THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

MEMORANDUM

To : CUS Chair and Members (see distribution list)

cc : President, Provost, CPS Secretariat *(without enclosures)*

From : Prof Anirban MUKHOPADHYAY, Secretary of CUS

Date : 6 January 2021

Subject : Agenda for the 167th CUS meeting to be held on 13 January 2021

The 167th CUS meeting will be held on **Wednesday, 13 January 2021 at 9:30 a.m.** via the online platform **Zoom**.

AGENDA

1.	Welcome	
2.	Confirmation of the Minutes of the 166th Meeting Held on 11 November 2020	(Enclosed)
3.	Matters Arising from the Last Minutes	(CUS 01/21)
4.	Oral Report by the Chair	

(Non-reserved items: 5-9)

FOR DISCUSSION

5.	Initial Proposal for the New Bachelor of Science Program in Sustainable and Green Finance	(CUS 02/21)
6.	Dual Degree Program in Technology and Management: 11 BEng/BSc Programs with Four More BBA Programs	(CUS 03/21)
7.	Final Proposal for the Revised Framework of the Undergraduate Common Core Program	(CUS 04/21)
8.	Major Program Changes for Bachelor of Science in Integrative Systems and Design	(CUS 05/21)
9.	New Courses and Major Course Changes	(CUS 06/21)

FOR INFORMATION

10. Minor Changes to Courses and Programs (CUS 07/21)

ANY OTHER BUSINESS

11. Date of next meeting: Wednesday, 17 March 2021 at 9:30 a.m.

(Reserved item: 12)

FOR DISCUSSION

12. Potential Graduates by Fall 2020-21 (CUS 08/21)
[to be tabled]

Enclosure

Distribution

Chair and Members:
Prof Andrew HORNER
Prof Melody CHAO
Mr Tung-Wai CHEUK
Mr Chung-Tat CHOR
Prof King-Lau CHOW
Mr Pak-Ho FONG
Prof Jimmy FUNG
Prof Allen HUANG
Prof Baoling HUANG
Prof Stanley LAU
Miss Wing-Yau LOK
Prof Pak-Wo LEUNG
Prof Philip MOK
Prof Emily NASON
Mr James PRINCE
Prof Kevin TAM
Prof Melinda WHONG
Prof Tim WOO
Prof Carine YIU

Observers:
Ms Renee KOU
Mr Tony LAU
Dr Trevor WEBB

Secretariat:
Ms Anne LUK
Ms Janet TANG

DRAFT

THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Minutes of the 166th meeting of the Senate Committee on Undergraduate Studies (CUS) held on 11 November 2020 (Wednesday) at 9:30a.m. via the online platform Zoom.

Present:	Prof Andrew HORNER (Chair)	Prof Anirban MUKHOPADHYAY (Secretary)
	Prof Melody CHAO	Prof King-Lau CHOW
	Prof Joshua DERMAN	Prof Jimmy FUNG
	Mr Pak-Ho FONG	Prof Allen HUANG
	Prof Stanley LAU	Prof Pak-Wo LEUNG
	Dr Cindy Xin LI	Miss Wing Yau LOK
	Prof Philip MOK	Prof Emily NASON
	Mr James PRINCE	Prof Kevin TAM
	Prof Melinda WHONG	Prof Tim WOO
In attendance:	Dr Ilari KAILA *(for agenda item #4)*	Ms Renee KOU
	Prof Ronald LAU *(for agenda item #6)*	Dr Sai Lok NAM
	Prof Huamin QU (*for agenda item #7)*	Miss Theresa TAM *(for agenda item#10)*
	Dr Trevor WEBB	
Apologies:	Mr Chung Tat CHOR	Mr Tung Wai CHEUK
	Mr Tony LAU	
Secretariat:	Ms Anne LUK	

Action

Welcome

1. The Chair extended his welcome to three new student members, namely Mr CHOR Chung Tat (SSCI), Miss LOK Wing Yau (SBM) and Mr CHEUK Tung Wai (SHSS).

Confirmation of the Minutes of the 165th Meeting Held on 16 September 2020 and the Special CUS Meeting on 25 September 2020

2. The minutes of the 165th meeting held on 16 September 2020 and the Special CUS Meeting on 25 September 2020 were confirmed as accurate records of the meetings.

Matters Arising from the Last Minutes (CUS 45/20)

3. Members noted that Senate at its 6 October 2020 meeting gave provisional approval for the Initial Proposal for the "Extended Major" Framework and the New Program Choice under the Framework.

Final Proposal for the New Undergraduate Minor Program in Music and Creative Arts (CUS 46/20)

4. Dr Ilari KAILA gave a short presentation on the final proposal, including responses to the comments from CUS as follows:
   (a) HUMA 2104 *Music Theory I* and HUMA 3104 M*usic Theory II* retitled as

Music Theory I - Introduction to Tonal Music and *Music Theory II - Fundamentals of Harmony and Counterpoint* respectively to better reflect the course content. The former being a fundamental course and the latter was in the form of small seminar class with more hands-on focus; and

(b) Removed the pre-requisite requirement (*Music Theory I - Introduction to Tonal Music*) for *Music Theory II - Fundamentals of Harmony and Counterpoint.*

5. Dr KAILA further explained the relationship between the two courses. The courses were sequential in the sense that *Music Theory I - Introduction to Tonal Music* would be essential to prepare students for *Music Theory II - Fundamentals of Harmony and Counterpoint*; and there would be no point for those students who had taken *Music Theory II - Fundamentals of Harmony and Counterpoint* to take *Music Theory I - Introduction to Tonal Music*.

6. As the final proposal had addressed all the key concern raised by the CUS, the Committee resolved to recommend the introduction of the proposed Undergraduate Minor Program in Music and Creative Arts to the Senate for approval.

Initial Proposal for the New Undergraduate Minor Program in Literature and Creative Arts (CUS 47/20)

7. Dr Sai Lok NAM shared a video of Prof Sheng Qing WU giving a short presentation on the program:

(a) The program aimed to help students to develop the critical skills necessary to analyse and appreciate literary text; enhance their critical thinking ability and ability to express themselves in an effective way. The program would be a good opportunity for students to work with internationally renowned writers to gain hands-on experience to substantially develop their Chinese writing skills, which would be important for students' intellectual, emotional and career development in the future;

(b) Benchmarking against local and overseas universities suggested that full-fledged universities would always offer creative writing major/minor/concentration. The survey conducted last year indicated that majority of students had expressed interest in creative writing and art courses;

(c) Students would need to take one required course (out of three) and five Literature and Film Fundamental and General Creative Art or Music electives;

(d) All required courses would be conducted mainly in Chinese/Putonghua, as no English resources were available. Literature and Film Fundamental electives would be conducted mainly in English, with the exception for some courses on Chinese Literature; and

(e) It was anticipated that there would be 30 students each year. The program team would review the demand in three or five years' time.

8. CUS had the following comments:

(a) The title of a program should tell students what the program is about (i.e., what is expected from the students). The proposed title was not an accurate reflection of the program as:

i. The program had a strong emphasis on Chinese creative writing; and

ii. Students could take as few as one General Creative Arts or Music elective. It might not worth including this area in the program title.

(b) The program title overlapped with "Music and Creative Arts", another Minor program of the Division. This might confuse students. A more distinct title would be needed as content-wise the programs were very different.

(c) Collecting feedback from students would help to decide the best title that could appeal to students and at the same time reflect the focus of the program.

(d) Changes to the program title might require respective changes to the program intended outcomes.

(e) Since the program had the aspiration to go beyond Chinese Literature in the future, and that students could choose courses with English as the medium of instruction (MoI) for the electives, adding an English required course might help to attract more students to enrol on the program.

(f) Clarification regarding the relationship between the 3-credit Chinese Communication course (which was not just about Chinese proficiency) and the required courses; and how they related to the Minor program would be needed.

9. Members' attention was drawn to the fact that Senate's approval would be needed for a specific course/program to be conducted in a language other than English. If CUS saw the need, the Committee could make conscious decisions to recommend the use of a non-English language as the MoI.

10. Members expressed broad general support for the initiative. The program team would be invited to include in its final proposal its feedback to comments from CUS. HUMA/ SHSS

Major Program Changes to the BBA Program in Operations Management (CUS 48/20)

11. Prof Ronald LAU briefed members on the rationale for proposing the Supply Chain Management Option under the BBA program:

(a) The BBA program had a Business Analytics Option. However, some students found it too statistical- and quantitative- focused; and

(b) Supply chain management, being the strength of the department, had grown increasingly important because of the pandemic. Students had expressed interests in the Option and considered it useful for their future career.

(c) Under the current curriculum structure, students would be required to take two extra courses to fulfil the Option requirements.

12. It was noted that some Centre for Language Education (CLE) courses included in the proposal were outdated. The program team would be invited to update the information accordingly. SBM/ISOM

13. The Committee resolved to recommend the changes to the Senate for approval.

[Post-meeting notes: ISOM updated the course information as shown in the Annex: Replaced LABU 2052 and LABU 2051 with LABU 2040 and LABU 2060; removed LANG 3069 and LANG 1112 (under Goals 1 to 3, 5 to 6 and 8); replaced MGMT 2120 with MGMT 2010 and MGMT 2130 (under Goals 1, 3, 7

and 8); and replaced ISOM 4770 with ISOM 3770 (under Goals 1to 6).]

Final Proposal for the General Framework of Extended Major and the Extended Major Program in Artificial Intelligence (CUS 49/20)

14. CUS appreciated the many works IPO and the Schools had done to come up with a concrete final proposal within a short period of time.

15. Prof Jimmy FUNG gave a short presentation regarding the major changes made since CUS' review of the initial proposal, in particular, how the comments from CUS were addressed:
    (a) The program-based admission/major selection exercise quotas for "Engineering+AI" and "Science+AI" were revised as 150/30 and 40/40 respectively. The two types of admission would add up to 260 per year, accounting for 10% of the student population. The projection for 2024-25 would be close to 1,000 students on the program.
    (b) To prevent the program from turning into a technical one, IDPO 4110 *Practical Machine Learning* and IDPO 4120 *Ethics of Artificial Intelligence* were added.
    (c) During the Virtual Info Day 2020, around 1,800 registrants attended the Cantonese live session introducing the program; and around 360 for the English session. The audience demonstrated substantial interest in the program.
    (d) Students would take cross-disciplinary courses in their 2nd and 3rd year of study to prepare for the application and integration of Artificial Intelligence (AI) with their Majors.
    (e) Students would be required to take either IDPO 4990 *Interdisciplinary Capstone Design* or IDPO 4991 *Interdisciplinary Capstone Project.*
    (f) The grades obtained from the "X" requirements would be counted towards the Major Cumulative Grade Average (MCGA).

16. Members observed the following:
    (a) Experience from some Schools suggested that students might have difficulty enrolling on courses related to hot topics during their exchange overseas, as some universities might not open the classes to non-local students. Students should be advised to take AI required courses (and future "X"-related ones) at HKUST.
    (b) The total number of credits on AI electives might vary from Major to Major. Not all students would be required to take 9 credits. For instance, all Engineering Majors had a 6-credit Final Year Project (FYP) which contained AI elements, of which 3 credits were Major-related and 3 were AI-related. These students could then take only 6 credits of AI electives.
    (c) Demand for FYP supervisors could be a bottleneck hindering the smooth implementation of the program. Prof Huamin QU supplemented that the issue could be resolved as faculty from the Guangzhou Campus could rotate in to help to supervise the students.

17. Members expressed an overall support for the proposal. Subject to Senate's approval for the "Major+X" Framework, future approval for "Major+X" programs would be delegated to CUS. To better prepare for the coming admission round, IPO would be invited to coordinate with the Schools, especially those with School-based admission, to start planning for the next "X" IPO

that would best fit them. Ideally, more details could be available for further discussion at the April 2021 CUS meeting.

New Course and Major Course Changes (CUS 50/20)
New Common Core Course (CUS 51/20)

18. No request for un-starring of the agenda items were received. With an understanding that all proposals were fully examined by the CUS Secretariat and the Committee on Undergraduate Common Core Education Secretariat (for Common Core courses), the Committee approved all course proposals without further deliberation at the meeting.

[Post-meeting notes: HUMA informed the CUS Secretariat on 20 November 2020 that there was a typo in the course proposal. HUMA intended to offer the course in Spring Term 2020-21 instead of 2021-22.]

Initial Proposal for the Revised Undergraduate Common Core Program (CUS 52/20)

19. Prof Anirban MUKHOPADHYAY gave a presentation on the revised framework for the Undergraduate Common Core Program:
    (a) The Steering Committee on Review of the Common Core, set up in April 2019, was tasked to conduct a review of the existing Common Core Program. The Committee reviewed the objectives of the program, HKUST's and societal expectation on graduate attributes as well as General Education review reports of overseas and local universities.
    (b) The following major issues were identified:
        i. The program did not serve the objective of developing intellectual breadth beyond a single discipline, partly because students chose courses related to their Majors; and partly because of the double-counting of credits mechanism;
        ii. Competency outcomes were not well assessed;
        iii. Lack of pre-requisites led to low commonality of experience. The program had no identity and students did not know why they had to "waste" these credits (or time); and
        iv. Flat/declining scores in Annual Assessment of Graduate Attributes and Information Literacy Tests (classes of 2019 & 2020).
    (c) The revised framework proposed by the Steering Committee took into consideration the following factors:
        i. Addressing major issues identified;
        ii. Alignment with the University's priorities to broaden learning experience and overcome academic boundaries as set out in the University's Strategic Plan for 2021-2028; and
        iii. The University Grants Committee's requirement for universities to report on their effort in developing students' skills and attitudes, meeting the society needs as a whole and supporting students with mental issues.
    (d) Major changes proposed to the framework included:
        i. Reduction of credits from 36 to 30 with no double-counting of credits;
        ii. A three-tier scaffolded structure would be adopted
            - Foundation level (15 credits): *Critical Thinking and Data Literacy* and *Habits, Mindsets, and Wellness* coursed added on top of the

existing English and Chinese Communication courses.

- Broadening level (12 credits): introduction of the new Creative and Computational Arts area; removal of Quantitative Reasoning area; splitting of Science and Technology into two areas and introduced program-specific exclusions based on "home area"; and
- Experience levels (3 credits): a choice of four different cross-disciplinary experiential opportunities (UxOP).

20. Members were informed of some common questions raised at different occasions during the consultation progress. For instance:
    (a) Differences between the critical thinking element embedded in existing courses covered by the Majors/Minors and the Common Core Program: it was explained that the latter targeted average students and focus on transferable competency.
    (b) Differences between HLTH 1010 *Healthy Lifestyle* and the proposed 3-credit *Habits, Mindsets, and Wellness* course and the scaling up: the latter integrated the desirable elements of the former into an academic framework. Though similar materials would be used, the new course would be delivered in a more systematic way.
    (c) It was not yet confirmed if double-counting of credits would be allowed for Minors.
    (d) UxOP could be taken in Year 3, hence it would be less demanding as compared to the current arraignments. The four different UxOP choices aimed to cater for the demand of 2,500 students.
    (e) The Undergraduate Core Education Office would review the course offerings under the Broadening section, based on the scaffolding developed.

21. Further elaboration was provided for the UxOP. Since the new UROP would bear 3 credits, on top of the research work conducted (regular research like the current UROP arrangements), students would be required to share with others their work via small cross-disciplinary workshops and presentations. Students would be graded based on their reflection. It would be a bit difficult to ascertain the demand for the four streams at the beginning. Information on the number of students engaged in UROP, internships, mentorship/outreach, etc., would be a good reference point. Following the current trend, if around 100 students opted for UROP, the other three streams might have an average of 800 students. Since some faculty had already expressed interest in leading theme-based projects, it was optimistic that there would be sufficient faculty to support the UxOP.

22. The revised program would be a major change in the University's approach. It would help the University to deliver a quality Common Core Program, which the University intended to achieve years ago. The successful implementation of the revised program would allow the University to communicate with the students clearly their progress of specific competencies (e.g., teamwork, academic literacy, learning to learn ability, communication skill, etc.). This might enhance students' recognition of the value of the Common Core Program; and reduce reliance on the CGA.

23. CUS expressed positive support for the initiative with the following comments:
    (a) Though UxOP would only be implemented three years from now, pilot testing was considered crucial to better prepare for the large-scale implementation, as it might take more than one trial run to iron out possible

problems.

(b) Mechanisms should be in place to ensure consistency of grading across the four UxOP streams.

(c) There should be clear indication about the party responsible for evaluating the Common Core courses.

(d) It was noted that students could choose from a range of activities for the *Habits, Mindsets, and Wellness* course. Students with special needs could be given exceptions according to the prevailing practice, should the Department see fit.

(e) The workload for UxOP arrangements, in particular, the matching of students with the theme-based projects as well as internships would be substantial. The Senior Management was aware of the potential resource implications.

(f) Given that students would be required to take the Foundation courses in Year 1, this might pose pressure on class timetabling. Measures such as adoption of sub-sessions for the courses and pre-assigning of courses might need to be explored. The said requirement might also affect the arrangement of some Majors which required students to take a certain number of foundation courses during the first year of study.

Proposed Revisions to the Regulations for Examinations (CUS 53/20)

24. Prof Anirban MUKHOPADHYAY briefed members on the background of the paper:

(a) In view of the increasing number of cheating cases in connection with online examinations, the Associate Deans considered that there was a need to formulate regulations specific to online examinations for staff and students' reference.

(b) The revised regulations were endorsed by the Committee on Teaching and Learning (CTLQ) via circulation on 10 September 2020 for Senate's approval at its October 2020 meeting, aiming for implementation by mid-term.

(c) Senate Secretariat subsequently advised that the endorsement from the CUS and the Committee on Postgraduate Studies would be needed before consideration by the Senate.

25. CUS considered the revised regulations necessary to facilitate the operations at departmental level and to manage the different appreciations about cheating among students. Members resolved to endorse the revised regulations.

Support for Students with HKDSE Chinese Language Subject below Level 3 (CUS 54/20)

26. The University Admissions Sub-committee (UAS) observed an increase in the number of students admitted with a HKDSE result of below Level 3 for the English/Chinese Subjects. CUS was therefore invited to consider if there would be a need to review the University's current support for students' proficiency, especially for Chinese.

27. Prof Melinda WHONG supplemented that there was more support for English training because students were required to study in English. The assumption for Chinese seemed to be different. Subject to CUS agreeing with the logic, CLE

could re-think the Common Core options to offer a wider or more interesting set of courses so that the training would not focus only on increasing the level of proficiency. While Members did not have any views on the matter for the time being, CLE welcomed suggestions after the meeting; and would bring in more new courses for discussion in the future.

Amendment to the Subject Requirement for JUPAS Admission to BSc in Mathematics and Economics (MAEC) via Program-Based Admission (PBA) (CUS 55/20)

28. Members received a recommendation from the UAS for a proposal from the School of Science to consider the HKDSE Integrated Science subject as an Elective 2 rather than Elective 1 subject requirement for BSc in Mathematics and Economics (MAEC). Members agreed to approve the recommendation to take effect from the Fall 2021-22 admission round.

Items for Information

29. The following papers were presented to Members for information:
    (a) Annual Report on the Work of the Committee on Undergraduate Core Education from 1 July 2019 to 30 June 2020 (CUS 56/20)
    (b) Annual Report on the Work of the Undergraduate Admissions Sub-Committee from 1 September 2019 to 31 August 2020 (CUS 57/20)

30. The following paper would be available for information to Members upon request:
    (a) Course Deletion and Minor Changes to Courses and Programs (CUS 58/20)

Any Other Business

31. Members were informed that the Chair, on behalf of the Committee, approved on 6 November 2020 the retention of MATH 4333 *Mathematical Biology*, a sunset course deleted for the 2020-21 academic year. The Mathematics department advised that the course would be offered to the Applied Mathematics Track students in Spring 2020-21.

Date of Next Meeting

32. There being no other business, the meeting was adjourned at 12:10pm. The next CUS meeting was scheduled for 13 January 2021 at 9:30am.

CUS/13 January 2021
Agenda Item 3
File: 01/21

Matters Arising from the Minutes of the Last Meeting Held on 11 November 2020

1. **Minutes paras. 4 to 6: Final Proposal for the New Undergraduate Minor Program in Music and Creative Arts (CUS 46/20)**

   Senate would be invited to consider the proposal at its 153rd meeting on 3 February 2021.

2. **Minutes paras. 11 to 13: Major Program Changes to the BBA Program in Operations Management (CUS 48/20)**
   Minutes paras. 14 to 17: Final Proposal for the General Framework of Extended Major and the Extended Major Program in Artificial Intelligence (CUS 49/20)

   The papers were submitted to the Senate and were approved at its 152nd meeting held on 8 December 2020. Formal documentation for the Senate's resolution is awaited.

3. **Minutes para. 18: New Course and Major Course Changes (CUS 50/20) and New Common Core Course (CUS 51/20)**

   IPO submitted a request to change the effective date of the new common core PPOL 2110 *Science, Technology and Society in China* from 2021-22 Spring to 2020-21 Spring.

4. **Minutes paras. 19 to 23: Initial Proposal for the Revised Undergraduate Common Core Program (CUS 52/20)**

   The initial proposal was submitted to the Senate for discussion in the 152nd Senate meeting on 8 December 2020. Senate was positive about the initiative; and the Steering Group would take into account Senate's comments when preparing the final proposal.

5. **Minutes paras. 24 to 25: Proposed Revisions to the Regulations for Examinations (CUS 53/20)**

   Further to the Committee on Postgraduate Studies (CPS)' consideration and endorsement of the revisions, they were submitted to the Senate for approval via circulation.

   In connection with the proposed revisions to the Regulations for Examinations, update of the declaration statement of academic integrity under the HKUST Academic Honor Code for online examinations was also required, as there are references across the two documents. Both CUS and CPS took Chair's Action to

endorse the updates (Appendix) on 27 November 2020. The updated declaration statement was submitted to the Senate for approval via circulation.

Senate approved the proposed revisions to the Regulations for Examinations and the updated declaration statement, for implementation with immediate effect, on 8 December 2020. Formal documentation for the Senate's resolution is awaited.

Matters Arising from the Minutes of the Meeting Held on 25 September 2020

6. Minutes para. 2: Revised Proposal for New Program Choices under the "Extended Major" Framework - BEng/BSc in [major name] with an extended major in [X] (CUS 44/20)

Senate resolution extracted from the confirmed minutes of the 151st Senate meeting:
"Members supported the proposed Framework with an understanding that additional program choices and emerging areas X might be introduced in future. Senate granted its provisional approval for the new Framework and announcement of two new programs choices to JUPAS applicants so that related promotion activities can be arranged immediately. The Senate also took note of the admission requirements of the two proposed program choices under the new Framework. Members were informed that the proposal would be revised and submitted to the Senate in December 2020 for approval."

Matters Arising from the Minutes of the Meeting Held on 13 May 2020

7. Minutes para. 5: Final Proposal for the New BSc Program in Data Analytics in Science (CUS 16/20)

Senate resolution extracted from the confirmed minutes of the 150th Senate meeting:
"The proposed introduction of the BSc Program in Data Analytics in Science was moved, seconded and carried."

8. Minutes para. 6: Major Program Changes to the BBA Program in Professional Accounting (CUS 17/20)

Senate resolution extracted from the confirmed minutes of the 150th Senate meeting:
"The proposed changes to the Program was moved, seconded and carried."

9. Minutes para. 7: Closing of Undergraduate Minor Program in Biological Physics (CUS 18/20)

Senate resolution extracted from the confirmed minutes of the 150th Senate meeting:

"The proposed closure of the Minor Program in Biological Physics was moved, seconded and carried."

Matters Arising from the Minutes of the Meeting Held on 15 January 2020

10. Minutes para. 4: Final Proposal for a New Undergraduate Minor Program in Sustainability (CUS 02/20)

Senate resolution extracted from the confirmed minutes of the 149th Senate meeting:
"The proposal of the new undergraduate Minor Program in Sustainability, effective from Fall Term of 2020-21 academic year, was moved, seconded and carried."

11. Minutes para. 8: Any Other Business – Revised Course Grade Guideline Bands

Senate resolution extracted from the confirmed minutes of the 149th Senate meeting:
"The proposal to update the course grade guidelines bands for implementation from Spring Term of 2019-20 onwards, was moved, seconded and carried.

Appendix

The HKUST Academic Honor Code

(Proposed revisions highlighted)

Honesty and integrity are central to the academic work of HKUST. Students of the University must observe and uphold the highest standards of academic integrity and honesty in all the work they do throughout their program of study.

As members of the University community, students have the responsibility to help maintain the academic reputation of HKUST in its academic endeavours.

Sanctions will be imposed on students, if they are found to have violated the regulations governing academic integrity and honesty.

Declaration of Academic Integrity

You MUST confirm the following statements to unlock the exam. Points earned from these questions will not count towards the exam grade.

- I will answer the questions using only materials, including online materials, specifically approved for use in this examination.
- I will not receive any assistance during the examination and all the answers will be my own work.
- I am taking this examination in isolation in a private room unless with the explicit written consent of my instructor.
- I am using my own ITSC account to complete this examination.
- I understand that the use of a virtual background is prohibited.
- I understand that it is my responsibility to ensure that my equipment is functioning properly.
- I will follow the invigilator's instructions to set up the proctoring environment.
- I will not leave the examination venue and/or turn off my camera in the first 30 minutes of the examination unless with the explicit permission of the instructor.
- I understand that conversation or other communication, whether at my workstation or remotely through electronic or other means, and whether it is related to the examination or not, is not allowed during the examination unless specifically permitted by the invigilator; and that any questions must be addressed to the invigilator.
- I will not save or distribute copies of examination questions in any form either during or after the examination.
- I will delete, immediately at the end of the examination, any questions that I download onto my hard-drive, external drive or other device in order to work on during the examination.
- I understand that I may leave the examination venue to visit the washroom or for any other reason only during designated periods, where scheduled, or with an invigilator's permission, and only after I have uploaded my examination answers before leaving.
- I understand that, once uploaded, my answers cannot be revised/modified unless explicitly permitted for the examination.

- I will not take examination materials or use electronic devices if I leave my workstation; I will take personal items to the washroom only with the invigilator's permission.
- I understand that if I leave the examination venue to go to the washroom or due to illness or other extenuating circumstances without uploading my answers, I will be deemed to have been unable to complete the examination and that the Academic Regulations Governing Undergraduate Studies (7.5) or the Academic Regulations Governing Postgraduate Studies (7.4) shall apply, as appropriate.

CUS/13 January 2021
Agenda Item 5
File: 02/21

COMMITTEE ON UNDERGRADUATE STUDIES

Paper for: Discussion

Title: **Initial Proposal for a new BSc Program in Sustainable and Green Finance**

Purpose: The School of Business and Management and Interdisciplinary Programs Office submit an initial proposal to introduce a new BSc program in Sustainable and Green Finance for implementation with effect from Fall 2022-23 for discussion and comments by CUS

Submitted by: School of Business and Management and Interdisciplinary Programs Office

Prepared by: CUS Secretariat

BACKGROUND

1. In accordance with the policies and procedures for undergraduate programs and course administration, departments intending to introduce a new program should submit to the Committee on Undergraduate Studies (CUS) an initial program plan for vetting prior to preparing the detailed proposal.

2. The School of Business and Management (SBM) and Interdisciplinary Programs Office (IPO) take an initiative to offer a new BSc program in Sustainable and Green Finance and submit an initial proposal which is presented in the Appendix.

ACTION SOUGHT

3. CUS is invited to discuss and comment on the initial proposal for the BSc program in Sustainable and Green Finance as presented in the Appendix. In particular, members are invited to identify issues or questions that SBM/IPO should address in preparing the final program proposal.

Appendix to
CUS 02/21

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Approval of New Undergraduate Program

Intial Proposal ☑ Final Proposal ☐

Section 1: General Information

a) The program is a : Major ◉ Minor ○ Other ○

b) Title: (in English) Bachelor of Science in Sustainable and Green Finance

(in Chinese) 理學士 (可持續發展及綠色金融)

c) School/IPO proposing this program: School of Business and Management
Interdisciplinary Programs Office

d) Offering Department(s): School of Business and Management
Division of Environment & Sustainability

e) Expected term for the launch of the program:: Fall 2022-23

Section 2: Submission and Recommendation

Proposal Submission and Recommendation

Offering Department/Program Unit	*Position*	*Name*	*Date*
School of Business and Management	Dean	Prof. Kar Yan TAM	23-Dec-20
Division of Environment & Sustainability	Head of Dept	Prof. Jimmy FUNG	22-Dec-20

Recommending School/IPO	*Position*	*Name*	*Date*
School of Business and Management	Dean	Prof. Kar Yan TAM	23-Dec-20
Interdisciplinary Programs Office	Director	Prof. Huamin QU	7-Jan-21

Concurrence

School/Dept/Program Unit	*Position*	*Name*	*Date*

a) Educational Objectives and Alignment of Objectives with Role and Mission

Sustainable and green finance is an emerging discipline that aims to increase the level of financial flows from the public, private and not-for-profit sectors to sustainability development priorities at the national and global levels. The consent among signing nations of the landmark U.N. Paris Agreement in 2015 is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels. Mainland China is a strong advocate of the Agreement and aims to achieve zero carbon emission by 2060. Hong Kong also sets its carbon neutrality target in 2050. This collective effort among nations with clear milestones and targets under the Paris Agreement or their own national agendas will create tremendous opportunities for professionals who can lead and integrate Environmental, Social and Governance (ESG) strategies into finance and investments.

According to a recent report of Boston Consulting Group, China will have to invest up to HK$118 trillion over the next three decades in technologies and infrastructure to achieve the said target. These investment opportunities will create a huge demand for professionals who are knowledgeable of finance, sustainability, climate change, and related technological solutions. There is a huge gap between the supply and demand for talent in Sustainable and green finance worldwide. Currently, there is no undergraduate program in Hong Kong that focuses on green finance while universities in Europe and the US have started to launch programs in recent years. In response to this surging demand, the School of Business and Management (SBM) is collaborating with the Division of Environment and Sustainability (ENVR) to offer a 4-year Bachelor of Science program in Sustainable and Green Finance. With a strong Environment Division and a reputable Business School, HKUST is in a unique position to develop a new program to fill the talent gap and help develop Hong Kong into a leading international green finance center.

The proposed program will equip students with the essential knowledge and skills in Sustainable and green finance. It intends to nurture students to be effective leaders and managers in ESG, impact investment, financing of Sustainable and green projects, development of Sustainable and green instruments and products, and other related fields. Students are required to complete a selected set of courses from SBM, ENVR, and other academic units to fulfill the degree requirements. The curriculum will embrace a wide range of topics related to Sustainable and green finance. The courses will span multiple disciplines, including climate and ESG, finance and risk management, statistics and programming, big data, operations management, public policy, among others.

The proposed program aligns strongly with HKUST's vision and mission. In particular, the interdisciplinary nature of the program will provide students with a broad-based learning experience that cuts across business as well as environment, science, and technology. Its holistic curriculum will equip students with a solid foundation of knowledge and skills to function effectively in related fields, enhance students' creativity and critical thinking skills, and provide students with a global outlook on the development of Sustainable and green finance. The graduates of this program will be in good demand, and they will contribute to the economic and social development of Hong Kong, the Greater Bay Area, and beyond.

This program will include a total of 115 credits, including:

- University Common Core (Revamped): 30 credits
- Business and Finance Required Courses: 24 credits
- Environment and Sustainability Required Courses: 24 credits
- Other Required Courses: 19-20 credits
- Sustainable and Green Finance Electives: 18 credits

For details, please refer to Attachment 1: Curriculum Requirements.

b) Student Demand and Demand for Graduates

To moderate the adverse impacts of climate changes is a shared priority of developed and developing nations. The goal to "green the brown" will create tremendous opportunities in new energy technologies, development of financial markets such as carbon pricing and trading to facilitate the replacement of fossil energy, digitization of infrastructure of transportation to save energy consumption, the market for green bonds and other instruments to fund sustainability projects. Hong Kong, as an international financial center, can play an important role in this development that will span decades.

In the Chief Executive's Policy Address 2020, Mrs. Carrie Lam said, "We will develop green finance to boost investments conducive to reduce carbon emissions, build a low-carbon economy which is more resilient to climate change, and enhance public education and publicity. I cordially invite all sectors to work together to promote low-carbon transformation in Hong Kong in a bid to strive towards the goal of carbon neutrality by 2050." (https://www.policyaddress.gov.hk/2020/eng/policy.html). Subsequent to the announcement of the Policy Address, Professor Arthur Li, Chairman of the Council for Sustainable Development (SDC), expressed that "It is a challenge for Hong Kong to strive to achieve carbon neutrality before 2050, which requires collaborative efforts across the Government, businesses, non-profit sector, and individuals. Yet, at the same time, it offers new opportunities for the Hong Kong economy, intensifies the development of green enterprises, and creates jobs. Hong Kong, as an advanced international metropolis, should capitalise on its well-developed infrastructure, enable its talents to realise their

potential, and promote local research and development. We should seize this opportunity and work together so that Hong Kong can strive to achieve carbon neutrality before 2050." (https://www.info.gov.hk/gia/general/202011/25/P2020112500723p.htm)

There is a great demand for talent in sustainable and green finance. However, there is a worldwide shortage of talent in Sustainable and green finance. A report produced by Macquarie Infrastructure and Real Assets of Macquarie Group Limited in January 2020 points out that although more than 90 percent of real asset investors expect to increase their focus on sustainability over the next five years, there is an absence of in-house ESG expertise, especially in the US and Asia. (https://www.macquarie.com/hk/en/about/news/2020/focus-on-esg-intensifies-as-real-asset-investors-seek-returns-reveals-new-macquarie-infrastructure-and-real-assets-report.html) The shortage of talent pool is also found in Europe. Natalie Basiratpour, a director at recruitment firm Octavius Finance in London, was interviewed by eFinancialCareers and said, "there's a tendency for funds to hire people with ESG experience from not for profits and elsewhere and to sit them alongside people with existing investing talent, with the intention that ESG experts will influence the outcomes." (https://news.efinancialcareers.com/uk-en/3004891/esg-jobs-and-pay-finance)

Talent is the key to develop Hong Kong into a green finance center and to prepare for the carbon neutrality challenge. There is no degree program in Sustainable and green finance in Hong Kong as of today. While there exist local degree programs in either finance or environment, but they tend to focus on silo traditional disciplines with little integration between finance and environment, which is the essence of this emerging discipline. From all indications we received from the government, regulators, and industry, there is already a huge demand for professionals in Sustainable and green finance, and the talent gap will only be widened in the future.

c) Arrangements for Admission and Selection (if relevant)

A hybrid admission model will be adopted for this program. For an initial class size of 30, 18 will be directly recruited and admitted from secondary schools, and 12 will be admitted through the major selection exercise from SBM at the end of year 1. This hybrid model allows some students with dual interests across two distinct disciplines to follow a coordinated and integrated curriculum so they can adapt their study earlier to pursue their interests. At the same time, it preserves the opportunity for those who have not decided their interest in admission to HKUST but who later find that they are interested in studying Sustainable and green finance.

For admission requirements, we will combine the current requirements of SBM and ENVR for the new program. For HKDSE, the proposed minimum requirements are 433233 (for English, Chinese, Mathematics, Liberal Studies, and two other electives), with a weighting of 2 for English and Mathematics

and 1.5 for the best elective score from Chemistry/Economics/Physics/M1/M2. Interviews may be conducted as part of the selection.

For students admitted to the joint program who wish to exit the major, they can transfer to SBM or ENVR (as an undeclared major for SBM) after the first term (application deadline is in the Winter term before Spring term starts) so that the students can enroll in the relevant courses in the School that they wish to opt-in. This will ensure that the students will still be able to follow the new curriculum without further delay and will be able to graduate in time. After this opt-out deadline, students may still transfer to SBM or ENVR through program transfer.

d) Estimated Student Enrollment (for majors/minors)

The initial intake in 2022-23 will be 30 students.

e) Consultation with Stakeholders

SBM has consulted its School Advisory Council at its meeting held on 8 October 2020. The Council consists of local and international business leaders from various professional industries. Strong support has been obtained from the Council on the School's strategic development on Sustainable and green finance.

We have also interviewed the following stakeholders to solicit their views on the degree program in Sustainable and green finance and the demand for talent in Hong Kong:

Title and Institution	Name
Secretary of Financial Services and Treasury Bureau	Christopher Hui
Former Undersecretary of Environment	Christine Loh
Chief Executive of Hong Kong Monetary Authority	Eddie Yue
Deputy Executive of Hong Kong Monetary Authority	Arthur Yuen
Senior Director, Head of International Affairs & Sustainable Finance Securities and Futures Commission	Christine Kung
Head of Banking Policy, Hong Kong Monetary Authority	Daryl Ho
Managing Director, Head of Green and Sustainable Finance, Markets Division, Hong Kong Exchanges and Clearing Limited	Grace Hui
Chairman, World Green Organization (Hong Kong)	Albert Yip
President, EFMD	Eric Cornuel

Their comments and advice are very consistent that such a degree program will increase the talent pool and capacity of Hong Kong in the area of Sustainable and green finance. On Nov 19, 2020, we invited Daryl Ho (Head of Banking Policy of HKMA) to brief our faculty on the issues and priorities of HKMA on climate and green finance so that colleagues in planning the curriculum have first-hand information on the development of the industry and its trajectory.

f) Benchmarking

We have conducted a benchmarking study and found no degree program in Sustainable and green finance offered by UGC institutions at this point. We have also reviewed overseas programs in related areas. Please refer to a separate table in Attachment 2 for benchmarking the University of Leeds, the University of Reading, the University of Warwick, our existing Quantitative Finance major and our existing Environment Management and Technology major, and the proposed program.

g) Resources

Some courses in the program are existing courses offered by SBM and ENVR. Additional resources will be needed to develop new interdisciplinary courses, to identify suitable capstone projects and advisors for the students, and to support program administration (e.g., recruitment and admission, student advising).

h) Responses to Issues and Questions Raised by the CUS on the Initial Proposal

N/A

i) Intended Learning Outcomes

Graduates from the program are expected to:

1. have a broad understanding of Sustainable and green business functions and integrate these functions to adopt an inter-disciplinary approach and formulate effective and innovative solutions to tackle complex real-world problems.
2. have in-depth grasp of Sustainable and green finance knowledge and skills, and transfer acquired knowledge and skills to meet changes and challenges in different fields.
3. engage in activities that lead to impact of societal improvement
4. make effective ESG finance decisions supported by analytical and quantitative techniques.
5. have the ability to create and innovate with divergent thinking.
6. communicate effectively with people of different levels and work areas.
7. work independently, collaborate effectively in teams, and lead a team to success.
8. demonstrate a global outlook and function effectively in multi-cultural and international settings.
9. effectively use information technology and sources of information in work applications.
10. understand professional and ethical responsibility, and recognize the importance of a sustainable and green living society.

j) Program Management

Both SBM and ENVR are fully committed to the program. SBM and ENVR will each appoint a faculty member as a Co-Director to jointly manage the program. An Executive Committee will be formed consisting of the two Co-Directors and administrative representatives from SBM and ENVR (Heads and/or Associate Deans) as members. The Committee will meet at least quarterly or more often as needed to discuss strategic and administrative matters and to ensure the program's smooth operation. Administratively, the program will be housed under SBM. The proposed program management arrangements will be reviewed after 2 years or earlier if major issues come up.

k) Transitional Arrangement

N/A

Attachment 1

Bachelor of Science in Sustainable and Green Finance

Curriculum Requirements

This program will include a total of 115 credits, including:
- University Common Core (Revamped): 30 credits
- Business and Finance Required Courses: 24 credits
- Environment and Sustainability Required Courses: 24 credits
- Other Required Courses: 19-20 credits
- Sustainable and Green Finance Electives: 18 credits

(For students admitted in 2022-23 under the 4-year degree)

BSc in Sustainable and Green Finance

Students taking the BSc Program in Sustainable and Green Finance as their first major are exempted from the School Requirements. However, they are still required to complete the University requirements in addition to the major requirements for graduation. For details please refer to the respective sections on this website.

Some courses can be used to fulfill both Major and University Common Core Requirements. Students may reuse a maximum of 6 credits of these courses to count towards both Requirements.

Students may use no more than 6 credits earned from courses offered in pure online delivery mode to satisfy the graduation requirements of a degree program. This 6-credit limit does not apply to credits obtained through the credit transfer procedures of the University.

For students graduating with an additional major, they must take all the requirements specified for that major, within which they must complete at least 20 single-counted credits. These 20 credits cannot be used to fulfill any other requirements for graduation except for the 120-credit degree requirement.

Major Requirements

Required Course(s)

			Credit(s) attained
FINA/ ISOM/ MGMT		Business and Finance Required Courses (Courses from the specified list)	24
FINA	3103	Intermediate Investments	3
FINA	3203	Derivatives	3
FINA	3810	Bloomberg Market Concepts Certification	0
FINA	4303	Fixed Income Securities	3
FINA	4929L	ESG Investing	3

FINA	4929O	Risk Management	3
FINA	XXXX	Green Finance Case Analyses (TBD)**	3
ISOM	XXXX	Sustainable Supply Chain Management (TBD)**	3
MGMT	3170	Managing CSR (Corporate Social Responsibility)	3
ENVR/ SUST		Environment and Sustainability Required Courses (Courses from the specified list)	24
ENVR	2XXX	Sustainable Development (TBD)**	3
ENVR	2XXX	Circular Economy and Life Cycle Assessment (TBD)**	3
ENVR	3310	Green Business Strategy	3
ENVR	3XXX	Environmental Sustainability Risks and Challenges (TBD)**	3
ENVR	4XXX	Social Sustainability Risks and Challenges (TBD)**	3
ENVR	4XXX	National and International Perspective – Governance and Applications (TBD)**	3
ENVR	4320	ESG Management and Reporting	3
SUST	1000	Introduction to Sustainability	3
FINA/ ISOM/ MGMT/ LABU/ MATH		Other Required Courses from the specified list (Students should take FINA 2203 OR FINA 2303; and take MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023.)	19-20
FINA	2203	Fundamentals of Business Finance	3
FINA	2303	Financial Management	3
ISOM	2020	Coding for Business	1
ISOM	2500	Business Statistics	3
ISOM	2600	Introduction to Business Statistics	1
MGMT	2130	Business Ethics and Social Responsibility	2
LABU	2040	Business Case Analyses	3
LABU	2060	Effective Communication in Business	3
MATH	1003	Calculus and Linear Algebra	3
MATH	1012	Calculus IA	4
MATH	1013	Calculus IB	3
MATH	1020	Accelerated Calculus	4
MATH	1023	Honors Calculus I	3

Elective(s)

		Minimum Credit(s) attained
	Sustainable and Green Finance Electives (Courses from the specified elective lists, of which at least 6 credits should be taken from each Area.)	18
Area A: Finance		
FINA	Any FINA courses at 3000- or 4000-level.	

Area B: Sustainability (at least 3 credits have to be above 3000-level)

ENVR	1070	Thinking Big: Systems Thinking for Environmental Problems	3
ENVR	1080	The Smart Consumer - Uncovering the Hidden Story behind the Product Label	3
ENVR	1170	Big History, Sustainability and Climate Change	3
ENVR	2010	Environmental Science Fundamentals	3
ENVR	3220	Energy Sources and Usage	3
ENVR	3420	Environmental Law and Regulations	3
ENVR	4480	Climate Modeling and Risk Assessment	3

***Remarks on course(s):*

- FINA xxxx: The course is a new course subject to approval.
- ISOM xxxx: The course is a new course subject to approval.
- ENVR 2xxx: The course is a new course subject to approval.
- ENVR 2xxx: The course is a new course subject to approval.
- ENVR 3xxx: The course is a new course subject to approval.
- ENVR 4xxx: The course is a new course subject to approval.
- ENVR 4xxx: The course is a new course subject to approval.

Attachment 2

Bachelor of Science in Sustainable and Green Finance
Benchmarking

Program Name	Proposed New Program: Bachelor of Science in Sustainable and Green Finance	HKUST: Bachelor of Science in Quantitative Finance (QFIN)	HKUST: Bachelor of Science in Environmental Management and Technology (EVMT)	University of Leeds: Bachelor of Arts in Environment and Business	University of Reading: Bachelor of Science in Finance (Sustainable Finance)	University of Warwick: Bachelor of Arts and Sciences in Global Sustainable Development and Business Studies
Program Objective	The proposed program will equip students with the essential knowledge and skills in Sustainable and green finance to fill the talent gap and help develop Hong Kong into a leading international green finance center.	Equip students with knowledge and skills to solve complex financial problems and be well prepared for professional qualifications. Graduates are typically employed by investment banks, commercial banks, hedge fund, asset management firms, brokerage firms, insurance companies, consulting firms, the Big Four auditors, private equity firms, government agencies as well as many other types of both small and large well-known corporations.	Equip students with a focus on solving complex environmental problems in the complex world to pursue a career in environmental management.	Combines the study of environmental and sustainability issues with sound business and management practice. Graduates will work in private companies, non-governmental organisations or the public sector in the areas of environmental consultancy and management, corporate social responsibility.	Develop the key skills and knowledge to meet the changes in financial world by gaining expertise in sustainable finance and business ethics. Studies will be underpinned by core modules on the essentials of business and finance, giving graduates a thorough understanding of the financial sector.	A holistic approach to exploring issues surrounding sustainability, including climate change, energy security, and wealth inequality. Graduates will have developed critical knowledge of sustainability, and the skills necessary to transfer this knowledge into the world of business.
Degree Type	Bachelor of Science in Sustainable and Green Finance	Bachelor of Science in Quantitative Finance	Bachelor of Science in Environmental Management and Technology	Bachelor of Arts in Environment and Business	Bachelor of Science in Finance (Sustainable Finance)	Bachelor of Arts and Sciences in Global Sustainable Development and Business Studies
Duration of Study	4 years	4 years	4 years	3 years (4 years with placement year)	3 years (4 years with placement year)	3 years (3 years with integrated study abroad programme) (4 years with study abroad or placement year)
Admission	Direct admission	Direct admission	Direct admission	Direct admission	Direct admission	Direct admission
Credit Requirements	120 credits	120 credits	120 credits	360 credits	Not stated on the website	360 credits
Programme Requirements	**University Common Core (Revamped) (30 credits)** **Major Requirements (67 credits)** *(i) Business and Finance Required Courses (24 credits) - TBD* • FINA3103 - Intermediate Investments (3 credits) • FINA3203 - Derivatives (3 credits) • FINA3810 - Bloomberg Market Concepts Certification (0 credit) • FINA4303 - Fixed Income Securities (3 credits) • FINA4929L - ESG Investing (3 credits) • FINA4929O - Risk Management (3 credits) • FINAXXXX - Green Finance Case Analyses (TBD) (3 credits) • ISOMXXXX - Sustainable Supply Chain Management (TBD) (3 credits) • MGMT3170 - Managing CSR (Corporate Social Responsibility) (3 credits)	**University Common Core (36 credits)** **School Requirements (33-34 credits)** • FINA2303 - Financial Management (3 credits) • ACCT2010 - Principles of Accounting I (3 credits) • ECON2103/2113 - Principles of Microeconomics/Microeconomics (3 credits) • ECON2123/3123 - Macroeconomics/ Macroeconomic Theory I (3 credits) • ISOM2010 - Introduction to Information Systems (3 credits) • ISOM2020 - Coding for Business (1 credit) • ISOM2500 - Business Statistics (3 credits) • ISOM2600 - Introduction to Business Analytics (1 credit) • MGMT2010 - Business Ethics and the Individual (2 credits) • MGMT2130 - Business Ethics and Social Responsibility (2 credits)	**University Common Core (36 credits)** **Fundamental Courses (10 -11 credits)** • COMP 1021/1022P/ISOM 2010 - Introduction to Computer Science/ Introduction to Computing with Java/ Introduction to Information Systems (3 credits) • LANG2082 - Communication for Environmental Management and Technology I (2 credits) • LANG2083 - Communication for Environmental Management and Technology II (2 credits) • MATH1003/1012/1013/1020/1023 - Calculus and Linear Algebra/ Calculus IA/ Calculus IB/ Accelerated Calculus/ Honors Calculus I (3-4 credits) **Business Requirements (21 credits)** • ECON2103/2113 - Microeconomics (3 credits) • MGMT2110 - Organizational Behavior (3 credits)	**Year 1 (120 credits)** *Compulsory Modules* • Understanding Social Enterprises (10 credits) • Sustainable Development (20 credits) • Skills for Environmental Social Science (10 credits) • Introduction to Business, Environment and Corporate Responsibility (20 credits) • Environmental Science for Environmental Management (20 credits) *Optional Modules (Choose 20 to 40 credits)* • Foundation Mathematics for Social Sciences* (10 credits) *Students WITHOUT A-Level Maths or equivalent or AS Level Maths with a grade of A-C are required to study the course. Students who have completed A-Level Maths or	**Year 1 (120 credits)** *Compulsory Modules* • Introductory Securities and Markets (20 credits) • Introductory Finance/Trading Simulation I (20 credits) • Introductory Economics for Business and Finance (20 credits) • Introductory Quantitative Techniques for Business and Finance (20 credits) • Ethics in Investment Management (BSc) (20 credits) • Business in Practice: Accounting for Managers (20 credits) **Year 2 (Not stated the no. of credits)** *Compulsory Modules* • Corporate Finance (20 credits) • Portfolio Management (BSc) (20 credits) • Financial Modelling (20 credits)	**Year 1 (120 credits)** *GSD Modules (60 credits)* • Economic Principles of Global Sustainable Development (15 credits) • Environmental Principles of Global Sustainable Development (15 credits) • Social Principles of Global Sustainable Development (15 credits) • Core Global Sustainable Development Project module (15 credits) *Business Studies Modules (60 credits)* • Choice of optional first year modules offered by Warwick Business School **Year 2 (120 credits)** *GSD Modules (30 credits)* • Health and Sustainable Development (30 credits)

Program Name	Proposed New Program: Bachelor of Science in Sustainable and Green Finance	HKUST: Bachelor of Science in Quantitative Finance (QFIN)	HKUST: Bachelor of Science in Environmental Management and Technology (EVMT)	University of Leeds: Bachelor of Arts in Environment and Business	University of Reading: Bachelor of Science in Finance (Sustainable Finance)	University of Warwick: Bachelor of Arts and Sciences in Global Sustainable Development and Business Studies
	(ii) Environment and Sustainability Required Courses (24 credits) - TBD • SUST 1000 - Introduction to Sustainability (3 credits) • ENVR2XXX - Sustainable Development (TBD) (3 credits) • ENVR2XXX - Circular Economy and Life Cycle Assessment (TBD) (3 credits) • ENVR3310 - Green Business Strategy (3 credits) • ENVR3XXX - Environmental Sustainability Risks and Challenges (TBD) (3 credits) • ENVR4XXX - Social Sustainability Risks and Challenges (TBD) (3 credits) • ENVR4XXX - National and International Perspective – Governance and Applications (TBD) (3 credits) • ENVR4320 - ESG Management and Reporting (3 credits) *Other Required Courses (19-20 credits)* • FINA 2203 or 2303 - Financial Management (3 credits) • ISOM2020 - Coding for Business (1 credit) • ISOM2500 - Business Statistics (3 credits) • ISOM2600 - Introduction to Business Statistics (1 credit) • LABU2040 - Business Case Analyses (3 credits) • LABU2060 - Effective Communication in Business (3 credits) • MATH 1003 or 1012 or 1013 or 1020 or 1023 Calculus (3-4 credits) • MGMT2130 - Business Ethics and Social Responsibility (2 credits) **Electives Requirements (18 credits)** *Area A: Finance* • Any FINA courses at 3000- or 4000-level *Area B: Sustainability* • ENVR1070 - Thinking Big: Systems Thinking for Environmental Problems (3 credits)	• SBMT1111 - Business Student Induction (0 credit) • LABU2040 - Business Case Analyses (3 credits) • LABU2060 - Effective Communication in Business (3 credits) • MATH1003/1012/1013/1020/1023 - Calculus and Linear Algebra/ Calculus IA/ Calculus IB/ Accelerated Calculus/ Honors Calculus I (3-4 credits) **Major Requirements (41-45 credits)** • FINA2101 - Introduction to Finance (1 credit) • FINA3103 - Intermediate Investments (3 credits) • FINA3203 - Derivative Securities (3 credits) • FINA3303 - Intermediate Corporate Finance (3 credits) • FINA3810 - Bloomberg Market Concepts Certification (0 credits) • FINA4803 - Quantitative Trading (3 credits) • ECON3334 - Introduction to Econometrics (4 credits) • ISOM3230 - Business Applications Programming (3 credits) • MATH1014/1024 - Calculus (3 credits) • MATH2011/2023 - Multivariable Calculus (3 credits) • QFIN - Restricted Electives (18 credits)	• FINA2203 - Fundamentals of Business Finance (3 credits) • ISOM2500 - Business Statistics (3 credits) • ENVR 3310 - Green Business Strategy (3 credits) • ENVR3410 - Economics for Environment Policy and Management (3 credits) • ENVR4320 - ESG Management and Reporting (3 credits) **Environment Requirements (21 credits)** • ENVR1170 - Big History, Sustainability and Climate Change (3 credits) • ENVR2010 - Environmental Science Fundamentals (3 credits) • ENVR2030 - Material and Energy Balance for Environmental Management (3 credits) • ENVR3110 - Sustainable Development (3 credits) • ENVR3210 - Environmental Technology (3 credits) • ENVR3220 - Energy Sources and Usage (3 credits) • ENVR3420 - Environmental Law and Regulations (3 credits) **Professional Development Courses (11 credits)** • ENVR1001 - EVMT Orientation (0 credits) • ENVR2001 - Academic and Professional Development I (1 credit) • ENVR3001 - Academic and Professional Development II (1 credit) • ENVR4001 - Academic and Professional Development III (1 credit) • ENVR4980 - Environmental Management and Technology Capstone Project I (3 credits) • ENVR4990 - Environmental Management and Technology Capstone Project II (3 credits) • LANG3081 - Communication for Environmental Management and Technology III (2 credits) **Elective Courses (12 credits)**	equivalent or already have AS Level Maths Grade C or above must NOT enrol in the course. • An Introduction to Law: What is Law? (10 credits) • Introduction to Enterprise and Entrepreneurship (10 credits) • Introduction to Management (10 credits) • Introduction to Effective Decision Making (10 credits) • Organisational Behaviour (20 credits) • Natural Hazards (10 credits) • Ecology (10 credits) • Atmosphere (10 credits) • Environmental Politics and Policy (10 credits) *Discovery Modules (take up to 20 credits)* The opportunity to broaden the studies beyond the core discipline, as represented by the Discovery Themes, is integrated into many programmes of study within the available combinations of compulsory and optional modules. **Year 2 (120 credits)** *Compulsory Modules* • Managing Innovation in Business (10 credits) • Personal Development for Careers in the Environmental Sector (10 credits) • Tools and Techniques for Business, Environment and Corporate Responsibility (20 credits) • Research in the Environmental Social Sciences (30 credits) • Economics and Sustainability (10 credits) *Optional Modules (Choose 20 to 40 credits)* • International Law (20 credits) • Leadership in Business (10 credits) • Anthropology for Business (10 credits) • Principles of Marketing (10 credits) • Principles of Corporate Strategy (10 credits)	*Optional Modules* • Introductory Econometrics for Finance (20 credits) • Trends in Finance (20 credits) • FX and International Debt Markets (20 credits) *Work Placement* • Work Mini-Placement (0 credits) **Year 3 (Not stated the no. of credits)** *Compulsory Modules* • Management of Risk (20 credits) • Derivative Securities (20 credits) • New Directions in Business and Corporate Social Responsibility (20 credits) • Responsible Investment and Sustainability Reporting (20 credits) *Optional Modules* • Financial Engineering (20 credits) • Research Project (BSc) (20 credits) • Private Equity and Venture Capital (20 credits) • Finance and Occupational Pensions (20 credits) • Bonds and Money Markets (20 credits) • Fintech and Cryptocurrencies (20 credits)	• Security, Sovereignty and Sustainability in the Global Food System (30 credits) • Inequalities and Sustainable Development: Inclusion and Dignity for All (30 credits) *GSD Focus Module(s) (30 credits)* *Business Studies Modules (60 credits)* **Year 2 (Integrated year with Terms 2 and 3 spent abroad)** Term 1 (60 credits) *GSD module (15 credits)* • Health and Sustainable Development (15 credits) • Security, Sovereignty and Sustainability in the Global Food System (15 credits) • Inequalities and Sustainable Development: Inclusion and Dignity for ALL (15 credits) *GSD Focus Module (15 credits)* *Business Studies Modules (30 credits)* Term 2 & 3 (Spent abroad) **Final Year (120 credits)** *GSD Modules (30 credits)* *GSD Focus Module(s) (30 credits)* *Business Studies Modules (60 credits)*

Program Name	Proposed New Program: Bachelor of Science in Sustainable and Green Finance	HKUST: Bachelor of Science in Quantitative Finance (QFIN)	HKUST: Bachelor of Science in Environmental Management and Technology (EVMT)	University of Leeds: Bachelor of Arts in Environment and Business	University of Reading: Bachelor of Science in Finance (Sustainable Finance)	University of Warwick: Bachelor of Arts and Sciences in Global Sustainable Development and Business Studies
	• ENVR1080 - The Smart Consumer - Uncovering the Hidden Story behind the Product Label (3 credits) • ENVR1170 - Big History, Sustainability and Climate Change (3 credits) • ENVR2010 - Environmental Science Fundamentals (3 credits) • ENVR3220 - Energy Sources and Usage (3 credits) • ENVR3420 - Environmental Law and Regulations (3 credits) • ENVR4480 - Climate Modeling and Risk Assessment (3 credits)			• Advanced Management Decision Making (10 credits) • Climate Change: Society and Human Dimensions (10 credits) • People, Sustainability, and the Environment (20 credits) • Environmental Impact Assessment (10 credits) • Environmental Policy and Governance (10 credits) • Managing Biodiversity (10 credits) • Transport, Energy and Environment (10 credits) *Discovery Modules (Take up to 20 credits)* **Year 3 (120 credits)** *Compulsory Modules* • International Business Management (20 credits) • Environmental Research Project (40 credits) • Business and Sustainable Development (10 credits) *Optional Modules (choose 30 to 50 credits)* • Geographers into Teaching: School Placements (20 credits) • Law and the Environment II: Governing the Environment (10 credits) • Environmental Law (20 credits) • Enterprise Consultancy (20 credits) • Current Issues in Decision Making (20 credits) • Managing Innovation and Technology (20 credits) • Environmental Risk: Science, Policy and Management (10 credits) • Sustainable Consumption (10 credits) • Strategic Energy Issues (10 credits) *Discovery modules (take up to 20 credits)*		
Website	N/A	http://www.bm.ust.hk/fina/programs/bsc-in-quantitative-finance/bsc-qf-overview	http://www.evmt.ust.hk/programs/undergraduate-program/bsc-in-evmt/program-introduction/	https://courses.leeds.ac.uk/a467/environment-and-business-ba	https://www.icmacentre.ac.uk/study/undergraduate/bsc-finance-sustainable-finance#modules	https://warwick.ac.uk/fac/arts/schoolforcross-facultystudies/gsd/prospectivestudents/undergraduate/jointhonours/gsdbusiness

CUS/13 January 2021
Agenda Item 6
File: 03/21

COMMITTEE ON UNDERGRADUATE STUDIES

Paper for: Discussion/Approval

Title: **Dual Degree Program in Technology and Management: 11 BEng/BSc Programs with Four More BBA Programs**

Purpose: The Interdisciplinary Programs Office has submitted a proposal of the deviation arrangements for the existing 11 BEng/BSc programs with BBA in Economics, BBA in Finance, BBA in Management and BBA in Marketing to take effect from Spring 2021-22 for approval by the CUS

Submitted by: Interdisciplinary Programs Office

Prepared by: CUS Secretariat

BACKGROUND

1. Under the four-year degree, students will declare their major under respective schools, while they have also the option to enroll in the dual degree program under which students may earn two different degrees by fulfilling all the requirements of both degree programs.

2. At its 124th CUS meeting in May 2012, CUS approved the deviation arrangements for the first batch of nine BEng and BBA dual degree programs under the four-year degree curriculum. Currently, there are 11 BEng/BSc and BBA in General Business Management (GBM) dual degree programs. With demand for more combinations of dual degree program, the Interdisciplinary Programs Office (IPO) has submitted a proposal regarding pre-approved deviation arrangements for the 11 existing BEng/BSc programs with four more School of Business and Management (SBM) BBA programs, namely BBA in Economics, BBA in Finance, BBA in Management and BBA in Marketing, totaling 44 new dual degree programs.

PROPOSED ARRANGEMENTS

3. The proposed deviation arrangements follow the framework as approved in May 2012 which are summarized as follows:

(a) *Minimum 120-credit requirement:* in the attached normative study plan, the total credits students will earn when completing the newly proposed BEng/BSc and BBA dual degree programs range from 161 to 191, and would not be required to complete additional credits.

(b) *University Common Core requirement:* students must complete all the requirements of the University Common Core, and may count this to both degrees.

(c) *University English Language requirement:* The English Language requirements of the dual degree program combine requirements of the University, School of Engineering (SENG)/School of Science (SSCI) and SBM, with the 6-credit University English Core courses being counted towards both degrees (see Attachment C to the Appendix).

(d) *Substitution and waiver of courses and requirements for School and major requirements:* Details of the substitution and waiver arrangements are set out in Attachment A to the Appendix.

(e) *Additional requirement:* Students in the dual degree program are required to take an additional non-credit bearing course TEMP 1010 *Technology and Management Professional Activities*, in addition to the School and major requirements, with an intention to enhance their academic and/or personal development (see Attachments A and B to the Appendix).

4. The deviation arrangements have been reviewed and agreed by SENG, SSCI and SBM.

5. The deviations from curriculum proposed in paragraph 3 could apply to all students enrolled in the dual degree programs. Any further deviation from the curriculum that may be necessary for individual student, or further curricular changes, will be subject to approval by SENG, SSCI and SBM, following the current policy and procedures for approving deviations from curriculum.

6. The changes are proposed to take effect from Spring 2021-21, applicable to 2020-2021 cohort and beyond.

TOTAL CREDITS AND STUDY PATHWAYS

7. For the reference of the Committee, the study pathways for students directly admitted to the Dual Degree Program (full set including the GBM combination), as well as those admitted from the Schools of Science, Engineering, and Business and Management (sample set) are presented in Attachment B to the Appendix. Provided that there is sufficient overlap of courses between the Common Core and School/Major Requirements, students may further benefit from reduced credit requirements.

ACTION SOUGHT

8. CUS is invited to

(i) consider, and approve as appropriate, the proposed deviation arrangements for the dual degree programs under the four-year curriculum set out above in paragraph 3 and in Attachment A to the Appendix; and

(ii) note for information the total credits needed to complete the proposed dual degree programs, and the students' study pathways as presented in Attachment B to the Appendix.

MEMORANDUM

To: CUS Secretariat

via: Prof. Jimmy Fung
Chair, Interdisciplinary Undergraduate Studies Committee

From: Prof. Kai Lung Hui
Co-director of Dual Degree Program in Technology & Management

& Prof. Ravi Goonetilleke
Co-director of Dual Degree Program in Technology & Management

Date: 15th October, 2020

Our Ref: 402/DDP

Subject: Proposed 5Y Curriculum of Dual Degree Program in Technology & Management (BEng/BSc with 11 options and BBA with 5 options)

Dual Degree Program in Technology & Management (T&M-DDP) would like to propose the 5-year curriculum with 11 options in BEng/BSc and 5 options in BBA with effect from Spring 2021-22. This change will have effect on the 2020-2021 cohort onwards. The new curriculum will include 44 new majors in addition to the existing 11 majors with BBA degree in GBM. The program structure is listed below.

Total: 55 majors (44 new majors)	BEng in Bioengineering	and	BBA in Economics
	BEng in Chemical Engineering		
	BEng in Civil Engineering		BBA in Finance
	BEng in Civil and Environmental Engineering		
	BEng in Computer Engineering		BBA in General Business Management (Existing)
	BEng in Computer Science		
	BEng in Decision Analytics		
	BEng in Electronic Engineering		BBA in Management
	BEng in Industrial Engineering and Engineering Management		
	BEng in Mechanical Engineering		BBA in Marketing
	BSc in Biotechnology		

Students can admit to T&M-DDP via program-based admission or school-based admission. Program-based admission students will be admitted to T&M-DDP in their first year and school-based admission students will be admitted to T&M-DDP in their second year. Students will declare their major via the Major Selection Exercises (MSE) at the ends of their first year and second year for BEng/BSc degree and BBA degree of T&M-DDP respectively. Pathway templates of all majors for program-based admission students and four sets of sample pathway for school-based admission students are presented to demonstrate their study progress *(see Attachment B)*.

The program requirements of T&M-DDP are devised by combining the requirements of the BEng/BSc program and the BBA program. This will apply in the proposed 5-year curriculum with the following taken into consideration:

1. Deviation from Curriculum
   The course substitutions and waivers that are applicable in the existing BEng/BSc&BBA Dual Degree program will continue to apply in the proposed Dual Degree programs with new BBA options (S*ee attachment A).*

2. Additional Dual Degree Requirements
   Additional requirements specifically for the Dual Degree Program, including TEMG1010 and TEMG3950 are presented in the pathway templates (see *attachment B*) and "Deviation from Curriculum" (see *attachment A*).

3. English Language Requirements
   The English Language requirements of the new BEng/BSc&BBA Dual Degree programs are a combination of the requirements of university, SENG/SSCI and SBM (see *attachment C*).

4. Double Counting of Common Core Requirements
   The double-counting policy applicable to existing BEng/BSc&BBA Dual Degree programs, which is to apply double-counting policy to each degree separately will continue to apply in the proposed Dual Degree programs.

Below please find the concurrence obtained from departments/schools in concern,

School/ Dept.	Approval	Name	Initial	Date
CBE	Yes / No			
CIVL	Yes / No			
CSE	Yes / No			
CPEG	Yes / No			
ECE	Yes / No			
IEDA	Yes / No			
MAE	Yes / No			
LIFS	Yes / No			
ECON	Yes / No			
FINA	Yes / No			
MARK	Yes / No			
MGMT	Yes / No			
SSCI	Yes / No			
SENG	Yes / No			
SBM	Yes / No			

For consideration and approval please. Thank you very much.

Encl.

A. Attachment A – Deviation from Curriculum
B. Attachment B – Suggested pathways of all Dual Degree programs
C. Attachment C – English language requirements of all Dual Degree programs

Below please find the concurrence obtained from departments/schools in concern,

School/Dept.	Approval	Name	Date
CBE	Yes / ~~No~~	Prof Ying CHAU	2 Nov 2020
CIVL	Yes / ~~No~~	Prof Jack CHENG	13 Nov 2020
CSE	Yes / ~~No~~	Dr Qiong LUO	22 Oct 2020
CPEG	Yes / ~~No~~	Prof Wilfred NG	16 Oct 2020
ECE	Yes / ~~No~~	Prof Weichuan YU	16 Oct 2020
IEDA	Yes / ~~No~~	Prof Jiheng ZHANG	19 Oct 2020
MAE	Yes / ~~No~~	Prof Baoling HUANG	16 Oct 2020
LIFS	Yes / ~~No~~	Prof Robert KO	16 Oct 2020
ECON	Yes / ~~No~~	Prof Albert PARK	12 Nov 2020
FINA	Yes / ~~No~~	Prof Chu ZHANG	23 Nov 2020
MARK	Yes / ~~No~~	Prof Jiewen HONG	12 Nov 2020
MGMT	Yes / ~~No~~	Prof Yaping GONG	13 Nov 2020
SSCI	Yes / ~~No~~	Prof Pakwo LEUNG	20 Oct 2020
SENG	Yes / ~~No~~	Prof Philip K.T. MOK	22 Oct 2020
SBM	Yes / ~~No~~	Prof Allen HUANG	12 Nov 2020

Deviation from curriculum

for Dual Degree Program

Degree Program 1: ***BEng in Bioengineering (BIEN)***

Degree Program 2: ***BBA in Economics (ECON) OR***
BBA in Finance (FINA) OR
BBA in General Business Management (GBM) OR
BBA in Management (MGMT) OR
BBA in Marketing (MARK)

Degree Program	Original requirements specified for the degree program		Substituted/ Waived/ Additional Req't/ Others	Proposed substituted course/ requirement		Remarks
	Course code/ requirement	Credits		Course code/ requirement	Credits	
ECON/FINA/GBM/ MGMT/MARK	SBMT 1111	0	Waived	-	-	DDP students do not need to join this non-credit bearing development course originally designed for Business students
BIEN	ENGG 1010	0	Waived	-	-	***[For non-SENG year 1 students admitted to T&M-DDP via School-based admission]*** DDP students do not need to join this non-credit bearing development course originally designed for Engineering students.
BIEN	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development.
ECON/FINA/GBM/ MGMT/MARK	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development.
BIEN	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM/ MGMT/MARK	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM/ MGMT/MARK	ISOM 2010	3	Substituted	COMP 1021 OR COMP 1022P OR COMP 2011	3 OR 4	COMP 1021, COMP 1022P and COMP 2011 are more advanced computing courses as compared to ISOM 2010. Students should take one of these three COMP courses instead of ISOM 2010
ECON/FINA/GBM/ MGMT/MARK	ISOM 2020	1	Substituted	COMP 1021 OR COMP 1022P OR COMP 1029P OR COMP 2011	3 OR 4	COMP 1021, COMP 1022P, COMP1029P and COMP 2011 are more advanced coding courses as compared to ISOM 2020. Students should take one of these four COMP courses instead of ISOM 2020
ECON/FINA/GBM/ MGMT/MARK	ISOM 2500	3	Substituted	LIFS 3150 OR MATH 2411	3 OR 4	ISOM 2500 and LIFS 3150 / MATH 2411 are mutual exclusions. To fulfill the HKIE engineering accreditation requirements, dual degree students should take LIFS 3150 / MATH 2411. (Students admitted via SBM could be considered of using ISOM 2500 to substitute LIFS 3150 / MATH 2411 upon individual case-by-case approval from Engineering department.)
ECON/FINA/GBM/ MGMT/MARK	ISOM 2600	1	Substituted	BIEN3320	3	DDP students could learn similar analytical skills in BIEN3320.

Deviation from curriculum

for Dual Degree Program

Degree Program 1: ***BSc in Biotechnology (BIOT)***

Degree Program 2: ***BBA in Economics (ECON) OR***
BBA in Finance (FINA) OR
BBA in General Business Management (GBM) OR
BBA in Management (MGMT) OR
BBA in Marketing (MARK)

Degree Program	Original requirements specified for the degree program		Substituted/ Waived/ Additional Req't/ Others	Proposed substituted course/ requirement		Remarks
	Course code/ requirement	Credits		Course code/ requirement	Credits	
ECON/FINA/GBM /MGMT/MARK	SBMT 1111	0	Waived	-	-	DDP students do not need to join this non-credit bearing development course originally designed for Business students
BIOT	SCIE 1000	0	Waived	-	-	***[For non-SSCI year 1 students admitted to T&M-DDP via School-based admission]*** DDP students do not need to join this non-credit bearing development course originally designed for Science students.
BIOT	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
ECON/FINA/GBM /MGMT/MARK	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
BIOT	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM /MGMT/MARK	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM /MGMT/MARK	ISOM 2010	3	Substituted	COMP 1021 OR COMP 1022P OR COMP 2011	3 OR 4	COMP 1021, COMP 1022P and COMP 2011 are more advanced computing courses as compared to ISOM 2010. Students should take one of these three COMP courses instead of ISOM 2010
ECON/FINA/GBM /MGMT/MARK	ISOM 2020	1	Substituted	COMP 1021 OR COMP 1029P	1 OR 3	COMP 1021 COMP 1029P are similar coding courses as compared to ISOM 2020. Students should take one of these two COMP courses instead of ISOM 2020

Deviation from curriculum

for Dual Degree Program

Degree Program 1: ***BEng in Chemical Engineering (CENG)***

Degree Program 2: ***BBA in Economics (ECON) OR***
BBA in Finance (FINA) OR
BBA in General Business Management (GBM) OR
BBA in Management (MGMT) OR
BBA in Marketing (MARK)

Degree Program	Original requirements specified for the degree program		Substituted/ Waived/ Additional Req't/ Others	Proposed substituted course/ requirement		Remarks
	Course code/ requirement	Credits		Course code/ requirement	Credits	
ECON/FINA/GBM/ MGMT/MARK	SBMT 1111	0	Waived	-	-	DDP students do not need to join this non-credit bearing development course originally designed for Business students
CENG	ENGG 1010	0	Waived	-	-	***[For non-SENG year 1 students admitted to T&M-DDP via School-based admission]*** DDP students do not need to join this non-credit bearing development course originally designed for Engineering students.
CENG	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
ECON/FINA/GBM/ MGMT/MARK	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
CENG	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM/ MGMT/MARK	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM/ MGMT/MARK	ISOM 2010	3	Substituted	COMP 1021 OR COMP 1022P OR COMP 2011	3 OR 4	COMP 1021, COMP 1022P and COMP 2011 are more advanced computing courses as compared to ISOM 2010. Students should take one of these three COMP courses instead of ISOM 2010
ECON/FINA/GBM/ MGMT/MARK	ISOM 2020	1	Substituted	COMP 1021 OR COMP 1029P	1 OR 3	COMP 1021 COMP 1029P are similar coding courses as compared to ISOM 2020. Students should take one of these two COMP courses instead of ISOM 2020

Deviation from curriculum

for Dual Degree Program

Degree Program 1: ***BEng in Civil Engineering (CIVL)***

Degree Program 2: ***BBA in Economics (ECON) OR***
BBA in Finance (FINA) OR
BBA in General Business Management (GBM) OR
BBA in Management (MGMT) OR
BBA in Marketing (MARK)

Degree Program	Original requirements specified for the degree program		Substituted/ Waived/ Additional Req't/ Others	Proposed substituted course/ requirement		Remarks
	Course code/ requirement	Credits		Course code/ requirement	Credits	
ECON/FINA/GBM /MGMT/MARK	SBMT 1111	0	Waived	-	-	DDP students do not need to join this non-credit bearing development course originally designed for Business students
CIVL	ENGG 1010	0	Waived	-	-	***[For non-SENG year 1 students admitted to T&M-DDP via School-based admission]*** DDP students do not need to join this non-credit bearing development course originally designed for Engineering students.
CIVL	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
ECON/FINA/GBM /MGMT/MARK	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
CIVL	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM /MGMT/MARK	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM /MGMT/MARK	ISOM 2010	3	Substituted	COMP 1021 OR COMP 1022P OR COMP 2011	3 OR 4	COMP 1021, COMP 1022P and COMP 2011 are more advanced computing courses as compared to ISOM 2010. Students should take one of these three COMP courses instead of ISOM 2010
ECON/FINA/GBM /MGMT/MARK	ISOM 2500	3	Substituted	CIVL 2160	3	ISOM 2500 and CIVL 2160 are mutual exclusions. To fulfill the HKIE engineering accreditation requirements, dual degree students should take CIVL 2160. (Students admitted via SBM could be considered of using ISOM 2500 to substitute CIVL 2160 upon individual case-by-case approval from Engineering department.)
ECON/FINA/GBM /MGMT/MARK	ISOM 2020	1	Substituted	COMP 1021 OR COMP 1029P	1 OR 3	COMP 1021 COMP 1029P are similar coding courses as compared to ISOM 2020. Students should take one of these two COMP courses instead of ISOM 2020

Deviation from curriculum

for Dual Degree Program

Degree Program 1: ***BEng in Computer Sciecne (COMP)***

Degree Program 2: ***BBA in Economics (ECON) OR***
BBA in Finance (FINA) OR
BBA in General Business Management (GBM) OR
BBA in Management (MGMT) OR
BBA in Marketing (MARK)

Degree Program	Original requirements specified for the degree program		Substituted/ Waived/ Additional Req't/ Others	Proposed substituted course/ requirement		Remarks
	Course code/ requirement	Credits		Course code/ requirement	Credits	
ECON/FINA/GBM /MGMT/MARK	SBMT 1111	0	Waived	-	-	DDP students do not need to join this non-credit bearing development course originally designed for Business students
COMP	ENGG 1010	0	Waived	-	-	***[For non-SENG year 1 students admitted to T&M-DDP via School-based admission]*** DDP students do not need to join this non-credit bearing development course originally designed for Engineering students.
COMP	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
ECON/FINA/GBM /MGMT/MARK	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
COMP	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM /MGMT/MARK	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM /MGMT/MARK	ISOM 2010	3	Substituted	COMP 1021 OR COMP 1022P	3	COMP 1021 and COMP 1022P are more advanced computing courses as compared to ISOM 2010. Students should take one of these two COMP courses instead of ISOM 2010
ECON/FINA/GBM /MGMT/MARK	ISOM 2500	3	Substituted	MATH 2411	4	ISOM 2500 and MATH 2411 are mutual exclusions. To fulfill the HKIE engineering accreditation requirements, dual degree students should take MATH 2411. (Students admitted via SBM could be considered of using ISOM 2500 to substitute MATH 2411 upon individual case-by-case approval from Engineering department.)
ECON/FINA/GBM /MGMT/MARK	ISOM 2020	1	Substituted	COMP 1021 OR COMP 1029P	1 OR 3	COMP 1021 COMP 1029P are similar coding courses as compared to ISOM 2020. Students should take one of these two COMP courses instead of ISOM 2020

Deviation from curriculum

for Dual Degree Program

Degree Program 1: ***BEng in Computer Engineering (CPEG)***

Degree Program 2: ***BBA in Economics (ECON) OR***
BBA in Finance (FINA) OR
BBA in General Business Management (GBM) OR
BBA in Management (MGMT) OR
BBA in Marketing (MARK)

Degree Program	Original requirements specified for the degree program		Substituted/ Waived/ Additional Req't/ Others	Proposed substituted course/ requirement		Remarks
	Course code/ requirement	Credits		Course code/ requirement	Credits	
ECON/FINA/GBM/ MGMT/MARK	SBMT 1111	0	Waived	-	-	DDP students do not need to join this non-credit bearing development course originally designed for Business students
CPEG	ENGG 1010	0	Waived	-	-	***[For non-SENG year 1 students admitted to T&M-DDP via School-based admission]*** DDP students do not need to join this non-credit bearing development course originally designed for Engineering students.
CPEG	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
ECON/FINA/GBM/ MGMT/MARK	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
CPEG	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM/ MGMT/MARK	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM/ MGMT/MARK	ISOM 2010	3	Substituted	COMP 1021 OR COMP 1022P	3	COMP 1021 and COMP 1022P are more advanced computing courses as compared to ISOM 2010. Students should take one of these two COMP courses instead of ISOM 2010
ECON/FINA/GBM/ MGMT/MARK	ISOM 2020	1	Substituted	COMP 1021 OR COMP 1029P	1 OR 3	COMP 1021 COMP 1029P are similar coding courses as compared to ISOM 2020. Students should take one of these two COMP courses instead of ISOM 2020

Deviation from curriculum

for Dual Degree Program

Degree Program 1: ***BEng in Civil and Environmental Engineering (CIEV)***

Degree Program 2: ***BBA in Economics (ECON) OR***
BBA in Finance (FINA) OR
BBA in General Business Management (GBM) OR
BBA in Management (MGMT) OR
BBA in Marketing (MARK)

Degree Program	Original requirements specified for the degree program		Substituted/ Waived/ Additional Req't/ Others	Proposed substituted course/ requirement		Remarks
	Course code/ requirement	Credits		Course code/ requirement	Credits	
ECON/FINA/GBM/ MGMT/MARK	SBMT 1111	0	Waived	-	-	DDP students do not need to join this non-credit bearing development course originally designed for Business students
CIVL	ENGG 1010	0	Waived	-	-	***[For non-SENG year 1 students admitted to T&M-DDP via School-based admission]*** DDP students do not need to join this non-credit bearing development course originally designed for Engineering students.
CIVL	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
ECON/FINA/GBM/ MGMT/MARK	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
CPEG	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM/ MGMT/MARK	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM/ MGMT/MARK	ISOM 2010	3	Substituted	COMP 1021 OR COMP 1022P OR COMP 2011	3 OR 4	COMP 1021, COMP 1022P and COMP 2011 are more advanced computing courses as compared to ISOM 2010. Students should take one of these three COMP courses instead of ISOM 2010
ECON/FINA/GBM/ MGMT/MARK	ISOM 2500	3	Substituted	CIVL 2160	3	It is one-way exclusion for which ISOM 2500 excludes CIVL 2160. To fulfill the HKIE engineering accreditation requirements, dual degree students should take CIVL 2160. (Students admitted via SBM could be considered of using ISOM 2500 to substitute CIVL 2160 upon individual case-by-case approval from Engineering department.)
ECON/FINA/GBM/ MGMT/MARK	ISOM 2020	1	Substituted	COMP 1021 OR COMP 1029P	1 OR 3	COMP 1021 COMP 1029P are similar coding courses as compared to ISOM 2020. Students should take one of these two COMP courses instead of ISOM 2020

Deviation from curriculum

for Dual Degree Program

Degree Program 1: ***BEng in Decision Analytics (DA)***

Degree Program 2: ***BBA in Economics (ECON) OR***
BBA in General Business Management (GBM) OR
BBA in Management (MGMT) OR
BBA in Marketing (MARK)

Degree Program	Original requirements specified for the degree program		Substituted/ Waived/ Additional Req't/ Others	Proposed substituted course/ requirement		Remarks
	Course code/ requirement	Credits		Course code/ requirement	Credits	
ECON/GBM/MGMT /MARK	SBMT 1111	0	Waived	-	-	DDP students do not need to join this non-credit bearing development course originally designed for Business students
DA	ENGG 1010	0	Waived	-	-	***[For non-SENG year 1 students admitted to T&M-DDP via School-based admission]*** DDP students do not need to join this non-credit bearing development course originally designed for Engineering students.
DA	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development.
ECON/GBM/MGMT /MARK	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development.
DA	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/GBM/MGMT /MARK	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/GBM/MGMT /MARK	ISOM 2010	3	Substituted	COMP 1021 OR COMP 1022P OR COMP 2011	3 OR 4	COMP 1021, COMP 1022P and COMP 2011 are more advanced computing courses as compared to ISOM 2010. Students should take one of these three COMP courses instead of ISOM 2010
ECON/GBM/MGMT /MARK	ISOM 2500	3	Substituted	IEDA 2540	3	It is one-way exclusion for which IEDA 2540 excludes ISOM 2500. To fulfill the HKIE engineering accreditation requirements, dual degree students should take IEDA 2540. (Students admitted via SBM could be considered of using ISOM 2500 to substitute IEDA 2540 upon individual case-by-case approval from Engineering department.)
ECON/GBM/MGMT /MARK	ISOM 2020	1	Substituted	COMP 1021 OR COMP 1029P	1 OR 3	COMP 1021 COMP 1029P are similar coding courses as compared to ISOM 2020. Students should take one of these two COMP courses instead of ISOM 2020

Deviation from curriculum

for Dual Degree Program

Degree Program 1: ***BEng in Electronic Engineering (ELEC)***

Degree Program 2: ***BBA in Economics (ECON) OR***
BBA in Finance (FINA) OR
BBA in General Business Management (GBM) OR
BBA in Management (MGMT) OR
BBA in Marketing (MARK)

Degree Program	Original requirements specified for the degree program		Substituted/ Waived/ Additional Req't/ Others	Proposed substituted course/ requirement		Remarks
	Course code/ requirement	Credits		Course code/ requirement	Credits	
ECON/FINA/GBM /MGMT/MARK	SBMT 1111	0	Waived	-	-	DDP students do not need to join this non-credit bearing development course originally designed for Business students
ELEC	ENGG 1010	0	Waived	-	-	***[For non-SENG year 1 students admitted to T&M-DDP via School-based admission]*** DDP students do not need to join this non-credit bearing development course originally designed for Engineering students.
ELEC	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
ECON/FINA/GBM /MGMT/MARK	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
ELEC	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM /MGMT/MARK	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM /MGMT/MARK	ISOM 2010	3	Substituted	COMP 1021 OR COMP 1022P	3	COMP 1021 and COMP 1022P are more advanced computing courses as compared to ISOM 2010. Students should take one of these two COMP courses instead of ISOM 2010
ECON/FINA/GBM /MGMT/MARK	ISOM 2020	1	Substituted	COMP 1021 OR COMP 1029P	3	COMP 1021 COMP 1029P are similar coding courses as compared to ISOM 2020. Students should take one of these two COMP courses instead of ISOM 2020

Deviation from curriculum

for Dual Degree Program

Degree Program 1: ***BEng in Industrial Engineering and Engineering Management (IEEM)***

Degree Program 2: ***BBA in Economics (ECON) OR***

BBA in General Business Management (GBM) OR

BBA in Management (MGMT) OR

BBA in Marketing (MARK)

Degree Program	Original requirements specified for the degree program		Substituted/ Waived/ Additional Req't/ Others	Proposed substituted course/ requirement		Remarks
	Course code/ requirement	Credits		Course code/ requirement	Credits	
ECON/GBM/ MGMT/MARK	SBMT 1111	0	Waived	-	-	DDP students do not need to join this non-credit bearing development course originally designed for Business students
IEEM	ENGG 1010	0	Waived	-	-	***[For non-SENG year 1 students admitted to T&M-DDP via School-based admission]*** DDP students do not need to join this non-credit bearing development course originally designed for Engineering students.
IEEM	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
ECON/GBM/ MGMT/MARK	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
IEEM	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/GBM/ MGMT/MARK	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/GBM/ MGMT/MARK	ISOM 2010	3	Substituted	COMP 1021 OR COMP 1022P OR COMP 2011	3 OR 4	COMP 1021, COMP 1022P and COMP 2011 are more advanced computing courses as compared to ISOM 2010. Students should take one of these three COMP courses instead of ISOM 2010
ECON/GBM/ MGMT/MARK	ISOM 2700	3	Substituted	IEDA 4100	3	ISOM 2700 and IEDA 4100 are mutual exclusions. ISOM 2700 should be substituted by IEDA 4100 to fulfill the HKIE engineering accreditation.
ECON/GBM/ MGMT/MARK	ISOM 2500	3	Substituted	IEDA 2540	3	It is one-way exclusion for which IEDA 2540 excludes ISOM 2500. To fulfill the HKIE engineering accreditation requirements, dual degree students should take IEDA 2540. (Students admitted via SBM could be considered of using ISOM 2500 to substitute IEDA 2540 upon individual case-by-case approval from Engineering department.)
ECON/GBM/ MGMT/MARK	ISOM 2020	1	Substituted	COMP 1021 OR COMP 1029P	1 OR 3	COMP 1021 COMP 1029P are similar coding courses as compared to ISOM 2020. Students should take one of these two COMP courses instead of ISOM 2020

Deviation from curriculum

for Dual Degree Program

Degree Program 1: ***BEng in Mechanical Engineering (MECH)***

Degree Program 2: ***BBA in Economics (ECON) OR***
BBA in Finance (FINA) OR
BBA in General Business Management (GBM) OR
BBA in Management (MGMT) OR
BBA in Marketing (MARK)

Degree Program	Original requirements specified for the degree program		Substituted/ Waived/ Additional Req't/ Others	Proposed substituted course/ requirement		Remarks
	Course code/ requirement	Credits		Course code/ requirement	Credits	
ECON/FINA/GBM /MGMT/MARK	SBMT 1111	0	Waived	-	-	DDP students do not need to join this non-credit bearing development course originally designed for Business students
MECH	ENGG 1010	0	Substituted	SBMT 1111	0	***[For non-SENG year 1 students admitted to T&M-DDP via School-based admission]*** DDP students do not need to join this non-credit bearing development course originally designed for Engineering students.
MECH	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
ECON/FINA/GBM /MGMT/MARK	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
MECH	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM /MGMT/MARK	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
ECON/FINA/GBM /MGMT/MARK	ISOM 2010	3	Substituted	COMP 1021 OR COMP 1022P OR COMP 2011	3 OR 4	COMP 1021, COMP 1022P and COMP 2011 are more advanced computing courses as compared to ISOM 2010. Students should take one of these three COMP courses instead of ISOM 2010
ECON/FINA/GBM /MGMT/MARK	ISOM 2020	1	Substituted	COMP 1021 OR COMP 1029P	1 OR 3	COMP 1021 COMP 1029P are similar coding courses as compared to ISOM 2020. Students should take one of these two COMP courses instead of ISOM 2020

Deviation from curriculum

for Dual Degree Program

Degree Program 1: ***BEng in Decision Analytics (DA)***

Degree Program 2: ***BBA in Finance (FINA)***

Degree Program	Original requirements specified for the degree program		Substituted/ Waived/ Additional Req't/ Others	Proposed substituted course/ requirement		Remarks
	Course code/ requirement	Credits		Course code/ requirement	Credits	
FINA	SBMT 1111	0	Waived	-	-	DDP students do not need to join this non-credit bearing development course originally designed for Business students
DA	ENGG 1010	0	Waived	-	-	***[For non-SENG year 1 students admitted to T&M-DDP via School-based admission]*** DDP students do not need to join this non-credit bearing development course originally designed for Engineering students.
DA	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development.
FINA	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development.
DA	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
FINA	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
FINA	ISOM 2010	3	Substituted	COMP 1021 OR COMP 1022P OR COMP 2011	3 OR 4	COMP 1021, COMP 1022P and COMP 2011 are more advanced computing courses as compared to ISOM 2010. Students should take one of these three COMP courses instead of ISOM 2010
DA	IEDA 2540	3	Substituted	ISOM 2500	3	DDP students should take ISOM 2500 to allow themselves to complete FINA2303 before SBM major selection to fulfill the entry requirement of FINA.
FINA	ISOM 2020	1	Substituted	COMP 1021 OR COMP 1029P	1 OR 3	COMP 1021 COMP 1029P are similar coding courses as compared to ISOM 2020. Students should take one of these two COMP courses instead of ISOM 2020

Deviation from curriculum

for Dual Degree Program

Degree Program 1: ***BEng in Industrial Engineering and Engineering Management (IEEM)***
Degree Program 2: ***BBA in Finance (FINA)***

Degree Program	Original requirements specified for the degree program		Substituted/ Waived/ Additional Req't/ Others	Proposed substituted course/ requirement		Remarks
	Course code/ requirement	Credits		Course code/ requirement	Credits	
FINA	SBMT 1111	0	Waived	-	-	DDP students do not need to join this non-credit bearing development course originally designed for Business students
IEEM	ENGG 1010	0	Waived	-	-	***[For non-SENG year 1 students admitted to T&M-DDP via School-based admission]*** DDP students do not need to join this non-credit bearing development course originally designed for Engineering students.
IEEM	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
FINA	-	-	Additional Req't	TEMG 1010	0	DDP students should take this non-credit bearing course to enhance their academic development
IEEM	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
FINA	-	-	Additional Req't	TEMG 3950	3	DDP students should take this 3-credit course to enhance their problem-solving skills.
FINA	ISOM 2010	3	Substituted	COMP 1021 OR COMP 1022P OR COMP 2011	3 OR 4	COMP 1021, COMP 1022P and COMP 2011 are more advanced computing courses as compared to ISOM 2010. Students should take one of these three COMP courses instead of ISOM 2010
FINA	ISOM 2700	3	Substituted	IEDA 4100	3	ISOM 2700 and IEDA 4100 are mutual exclusions. ISOM 2700 should be substituted by IEDA 4100 to fulfill the HKIE engineering accreditation.
IEEM	IEDA 2540	3	Substituted	ISOM 2500	3	DDP students should take ISOM 2500 to allow themselves to complete FINA2303 before SBM major selection to fulfill the entry requirement of FINA.
FINA	ISOM 2020	1	Substituted	COMP 1021 OR COMP 1029P	1 OR 3	COMP 1021 COMP 1029P are similar coding courses as compared to ISOM 2020. Students should take one of these two COMP courses instead of ISOM 2020

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

BEGBM **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management															
Program:		Dual Degree Program (BEng in Bioengineering and BBA in General Business Management)															
							<< *Declaration of BEng major*		<< *Declaration of BBA major*								
				Student's Pathway													
Course Offering Dept (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Bioengineering															
Major Requirements															
Engineering Fundamental Courses															
COMP COMP COMP COMP	1021 1022P 1029P 2011	Note: [COMP 1021] OR [(COMP 1022P OR COMP 2011) AND COMP1029P] Introduction to Computer Science Introduction to Computing with Java Python Programming Bridging Course Programming with C++	3-5 3 3 1 4		3									3	The course will also be used to substitute ISOM 2010
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM CHEM	1010 1020	Note: CHEM1010 OR CHEM 1020 General Chemistry IA General Chemistry IB	3 3	3										3	
CHEM	1050	Laboratory for General Chemistry I	1	1										1	
LANG	2030	Technical Communication I	3				3							3	
LIFS	1901	General Biology I	3	3										3	
MATH MATH MATH MATH MATH MATH	1012 1013 1014 1020 1023 1024	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA Calculus IB Calculus II Accelerated Calculus Honors Calculus I Honors Calculus II	4-7 4 3 3 4 3 3	3	3									6	
PHYS PHYS	1112 1312	Note: PHYS 1112 OR PHYS 1312 General Physics I with Calculus Honors General Physics I	3 3	3										3	
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	23-29											22	
Major Required Courses and Electives															
BIEN CENG	1010 1000	Note: BIEN 1010 OR CENG 1000 Introduction to Biomedical Engineering Introduction to Chemical and Biiological Engineering	3 3		3									3	
BIEN	2310	Modeling for Chemical and Biological Engineering	3			3								3	
BIEN	2410	Cellular and Systems Physiology for Engineers	3						3					3	
BIEN	2610	Chemical Biology for Engineers	3			3								3	
BIEN	2990	Academic and Professional Development I	1			1								1	
BIEN	3240	Transport Phenomena in Biological Systems	3									3		3	
BIEN	3320	Data Science for Biology and Medicine	3				3							3	
BIEN	3410	Introduction to Bioinstrumentation and Bioimaging	3							3				3	
BIEN	3910	Bioengineering Laboratory	4							4				4	
BIEN BIEN BIEN	4920 4930 4940	Note: BIEN 4920 OR BIEN 4930 OR BIEN 4940 Bioengineering Capstone Design Bioengineering Thesis Research Bioengineering Industrial Project	6 6 6									3	3	6	
BIEN	4990	Academic and Professional Development II	1									1		1	
CENG	2210	Chemical and Biological Engineering Thermodynamics	3				3							3	
CENG	3230	Chemical and Biological Reaction Engineering	3							3				3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LIFS MATH	3150 2411	Note: LIFS 3150 OR MATH 2411 Biostatistics Applied Statistics	3-4 3 4			3								3	
LANG	4035	Technical Communication II for Chemical and Biological Engineering	3									3		3	
SSCI/SENG		Bioengineering Electives (5 courses from the specified elective list, of which at least 9 credits should be taken from a single specialty area (Area 1 or Area 2). Out of the 15 credits taken, at least 9 credits should be at 4000-level)	15								6	3	6	15	
		Required credits for Major Required Courses and Electives	60-61											60	
BBA in General Business Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	3 3			3								3	
ECON ECON	2123 3123	Note: ECON 2123 OR ECON 3123 Macroeconomics Macroeconomic Theory I	3 3							3				3	
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/COMP2011
ISOM	2020	Coding for Business	1	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/1029P/2011
ISOM	2500	Business Statistics	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by LIFS 3150/MATH 2411
ISOM	2600	Introduction to Business Analytics	1	-	-	-	-	-	-	-	-	-	-	0	Substituted by BIEN3320
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2				2							2	
MGMT	2110	Organizational Behavior	3		3									3	
MGMT	2130	Business Ethics and Social Responsibility	2					2						2	
SBMT	1111	Business Student Induction	0	-	-	-	-	-	-	-	-	-	-	0	Substituted by ENGG 1010
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3						3					3	
MATH MATH MATH MATH MATH MATH	1003 1012 1013 1020 1023	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra Calculus IA Calculus IB Accelerated Calculus Honors Calculus I	3-4 3 4 3 4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
		Required credits for School Requirements	43-44											34	
Major Requirements															
Major Required Courses and Electives															
SB&M		SB&M Electives (Any 9 courses offered by the departments under SB&M, of which at least 4 courses are of 3000-level or above.)	29					6		3	9	4	7	29	
		Required credits for Major Required Courses and Electives	29											29	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	3	3	3	3	6	6	3	3			30	
CORE	C1 & C2	U CORE - English Language	6	3				3						6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				19	18	19	20	20	18	19	18	17	16		
				184##											
						<< *Declaration of BEng major*		<< *Declaration of BBA major*							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substitued

To graduate, students should complete all requirements specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

BTGBM **2020-21 Intake**

(Via DDP PBA)

School:		School of Science and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BSc in Biotechnology and BBA in General Business Management)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BSc in Biotechnology															
School Requirements															
SCIE	1000	Science School Induction	0	0	0									0	
		Note: COMP1021 OR COMP1022P OR COMP2011	3-4												
COMP	1021	Introduction to Computer Science	3												
COMP	1022P	Introduction to Computing with Java	3			3								3	This course will be used to substitute ISOM 2010
COMP	2011	Programming with C++	4												
LANG	2010	English for Science I	3					3						3	
SSCI		Science Foundation courses [8 courses from the specified elective list. Students should take (i) 7 foundation lecture courses, including at least 1 lecture course, but no more than 3 lecture courses, from each discipline: CHEM, LIFS, MATH and PHYS; and (ii) 1 laboratory course.]	22-25												
CHEM	1004	Chemistry in Everyday Life	3												
CHEM	1010	General Chemistry IA	3												
CHEM	1020	General Chemistry IB	3												
CHEM	1030	General Chemistry II	3												
CHEM	1050	Laboratory for General Chemistry I	1												
CHEM	1055	Laboratory for General Chemistry II	1												
LIFS	1030	Environmental Science	3												
LIFS	1901@	General Biology I@	3												LIFS1901 & LIFS1902 are Major Pre-requisite
LIFS	1902@	General Biology II@	3												
LIFS	1903	Laboratory for General Biology I	1												
LIFS	1904	Laboratory for General Biology II	1												
LIFS	1930	Nature of Life Sciences	3												
LIFS	2210	Biochemistry I	3	10	3	6	3							22	Students are recommended to take CHEM1010, CHEM1030, LIFS1903 and MATH1013 to satisfy the requirements of both SSCI School requirements and Major requirements
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2023	Multivariable Calculus	4												
MATH	2121	Linear Algebra	4												
MATH	2131	Honors in Linear and Abstract Algebra I	4												
PHY	1001	Physics and the Modern Society	3												
PHY	1111	General Physics I	3												
PHY	1112	General Physics I with Calculus	3												
PHY	1113	Laboratory for General Physics I	1												
PHY	1114	General Physics II	3												
PHY	1115	Laboratory for General Physics II	1												
PHY	1312	Honors General Physics I	3												
PHY	1314	Honors General Physics II	3												
		Required credits for School / Major Pre-requisite Requirements	25-29											28	
Major Requirements															
Major Required Courses and Electives															
LIFS	1903	Laboratory for General Biology I	1	(1)										0	
LIFS	1904	Laboratory for General Biology II	1		1									1	
LIFS	2040	Cell Biology	3				3							3	
LIFS	2070	Introduction to Biotechnology	3			3								3	
LIFS	2080	Plant Biology	3				3							3	
LIFS	2210	Biochemistry I	3			(3)								0	
LIFS	3060	Microbiology	3						3					3	
LIFS	3110	Biotechnological Application of Recombinant DNA Techniques	3					3						3	
LIFS	3140	General Genetics	4							4				4	
LIFS	4150	Plant Biotechnology	3									3		3	
LIFS	4200	Concepts and Issues in Contemporary Biotechnology	3							3				3	
		Note: LIFS4963 OR (LIFS4973 AND LIFS4983) OR (SCIE4500 AND LIFS4983) [Students following IRE Track can only use (SCIE4500 AND LIFS4983) to fulfill the requirement.]	3-7												
LIFS	4963	Biotechnology Capstone Project	3									[3]	3	3	
LIFS	4973	Biotechnology Project Research I	3												
LIFS	4983	Biotechnology Project Research II	4												
SCIE	4500	IRE Research Project II	3												
		Note: CHEM1010 OR CHEM1020													
CHEM	1010	General Chemistry IA	3	(3)										0	
CHEM	1020	General Chemistry IB	3												
CHEM	1030	General Chemistry II	3		(3)									0	
CHEM	1050	Laboratory for General Chemistry I	1	1										1	
CHEM	1055	Laboratory for General Chemistry II	1		1									1	
		Note: CHEM 2110 OR CHEM 2311													
CHEM	2110	Organic Chemistry I	3					3						3	
CHEM	2311	Analytical Chemistry	3												
		Note: CHEM2155 OR CHEM2355													
CHEM	2155	Fundamental Organic Chemistry Laboratory	1						1					1	
CHEM	2355	Fundamental Analytical Chemistry Laboratory	1												
CENG	1600	Biotechnology and Its Business Opportunities	3							3				3	
LANG	3024	Science Communication in English (Life Science)	3										3	3	
LIFS/BIPH/BTEC/BIEN/ CENG		Biotechnology Electives (Courses from the specified elective list; Students following IRE Track are required to take a minimum of 15 credits; while others a minimum of 18 credits. Courses taken as Major/Track Required Courses may not be counted towards the elective requirement.)	15-18						3		3	6	3	15	
		Required credits for Major Required Courses and Electives	62-70											56	
BBA in General Business Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3				3							3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/1022Q/2011
ISOM	2020	Coding for Business	1						1					1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1							1				1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2		2									2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2					2						2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3							3				3	
LABU	2060	Effective Communication in Business	3									3		3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	(3)										0	DDP students should take MATH 1013 OR MATH 1023 to satisfy the requirements of both BSc and BBA degrees
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
SB&M		SB&M Electives (Any 9 courses offered by the departments under SB&M, of which at least 4 courses are of 3000-level or above.)	29					3	6	3	7	3	7	29	
		Required credits for Major Required Courses and Electives	29											29	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	3	3		3	3		3	9	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				17	19	18	21	20	20	20	19	18	19		
				191##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

@ Course that students need to complete before enrolling into respective major/programs.

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

{ } indicates the course overlapping with another requirement will not be necessarily counted towards the School Requirements.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CEGBM **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Chemical Engineering and BBA in General Business Management)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Chemical Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP 1021 OR COMP 1022P OR COMP 2011	3-4												
COMP	1021	Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM1010 OR CHEM1020													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
LANG	2030	Technical Communication I	3			3								3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
		Note: PHYS 1112 OR PHYS 1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Required credits for Engineering Fundamental Courses	19-23											21	
Major Required Courses and Electives															
		Note: CENG1000 OR CENG1500													
CENG	1000	Introduction to Chemical and Biological Engineering	3	3										3	
CENG	1500	A First Course on Materials Science and Applications	3												
		Note: CENG1600 OR CENG1700 OR BIEN1010													
CENG	1600	Biotechnology and Its Business Opportunities	3		3									3	
CENG	1700	Introduction to Environmental Engineering	3												
BIEN	1010	Introduction to Biomedical Engineering	3												
CENG	1010	Academic and Professional Development I	0			0								0	
CENG	1980	Industrial Training	0				0	0	0	0				0	
CENG	2110	Process and Product Design Principles	3			3								3	
CENG	2210	Chemical and Biological Engineering Thermodynamics	3				3							3	
CENG	2220	Process Fluid Mechanics	3				3							3	
CENG	2310	Modeling for Chemical and Biological Engineering	3			3								3	
CENG	3110	Process Dynamics and Control	3						3					3	
CENG	3150	Integrated Chemical Process & Product Design	5						5					5	
CENG	3210	Separation Processes	3					3						3	
CENG	3220	Heat and Mass Transfer	3					3						3	
CENG	3230	Chemical and Biological Reaction Engineering	3					3						3	
CENG	3950	Chemical and Environment Engineering Laboratory	4								4			4	
CENG	4020	Academic and Professional Development II	0									0		0	
		Note: CENG4920 OR CENG4930 OR CENG4940													
CENG	4920	Chemical Engineering Capstone Design	6												
CENG	4930	Chemical Engineering Thesis Research	6									3	3	6	
CENG	4940	Chemical Engineering Industrial Project	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
CHEM	1050	Laboratory for General Chemistry I	1		1									1	
CHEM	2111	Fundamentals of Organic Chemistry	3				3							3	
CHEM	2155	Fundamental Organic Chemistry Laboratory	1				1							1	
LANG	4035	Technical Communication II for Chemical and Biological Engineering	3									3		3	
		Note: BIEN2410 OR BIEN2610 OR LIFS1901													
BIEN	2410	Cellular and Systems Physiology for Engineers	3												
BIEN	2610	Chemical Biology for Engineers	3				3							3	
LIFS	1901	General Biology I	3												
SENG/SSCI/ENVR		CENG Elective (12 credits from specified elective list)	12					3	3	3	3			12	
		Required credits for Major Requirements Courses and Electives	68											68	
BBA in General Business Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3							3				3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3		3									3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3							3				3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/COMP2011
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3									3		3	
MARK	2120	Marketing Management	3		3									3	
MGMT	2010	Business Ethics and the Individual	2						2					2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2								2			2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3						3					3	
LABU	2060	Effective Communication in Business	3										3	3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	45-46											39	
Major Requirements															
Major Required Courses and Electives															
SB&M		SB&M Electives (Any 9 courses offered by the departments under SB&M, of which at least 4 courses are of 3000-level or above.)	29						3	9		7	10	29	
		Required credits for Major Required Courses and Electives	29											29	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30				3	6		3	12	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	19	21	19	20	19	21	21	19	19		
				196##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CIGBM **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Civil Engineering and BBA in General Business Management)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**	
						<< Declaration of BEng major		***<< Declaration of BBA major***								
BEng in Civil Engineering																
Major Requirements																
Engineering Fundamental Courses																
COMP	1021	Note: COMP 1021 OR COMP 1022P OR COMP 2011 Introduction to Computer Science	3-4 3		3									3	This course will also be used to substitute ISOM 2010	
COMP	1022P	Introduction to Computing with Java	3													
COMP	2011	Programming with C++	4													
ENGG	1010	Academic Orientation	0	0	0									0		
CHEM	1010	Note: CHEM 1010 OR CHEM 1020 General Chemistry IA	3	3										3		
CHEM	1020	General Chemistry IB	3													
LANG	2030	Technical Communication I	3					3						3		
MATH	1012	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA	4-7 4	3	3									6		
MATH	1013	Calculus IB	3													
MATH	1014	Calculus II	3													
MATH	1020	Accelerated Calculus	4													
MATH	1023	Honors Calculus I	3													
MATH	1024	Honors Calculus II	3													
MATH	2011	Introduction to Multivariable Calculus	3			3								3		
MATH	2350	Applied Linear Algebra and Differential Equations	3			3								3		
PHYS	1112	Note: PHYS 1112 OR PHYS 1312 General Physics I with Calculus	3	3										3		
PHYS	1312	Honors General Physics I	3													
		Required credits for Engineering Fundamental Courses	22-26											24		
Major Required Courses and Electives																
CIVL	1010	Academic Professional Development I	0			0	0							0		
CIVL	1100	Discovering Civil and Environmental Engineering	3		3									3		
CIVL	2010	Academic Professional Development II	0					0	0					0		
CIVL	2020	Industrial and BIM Training	0			0*	0							0		
CIVL	2110	Statics	3			3								3		
CIVL	2120	Mechanics of Materials	3				3							3		
CIVL	2160	Modeling Systems with Uncertainties	3			3								3	This course will also be used to substitute ISOM 2500	
CIVL	2170	Infrastructure Systems Engineering and Management	3				3							3		
CIVL	2410	Environmental Assessment and Management	3				3							3		
CIVL	2510	Fluid Mechanics	3				3							3		
CIVL	2810	Construction Materials	3					3						3		
CIVL	3010	Academic Professional Development III	0							0	0			0		
CIVL	3020	Internship Training	0								0^			0		
CIVL	3210	Introduction to Construction Management	3						3					3		
CIVL	3310	Structural Analysis	3					3						3		
CIVL	3320	Reinforced Concrete Design	3						3					3		
CIVL	3510	Hydrosystems Engineering	3					3						3		
CIVL	3610	Traffic and Transportation Engineering	3						3					3		
CIVL	3730	Fundamentals of Geotechnics	3							3				3		
CIVL	3740	Geotechnical Analysis and Design	3								3			3		
CIVL	4910	Note: CIVL 4910 OR CIVL 4920 Civil and Environmental Engineering Final Year Project	6									3	3	6		
CIVL	4920	Civil and Environmental Engineering Final Year Thesis	6													
CIVL	4950	Civil Engineering Capstone Design Project	3									3		3		
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0		
LANG	4033	Technical Communication II for Civil and Environmental Engineering	3									3		3		
CIVL/SENG		CIVL Electives (3 courses from the specified elective list) CIVL: Any CIVL courses at 4000-level or above except CIVL 4230 SENG: Any 3000-level or above courses offered by the Engineering School or engineering departments other than CIVL	9								3	3	3	9		
		Required credits for Major Requirements Courses and Electives	66											66		
BBA in General Business Management																
School Requirements																
ACCT	2010	Principles of Accounting I	3			3								3		
ACCT	2200	Principles of Accounting II	3						3					3		
ECON	2103	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics	3		3									3		
ECON	2113	Microeconomics	3													
ECON	2123	Note: ECON 2123 OR ECON 3123 Macroeconomics	3					3						3		
ECON	3123	Macroeconomic Theory I	3													
FINA	2303	Financial Management	3				3							3		
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P	
ISOM	2020	Coding for Business	1				1							1		
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by CIVL 2160	
ISOM	2600	Introduction to Business Analytics	1				1							1		
ISOM	2700	Operations Management	3						3					3		
MARK	2120	Marketing Management	3				3							3		
MGMT	2010	Business Ethics and the Individual	2						2					2		
MGMT	2110	Organizational Behavior	3			3								3		
MGMT	2130	Business Ethics and Social Responsibility	2							2				2		
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students	
LABU	2040	Business Case Analyses	3										3	3		
LABU	2060	Effective Communication in Business	3							3				3		
MATH	1003	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra	3-4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees	
MATH	1012	Calculus IA	4													
MATH	1013	Calculus IB	3													
MATH	1020	Accelerated Calculus	4													
MATH	1023	Honors Calculus I	3													
		Required credits for School Requirements	43-44											36		
Major Requirements																
Major Required Courses and Electives																
SB&M		SB&M Electives (Any 9 courses offered by the departments under SB&M, of which at least 4 courses are of 3000-level or above.)	29					3		6	6	7	7	29		
		Required credits for Major Required Courses and Electives	29											29		
Additional Requirements																
Requirements for Dual Degree Program																
Required Courses																
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0		
TEMG	3950	Case-based Problem Solving	3		3									3		
		Required credits for Additional Requirements	3											3		
University CORE																
CORE	C3 - C12	U CORE - Others	30	6		3		3	3	6	6		3	30		
CORE	C1 & C2	U CORE - English Language	6	3	3									6		
		Sub-total for University CORE	36											36		
				Term load (excl. free credits)												
				18	18	21	20	21	20	20	18	19	19			
				194##												
						<< Declaration of BEng major		***<< Declaration of BBA major***								

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

COGBM **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Computer Science and BBA in General Business Management)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
						<< Declaration of BEng major		***<< Declaration of BBA major***							
BEng in Computer Science															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP1021 OR COMP1022P													
COMP	1021	Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM1004 OR CHEM1010 OR CHEM1020 OR LIFS1901 OR PHYS1001 OR PHYS1112 OR PHYS1312													
CHEM	1004	Chemistry in Everyday Life	3												
CHEM	1010	General Chemistry IA	3												
CHEM	1020	General Chemistry IB	3	3										3	
LIFS	1901	General Biology I	3												
PHYS	1001	Physics and the Modern Society	3												
PHYS	1112	General Physics I with Calculus	3												
PHYS	1312	Honors General Physics I	3												
LANG	2030	Technical Communication I	3					3						3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (COMP students may also use COMP1022P or COMP1022Q to fulfill this requirement)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	19-23											18	
Major Required Courses and Electives															
		Note: (COMP2011 AND COMP2012) OR COMP2012H	5-8												
COMP	2011	Programming with C++	4			4	4							8	
COMP	2012	Object-Oriented Programming and Data Structures	4												
COMP	2012H	Honors Object-Oriented Programming and Data Structures	5												
COMP	2611	Computer Organization	4						4					4	
		Note: COMP2711 OR COMP2711H													
COMP	2711	Discrete Mathematical Tools for Computer Science	4			4								4	
COMP	2711H	Honors Discrete Mathematical Tools for Computer Science	4												
		Note: COMP3111 OR COMP3111H													
COMP	3111	Software Engineering	4					4						4	
COMP	3111H	Honors Software Engineering	4												
COMP	3511	Operating Systems	3							3				3	
		Note: COMP3711 OR COMP3711H	3-4												
COMP	3711	Design and Analysis of Algorithms	3					3						3	
COMP	3711H	Honors Design and Analysis of Algorithms	4												
		Note: Students are required to take COMP4900 for every regular term in which they are in residency at HKUST with major in COMP				0	0	0	0	0	0	0	0	0	
COMP	4900	Academic and Professional Development	0												
COMP		Note: (COMP4981 OR COMP4981H) AND COMP1991 OR COMP4910	6												
COMP	1991	Industrial Experience	0												
COMP	4981	Final Year Project	6									3	3	6	
COMP	4981H	Final Year Thesis	6												
COMP	4910	Co-op FYP Program	6												
		Note: ELEC2600 OR IELM2510 OR MATH2411 OR MATH2421 OR MATH2431	3-4												
ELEC	2600	Probability and Random Processes in Engineering	4												
IEDA	2520	Probability for Engineers	3												Students should take MATH 2411 which will also be used to substitute ISOM 2500
IEDA	2540	Statistics for Engineers	3				4							4	
MATH	2411	Applied Statistics	4												
MATH	2421	Probability	4												
MATH	2431	Honors Probability	4												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4030	Technical Communication II for CSE & CPEG	3									3		3	
COMP		COMP Electives (5 courses from the specified elective list, of which at least 3 courses should be taken from 1 area and at least 2 courses outside that area.)	15							3	6	3	3	15	
COMP		COMP Elective (Any 1 course offered under COMP)	3										3	3	
		Required credits for Major Requirements Courses and Electives	53-58											57	
BBA in General Business Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3				3							3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by MATH 2411
ISOM	2600	Introduction to Business Analytics	1				1							1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3		3									3	
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2							2				2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3						3					3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
SB&M		SB&M Electives (Any 9 courses offered by the departments under SB&M, of which at least 4 courses are of 3000-level or above.)	29					6	3	3	6	7	4	29	
		Required credits for Major Required Courses and Electives	29											29	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3	3			3	6	6		3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	19	18	20	19	17	18	16	16		
				179##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CPGBM **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Computer Engineering and BBA in General Business Management)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
						<< Declaration of BEng major		*<< Declaration of BBA major*							
BEng in Computer Engineering															
Major Requirements															
Engineering Fundamental Courses															
COMP	1021	Note: COMP1021 OR COMP1022P Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3				3							3	
MATH	1012	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA	4-7 4	3	3									6	
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3					3						3	
MATH	2111	Matrix Algebra and Applications	3					3						3	
PHYS	1112	Note: PHYS1112 OR PHYS1312 General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
PHYS	1114	Note: PHYS1114 OR PHYS1314 General Physics II	3						3					3	
PHYS	1314	Honors General Physics II	3												
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	25-29											24	
Major Required Courses and Electives															
CPEG	2930	Academic and Professional Development I	0			0	0							0	
CPEG	3930	Academic and Professional Development II	0					0	0					0	
COMP	2011	Note: (COMP2011 AND COMP2012) OR COMP2012H Programming with C++	5-8 4			4		4						8	
COMP	2012	Object-Oriented Programming and Data Structures	4												
COMP	2012H	Honors Object-Oriented Programming and Data Structures	5												
COMP	2611	Note: COMP2611 OR ELEC2350 Computer Organization	4 4				4							4	
ELEC	2350	Introduction to Computer Organization and Design	4												
COMP	2711	Note: COMP2711 OR COMP2711H OR ELEC 2600 Discrete Mathematical Tools for Computer Science	4 4							4				4	
COMP	2711H	Honors Discrete Mathematical Tools for Computer Science	4												
ELEC	2600	Probability and Random Processes in Engineering	4												
COMP	3511	Operating Systems	3								3			3	
COMP	4521	Note: COMP4521 OR COMP4611 OR ELEC 4310 Mobile Application Develoepment	3-4 3									3		3	
COMP	4611	Design and Analysis of Computer Architectures	3												
ELEC	4310	Embedded System Design	4												
ELEC	4320	FPGA-based Design: From Theory to Practice	3												
ELEC	4330	Mobile Embedded Systems: Hardware Platform, Software Development, and Applications	3												
CPEG	1971	Note: [(CPEG4901 OR CPEG4902) AND CPEG1971] OR [(CPEG4911 OR CPEG4912) AND CPEG1971] OR CPEG4910 Industrial Experience	6 0									3	3	6	
CPEG	4901	Computer Engineering Final Year Project in COMP	6												
CPEG	4902	Computer Engineering Final Year Thesis in COMP	6												
CPEG	4911	Computer Engineering Final Year Project in ELEC	6												
CPEG	4912	Computer Engineering Final Year Thesis in ELEC	6												
CPEG	4910	Co-op Program	6												
ELEC	1100	Introduction to Electro-Robot Design	4			4								4	
ELEC		Note: ELEC1200 OR ELEC2100 OR ELEC2400 (2 courses out of 3) A System View of Communications: from Signals to Packets	8 4				4		4					8	
ELEC	1200	Signals and Systems	4												
ELEC	2100	Electronic Circuits	4												
ELEC	2400	Introduction to Embedded Systems	4								4			4	
ELEC	3300	Engineering Seminar Series	0			0	0	0	0					0	
ENGG	2010	Note: LANG4030 OR LANG4031 Technical Communication II for CSE & CPEG	3									3		3	
LANG	4030	Technical Communication II for ECE & CPEG	3												
LANG	4031	Area Courses (At least 4 courses from the specified elective list , of which at least 2 courses should be taken from one single area and at least 2 courses outside that area. Courses taken as Major Required Courses may not be counted towards the elective requirement.)	15			3					4	4	4	15	
COMP/ELEC		**Required credits for Major Requirements Courses and Electives**	59-63											62	
BBA in General Business Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON	2103	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics	3		3									3	
ECON	2113	Microeconomics	3												
ECON	2123	Note: ECON 2123 OR ECON 3123 Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2					2						2	
MGMT	2110	Organizational Behavior	3		3									3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3						3					3	
MATH	1003	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra	3-4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
SB&M		SB&M Electives (Any 9 courses offered by the departments under SB&M, of which at least 4 courses are of 3000-level or above.)	29					3	3	7	3	3	10	29	
		Required credits for Major Required Courses and Electives	29											29	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3	3				9	6	3		30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	20	20	19	20	20	19	19		
				193##											
						<< Declaration of BEng major		*<< Declaration of BBA major*							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CVGBM **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Civil and Environmental Engineering and BBA in General Business Management)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Civil and Environmental Engineering															
Major Requirements															
Engineering Fundamental Courses															
COMP COMP COMP	1021 1022P 2011	Note: COMP 1021 OR COMP 1022P OR COMP 2011 Introduction to Computer Science Introduction to Computing with Java Programming with C++	3-4 3 3 4		3									3	This course will also be used to substitute ISOM 2010
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM CHEM	1010 1020	Note: CHEM 1010 OR CHEM 1020 General Chemistry IA General Chemistry IB	3 3	3										3	
LANG	2030	Technical Communication I	3					3						3	
MATH MATH MATH MATH MATH MATH	1012 1013 1014 1020 1023 1024	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA Calculus IB Calculus II Accelerated Calculus Honors Calculus I Honors Calculus II	4-7 4 3 3 4 3 3	3	3									6	
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
MATH	2350	Applied Linear Algebra and Differential Equations	3			3								3	
PHYS PHYS	1112 1312	Note: PHYS 1112 OR PHYS 1312 General Physics I with Calculus Honors General Physics I	3 3	3										3	
		Required credits for Engineering Fundamental Courses	22-26											24	
Major Required Courses and Electives															
CIVL	1010	Academic Professional Development I	0			0	0							0	
CIVL	1100	Discovering Civil and Environmental Engineering	3		3									3	
CIVL	2010	Academic Professional Development II	0					0	0					0	
CIVL	2020	Industrial and BIM Training	0			0*	0							0	
CIVL	2110	Statics	3			3								3	
CIVL	2120	Mechanics of Materials	3				3							3	
CIVL	2160	Modeling Systems with Uncertainties	3			3								3	This course will also be used to substitute ISOM 2500
CIVL	2170	Infrastructure Systems Engineering and Management	3				3							3	
CIVL	2410	Environmental Assessment and Management	3				3							3	
CIVL	2510	Fluid Mechanics	3				3							3	
CIVL	2810	Construction Materials	3					3						3	
CIVL	3010	Academic Professional Development III	0							0	0			0	
CIVL	3020	Internship Training	0								0^			0	
CIVL CIVL	3210 3610	Note: CIVL3210 OR CIVL3610 Introduction to Construction Management Traffic and Transportation Engineering	3 3						3					3	
CIVL	3310	Structural Analysis	3					3						3	
CIVL	3320	Reinforced Concrete Design	3						3					3	
CIVL	3420	Water and Wastewater Engineering	3						3					3	
CIVL	3510	Hydrosystems Engineering	3					3						3	
CIVL	3730	Fundamentals of Geotechnics	3							3				3	
CIVL	3740	Geotechnical Analysis and Design	3								3			3	
CIVL CIVL	4910 4920	Note: CIVL 4910 OR CIVL 4920 Civil and Environmental Engineering Final Year Project Civil and Environmental Engineering Final Year Thesis	6 6									3	3	6	
CIVL	4950	Civil Engineering Capstone Design Project	3									3		3	
CIVL CIVL CIVL	4450 5450 5460	Note: CIVL4450 OR CIVL 5450 OR CIVL5460 Carbon Footprint Analysis and Reduction Hazardous Waste Treatment and Site Remediation Landfill Engineering and Design	3 3 3								3			3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4033	Technical Communication II for Civil and Environmental Engineering	3									3		3	
CIVL/SENG		CIVL (Environmental) Electives [at least 1 course should be selected from the "Restricted Electives".] Restricted electives: at least 1 course AND (CIVL: Any CIVL courses at 4000-level or above except those listed as "Restricted Electives" from the list OR SENG: Any 3000-level or above courses offered by the Engineering School or engineering departments other than CIVL)	6									3	3	6	
		Required credits for Major Requirements Courses and Electives	66											66	
BBA in General Business Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	3 3			3								3	
ECON ECON	2123 3123	Note: ECON 2123 OR ECON 3123 Macroeconomics Macroeconomic Theory I	3 3					3						3	
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1		1									1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by CIVL 2160
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3		3									3	
MGMT	2130	Business Ethics and Social Responsibility	2								2			2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Substituted by ENGG 1010
LABU	2040	Business Case Analyses	3										3	3	
LABU	2060	Effective Communication in Business	3							3				3	
MATH MATH MATH MATH MATH	1003 1012 1013 1020 1023	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra Calculus IA Calculus IB Accelerated Calculus Honors Calculus I	3-4 3 4 3 4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
SB&M		SB&M Electives (Any 9 courses offered by the departments under SB&M, of which at least 4 courses are of 3000-level or above.)	29					3	3	7	3	6	7	29	
		Required credits for Major Required Courses and Electives	29											29	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	1	U CORE - Others	30	6			3		3	6	9		3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	19	20	21	19	21	19	20	18	19		
				194##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

DAGBM 2020-21 Intake

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Decision Analytics and BBA in General Business Management)**													**Remarks**
Course Offering Dept (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	
BEng in Decision Analytics															
Major Requirements															
Engineering Fundamental Courses															
COMP COMP COMP	1021 1022P 2011	Note: COMP 1021 OR COMP 1022P OR COMP 2011 Introduction to Computer Science Introduction to Computing with Java Programming with C++	3-4 3 3 4		3									3	This course will also be used to substitute ISOM 2010
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM CHEM PHYS PHYS	1010 1020 1112 1312	Note: CHEM1010 OR CHEM1020 OR PHYS1112 OR PHYS1312 General Chemistry IA General Chemistry IB General Physics I with Calculus Honors General Physics I	 3 3 3 3	3										3	
LANG	2030	Technical Communication I	3				3							3	
MATH MATH MATH MATH MATH MATH	1012 1013 1014 1020 1023 1024	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA Calculus IB Calculus II Accelerated Calculus Honors Calculus I Honors Calculus II	4-7 4 3 3 4 3 3	3	3									6	
MATH	2011	Introduction to Multivariable Calculus	3				3							3	
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (If the students take an introduction course included in their major, th course can be counted towards their major requirement.	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	22-27											21	
Major Required Courses and Electives															
IEDA	1010	Academic and Professional Development I	0			0	0							0	
IEDA	1020	Academic and Professional Development II	0					0	0					0	
IEDA IEDA	1990 1991	Note: IEDA1990 OR IEDA1991 Industrial Training Industrial Experience	 0 0			0	0	0	0	0	0	0	0	0	
IEDA	2520	Probaility for Engineers	3			3								3	
IEDA	2540	Statistics for Engineers	3				3							3	This course will also be used to substitute ISOM2500
IEDA	3010	Prescriptive Analytics	3					3						3	
IEDA	3230	Engineering Economics and Accounting	3				3							3	
IEDA	3250	Stochastic Models	3						3					3	
IEDA	3300	Industrial Data Systems	3				3							3	
IEDA	3560	Predictive Analytics	3						3					3	
IEDA IEDA	4901 4920	Note: IEDA4901 OR IEDA4920 Final Year Thesis Decision Analytics Final Year Project	 6 6									3	3	6	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
ECON ECON	2103 2113	Note: ECON2103 OR ECON2113 Principles of Microeconomics Microeconomics	 3 3			3								3	
LANG	4032	Technical Communication II for Industrial Engineering and Decision Analytics	3						3					3	
IEDA		Area Electives (5 courses from the specified elective list, of which all 5 courses should be taken from th same area)	15						3	6	3	3		15	
		Required credits for Major Required Courses and Electives	48											48	
BBA in General Business Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	 3 3			(3)								0	
ECON ECON	2123 3123	Note: ECON 2123 OR ECON 3123 Macroeconomics Macroeconomic Theory	 3 3									3		3	
FINA	2303	Financial Management	3					3						3	
ISOM	2010	Introduction to Information Systems	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by IEDA2540
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3								3			3	
MARK	2120	Marketing Management	3	3										3	
MGMT	2010	Business Ethics and the Individual	2					2						2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2							2				2	
SBMT	1111	Business Student Induction	0	-	-	-	-	-	-	-	-	-	-	0	Waived for DDP students
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3						3					3	
MATH MATH MATH MATH MATH MATH	1003 1012 1013 1020 1023	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra Calculus IA Calculus IB Accelerated Calculus Honors Calculus I	3-4 3 4 3 4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
		Required credits for School Requirements	43-44											33	
Major Requirements															
Major Required Courses and Electives															
SB&M		SB&M Electives (Any 9 courses offered by the departments under SB&M, of which at least 4 courses ar of 3000-level or above.'	29					3		6	6	7	7	29	
		Required credits for Major Required Courses and Electives	29											29	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	6	3	3			3	6		3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	18	16	18	17	18	16	13		
				170##											
						<< Declaration of BEng major		*<< Declaration of BBA major*							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substitued

To graduate, students should complete all requirements specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

EEGBM **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Electronic Engineering and BBA in General Business Management)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Electronic Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: ELEC2600 OR ELEC2600H) OR MATH2011 OR MATH2111 OR MATH2350 OR MATH 2351 (3 courses out of 6)	9-10												
ELEC	2600	Probability and Random Processes in Engineering	4												
ELEC	2600H	Honors Probability and Random Processes in Engineering	4	3		3		3						9	
MATH	2011	Introduction to Multivariable Calculus	3												
MATH	2111	Matrix Algebra and Applications	3												
MATH	2350	Applied Linear Algebra and Differential Equations	3												
MATH	2351	Introduction to Differential Equations	3												
		Note: COMP1021 OR COMP1022P													
COMP	1021	Introduction to Computer Science	3		3									3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4			4								4	
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3						3					3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
		Note: PHYS1112 OR PHYS1312	3												
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Note: PHYS1114 OR PHYS1314	3												
PHYS	1114	General Physics II	3		3									3	
PHYS	1314	Honors General Physics II	3												
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	32-37											31	
Major Required Courses and Electives															
ELEC	1100	Introduction to Electro-Robot Design	4			4								4	
ELEC	1200	A System View of Communications: from Signals to Packets	4				4							4	
		Note: ELEC2100 OR ELEC2100H													
ELEC	2100	Signals and Systems	4							4				4	
ELEC	2100H	Honors Signals and Systems	4												
ELEC	2350	Introduction to Computer Organization and Design	4							4				4	
ELEC	2400	Electronic Circuits	4						4					4	
ELEC	2910	Academic and Professional Development I	0			0	0							0	
ELEC	3910	Academic and Professional Development II	0					0	0					0	
		Note: (ELEC4900 AND ELEC2991) OR (ELEC4901 AND ELEC2991) OR ELEC4910 (Students taking the Research Option must take ELEC 4901)	6												
ELEC	4900	Final Year Design Project	6												
ELEC	4901	Final Year Thesis	6									3	3	6	
ELEC	2991	Industrial Experience (Electronic Engineering)	0												
ELEC	4910	Co-op Program	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4031	Technical Communication II for ECE & CPEG	3									3		3	
ELEC		ELEC 3000-level or 4000-level Electives (Any 2 courses ELEC 4000-levek courses. ELEC4940 cannot be used to count towards this elective requirement)	21				3		3		6	3	6	21	
		Required credits for Major Requirements Courses and Electives	50											50	
BBA in General Business Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON2103 OR ECON2113													
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
		Note: ECON2123 OR ECON3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3					3						3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2									2		2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3					3						3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
SB&M		SB&M Electives (Any 9 courses offered by the departments under SB&M, of which at least 4 courses are of 3000-level or above.)	29					6	3	6	4	3	7	29	
		Required credits for Major Required Courses and Electives	29											29	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3				3	6	9	3		30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	19	20	19	20	19	17	18		
				188##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

IEGBM **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Industrial Engineering and Engineering Management and BBA in General Business Management)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Industrial Engineering and Engineering Management															
Major Requirements															
Engineering Fundamental Courses															
COMP COMP COMP	1021 1022P 2011	Note: COMP1021 OR COMP1022P OR COMP2011 Introduction to Computer Science Introduction to Computing with Java Programming with C++	3-4 3 3 4	3										3	This course will also be used to substitute ISOM 2010
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM CHEM PHYS PHYS	1010 1020 1112 1312	Note: CHEM1010 OR CHEM1020 OR PHYS1112 OR PHYS1312 General Chemistry IA General Chemistry IB General Physics I with Calculus Honors General Physics I	 3 3 3 3	3										3	
LANG	2030	Technical Communication I	3					3						3	
MATH MATH MATH MATH MATH MATH	1012 1013 1014 1020 1023 1024	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA Calculus IB Calculus II Accelerated Calculus Honors Calculus I Honors Calculus II	4-7 4 3 3 4 3 3	3	3									6	
MATH	2011	Introduction to Multivariable Calculus	3				3							3	
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	22-27											21	
Major Required Courses and Electives															
IEDA	1010	Academic and Professional Development I	0			0	0							0	
IEDA	1020	Academic and Professional Development II	0					0	0					0	
IEDA IEDA	1990 1991	Note: IEDA1990 OR IEDA1991 Industrial Training Industrial Experience	 0 0			0*	0^							0	
IEDA	2520	Probability for Engineers	3			3								3	
IEDA	2540	Statistics for Engineers	3				3							3	This course will also be used to substitute ISOM2500
IEDA	3010	Presciptive Analytics	3					3						3	
IEDA	3230	Engineering Economics and Accounting	3					3						3	
IEDA	3250	Stochastic Models	3						3					3	
IEDA	3300	Industrial Data Systems	3				3							3	
IEDA	4100	Integrated Production Systems	3								3			3	This course will also be used to substitute ISOM 2700
IEDA	4130	System Simulation	3								3			3	
IEDA IEDA	4901 4960	Note: IEDA4901 OR IEDA4990 Final Year Thesis Industrial Engineering and Engineering Management Final Year Project	 6 6									3	3	6	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0	0	0	0	0	0	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	 3 3			3								3	
LANG	4032	Technical Communication II for Industrial Engineering and Decision Analytics	3									3		3	
IEDA		Industrial Engineering Electives (Courses from the specified 21 elective list, of which at least 15 credits should be taken from 1 of the 2 areas and at least 6 credits outside that area.)	21			6	3			3		3	6	21	
		Required credits for Major Requirements Courses and Electives	57											57	
BBA in General Business Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	 3 3			(3)								0	
ECON ECON	2123 3123	Note: ECON 2123 OR ECON 3123 Macroeconomics Macroeconomic Theory I	 3 3				3							3	
FINA	2303	Financial Management	3					3						3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by IEDA2540
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by IEDA 4100
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2					2						2	
MGMT	2110	Organizational Behavior	3		3									3	
MGMT	2130	Business Ethics and Social Responsibility	2								2			2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3						3					3	
LABU	2060	Effective Communication in Business	3							3				3	
MATH MATH MATH MATH MATH	1003 1012 1013 1020 1023	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra Calculus IA Calculus IB Accelerated Calculus Honors Calculus I	3-4 3 4 3 4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
		Required credits for School Requirements	43-44											30	
Major Requirements															
Major Required Courses and Electives															
SB&M		SB&M Electives (Any 9 courses offered by the departments under SB&M, of which at least 4 courses are of 3000-level or above.)	29						3	9	3	7	7	29	
		Required credits for Major Required Courses and Electives	29											29	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3	3		3	6	3	6			30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	18	19	18	18	17	16	16		
				176##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

MEGBM **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Mechanical Engineering and BBA in General Business Management)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Mechanical Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP1021 OR COMP1022P OR COMP2011	3-4												
COMP	1021	Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3				3							3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3							3				3	
		Note: MATH2111 OR MATH2350 OR MATH2351													
MATH	2111	Matrix Algebra and Applications	3												
MATH	2350	Applied Linear Algebra and Differential Equations	3							3				3	
MATH	2351	Introduction to Differential Equations	3												
		Note: PHYS1112 OR PHYS1312													
PHYS	1112	General Physics I with Calculus	3		3									3	
PHYS	1312	Honors General Physics I	3												
CHEM/LIFS/ PHYS		Science 1000-level course (Any 1 course of the subject and level as specified)	3		(3)									0	
		Required credits for Engineering Fundamental Courses	22-26											21	
Major Required Courses and Electives															
MECH	1990	Industrial Training	0			0*	0^							0	
MECH	2020	Statics and Dynamics	3			3								3	
MECH	2040	Solid Mechanics I	3						3					3	
MECH	2210	Fluid Mechanics	3						3					3	
MECH	2310	Thermodynamics	3			3								3	
MECH	2410	Engineering Materials I	3				3							3	
MECH	2520	Design and Manufacturing I	3				3							3	
MECH	2907	Mechatronic Design and Prototyping	3						3					3	
MECH	3030	Mechanisms of Machinery	3								3			3	
		Note: MECH3300 OR MECH3420 OR MECH3520													
MECH	3300	Energy Conversion	3							3				3	
MECH	3420	Engineering Materials II	3												
MECH	3520	Design and Manufacturing II	3												
MECH	3310	Heat Transfer	3								3			3	
MECH	3610	Control Principles	3					3						3	
MECH	3630	Electrical Technology	3						3					3	
MECH	3830	Laboratory	3								3			3	
MECH	4900	Final Year Design Project	6									3	3	6	
ELEC	2420	Basic Electronics	3			3								3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4034	Technical Communication II for Mechanical and Areospace Engineering	3								3			3	
		Required credits for Major Requirements Courses and Electives	51											51	
BBA in General Business Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2					2						2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3							3				3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4	(3)										0	
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
SB&M		SB&M Electives (Any 9 courses offered by the departments under SB&M, of which at least 4 courses are of 3000-level or above.)	29					6		3	3	7	10	29	
		Required credits for Major Required Courses and Electives	29											29	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	9	6					3	3	6	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	18	19	18	18	18	16	16		
				179##											

<< Declaration of BEng major

<< Declaration of BBA major

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

BEFINA **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Bioengineering and BBA in Finance)**														
Course Offering Dept (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Bioengineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: [COMP 1021] OR [(COMP 1022P OR COMP 2011) AND COMP1029P]	3-5												
COMP	1021	Introduction to Computer Science	3												
COMP	1022P	Introduction to Computing with Java	3		3									3	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	1029P	Python Programming Bridging Course	1												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM1010 OR CHEM 1020													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
CHEM	1050	Laboratory for General Chemistry I	1	1										1	
LANG	2030	Technical Communication I	3				3							3	
LIFS	1901	General Biology I	3	3										3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3	3	3									6	
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus I	3												
		Note: PHYS 1112 OR PHYS 1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
SENG		Engineering Introduction course (If the students take an introduction course included in their major, thi course can be counted towards their major requirement.	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	23-29											22	
Major Required Courses and Electives															
		Note: BIEN 1010 OR CENG 1000													
BIEN	1010	Introduction to Biomedical Engineering	3		3									3	
CENG	1000	Introduction to Chemical and Biilological Engineering	3												
BIEN	2310	Modeling for Chemical and Biological Engineering	3			3								3	
BIEN	2410	Cellular and Systems Physiology for Engineers	3						3					3	
BIEN	2610	Chemical Biology for Engineers	3			3								3	
BIEN	2990	Academic and Professional Development I	1			1								1	
BIEN	3240	Transport Phenomena in Biological Systems	3									3		3	
BIEN	3320	Data Science for Biology and Medicine	3				3							3	
BIEN	3410	Introduction to Bioinstrumentation and Bioimaging	3							3				3	
BIEN	3910	Bioengineering Laboratory	4							4				4	
		Note: BIEN 4920 OR BIEN 4930 OR BIEN 4940													
BIEN	4920	Bioengineering Capstone Design	6												
BIEN	4930	Bioengineering Thesis Research	6									3	3	6	
BIEN	4940	Bioengineering Industrial Projec	6												
BIEN	4990	Academic and Professional Development II	1									1		1	
CENG	2210	Chemical and Biological Engineering Thermodynamics	3				3							3	
CENG	3230	Chemical and Biological Reaction Engineering	3							3				3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
		Note: LIFS 3150 OR MATH 2411	3-4												
LIFS	3150	Biostatistics	3			3								3	
MATH	2411	Applied Statistics	4												
LANG	4035	Technical Communication II for Chemical and Biological Engineering	3									3		3	
SSCI/SENG		Bioengineering Electives (5 courses from the specified elective list, of which at least 9 credits should be taken from a single specialty area (Area 1 or Area 2). Out of the 15 credits taken, at least 9 credits should be at 4000-level)	15								6	3	6	15	
		Required credits for Major Required Courses and Electives	60-61											60	
BBA in Finance															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3							3				3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	FINA 2303 is a major pre-requisite
ISOM	2010	Introduction to Information Systems	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/COMP2011
ISOM	2020	Coding for Business	1	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/1029P/2011
ISOM	2500	Business Statistics	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by LIFS 3150/MATH 2411
ISOM	2600	Introduction to Business Analytics	1	-	-	-	-	-	-	-	-	-	-	0	Substituted by BIEN3320
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3		3									3	
MGMT	2130	Business Ethics and Social Responsibility	2					2						2	
SBMT	1111	Business Student Induction	0	-	-	-	-	-	-	-	-	-	-	0	Substituted by ENGG 1010
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3						3					3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3	(3)										0	
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											34	
Major Requirements															
Major Required Courses and Electives															
FINA	3001	Key Skills for Finance Professionals (A)	1					1						1	
FINA	3103	Intermediate Investments	3					3						3	
FINA	3203	Derivative Securities	3								3			3	
FINA	3303	Intermediate Corporate Finance	3							3				3	
FINA	3810	Bloomberg Market Concepts Certification	0					0						0	
		Note: (ACCT 3010 AND ACCT 3020) OR ACCT 3030	3-6												
ACCT	3010	Financial Accounting I	3												
ACCT	3020	Financial Accounting II	3					3						3	
ACCT	3030	Intermediate Financial Accounting for Non-Accounting Majors	3												
ISOM/COMP		Note: ISOM 3230 OR ISOM 3400 OR COMP 1022P	3												
ISOM	3230	Business Applications Programming	3												
ISOM	3400	Python Programming for Business Analytics	3		(3)									0	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	1022P	Introduction to Computing with Java	3												
FINA		FINA 3000-level or above Electives (Any 3 courses of the subject and level as specified)	9								3	3	3	9	
		Required credits for Major Required Courses and Electives	25-28											22	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	3			3	6	6	3	6	3		30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				19	18	18	18	18	18	19	18	19	12		
				177##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substitued

To graduate, students should complete all requirements specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

BTFINA **2020-21 Intake**

(Via DDP PBA)

School:		School of Science and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BSc in Biotechnology and BBA in Finance)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BSc in Biotechnology															
School Requirements															
SCIE	1000	Science School Induction	0	0	0									0	
		Note: COMP1021 OR COMP1022P OR COMP2011	3-4												
COMP	1021	Introduction to Computer Science	3												
COMP	1022P	Introduction to Computing with Java	3			3								3	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	2011	Programming with C++	4												
LANG	2010	English for Science I	3					3						3	
SSCI		Science Foundation courses [8 courses from the specified elective list. Students shoul take (i) 7 foundation lecture courses, including at least 1 lecture course, but no more than 3 lecture courses, from each discipline: CHEM, LIFS, MATH and PHYS; and (ii) 1 laboratory course.]	22-25												
CHEM	1004	Chemistry in Everyday Life	3												
CHEM	1010	General Chemistry IA	3												
CHEM	1020	General Chemistry IB	3												
CHEM	1030	General Chemistry II	3												
CHEM	1050	Laboratory for General Chemistry I	1												
CHEM	1055	Laboratory for General Chemistry II	1												
LIFS	1030	Environmental Science	3												
LIFS	1901@	General Biology I@	3												LIFS1901 & LIFS1902 are Major Pre requisite
LIFS	1902@	General Biology II@	3												
LIFS	1903	Laboratory for General Biology I	1												
LIFS	1904	Laboratory for General Biology II	1												
LIFS	1930	Nature of Life Sciences	3	10	3	6	3							22	Students are recommended to take CHEM1010, CHEM1030, LIFS1903 and MATH1013 to satisfy the requirements of both SSCI School requirements and Major requirements
LIFS	2210	Biochemistry I	3												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2023	Multivariable Calculus	4												
MATH	2121	Linear Algebra	4												
MATH	2131	Honors in Linear and Abstract Algebra I	4												
PHY	1001	Physics and the Modern Society	3												
PHY	1111	General Physics I	3												
PHY	1112	General Physics I with Calculus	3												
PHY	1113	Laboratory for General Physics I	1												
PHY	1114	General Physics II	3												
PHY	1115	Laboratory for General Physics I	1												
		Required credits for School / Major Pre-requisite Requirements	25-29											28	
Major Requirements															
Major Required Courses and Electives															
LIFS	1903	Laboratory for General Biology I	1	(1)										0	
LIFS	1904	Laboratory for General Biology II	1		1									1	
LIFS	2040	Cell Biology	3				3							3	
LIFS	2070	Introduction to Biotechnology	3			3								3	
LIFS	2080	Plant Biology	3				3							3	
LIFS	2210	Biochemistry I	3			(3)								0	
LIFS	3060	Microbiology	3						3					3	
LIFS	3110	Biotechnological Application of Recombinant DNA Techniques	3					3						3	
LIFS	3140	General Genetics	4							4				4	
LIFS	4150	Plant Biotechnology	3									3		3	
LIFS	4200	Concepts and Issues in Contemporary Biotechnology	3							3				3	
		Note: LIFS4963 OR (LIFS4973 AND LIFS4983) OR (SCIE4500 AND LIFS4983) [Students following IRE Track can only use (SCIE4500 AND LIFS4983) to fulfill the requirement.]	3-7												
LIFS	4963	Biotechnology Capstone Project	3									[3]	3	3	
LIFS	4973	Biotechnology Project Research I	3												
LIFS	4983	Biotechnology Project Research II	4												
SCIE	4500	IRE Research Project I	3												
		Note: CHEM1010 OR CHEM1020	3												
CHEM	1010	General Chemistry IA	3	(3)										0	
CHEM	1020	General Chemistry IB	3												
CHEM	1030	General Chemistry II	3		(3)									0	
CHEM	1050	Laboratory for General Chemistry I	1	1										1	
CHEM	1055	Laboratory for General Chemistry II	1		1									1	
		Note: CHEM 2110 OR CHEM 2311	3												
CHEM	2110	Organic Chemistry I	3					3						3	
CHEM	2311	Analytical Chemistry	3												
		Note: CHEM2155 OR CHEM2355	1												
CHEM	2155	Fundamental Organic Chemistry Laboratory	1						1					1	
CHEM	2355	Fundamental Analytical Chemistry Laboratory	1												
CENG	1600	Biotechnology and Its Business Opportunities	3							3				3	
LANG	3024	Science Communication in English (Life Science)	3										3	3	
LIFS/BIPH/BTEC/BIEN/ CENG		Biotechnology Electives (Courses from the specified elective list; Students following IRE Track are required to take a minimum of 15 credits; while others a minimum of 18 credits. Courses taken as Major/Track Required Courses may not be counted towards the elective requirement.)	15-18						3		3	6	3	15	
		Required credits for Major Required Courses and Electives	62-70											56	
BBA in Finance															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113	3												
ECON	2103	Principles of Microeconomics	3				3							3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123	3												
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	FINA 2303 is a major pre-requisite
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/1022Q/2011
ISOM	2020	Coding for Business	1				1							1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1							1				1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2		2									2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3								3			3	
LABU	2060	Effective Communication in Business	3									3		3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1013 OR MATH 1023 to satisfy the requirements of both BSc and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
FINA	3001	Key Skills for Finance Professionals (A)	1					1						1	
FINA	3103	Intermediate Investments	3					3						3	
FINA	3203	Derivative Securities	3								3			3	
FINA	3303	Intermediate Corporate Finance	3							3				3	
FINA	3810	Bloomberg Market Concepts Certification	0					0						0	
		Note: (ACCT 3010 AND ACCT 3020) OR ACCT 3030	3-6												
ACCT	3010	Financial Accounting I	3					3						3	
ACCT	3020	Financial Accounting II	3												
ACCT	3030	Intermediate Financial Accounting for Non-Accounting Majors	3												
ISOM/COMP		Note: ISOM 3230 OR ISOM 3400 OR COMP 1022P	3												
ISOM	3230	Business Applications Programming	3												DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
ISOM	3400	Python Programming for Business Analytics	3			(3)								0	
COMP	1022P	Introduction to Computing with Java	3												
FINA		FINA 3000-level or above Electives (Any 3 courses of the subject and level as specified)	9								3	3	3	9	
		Required credits for Major Required Courses and Electives	25-28											22	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	3	3				6	6	6	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				17	19	18	19	19	19	20	18	18	17		
				184##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

@ Course that students need to complete before enrolling into respective major/programs.

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CEFINA **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Chemical Engineering and BBA in Finance)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Chemical Engineering															
Major Requirements															
Engineering Fundamental Courses															
COMP	1021	Note: COMP 1021 OR COMP 1022P OR COMP 2011 Introduction to Computer Science	3-4 3	3										3	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM	1010	Note: CHEM1010 OR CHEM1020 General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
LANG	2030	Technical Communication I	3					3						3	
MATH	1012	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA	4-7 4	3	3									6	
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
PHYS	1112	Note: PHYS 1112 OR PHYS 1312 General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Required credits for Engineering Fundamental Courses	19-23											21	
Major Required Courses and Electives															
CENG	1000	Note: CENG1000 OR CENG1500 Introduction to Chemical and Biological Engineering	3	3										3	
CENG	1500	A First Course on Materials Science and Applications	3												
CENG	1600	Note: CENG1600 OR CENG1700 OR BIEN1010 Biotechnology and Its Business Opportunities	3		3									3	
CENG	1700	Introduction to Environmental Engineering	3												
BIEN	1010	Introduction to Biomedical Engineering	3												
CENG	1010	Academic and Professional Development I	0			0								0	
CENG	1980	Industrial Training	0				0	0	0	0				0	
CENG	2110	Process and Product Design Principles	3			3								3	
CENG	2210	Chemical and Biological Engineering Thermodynamics	3				3							3	
CENG	2220	Process Fluid Mechanics	3				3							3	
CENG	2310	Modeling for Chemical and Biological Engineering	3			3								3	
CENG	3110	Process Dynamics and Control	3						3					3	
CENG	3150	Integrated Chemical Process & Product Design	5						5					5	
CENG	3210	Separation Processes	3					3						3	
CENG	3220	Heat and Mass Transfer	3					3						3	
CENG	3230	Chemical and Biological Reaction Engineering	3					3						3	
CENG	3950	Chemical and Environment Engineering Laboratory	4								4			4	
CENG	4020	Academic and Professional Development II	0									0		0	
CENG	4920	Note: CENG4920 OR CENG4930 OR CENG4940 Chemical Engineering Capstone Design	6									3	3	6	
CENG	4930	Chemical Engineering Thesis Research	6												
CENG	4940	Chemical Engineering Industrial Project	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
CHEM	1050	Laboratory for General Chemistry I	1		1									1	
CHEM	2111	Fundamentals of Organic Chemistry	3				3							3	
CHEM	2155	Fundamental Organic Chemistry Laboratory	1				1							1	
LANG	4035	Technical Communication II for Chemical and Biological Engineering	3									3		3	
BIEN	2410	Note: BIEN2410 OR BIEN2610 OR LIFS1901 Cellular and Systems Physiology for Engineers	3				3							3	
BIEN	2610	Chemical Biology for Engineers	3												
LIFS	1901	General Biology I	3												
SENG/SSCI/ENVR		CENG Elective (12 credits from specified elective list)	12					3	3	3	3			12	
		Required credits for Major Requirements Courses and Electives	68											68	
BBA in Finance															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3							3				3	
ECON	2103	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics	3		3									3	
ECON	2113	Microeconomics	3												
ECON	2123	Note: ECON 2123 OR ECON 3123 Macroeconomics	3							3				3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	FINA 2303 is a major pre-requisite
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/COMP2011
ISOM	2020	Coding for Business	1			1								1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1			1								1	
ISOM	2700	Operations Management	3									3		3	
MARK	2120	Marketing Management	3		3									3	
MGMT	2010	Business Ethics and the Individual	2							2				2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3							3				3	
LABU	2060	Effective Communication in Business	3										3	3	
MATH	1003	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra	3-4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	45-46											39	
Major Requirements															
Major Required Courses and Electives															
FINA	3001	Key Skills for Finance Professionals (A)	1					1						1	
FINA	3103	Intermediate Investments	3					3						3	
FINA	3203	Derivative Securities	3								3			3	
FINA	3303	Intermediate Corporate Finance	3							3				3	
FINA	3810	Bloomberg Market Concepts Certification	0					0						0	
ACCT	3010	Note: (ACCT 3010 AND ACCT 3020) OR ACCT 3030 Financial Accounting I	3-6 3							3				3	
ACCT	3020	Financial Accounting II	3												
ACCT	3030	Intermediate Financial Accounting for Non-Accounting Majors	3												
ISOM/COMP		Note: ISOM 3230 OR ISOM 3400 OR COMP 1022P	3												
ISOM	3230	Business Applications Programming	3	(3)										0	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
ISOM	3400	Python Programming for Business Analytics	3												
COMP	1022P	Introduction to Computing with Java	3												
FINA		FINA 3000-level or above Electives (Any 3 courses of the subject and level as specified)	9								3	3	3	9	
		Required credits for Major Required Courses and Electives	25-28											22	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30				3		9		6	6	6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	19	20	19	19	20	20	19	18	17		
				189##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CIFINA **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Civil Engineering and BBA in Finance)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Civil Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP 1021 OR COMP 1022P OR COMP 2011	3-4												
COMP	1021	Introduction to Computer Science	3		3									3	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM 1010 OR CHEM 1020													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
LANG	2030	Technical Communication I	3					3						3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
MATH	2350	Applied Linear Algebra and Differential Equations	3			3								3	
		Note: PHYS 1112 OR PHYS 1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Required credits for Engineering Fundamental Courses	22-26											24	
Major Required Courses and Electives															
CIVL	1010	Academic Professional Development I	0			0	0							0	
CIVL	1100	Discovering Civil and Environmental Engineering	3		3									3	
CIVL	2010	Academic Professional Development II	0					0	0					0	
CIVL	2020	Industrial and BIM Training	0			0*	0							0	
CIVL	2110	Statics	3			3								3	
CIVL	2120	Mechanics of Materials	3				3							3	
CIVL	2160	Modeling Systems with Uncertainties	3			3								3	This course will also be used to substitute ISOM 2500
CIVL	2170	Infrastructure Systems Engineering and Management	3				3							3	
CIVL	2410	Environmental Assessment and Management	3				3							3	
CIVL	2510	Fluid Mechanics	3				3							3	
CIVL	2810	Construction Materials	3					3						3	
CIVL	3010	Academic Professional Development III	0							0	0			0	
CIVL	3020	Internship Training	0								0^			0	
CIVL	3210	Introduction to Construction Management	3						3					3	
CIVL	3310	Structural Analysis	3					3						3	
CIVL	3320	Reinforced Concrete Design	3						3					3	
CIVL	3510	Hydrosystems Engineering	3					3						3	
CIVL	3610	Traffic and Transportation Engineering	3						3					3	
CIVL	3730	Fundamentals of Geotechnics	3							3				3	
CIVL	3740	Geotechnical Analysis and Design	3								3			3	
		Note: CIVL 4910 OR CIVL 4920													
CIVL	4910	Civil and Environmental Engineering Final Year Project	6									3	3	6	
CIVL	4920	Civil and Environmental Engineering Final Year Thesis	6												
CIVL	4950	Civil Engineering Capstone Design Project	3									3		3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4033	Technical Communication II for Civil and Environmental Engineering	3									3		3	
		CIVL Electives (3 courses from the specified elective list)													
CIVL/SENG		CIVL: Any CIVL courses at 4000-level or above except CIVL 4230	9								3	3	3	9	
		SENG: Any 3000-level or above courses offered by the Engineering School or engineering departments other than CIVL													
		Required credits for Major Requirements Courses and Electives	66											66	
BBA in Finance															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3		3									3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	FINA 2303 is a major pre-requisite
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1				1							1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by CIVL 2160
ISOM	2600	Introduction to Business Analytics	1				1							1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2								2			2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3										3	3	
LABU	2060	Effective Communication in Business	3							3				3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
FINA	3001	Key Skills for Finance Professionals (A)	1					1						1	
FINA	3103	Intermediate Investments	3					3						3	
FINA	3203	Derivative Securities	3								3			3	
FINA	3303	Intermediate Corporate Finance	3							3				3	
FINA	3810	Bloomberg Market Concepts Certification	0					0						0	
		Note: (ACCT 3010 AND ACCT 3020) OR ACCT 3030	3-6												
ACCT	3010	Financial Accounting I	3							3				3	
ACCT	3020	Financial Accounting II	3												
ACCT	3030	Intermediate Financial Accounting for Non-Accounting Majors	3												
ISOM/COMP		Note: ISOM 3230 OR ISOM 3400 OR COMP 1022P	3												
ISOM	3230	Business Applications Programming	3		(3)									0	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
ISOM	3400	Python Programming for Business Analytics	3												
COMP	1022P	Introduction to Computing with Java	3												
FINA		FINA 3000-level or above Electives (Any 3 courses of the subject and level as specified)	9								3	3	3	9	
		Required credits for Major Required Courses and Electives	25-28											22	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6					3	6	6	3	6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	20	19	18	18	20	18	18		
				187##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

COFINA **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Computer Science and BBA in Finance)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Computer Science															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP1021 OR COMP1022P													
COMP	1021	Introduction to Computer Science	3	3										3	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	1022P	Introduction to Computing with Java	3												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM1004 OR CHEM1010 OR CHEM1020 OR LIFS1901 OR PHYS1001 OR PHYS1112 OR PHYS1312													
CHEM	1004	Chemistry in Everyday Life	3												
CHEM	1010	General Chemistry IA	3												
CHEM	1020	General Chemistry IB	3	3										3	
LIFS	1901	General Biology I	3												
PHYS	1001	Physics and the Modern Society	3												
PHYS	1112	General Physics I with Calculus	3												
PHYS	1312	Honors General Physics I	3												
LANG	2030	Technical Communication I	3					3						3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus I	3												
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (COMP students may also use COMP1022P o COMP1022Q to fulfill this requirement	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	19-23											18	
Major Required Courses and Electives															
		Note: (COMP2011 AND COMP2012) OR COMP2012H	5-8												
COMP	2011	Programming with C++	4			4	4							8	
COMP	2012	Object-Oriented Programming and Data Structures	4												
COMP	2012H	Honors Object-Oriented Programming and Data Structures	5												
COMP	2611	Computer Organization	4						4					4	
		Note: COMP2711 OR COMP2711H													
COMP	2711	Discrete Mathematical Tools for Computer Science	4			4								4	
COMP	2711H	Honors Discrete Mathematical Tools for Computer Science	4												
		Note: COMP3111 OR COMP3111H													
COMP	3111	Software Engineering	4					4						4	
COMP	3111H	Honors Software Engineering	4												
COMP	3511	Operating Systems	3							3				3	
		Note: COMP3711 OR COMP3711H	3-4												
COMP	3711	Design and Analysis of Algorithms	3					3						3	
COMP	3711H	Honors Design and Analysis of Algorithms	4												
		Note: Students are required to take COMP4900 for every regular term in which they are in residency at HKUST with major in COMP													
COMP	4900	Academic and Professional Development	0			0	0	0	0	0	0	0	0	0	
COMP		Note: (COMP4981 OR COMP4981H) AND COMP1991 OR COMP4910	6												
COMP	1991	Industrial Experience	0												
COMP	4981	Final Year Project	6									3	3	6	
COMP	4981H	Final Year Thesis	6												
COMP	4910	Co-op FYP Program	6												
		Note: ELEC2600 OR IELM2510 OR MATH2411 OR MATH2421 OR MATH2431	3-4												
ELEC	2600	Probability and Random Processes in Engineering	4												
IEDA	2520	Probability for Engineers	3												Students should take MATH 2411 which will also be used to substitute ISOM 2500.
IEDA	2540	Statistics for Engineers	3			4								4	
MATH	2411	Applied Statistics	4												
MATH	2421	Probability	4												
MATH	2431	Honors Probability	4												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4030	Technical Communication II for CSE & CPEG	3									3		3	
COMP		COMP Electives (5 courses from the specified elective list, of which at least 3 course should be taken from 1 area and at least 2 courses outside that area.	15							3	6	3	3	15	
COMP		COMP Elective (Any 1 course offered under COMP)	3										3	3	
		Required credits for Major Requirements Courses and Electives	53-58											57	
BBA in Finance															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3				3							3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	FINA 2303 is a major pre-requisite
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by MATH 2411
ISOM	2600	Introduction to Business Analytics	1				1							1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3		3									3	
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2				2							2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3						3					3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
FINA	3001	Key Skills for Finance Professionals (A)	1					1						1	
FINA	3103	Intermediate Investments	3					3						3	
FINA	3203	Derivative Securities	3								3			3	
FINA	3303	Intermediate Corporate Finance	3							3				3	
FINA	3810	Bloomberg Market Concepts Certification	0					0						0	
		Note: (ACCT 3010 AND ACCT 3020) OR ACCT 3030	3-6												
ACCT	3010	Financial Accounting I	3							3				3	
ACCT	3020	Financial Accounting II	3												
ACCT	3030	Intermediate Financial Accounting for Non-Accounting Majors	3												
ISOM/COMP		Note: ISOM 3230 OR ISOM 3400 OR COMP 1022P	3												
ISOM	3230	Business Applications Programming	3												
ISOM	3400	Python Programming for Business Analytics	3	(3)										0	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	1022P	Introduction to Computing with Java	3												
FINA		FINA 3000-level or above Electives (Any 3 courses of the subject and level as specified)	9								3	3	3	9	
		Required credits for Major Required Courses and Electives	25-28											22	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3		3		3	6	3	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	19	18	16	18	15	15	15		
				172##											

<< Declaration of BEng major

<< Declaration of BBA major

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CPFINA **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Computer Engineering and BBA in Finance)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Computer Engineering															
Major Requirements															
Engineering Fundamental Courses															
COMP	1021	Note: COMP1021 OR COMP1022P Introduction to Computer Science	3	3										3	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	1022P	Introduction to Computing with Java	3												
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3				3							3	
MATH	1012	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA	4-7 4	3	3									6	
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3					3						3	
MATH	2111	Matrix Algebra and Applications	3					3						3	
PHYS	1112	Note: PHYS1112 OR PHYS1312 General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
PHYS	1114	Note: PHYS1114 OR PHYS1314 General Physics II	3						3					3	
PHYS	1314	Honors General Physics II	3												
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	25-29											24	
Major Required Courses and Electives															
CPEG	2930	Academic and Professional Development I	0			0	0							0	
CPEG	3930	Academic and Professional Development II	0					0	0					0	
COMP	2011	Note: (COMP2011 AND COMP2012) OR COMP2012H Programming with C++	5-8 4												
COMP	2012	Object-Oriented Programming and Data Structures	4			4		4						8	
COMP	2012H	Honors Object-Oriented Programming and Data Structures	5												
COMP	2611	Note: COMP2611 OR ELEC2350 Computer Organization	4 4				4							4	
ELEC	2350	Introduction to Computer Organization and Design	4												
COMP	2711	Note: COMP2711 OR COMP2711H OR ELEC 2600 Discrete Mathematical Tools for Computer Science	4 4							4				4	
COMP	2711H	Honors Discrete Mathematical Tools for Computer Science	4												
ELEC	2600	Probability and Random Processes in Engineering	4												
COMP	3511	Operating Systems	3								3			3	
COMP	4521	Note: COMP4521 OR COMP4611 OR ELEC 4310 Mobile Application Develoepment	3-4 3									3		3	
COMP	4611	Design and Analysis of Computer Architectures	3												
ELEC	4310	Embedded System Design	4												
ELEC	4320	FPGA-based Design: From Theory to Practice	3												
ELEC	4330	Mobile Embedded Systems: Hardware Platform, Software Development, and Applications	3												
CPEG	1971	Note: [(CPEG4901 OR CPEG4902) AND CPEG1971] OR [(CPEG4911 OR CPEG4912) AND CPEG1971] OR CPEG4910 Industrial Experience	6 0												
CPEG	4901	Computer Engineering Final Year Project in COMP	6									3	3	6	
CPEG	4902	Computer Engineering Final Year Thesis in COMP	6												
CPEG	4911	Computer Engineering Final Year Project in ELEC	6												
CPEG	4912	Computer Engineering Final Year Thesis in ELEC	6												
CPEG	4910	Co-op Program	6												
ELEC	1100	Introduction to Electro-Robot Design	4			4								4	
ELEC	1200	Note: ELEC1200 OR ELEC2100 OR ELEC2400 (2 courses out of 3) A System View of Communications: from Signals to Packets	8 4				4		4					8	
ELEC	2100	Signals and Systems	4												
ELEC	2400	Electronic Circuits	4												
ELEC	3300	Introduction to Embedded Systems	4								4			4	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4030	Note: LANG4030 OR LANG4031 Technical Communication II for CSE & CPEG	3									3		3	
LANG	4031	Technical Communication II for ECE & CPEG	3												
COMP/ELEC		Area Courses (At least 4 courses from the specified elective list , of which at least 2 courses should be taken from one single area and at least 2 courses outside that area. Courses taken as Major Required Courses may not be counted towards the elective requirement.)	15			3					4	4	4	15	
		Required credits for Major Requirements Courses and Electives	59-63											62	
BBA in Finance															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON	2103	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics	3		3									3	
ECON	2113	Microeconomics	3												
ECON	2123	Note: ECON 2123 OR ECON 3123 Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	FINA 2303 is a major pre-requisite
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2								2			2	
MGMT	2110	Organizational Behavior	3		3									3	
MGMT	2130	Business Ethics and Social Responsibility	2									2		2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3						3					3	
MATH	1003	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra	3-4 3												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4	(3)										0	
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
FINA	3001	Key Skills for Finance Professionals (A)	1					1						1	
FINA	3103	Intermediate Investments	3					3						3	
FINA	3203	Derivative Securities	3								3			3	
FINA	3303	Intermediate Corporate Finance	3							3				3	
FINA	3810	Bloomberg Market Concepts Certification	0					0						0	
ACCT	3010	Note: (ACCT 3010 AND ACCT 3020) OR ACCT 3030 Financial Accounting I	3-6 3							3				3	
ACCT	3020	Financial Accounting II	3												
ACCT	3030	Intermediate Financial Accounting for Non-Accounting Majors	3												
ISOM/COMP		Note: ISOM 3230 OR ISOM 3400 OR COMP 1022P	3												
ISOM	3230	Business Applications Programming	3												DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
ISOM	3400	Python Programming for Business Analytics	3	(3)										0	
COMP	1022P	Introduction to Computing with Java	3												
FINA		FINA 3000-level or above Electives (Any 3 courses of the subject and level as specified)	9								3	3	3	9	
		Required credits for Major Required Courses and Electives	25-28											22	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3	3			3	9			6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	20	19	19	19	19	18	16		
				186##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CVFINA **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Civil and Environmental Engineering and BBA in Finance)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Civil and Environmental Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP 1021 OR COMP 1022P OR COMP 2011	3-4												
COMP	1021	Introduction to Computer Science	3		3									3	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM 1010 OR CHEM 1020													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
LANG	2030	Technical Communication I	3					3						3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus I	3												
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
MATH	2350	Applied Linear Algebra and Differential Equations	3			3								3	
		Note: PHYS 1112 OR PHYS 1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Required credits for Engineering Fundamental Courses	22-26											24	
Major Required Courses and Electives															
CIVL	1010	Academic Professional Development I	0			0	0							0	
CIVL	1100	Discovering Civil and Environmental Engineering	3		3									3	
CIVL	2010	Academic Professional Development II	0					0	0					0	
CIVL	2020	Industrial and BIM Training	0			0*	0							0	
CIVL	2110	Statics	3			3								3	
CIVL	2120	Mechanics of Materials	3				3							3	
CIVL	2160	Modeling Systems with Uncertainties	3			3								3	
CIVL	2170	Infrastructure Systems Engineering and Management	3				3							3	
CIVL	2410	Environmental Assessment and Management	3				3							3	
CIVL	2510	Fluid Mechanics	3				3							3	
CIVL	2810	Construction Materials	3					3						3	
CIVL	3010	Academic Professional Development III	0							0	0			0	
CIVL	3020	Internship Training	0								0^			0	
		Note: CIVL3210 OR CIVL3610	3												
CIVL	3210	Introduction to Construction Management	3						3					3	
CIVL	3610	Traffic and Transportation Engineering	3												
CIVL	3310	Structural Analysis	3					3						3	
CIVL	3320	Reinforced Concrete Design	3						3					3	
CIVL	3420	Water and Wastewater Engineering	3						3					3	
CIVL	3510	Hydrosystems Engineering	3					3						3	
CIVL	3730	Fundamentals of Geotechnics	3							3				3	
CIVL	3740	Geotechnical Analysis and Design	3								3			3	
		Note: CIVL 4910 OR CIVL 4920													
CIVL	4910	Civil and Environmental Engineering Final Year Project	6									3	3	6	
CIVL	4920	Civil and Environmental Engineering Final Year Thesis	6												
CIVL	4950	Civil Engineering Capstone Design Project	3									3		3	
		Note: CIVL4450 OR CIVL 5450 OR CIVL5460													
CIVL	4450	Carbon Footprint Analysis and Reduction	3								3			3	
CIVL	5450	Hazardous Waste Treatment and Site Remediation	3												
CIVL	5460	Landfill Engineering and Design	3												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4033	Technical Communication II for Civil and Environmental Engineering	3									3		3	
CIVL/SENG		CIVL (Environmental) Electives [at least 1 course should be selected from the "Restricted Electives".] Restricted electives: at least 1 course AND (CIVL: Any CIVL courses at 4000-level or above except those listed as "Restricted Electives" from the list OR SENG: Any 3000-level or above courses offered by the Engineering School or engineering departments other than CIVL)	6									3	3	6	
		Required credits for Major Requirements Courses and Electives	66											66	
BBA in Finance															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	FINA 2303 is a major pre-requisite
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1				1							1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by CIVL 2160
ISOM	2600	Introduction to Business Analytics	1						1					1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3		3									3	
MGMT	2130	Business Ethics and Social Responsibility	2								2			2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Substituted by ENGG 1010
LABU	2040	Business Case Analyses	3										3	3	
LABU	2060	Effective Communication in Business	3							3				3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
FINA	3001	Key Skills for Finance Professionals (A)	1					1						1	
FINA	3103	Intermediate Investments	3					3						3	
FINA	3203	Derivative Securities	3								3			3	
FINA	3303	Intermediate Corporate Finance	3							3				3	
FINA	3810	Bloomberg Market Concepts Certification	0					0						0	
		Note: (ACCT 3010 AND ACCT 3020) OR ACCT 3030	3-6												
ACCT	3010	Financial Accounting I	3							3				3	
ACCT	3020	Financial Accounting II	3												
ACCT	3030	Intermediate Financial Accounting for Non-Accounting Majors	3												
ISOM/COMP		Note: ISOM 3230 OR ISOM 3400 OR COMP 1022P	3												
ISOM	3230	Business Applications Programming	3		(3)									0	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
ISOM	3400	Python Programming for Business Analytics	3												
COMP	1022P	Introduction to Computing with Java	3												
FINA		FINA 3000-level or above Electives (Any 3 courses of the subject and level as specified)	9								3	3	3	9	
		Required credits for Major Required Courses and Electives	25-28											22	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6					3	6	6	3	6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	19	19	19	18	20	18	18		
				187##											

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

DAFINA (Via DDP PBA) **2020-21 Intake**

School:		School of Engineering and School of Business Management		Student's Pathway		<< Declaration of BEng major		<< Declaration of BBA major								
Program:		**Dual Degree Program (BEng in Decision Analytics and BBA in Finance)**														
Course Offering Dept (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Decision Analytics															
Major Requirements															
Engineering Fundamental Courses															
COMP	1021	Note: COMP 1021 OR COMP 1022P OR COMP 2011 Introduction to Computer Science	3-4 3		3									3	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM	1010	Note: CHEM1010 OR CHEM1020 OR PHYS1112 OR PHYS1312 General Chemistry IA	3												
CHEM	1020	General Chemistry IB	3	3										3	
PHYS	1112	General Physics I with Calculus	3												
PHYS	1312	Honors General Physics I	3												
LANG	2030	Technical Communication I	3				3							3	
MATH	1012	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA	4-7 4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3				3							3	
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	22-27											21	
Major Required Courses and Electives															
IEDA	1010	Academic and Professional Development I	0			0	0							0	
IEDA	1020	Academic and Professional Development II	0					0	0					0	
IEDA	1990	Note: IEDA1990 OR IEDA1991 Industrial Training	0			0	0	0	0	0	0	0	0	0	
IEDA	1991	Industrial Experience	0												
IEDA	2520	Probaility for Engineers	3			3								3	
IEDA	2540	Statistics for Engineers	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by ISOM2500
IEDA	3010	Prescriptive Analytics	3					3						3	
IEDA	3230	Engineering Economics and Accounting	3				3							3	
IEDA	3250	Stochastic Models	3						3					3	
IEDA	3300	Industrial Data Systems	3				3							3	
IEDA	3560	Predictive Analytics	3						3					3	
IEDA	4901	Note: IEDA4901 OR IEDA4920 Final Year Thesis	6									3	3	6	
IEDA	4920	Decision Analytics Final Year Project	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
ECON	2103	Note: ECON2103 OR ECON2113 Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
LANG	4032	Technical Communication II for Industrial Engineering and Decision Analytics	3						3					3	
IEDA		Area Electives (5 courses from the specified elective list, of which all 5 courses should be taken from the same area)	15						3	6	3	3		15	
		Required credits for Major Required Courses and Electives	48											45	
BBA in Finance															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON	2103	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics	3			(3)								0	
ECON	2113	Microeconomics	3												
ECON	2123	Note: ECON 2123 OR ECON 3123 Macroeconomics	3									3		3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	FINA 2303 is a major pre-requisite
ISOM	2010	Introduction to Information Systems	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	This course will also be used to substitute IEDA2540
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3								3			3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2					2						2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2							2				2	
SBMT	1111	Business Student Induction	0	-	-	-	-	-	-	-	-	-	-	0	Waived for DDP students
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3						3					3	
MATH	1003	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra	3-4 3												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4	(3)										0	
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
FINA	3001	Key Skills for Finance Professionals (A)	1					1						1	
FINA	3103	Intermediate Investments	3					3						3	
FINA	3203	Derivative Securities	3								3			3	
FINA	3303	Intermediate Corporate Finance	3							3				3	
FINA	3810	Bloomberg Market Concepts Certification	0					0						0	
ACCT	3010	Note: (ACCT 3010 AND ACCT 3020) OR ACCT 3030 Financial Accounting I	3-6 3							3				3	
ACCT	3020	Financial Accounting II	3												
ACCT	3030	Intermediate Financial Accounting for Non-Accounting Majors	3												
ISOM/COMP		Note: ISOM 3230 OR ISOM 3400 OR COMP 1022P	3												
ISOM	3230	Business Applications Programming	3		(3)									0	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
ISOM	3400	Python Programming for Business Analytics	3												
COMP	1022P	Introduction to Computing with Java	3												
FINA		FINA 3000-level or above Electives (Any 3 courses of the subject and level as specified)	9								3	3	3	9	
		Required credits for Major Required Courses and Electives	25-28											22	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	9	6			3		3	3		6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	18	17	18	17	15	12	12		
				163##											
						<< Declaration of BEng major		<< Declaration of BBA major							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substitued

To graduate, students should complete all requirements specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

EEFINA **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Electronic Engineering and BBA in Finance)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Electronic Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: ELEC2600 OR ELEC2600H) OR MATH2011 OR MATH2111 OR MATH2350 OR MATH 2351 (3 courses out of 6)	9-10												
ELEC	2600	Probability and Random Processes in Engineering	4												
ELEC	2600H	Honors Probability and Random Processes in Engineering	4	3		3		3						9	
MATH	2011	Introduction to Multivariable Calculus	3												
MATH	2111	Matrix Algebra and Applications	3												
MATH	2350	Applied Linear Algebra and Differential Equations	3												
MATH	2351	Introduction to Differential Equations	3												
		Note: COMP1021 OR COMP1022P													
COMP	1021	Introduction to Computer Science	3		3									3	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4			4								4	
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3						3					3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
		Note: PHYS1112 OR PHYS1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Note: PHYS1114 OR PHYS1314													
PHYS	1114	General Physics II	3		3									3	
PHYS	1314	Honors General Physics II	3												
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	32-37											31	
Major Required Courses and Electives															
ELEC	1100	Introduction to Electro-Robot Design	4			4								4	
ELEC	1200	A System View of Communications: from Signals to Packets	4				4							4	
		Note: ELEC2100 OR ELEC2100H													
ELEC	2100	Signals and Systems	4							4				4	
ELEC	2100H	Honors Signals and Systems	4												
ELEC	2350	Introduction to Computer Organization and Design	4							4				4	
ELEC	2400	Electronic Circuits	4						4					4	
ELEC	2910	Academic and Professional Development I	0			0	0							0	
ELEC	3910	Academic and Professional Development II	0					0	0					0	
		Note: (ELEC4900 AND ELEC2991) OR (ELEC4901 AND ELEC2991) OR ELEC4910 (Students taking the Research Option must take ELEC 4901)	6												
ELEC	4900	Final Year Design Project	6												
ELEC	4901	Final Year Thesis	6									3	3	6	
ELEC	2991	Industrial Experience (Electronic Engineering)	0												
ELEC	4910	Co-op Program	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4031	Technical Communication II for ECE & CPEG	3									3		3	
ELEC		ELEC 3000-level or 4000-level Electives (Any 2 courses ELEC 4000-levek courses. ELEC4940 cannot be used to count towards this elective requirement)	21				3		3		6	3	6	21	
		Required credits for Major Requirements Courses and Electives	50											50	
BBA in Finance															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON2103 OR ECON2113													
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
		Note: ECON2123 OR ECON3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	FINA 2303 is a major pre-requisite
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3					3						3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2					2						2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2						2					2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3					3						3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
FINA	3001	Key Skills for Finance Professionals (A)	1					1						1	
FINA	3103	Intermediate Investments	3					3						3	
FINA	3203	Derivative Securities	3								3			3	
FINA	3303	Intermediate Corporate Finance	3							3				3	
FINA	3810	Bloomberg Market Concepts Certification	0					0						0	
		Note: (ACCT 3010 AND ACCT 3020) OR ACCT 3030	3-6												
ACCT	3010	Financial Accounting I	3												
ACCT	3020	Financial Accounting II	3							3				3	
ACCT	3030	Intermediate Financial Accounting for Non-Accounting Majors	3												
ISOM/COMP		Note: ISOM 3230 OR ISOM 3400 OR COMP 1022P	3												
ISOM	3230	Business Applications Programming	3												
ISOM	3400	Python Programming for Business Analytics	3		(3)									0	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	1022P	Introduction to Computing with Java	3												
FINA		FINA 3000-level or above Electives (Any 3 courses of the subject and level as specified)	9									3	3	9	
		Required credits for Major Required Courses and Electives	25-28											22	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3				3	6	6	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	19	20	18	20	18	15	15		
				181##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

IEFINA **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Industrial Engineering and Engineering Management and BBA in Finance)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Industrial Engineering and Engineering Management															
Major Requirements															
Engineering Fundamental Courses															
COMP COMP COMP	1021 1022P 2011	Note: COMP1021 OR COMP1022P OR COMP2011 Introduction to Computer Science Introduction to Computing with Java Programming with C++	3-4 3 3 4	3										3	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM CHEM PHYS PHYS	1010 1020 1112 1312	Note: CHEM1010 OR CHEM1020 OR PHYS1112 OR PHYS1312 General Chemistry IA General Chemistry IB General Physics I with Calculus Honors General Physics I	3 3 3 3	3										3	
LANG	2030	Technical Communication I	3					3						3	
MATH MATH MATH MATH MATH MATH	1012 1013 1014 1020 1023 1024	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA Calculus IB Calculus II Accelerated Calculus Honors Calculus I Honors Calculus II	4-7 4 3 3 4 3 3	3	3									6	
MATH	2011	Introduction to Multivariable Calculus	3				3							3	
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	22-27											21	
Major Required Courses and Electives															
IEDA	1010	Academic and Professional Development I	0			0	0							0	
IEDA	1020	Academic and Professional Development II	0					0	0					0	
IEDA IEDA	1990 1991	Note: IEDA1990 OR IEDA1991 Industrial Training Industrial Experience	0 0			0*	0^							0	
IEDA	2520	Probability for Engineers	3			3								3	
IEDA	2540	Statistics for Engineers	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by ISOM2500
IEDA	3010	Presciptive Analytics	3					3						3	
IEDA	3230	Engineering Economics and Accounting	3					3						3	
IEDA	3250	Stochastic Models	3						3					3	
IEDA	3300	Industrial Data Systems	3				3							3	
IEDA	4100	Integrated Production Systems	3								3			3	This course will also be used to substitute ISOM 2700
IEDA	4130	System Simulation	3								3			3	
IEDA IEDA	4901 4960	Note: IEDA4901 OR IEDA4990 Final Year Thesis Industrial Engineering and Engineering Management Final Year Project	6 6									3	3	6	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0	0	0	0	0	0	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	3 3			3								3	
LANG	4032	Technical Communication II for Industrial Engineering and Decision Analytics	3									3		3	
IEDA		Industrial Engineering Electives (Courses from the specified 21 elective list, of which at least 15 credits should be taken from 1 of the 2 areas and at least 6 credits outside that area.)	21			6	3			3		3	6	21	
		Required credits for Major Requirements Courses and Electives	57											54	
BBA in Finance															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	3 3			(3)								0	
ECON ECON	2123 3123	Note: ECON 2123 OR ECON 3123 Macroeconomics Macroeconomic Theory I	3 3					3						3	
FINA	2303	Financial Management	3				3							3	FINA 2303 is a major pre-requisite
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	This course will also be used to substitute IEDA2540
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by IEDA 4100
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2						2					2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2									2		2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3						3					3	
LABU	2060	Effective Communication in Business	3							3				3	
MATH MATH MATH MATH MATH MATH	1003 1012 1013 1020 1023	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra Calculus IA Calculus IB Accelerated Calculus Honors Calculus I	3-4 3 4 3 4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
		Required credits for School Requirements	43-44											33	
Major Requirements															
Major Required Courses and Electives															
FINA	3001	Key Skills for Finance Professionals (A)	1					1						1	
FINA	3103	Intermediate Investments	3					3						3	
FINA	3203	Derivative Securities	3								3			3	
FINA	3303	Intermediate Corporate Finance	3							3				3	
FINA	3810	Bloomberg Market Concepts Certification	0					0						0	
ACCT ACCT ACCT	3010 3020 3030	Note: (ACCT 3010 AND ACCT 3020) OR ACCT 3030 Financial Accounting I Financial Accounting II Intermediate Financial Accounting for Non-Accounting Majors	3-6 3 3 3							3				3	
ISOM/COMP ISOM ISOM COMP	3230 3400 1022P	Note: ISOM 3230 OR ISOM 3400 OR COMP 1022P Business Applications Programming Python Programming for Business Analytics Introduction to Computing with Java	3 3 3 3	(3)										0	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
FINA		FINA 3000-level or above Electives (Any 3 courses of the subject and level as specified)	9								3	3	3	9	
		Required credits for Major Required Courses and Electives	25-28											22	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	6				6	6	6			30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	18	18	17	18	18	14	12		
				169##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

MEFINA **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Mechanical Engineering and BBA in Finance)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Mechanical Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP1021 OR COMP1022P OR COMP2011	3-4												
COMP	1021	Introduction to Computer Science	3	3										3	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3				3							3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3					3						3	
		Note: MATH2111 OR MATH2350 OR MATH2351													
MATH	2111	Matrix Algebra and Applications	3							3				3	
MATH	2350	Applied Linear Algebra and Differential Equations	3												
MATH	2351	Introduction to Differential Equations	3												
		Note: PHYS1112 OR PHYS1312													
PHYS	1112	General Physics I with Calculus	3		3									3	
PHYS	1312	Honors General Physics I	3												
CHEM/LIFS/ PHYS		Science 1000-level course (Any 1 course of the subject and level as specified)	3		(3)									0	
		Required credits for Engineering Fundamental Courses	22-26											21	
Major Required Courses and Electives															
MECH	1990	Industrial Training	0			0*	0^							0	
MECH	2020	Statics and Dynamics	3			3								3	
MECH	2040	Solid Mechanics I	3						3					3	
MECH	2210	Fluid Mechanics	3						3					3	
MECH	2310	Thermodynamics	3			3								3	
MECH	2410	Engineering Materials I	3				3							3	
MECH	2520	Design and Manufacturing I	3				3							3	
MECH	2907	Mechatronic Design and Prototyping	3						3					3	
MECH	3030	Mechanisms of Machinery	3								3			3	
		Note: MECH3300 OR MECH3420 OR MECH3520	3												
MECH	3300	Energy Conversion	3							3				3	
MECH	3420	Engineering Materials II	3												
MECH	3520	Design and Manufacturing II	3												
MECH	3310	Heat Transfer	3								3			3	
MECH	3610	Control Principles	3					3						3	
MECH	3630	Electrical Technology	3						3					3	
MECH	3830	Laboratory	3								3			3	
MECH	4900	Final Year Design Project	6									3	3	6	
ELEC	2420	Basic Electronics	3			3								3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4034	Technical Communication II for Mechanical and Areospace Engineering	3								3			3	
		Required credits for Major Requirements Courses and Electives	51											51	
BBA in Finance															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113	3												
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123	3												
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	FINA 2303 is a major pre-requisite
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2									2		2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3							3				3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
FINA	3001	Key Skills for Finance Professionals (A)	1					1						1	
FINA	3103	Intermediate Investments	3					3						3	
FINA	3203	Derivative Securities	3								3			3	
FINA	3303	Intermediate Corporate Finance	3							3				3	
FINA	3810	Bloomberg Market Concepts Certification	0					0						0	
		Note: (ACCT 3010 AND ACCT 3020) OR ACCT 3030	3-6												
ACCT	3010	Financial Accounting I	3							3				3	
ACCT	3020	Financial Accounting II	3												
ACCT	3030	Intermediate Financial Accounting for Non-Accounting Majors	3												
ISOM/COMP		Note: ISOM 3230 OR ISOM 3400 OR COMP 1022P	3												
ISOM	3230	Business Applications Programming	3												
ISOM	3400	Python Programming for Business Analytics	3	(3)										0	DDP students should take COMP 1022P to satisfy the requirements of both BEng and BBA degrees
COMP	1022P	Introduction to Computing with Java	3												
FINA		FINA 3000-level or above Electives (Any 3 courses of the subject and level as specified)	9								3	3	3	9	
		Required credits for Major Required Courses and Electives	25-28											22	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	9	6					3		6	6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	18	18	18	18	18	14	14		
				172##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

BEECON **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Bioengineering and BBA in Economics)**														
Course Offering Dept (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Bioengineering															
Major Requirements															
Engineering Fundamental Courses															
COMP COMP COMP COMP	1021 1022P 1029P 2011	Note: [COMP 1021] OR [(COMP 1022P OR COMP 2011) AND COMP1029P] Introduction to Computer Science Introduction to Computing with Java Python Programming Bridging Course Programming with C++	3-5 3 3 1 4		3									3	The course will also be used to substitute ISOM 2010
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM CHEM	1010 1020	Note: CHEM1010 OR CHEM 1020 General Chemistry IA General Chemistry IB	3 3	3										3	
CHEM	1050	Laboratory for General Chemistry I	1	1										1	
LANG	2030	Technical Communication I	3				3							3	
LIFS	1901	General Biology I	3	3										3	
MATH MATH MATH MATH MATH MATH	1012 1013 1014 1020 1023 1024	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA Calculus IB Calculus II Accelerated Calculus Honors Calculus I Honors Calculus II	4-7 4 3 3 4 3 3	3	3									6	
PHYS PHYS	1112 1312	Note: PHYS 1112 OR PHYS 1312 General Physics I with Calculus Honors General Physics I	3 3	3										3	
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	23-29											22	
Major Required Courses and Electives															
BIEN CENG	1010 1000	Note: BIEN 1010 OR CENG 1000 Introduction to Biomedical Engineering Introduction to Chemical and Biiological Engineering	3 3		3									3	
BIEN	2310	Modeling for Chemical and Biological Engineering	3			3								3	
BIEN	2410	Cellular and Systems Physiology for Engineers	3						3					3	
BIEN	2610	Chemical Biology for Engineers	3			3								3	
BIEN	2990	Academic and Professional Development I	1			1								1	
BIEN	3240	Transport Phenomena in Biological Systems	3									3		3	
BIEN	3320	Data Science for Biology and Medicine	3				3							3	
BIEN	3410	Introduction to Bioinstrumentation and Bioimaging	3							3				3	
BIEN	3910	Bioengineering Laboratory	4							4				4	
BIEN BIEN BIEN	4920 4930 4940	Note: BIEN 4920 OR BIEN 4930 OR BIEN 4940 Bioengineering Capstone Design Bioengineering Thesis Research Bioengineering Industrial Project	6 6 6									3	3	6	
BIEN	4990	Academic and Professional Development II	1									1		1	
CENG	2210	Chemical and Biological Engineering Thermodynamics	3				3							3	
CENG	3230	Chemical and Biological Reaction Engineering	3							3				3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LIFS MATH	3150 2411	Note: LIFS 3150 OR MATH 2411 Biostatistics Applied Statistics	3-4 3 4			3								3	
LANG	4035	Technical Communication II for Chemical and Biological Engineering	3									3		3	
SSCI/SENG		Bioengineering Electives (5 courses from the specified elective list, of which at least 9 credits should be taken from a single specialty area (Area 1 or Area 2). Out of the 15 credits taken, at least 9 credits should be at 4000-level)	15								6	3	6	15	
		Required credits for Major Required Courses and Electives	60-61											60	
BBA in Economics															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	3 3		3									3	ECON 2103/2113/2123 is a major prerequisite
ECON ECON	2123 3123	Note: ECON 2123 OR ECON 3123 Macroeconomics Macroeconomic Theory I	3 3			3								3	
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/COMP2011
ISOM	2020	Coding for Business	1	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/1029P/2011
ISOM	2500	Business Statistics	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by LIFS 3150/MATH 2411
ISOM	2600	Introduction to Business Analytics	1	-	-	-	-	-	-	-	-	-	-	0	Substituted by BIEN3320
ISOM	2700	Operations Management	3					3						3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2				2							2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2					2						2	
SBMT	1111	Business Student Induction	0	-	-	-	-	-	-	-	-	-	-	0	Substituted by ENGG 1010
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3						3					3	
MATH MATH MATH MATH MATH MATH	1003 1012 1013 1020 1023	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra Calculus IA Calculus IB Accelerated Calculus Honors Calculus I	3-4 3 4 3 4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
		Required credits for School Requirements	43-44											34	
Major Requirements															
Major Required Courses and Electives															
ECON	3014	Managerial Microeconomics	4					4						4	
ECON	3024	Managerial Macroeconomics	4						4					4	
ECON	3334	Introduction to Econometrics	4							4				4	
ECON	4670	Economics Research and Communication	0									0		0	
ECON		ECON 4000-level Electives (Any 3 courses of the subject and level as specified)	11								4	4	3	11	
		Required credits for Major Required Courses and Electives	23											23	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	3		3		6	6	3	6		3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				19	18	19	20	18	19	17	16	17	15		
				178##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

--- denotes the course/requirement is either waived or substitued

To graduate, students should complete all requirements specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

BTECON **2020-21 Intake**

(Via DDP PBA)

School:		School of Science and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BSc in Biotechnology and BBA in General Business Management)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BSc in Biotechnology															
School Requirements															
SCIE	1000	Science School Induction	0	0	0									0	
		Note: COMP1021 OR COMP1022P OR COMP2011	3-4												
COMP	1021	Introduction to Computer Science	3			3								3	This course will be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
LANG	2010	English for Science I	3					3						3	
SSCI		~~Science Foundation courses [8 courses from the specified elective list. Students should~~ take (i) 7 foundation lecture courses, including at least 1 lecture course, but no more than 3 lecture courses, from each discipline: CHEM, LIFS, MATH and PHYS; and (ii) 1 laboratory course.]	22-25												
CHEM	1004	Chemistry in Everyday Life	3												
CHEM	1010	General Chemistry IA	3												
CHEM	1020	General Chemistry IB	3												
CHEM	1030	General Chemistry II	3												
CHEM	1050	Laboratory for General Chemistry I	1												
CHEM	1055	Laboratory for General Chemistry II	1												
LIFS	1030	Environmental Science	3												
LIFS	1901@	General Biology I@	3												
LIFS	1902@	General Biology II@	3												LIFS1901 & LIFS1902 are Major Pre-requisite
LIFS	1903	Laboratory for General Biology I	1												
LIFS	1904	Laboratory for General Biology II	1												
LIFS	1930	Nature of Life Sciences	3												Students are recommended to take CHEM1010, CHEM1030, LIFS1903 and MATH1013 to satisfy the requirements of both SSCI School requirements and Major requirements
LIFS	2210	Biochemistry I	3	10	3	6	3							22	
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2023	Multivariable Calculus	4												
MATH	2121	Linear Algebra	4												
MATH	2131	Honors in Linear and Abstract Algebra I	4												
PHY	1001	Physics and the Modern Society	3												
PHY	1111	General Physics I	3												
PHY	1112	General Physics I with Calculus	3												
PHY	1113	Laboratory for General Physics I	1												
PHY	1114	General Physics II	3												
PHY	1115	Laboratory for General Physics II	1												
PHY	1212	~~Honors General Physics I~~	3												
		Required credits for School / Major Pre-requisite Requirements	25-29											28	
Major Requirements															
Major Required Courses and Electives															
LIFS	1903	Laboratory for General Biology I	1	(1)										0	
LIFS	1904	Laboratory for General Biology II	1		1									1	
LIFS	2040	Cell Biology	3				3							3	
LIFS	2070	Introduction to Biotechnology	3			3								3	
LIFS	2080	Plant Biology	3				3							3	
LIFS	2210	Biochemistry I	3			(3)								0	
LIFS	3060	Microbiology	3						3					3	
LIFS	3110	Biotechnological Application of Recombinant DNA Techniques	3					3						3	
LIFS	3140	General Genetics	4							4				4	
LIFS	4150	Plant Biotechnology	3									3		3	
LIFS	4200	Concepts and Issues in Contemporary Biotechnology	3							3				3	
		Note: LIFS4963 OR (LIFS4973 AND LIFS4983) OR (SCIE4500 AND LIFS4983) [Students following IRE Track can only use (SCIE4500 AND LIFS4983) to fulfill the requirement.]	3-7												
LIFS	4963	Biotechnology Capstone Project	3									[3]	3	3	
LIFS	4973	Biotechnology Project Research I	3												
LIFS	4983	Biotechnology Project Research II	4												
SCIE	4500	IRE Research Project II	3												
		Note: CHEM1010 OR CHEM1020													
CHEM	1010	General Chemistry IA	3	(3)										0	
CHEM	1020	General Chemistry IB	3												
CHEM	1030	General Chemistry II	3		(3)									0	
CHEM	1050	Laboratory for General Chemistry I	1	1										1	
CHEM	1055	Laboratory for General Chemistry II	1		1									1	
		Note: CHEM 2110 OR CHEM 2311													
CHEM	2110	Organic Chemistry I	3					3						3	
CHEM	2311	Analytical Chemistry	3												
		Note: CHEM2155 OR CHEM2355													
CHEM	2155	Fundamental Organic Chemistry Laboratory	1						1					1	
CHEM	2355	Fundamental Analytical Chemistry Laboratory	1												
CENG	1600	Biotechnology and Its Business Opportunities	3							3				3	
LANG	3024	Science Communication in English (Life Science)	3										3	3	
LIFS/BIPH/BTEC/BIEN/ CENG		Biotechnology Electives (Courses from the specified elective list; Students following IRE Track are required to take a minimum of 15 credits; while others a minimum of 18 credits. Courses taken as Major/Track Required Courses may not be counted towards the elective requirement.)	15-18						3		3	6	3	15	
		Required credits for Major Required Courses and Electives	62-70											56	
BBA in Economics															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3		3									3	ECON 2103/2113/2123 is a major prerequisite
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3			3								3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/1022Q/2011
ISOM	2020	Coding for Business	1				1							1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1							1				1	
ISOM	2700	Operations Management	3					3						3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2		2									2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3								3			3	
LABU	2060	Effective Communication in Business	3									3		3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1013 OR MATH 1023 to satisfy the requirements of both BSc and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
ECON	3014	Managerial Microeconomics	4					4						4	
ECON	3024	Managerial Macroeconomics	4						4					4	
ECON	3334	Introduction to Econometrics	4							4				4	
ECON	4670	Economics Research and Communication	0									0		0	
ECON		ECON 4000-level Electives (Any 3 courses of the subject and level as specified)	11								4	4	3	11	
		Required credits for Major Required Courses and Electives	23											23	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	3				3	6	3	9	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				17	19	18	19	19	20	18	19	19	17		
				185##											

<< Declaration of BEng major

<< Declaration of BBA major

Notes:

@ Course that students need to complete before enrolling into respective major/programs.

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CEECON **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Chemical Engineering and BBA in Economics)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Chemical Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP 1021 OR COMP 1022P OR COMP 2011	3-4												
COMP	1021	Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM1010 OR CHEM1020													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
LANG	2030	Technical Communication I	3			3								3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
		Note: PHYS 1112 OR PHYS 1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	General Physics I	3												
		Required credits for Engineering Fundamental Courses	19-23											21	
Major Required Courses and Electives															
		Note: CENG1000 OR CENG1500													
CENG	1000	Introduction to Chemical and Biological Engineering	3	3										3	
CENG	1500	A First Course on Materials Science and Applications	3												
		Note: CENG1600 OR CENG1700 OR BIEN1010													
CENG	1600	Biotechnology and Its Business Opportunities	3		3									3	
CENG	1700	Introduction to Environmental Engineering	3												
BIEN	1010	Introduction to Biomedical Engineering	3												
CENG	1010	Academic and Professional Development I	0			0								0	
CENG	1980	Industrial Training	0				0	0	0	0				0	
CENG	2110	Process and Product Design Principles	3			3								3	
CENG	2210	Chemical and Biological Engineering Thermodynamics	3				3							3	
CENG	2220	Process Fluid Mechanics	3				3							3	
CENG	2310	Modeling for Chemical and Biological Engineering	3			3								3	
CENG	3110	Process Dynamics and Control	3						3					3	
CENG	3150	Integrated Chemical Process & Product Design	5						5					5	
CENG	3210	Separation Processes	3					3						3	
CENG	3220	Heat and Mass Transfer	3					3						3	
CENG	3230	Chemical and Biological Reaction Engineering	3					3						3	
CENG	3950	Chemical and Environment Engineering Laboratory	4								4			4	
CENG	4020	Academic and Professional Development II	0									0		0	
		Note: CENG4920 OR CENG4930 OR CENG4940													
CENG	4920	Chemical Engineering Capstone Design	6												
CENG	4930	Chemical Engineering Thesis Research	6									3	3	6	
CENG	4940	Chemical Engineering Industrial Project	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
CHEM	1050	Laboratory for General Chemistry I	1		1									1	
CHEM	2111	Fundamentals of Organic Chemistry	3				3							3	
CHEM	2155	Fundamental Organic Chemistry Laboratory	1				1							1	
LANG	4035	Technical Communication II for Chemical and Biological Engineering	3									3		3	
		Note: BIEN2410 OR BIEN2610 OR LIFS1901													
BIEN	2410	Cellular and Systems Physiology for Engineers	3				3							3	
BIEN	2610	Chemical Biology for Engineers	3												
LIFS	1901	General Biology I	3												
SENG/SSCI/ENVR		CENG Elective (12 credits from specified elective list)	12					3	3	3	3			12	
		Required credits for Major Requirements Courses and Electives	68											68	
BBA in Economics															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3							3				3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3		3									3	
ECON	2113	Microeconomics	3												ECON 2103/2113/2123 is a major prerequisite
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3			3								3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/COMP2011
ISOM	2020	Coding for Business	1			1								1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1			1								1	
ISOM	2700	Operations Management	3							3				3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2						2					2	
MGMT	2110	Organizational Behavior	3						3					3	
MGMT	2130	Business Ethics and Social Responsibility	2									2		2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3							3				3	
LABU	2060	Effective Communication in Business	3										3	3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	45-46											39	
Major Requirements															
Major Required Courses and Electives															
ECON	3014	Managerial Microeconomics	4					4						4	
ECON	3024	Managerial Macroeconomics	4						4					4	
ECON	3334	Introduction to Econometrics	4							4				4	
ECON	4670	Economics Research and Communication	0									0		0	
ECON		ECON 4000-level Electives (Any 3 courses of the subject and level as specified)	11								4	4	3	11	
		Required credits for Major Required Courses and Electives	23											23	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30					3		3	9	6	9	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	19	20	19	19	20	19	20	18	18		
				190##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CIECON **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Civil Engineering and BBA in Economics)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Civil Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP 1021 OR COMP 1022P OR COMP 2011	3-4												
COMP	1021	Introduction to Computer Science	3		3									3	This course will be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM 1010 OR CHEM 1020													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
LANG	2030	Technical Communication I	3					3						3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
MATH	2350	Applied Linear Algebra and Differential Equations	3			3								3	
		Note: PHYS 1112 OR PHYS 1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Required credits for Engineering Fundamental Courses	22-26											24	
Major Required Courses and Electives															
CIVL	1010	Academic Professional Development I	0			0	0							0	
CIVL	1100	Discovering Civil and Environmental Engineering	3		3									3	
CIVL	2010	Academic Professional Development II	0					0	0					0	
CIVL	2020	Industrial and BIM Training	0			0*	0							0	
CIVL	2110	Statics	3			3								3	
CIVL	2120	Mechanics of Materials	3				3							3	
CIVL	2160	Modeling Systems with Uncertainties	3			3								3	This course will also be used to substitute ISOM 2500
CIVL	2170	Infrastructure Systems Engineering and Management	3				3							3	
CIVL	2410	Environmental Assessment and Management	3				3							3	
CIVL	2510	Fluid Mechanics	3				3							3	
CIVL	2810	Construction Materials	3					3						3	
CIVL	3010	Academic Professional Development III	0							0	0			0	
CIVL	3020	Internship Training	0								0^			0	
CIVL	3210	Introduction to Construction Management	3						3					3	
CIVL	3310	Structural Analysis	3					3						3	
CIVL	3320	Reinforced Concrete Design	3						3					3	
CIVL	3510	Hydrosystems Engineering	3					3						3	
CIVL	3610	Traffic and Transportation Engineering	3						3					3	
CIVL	3730	Fundamentals of Geotechnics	3							3				3	
CIVL	3740	Geotechnical Analysis and Design	3								3			3	
		Note: CIVL 4910 OR CIVL 4920													
CIVL	4910	Civil and Environmental Engineering Final Year Project	6									3	3	6	
CIVL	4920	Civil and Environmental Engineering Final Year Thesis	6												
CIVL	4950	Civil Engineering Capstone Design Project	3									3		3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4033	Technical Communication II for Civil and Environmental Engineering	3									3		3	
		CIVL Electives (3 courses from the specified elective list)													
CIVL/SENG		CIVL: Any CIVL courses at 4000-level or above except CIVL 4230	9								3	3	3	9	
		SENG: Any 3000-level or above courses offered by the Engineering School or engineering departments other than CIVL													
		Required credits for Major Requirements Courses and Electives	66											66	
BBA in Economics															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3		3									3	
ECON	2113	Microeconomics	3												ECON 2103/2113/2123 is a major prerequisite
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3			3								3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by CIVL 2160
ISOM	2600	Introduction to Business Analytics	1						1					1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3	3										3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3										3	3	
LABU	2060	Effective Communication in Business	3							3				3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
ECON	3014	Managerial Microeconomics	4					4						4	
ECON	3024	Managerial Macroeconomics	4						4					4	
ECON	3334	Introduction to Econometrics	4							4				4	
ECON	4670	Economics Research and Communication	0									0		0	
ECON		ECON 4000-level Electives (Any 3 courses of the subject and level as specified)	11								4	4	3	11	
		Required credits for Major Required Courses and Electives	23											23	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	3				3		9	9	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	18	20	20	19	19	19	17		
				188##											
						<< Declaration of BEng major		*<< Declaration of BBA major*							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

COECON **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Computer Science and BBA in Economics)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
						<< Declaration of BEng major		*<< Declaration of BBA major*							
BEng in Computer Science															
Major Requirements															
Engineering Fundamental Courses															
COMP COMP	1021 1022P	Note: COMP1021 OR COMP1022P Introduction to Computer Science Introduction to Computing with Java	3 3	3										3	This course will also be used to substitute ISOM 2010
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM CHEM CHEM LIFS PHYS PHYS PHYS	1004 1010 1020 1901 1001 1112 1312	Note: CHEM1004 OR CHEM1010 OR CHEM1020 OR LIFS1901 OR PHYS1001 OR PHYS1112 OR PHYS1312 Chemistry in Everyday Life General Chemistry IA General Chemistry IB General Biology I Physics and the Modern Society General Physics I with Calculus Honors General Physics I	3 3 3 3 3 3 3	3										3	
LANG	2030	Technical Communication I	3					3						3	
MATH MATH MATH MATH MATH MATH	1012 1013 1014 1020 1023 1024	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA Calculus IB Calculus II Accelerated Calculus Honors Calculus I Honors Calculus II	4-7 4 3 3 4 3 3	3	3									6	
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (COMP students may also use COMP1022P or COMP1022Q to fulfill this requirement)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	19-23											18	
Major Required Courses and Electives															
COMP COMP COMP	2011 2012 2012H	Note: (COMP2011 AND COMP2012) OR COMP2012H Programming with C++ Object-Oriented Programming and Data Structures Honors Object-Oriented Programming and Data Structures	5-8 4 4 5			4	4							8	
COMP	2611	Computer Organization	4						4					4	
COMP COMP	2711 2711H	Note: COMP2711 OR COMP2711H Discrete Mathematical Tools for Computer Science Honors Discrete Mathematical Tools for Computer Science	4 4			4								4	
COMP COMP	3111 3111H	Note: COMP3111 OR COMP3111H Software Engineering Honors Software Engineering	4 4					4						4	
COMP	3511	Operating Systems	3							3				3	
COMP COMP	3711 3711H	Note: COMP3711 OR COMP3711H Design and Analysis of Algorithms Honors Design and Analysis of Algorithms	3-4 3 4					3						3	
COMP	4900	Note: Students are required to take COMP4900 for every regular term in which they are in residency at HKUST with major in COMP Academic and Professional Development	0			0	0	0	0	0	0	0	0	0	
COMP COMP COMP COMP COMP	1991 4981 4981H 4910	Note: (COMP4981 OR COMP4981H) AND COMP1991 OR COMP4910 Industrial Experience Final Year Project Final Year Thesis Co-op FYP Program	6 0 6 6 6									3	3	6	
ELEC IEDA IEDA MATH MATH MATH	2600 2520 2540 2411 2421 2431	Note: ELEC2600 OR IELM2510 OR MATH2411 OR MATH2421 OR MATH2431 Probability and Random Processes in Engineering Probability for Engineers Statistics for Engineers Applied Statistics Probability Honors Probability	3-4 4 3 3 4 4 4			4								4	Students should take MATH 2411 which will also be used to substitute ISOM 2500.
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4030	Technical Communication II for CSE & CPEG	3									3		3	
COMP		COMP Electives (5 courses from the specified elective list, of which at least 3 courses should be taken from 1 area and at least 2 courses outside that area.)	15							3	6	3	3	15	
COMP		COMP Elective (Any 1 course offered under COMP)	3										3	3	
		Required credits for Major Requirements Courses and Electives	53-58											57	
BBA in Economics															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	3 3		3									3	ECON 2103/2113/2123 is a major prerequisite
ECON ECON	2123 3123	Note: ECON 2123 OR ECON 3123 Macroeconomics Macroeconomic Theory I	3 3			3								3	
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by MATH 2411
ISOM	2600	Introduction to Business Analytics	1				1							1	
ISOM	2700	Operations Management	3					3						3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2							2				2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3						3					3	
MATH MATH MATH MATH MATH	1003 1012 1013 1020 1023	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra Calculus IA Calculus IB Accelerated Calculus Honors Calculus I	3-4 3 4 3 4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
ECON	3014	Managerial Microeconomics	4					4						4	
ECON	3024	Managerial Macroeconomics	4						4					4	
ECON	3334	Introduction to Econometrics	4							4				4	
ECON	4670	Economics Research and Communication	0									0		0	
ECON		ECON 4000-level Electives (Any 3 courses of the subject and level as specified)	11								4	4	3	11	
		Required credits for Major Required Courses and Electives	23											23	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3		3		6	6	6			30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	20	18	20	18	16	13	14		
				173##											
						<< Declaration of BEng major		*<< Declaration of BBA major*							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CPECON **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Computer Engineering and BBA in Economics)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Computer Engineering															
Major Requirements															
Engineering Fundamental Courses															
COMP	1021	Note: COMP1021 OR COMP1022P Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3				3							3	
MATH	1012	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA	4-7 4	3	3									6	
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3					3						3	
MATH	2111	Matrix Algebra and Applications	3					3						3	
PHYS	1112	Note: PHYS1112 OR PHYS1312 General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
PHYS	1114	Note: PHYS1114 OR PHYS1314 General Physics II	3						3					3	
PHYS	1314	Honors General Physics II	3												
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	25-29											24	
Major Required Courses and Electives															
CPEG	2930	Academic and Professional Development I	0			0	0							0	
CPEG	3930	Academic and Professional Development II	0					0	0					0	
COMP	2011	Note: (COMP2011 AND COMP2012) OR COMP2012H Programming with C++	5-8 4			4		4						8	
COMP	2012	Object-Oriented Programming and Data Structures	4												
COMP	2012H	Honors Object-Oriented Programming and Data Structures	5												
COMP	2611	Note: COMP2611 OR ELEC2350 Computer Organization	4 4				4							4	
ELEC	2350	Introduction to Computer Organization and Design	4												
COMP	2711	Note: COMP2711 OR COMP2711H OR ELEC 2600 Discrete Mathematical Tools for Computer Science	4 4							4				4	
COMP	2711H	Honors Discrete Mathematical Tools for Computer Science	4												
ELEC	2600	Probability and Random Processes in Engineering	4												
COMP	3511	Operating Systems	3								3			3	
COMP	4521	Note: COMP4521 OR COMP4611 OR ELEC 4310 Mobile Application Develoepment	3-4 3											3	
COMP	4611	Design and Analysis of Computer Architectures	3									3			
ELEC	4310	Embedded System Design	4												
ELEC	4320	FPGA-based Design: From Theory to Practice	3												
ELEC	4330	Mobile Embedded Systems: Hardware Platform, Software Development, and Applicatio	3												
CPEG	1971	Note: [(CPEG4901 OR CPEG4902) AND CPEG1971] OR [(CPEG4911 OR CPEG4912) AND CPEG1971] OR CPEG4910 Industrial Experience	6 0											6	
CPEG	4901	Computer Engineering Final Year Project in COMP	6									3	3		
CPEG	4902	Computer Engineering Final Year Thesis in COMP	6												
CPEG	4911	Computer Engineering Final Year Project in ELEC	6												
CPEG	4912	Computer Engineering Final Year Thesis in ELEC	6												
CPEG	4910	Co-op Program	6												
ELEC	1100	Introduction to Electro-Robot Design	4			4								4	
ELEC	1200	Note: ELEC1200 OR ELEC2100 OR ELEC2400 (2 courses out of 3) A System View of Communications: from Signals to Packets	8 4				4		4					8	
ELEC	2100	Signals and Systems	4												
ELEC	2400	Electronic Circuits	4												
ELEC	3300	Introduction to Embedded Systems	4								4			4	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4030	Note: LANG4030 OR LANG4031 Technical Communication II for CSE & CPEG	3									3		3	
LANG	4031	Technical Communication II for ECE & CPEG	3												
COMP/ELEC		Area Courses (At least 4 courses from the specified elective list , of which at least 2 courses should be taken from one single area and at least 2 courses outside that area. Courses taken as Major Required Courses may not be counted towards the elective requirement.)	15			3					4	4	4	15	
		Required credits for Major Requirements Courses and Electives	59-63											62	
BBA in Economics															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON	2103	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics	3		3									3	ECON 2103/2113/2123 is a major prerequisite
ECON	2113	Microeconomics	3												
ECON	2123	Note: ECON 2123 OR ECON 3123 Macroeconomics	3			3								3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2							2				2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2								2			2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3								3			3	
LABU	2060	Effective Communication in Business	3						3					3	
MATH	1003	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra	3-4 3												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4	(3)										0	
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
ECON	3014	Managerial Microeconomics	4					4						4	
ECON	3024	Managerial Macroeconomics	4						4					4	
ECON	3334	Introduction to Econometrics	4							4				4	
ECON	4670	Economics Research and Communication	0									0		0	
ECON		ECON 4000-level Electives (Any 3 courses of the subject and level as specified)	11								4	4	3	11	
		Required credits for Major Required Courses and Electives	23											23	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3	3		3		9			6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	20	19	20	19	20	17	16		
				187##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CVECON **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Civil and Environmental Engineering and BBA in Economics)**													**Remarks**
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	
						<< Declaration of BEng major		*<< Declaration of BBA major*							
BEng in Civil and Environmental Engineering															
Major Requirements															
Engineering Fundamental Courses															
COMP COMP COMP	1021 1022P 2011	Note: COMP 1021 OR COMP 1022P OR COMP 2011 Introduction to Computer Science Introduction to Computing with Java Programming with C++	3-4 3 3 4		3									3	This course will also be used to substitute ISOM 2010
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM CHEM	1010 1020	Note: CHEM 1010 OR CHEM 1020 General Chemistry IA General Chemistry IB	3 3	3										3	
LANG	2030	Technical Communication I	3					3						3	
MATH MATH MATH MATH MATH MATH	1012 1013 1014 1020 1023 1024	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA Calculus IB Calculus II Accelerated Calculus Honors Calculus I Honors Calculus I	4-7 4 3 3 4 3 3	3	3									6	
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
MATH	2350	Applied Linear Algebra and Differential Equations	3			3								3	
PHYS PHYS	1112 1312	Note: PHYS 1112 OR PHYS 1312 General Physics I with Calculus Honors General Physics I	3 3	3										3	
		Required credits for Engineering Fundamental Courses	22-26											24	
Major Required Courses and Electives															
CIVL	1010	Academic Professional Development I	0			0	0							0	
CIVL	1100	Discovering Civil and Environmental Engineering	3		3									3	
CIVL	2010	Academic Professional Development II	0					0	0					0	
CIVL	2020	Industrial and BIM Training	0			0*	0							0	
CIVL	2110	Statics	3			3								3	
CIVL	2120	Mechanics of Materials	3				3							3	
CIVL	2160	Modeling Systems with Uncertainties	3			3								3	
CIVL	2170	Infrastructure Systems Engineering and Management	3				3							3	
CIVL	2410	Environmental Assessment and Management	3				3							3	
CIVL	2510	Fluid Mechanics	3				3							3	
CIVL	2810	Construction Materials	3					3						3	
CIVL	3010	Academic Professional Development III	0							0	0			0	
CIVL	3020	Internship Training	0								0^			0	
CIVL CIVL	3210 3610	Note: CIVL3210 OR CIVL3610 Introduction to Construction Management Traffic and Transportation Engineering	3 3						3					3	
CIVL	3310	Structural Analysis	3					3						3	
CIVL	3320	Reinforced Concrete Design	3						3					3	
CIVL	3420	Water and Wastewater Engineering	3						3					3	
CIVL	3510	Hydrosystems Engineering	3					3						3	
CIVL	3730	Fundamentals of Geotechnics	3							3				3	
CIVL	3740	Geotechnical Analysis and Design	3								3			3	
CIVL CIVL	4910 4920	Note: CIVL 4910 OR CIVL 4920 Civil and Environmental Engineering Final Year Project Civil and Environmental Engineering Final Year Thesis	6 6									3	3	6	
CIVL	4950	Civil Engineering Capstone Design Project	3									3		3	
CIVL CIVL CIVL	4450 5450 5460	Note: CIVL4450 OR CIVL 5450 OR CIVL5460 Carbon Footprint Analysis and Reduction Hazardous Waste Treatment and Site Remediation Landfill Engineering and Design	3 3 3								3			3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4033	Technical Communication II for Civil and Environmental Engineering	3									3		3	
CIVL/SENG		CIVL (Environmental) Electives [at least 1 course should be selected from the "Restricted Electives".] Restricted electives: at least 1 course AND (CIVL: Any CIVL courses at 4000-level or above except those listed as "Restricted Electives" from the list OR SENG: Any 3000-level or above courses offered by the Engineering School or engineering departments other than CIVL)	6									3	3	6	
		Required credits for Major Requirements Courses and Electives	66											66	
BBA in Economics															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	3 3		3									3	ECON 2103/2113/2123 is a major prerequisite
ECON ECON	2123 3123	Note: ECON 2123 OR ECON 3123 Macroeconomics Macroeconomic Theory I	3 3			3								3	
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1				1							1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by CIVL 2160
ISOM	2600	Introduction to Business Analytics	1						1					1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3	3										3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Substituted by ENGG 1010
LABU	2040	Business Case Analyses	3										3	3	
LABU	2060	Effective Communication in Business	3							3				3	
MATH MATH MATH MATH MATH	1003 1012 1013 1020 1023	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra Calculus IA Calculus IB Accelerated Calculus Honors Calculus I	3-4 3 4 3 4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
ECON	3014	Managerial Microeconomics	4					4						4	
ECON	3024	Managerial Macroeconomics	4						4					4	
ECON	3334	Introduction to Econometrics	4							4				4	
ECON	4670	Economics Research and Communication	0									0		0	
ECON		ECON 4000-level Electives (Any 3 courses of the subject and level as specified)	11								4	4	3	11	
		Required credits for Major Required Courses and Electives	23											23	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	3				3		9	9	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	19	19	20	19	19	19	17		
				188##											
						<< Declaration of BEng major		*<< Declaration of BBA major*							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

DAECON **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management														
Program:		**Dual Degree Program (BEng in Decision Analytics and BBA in Economics)**														
Course Offering Dept (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Decision Analytics															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP 1021 OR COMP 1022P OR COMP 2011	3-4												
COMP	1021	Introduction to Computer Science	3		3									3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM1010 OR CHEM1020 OR PHYS1112 OR PHYS1312													
CHEM	1010	General Chemistry IA	3												
CHEM	1020	General Chemistry IB	3	3										3	
PHYS	1112	General Physics I with Calculus	3												
PHYS	1312	Honors General Physics I	3												
LANG	2030	Technical Communication I	3				3							3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3				3							3	
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	22-27											21	
Major Required Courses and Electives															
IEDA	1010	Academic and Professional Development I	0			0	0							0	
IEDA	1020	Academic and Professional Development II	0					0	0					0	
		Note: IEDA1990 OR IEDA1991	0												
IEDA	1990	Industrial Training	0			0	0	0	0	0	0	0	0	0	
IEDA	1991	Industrial Experience	0												
IEDA	2520	Probaility for Engineers	3			3								3	
IEDA	2540	Statistics for Engineers	3				3							3	This course will also be used to substitute ISOM2500
IEDA	3010	Prescriptive Analytics	3					3						3	
IEDA	3230	Engineering Economics and Accounting	3				3							3	
IEDA	3250	Stochastic Models	3						3					3	
IEDA	3300	Industrial Data Systems	3				3							3	
IEDA	3560	Predictive Analytics	3						3					3	
		Note: IEDA4901 OR IEDA4920	6												
IEDA	4901	Final Year Thesis	6									3	3	6	
IEDA	4920	Decision Analytics Final Year Project	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
		Note: ECON2103 OR ECON2113	3												
ECON	2103	Principles of Microeconomics	3		3									3	ECON 2103/2113/2123 is a major prerequisite
ECON	2113	Microeconomics	3												
LANG	4032	Technical Communication II for Industrial Engineering and Decision Analytics	3						3					3	
IEDA		Area Electives (5 courses from the specified elective list, of which all 5 courses should be taken from the same area)	15						3	6	3	3		15	
		Required credits for Major Required Courses and Electives	48											48	
BBA in Economics															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3									3		3	
		Note: ECON 2103 OR ECON 2113	3												
ECON	2103	Principles of Microeconomics	3		(3)									0	ECON 2103/2113/2123 is a major prerequisite
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123	3												
ECON	2123	Macroeconomics	3			3								3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3					3						3	
ISOM	2010	Introduction to Information Systems	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by IEDA2540
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3								3			3	
MARK	2120	Marketing Management	3			3								3	
MGMT	2010	Business Ethics and the Individual	2					2						2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2							2				2	
SBMT	1111	Business Student Induction	0	-	-	-	-	-	-	-	-	-	-	0	Waived for DDP students
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3							3				3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											33	
Major Requirements															
Major Required Courses and Electives															
ECON	3014	Managerial Microeconomics	4					4						4	
ECON	3024	Managerial Macroeconomics	4						4					4	
ECON	3334	Introduction to Econometrics	4							4				4	
ECON	4670	Economics Research and Communication	0									0		0	
ECON		ECON 4000-level Electives (Any 3 courses of the subject and level as specified)	11								4	4	3	11	
		Required credits for Major Required Courses and Electives	29											23	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	9	3		3			3	6		6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	18	17	16	18	16	13	12		
				164##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substitued

To graduate, students should complete all requirements specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

EEECON **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Electronic Engineering and BBA in Economics)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
						<< Declaration of BEng major		*<< Declaration of BBA major*							
BEng in Electronic Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: ELEC2600 OR ELEC2600H) OR MATH2011 OR MATH2111 OR MATH2350 OR MATH 2351 (3 courses out of 6)	9-10												
ELEC	2600	Probability and Random Processes in Engineering	4												
ELEC	2600H	Honors Probability and Random Processes in Engineering	4	3		3		3						9	
MATH	2011	Introduction to Multivariable Calculus	3												
MATH	2111	Matrix Algebra and Applications	3												
MATH	2350	Applied Linear Algebra and Differential Equations	3												
MATH	2351	Introduction to Differential Equations	3												
		Note: COMP1021 OR COMP1022P	3												
COMP	1021	Introduction to Computer Science	3		3									3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4			4								4	
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3						3					3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
		Note: PHYS1112 OR PHYS1312	3												
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Note: PHYS1114 OR PHYS1314	3												
PHYS	1114	General Physics II	3		3									3	
PHYS	1314	Honors General Physics II	3												
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	32-37											31	
Major Required Courses and Electives															
ELEC	1100	Introduction to Electro-Robot Design	4			4								4	
ELEC	1200	A System View of Communications: from Signals to Packets	4				4							4	
		Note: ELEC2100 OR ELEC2100H	4												
ELEC	2100	Signals and Systems	4							4				4	
ELEC	2100H	Honors Signals and Systems	4												
ELEC	2350	Introduction to Computer Organization and Design	4							4				4	
ELEC	2400	Electronic Circuits	4						4					4	
ELEC	2910	Academic and Professional Development I	0			0	0							0	
ELEC	3910	Academic and Professional Development II	0					0	0					0	
		Note: (ELEC4900 AND ELEC2991) OR (ELEC4901 AND ELEC2991) OR ELEC4910 (Students taking the Research Option must take ELEC 4901)	6												
ELEC	4900	Final Year Design Project	6									3	3	6	
ELEC	4901	Final Year Thesis	6												
ELEC	2991	Industrial Experience (Electronic Engineering)	0												
ELEC	4910	Co-op Program	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4031	Technical Communication II for ECE & CPEG	3									3		3	
ELEC		ELEC 3000-level or 4000-level Electives (Any 2 courses ELEC 4000-levek courses. ELEC4940 cannot be used to count towards this elective requirement)	21				3		3		6	3	6	21	
		Required credits for Major Requirements Courses and Electives	50											50	
BBA in Economics															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON2103 OR ECON2113	3												
ECON	2103	Principles of Microeconomics	3		3									3	
ECON	2113	Microeconomics	3												ECON 2103/2113/2123 is a major prerequisite
		Note: ECON2123 OR ECON3123	3												
ECON	2123	Macroeconomics	3			3								3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3					3						3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2					2						2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2								2			2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3					3						3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3	(3)											
MATH	1012	Calculus IA	4											0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
ECON	3014	Managerial Microeconomics	4					4						4	
ECON	3024	Managerial Macroeconomics	4						4					4	
ECON	3334	Introduction to Econometrics	4							4				4	
ECON	4670	Economics Research and Communication	0									0		0	
ECON		ECON 4000-level Electives (Any 3 courses of the subject and level as specified)	11								4	4	3	11	
		Required credits for Major Required Courses and Electives	23											23	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6				3	3	6	6	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	19	20	20	18	18	16	15		
				182##											
						<< Declaration of BEng major		*<< Declaration of BBA major*							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

IEECON **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Industrial Engineering and Engineering Management and BBA in Economics)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	Sub-total	Remarks
						<< Declaration of BEng major		*<< Declaration of BBA major*							
BEng in Industrial Engineering and Engineering Management															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP1021 OR COMP1022P OR COMP2011	3-4												
COMP	1021	Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM1010 OR CHEM1020 OR PHYS1112 OR PHYS1312													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
PHYS	1112	General Physics I with Calculus	3												
PHYS	1312	Honors General Physics I	3												
LANG	2030	Technical Communication I	3					3						3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4	3	3									6	
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3				3							3	
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	22-27											21	
Major Required Courses and Electives															
IEDA	1010	Academic and Professional Development I	0			0	0							0	
IEDA	1020	Academic and Professional Development II	0					0	0					0	
		Note: IEDA1990 OR IEDA1991													
IEDA	1990	Industrial Training	0			0*	0^							0	
IEDA	1991	Industrial Experience	0												
IEDA	2520	Probability for Engineers	3			3								3	
IEDA	2540	Statistics for Engineers	3				3							3	This course will also be used to substitute ISOM2500
IEDA	3010	Presciptive Analytics	3					3						3	
IEDA	3230	Engineering Economics and Accounting	3					3						3	
IEDA	3250	Stochastic Models	3						3					3	
IEDA	3300	Industrial Data Systems	3				3							3	
IEDA	4100	Integrated Production Systems	3								3			3	This course will also be used to substitute ISOM 2700
IEDA	4130	System Simulation	3								3			3	
		Note: IEDA4901 OR IEDA4990													
IEDA	4901	Final Year Thesis	6									3	3	6	
IEDA	4960	Industrial Engineering and Engineering Management Final Year Project	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0	0	0	0	0	0	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3		3									3	ECON 2103/2113/2123 is a major prerequisite
ECON	2113	Microeconomics	3												
LANG	4032	Technical Communication II for Industrial Engineering and Decision Analytics	3									3		3	
IEDA		Industrial Engineering Electives (Courses from the specified 21 elective list, of which at least 15 credits should be taken from 1 of the 2 areas and at least 6 credits outside that area.)	21			3	3	3		3		3	6	21	
		Required credits for Major Requirements Courses and Electives	57											57	
BBA in Economics															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3		(3)									0	ECON 2103/2113/2123 is a major prerequisite
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3			3								3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3					3						3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1				1							1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by IEDA2540
ISOM	2600	Introduction to Business Analytics	1				1							1	
ISOM	2700	Operations Management	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by IEDA 4100
MARK	2120	Marketing Management	3			3								3	
MGMT	2010	Business Ethics and the Individual	2						2					2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2									2		2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3						3					3	
LABU	2060	Effective Communication in Business	3							3				3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4	(3)										0	
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											30	
Major Requirements															
Major Required Courses and Electives															
ECON	3014	Managerial Microeconomics	4					4						4	
ECON	3024	Managerial Macroeconomics	4						4					4	
ECON	3334	Introduction to Econometrics	4							4				4	
ECON	4670	Economics Research and Communication	0									0		0	
ECON		ECON 4000-level Electives (Any 3 courses of the subject and level as specified)	11								4	4	3	11	
		Required credits for Major Required Courses and Electives	23											23	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3	3			3	9	6			30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	17	19	18	19	16	15	12		
				170##											
						<< Declaration of BEng major		*<< Declaration of BBA major*							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

MEECON **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Mechanical Engineering and BBA in Economics)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall << *Declaration of BEng major*	Year 2 Spring	Year 3 Fall << *Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Mechanical Engineering															
Major Requirements															
Engineering Fundamental Courses															
COMP	1021	Note: COMP1021 OR COMP1022P OR COMP2011 Introduction to Computer Science	3-4 3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3				3							3	
MATH	1012	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA	4-7 4	3	3									6	
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3					3						3	
MATH	2111	Note: MATH2111 OR MATH2350 OR MATH2351 Matrix Algebra and Applications	3 3							3				3	
MATH	2350	Applied Linear Algebra and Differential Equations	3												
MATH	2351	Introduction to Differential Equations	3												
PHYS	1112	Note: PHYS1112 OR PHYS1312 General Physics I with Calculus	3 3		3									3	
PHYS	1312	Honors General Physics I	3												
CHEM/LIFS/ PHYS		Science 1000-level course (Any 1 course of the subject and level as specified)	3		(3)									0	
		Required credits for Engineering Fundamental Courses	22-26											21	
Major Required Courses and Electives															
MECH	1990	Industrial Training	0			0*	0^							0	
MECH	2020	Statics and Dynamics	3			3								3	
MECH	2040	Solid Mechanics I	3						3					3	
MECH	2210	Fluid Mechanics	3						3					3	
MECH	2310	Thermodynamics	3			3								3	
MECH	2410	Engineering Materials I	3				3							3	
MECH	2520	Design and Manufacturing I	3				3							3	
MECH	2907	Mechatronic Design and Prototyping	3						3					3	
MECH	3030	Mechanisms of Machinery	3								3			3	
MECH	3300	Note: MECH3300 OR MECH3420 OR MECH3520 Energy Conversion	3 3							3				3	
MECH	3420	Engineering Materials II	3												
MECH	3520	Design and Manufacturing II	3												
MECH	3310	Heat Transfer	3								3			3	
MECH	3610	Control Principles	3					3						3	
MECH	3630	Electrical Technology	3						3					3	
MECH	3830	Laboratory	3								3			3	
MECH	4900	Final Year Design Project	6									3	3	6	
ELEC	2420	Basic Electronics	3			3								3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4034	Technical Communication II for Mechanical and Areospace Engineering	3								3			3	
		Required credits for Major Requirements Courses and Electives	51											51	
BBA in Economics															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON	2103	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics	3 3		3									3	ECON 2103/2113/2123 is a major prerequisite
ECON	2113	Microeconomics	3												
ECON	2123	Note: ECON 2123 OR ECON 3123 Macroeconomics	3 3			3								3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3					3						3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2									2		2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3							3				3	
MATH	1003	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra	3-4 3												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4	(3)										0	
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
ECON	3014	Managerial Microeconomics	4					4						4	
ECON	3024	Managerial Macroeconomics	4						4					4	
ECON	3334	Introduction to Econometrics	4							4				4	
ECON	4670	Economics Research and Communication	0									0		0	
ECON		ECON 4000-level Electives (Any 3 courses of the subject and level as specified)	11								4	4	3	11	
		Required credits for Major Required Courses and Electives	23											23	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	9	3					6		6	6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	18	18	19	19	16	15	14		
				173##											

<< *Declaration of BEng major* | << *Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

BEMARK **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management				<< Declaration of BEng major		<< Declaration of BBA major									
Program:		**Dual Degree Program (BEng in Bioengineering and BBA in Marketing)**		Student's Pathway													
Course Offering Dept (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Bioengineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: [COMP 1021] OR [(COMP 1022P OR COMP 2011) AND COMP1029P]	3-5												
COMP	1021	Introduction to Computer Science	3												
COMP	1022P	Introduction to Computing with Java	3		3									3	This course will also be used to substitute ISOM 2010
COMP	1029P	Python Programming Bridging Course	1												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM1010 OR CHEM 1020													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
CHEM	1050	Laboratory for General Chemistry I	1	1										1	
LANG	2030	Technical Communication I	3				3							3	
LIFS	1901	General Biology I	3	3										3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
		Note: PHYS 1112 OR PHYS 1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	23-29											22	
Major Required Courses and Electives															
		Note: BIEN 1010 OR CENG 1000													
BIEN	1010	Introduction to Biomedical Engineering	3		3									3	
CENG	1000	Introduction to Chemical and Biiological Engineering	3												
BIEN	2310	Modeling for Chemical and Biological Engineering	3			3								3	
BIEN	2410	Cellular and Systems Physiology for Engineers	3						3					3	
BIEN	2610	Chemical Biology for Engineers	3			3								3	
BIEN	2990	Academic and Professional Development I	1			1								1	
BIEN	3240	Transport Phenomena in Biological Systems	3									3		3	
BIEN	3320	Data Science for Biology and Medicine	3				3							3	
BIEN	3410	Introduction to Bioinstrumentation and Bioimaging	3							3				3	
BIEN	3910	Bioengineering Laboratory	4							4				4	
		Note: BIEN 4920 OR BIEN 4930 OR BIEN 4940													
BIEN	4920	Bioengineering Capstone Design	6									3	3	6	
BIEN	4930	Bioengineering Thesis Research	6												
BIEN	4940	Bioengineering Industrial Project	6												
BIEN	4990	Academic and Professional Development II	1									1		1	
CENG	2210	Chemical and Biological Engineering Thermodynamics	3				3							3	
CENG	3230	Chemical and Biological Reaction Engineering	3							3				3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
		Note: LIFS 3150 OR MATH 2411	3-4												
LIFS	3150	Biostatistics	3			3								3	
MATH	2411	Applied Statistics	4												
LANG	4035	Technical Communication II for Chemical and Biological Engineering	3									3		3	
SSCI/SENG		Bioengineering Electives (5 courses from the specified elective list, of which at least 9 credits should be taken from a single specialty area (Area 1 or Area 2). Out of the 15 credits taken, at least 9 credits should be at 4000-level)	15								6	3	6	15	
		Required credits for Major Required Courses and Electives	60-61											60	
BBA in Marketing															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3							3				3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/COMP2011
ISOM	2020	Coding for Business	1	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/1029P/2011
ISOM	2500	Business Statistics	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by LIFS 3150/MATH 2411
ISOM	2600	Introduction to Business Analytics	1	-	-	-	-	-	-	-	-	-	-	0	Substituted by BIEN3320
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	MARK 2120 is a major pre-requisite
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3		3									3	
MGMT	2130	Business Ethics and Social Responsibility	2					2						2	
SBMT	1111	Business Student Induction	0	-	-	-	-	-	-	-	-	-	-	0	Substituted by ENGG 1010
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3						3					3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4	(3)										0	
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											34	
Major Requirements															
Major Required Courses and Electives															
MARK	3220	Marketing Research	4					4						4	
MARK	3420	Consumer Behavior	4						4					4	
MARK	4210	Strategic Marketing	4										4	4	
MARK		MARK 3000-level or above Electives (Any 3 courses of the subject and level as specified)	12							4	4	4		12	
		Required credits for Major Required Courses and Electives	24											24	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	3			3	9	3	3	9			30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				19	18	18	18	18	19	20	19	17	13		
				179##											
						<< Declaration of BEng major		<< Declaration of BBA major							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substitued

To graduate, students should complete all requirements specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

BTMARK **2020-21 Intake**

(Via DDP PBA)

School:		School of Science and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BSc in Biotechnology and BBA in Marketing)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BSc in Biotechnology															
School Requirements															
SCIE	1000	Science School Induction	0	0	0									0	
		Note: COMP1021 OR COMP1022P OR COMP2011	3-4												
COMP	1021	Introduction to Computer Science	3												
COMP	1022P	Introduction to Computing with Java	3			3								3	This course will also be used to substitute ISOM 2010
COMP	2011	Programming with C++	4												
LANG	2010	English for Science I	3					3						3	
SSCI		Science Foundation courses [8 courses from the specified elective list. Students should take (i) 7 foundation lecture courses, including at least 1 lecture course, but no more than 3 lecture courses, from each discipline: CHEM, LIFS, MATH and PHYS; and (ii) 1 laboratory course.]	22-25												
CHEM	1004	Chemistry in Everyday Life	3												
CHEM	1010	General Chemistry IA	3												
CHEM	1020	General Chemistry IB	3												
CHEM	1030	General Chemistry II	3												
CHEM	1050	Laboratory for General Chemistry I	1												
CHEM	1055	Laboratory for General Chemistry II	1												
LIFS	1030	Environmental Science	3												
LIFS	1901@	General Biology I@	3												
LIFS	1902@	General Biology II@	3												LIFS1901 & LIFS1902 are Major Pre-requisite
LIFS	1903	Laboratory for General Biology I	1												
LIFS	1904	Laboratory for General Biology II	1												
LIFS	1930	Nature of Life Sciences	3												Students are recommended to take CHEM1010, CHEM1030, LIFS1903 and MATH1013 to satisfy the requirements of both SSCI School requirements and Major requirements
LIFS	2210	Biochemistry I	3	10	3	6	3							22	
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2023	Multivariable Calculus	4												
MATH	2121	Linear Algebra	4												
MATH	2131	Honors in Linear and Abstract Algebra I	4												
PHY	1001	Physics and the Modern Society	3												
PHY	1111	General Physics I	3												
PHY	1112	General Physics I with Calculus	3												
PHY	1113	Laboratory for General Physics I	1												
PHY	1114	General Physics II	3												
PHY	1115	Laboratory for General Physics II	1												
PHY	1212	Honors General Physics I	3												
		Required credits for School / Major Pre-requisite Requirements	25-29											28	
Major Requirements															
Major Required Courses and Electives															
LIFS	1903	Laboratory for General Biology I	1	(1)										0	
LIFS	1904	Laboratory for General Biology II	1		1									1	
LIFS	2040	Cell Biology	3				3							3	
LIFS	2070	Introduction to Biotechnology	3			3								3	
LIFS	2080	Plant Biology	3				3							3	
LIFS	2210	Biochemistry I	3			(3)								0	
LIFS	3060	Microbiology	3						3					3	
LIFS	3110	Biotechnological Application of Recombinant DNA Techniques	3					3						3	
LIFS	3140	General Genetics	4							4				4	
LIFS	4150	Plant Biotechnology	3									3		3	
LIFS	4200	Concepts and Issues in Contemporary Biotechnology	3							3				3	
		Note: LIFS4963 OR (LIFS4973 AND LIFS4983) OR (SCIE4500 AND LIFS4983) [Students following IRE Track can only use (SCIE4500 AND LIFS4983) to fulfill the requirement.]	3-7												
LIFS	4963	Biotechnology Capstone Project	3									[3]	3	3	
LIFS	4973	Biotechnology Project Research I	3												
LIFS	4983	Biotechnology Project Research II	4												
SCIE	4500	IRE Research Project II	3												
		Note: CHEM1010 OR CHEM1020													
CHEM	1010	General Chemistry IA	3	(3)										0	
CHEM	1020	General Chemistry IB	3												
CHEM	1030	General Chemistry II	3		(3)									0	
CHEM	1050	Laboratory for General Chemistry I	1	1										1	
CHEM	1055	Laboratory for General Chemistry II	1		1									1	
		Note: CHEM 2110 OR CHEM 2311													
CHEM	2110	Organic Chemistry I	3					3						3	
CHEM	2311	Analytical Chemistry	3												
		Note: CHEM2155 OR CHEM2355													
CHEM	2155	Fundamental Organic Chemistry Laboratory	1						1					1	
CHEM	2355	Fundamental Analytical Chemistry Laboratory	1												
CENG	1600	Biotechnology and Its Business Opportunities	3							3				3	
LANG	3024	Science Communication in English (Life Science)	3										3	3	
LIFS/BIPH/BTEC/BIEN/ CENG		Biotechnology Electives (Courses from the specified elective list; Students following IRE Track are required to take a minimum of 15 credits; while others a minimum of 18 credits. Courses taken as Major/Track Required Courses may not be counted towards the elective requirement.)	15-18						3		3	6	3	15	
		Required credits for Major Required Courses and Electives	62-70											56	
BBA in Marketing															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3				3							3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/1022Q/2011
ISOM	2020	Coding for Business	1				1							1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1							1				1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	MARK 2120 is a major pre-requisite
MGMT	2010	Business Ethics and the Individual	2	2										2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2							2				2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3								3			3	
LABU	2060	Effective Communication in Business	3									3		3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1013 OR MATH 1023 to satisfy the requirements of both BSc and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
MARK	3220	Marketing Research	4					4						4	
MARK	3420	Consumer Behavior	4						4					4	
MARK	4210	Strategic Marketing	4										4	4	
MARK		MARK 3000-level or above Electives (Any 3 courses of the subject and level as specified)	12							4	4	4		12	
		Required credits for Major Required Courses and Electives	24											24	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	3	3			3	3	3	9	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				19	17	18	19	19	20	20	19	19	16		
				186##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

@ Course that students need to complete before enrolling into respective major/programs.

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CEMARK **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Chemical Engineering and BBA in Marketing)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Chemical Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP 1021 OR COMP 1022P OR COMP 2011	3-4												
COMP	1021	Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM1010 OR CHEM1020													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
LANG	2030	Technical Communication I	3					3						3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
		Note: PHYS 1112 OR PHYS 1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Required credits for Engineering Fundamental Courses	19-23											21	
Major Required Courses and Electives															
		Note: CENG1000 OR CENG1500													
CENG	1000	Introduction to Chemical and Biological Engineering	3	3										3	
CENG	1500	A First Course on Materials Science and Applications	3												
		Note: CENG1600 OR CENG1700 OR BIEN1010													
CENG	1600	Biotechnology and Its Business Opportunities	3		3									3	
CENG	1700	Introduction to Environmental Engineering	3												
BIEN	1010	Introduction to Biomedical Engineering	3												
CENG	1010	Academic and Professional Development I	0			0								0	
CENG	1980	Industrial Training	0				0	0	0	0				0	
CENG	2110	Process and Product Design Principles	3			3								3	
CENG	2210	Chemical and Biological Engineering Thermodynamics	3				3							3	
CENG	2220	Process Fluid Mechanics	3				3							3	
CENG	2310	Modeling for Chemical and Biological Engineering	3			3								3	
CENG	3110	Process Dynamics and Control	3						3					3	
CENG	3150	Integrated Chemical Process & Product Design	5						5					5	
CENG	3210	Separation Processes	3					3						3	
CENG	3220	Heat and Mass Transfer	3					3						3	
CENG	3230	Chemical and Biological Reaction Engineering	3					3						3	
CENG	3950	Chemical and Environment Engineering Laboratory	4								4			4	
CENG	4020	Academic and Professional Development II	0									0		0	
		Note: CENG4920 OR CENG4930 OR CENG4940													
CENG	4920	Chemical Engineering Capstone Design	6									3	3	6	
CENG	4930	Chemical Engineering Thesis Research	6												
CENG	4940	Chemical Engineering Industrial Project	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
CHEM	1050	Laboratory for General Chemistry I	1		1									1	
CHEM	2111	Fundamentals of Organic Chemistry	3				3							3	
CHEM	2155	Fundamental Organic Chemistry Laboratory	1				1							1	
LANG	4035	Technical Communication II for Chemical and Biological Engineering	3									3		3	
		Note: BIEN2410 OR BIEN2610 OR LIFS1901													
BIEN	2410	Cellular and Systems Physiology for Engineers	3				3							3	
BIEN	2610	Chemical Biology for Engineers	3												
LIFS	1901	General Biology I	3												
SENG/SSCI/ENVR		CENG Elective (12 credits from specified elective list)	12					3	3	3	3			12	
		Required credits for Major Requirements Courses and Electives	68											68	
BBA in Marketing															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3							3				3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3		3									3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3							3				3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/COMP2011
ISOM	2020	Coding for Business	1			1								1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1			1								1	
ISOM	2700	Operations Management	3									3		3	
MARK	2120	Marketing Management	3		3									3	MARK 2120 is a major pre-requisite
MGMT	2010	Business Ethics and the Individual	2						2					2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3							3				3	
LABU	2060	Effective Communication in Business	3										3	3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	45-46											39	
Major Requirements															
Major Required Courses and Electives															
MARK	3220	Marketing Research	4					4						4	
MARK	3420	Consumer Behavior	4						4					4	
MARK	4210	Strategic Marketing	4										4	4	
MARK		MARK 3000-level or above Electives (Any 3 courses of the subject and level as specified)	12							4	4	4		12	
		Required credits for Major Required Courses and Electives	24											24	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30				3		3	3	9	6	6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	19	20	19	19	20	19	20	19	18		
				191##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CIMARK **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Civil Engineering and BBA in Marketing)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Civil Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP 1021 OR COMP 1022P OR COMP 2011	3-4												
COMP	1021	Introduction to Computer Science	3		3									3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM 1010 OR CHEM 1020													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
LANG	2030	Technical Communication I	3					3						3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
MATH	2350	Applied Linear Algebra and Differential Equations	3			3								3	
		Note: PHYS 1112 OR PHYS 1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Required credits for Engineering Fundamental Courses	22-26											24	
Major Required Courses and Electives															
CIVL	1010	Academic Professional Development I	0			0	0							0	
CIVL	1100	Discovering Civil and Environmental Engineering	3		3									3	
CIVL	2010	Academic Professional Development II	0					0	0					0	
CIVL	2020	Industrial and BIM Training	0			0*	0							0	
CIVL	2110	Statics	3			3								3	
CIVL	2120	Mechanics of Materials	3				3							3	
CIVL	2160	Modeling Systems with Uncertainties	3			3								3	This course will also be used to substitute ISOM 2500
CIVL	2170	Infrastructure Systems Engineering and Management	3				3							3	
CIVL	2410	Environmental Assessment and Management	3				3							3	
CIVL	2510	Fluid Mechanics	3				3							3	
CIVL	2810	Construction Materials	3					3						3	
CIVL	3010	Academic Professional Development III	0							0	0			0	
CIVL	3020	Internship Training	0								0^			0	
CIVL	3210	Introduction to Construction Management	3						3					3	
CIVL	3310	Structural Analysis	3					3						3	
CIVL	3320	Reinforced Concrete Design	3						3					3	
CIVL	3510	Hydrosystems Engineering	3					3						3	
CIVL	3610	Traffic and Transportation Engineering	3						3					3	
CIVL	3730	Fundamentals of Geotechnics	3							3				3	
CIVL	3740	Geotechnical Analysis and Design	3								3			3	
		Note: CIVL 4910 OR CIVL 4920	6												
CIVL	4910	Civil and Environmental Engineering Final Year Project	6									3	3	6	
CIVL	4920	Civil and Environmental Engineering Final Year Thesis													
CIVL	4950	Civil Engineering Capstone Design Project	3									3		3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4033	Technical Communication II for Civil and Environmental Engineering	3									3		3	
CIVL/SENG		CIVL Electives (3 courses from the specified elective list) CIVL: Any CIVL courses at 4000-level or above except CIVL 4230 SENG: Any 3000-level or above courses offered by the Engineering School or engineering departments other than CIVL	9								3	3	3	9	
		Required credits for Major Requirements Courses and Electives	66											66	
BBA in Marketing															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3		3									3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1				1							1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by CIVL 2160
ISOM	2600	Introduction to Business Analytics	1				1							1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	MARK 2120 is a major pre-requisite
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3										3	3	
LABU	2060	Effective Communication in Business	3							3				3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
MARK	3220	Marketing Research	4					4						4	
MARK	3420	Consumer Behavior	4						4					4	
MARK	4210	Strategic Marketing	4										4	4	
MARK		MARK 3000-level or above Electives (Any 3 courses of the subject and level as specified)	12							4	4	4		12	
		Required credits for Major Required Courses and Electives	24											24	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6						9	9	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	20	19	19	19	19	19	18		
				189##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

COMARK **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Computer Science and BBA in Marketing)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Computer Science															
Major Requirements															
Engineering Fundamental Courses															
COMP	1021	Note: COMP1021 OR COMP1022P Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM	1004	Note: CHEM1004 OR CHEM1010 OR CHEM1020 OR LIFS1901 OR PHYS1001 OR PHYS1112 OR PHYS1312 Chemistry in Everyday Life	3	3										3	
CHEM	1010	General Chemistry IA	3												
CHEM	1020	General Chemistry IB	3												
LIFS	1901	General Biology I	3												
PHYS	1001	Physics and the Modern Society	3												
PHYS	1112	General Physics I with Calculus	3												
PHYS	1312	Honors General Physics I	3												
LANG	2030	Technical Communication I	3					3						3	
MATH	1012	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA	4-7 4	3	3									6	
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (COMP students may also use COMP1022P or COMP1022Q to fulfill this requirement)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	19-23											18	
Major Required Courses and Electives															
COMP	2011	Note: (COMP2011 AND COMP2012) OR COMP2012H Programming with C++	5-8 4			4	4							8	
COMP	2012	Object-Oriented Programming and Data Structures	4												
COMP	2012H	Honors Object-Oriented Programming and Data Structures	5												
COMP	2611	Computer Organization	4						4					4	
COMP	2711	Note: COMP2711 OR COMP2711H Discrete Mathematical Tools for Computer Science	4			4								4	
COMP	2711H	Honors Discrete Mathematical Tools for Computer Science	4												
COMP	3111	Note: COMP3111 OR COMP3111H Software Engineering	4					4						4	
COMP	3111H	Honors Software Engineering	4												
COMP	3511	Operating Systems	3							3				3	
COMP	3711	Note: COMP3711 OR COMP3711H Design and Analysis of Algorithms	3-4 3					3						3	
COMP	3711H	Honors Design and Analysis of Algorithms	4												
COMP	4900	Note: Students are required to take COMP4900 for every regular term in which they are in residency at HKUST with major in COMP Academic and Professional Development	0			0	0	0	0	0	0	0	0	0	
COMP	1991	Note: (COMP4981 OR COMP4981H) AND COMP1991 OR COMP4910 Industrial Experience	6 0											6	
COMP	4981	Final Year Project	6									3	3		
COMP	4981H	Final Year Thesis	6												
COMP	4910	Co-op FYP Program	6												
ELEC	2600	Note: ELEC2600 OR IELM2510 OR MATH2411 OR MATH2421 OR MATH2431 Probability and Random Processes in Engineering	3-4 4											4	Students should take MATH 2411 which will also be used to substitute ISOM 2500.
IEDA	2520	Probability for Engineers	3												
IEDA	2540	Statistics for Engineers	3			4									
MATH	2411	Applied Statistics	4												
MATH	2421	Probability	4												
MATH	2431	Honors Probability	4												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4030	Technical Communication II for CSE & CPEG	3									3		3	
COMP		COMP Electives (5 courses from the specified elective list, of which at least 3 courses should be taken from 1 area and at least 2 courses outside that area.)	15							3	6	3	3	15	
COMP		COMP Elective (Any 1 course offered under COMP)	3										3	3	
		Required credits for Major Requirements Courses and Electives	53-58											57	
BBA in Marketing															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON	2103	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics	3				3							3	
ECON	2113	Microeconomics	3												
ECON	2123	Note: ECON 2123 OR ECON 3123 Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by MATH 2411
ISOM	2600	Introduction to Business Analytics	1				1							1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3		3									3	MARK 2120 is a major pre-requisite
MGMT	2010	Business Ethics and the Individual	2				2							2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2							2				2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3						3					3	
MATH	1003	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra	3-4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
MARK	3220	Marketing Research	4					4						4	
MARK	3420	Consumer Behavior	4						4					4	
MARK	4210	Strategic Marketing	4										4	4	
MARK		MARK 3000-level or above Electives (Any 3 courses of the subject and level as specified)	12							4	4	4		12	
		Required credits for Major Required Courses and Electives	24											24	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3		3		3	6	9			30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	19	18	20	18	19	13	13		
				174##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CPMARK 2020-21 Intake

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Computer Engineering and BBA in Marketing)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
						<< Declaration of BEng major		***<< Declaration of BBA major***							
BEng in Computer Engineering															
Major Requirements															
Engineering Fundamental Courses															
COMP COMP	1021 1022P	Note: COMP1021 OR COMP1022P Introduction to Computer Science Introduction to Computing with Java	3 3	3										3	This course will also be used to substitute ISOM 2010
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3				3							3	
MATH MATH MATH MATH MATH MATH	1012 1013 1014 1020 1023 1024	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA Calculus IB Calculus II Accelerated Calculus Honors Calculus I Honors Calculus II	4-7 4 3 3 4 3 3	3	3									6	
MATH	2011	Introduction to Multivariable Calculus	3					3						3	
MATH	2111	Matrix Algebra and Applications	3					3						3	
PHYS PHYS	1112 1312	Note: PHYS1112 OR PHYS1312 General Physics I with Calculus Honors General Physics I	3 3	3										3	
PHYS PHYS	1114 1314	Note: PHYS1114 OR PHYS1314 General Physics II Honors General Physics II	3 3						3					3	
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	25-29											24	
Major Required Courses and Electives															
CPEG	2930	Academic and Professional Development I	0			0	0							0	
CPEG	3930	Academic and Professional Development II	0					0	0					0	
COMP COMP COMP	2011 2012 2012H	Note: (COMP2011 AND COMP2012) OR COMP2012H Programming with C++ Object-Oriented Programming and Data Structures Honors Object-Oriented Programming and Data Structures	5-8 4 4 5			4		4						8	
COMP ELEC	2611 2350	Note: COMP2611 OR ELEC2350 Computer Organization Introduction to Computer Organization and Design	4 4 4				4							4	
COMP COMP COMP	2711 2711H 2600	Note: COMP2711 OR COMP2711H OR ELEC 2600 Discrete Mathematical Tools for Computer Science Honors Discrete Mathematical Tools for Computer Science Probability and Random Processes in Engineering	4 4 4 4							4				4	
COMP	3511	Operating Systems	3								3			3	
COMP COMP ELEC ELEC ELEC	4521 4611 4310 4320 4330	Note: COMP4521 OR COMP4611 OR ELEC 4310 Mobile Application Develoepment Design and Analysis of Computer Architectures Embedded System Design FPGA-based Design: From Theory to Practice Mobile Embedded Systems: Hardware Platform, Software Development, and Applications	3-4 3 3 4 3 3									3		3	
CPEG CPEG CPEG CPEG CPEG CPEG	1971 4901 4902 4911 4912 4910	Note: [(CPEG4901 OR CPEG4902) AND CPEG1971] OR [(CPEG4911 OR CPEG4912) AND CPEG1971] OR CPEG4910 Industrial Experience Computer Engineering Final Year Project in COMP Computer Engineering Final Year Thesis in COMP Computer Engineering Final Year Project in ELEC Computer Engineering Final Year Thesis in ELEC Co-op Program	6 0 6 6 6 6 6									3	3	6	
ELEC	1100	Introduction to Electro-Robot Design	4			4								4	
ELEC ELEC ELEC	1200 2100 2400	Note: ELEC1200 OR ELEC2100 OR ELEC2400 (2 courses out of 3) A System View of Communications: from Signals to Packets Signals and Systems Electronic Circuits	8 4 4 4				4		4					8	
ELEC	3300	Introduction to Embedded Systems	4								4			4	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG LANG	4030 4031	Note: LANG4030 OR LANG4031 Technical Communication II for CSE & CPEG Technical Communication II for ECE & CPEG	3 3									3		3	
COMP/ELEC		Area Courses (At least 4 courses from the specified elective list , of which at least 2 courses should be taken from one single area and at least 2 courses outside that area. Courses taken as Major Required Courses may not be counted towards the elective requirement.)	15			3					4	4	4	15	
		Required credits for Major Requirements Courses and Electives	59-63											62	
BBA in Marketing															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	3 3		3									3	
ECON ECON	2123 3123	Note: ECON 2123 OR ECON 3123 Macroeconomics Macroeconomic Theory I	3 3					3						3	
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	MARK 2120 is a major pre-requisite
MGMT	2010	Business Ethics and the Individual	2							2				2	
MGMT	2110	Organizational Behavior	3		3									3	
MGMT	2130	Business Ethics and Social Responsibility	2								2			2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3						3					3	
MATH MATH MATH MATH MATH MATH	1003 1012 1013 1020 1023	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra Calculus IA Calculus IB Accelerated Calculus Honors Calculus I	3-4 3 4 3 4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
MARK	3220	Marketing Research	4					4						4	
MARK	3420	Consumer Behavior	4						4					4	
MARK	4210	Strategic Marketing	4										4	4	
MARK		MARK 3000-level or above Electives (Any 3 courses of the subject and level as specified)	12							4	4	4		12	
		Required credits for Major Required Courses and Electives	24											24	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3	3				9	3		6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	20	19	20	19	20	17	17		
				188##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CVMARK **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Civil and Environmental Engineering and BBA in Marketing)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Civil and Environmental Engineering															
Major Requirements															
Engineering Fundamental Courses															
COMP COMP COMP	1021 1022P 2011	Note: COMP 1021 OR COMP 1022P OR COMP 2011 Introduction to Computer Science Introduction to Computing with Java Programming with C++	3-4 3 3 4		3									3	This course will also be used to substitute ISOM 2010
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM CHEM	1010 1020	Note: CHEM 1010 OR CHEM 1020 General Chemistry IA General Chemistry IB	3 3	3										3	
LANG	2030	Technical Communication I	3					3						3	
MATH MATH MATH MATH MATH MATH	1012 1013 1014 1020 1023 1024	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA Calculus IB Calculus II Accelerated Calculus Honors Calculus I Honors Calculus II	4-7 4 3 3 4 3 3	3	3									6	
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
MATH	2350	Applied Linear Algebra and Differential Equations	3			3								3	
PHYS PHYS	1112 1312	Note: PHYS 1112 OR PHYS 1312 General Physics I with Calculus Honors General Physics I	3 3	3										3	
		Required credits for Engineering Fundamental Courses	22-26											24	
Major Required Courses and Electives															
CIVL	1010	Academic Professional Development I	0			0	0							0	
CIVL	1100	Discovering Civil and Environmental Engineering	3		3									3	
CIVL	2010	Academic Professional Development II	0					0	0					0	
CIVL	2020	Industrial and BIM Training	0			0*	0							0	
CIVL	2110	Statics	3			3								3	
CIVL	2120	Mechanics of Materials	3				3							3	
CIVL	2160	Modeling Systems with Uncertainties	3			3								3	
CIVL	2170	Infrastructure Systems Engineering and Management	3				3							3	
CIVL	2410	Environmental Assessment and Management	3				3							3	
CIVL	2510	Fluid Mechanics	3				3							3	
CIVL	2810	Construction Materials	3					3						3	
CIVL	3010	Academic Professional Development III	0							0	0			0	
CIVL	3020	Internship Training	0								0^			0	
CIVL CIVL	3210 3610	Note: CIVL3210 OR CIVL3610 Introduction to Construction Management Traffic and Transportation Engineering	3 3						3					3	
CIVL	3310	Structural Analysis	3					3						3	
CIVL	3320	Reinforced Concrete Design	3						3					3	
CIVL	3420	Water and Wastewater Engineering	3						3					3	
CIVL	3510	Hydrosystems Engineering	3					3						3	
CIVL	3730	Fundamentals of Geotechnics	3							3				3	
CIVL	3740	Geotechnical Analysis and Design	3								3			3	
CIVL CIVL	4910 4920	Note: CIVL 4910 OR CIVL 4920 Civil and Environmental Engineering Final Year Project Civil and Environmental Engineering Final Year Thesis	6 6									3	3	6	
CIVL	4950	Civil Engineering Capstone Design Project	3									3		3	
CIVL CIVL CIVL	4450 5450 5460	Note: CIVL4450 OR CIVL 5450 OR CIVL5460 Carbon Footprint Analysis and Reduction Hazardous Waste Treatment and Site Remediation Landfill Engineering and Design	3 3 3								3			3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4033	Technical Communication II for Civil and Environmental Engineering	3									3		3	
CIVL/SENG		CIVL (Environmental) Electives [at least 1 course should be selected from the "Restricted Electives".] Restricted electives: at least 1 course AND (CIVL: Any CIVL courses at 4000-level or above except those listed as "Restricted Electives" from the list OR SENG: Any 3000-level or above courses offered by the Engineering School or engineering departments other than CIVL)	6									3	3	6	
		Required credits for Major Requirements Courses and Electives	66											66	
BBA in Marketing															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	3 3			3								3	
ECON ECON	2123 3123	Note: ECON 2123 OR ECON 3123 Macroeconomics Macroeconomic Theory I	3 3					3						3	
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1				1							1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by CIVL 2160
ISOM	2600	Introduction to Business Analytics	1						1					1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2			2								2	MARK 2120 is a major pre-requisite
MGMT	2110	Organizational Behavior	3	3										3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Substituted by ENGG 1010
LABU	2040	Business Case Analyses	3										3	3	
LABU	2060	Effective Communication in Business	3							3				3	
MATH MATH MATH MATH MATH MATH	1003 1012 1013 1020 1023	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra Calculus IA Calculus IB Accelerated Calculus Honors Calculus I	3-4 3 4 3 4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
MARK	3220	Marketing Research	4					4						4	
MARK	3420	Consumer Behavior	4						4					4	
MARK	4210	Strategic Marketing	4										4	4	
MARK		MARK 3000-level or above Electives (Any 3 courses of the subject and level as specified)	12							4	4	4		12	
		Required credits for Major Required Courses and Electives	24											24	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	3	3					9	9	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	19	19	20	19	19	19	18		
				189##											

<< Declaration of BEng major

<< Declaration of BBA major

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

DAMARK **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management														
Program:		**Dual Degree Program (BEng in Decision Analytics and BBA in Marketing)**														
Course Offering Dept (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Decision Analytics															
Major Requirements															
Engineering Fundamental Courses															
COMP COMP COMP	1021 1022P 2011	Note: COMP 1021 OR COMP 1022P OR COMP 2011 Introduction to Computer Science Introduction to Computing with Java Programming with C++	3-4 3 3 4		3									3	This course will also be used to substitute ISOM 2010
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM CHEM PHYS PHYS	1010 1020 1112 1312	Note: CHEM1010 OR CHEM1020 OR PHYS1112 OR PHYS1312 General Chemistry IA General Chemistry IB General Physics I with Calculus Honors General Physics I	 3 3 3 3	3										3	
LANG	2030	Technical Communication I	3				3							3	
MATH MATH MATH MATH MATH MATH	1012 1013 1014 1020 1023 1024	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA Calculus IB Calculus II Accelerated Calculus Honors Calculus I Honors Calculus II	4-7 4 3 3 4 3 3	3	3									6	
MATH	2011	Introduction to Multivariable Calculus	3				3							3	
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	22-27											21	
Major Required Courses and Electives															
IEDA	1010	Academic and Professional Development I	0			0	0							0	
IEDA	1020	Academic and Professional Development II	0					0	0					0	
IEDA IEDA	1990 1991	Note: IEDA1990 OR IEDA1991 Industrial Training Industrial Experience	 0 0			0	0	0	0	0	0	0	0	0	
IEDA	2520	Probaility for Engineers	3			3								3	
IEDA	2540	Statistics for Engineers	3				3							3	This course will also be used to substitute ISOM2500
IEDA	3010	Prescriptive Analytics	3					3						3	
IEDA	3230	Engineering Economics and Accounting	3				3							3	
IEDA	3250	Stochastic Models	3						3					3	
IEDA	3300	Industrial Data Systems	3				3							3	
IEDA	3560	Predictive Analytics	3						3					3	
IEDA IEDA	4901 4920	Note: IEDA4901 OR IEDA4920 Final Year Thesis Decision Analytics Final Year Project	 6 6									3	3	6	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
ECON ECON	2103 2113	Note: ECON2103 OR ECON2113 Principles of Microeconomics Microeconomics	 3 3			3								3	
LANG	4032	Technical Communication II for Industrial Engineering and Decision Analytics	3						3					3	
IEDA		Area Electives (5 courses from the specified elective list, of which all 5 courses should be taken from the same area)	15						3	6	3	3		15	
		Required credits for Major Required Courses and Electives	48											48	
BBA in Marketing															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3							3				3	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	 3 3			(3)								0	
ECON ECON	2123 3123	Note: ECON 2123 OR ECON 3123 Macroeconomics Macroeconomic Theory I	 3 3									3		3	
FINA	2303	Financial Management	3					3						3	
ISOM	2010	Introduction to Information Systems	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by IEDA2540
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3								3			3	
MARK	2120	Marketing Management	3			3								3	MARK 2120 is a major pre-requisite
MGMT	2010	Business Ethics and the Individual	2					2						2	
MGMT	2110	Organizational Behavior	3			3								3	
MGMT	2130	Business Ethics and Social Responsibility	2							2				2	
SBMT	1111	Business Student Induction	0	-	-	-	-	-	-	-	-	-	-	0	Waived for DDP students
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3								3			3	
MATH MATH MATH MATH MATH	1003 1012 1013 1020 1023	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra Calculus IA Calculus IB Accelerated Calculus Honors Calculus I	3-4 3 4 3 4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
		Required credits for School Requirements	43-44											33	
Major Requirements															
Major Required Courses and Electives															
MARK	3220	Marketing Research	4					4						4	
MARK	3420	Consumer Behavior	4						4					4	
MARK	4210	Strategic Marketing	4										4	4	
MARK		MARK 3000-level or above Electives (Any 3 courses of the subject and level as specified)	12							4	4	4		12	
		Required credits for Major Required Courses and Electives	24											24	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	9	6		3			3	3		6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	18	17	16	18	16	13	13		
				165##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substitued

To graduate, students should complete all requirements specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

EEMARK **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Electronic Engineering and BBA in Marketing)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
						<< Declaration of BEng major		*<< Declaration of BBA major*							
BEng in Electronic Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: ELEC2600 OR ELEC2600H) OR MATH2011 OR MATH2111 OR MATH2350 OR MATH 2351 (3 courses out of 6)	9-10												
ELEC	2600	Probability and Random Processes in Engineering	4												
ELEC	2600H	Honors Probability and Random Processes in Engineering	4	3		3		3						9	
MATH	2011	Introduction to Multivariable Calculus	3												
MATH	2111	Matrix Algebra and Applications	3												
MATH	2350	Applied Linear Algebra and Differential Equations	3												
MATH	2351	Introduction to Differential Equations	3												
		Note: COMP1021 OR COMP1022P													
COMP	1021	Introduction to Computer Science	3		3									3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4			4								4	
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3						3					3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3	3	3									6	
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
		Note: PHYS1112 OR PHYS1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Note: PHYS1114 OR PHYS1314													
PHYS	1114	General Physics II	3		3									3	
PHYS	1314	Honors General Physics II	3												
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	32-37											31	
Major Required Courses and Electives															
ELEC	1100	Introduction to Electro-Robot Design	4			4								4	
ELEC	1200	A System View of Communications: from Signals to Packets	4				4							4	
		Note: ELEC2100 OR ELEC2100H													
ELEC	2100	Signals and Systems	4							4				4	
ELEC	2100H	Honors Signals and Systems	4												
ELEC	2350	Introduction to Computer Organization and Design	4							4				4	
ELEC	2400	Electronic Circuits	4						4					4	
ELEC	2910	Academic and Professional Development I	0			0	0							0	
ELEC	3910	Academic and Professional Development II	0					0	0					0	
		Note: (ELEC4900 AND ELEC2991) OR (ELEC4901 AND ELEC2991) OR ELEC4910 (Students taking the Research Option must take ELEC 4901)	6												
ELEC	4900	Final Year Design Project	6												
ELEC	4901	Final Year Thesis	6									3	3	6	
ELEC	2991	Industrial Experience (Electronic Engineering)	0												
ELEC	4910	Co-op Program	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4031	Technical Communication II for ECE & CPEG	3									3		3	
ELEC		ELEC 3000-level or 4000-level Electives (Any 2 courses ELEC 4000-levek courses. ELEC4940 cannot be used to count towards this elective requirement)	21				3		3		6	3	6	21	
		Required credits for Major Requirements Courses and Electives	50											50	
BBA in Marketing															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON2103 OR ECON2113													
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
		Note: ECON2123 OR ECON3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3					3						3	
MARK	2120	Marketing Management	3				3							3	MARK 2120 is a major pre-requisite
MGMT	2010	Business Ethics and the Individual	2					2						2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2								2			2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3					3						3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
MARK	3220	Marketing Research	4					4						4	
MARK	3420	Consumer Behavior	4						4					4	
MARK	4210	Strategic Marketing	4										4	4	
MARK		MARK 3000-level or above Electives (Any 3 courses of the subject and level as specified)	12							4	4	4		12	
		Required credits for Major Required Courses and Electives	24											24	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3				3	6	6	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	19	20	20	18	18	16	16		
				183##											
						<< Declaration of BEng major		*<< Declaration of BBA major*							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

IEMARK **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Industrial Engineering and Engineering Management and BBA in Marketing)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Industrial Engineering and Engineering Management															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP1021 OR COMP1022P OR COMP2011	3-4												
COMP	1021	Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM1010 OR CHEM1020 OR PHYS1112 OR PHYS1312													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
PHYS	1112	General Physics I with Calculus	3												
PHYS	1312	Honors General Physics I	3												
LANG	2030	Technical Communication I	3					3						3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4	3	3									6	
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3				3							3	
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	22-27											21	
Major Required Courses and Electives															
IEDA	1010	Academic and Professional Development I	0			0	0							0	
IEDA	1020	Academic and Professional Development II	0					0	0					0	
		Note: IEDA1990 OR IEDA1991													
IEDA	1990	Industrial Training	0			0*	0^							0	
IEDA	1991	Industrial Experience	0												
IEDA	2520	Probability for Engineers	3			3								3	
IEDA	2540	Statistics for Engineers	3				3							3	This course will also be used to substitute ISOM2500
IEDA	3010	Presciptive Analytics	3					3						3	
IEDA	3230	Engineering Economics and Accounting	3					3						3	
IEDA	3250	Stochastic Models	3						3					3	
IEDA	3300	Industrial Data Systems	3				3							3	
IEDA	4100	Integrated Production Systems	3								3			3	This course will also be used to substitute ISOM 2700
IEDA	4130	System Simulation	3								3			3	
		Note: IEDA4901 OR IEDA4990	6												
IEDA	4901	Final Year Thesis	6									3	3	6	
IEDA	4960	Industrial Engineering and Engineering Management Final Year Project													
ENGG	2010	Engineering Seminar Series	0			0	0	0	0	0	0	0	0	0	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
LANG	4032	Technical Communication II for Industrial Engineering and Decision Analytics	3									3		3	
IEDA		Industrial Engineering Electives (Courses from the specified 21 elective list, of which at least 15 credits should be taken from 1 of the 2 areas and at least 6 credits outside that area.)	21			6	3			3		3	6	21	
		Required credits for Major Requirements Courses and Electives	57											57	
BBA in Marketing															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3			(3)								0	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3				3							3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3					3						3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by IEDA2540
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by IEDA 4100
MARK	2120	Marketing Management	3			3								3	MARK 2120 is a major pre-requisite
MGMT	2010	Business Ethics and the Individual	2							2				2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2									2		2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3						3					3	
LABU	2060	Effective Communication in Business	3							3				3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											30	
Major Requirements															
Major Required Courses and Electives															
MARK	3220	Marketing Research	4					4						4	
MARK	3420	Consumer Behavior	4						4					4	
MARK	4210	Strategic Marketing	4										4	4	
MARK		MARK 3000-level or above Electives (Any 3 courses of the subject and level as specified)	12							4	4	4		12	
		Required credits for Major Required Courses and Electives	24											24	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	6				6	6	6			30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	18	18	19	18	16	15	13		
				171##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

MEMARK 2020-21 Intake

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Mechanical Engineering and BBA in Marketing)**													
						<< Declaration of BEng major		*<< Declaration of BBA major*							
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Mechanical Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP1021 OR COMP1022P OR COMP2011	3-4												
COMP	1021	Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3				3							3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3					3						3	
		Note: MATH2111 OR MATH2350 OR MATH2351													
MATH	2111	Matrix Algebra and Applications	3							3				3	
MATH	2350	Applied Linear Algebra and Differential Equations	3												
MATH	2351	Introduction to Differential Equations	3												
		Note: PHYS1112 OR PHYS1312													
PHYS	1112	General Physics I with Calculus	3		3									3	
PHYS	1312	Honors General Physics I	3												
CHEM/LIFS/ PHYS		Science 1000-level course (Any 1 course of the subject and level as specified)	3		(3)									0	
		Required credits for Engineering Fundamental Courses	22-26											21	
Major Required Courses and Electives															
MECH	1990	Industrial Training	0			0*	0^							0	
MECH	2020	Statics and Dynamics	3			3								3	
MECH	2040	Solid Mechanics I	3						3					3	
MECH	2210	Fluid Mechanics	3						3					3	
MECH	2310	Thermodynamics	3			3								3	
MECH	2410	Engineering Materials I	3				3							3	
MECH	2520	Design and Manufacturing I	3				3							3	
MECH	2907	Mechatronic Design and Prototyping	3						3					3	
MECH	3030	Mechanisms of Machinery	3								3			3	
		Note: MECH3300 OR MECH3420 OR MECH3520													
MECH	3300	Energy Conversion	3							3				3	
MECH	3420	Engineering Materials II	3												
MECH	3520	Design and Manufacturing II	3												
MECH	3310	Heat Transfer	3								3			3	
MECH	3610	Control Principles	3					3						3	
MECH	3630	Electrical Technology	3						3					3	
MECH	3830	Laboratory	3								3			3	
MECH	4900	Final Year Design Project	6									3	3	6	
ELEC	2420	Basic Electronics	3			3								3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4034	Technical Communication II for Mechanical and Areospace Engineering	3								3			3	
		Required credits for Major Requirements Courses and Electives	51											51	
BBA in Marketing															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3							3				3	
MARK	2120	Marketing Management	3				3							3	MARK 2120 is a major pre-requisite
MGMT	2010	Business Ethics and the Individual	2									2		2	
MGMT	2110	Organizational Behavior	3				3							3	
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3							3				3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4	(3)										0	
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
MARK	3220	Marketing Research	4					4						4	
MARK	3420	Consumer Behavior	4						4					4	
MARK	4210	Strategic Marketing	4										4	4	
MARK		MARK 3000-level or above Electives (Any 3 courses of the subject and level as specified)	12							4	4	4		12	
		Required credits for Major Required Courses and Electives	24											24	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	9	6					3		6	6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	18	18	19	19	16	15	15		
				174##											
						<< Declaration of BEng major		*<< Declaration of BBA major*							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

BEMGMT **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Bioengineering and BBA in Management)**														
Course Offering Dept (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Bioengineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: [COMP 1021] OR [(COMP 1022P OR COMP 2011) AND COMP1029P]	3-5												
COMP	1021	Introduction to Computer Science	3												
COMP	1022P	Introduction to Computing with Java	3		3									3	This course will also be used to substitute ISOM 2010
COMP	1029P	Python Programming Bridging Course	1												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM1010 OR CHEM 1020													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
CHEM	1050	Laboratory for General Chemistry I	1	1										1	
LANG	2030	Technical Communication I	3				3							3	
LIFS	1901	General Biology I	3	3										3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus I	3												
		Note: PHYS 1112 OR PHYS 1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	23-29											22	
Major Required Courses and Electives															
		Note: BIEN 1010 OR CENG 1000													
BIEN	1010	Introduction to Biomedical Engineering	3		3									3	
CENG	1000	Introduction to Chemical and Biological Engineering	3												
BIEN	2310	Modeling for Chemical and Biological Engineering	3			3								3	
BIEN	2410	Cellular and Systems Physiology for Engineers	3						3					3	
BIEN	2610	Chemical Biology for Engineers	3			3								3	
BIEN	2990	Academic and Professional Development I	1			1								1	
BIEN	3240	Transport Phenomena in Biological Systems	3									3		3	
BIEN	3320	Data Science for Biology and Medicine	3				3							3	
BIEN	3410	Introduction to Bioinstrumentation and Bioimaging	3							3				3	
BIEN	3910	Bioengineering Laboratory	4							4				4	
		Note: BIEN 4920 OR BIEN 4930 OR BIEN 4940													
BIEN	4920	Bioengineering Capstone Design	6												
BIEN	4930	Bioengineering Thesis Research	6									3	3	6	
BIEN	4940	Bioengineering Industrial Project	6												
BIEN	4990	Academic and Professional Development II	1									1		1	
CENG	2210	Chemical and Biological Engineering Thermodynamics	3				3							3	
CENG	3230	Chemical and Biological Reaction Engineering	3							3				3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
		Note: LIFS 3150 OR MATH 2411	3-4												
LIFS	3150	Biostatistics	3			3								3	
MATH	2411	Applied Statistics	4												
LANG	4035	Technical Communication II for Chemical and Biological Engineering	3									3		3	
SSCI/SENG		Bioengineering Electives (5 courses from the specified elective list, of which at least 9 credits should be taken from a single specialty area (Area 1 or Area 2). Out of the 15 credits taken, at least 9 credits should be at 4000-level)	15								6	3	6	15	
		Required credits for Major Required Courses and Electives	60-61											60	
BBA in Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3							3				3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/COMP2011
ISOM	2020	Coding for Business	1	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/1029P/2011
ISOM	2500	Business Statistics	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by LIFS 3150/MATH 2411
ISOM	2600	Introduction to Business Analytics	1	-	-	-	-	-	-	-	-	-	-	0	Substituted by BIEN3320
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3		3									3	MGMT 2110 is a major pre-requisite
MGMT	2130	Business Ethics and Social Responsibility	2					2						2	
SBMT	1111	Business Student Induction	0	-	-	-	-	-	-	-	-	-	-	0	Substituted by ENGG 1010
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3						3					3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3	(3)										0	
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											34	
Major Requirements															
Major Required Courses and Electives															
		Note: MGMT 3110 OR MGMT 3120 (For students in the Consulting Option, they will use MGMT 3110 to fulfill the Option Requirements and should take MGMT 3120 to fulfill this requirement.)	4												
MGMT	3110	Human Resources Management	4						4					4	Students in the Consulting Option must take MGMT 3120
MGMT	3120	Managerial Leadership	4												
		Note: MGMT 3130 OR MGMT 3140 (Students in the Consulting Option must take MGMT 3140 to fulfill this requirement.)	4												
MGMT	3130	Judgement and Decision Making in Organizations	4					4						4	Students in the Consulting Option must take MGMT 3140
MGMT	3140	Negotiation	4												
		Note: MGMT 4210 OR MGMT 4220 (Students in the Consulting Option or in the Corporate Social Responsibility and Sustainability Option must take MGMT 4210 to fulfill this requirement.)	3-4							3				3	Students in the Consulting Option must take MGMT 4210 Students in the CSR Option must take MGMT 4210
MGMT	4210	Corporate Strategy	3												
MGMT	4220	Entrepreneurship and Innovation	4												
MGMT		MGMT 3000-level or above Electives (Any 3 courses of the subject and level as specified. Courses taken as Option Required Courses may not be counted towards the elective requirement.)	9							3	3	3		9	Students in the Consulting Option are recommended to take MGMT 4220 and a new course in Simulating Strategy to fulfill the major elective requirement
		Required credits for Major Required Courses and Electives	20-21											20	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	3			3	9	3		9		3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				19	18	18	18	18	19	19	18	16	12		
				175##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

--- denotes the course/requirement is either waived or substitued

To graduate, students should complete all requirements specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

BTMGMT **2020-21 Intake**

(Via DDP PBA)

School:		School of Science and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BSc in Biotechnology and BBA in Management)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	Sub-total	Remarks
						<< *Declaration of BEng major*		<< *Declaration of BBA major*							
BSc in Biotechnology															
School Requirements															
SCIE	1000	Science School Induction	0	0	0									0	
		Note: COMP1021 OR COMP1022P OR COMP2011	3-4												
COMP	1021	Introduction to Computer Science	3			3								3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
LANG	2010	English for Science I	3					3						3	
SSCI		Science Foundation Courses [6 courses from the specified elective list. Students should take 7 foundation lecture courses, including at least 1 lecture course, but no more than 3 lecture courses, from each discipline: CHEM, LIFS, MATH and PHYS; and (ii) 1 laboratory course.]	22-25												
		Chemistry in Everyday Life													
CHEM	1004	General Chemistry IA	3												
CHEM	1010	General Chemistry IB	3												
CHEM	1020	General Chemistry II	3												
CHEM	1030	Laboratory for General Chemistry I	3												
CHEM	1050	Laboratory for General Chemistry II	1												
CHEM	1055		1												
		Environmental Science													
LIFS	1030	General Biology I@	3												
LIFS	1901@	General Biology II@	3												
LIFS	1902@	Laboratory for General Biology I	3												LIFS1901 & LIFS1902 are Major Pre-requisite
LIFS	1903	Laboratory for General Biology II	1												
LIFS	1904	Nature of Life Sciences	1												
LIFS	1930	Biochemistry I	3												
LIFS	2210		3	10	3	6	3							22	Students are recommended to take CHEM1010, CHEM1030, LIFS1903 and MATH1013 to satisfy the requirements of both SSCI School requirements and Major requirements
		Calculus IA													
MATH	1012	Calculus IB	4												
MATH	1013	Calculus II	3												
MATH	1014	Accelerated Calculus	3												
MATH	1020	Honors Calculus I	4												
MATH	1023	Honors Calculus II	3												
MATH	1024	Multivariable Calculus	3												
MATH	2023	Linear Algebra	4												
MATH	2121	Honors in Linear and Abstract Algebra I	4												
MATH	2131		4												
		Physics and the Modern Society													
PHY	1001	General Physics I	3												
PHY	1111	General Physics I with Calculus	3												
PHY	1112	Laboratory for General Physics I	3												
PHY	1113	General Physics II	1												
PHY	1114	Laboratory for General Physics II	3												
PHY	1115	Honors General Physics I	1												
PHY	1312	Honors General Physics I	3												
		Required credits for School / Major Pre-requisite Requirements	25-29											28	
Major Requirements															
Major Required Courses and Electives															
LIFS	1903	Laboratory for General Biology I	1	(1)										0	
LIFS	1904	Laboratory for General Biology II	1		1									1	
LIFS	2040	Cell Biology	3				3							3	
LIFS	2070	Introduction to Biotechnology	3			3								3	
LIFS	2080	Plant Biology	3				3							3	
LIFS	2210	Biochemistry I	3			(3)								0	
LIFS	3060	Microbiology	3						3					3	
LIFS	3110	Biotechnological Application of Recombinant DNA Techniques	3					3						3	
LIFS	3140	General Genetics	4							4				4	
LIFS	4150	Plant Biotechnology	3									3		3	
LIFS	4200	Concepts and Issues in Contemporary Biotechnology	3							3				3	
		Note: LIFS4963 OR (LIFS4973 AND LIFS4983) OR (SCIE4500 AND LIFS4983) [Students following IRE Track can only use (SCIE4500 AND LIFS4983) to fulfill the requirement.]	3-7												
LIFS	4963	Biotechnology Capstone Project	3									[3]	3	3	
LIFS	4973	Biotechnology Project Research I	3												
LIFS	4983	Biotechnology Project Research II	4												
SCIE	4500	IRE Research Project II	3												
		Note: CHEM1010 OR CHEM1020													
CHEM	1010	General Chemistry IA	3	(3)										0	
CHEM	1020	General Chemistry IE	3												
CHEM	1030	General Chemistry II	3		(3)									0	
CHEM	1050	Laboratory for General Chemistry I	1	1										1	
CHEM	1055	Laboratory for General Chemistry II	1		1									1	
		Note: CHEM 2110 OR CHEM 2311													
CHEM	2110	Organic Chemistry I	3					3						3	
CHEM	2311	Analytical Chemistry	3												
		Note: CHEM2155 OR CHEM2355													
CHEM	2155	Fundamental Organic Chemistry Laboratory	1						1					1	
CHEM	2355	Fundamental Analytical Chemistry Laboratory	1												
CENG	1600	Biotechnology and Its Business Opportunities	3							3				3	
LANG	3024	Science Communication in English (Life Science)	3										3	3	
LIFS/BIPH/BTEC/BIEN/ CENG		Biotechnology Electives (Courses from the specified elective list; Students following IRE Track are required to take a minimum of 15 credits; while others a minimum of 18 credits. Courses taken as Major/Track Required Courses may not be counted towards the elective requirement.)	15-18						3		3	6	3	15	
		Required credits for Major Required Courses and Electives	62-70											56	
BBA in Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3				3							3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/1022Q/2011
ISOM	2020	Coding for Business	1				1							1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1							1				1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3			3								3	MGMT 2110 is a major pre-requisite
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3								3			3	
LABU	2060	Effective Communication in Business	3									3		3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1013 OR MATH 1023 to satisfy the requirements of both BSc and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
		Note: MGMT 3110 OR MGMT 3120 (For students in the Consulting Option, they will use MGMT 3110 to fulfill the Option Requirements and should take MGMT 3120 to fulfill this requirement.)	4												
MGMT	3110	Human Resources Management	4						4					4	Students in the Consulting Option must take MGMT 3120
MGMT	3120	Managerial Leadership	4												
		Note: MGMT 3130 OR MGMT 3140 (Students in the Consulting Option must take MGMT 3140 to fulfill this requirement.)	4												
MGMT	3130	Judgement and Decision Making in Organizations	4					4						4	Students in the Consulting Option must take MGMT 3140
MGMT	3140	Negotiation	4												
		Note: MGMT 4210 OR MGMT 4220 (Students in the Consulting Option or in the Corporate Social Responsibility and Sustainability Option must take MGMT 4210 to fulfill this requirement.)	3-4							3				3	Students in the Consulting Option must take MGMT 4210 Students in the CSR Option must take MGMT 4210
MGMT	4210	Corporate Strategy	3												
MGMT	4220	Entrepreneurship and Innovation	4												
MGMT		MGMT 3000-level or above Electives (Any 3 courses of the subject and level as specified. Courses taken as Option Required Courses may not be counted towards the elective requirement.)	9							3	3	3		9	Students in the Consulting Option are recommended to take MGMT 4220 and a new course in Simulating Strategy to fulfill the major elective requirement
		Required credits for Major Required Courses and Electives	20-21											20	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	3	3			3	3	3	9	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				17	17	20	19	19	20	20	18	18	14		
				182##											
						<< *Declaration of BEng major*		<< *Declaration of BBA major*							

Notes:

@ Course that students need to complete before enrolling into respective major/programs.

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CEMGMT **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Chemical Engineering and BBA in Management)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Chemical Engineering															
Major Requirements															
Engineering Fundamental Courses															
COMP	1021	Note: COMP 1021 OR COMP 1022P OR COMP 2011 Introduction to Computer Science	3-4 3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM	1010	Note: CHEM1010 OR CHEM1020 General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
LANG	2030	Technical Communication I	3					3						3	
MATH	1012	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA	4-7 4	3	3									6	
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
PHYS	1112	Note: PHYS 1112 OR PHYS 1312 General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Required credits for Engineering Fundamental Courses	19-23											21	
Major Required Courses and Electives															
CENG	1000	Note: CENG1000 OR CENG1500 Introduction to Chemical and Biological Engineering	3	3										3	
CENG	1500	A First Course on Materials Science and Applications	3												
CENG	1600	Note: CENG1600 OR CENG1700 OR BIEN1010 Biotechnology and Its Business Opportunities	3		3									3	
CENG	1700	Introduction to Environmental Engineering	3												
BIEN	1010	Introduction to Biomedical Engineering	3												
CENG	1010	Academic and Professional Development I	0			0								0	
CENG	1980	Industrial Training	0				0	0	0	0				0	
CENG	2110	Process and Product Design Principles	3			3								3	
CENG	2210	Chemical and Biological Engineering Thermodynamics	3				3							3	
CENG	2220	Process Fluid Mechanics	3				3							3	
CENG	2310	Modeling for Chemical and Biological Engineering	3			3								3	
CENG	3110	Process Dynamics and Control	3						3					3	
CENG	3150	Integrated Chemical Process & Product Design	5						5					5	
CENG	3210	Separation Processes	3					3						3	
CENG	3220	Heat and Mass Transfer	3					3						3	
CENG	3230	Chemical and Biological Reaction Engineering	3					3						3	
CENG	3950	Chemical and Environment Engineering Laboratory	4								4			4	
CENG	4020	Academic and Professional Development II	0									0		0	
CENG	4920	Note: CENG4920 OR CENG4930 OR CENG4940 Chemical Engineering Capstone Design	6									3	3	6	
CENG	4930	Chemical Engineering Thesis Research	6												
CENG	4940	Chemical Engineering Industrial Project	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
CHEM	1050	Laboratory for General Chemistry I	1		1									1	
CHEM	2111	Fundamentals of Organic Chemistry	3				3							3	
CHEM	2155	Fundamental Organic Chemistry Laboratory	1				1							1	
LANG	4035	Technical Communication II for Chemical and Biological Engineering	3									3		3	
BIEN	2410	Note: BIEN2410 OR BIEN2610 OR LIFS1901 Cellular and Systems Physiology for Engineers	3				3							3	
BIEN	2610	Chemical Biology for Engineers	3												
LIFS	1901	General Biology I	3												
SENG/SSCI/ENVR		CENG Elective (12 credits from specified elective list)	12					3	3	3	3			12	
		Required credits for Major Requirements Courses and Electives	68											68	
BBA in Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3							3				3	
ECON	2103	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics	3		3									3	
ECON	2113	Microeconomics	3												
ECON	2123	Note: ECON 2123 OR ECON 3123 Macroeconomics	3							3				3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/COMP2011
ISOM	2020	Coding for Business	1			1								1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1			1								1	
ISOM	2700	Operations Management	3									3		3	
MARK	2120	Marketing Management	3		3									3	
MGMT	2010	Business Ethics and the Individual	2						2					2	
MGMT	2110	Organizational Behavior	3			3								3	MGMT 2110 is a major pre-requisite
MGMT	2130	Business Ethics and Social Responsibility	2							2				2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3							3				3	
LABU	2060	Effective Communication in Business	3										3	3	
MATH	1003	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra	3-4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	45-46											39	
Major Requirements															
Major Required Courses and Electives															
MGMT	3110	Note: MGMT 3110 OR MGMT 3120 (For students in the Consulting Option, they will use MGMT 3110 to fulfill the Option Requirements and should take MGMT 3120 to fulfill this requirement.) Human Resources Management	4 4						4					4	Students in the Consulting Option must take MGMT 3120
MGMT	3120	Managerial Leadership	4												
MGMT	3130	Note: MGMT 3130 OR MGMT 3140 (Students in the Consulting Option must take MGMT 3140 to fulfill this requirement.) Judgement and Decision Making in Organizations	4 4					4						4	Students in the Consulting Option must take MGMT 3140
MGMT	3140	Negotiation	4												
MGMT	4210	Note: MGMT 4210 OR MGMT 4220 (Students in the Consulting Option or in the Corporate Social Responsibility and Sustainability Option must take MGMT 4210 to fulfill this requirement.) Corporate Strategy	3-4 3							3				3	Students in the Consulting Option must take MGMT 4210 Students in the CSR Option must take MGMT 4210
MGMT	4220	Entrepreneurship and Innovation	4												
MGMT		MGMT 3000-level or above Electives (Any 3 courses of the subject and level as specified. Courses taken as Option Required Courses may not be counted towards the elective requirement.)	9							3	3	3		9	Students in the Consulting Option are recommended to take MGMT 4220 and a new course in Simulating Strategy to fulfill the major elective requirement
		Required credits for Major Required Courses and Electives	20-21											20	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30				3		3		9	6	9	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	19	20	19	19	20	20	19	18	15		
				187##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CIMGMT **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Civil Engineering and BBA in Management)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Civil Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP 1021 OR COMP 1022P OR COMP 2011	3-4												
COMP	1021	Introduction to Computer Science	3		3									3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM 1010 OR CHEM 1020													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
LANG	2030	Technical Communication I	3					3						3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
MATH	2350	Applied Linear Algebra and Differential Equations	3			3								3	
		Note: PHYS 1112 OR PHYS 1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Required credits for Engineering Fundamental Courses	22-26											24	
Major Required Courses and Electives															
CIVL	1010	Academic Professional Development I	0			0	0							0	
CIVL	1100	Discovering Civil and Environmental Engineering	3		3									3	
CIVL	2010	Academic Professional Development II	0					0	0					0	
CIVL	2020	Industrial and BIM Training	0			0*	0							0	
CIVL	2110	Statics	3			3								3	
CIVL	2120	Mechanics of Materials	3				3							3	
CIVL	2160	Modeling Systems with Uncertainties	3			3								3	This course will also be used to substitute ISOM 2500
CIVL	2170	Infrastructure Systems Engineering and Management	3				3							3	
CIVL	2410	Environmental Assessment and Management	3				3							3	
CIVL	2510	Fluid Mechanics	3				3							3	
CIVL	2810	Construction Materials	3					3						3	
CIVL	3010	Academic Professional Development III	0							0	0			0	
CIVL	3020	Internship Training	0								0^			0	
CIVL	3210	Introduction to Construction Management	3						3					3	
CIVL	3310	Structural Analysis	3					3						3	
CIVL	3320	Reinforced Concrete Design	3						3					3	
CIVL	3510	Hydrosystems Engineering	3					3						3	
CIVL	3610	Traffic and Transportation Engineering	3						3					3	
CIVL	3730	Fundamentals of Geotechnics	3							3				3	
CIVL	3740	Geotechnical Analysis and Design	3								3			3	
		Note: CIVL 4910 OR CIVL 4920													
CIVL	4910	Civil and Environmental Engineering Final Year Project	6									3	3	6	
CIVL	4920	Civil and Environmental Engineering Final Year Thesis	6												
CIVL	4950	Civil Engineering Capstone Design Project	3									3		3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4033	Technical Communication II for Civil and Environmental Engineering	3									3		3	
CIVL/SENG		CIVL Electives (3 courses from the specified elective list) CIVL: Any CIVL courses at 4000-level or above except CIVL 4230 SENG: Any 3000-level or above courses offered by the Engineering School or engineering departments other than CIVL	9								3	3	3	9	
		Required credits for Major Requirements Courses and Electives	66											66	
BBA in Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3		3									3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1				1							1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by CIVL 2160
ISOM	2600	Introduction to Business Analytics	1				1							1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3			3								3	MGMT 2110 is a major pre-requisite
MGMT	2130	Business Ethics and Social Responsibility	2								2			2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3										3	3	
LABU	2060	Effective Communication in Business	3							3				3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3	(3)										0	
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
		Note: MGMT 3110 OR MGMT 3120 (For students in the Consulting Option, they will use MGMT 3110 to fulfill the Option Requirements and should take MGMT 3120 to fulfill this requirement.)	4						4					4	Students in the Consulting Option must take MGMT 3120
MGMT	3110	Human Resources Management	4												
MGMT	3120	Managerial Leadership	4												
		Note: MGMT 3130 OR MGMT 3140 (Students in the Consulting Option must take MGMT 3140 to fulfill this requirement.)	4												
MGMT	3130	Judgement and Decision Making in Organizations	4					4						4	Students in the Consulting Option must take MGMT 3140
MGMT	3140	Negotiation	4												
		Note: MGMT 4210 OR MGMT 4220 (Students in the Consulting Option or in the Corporate Social Responsibility and Sustainability Option must take MGMT 4210 to fulfill this requirement.)	3-4												
MGMT	4210	Corporate Strategy	3							3				3	Students in the Consulting Option must take MGMT 4210 Students in the CSR Option must take MGMT 4210
MGMT	4220	Entrepreneurship and Innovation	4												
MGMT		MGMT 3000-level or above Electives (Any 3 courses of the subject and level as specified. Courses taken as Option Required Courses may not be counted towards the elective requirement.)	9							3	3	3		9	Students in the Consulting Option are recommended to take MGMT 4220 and a new course in Simulating Strategy to fulfill the major elective requirement
		Required credits for Major Required Courses and Electives	20-21											20	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6						6	9	3	6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	20	19	19	18	20	18	15		
				185##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

COMGMT **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Computer Science and BBA in Management)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Computer Science															
Major Requirements															
Engineering Fundamental Courses															
COMP	1021	Note: COMP1021 OR COMP1022P Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM	1004	Note: CHEM1004 OR CHEM1010 OR CHEM1020 OR LIFS1901 OR PHYS1001 OR PHYS1112 OR PHYS1312 Chemistry in Everyday Life	3	3										3	
CHEM	1010	General Chemistry IA	3												
CHEM	1020	General Chemistry IB	3												
LIFS	1901	General Biology I	3												
PHYS	1001	Physics and the Modern Society	3												
PHYS	1112	General Physics I with Calculus	3												
PHYS	1312	Honors General Physics I	3												
LANG	2030	Technical Communication I	3					3						3	
MATH	1012	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA	4-7 4	3	3									6	
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (COMP students may also use COMP1022P or COMP1022Q to fulfill this requirement)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	19-23											18	
Major Required Courses and Electives															
COMP	2011	Note: (COMP2011 AND COMP2012) OR COMP2012H Programming with C++	5-8 4			4	4							8	
COMP	2012	Object-Oriented Programming and Data Structures	4												
COMP	2012H	Honors Object-Oriented Programming and Data Structures	5												
COMP	2611	Computer Organization	4						4					4	
COMP	2711	Note: COMP2711 OR COMP2711H Discrete Mathematical Tools for Computer Science	4			4								4	
COMP	2711H	Honors Discrete Mathematical Tools for Computer Science	4												
COMP	3111	Note: COMP3111 OR COMP3111H Software Engineering	4					4						4	
COMP	3111H	Honors Software Engineering	4												
COMP	3511	Operating Systems	3							3				3	
COMP	3711	Note: COMP3711 OR COMP3711H Design and Analysis of Algorithms	3-4 3					3						3	
COMP	3711H	Honors Design and Analysis of Algorithms	4												
COMP	4900	Note: Students are required to take COMP4900 for every regular term in which they are in residency at HKUST with major in COMP Academic and Professional Development	0			0	0	0	0	0	0	0	0	0	
COMP	1991	Note: (COMP4981 OR COMP4981H) AND COMP1991 OR COMP4910 Industrial Experience	6 0												
COMP	4981	Final Year Project	6									3	3	6	
COMP	4981H	Final Year Thesis	6												
COMP	4910	Co-op FYP Program	6												
ELEC	2600	Note: ELEC2600 OR IELM2510 OR MATH2411 OR MATH2421 OR MATH2431 Probability and Random Processes in Engineering	3-4 4											4	Students should take MATH 2411 which will also be used to substitute ISOM 2500.
IEDA	2520	Probability for Engineers	3												
IEDA	2540	Statistics for Engineers	3			4									
MATH	2411	Applied Statistics	4												
MATH	2421	Probability	4												
MATH	2431	Honors Probability	4												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4030	Technical Communication II for CSE & CPEG	3									3		3	
COMP		COMP Electives (5 courses from the specified elective list, of which at least 3 courses should be taken from 1 area and at least 2 courses outside that area.)	15							3	6	3	3	15	
COMP		COMP Elective (Any 1 course offered under COMP)	3										3	3	
		Required credits for Major Requirements Courses and Electives	53-58											57	
BBA in Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON	2103	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics	3				3							3	
ECON	2113	Microeconomics	3												
ECON	2123	Note: ECON 2123 OR ECON 3123 Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by MATH 2411
ISOM	2600	Introduction to Business Analytics	1				1							1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3		3									3	
MGMT	2010	Business Ethics and the Individual	2				2							2	
MGMT	2110	Organizational Behavior	3			3								3	MGMT 2110 is a major pre-requisite
MGMT	2130	Business Ethics and Social Responsibility	2							2				2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3						3					3	
MATH	1003	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra	3-4 3												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4	(3)										0	
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
MGMT	3110	Note: MGMT 3110 OR MGMT 3120 (For students in the Consulting Option, they will use MGMT 3110 to fulfill the Option Requirements and should take MGMT 3120 to fulfill this requirement.) Human Resources Management	4 4						4					4	Students in the Consulting Option must take MGMT 3120
MGMT	3120	Managerial Leadership	4												
MGMT	3130	Note: MGMT 3130 OR MGMT 3140 (Students in the Consulting Option must take MGMT 3140 to fulfill this requirement.) Judgement and Decision Making in Organizations	4 4					4						4	Students in the Consulting Option must take MGMT 3140
MGMT	3140	Negotiation	4												
MGMT	4210	Note: MGMT 4210 OR MGMT 4220 (Students in the Consulting Option or in the Corporate Social Responsibility and Sustainability Option must take MGMT 4210 to fulfill this requirement.) Corporate Strategy	3-4 3							3				3	Students in the Consulting Option must take MGMT 4210 Students in the CSR Option must take MGMT 4210
MGMT	4220	Entrepreneurship and Innovation	4												
MGMT		MGMT 3000-level or above Electives (Any 3 courses of the subject and level as specified. Courses taken as Option Required Courses may not be counted towards the elective requirement.)	9							3	3	3		9	Students in the Consulting Option are recommended to take MGMT 4220 and a new course in Simulating Strategy to fulfill the major elective requirement
		Required credits for Major Required Courses and Electives	20-21											20	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3		3			3	9	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	19	18	17	17	18	15	12		
				170##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CPMGMT **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Computer Engineering and BBA in Management)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
						<< Declaration of BEng major		*<< Declaration of BBA major*							
BEng in Computer Engineering															
Major Requirements															
Engineering Fundamental Courses															
COMP	1021	Note: COMP1021 OR COMP1022P Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3				3							3	
MATH	1012	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA	4-7 4	3	3									6	
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3					3						3	
MATH	2111	Matrix Algebra and Applications	3					3						3	
PHYS	1112	Note: PHYS1112 OR PHYS1312 General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
PHYS	1114	Note: PHYS1114 OR PHYS1314 General Physics II	3						3					3	
PHYS	1314	Honors General Physics II	3												
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	25-29											24	
Major Required Courses and Electives															
CPEG	2930	Academic and Professional Development I	0			0	0							0	
CPEG	3930	Academic and Professional Development II	0					0	0					0	
COMP	2011	Note: (COMP2011 AND COMP2012) OR COMP2012H Programming with C++	5-8 4			4		4						8	
COMP	2012	Object-Oriented Programming and Data Structures	4												
COMP	2012H	Honors Object-Oriented Programming and Data Structures	5												
COMP	2611	Note: COMP2611 OR ELEC2350 Computer Organization	4 4				4							4	
ELEC	2350	Introduction to Computer Organization and Design	4												
COMP	2711	Note: COMP2711 OR COMP2711H OR ELEC 2600 Discrete Mathematical Tools for Computer Science	4 4							4				4	
COMP	2711H	Honors Discrete Mathematical Tools for Computer Science	4												
ELEC	2600	Probability and Random Processes in Engineering	4												
COMP	3511	Operating Systems	3								3			3	
COMP	4521	Note: COMP4521 OR COMP4611 OR ELEC 4310 Mobile Application Develoepment	3-4 3									3		3	
COMP	4611	Design and Analysis of Computer Architectures	3												
ELEC	4310	Embedded System Design	4												
ELEC	4320	FPGA-based Design: From Theory to Practice	3												
ELEC	4330	Mobile Embedded Systems: Hardware Platform, Software Development, and Applications	3												
CPEG	1971	Note: [(CPEG4901 OR CPEG4902) AND CPEG1971] OR [(CPEG4911 OR CPEG4912) AND CPEG1971] OR CPEG4910 Industrial Experience	6 0												
CPEG	4901	Computer Engineering Final Year Project in COMP	6									3	3	6	
CPEG	4902	Computer Engineering Final Year Thesis in COMP	6												
CPEG	4911	Computer Engineering Final Year Project in ELEC	6												
CPEG	4912	Computer Engineering Final Year Thesis in ELEC	6												
CPEG	4910	Co-op Program	6												
ELEC	1100	Introduction to Electro-Robot Design	4			4								4	
ELEC	1200	Note: ELEC1200 OR ELEC2100 OR ELEC2400 (2 courses out of 3) A System View of Communications: from Signals to Packets	8 4				4		4					8	
ELEC	2100	Signals and Systems	4												
ELEC	2400	Electronic Circuits	4												
ELEC	3300	Introduction to Embedded Systems	4								4			4	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4030	Note: LANG4030 OR LANG4031 Technical Communication II for CSE & CPEG	3									3		3	
LANG	4031	Technical Communication II for ECE & CPEG	3												
COMP/ELEC		Area Courses (At least 4 courses from the specified elective list , of which at least 2 courses should be taken from one single area and at least 2 courses outside that area. Courses taken as Major Required Courses may not be counted towards the elective requirement.)	15			3					4	4	4	15	
		Required credits for Major Requirements Courses and Electives	59-63											62	
BBA in Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON	2103	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics	3		3									3	
ECON	2113	Microeconomics	3												
ECON	2123	Note: ECON 2123 OR ECON 3123 Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2		2									2	
MGMT	2110	Organizational Behavior	3		3									3	MGMT 2110 is a major pre-requisite
MGMT	2130	Business Ethics and Social Responsibility	2								2			2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3						3					3	
MATH	1003	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra	3-4 3												DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4	(3)										0	
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
MGMT	3110	Note: MGMT 3110 OR MGMT 3120 (For students in the Consulting Option, they will use MGMT 3110 to fulfill the Option Requirements and should take MGMT 3120 to fulfill this requirement.) Human Resources Management	4 4						4					4	Students in the Consulting Option must take MGMT 3120
MGMT	3120	Managerial Leadership	4												
MGMT	3130	Note: MGMT 3130 OR MGMT 3140 (Students in the Consulting Option must take MGMT 3140 to fulfill this requirement.) Judgement and Decision Making in Organizations	4 4					4						4	Students in the Consulting Option must take MGMT 3140
MGMT	3140	Negotiation	4												
MGMT	4210	Note: MGMT 4210 OR MGMT 4220 (Students in the Consulting Option or in the Corporate Social Responsibility and Sustainability Option must take MGMT 4210 to fulfill this requirement.) Corporate Strategy	3-4 3							3				3	Students in the Consulting Option must take MGMT 4210 Students in the CSR Option must take MGMT 4210
MGMT	4220	Entrepreneurship and Innovation	4												
MGMT		MGMT 3000-level or above Electives (Any 3 courses of the subject and level as specified. Courses taken as Option Required Courses may not be counted towards the elective requirement.)	9							3	3	3		9	Students in the Consulting Option are recommended to take MGMT 4220 and a new course in Simulating Strategy to fulfill the major elective requirement
		Required credits for Major Required Courses and Electives	20-21											20	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6		3				9	3	3	6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	17	20	20	19	20	19	19	19	13		
				184##											
						<< Declaration of BEng major		*<< Declaration of BBA major*							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

CVMGMT **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Civil and Environmental Engineering and BBA in Management)**													**Remarks**
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	
BEng in Civil and Environmental Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP 1021 OR COMP 1022P OR COMP 2011	3-4												
COMP	1021	Introduction to Computer Science	3		3									3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
		Note: CHEM 1010 OR CHEM 1020													
CHEM	1010	General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
LANG	2030	Technical Communication I	3					3						3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3			3								3	
MATH	2350	Applied Linear Algebra and Differential Equations	3			3								3	
		Note: PHYS 1112 OR PHYS 1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Required credits for Engineering Fundamental Courses	22-26											24	
Major Required Courses and Electives															
CIVL	1010	Academic Professional Development I	0			0	0							0	
CIVL	1100	Discovering Civil and Environmental Engineering	3		3									3	
CIVL	2010	Academic Professional Development II	0					0	0					0	
CIVL	2020	Industrial and BIM Training	0			0*	0							0	
CIVL	2110	Statics	3			3								3	
CIVL	2120	Mechanics of Materials	3				3							3	
CIVL	2160	Modeling Systems with Uncertainties	3			3								3	
CIVL	2170	Infrastructure Systems Engineering and Management	3				3							3	
CIVL	2410	Environmental Assessment and Management	3				3							3	
CIVL	2510	Fluid Mechanics	3				3							3	
CIVL	2810	Construction Materials	3					3						3	
CIVL	3010	Academic Professional Development III	0							0	0			0	
CIVL	3020	Internship Training	0								0^			0	
		Note: CIVL3210 OR CIVL3610													
CIVL	3210	Introduction to Construction Management	3						3					3	
CIVL	3610	Traffic and Transportation Engineering	3												
CIVL	3310	Structural Analysis	3					3						3	
CIVL	3320	Reinforced Concrete Design	3						3					3	
CIVL	3420	Water and Wastewater Engineering	3						3					3	
CIVL	3510	Hydrosystems Engineering	3					3						3	
CIVL	3730	Fundamentals of Geotechnics	3							3				3	
CIVL	3740	Geotechnical Analysis and Design	3								3			3	
		Note: CIVL 4910 OR CIVL 4920													
CIVL	4910	Civil and Environmental Engineering Final Year Project	6									3	3	6	
CIVL	4920	Civil and Environmental Engineering Final Year Thesis	6												
CIVL	4950	Civil Engineering Capstone Design Project	3									3		3	
		Note: CIVL4450 OR CIVL 5450 OR CIVL5460													
CIVL	4450	Carbon Footprint Analysis and Reduction	3								3			3	
CIVL	5450	Hazardous Waste Treatment and Site Remediation	3												
CIVL	5460	Landfill Engineering and Design	3												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4033	Technical Communication II for Civil and Environmental Engineering	3									3		3	
CIVL/SENG		CIVL (Environmental) Electives [at least 1 course should be selected from the "Restricted Electives".] Restricted electives: at least 1 course AND (CIVL: Any CIVL courses at 4000-level or above except those listed as "Restricted Electives" from the list OR SENG: Any 3000-level or above courses offered by the Engineering School or engineering departments other than CIVL)	6									3	3	6	
		Required credits for Major Requirements Courses and Electives	66											66	
BBA in Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1				1							1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by CIVL 2160
ISOM	2600	Introduction to Business Analytics	1						1					1	
ISOM	2700	Operations Management	3						3					3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2			2								2	
MGMT	2110	Organizational Behavior	3		3									3	MGMT 2110 is a major pre-requisite
MGMT	2130	Business Ethics and Social Responsibility	2							2				2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Substituted by ENGG 1010
LABU	2040	Business Case Analyses	3										3	3	
LABU	2060	Effective Communication in Business	3							3				3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											36	
Major Requirements															
Major Required Courses and Electives															
		Note: MGMT 3110 OR MGMT 3120 (For students in the Consulting Option, they will use MGMT 3110 to fulfill the Option Requirements and should take MGMT 3120 to fulfill this requirement.)	4						4					4	Students in the Consulting Option must take MGMT 3120
MGMT	3110	Human Resources Management	4												
MGMT	3120	Managerial Leadership	4												
		Note: MGMT 3130 OR MGMT 3140 (Students in the Consulting Option must take MGMT 3140 to fulfill this requirement.)	4												
MGMT	3130	Judgement and Decision Making in Organizations	4					4						4	Students in the Consulting Option must take MGMT 3140
MGMT	3140	Negotiation	4												
		Note: MGMT 4210 OR MGMT 4220 (Students in the Consulting Option or in the Corporate Social Responsibility and Sustainability Option must take MGMT 4210 to fulfill this requirement.)	3-4												
MGMT	4210	Corporate Strategy	3							3				3	Students in the Consulting Option must take MGMT 4210 Students in the CSR Option must take MGMT 4210
MGMT	4220	Entrepreneurship and Innovation	4												
MGMT		MGMT 3000-level or above Electives (Any 3 courses of the subject and level as specified. Courses taken as Option Required Courses may not be counted towards the elective requirement.)	9							3	3	3		9	Students in the Consulting Option are recommended to take MGMT 4220 and a new course in Simulating Strategy to fulfill the major elective requirement
		Required credits for Major Required Courses and Electives	20-21											20	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6						6	9	3	6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	19	19	20	20	18	18	15		
								185##							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

DAMGMT **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Decision Analytics and BBA in Management)**														
Course Offering Dept (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Decision Analytics															
Major Requirements															
Engineering Fundamental Courses															
COMP COMP COMP	1021 1022P 2011	Note: COMP 1021 OR COMP 1022P OR COMP 2011 Introduction to Computer Science Introduction to Computing with Java Programming with C++	3-4 3 3 4		3									3	This course will also be used to substitute ISOM 2010
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM CHEM PHYS PHYS	1010 1020 1112 1312	Note: CHEM1010 OR CHEM1020 OR PHYS1112 OR PHYS1312 General Chemistry IA General Chemistry IB General Physics I with Calculus Honors General Physics I	3 3 3 3	3										3	
LANG	2030	Technical Communication I	3				3							3	
MATH MATH MATH MATH MATH MATH	1012 1013 1014 1020 1023 1024	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA Calculus IB Calculus II Accelerated Calculus Honors Calculus I Honors Calculus I	4-7 4 3 3 4 3 3	3	3									6	
MATH	2011	Introduction to Multivariable Calculus	3				3							3	
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	22-27											21	
Major Required Courses and Electives															
IEDA	1010	Academic and Professional Development I	0			0	0							0	
IEDA	1020	Academic and Professional Development II	0					0	0					0	
IEDA IEDA	1990 1991	Note: IEDA1990 OR IEDA1991 Industrial Training Industrial Experience	0 0			0	0	0	0	0	0	0	0	0	
IEDA	2520	Probaility for Engineers	3			3								3	
IEDA	2540	Statistics for Engineers	3				3							3	This course will also be used to substitute ISOM2500
IEDA	3010	Prescriptive Analytics	3					3						3	
IEDA	3230	Engineering Economics and Accounting	3				3							3	
IEDA	3250	Stochastic Models	3						3					3	
IEDA	3300	Industrial Data Systems	3				3							3	
IEDA	3560	Predictive Analytics	3						3					3	
IEDA IEDA	4901 4920	Note: IEDA4901 OR IEDA4920 Final Year Thesis Decision Analytics Final Year Project	6 6									3	3	6	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
ECON ECON	2103 2113	Note: ECON2103 OR ECON2113 Principles of Microeconomics Microeconomics	3 3			3								3	
LANG	4032	Technical Communication II for Industrial Engineering and Decision Analytics	3						3					3	
IEDA		Area Electives (5 courses from the specified elective list, of which all 5 courses should be taken from the same area)	15						3	6	3	3		15	
		Required credits for Major Required Courses and Electives	48											48	
BBA in Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON ECON	2103 2113	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics Microeconomics	3 3			(3)								0	
ECON ECON	2123 3123	Note: ECON 2123 OR ECON 3123 Macroeconomics Macroeconomic Theory I	3 3									3		3	
FINA	2303	Financial Management	3					3						3	
ISOM	2010	Introduction to Information Systems	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3	-	-	-	-	-	-	-	-	-	-	0	Substituted by IEDA2540
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3								3			3	
MARK	2120	Marketing Management	3			3								3	
MGMT	2010	Business Ethics and the Individual	2					2						2	
MGMT	2110	Organizational Behavior	3			3								3	MGMT 2110 is a major pre-requisite
MGMT	2130	Business Ethics and Social Responsibility	2							2				2	
SBMT	1111	Business Student Induction	0	-	-	-	-	-	-	-	-	-	-	0	Waived for DDP students
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3										3	3	
MATH MATH MATH MATH MATH MATH	1003 1012 1013 1020 1023	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra Calculus IA Calculus IB Accelerated Calculus Honors Calculus I	3-4 3 4 3 4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
		Required credits for School Requirements	43-44											33	
Major Requirements															
Major Required Courses and Electives															
MGMT MGMT	3110 3120	Note: MGMT 3110 OR MGMT 3120 (For students in the Consulting Option, they will use MGMT 3110 to fulfill the Option Requirements and should take MGMT 3120 to fulfill this requirement.) Human Resources Management Managerial Leadership	4 4 4						4					4	Students in the Consulting Option must take MGMT 3120
MGMT MGMT	3130 3140	Note: MGMT 3130 OR MGMT 3140 (Students in the Consulting Option must take MGMT 3140 to fulfill this requirement.) Judgement and Decision Making in Organizations Negotiation	4 4 4					4						4	Students in the Consulting Option must take MGMT 3140
MGMT MGMT	4210 4220	Note: MGMT 4210 OR MGMT 4220 (Students in the Consulting Option or in the Corporate Social Responsibility and Sustainability Option must take MGMT 4210 to fulfill this requirement.) Corporate Strategy Entrepreneurship and Innovation	3-4 3 4							3				3	Students in the Consulting Option must take MGMT 4210 Students in the CSR Option must take MGMT 4210
MGMT		MGMT 3000-level or above Electives (Any 3 courses of the subject and level as specified. Courses taken as Option Required Courses may not be counted towards the elective requirement.)	9							3	3	3		9	Students in the Consulting Option are recommended to take MGMT 4220 and a new course in Simulating Strategy to fulfill the major elective requirement
		Required credits for Major Required Courses and Electives	20-21											20	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	9	6		3			3	3		6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	18	17	19	17	12	12	12		
				161##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

--- denotes the course/requirement is either waived or substitued

To graduate, students should complete all requirements specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

EEMGMT **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Electronic Engineering and BBA in Management)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Electronic Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: ELEC2600 OR ELEC2600H) OR MATH2011 OR MATH2111 OR MATH2350 OR MATH 2351 (3 courses out of 6)	9-10												
ELEC	2600	Probability and Random Processes in Engineering	4												
ELEC	2600H	Honors Probability and Random Processes in Engineering	4	3		3		3						9	
MATH	2011	Introduction to Multivariable Calculus	3												
MATH	2111	Matrix Algebra and Applications	3												
MATH	2350	Applied Linear Algebra and Differential Equations	3												
MATH	2351	Introduction to Differential Equations	3												
		Note: COMP1021 OR COMP1022P													
COMP	1021	Introduction to Computer Science	3		3									3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4			4								4	
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3						3					3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3	3	3									6	
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
		Note: PHYS1112 OR PHYS1312													
PHYS	1112	General Physics I with Calculus	3	3										3	
PHYS	1312	Honors General Physics I	3												
		Note: PHYS1114 OR PHYS1314													
PHYS	1114	General Physics II	3		3									3	
PHYS	1314	Honors General Physics II	3												
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4		(3)									0	
		Required credits for Engineering Fundamental Courses	32-37											31	
Major Required Courses and Electives															
ELEC	1100	Introduction to Electro-Robot Design	4			4								4	
ELEC	1200	A System View of Communications: from Signals to Packets	4				4							4	
		Note: ELEC2100 OR ELEC2100H													
ELEC	2100	Signals and Systems	4							4				4	
ELEC	2100H	Honors Signals and Systems	4												
ELEC	2350	Introduction to Computer Organization and Design	4							4				4	
ELEC	2400	Electronic Circuits	4						4					4	
ELEC	2910	Academic and Professional Development I	0			0	0							0	
ELEC	3910	Academic and Professional Development II	0					0	0					0	
		Note: (ELEC4900 AND ELEC2991) OR (ELEC4901 AND ELEC2991) OR ELEC4910 (Students taking the Research Option must take ELEC 4901)	6												
ELEC	4900	Final Year Design Project	6												
ELEC	4901	Final Year Thesis	6									3	3	6	
ELEC	2991	Industrial Experience (Electronic Engineering)	0												
ELEC	4910	Co-op Program	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4031	Technical Communication II for ECE & CPEG	3									3		3	
ELEC		ELEC 3000-level or 4000-level Electives (Any 2 courses ELEC 4000-levek courses. ELEC4940 cannot be used to count towards this elective requirement)	21				3		3		6	3	6	21	
		Required credits for Major Requirements Courses and Electives	50											50	
BBA in Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON2103 OR ECON2113													
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
		Note: ECON2123 OR ECON3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3					3						3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2					2						2	
MGMT	2110	Organizational Behavior	3				3							3	MGMT 2110 is a major pre-requisite
MGMT	2130	Business Ethics and Social Responsibility	2						2					2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3				3							3	
LABU	2060	Effective Communication in Business	3					3						3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
		Note: MGMT 3110 OR MGMT 3120 (For students in the Consulting Option, they will use MGMT 3110 to fulfill the Option Requirements and should take MGMT 3120 to fulfill this requirement.)	4						4					4	Students in the Consulting Option must take MGMT 3120
MGMT	3110	Human Resources Management	4												
MGMT	3120	Managerial Leadership	4												
		Note: MGMT 3130 OR MGMT 3140 (Students in the Consulting Option must take MGMT 3140 to fulfill this requirement.)	4												
MGMT	3130	Judgement and Decision Making in Organizations	4					4						4	Students in the Consulting Option must take MGMT 3140
MGMT	3140	Negotiation	4												
		Note: MGMT 4210 OR MGMT 4220 (Students in the Consulting Option or in the Corporate Social Responsibility and Sustainability Option must take MGMT 4210 to fulfill this requirement.)	3-4							3				3	Students in the Consulting Option must take MGMT 4210 Students in the CSR Option must take MGMT 4210
MGMT	4210	Corporate Strategy	3												
MGMT	4220	Entrepreneurship and Innovation	4												
MGMT		MGMT 3000-level or above Electives (Any 3 courses of the subject and level as specified. Courses taken as Option Required Courses may not be counted towards the elective requirement.)	9							3	3	3		9	Students in the Consulting Option are recommended to take MGMT 4220 and a new course in Simulating Strategy to fulfill the major elective requirement
		Required credits for Major Required Courses and Electives	20-21											20	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	3					6	9	3	3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	20	19	20	19	20	18	15	12		
				179##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

IEMGMT **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway											
Program:		**Dual Degree Program (BEng in Industrial Engineering and Engineering Management and BBA in Management)**													
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Industrial Engineering and Engineering Management															
Major Requirements															
Engineering Fundamental Courses															
COMP	1021	Note: COMP1021 OR COMP1022P OR COMP2011 Introduction to Computer Science	3-4 3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
CHEM	1010	Note: CHEM1010 OR CHEM1020 OR PHYS1112 OR PHYS1312 General Chemistry IA	3	3										3	
CHEM	1020	General Chemistry IB	3												
PHYS	1112	General Physics I with Calculus	3												
PHYS	1312	Honors General Physics I	3												
LANG	2030	Technical Communication I	3					3						3	
MATH	1012	Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] Calculus IA	4-7 4	3	3									6	
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3				3							3	
MATH	2111	Matrix Algebra and Applications	3			3								3	
SENG		Engineering Introduction course (If the students take an introduction course included in their major, this course can be counted towards their major requirement.)	3-4	(3)										0	
		Required credits for Engineering Fundamental Courses	22-27											21	
Major Required Courses and Electives															
IEDA	1010	Academic and Professional Development I	0			0	0							0	
IEDA	1020	Academic and Professional Development II	0					0	0					0	
IEDA	1990	Note: IEDA1990 OR IEDA1991 Industrial Training	0			0*	0^							0	
IEDA	1991	Industrial Experience	0												
IEDA	2520	Probability for Engineers	3			3								3	
IEDA	2540	Statistics for Engineers	3				3							3	This course will also be used to substitute ISOM2500
IEDA	3010	Presciptive Analytics	3					3						3	
IEDA	3230	Engineering Economics and Accounting	3					3						3	
IEDA	3250	Stochastic Models	3						3					3	
IEDA	3300	Industrial Data Systems	3				3							3	
IEDA	4100	Integrated Production Systems	3								3			3	This course will also be used to substitute ISOM 2700
IEDA	4130	System Simulation	3								3			3	
IEDA	4901	Note: IEDA4901 OR IEDA4990 Final Year Thesis	6									3	3	6	
IEDA	4960	Industrial Engineering and Engineering Management Final Year Project	6												
ENGG	2010	Engineering Seminar Series	0			0	0	0	0	0	0	0	0	0	
ECON	2103	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
LANG	4032	Technical Communication II for Industrial Engineering and Decision Analytics	3									3		3	
IEDA		Industrial Engineering Electives (Courses from the specified 21 elective list, of which at least 15 credits should be taken from 1 of the 2 areas and at least 6 credits outside that area.)	21			6	3			3		3	6	21	
		Required credits for Major Requirements Courses and Electives	57											57	
BBA in Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3		3									3	
ACCT	2200	Principles of Accounting II	3						3					3	
ECON	2103	Note: ECON 2103 OR ECON 2113 Principles of Microeconomics	3			(3)								0	
ECON	2113	Microeconomics	3												
ECON	2123	Note: ECON 2123 OR ECON 3123 Macroeconomics	3				3							3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3					3						3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by IEDA2540
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by IEDA 4100
MARK	2120	Marketing Management	3			3								3	
MGMT	2010	Business Ethics and the Individual	2						2					2	
MGMT	2110	Organizational Behavior	3				3							3	MGMT 2110 is a major pre-requisite
MGMT	2130	Business Ethics and Social Responsibility	2									2		2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3						3					3	
LABU	2060	Effective Communication in Business	3							3				3	
MATH	1003	Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023 Calculus and Linear Algebra	3-4 3	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1012	Calculus IA	4												
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											30	
Major Requirements															
Major Required Courses and Electives															
MGMT	3110	Note: MGMT 3110 OR MGMT 3120 (For students in the Consulting Option, they will use MGMT 3110 to fulfill the Option Requirements and should take MGMT 3120 to fulfill this requirement.) Human Resources Management	4 4						4					4	Students in the Consulting Option must take MGMT 3120
MGMT	3120	Managerial Leadership	4												
MGMT	3130	Note: MGMT 3130 OR MGMT 3140 (Students in the Consulting Option must take MGMT 3140 to fulfill this requirement.) Judgement and Decision Making in Organizations	4 4					4						4	Students in the Consulting Option must take MGMT 3140
MGMT	3140	Negotiation	4												
MGMT	4210	Note: MGMT 4210 OR MGMT 4220 (Students in the Consulting Option or in the Corporate Social Responsibility and Sustainability Option must take MGMT 4210 to fulfill this requirement.) Corporate Strategy	3-4 3							3				3	Students in the Consulting Option must take MGMT 4210 Students in the CSR Option must take MGMT 4210
MGMT	4220	Entrepreneurship and Innovation	4												
MGMT		MGMT 3000-level or above Electives (Any 3 courses of the subject and level as specified. Courses taken as Option Required Courses may not be counted towards the elective requirement.)	9							3	3	3		9	Students in the Consulting Option are recommended to take MGMT 4220 and a new course in Simulating Strategy to fulfill the major elective requirement
		Required credits for Major Required Courses and Electives	20-21											20	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	6	6				3	6	6		3	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	18	18	18	18	15	14	12		
				167##											
						<< Declaration of BEng major		***<< Declaration of BBA major***							

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

The Hong Kong University of Science and Technology

Interdisciplinary Programs Office

An Example on Student's Pathway

MEMGMT **2020-21 Intake**

(Via DDP PBA)

School:		School of Engineering and School of Business Management		Student's Pathway												
Program:		**Dual Degree Program (BEng in Mechanical Engineering and BBA in Management)**														
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall *<< Declaration of BEng major*	Year 2 Spring	Year 3 Fall *<< Declaration of BBA major*	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	**Sub-total**	**Remarks**
BEng in Mechanical Engineering															
Major Requirements															
Engineering Fundamental Courses															
		Note: COMP1021 OR COMP1022P OR COMP2011	3-4												
COMP	1021	Introduction to Computer Science	3	3										3	This course will also be used to substitute ISOM 2010
COMP	1022P	Introduction to Computing with Java	3												
COMP	2011	Programming with C++	4												
ENGG	1010	Academic Orientation	0	0	0									0	
LANG	2030	Technical Communication I	3				3							3	
		Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]	4-7												
MATH	1012	Calculus IA	4	3	3									6	
MATH	1013	Calculus IB	3												
MATH	1014	Calculus II	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
MATH	1024	Honors Calculus II	3												
MATH	2011	Introduction to Multivariable Calculus	3					3						3	
		Note: MATH2111 OR MATH2350 OR MATH2351													
MATH	2111	Matrix Algebra and Applications	3							3				3	
MATH	2350	Applied Linear Algebra and Differential Equations	3												
MATH	2351	Introduction to Differential Equations	3												
		Note: PHYS1112 OR PHYS1312													
PHYS	1112	General Physics I with Calculus	3		3									3	
PHYS	1312	Honors General Physics I	3												
CHEM/LIFS/ PHYS		Science 1000-level course (Any 1 course of the subject and level as specified)	3		(3)									0	
		Required credits for Engineering Fundamental Courses	22-26											21	
Major Required Courses and Electives															
MECH	1990	Industrial Training	0			0*	0^							0	
MECH	2020	Statics and Dynamics	3			3								3	
MECH	2040	Solid Mechanics I	3						3					3	
MECH	2210	Fluid Mechanics	3						3					3	
MECH	2310	Thermodynamics	3			3								3	
MECH	2410	Engineering Materials I	3				3							3	
MECH	2520	Design and Manufacturing I	3				3							3	
MECH	2907	Mechatronic Design and Prototyping	3						3					3	
MECH	3030	Mechanisms of Machinery	3								3			3	
		Note: MECH3300 OR MECH3420 OR MECH3520													
MECH	3300	Energy Conversion	3							3				3	
MECH	3420	Engineering Materials II	3												
MECH	3520	Design and Manufacturing II	3												
MECH	3310	Heat Transfer	3								3			3	
MECH	3610	Control Principles	3					3						3	
MECH	3630	Electrical Technology	3						3					3	
MECH	3830	Laboratory	3								3			3	
MECH	4900	Final Year Design Project	6									3	3	6	
ELEC	2420	Basic Electronics	3			3								3	
ENGG	2010	Engineering Seminar Series	0			0	0	0	0					0	
LANG	4034	Technical Communication II for Mechanical and Areospace Engineering	3								3			3	
		Required credits for Major Requirements Courses and Electives	51											51	
BBA in Management															
School Requirements															
ACCT	2010	Principles of Accounting I	3			3								3	
ACCT	2200	Principles of Accounting II	3						3					3	
		Note: ECON 2103 OR ECON 2113													
ECON	2103	Principles of Microeconomics	3			3								3	
ECON	2113	Microeconomics	3												
		Note: ECON 2123 OR ECON 3123													
ECON	2123	Macroeconomics	3					3						3	
ECON	3123	Macroeconomic Theory I	3												
FINA	2303	Financial Management	3				3							3	
ISOM	2010	Introduction to Information Systems	3	---	---	---	---	---	---	---	---	---	---	0	Substituted by COMP 1021/1022P/2011
ISOM	2020	Coding for Business	1					1						1	
ISOM	2500	Business Statistics	3			3								3	
ISOM	2600	Introduction to Business Analytics	1					1						1	
ISOM	2700	Operations Management	3										3	3	
MARK	2120	Marketing Management	3				3							3	
MGMT	2010	Business Ethics and the Individual	2									2		2	
MGMT	2110	Organizational Behavior	3				3							3	MGMT 2110 is a major pre-requisite
MGMT	2130	Business Ethics and Social Responsibility	2										2	2	
SBMT	1111	Business Student Induction	0	---	---	---	---	---	---	---	---	---	---	0	Waived for DDP students
LABU	2040	Business Case Analyses	3					3						3	
LABU	2060	Effective Communication in Business	3							3				3	
		Note: MATH 1003 OR MATH 1012 OR MATH 1013 OR MATH 1020 OR MATH 1023	3-4												
MATH	1003	Calculus and Linear Algebra	3												
MATH	1012	Calculus IA	4	(3)										0	DDP students should take MATH 1012 or MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees
MATH	1013	Calculus IB	3												
MATH	1020	Accelerated Calculus	4												
MATH	1023	Honors Calculus I	3												
		Required credits for School Requirements	43-44											39	
Major Requirements															
Major Required Courses and Electives															
		Note: MGMT 3110 OR MGMT 3120 (For students in the Consulting Option, they will use MGMT 3110 to fulfill the Option Requirements and should take MGMT 3120 to fulfill this requirement.)	4						4					4	Students in the Consulting Option must take MGMT 3120
MGMT	3110	Human Resources Management	4												
MGMT	3120	Managerial Leadership	4												
		Note: MGMT 3130 OR MGMT 3140 (Students in the Consulting Option must take MGMT 3140 to fulfill this requirement.)	4												
MGMT	3130	Judgement and Decision Making in Organizations	4					4						4	Students in the Consulting Option must take MGMT 3140
MGMT	3140	Negotiation	4												
		Note: MGMT 4210 OR MGMT 4220 (Students in the Consulting Option or in the Corporate Social Responsibility and Sustainability Option must take MGMT 4210 to fulfill this requirement.)	3-4							3				3	Students in the Consulting Option must take MGMT 4210 Students in the CSR Option must take MGMT 4210
MGMT	4210	Corporate Strategy	3												
MGMT	4220	Entrepreneurship and Innovation	4												
MGMT		MGMT 3000-level or above Electives (Any 3 courses of the subject and level as specified. Courses taken as Option Required Courses may not be counted towards the elective requirement.)	9							3	3	3		9	Students in the Consulting Option are recommended to take MGMT 4220 and a new course in Simulating Strategy to fulfill the major elective requirement
		Required credits for Major Required Courses and Electives	20-21											20	
Additional Requirements															
Requirements for Dual Degree Program															
Required Courses															
TEMG	1010	Technology and Management Professional Activities	0	0	0	0	0	0	0	0	0	0	0	0	
TEMG	3950	Case-based Problem Solving	3		3									3	
		Required credits for Additional Requirements	3											3	
University CORE															
CORE	C3 - C12	U CORE - Others	30	9	6					3		6	6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3									6	
		Sub-total for University CORE	36											36	
				Term load (excl. free credits)											
				18	18	18	18	18	19	18	15	14	14		
				170##											

<< Declaration of BEng major *<< Declaration of BBA major*

Notes:

( ) indicates the reuse of the same course to fulfill more than one requirement.

[ ] denotes the course is also offered in other terms as indicated and students may take the course in one of these subject to advice by the program office.

* Courses offered in winter term

^ Courses offered in summer term

--- denotes the course/requirement is either waived or substituted

To graduate, students should complete all requirements as specified for DDP.

**Remarks on course(s):

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

Attachment C

English Language Requirements of SENG, SBM and DDP students

4Y

SENG			SBM			DDP (BEECON/FINA/GBM/MGMT/MARK)			
Course code_SENG	Course title_SENG	Credits_SENG	Course code_SBM	Course title_SBM	Credits_SBM	Course code_DDP	Course title_DDP	Credits_DDP	Remarks
U Core	English Language	6	U Core	English Language	6	U Core	English Language	6	university requirement
LANG 2030	Technical Communication I	3	LABU 2040	Business Case Analyses	3	LANG 2030	Technical Communication I	3	SENG requirement
LANG 4035	Technical Communication II for Chemical and Biological Engineering	3	LABU 2060	Effective Communication in Business	3	LABU 2040	Business Case Analyses	3	SBM requirement
						LABU 2060	Effective Communication in Business	3	SBM requirement
						LANG 4035	Technical Communication II for Chemical and Biological Engineering	3	SENG requirement
	Total	12		Total	12		Total	18	

Attachment C

English Language Requirements of SSCI, SBM and DDP students

4Y

SSCI			SBM			DDP (BTECON/FINA/GBM/MGMT/MARK)			
Course code_SSCI	Course title_SSCI	Credits_SSCI	Course code_SBM	Course title_SBM	Credits_SBM	Course code_DDP	Course title_DDP	Credits_DDP	Remarks
U Core	English Language	6	U Core	English Language	6	U Core	English Language	6	university requirement
LANG 2010	English for Science I	3	LABU 2040	Business Case Analyses	3	LANG 2010	English for Science I	3	SSCI requirement
LANG 3024	Science Communication in English (Life Science)	3	LABU 2060	Effective Communication in Business	3	LABU 2040	Business Case Analyses	3	SBM requirement
						LABU 2060	Effective Communication in Business	3	SBM requirement
						LANG 3024	Science Communication in English (Life Science)	3	SSCI requirement
	Total	12		Total	12		Total	18	

Attachment C

English Language Requirements of SENG, SBM and DDP students

4Y

SENG			SBM			DDP (CEECON/FINA/GBM/MGMT/MARK)			
Course code_SENG	Course title_SENG	Credits_SENG	Course code_SBM	Course title_SBM	Credits_SBM	Course code_DDP	Course title_DDP	Credits_DDP	Remarks
U Core	English Language	6	U Core	English Language	6	U Core	English Language	6	university requirement
LANG 2030	Technical Communication I	3	LABU 2040	Business Case Analyses	3	LANG 2030	Technical Communication I	3	SENG requirement
LANG 4035	Technical Communication II for Chemical and Biological Engineering	3	LABU 2060	Effective Communication in Business	3	LABU 2040	Business Case Analyses	3	SBM requirement
						LABU 2060	Effective Communication in Business	3	SBM requirement
						LANG 4035	Technical Communication II for Chemical and Biological Engineering	3	SENG requirement
	Total	12		Total	12		Total	18	

Attachment C

English Language Requirements of SENG, SBM and DDP students

4Y

SENG			SBM			DDP (CIECON/FINA/GBM/MGMT/MARK)			
Course code_SENG	Course title_SENG	Credits_SENG	Course code_SBM	Course title_SBM	Credits_SBM	Course code_DDP	Course title_DDP	Credits_DDP	Remarks
U Core	English Language	6	U Core	English Language	6	U Core	English Language	6	university requirement
LANG 2030	Technical Communication I	3	LABU 2040	Business Case Analyses	3	LANG 2030	Technical Communication I	3	SENG requirement
LANG 4033	Technical Communication II for Civil and Environmental Engineering	3	LABU 2060	Effective Communication in Business	3	LABU 2040	Business Case Analyses	3	SBM requirement
						LABU 2060	Effective Communication in Business	3	SBM requirement
						LANG 4033	Technical Communication II for Civil and Environmental Engineering	3	SENG requirement
	Total	12		Total	12		Total	18	

Attachment C

English Language Requirements of SENG, SBM and DDP students

4Y

SENG			SBM			DDP (COECON/FINA/GBM/MGMT/MARK)			
Course code_SENG	Course title_SENG	Credits_SENG	Course code_SBM	Course title_SBM	Credits_SBM	Course code_DDP	Course title_DDP	Credits_DDP	Remarks
U Core	English Language	6	U Core	English Language	6	U Core	English Language	6	university requirement
LANG 2030	Technical Communication I	3	LABU 2040	Business Case Analyses	3	LANG 2030	Technical Communication I	3	SENG requirement
LANG 4030	Technical Communication II for CSE & CPEG	3	LABU 2060	Effective Communication in Business	3	LABU 2040	Business Case Analyses	3	SBM requirement
						LABU 2060	Effective Communication in Business	3	SBM requirement
						LANG 4030	Technical Communication II for CSE & CPEG	3	SENG requirement
	Total	12		Total	12		Total	18	

Attachment C

English Language Requirements of SENG, SBM and DDP students

4Y

SENG			SBM			DDP (CPECON/FINA/GBM/MGMT/MARK)			
Course code_SENG	Course title_SENG	Credits_SENG	Course code_SBM	Course title_SBM	Credits_SBM	Course code_DDP	Course title_DDP	Credits_DDP	Remarks
U Core	English Language	6	U Core	English Language	6	U Core	English Language	6	university requirement
LANG 2030	Technical Communication I	3	LABU 2040	Business Case Analyses	3	LANG 2030	Technical Communication I	3	SENG requirement
LANG 4030 OR LANG 4031	Technical Communication II for CSE & CPEG OR Technical Communication II for ECE & CPEG	3 3	LABU 2060	Effective Communication in Business	3	LABU 2040	Business Case Analyses	3	SBM requirement
						LABU 2060	Effective Communication in Business	3	SBM requirement
						LANG 4030 OR LANG 4031	Technical Communication II for CSE & CPEG OR Technical Communication II for ECE & CPEG	3	SENG requirement
	Total	12		Total	12		Total	18	

Attachment C

English Language Requirements of SENG, SBM and DDP students

4Y

SENG			SBM			DDP (CVECON/FINA/GBM/MGMT/MARK)			
Course code_SENG	Course title_SENG	Credits_SENG	Course code_SBM	Course title_SBM	Credits_SBM	Course code_DDP	Course title_DDP	Credits_DDP	Remarks
U Core	English Language	6	U Core	English Language	6	U Core	English Language	6	university requirement
LANG 2030	Technical Communication I	3	LABU 2040	Business Case Analyses	3	LANG 2030	Technical Communication I	3	SENG requirement
LANG 4033	Technical Communication II for Civil and Environmental Engineering	3	LABU 2060	Effective Communication in Business	3	LABU 2040	Business Case Analyses	3	SBM requirement
						LABU 2060	Effective Communication in Business	3	SBM requirement
						LANG 4033	Technical Communication II for Civil and Environmental Engineering	3	SENG requirement
	Total	12		Total	12		Total	18	

Attachment C

English Language Requirements of SENG, SBM and DDP students

4Y

SENG			SBM			DDP (DAECON/FINA/GBM/MGMT/MARK)			
Course code_SENG	Course title_SENG	Credits_SENG	Course code_SBM	Course title_SBM	Credits_SBM	Course code_DDP	Course title_DDP	Credits_DDP	Remarks
U Core	English Language	6	U Core	English Language	6	U Core	English Language	6	university requirement
LANG 2030	Technical Communication I	3	LABU 2040	Business Case Analyses	3	LANG 2030	Technical Communication I	3	SENG requirement
LANG 4032	Technical Communication II for Industrial Engineering and Decision Analytics	3	LABU 2060	Effective Communication in Business	3	LABU 2040	Business Case Analyses	3	SBM requirement
						LABU 2060	Effective Communication in Business	3	SBM requirement
						LANG 4032	Technical Communication II for Industrial Engineering and Decision Analytics	3	SENG requirement
	Total	12		Total	12		Total	18	

Attachment C

English Language Requirements of SENG, SBM and DDP students

4Y

SENG			**SBM**			**DDP (EEECON/FINA/GBM/MGMT/MARK)**			
Course code_SENG	Course title_SENG	Credits_SENG	Course code_SBM	Course title_SBM	Credits_SBM	Course code_DDP	Course title_DDP	Credits_DDP	Remarks
U Core	English Language	6	U Core	English Language	6	U Core	English Language	6	university requirement
LANG 2030	Technical Communication I	3	LABU 2040	Business Case Analyses	3	LANG 2030	Technical Communication I	3	SENG requirement
LANG 4031	Technical Communication II for ECE & CPEG	3	LABU 2060	Effective Communication in Business	3	LABU 2040	Business Case Analyses	3	SBM requirement
						LABU 2060	Effective Communication in Business	3	SBM requirement
						LANG 4031	Technical Communication II for ECE & CPEG	3	SENG requirement
	Total	12		Total	12		Total	18	

Attachment C

English Language Requirements of SENG, SBM and DDP students

4Y

SENG			SBM			DDP (IEECON/FINA/GBM/MGMT/MARK)			
Course code_SENG	Course title_SENG	Credits_SENG	Course code_SBM	Course title_SBM	Credits_SBM	Course code_DDP	Course title_DDP	Credits_DDP	Remarks
U Core	English Language	6	U Core	English Language	6	U Core	English Language	6	university requirement
LANG 2030	Technical Communication I	3	LABU 2040	Business Case Analyses	3	LANG 2030	Technical Communication I	3	SENG requirement
LANG 4032	Technical Communication II for Industrial Engineering and Decision Analytics	3	LABU 2060	Effective Communication in Business	3	LABU 2040	Business Case Analyses	3	SBM requirement
						LABU 2060	Effective Communication in Business	3	SBM requirement
						LANG 4032	Technical Communication II for Industrial Engineering and Decision Analytics	3	SENG requirement
	Total	12		Total	12		Total	18	

CUS/13 January 2021
Agenda Item 7
File: 04/21

COMMITTEE ON UNDERGRADUATE STUDIES

Paper for: Discussion/Decision

Title: **Final Proposal for the Revised Framework of the Undergraduate Common Core Program**

Purpose: The Steering Committee on Review of the Common Core submitted the final proposal for the revised structural framework of the Common Core Program, effective for the 2022-23 student intake, to CUS for discussion and endorsement

Submitted by: Steering Committee on Review of the Common Core

Prepared by: Committee on Undergraduate Studies

BACKGROUND

1. The Committee on Undergraduate Studies (CUS) discussed the initial proposal on the Revised Framework of the Undergraduate Common Core Program, as submitted by the Steering Committee on Review of the Common Core, at its 166th meeting on 11 November 2020. Comments and issues raised by CUS were subsequently conveyed to Steering Committee by the Secretariat (Appendix 1). The Steering Committee was required to address those issues and concerns, and provide responses in the final program proposal.

2. Given that the revisions recommended by the Steering Committee are substantial changes to the existing framework, CUS put forth the initial proposal to Senate for discussion at its 152nd meeting on 8 December 2020 so that the Steering Committee could also take into account Senate's comments when refining the proposal.

3. Senate noted that the Common Core aims to uphold the spirit of broadening the breadth of students. The three-tier structure under the revised Framework expects that students take common courses of Foundation Group, which set the tone of the University's mission and values, in their first year of studies, and would be given flexibility in choosing courses of different categories under Broadening Group and Experiencing Group as they progress to senior years. Senate supported the revamp to be proceeded with, while addressing the concerns (e.g., keeping certain extent of flexibility while retaining simplicity of exclusions for Broadening Group courses; simplifying the proposed revisions; and implementation of the proposed changes by phases) raised as appropriate.

FINAL PROPOSAL

4. Having considered the comments collected from the CUS and Senate meetings, the Steering Committee has submitted the final proposal (Appendix 2). The following summarizes key issues raised by the CUS and Senate being addressed/considered. More details can be found in paragraphs 16 and 17 of Appendix 2 respectively.

a. It was clarified that the Committee on Undergraduate Common Core (CUCE) would remain the party responsible for overseeing the Common Core. Organizational and administrative support will be needed, especially for the UxOP;
b. The current practice of allowing students to take Chinese Communication even after Year 1 shall be continued to prevent posing pressure on class timetabling;
c. Prevailing practice of granting students with special needs from specific activities under the Behavioral Foundations of University Education: Habits, Mindsets, and Wellness may continue;
d. Different UxOP components would be piloted before full implementation;
e. Mechanisms (e.g., clear and consistent rubrics integrated into the scaffolding structure will be in place to ensure consistency of grading across the four UxOP streams;
f. Double-counting will be allowed for Minor programs, since this supports the objective of broadening students' interests beyond their major area of study;
g. "Creative and Computational Arts (A)" under the Broadening group be renamed "Arts" for simplicity purpose;
h. The suggestion about further sub-dividing the "Social Analysis" section by School has not been incorporated as it may not serve the broadening objective;
i. The Steering Committee had given due deliberation about the suggestion of implementing the revised Framework in phase, however, it was considered not feasible;
j. A Working Group, under CUCE, would be formed subject to Senate's approval for the revised Framework. The Working Group, comprising representatives from Schools/IPO, HUMA, SOSC, CLE, CEI, ARO and ITSC, would advise and make recommendations to CUCE on the implementation of the new Common Core Framework;
k. Several faculty groups across different Schools/IPO have started to work on those new courses targeting for introduction during the pilot run; and
l. Proposals for new courses would be submitted after Senate's approval of the revised Framework, an exceptional approval granted by the Senate given the complexity of the revamp.

ACTION SOUGHT

5. CUS is invited to consider and recommend, as appropriate, to the Senate for approval the Revised Framework of the Undergraduate Common Core Program as presented in paragraphs 19 (i) to (vii) of Appendix 2 and Appendix 2a (with 13 attachments) for introduction in Fall 2022-23.

From:	Senate Committee on Undergraduate Studies
To:	Anirban Mukhopadhyay
Cc:	Andrew Brian HORNER; Anirban Mukhopadhyay; Sophie TSA; LUK Anne
Subject:	Initial Proposal for the Revised Undergraduate Common Core Program
Date:	13 November 2020 16:23:00

To: Prof Anirban MUKHOPADHYAY, Chair of Steering Committee on Review of the Common Core

From: CUS Secretariat

cc: Prof Andrew HORNER, Chair of CUS
Prof Anirban MUKHOPADHYAY, Secretary of CUS

Subject: Initial Proposal for the Revised Undergraduate Common Core Program

At its meeting on 11 November 2020, the Committee on Undergraduate Studies (CUS) considered the initial proposal for the Revised Undergraduate Common Core Program submitted by the Steering Committee on Review of the Common Core (Steering Committee). Members expressed positive support for the initiative.

CUS would like to share with the Steering Committee its comments/suggestions as follows; and the Steering Group is invited to address them when presenting the proposal for final approval.

(a) Though UxOP would only be implemented three years from now, a pilot run was considered crucial to better prepare for the large-scale implementation, as it may take more than one trial run to iron out possible problems.

(b) Mechanisms should be in place to ensure consistency of grading across the four UxOP streams.

(c) There should be a clear indication regarding the party responsible for evaluating the Common Core courses.

(d) The workload for UxOP arrangements, in particular, the matching of students with the theme-based projects as well as internships would be huge. The Senior Management was aware of the potential resource implications.

(e) It was noted that students could choose from a range of activities for the "Wellbeing" course. Students with special needs could be given exceptions according to the prevailing practice, should the department see fit.

(f) Given that students would be required to take the foundation courses in year 1, this might pose pressure on class timetabling. Measures such as the adoption of sub-sessions for the courses and pre-assigning of courses might need to be explored. The said requirement might also affect the arrangement of some Majors which required students to take a certain number of foundation courses during the first year of study.

It is hoped that the comments will help your preparation for the final proposal. The CUS looks forward to receiving the final proposal from the Steering Committee. Please note that the final proposal should come with new course proposals for all the planned new required courses for the curriculum.

For details regarding the CUS meeting and paper submission schedule, please contact Ms Anne LUK of the Secretariat at ext. 6009.

STEERING COMMITTEE ON REVIEW OF THE COMMON CORE

Final Proposal for the Revised Framework of the Undergraduate Common Core Program

BACKGROUND

1. The current 36-credit Common Core structure has been implemented since 2012. Its stated mission is to "support the mission and vision of HKUST by providing a broad and well-rounded education to its undergraduates". This mission is echoed in the University's Strategic Plan for 2021-28, with stated priorities to "broaden learning experience" and "overcome academic boundaries".

2. In the decade since the inception of the Common Core, there have been speedy changes in global technology trends, and the rising importance of cross-disciplinary studies (e.g., sustainability) has rendered skillsets such as critical thinking and data analytics even more critical. In this context, the objectives, structure, and implementation of the Common Core Program and its components should be re-considered so as to adequately equip students for future challenges.

3. Over 260 courses are currently offered as part of the Common Core. Under the existing policy, 6-9 credits can be "double-counted" thereby fulfilling both the Common Core requirement and School/Major requirements, and currently about 50% of Common Core courses can be double-counted towards School/Major requirements. A recent study by the Undergraduate Core Education Office found that this double-counting policy has led to undesirable consequences, such as (a) Confusion among students about what the Common Core represents; (b) Difficulty for instructors to cater to two groups of students having different objectives and motivations, with some students taking the course as a Major requirement and others as a Common Core course, and (c) An effective reduction in the number of credits used for broadening purposes.

4. More critically, it was also found that students gravitate to courses closely related to their Majors, and the number of courses taken outside the School of a given student's Major may be even less than in the previous 3 Year curriculum, thereby raising concerns about how we achieve the broadening objective of the Common Core. Under the current framework, most Common Core courses do not have any pre-requisite requirements. Consequently, there may be a need for additional rules to restrict students' choices of courses.

5. This distributional model also leads to a low commonality of experience since over 260 courses are offered in all and students tend to take very different subsets of courses with a few exceptions. Students therefore question why they need to spend time and effort on the Common Core, and the very identity of the Common Core program is unclear.

6. In the above light, the Committee on Undergraduate Studies (CUS) at its 157th meeting in January 2019 proposed and endorsed the establishment of a Steering Committee on Review of the Common Core, to advise and make recommendations to the CUS and the Senate on the

goals and objectives, and the composition and requirements of the Common Core Program. The proposed Steering Committee was approved by the Senate at its 144th meeting in February 2019. Subsequently, an extension of the timeline for the review of the Common Core, and an update of the membership of the Steering Committee, were approved by the Senate via CUS in April 2020 and October 2020 respectively.

REVIEW OF THE COMMON CORE PROGRAM

7. Since its setup, the Steering Committee met twelve times from April 2019 to December 2020, with a significant interlude from October 2019 to April 2020 due to unforeseen events including the social unrest and the coronavirus pandemic. The Steering Committee reviewed the objectives, and requirements of the Common Core Program. In view of the concerns stated above, the Steering Committee studied the HKUST and societal expectations, and graduate attributes in particular. It was noted that the updated set of skills (Industrial 4.0) for students to acquire has changed, and the existing "distributional" model may not be an effective way to achieve the "broadening horizons" goal. It was viewed that through the cross-disciplinary areas in data science, AI, sustainability, etc. students could be widened in their exposures and learning experiences. As demonstrated in the AY18/19 and 19/20 Annual Assessments of Graduate Attributes (AAGA), our students' scores in critical thinking (CCTST), self-directed learning readiness (SDLR), and information literacy (IL), were flat or even declining. Feedback from our graduates' employers reveals that there is an imperative for the University to invest in and strengthen our teaching of generic transferable skills, including critical thinking and data analytics, that will be necessary for the skilled workforce of the future.

8. In the review process, the Steering Committee discussed the intended learning outcomes of the Common Core program. The Committee agreed that the Common Core should be complementary to students' Majors and School requirements to better achieve the broadening objective; however, it was also felt that the program should be a real "common core" with a subset of courses common to all students to teach transferable knowledge and skills including cognitive skills, communication skills, and group work that are required for every student.

9. For an in-depth analysis of structures and requirements of the Common Core/General Education (GE) programs, the Steering Committee reviewed in detail the GE review reports of the following overseas universities that had recently revamped their own programs: Harvard University, Princeton University, the University of Arizona, the Ohio State University, the California State University, and Nanyang Technological University.

10. It was noted that there are different models of Common Core/GE programs, including open model, distributional model, core model, and hybrid model. The current HKUST Common Core model is a distributional one. Most of the GE programs under review were found to involve relatively heavy workloads and focused not on results and knowledge accumulation but on processes. The Steering Committee observed, for example, that the Harvard model is very broadening in its structure because it includes generic and disciplinary courses and does not allow double-counting. The model helps to holistically integrate what students have learnt.

11. Taking advantage of the opportunity that a recent HKU PhD student had compared the 2012 Common Core and GE reforms carried out by HKUST, HKU, and CUHK for his

dissertation research, the Steering Committee invited him to make a presentation. The following points were among the main findings and conclusions of this research:

i. Common Core is a networked curriculum, which, if executed well, could have long-term innovative consequences.
ii. Common Core education by definition should question boundaries and promote critical thinking.
iii. However, compared to the other two universities, HKUST appeared to have less pride in its education and its faculty tend to not acknowledge Common Core as an integral part of the University.
iv. Different from the other two universities, HKUST's relatively collegial approach to the reform of the Common Core in 2012 has led to a program that is relatively loose, unstructured, and lacking in tangible outcomes.
v. The HKUST Common Core needs defined structures that allow for instructor freedom and yet guarantee quality.

12. During the review, the Steering Committee discussed key principles or key values added of the Common Core, in order to capture what the Common Core is about and why we need a Common Core. After deliberation, the suggested key principles are refined as follows:

i. Apply transferable skills in diverse (interdisciplinary cross-cultural) global challenges highly relevant to Hong Kong;
ii. Broaden beyond major program with complementary disciplines to ensure breadth (intellectual empathy);
iii. Focus on the approach and process to develop adaptable mindsets and empathy on top of skillsets;
iv. Enhance holistic well-being by exploring the joy of learning and serving, the beauty and wonders in life, and human values through a positive and growth mindset; and
v. Develop identity in the society and community.

13. Two rounds of consultation were held throughout the review process. First, from September to October 2019, the Convener of the Committee presented a proposed new framework to the Deans/IPO Director, the Committee on Undergraduate Core Education (CUCE), and faculty members in the respective meetings of Schools and IPO. The feedback and inputs received from the consultation were summarized and considered by the Steering Committee in refining the proposed framework. Subsequently, in Fall 2020, the revised proposal was presented to stakeholders in forums including the CUCE meeting, Deans/DIPO's meeting, an open consultation session with faculty members, and a sharing session with nominated students. In parallel with the submission of the initial proposal to the CUS and Senate for consideration, the Convener of the Steering Committee attended several meetings including SSCI and SENG school circles, meetings with Associate Deans, SHSS UG Co-ordinators and faculty from HUMA to address their queries and concerns.

14. After a thorough review and discussion on different aspects and issues, the Steering Committee agreed that as a whole, the existing Mission, Goals, and Objectives of the Common Core are appropriate and do not need to be modified. However, the structure and the implementation of the program to deliver on these goals and objectives, and measure students' progress, needs to be reconsidered.

15. The Steering Committee recommended that structure of the Common Core framework should be changed from a distributional model to a scaffolding model, a model adopted by many new GE curricula among the universities that were referenced. Students should follow a structured progression, and it will be greatly beneficial to be able to assess the learning outcomes and competencies throughout the four years of study. The newly proposed framework, which eliminates double-counting and reduces the credit load to 30 (so there is either no impact, or at most 3 credits, to the study load for all students), will help students learn outside their focal discipline through 15 credits of Foundations courses and 12 credits of Broadening courses. Subsequently, students will base on their interests to apply their cross-disciplinary knowledge and transferable skills and competencies to complete a 3-credit requirement in an Experiencing program. In terms of progression, Foundational core skillsets and mindsets courses need to be taken in Year 1, exposure to Broadening courses outside the Major would be most appropriate in Years 2 and 3, and the **U**ndergraduate e**x**periential **O**pportunities **P**rogram (UxOP) requirement should be taken in Year 3 or 4.

RESPONSES TO ISSUES RAISED DURING CONSULTATIONS

16. The initial proposal for the new structural framework of the Common Core program was submitted to CUS for consideration at its 166th meeting on 11 November 2020. After deliberation, CUS expressed positive support for the initial proposal and conveyed several valuable comments and issues for the Steering Committee to address in the final proposal. Some main responses are listed below:

i. There were concerns about the organizational, administrative, and resource implications. It was clarified that CUCE will remain the party responsible for overseeing the Common Core. Organizational and administrative support will be needed, especially for the UxOP, and the Provost's office has been requested to provide the needed support and resources.
ii. Given that students would be required to take the Foundations courses in year 1, this might pose pressure on class timetabling. Based on this observation, it is proposed that the current practice of allowing students to take Chinese Communication even after Year 1 shall be continued. This proposal is incorporated in paragraph (19).
iii. It was noted that students could choose from a range of activities for the "Wellbeing" course. Students with special needs could be given exemptions from specific activities, according to the prevailing practice, should the Department see fit.
iv. Though UxOP would only be implemented starting Fall 2024, a pilot run was considered crucial to prepare for large-scale implementation. Consistent with this suggestion, the different UxOP components will be piloted well in advance of Fall 2024, with multiple iterations wherever possible.
v. Mechanisms will be in place to ensure consistency of grading across the four UxOP streams. These will be implemented using clear and consistent rubrics integrated into the scaffolding structure.

17. Since the revisions recommended by the Steering Committee are substantial changes to the existing framework, the proposal was presented to the Senate for consideration at its 152nd meeting on 8 December 2020. The Senate had a careful deliberation on the academic aspects of the proposal, with several questions being clarificatory in nature. After discussion, the Senate supported the revamp to be proceeded with, while addressing the concerns raised as appropriate. The following observations are pertinent:

i. Based on feedback obtained at consultation sessions, it was proposed that double-counting should be allowed for Minor programs, since this supports the objective of broadening a student's interests beyond their major area of study. This proposal is incorporated in paragraph 19.

ii. Also based on feedback obtained at consultation sessions, it was proposed that the Arts section should simply be named as "Arts", with the understanding that it will encompass arts of many different types. This proposal is also incorporated in paragraph 19.

iii. A concern was raised about the extent of the revamp, with the suggestion that it would be preferable to change one aspect at a time. However, UCEO has considered this option and considered it difficult to implement.

iv. It was suggested that the Social Analysis section may be further sub-divided by School. An analysis of the current course offerings reveals that this would not serve the broadening objective and may instead place a heavy burden on Schools to provide additional courses. Rather, it was felt preferable to maintain a simple structure.

v. Given the complexity of the program change, including the need for a revision of the course approval form, the Senate approved the request to submit proposals for specific new courses after, and conditional on, final approval of the program change; rather than have the new course proposals submitted simultaneously with the final program change proposal.

vi. Since the membership of the Steering Committee consists of faculty in their personal capacities, and members do not have technical expertise or experience in setting up support systems for a program (such as staff members from ARO, CEI, and ITSC), the Senate gave approval to set up a Working Group to oversee the implementation of the new Common Core, subject to approval of the final program change proposal (as per Paragraph 21).

FINAL PROPOSAL FOR THE NEW FRAMEWORK OF THE COMMON CORE

18. Under the current Common Core structure, there are eight areas including Humanities (H), Social Analysis (SA), Science and Technology (S&T), Quantitative Reasoning (QR), Arts, English Communication, Chinese Communication and Healthy Lifestyle. The total credits amount to 36. Students are required to take 3 credits in the School Sponsored Courses (SSC), each from H, SA and S&T. They can take 6 credits of electives from H, SA, S&T, QR and Arts.

19. The current Common Core model is a distributional one. In order to better achieve the objectives of delivering the Common Core, the following new framework is proposed (more details on the reasons for proposing the changes, feedback from stakeholder, revised student pathway, etc. are presented in Appendix 2a).

i. *Three tiers of Common Core Groups*
In the new framework, courses have been categorized into three groups (new courses in boldface):

CC Group	Credits	Common Core Areas	Credit Breakdown
Experiencing Years 3-4	3	**UxOP: UROP, UTOP, UPOP, UCOP** A choice of 4 structured & carefully designed programs, each with a different focus but commonalities in learning outcomes, requirement for cross-disciplinary, global, and systems thinking and communications, and pre-requisites in Foundations and Broadening	3
Broadening (with specific outcomes) Years 2-3	12	**Arts (A)**	**Program-specific requirements**
		Humanities (H)	
		Science (S)	
		Technology (T)	
		Social Analysis (SA)	
Foundations (Skillsets & Mindsets) Year 1	15	**Cognitive Foundations of University Education: Critical Thinking and Data Literacy**	3
		Behavioral Foundations of University Education: Habits, Mindsets, and Wellness	3
		English Communication	6
		Chinese Communication **#**	3
	30	**Total Credits Required (no double-counting)**	**30**

Chinese Communication need not necessarily be taken in Year 1.

The Foundations group includes the existing Chinese Communication and English Communication. Two new Foundations courses: (1) Cognitive Foundations of University Education: Critical Thinking and Data Literacy, (2) Behavioral Foundations of University Education: Habits, Mindsets, and Wellness will be introduced to provide core skillsets and mindsets training to students. All UG students will be required to acquire the same knowledge and competency skills in Year 1. They will be required to complete all the English Communication courses and be encouraged to complete the Chinese Communication course in Year 1. However, consistent with the current practice, flexibility will be given regarding the completion of the Chinese Communication course in a different year. The current 0-credit HLTH 1010 Healthy Lifestyle will be integrated into the new Behavioral Foundations course.

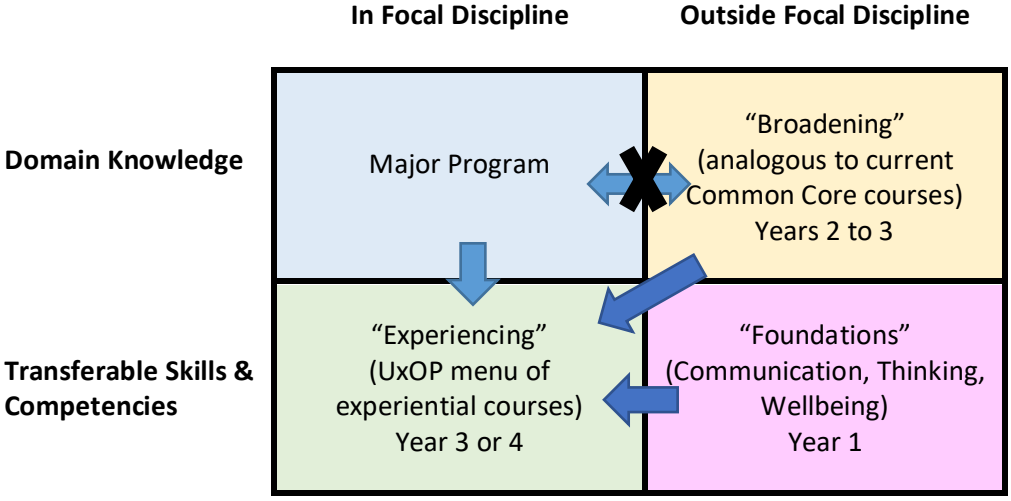
The Broadening group comprises courses in five areas: H, S, T, SA, and A. There will be no overall change to the H and SA areas. The existing S&T area will be separated into two areas: S and T. The existing Arts (A) area will have an updated set of learning outcomes with an increase in credit requirement from 0 to 3. The existing QR requirement will be dropped and replaced by the new Cognitive Foundations course.

Students from different Major programs will have different minimum credit requirement for each area in the Broadening group and will not be able to count any credits from their "home" area(s) so as to achieve the broadening requirement. Students' first Major, and not their additional Major, will serve as the reference point for group-based exclusions, except in cases where the first Major itself is inter-disciplinary (e.g., joint-School or dual degree). The Schools/IPO have proposed program-specific requirements for the Broadening group for each Major, and the related information is incorporated in Attachment 6b.

The Experiencing group will require students to choose any one out of the four structured programs offered as the Undergraduate experiential Opportunities Programs (**UxOP**):
UROP: Undergraduate **R**esearch **O**pportunities **P**rogram;
UTOP: Undergraduate **T**eaching **O**pportunities **P**rogram;
UPOP: Undergraduate **P**ractice **O**pportunities **P**rogram; and
UCOP: **U**ndergraduate Global **C**hallenges and **O**pportunities **P**rogram.

Students must complete the Cognitive and Behavioral Foundations courses in Year 1, as well as courses from at least two Broadening groups (i.e., 6 credits in two Broadening groups), before taking a UxOP course in Year 3 or 4. Each UxOP will have a different focus but they will all be experiential, inter-disciplinary, and involve communications with stakeholders outside the student's home discipline.

ii. *Conceptual Overview of the New Framework*
The proposed framework can be depicted graphically as follows:



iii. *Total Credit Change*
Under the new framework, the total credits of the Common Core structure will be changed to 30 credits. As compared to the current 36 credit program, there will be a reduction of 6 credits as a whole in the Common Core.

iv. *Removing Double-counting Rule for Major Programs*
Currently, students can double-count the Common Core with their Major or school requirements for 6 to 9 credits. However, in view of the concerns mentioned in paragraph (3), this double-counting practice will be discontinued in the new framework. Double-counting will be allowed for Minor programs to incentivize students to broaden their interests.

v. *CORE as the Course Code Prefix of Common Core*
It is proposed that all Common Core courses under this framework will be assigned a common identifier in the course code, for example, "CORE 1001", "CORE 2001", etc. Courses intended purely for the Common Core, e.g., the UxOP courses and some Foundations courses, will have the new CORE prefix, whereas other courses will be multi-coded to indicate their membership in the Common Core.

vi. *Deletion of SSC Requirement*
The current 9-credit SSC requirement will be deleted in the new framework. Nevertheless, Schools could continue to offer SSC courses in the Broadening group of the new framework.

vii. *Scaffolding Structure*
The Common Core framework will be migrated from a distributional model without any pre-requisite requirements to a scaffolding model with pre-requisites built into the three Common Core groups, viz., Foundations, Broadening, and Experiencing. As discussed in paragraph (19 i.), the Foundations courses would serve as pre-requisites to the Broadening and Experiencing courses and would need to be taken in Year 1. There would also be a minimum requirement for the Broadening courses before a student can proceed to the Experiencing courses. The need for a pre-requisite relationship between Broadening and Experiencing courses, and the nature of that relationship, would need to be reviewed and could be different for different Experiencing courses.

There will be scaffolding of transferrable skills in terms of a collection of competencies that the University hopes our graduates will possess. This will be a different route from, yet supplementary to, the academic content of the courses. The competencies embedded in the teaching of this content will be explicitly spelled out such that both instructors and students may clearly see the connections among the courses. For example, the critical thinking skills developed in the Cognitive Foundations course and the cross-domain knowledge from a particular Broadening course should both be relevant for an inter-disciplinary UCOP project undertaken subsequently.

Consistency in the application of competencies across the four-year curriculum is a new concept for the University. To achieve this, a shared institutional vocabulary disseminated using readily accessible resources with agreed-upon competency definitions, rubrics for assessments, and application examples will be needed. Before students and instructors can track competencies and progression, a clearly defined processes to map competencies to courses will be necessary, and to lessons and assessments will be highly desirable. There will be a need for a technical system/software for transparently tracking the aggregate competencies in a meaningful manner so that students can be uniformly assessed.

viii. *English Communication (E-Core) and Chinese Communication (C-Core) Courses*
The credit requirement of E-Core and C-Core courses will remain unchanged in the new Common Core framework. Meanwhile, the Center for Language Education (CLE) is developing a competency framework, intended as a curriculum backbone, to establish coherence among courses offered by the Center. The framework provides a common perspective for stakeholders to understand how the development of key competencies progresses across language courses in students' study pathways. The new E-Core and C-Core will integrate the framework into their instructional design. Once the revamp of E-Core and C-Core courses is ready to be discussed, CLE will submit the course change proposal separately.

IMPLEMENTATION

20. The work plan as recommended by the Steering Committee is to devise the implementation plan and transitional arrangement in Spring 2021. Some new courses under the revised framework will be pilot run from September 2021 to June 2022 **with a target to fully launch the revamped Common Core program for students in the 2022-23 intake**.

21. Under CUCE, a new Working Group will be formed to advise and make recommendations to CUCE on the implementation of the new Common Core. The Working Group will comprise representatives from Schools/IPO, HUMA, SOSC, CLE, CEI, ARO and ITSC (Attachment 12). The Working Group will proceed with its tasks conditional on the final approval of the program change.

22. Meanwhile, several faculty groups across different Schools/IPO have been formed to prepare the new course proposals including Cognitive Foundations of University Education: Critical Thinking and Data Literacy; Behavioral Foundations of University Education: Habits, Mindsets, and Wellness; and UxOP courses. The course proposals will be finalized and submitted to CUCE/CUS for consideration, for piloting as and when appropriate, after the proposed structural framework is approved.

CONCLUSION: MAJOR OBJECTIVES OF THE NEW FRAMEWORK

23. To conclude, the above proposed structural framework of the Common Core program is aligned with the imperatives of the University's Strategic Plan and the UGC Planning Exercise for the 2022/23 to 2025/28 Trienniums. This framework has been developed keeping in mind the Guangzhou campus which will adopt the same framework for its undergraduate programs in the near future. Indeed, many of these new initiatives attempt to build platforms for multi-disciplinarity and teamwork, by encouraging students and faculty to learn and teach together beyond existing boundaries. The new framework tries to introduce greater commonality of student experience, focus on student wellbeing, and a greater focus on the development of "average" students.

Appendix 2a
to CUS 04/21

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Changes to Existing Undergraduate Program

Section 1: General Information

a) The program is a : Major ☐ Minor ☐ Other ☒

b) Title: Final Proposal for the Revised Framework of the Undergraduate Common Core Program

c) Unit recommending the change(s): Steering Committee on Review of the Common Core

d) Program Admin. and Co-ordinating Department(s): Undergraduate Core Education, Center for Education Innovation (CEI)

e) Effective term for the change(s) proposed: Sept 2021-June 2022 (i.e., 2021-22 academic year): Pilot run of new courses; and Sept 2022 (i.e., 2022-23 academic year): Launch new Common Core Program for Fall 2022 student intake

f) Changes proposed applicable to student cohorts of: Sept 2022 (i.e., 2022-23 academic year): Launch new Common Core Program for Fall 2022 student intake

Section 2: Submission and Recommendation

Proposal Submission and Recommendation

	Position / Name:	Signature	Date
Recommending Unit:	Prof. Anirban Mukhopadhyay, Chairperson, Steering Committee on Review of the Common Core		23 Dec 2020

Concurrence

Name of School/Department	Position / Name	Signature	Date
SSCI	Prof. Pak Wo Leung, Associate Dean (UG Studies & Student Affairs)		4 Jan 2021
SENG	Prof. Philip Mok, Associate Dean (UG Studies)		29 Dec 2020
SBM	Prof. Allen Huang, Associate Dean (UG Programs)	Signed	31 Dec 2020
SHSS	Prof Carine Yiu, Associate Dean	Signed	4 Jan 2021
IPO	Prof. Jimmy Fung, Associate Director (UG Studies)		4 Jan 2021

Section 3: Recommended Change

The following changes are recommended:

☐ Change to the program title

New program title: _____

☐ Change in enrollment requirements

Please specify the change:

☐ Addition/deletion* of an Option, track or concentration of a major *(*delete as appropriate)*

Name of Option/track/concentration:

☐ Changes to required course(s)

Course code: ☐ Add ☐ Remove

Course code: ☐ Add ☐ Remove

☐ Changes to elective requirements

(Details: *)*

☒ Other changes

(Details: Please refer to the attached cover paper.)

Section 4: Documentation Required

		Please indicate if documentation is attached
a)	Reasons for proposing the changes • Issues with the current Common Core framework **Attachment 1**; • Benchmarking with local and overseas universities **Attachment 2**; • Review of the General Education Reports of the Overseas Institutions **Attachment 3**.	☒
b)	Feedback from stakeholders, including student feedback • Schedule of Consultation Sessions **Attachment 4**; • Summary of Notes on Consultation sessions **Attachment 5.**	☒
c)	Revised curriculum • The current and the newly proposed framework are presented in **Attachment 6**; • Initial Proposal for Cognitive Foundations of University Education: Critical Thinking and Data Literacy **Attachment 7**; • Initial Proposal for Behavioral Foundations of University Education: Habits, Mindsets, and Wellbeing **Attachment 8**; • Initial Proposal for a new Common Core area in the Broadening Group: Arts **Attachment 9**; • Initial Proposal for a new Common Core area in the Experiencing Group: Undergraduate Experiential Opportunities Programs (UxOP) **Attachment 10**.	☒

d) Revised sample student pathways of the Common Core Program (credit requirement) [X]

- **Attachments 6a and 6b**

e) Impact on educational objectives and intended learning outcomes [X]

- The educational objectives and ILOs of the new Common Core areas/courses are elaborated in the above-mentioned **Attachments 7 -10**.

f) Transitional arrangements [X]

- The existing Common Core demand and transition timeline **Attachment 11**.
- The proposed terms of reference and membership of the Working Group on Review of the Common Core Program under CUCE **Attachment 12** - The CUCE has, at its 57th meeting held on 17 Dec 2020, granted provisional approval of the setup of the Working Group.
- A new course proposal form (i.e. an interim arrangement for introduction of new Common Core courses under the revised framework) **Attachment 13**

Current Common Core Structure

Modified by Senate in Feb 2012, adding SSC as a compulsory requirement

Common Core Area	Credits		Note
	Required	Elective	
Humanities (H)	6*	6	* 3 credits must be from **H SSCs**
Social Analysis (SA)	6*		* 3 credits must be from **SA SSCs**
Science and Technology (S&T)	6*		* 3 credits must be from **S&T SSCs**
Quantitative Reasoning (QR)	3		
Arts	0		
English Communication	6**	Nil	**Must be taken in the 1st year of study
Chinese Communication	3	Nil	
Healthy Lifestyle	Non-credit	Nil	
Total Credits Required	**36**		*[Note: "SSCs" denotes "School-Sponsored Courses"]*

1

Development of the Common Core Structure

2007
Recommended by 334 Working Group

Arts and Humanities .....9 credits
Social Analysis.....9 credits
Science and Technology .....6 credits
Quantitative Reasoning.....3 credits
English Communication * .....6 credits
Chinese Writing * .....3 credits
Physical Education.....**
Service Learning.....**

TOTAL CREDITS.....36+

* *Must be taken in Year 1*
***To be determined*

Students will be strongly encouraged to enroll in project-based freshman seminars and to take part in a Mainland or international experience in fulfillment of the core requirements where appropriate.

December 2008
Approved by the Senate

Arts and Humanities .....9 credits (a)
Social Analysis .....9 credits
Science and Technology .....6 credits
Quantitative Reasoning.....3 credits
English Communication (b) .....6 credits
Chinese Communication.....3 credits
Healthy Lifestyle .....0 credit

TOTAL CREDITS.....36

(a) → *Of these 9 credits, 3 credits should be from the Arts area*
(b) → *Must be taken in Year One*

October 2010
Modified by the Senate

Humanities (H)	**6 credits**
Social Analysis (SA)	**6 credits**
Science and Technology (S&T)	6 credits
Quantitative Reasoning (QR)	3 credits
Core electives (H/SA/S&T/QR/Arts)	**6 credits**
English Communication	6 credits
Chinese Communication	3 credits
Healthy Lifestyle	0 credit
TOTAL CREDITS	36

* *Must be taken in Year One*

- Areas chosen represent the intellectual building blocks and core competencies necessary for a person to contribute meaningfully in our global society

2

Signature Courses → School-Sponsored Courses

- **June 2010**: Idea of Signature Courses originated at a budget and planning retreat by the Provost and the Deans. To offer a small number of high quality signature courses taught by our best professors to form the hallmark of the undergraduate curriculum
- **Beginning Fall 2011**: To pilot 15 signature course proposals for two years
- **After the Dec 2011 Faculty Forum**: Signature Courses renamed by Deans and Provost as School-Sponsored Courses (SSC) to highlight their nature of "interdisciplinarity", "more school effort of coordination" and "hallmark of the school"
- **Feb 2012**: Senate approved to make SSC a compulsory requirement of the 4Y Common Core Program, with provisional approval granted to SSCs until Fall 2015-16

  For Humanities, Social Analysis and Science and Technology common core areas, at least 3 credits must be selected from SSCs listed for the respective area
- **Between 2014 and 2016**: Two task groups established to review SSC implementation
- **Feb 2017**: Senate approved the current set of SSC objectives and selection criteria

3

Recommendations from 1st Advisory Board Review (Jun 2013)

No 1: Consider the following when reviewing the Common Core Program:
- Personal and leadership management skills;
- Service-based thinking mindset; and
- A global perspective.

No 2: Formulate a simple and clear statement to complement and capture the essence of the page-long exposition of the program aims and values.

No 3: Consider to develop courses to highlight the educational philosophy and core values of the Common Core Program:
- Move the SSCs forward to develop courses that highlight the educational philosophy and core values in the evaluation of their design, effectiveness and impact; and
- Include literature and classics courses and courses to develop leadership skills.

No 4: Consider the feasibility of dividing large classes into smaller groups, at which a facilitated discussion of video-taped lectures could be held.

4

Recommendations from 2nd Advisory Board Review (Jun 2015)

No 1: Map the CILOs with *ABC LIVE* to assist the development of these attributes for students.

No 2: Further strengthen the communication of the importance of the Program in university education with its stakeholders including parents to solicit their support and secure their buy-in.

No 3: Collect the views of employers to identify the gap between the undergraduate core education and employers' expectations in its external program review process.

No 4: Solicit support from faculty in articulating the importance of the Program to students' academic development and personal growth so as to arouse students' interest in studying common core courses particularly for those courses which are beyond their major disciplines.

No 5: Develop a transparent mechanism to stipulate the adding and removing of common core courses.

No 6: Identify a few courses, say 30-35 in total, highlighting the education philosophy and core values of the Program to facilitate students' course selection and appreciation of the Program values.

No 7: Encourage instructors to develop good blended learning courses for sharing effective teaching and learning practices, and consider providing incentives to those course developers.

5

Area ILOs:
http://uce.ust.hk/web/about/about_outcomes.html

Common Core Area	Intended Learning Outcomes	
Humanities (H)	H1	Comprehend and narrate human phenomena from the perspectives of humanities disciplines.
	H2	Appreciate and articulate diverse human values, feelings, reason and creativity in various forms of expression.
Social Analysis (SA)	SA1	Analyze key societal and behavioral issues by applying relevant social scientific approaches in different contexts
	SA2	Communicate a concern about key societal issues as responsible citizens
Science and Technology (S&T)	ST1	Comprehend and apply the basic principles of science and methods of scientific inquiry
	ST2	Evaluate the social and philosophical implications of scientific discoveries and technological development
Quantitative Reasoning (QR)	QR1	Use mathematical models or quantitative methods to formulate, analyze and solve problems that they encounter in their daily and professional lives
	QR2	Choose an appropriate method to represent and process a given set of quantitative data and to draw inferences from such data in a systematic and logical way
Arts	A1	Appreciate the theory, history and practice of the arts
	A2	Express themselves through various art forms or media
English Communication (E-Comm)	E1	Use English to achieve communicative purposes appropriate to the academic and social context
Chinese Communication (C-Comm)	C1	Students with Chinese background will be able to use Putonghua and Standard Written Chinese to achieve communicative purposes appropriate to the context, be it academic, social or professional
	C2	Students with non-Chinese background will be able to achieve basic communicative purposes in Putonghua
Healthy Lifestyle (HLTH)	HL1	Recognize the importance of physical, psychological, social, and occupational wellness
	HL2	Develop strategies to manage their lives
	HL3	Acquire new sports skills and maintain a higher level of physical wellness through a variety of activities

Program Goals & Objectives:
http://uce.ust.hk/web/about/about_mission.html

Goals

The Common Core Program strives to provide undergraduate students with a well-rounded quality education that broadens their horizons, inspires and ignites their passion for learning and empowers them for lifelong pursuit of excellence. Specifically, the goals of the Common Core Program are:

(a) **Broadening horizons:** to allow students to gain intellectual breadth and an appreciation of intellectual achievements across and beyond the main academic disciplines of their studies.

(b) **A passion for learning:** to spark students' passion for learning and enhance their higher order intellectual abilities: analysis and evaluation; judgment and critical thinking; defining and solving problems.

(c) **A lifelong pursuit of excellence:** to provide a foundation for students' life-long development through personal growth, preparation for future careers and opportunities to make contributions to the community.

Objectives

The objectives of the Common Core Program are:

(a) To provide courses across and beyond the main academic disciplines: science and technology, social studies, and arts and humanities, such that students can gain intellectual breadth.

(b) To instill knowledge on the human achievements in the arts and culture, the social structures and forms, and the significance of scientific discovery and technical accomplishments.

(c) To spark students' passion for learning by teaching and learning pedagogies that stimulate them to think for themselves, taking their own routes through the materials, to conduct self-directed research and inquiry, and to communicate their discoveries, explanations and narratives to others.

(d) To help develop higher-order thinking skills through activities that require students to form and communicate judgments, to apply theories and concepts to unfamiliar situations, or to analyze cases and solve problems.

(e) To offer courses that support students' development of skills in the areas of language and communication, quantitative reasoning and computer literacy.

(f) To nurture the development of students' attributes including social adaptability, the willingness to accept challenges, and the ability to work independently and in collaboration.

(g) To cultivate the development of responsible, ethical and compassionate citizens who can reflect on personal choices and basic human values, and understand the social and human impact of scientific and technical advances.

(h) To equip students with strategies to manage their lives, contribute to the community, and live up to the expectations that society places on its educated citizens.

6

Mapping AILOs to Common Core Program Goals

Common Core Areas ILOs		Common Core Goals and Objectives							
		Goal 1 Broadening Horizons		Goal 2 Passion for Learning		Goal 3 Lifelong Pursuit of Excellence			
		Obj 1	Obj 2	Obj 3	Obj 4	Obj 5	Obj 6	Obj 7	Obj 8
Humanities	H1	√	√	√	√	√	√	√	√
	H2	√	√	√	√	√	√	√	√
Social Analysis	SA1	√	√				√		
	SA2							√	√
Science and Technology	ST1	√	√						
	ST2	√	√						
Quantitative Reasoning	QR1				√	√			
	QR2				√	√			
Arts	A1	√	√						
	A2	√	√						
English Communication	E1					√			
Chinese Communication	C1					√			
	C2					√			
Healthy Lifestyle	HL1						√		√
	HL2				√				√
	HL3							√	√

- Generally achieving the broadening goal
- Relatively weak in sparking students' passion for learning, and developing attributes
- 2nd and 3rd goals are mainly mapped to QR, E-Comm, C-Comm, and HLTH AILOs

7

Issue 1: Does the Common Core serve its objective of broadening students with intellectual breadth beyond a single discipline?

Credits used to fulfill the core elective requirement

- Students tend to take courses closer to their major field of study, suggesting that this core elective requirement was not too instrumental in helping students broaden out

Courses serving both common core and school/major requirements

- ~50% CC courses can be counted toward major/school requirements, suggesting that the Common Core might not well serve its objective of providing a broad education to students

Double-counting arrangement acts against the broadening objective and influenced the demand for common core courses (higher demand for SA, S&T courses than for H)

[Observations from 4Y graduate statistics for the first two cohorts (2015-16 & 2016-17]

8

Data from the 2016-17 Graduate Statistics as reference:

- 63% of the course enrollment were used to fulfill CC requirements solely
- 15% were used to fulfill both CC and non-CC requirements (that is, double-counted)
- 22% were used to fulfill non-CC requirements only
  - 50% of which were school/major requirements
  - about 41% of these course enrollment were in the SA area, 24% in S&T, and 19% in QR
- 11 out of the 12 QR courses could be double-counted, ~80% of the QR enrollment were double-counted
- Actual CC credits taken only contributed to 14% or 17 credits (SSCI) to 18% or 21 credits (SHSS) of their graduation requirement if English and Chinese Communication credits and double-counted credits were excluded from the calculation
- The percentage dropped further to 5% or 6 credits (SHSS) to 11% or 13 credits (SSCI) if discipline-dependent credits (that is, credits earned from courses offered by the students' own school) were excluded

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Issue 2: Should additional rules be introduced to restrict students' choice of courses for meeting the core elective requirement?

→ Preliminary CUCE discussion, no conclusion yet

- Disallow students using courses offered by their School to fulfill the core elective requirement
- Restrict students from using courses related to their major or from specific area to fulfill the core elective requirement
- There was also a view that students should have the freedom to explore and select core electives of their own choice

Common Core Area	Credits		Note
	Required	Elective	
Humanities (H)	6*	6	* 3 credits must be from **H SSCs**
Social Analysis (SA)	6*		* 3 credits must be from **SA SSCs**
Science and Technology (S&T)	6*		* 3 credits must be from **S&T SSCs**
Quantitative Reasoning (QR)	3		
Arts	0		
English Communication	6**	Nil	**Must be taken in the 1st year of study
Chinese Communication	3	Nil	
Healthy Lifestyle	Non-credit	Nil	
Total Credits Required	**36**		*[Note: "SSCs" denotes "School-Sponsored Courses"]*

10

Issue 3: Should competency requirements be separated from the common core requirements?

→ WGR4Y* Recommendation:

Move English language, Chinese language, quantitative reasoning and Healthy Lifestyle outside the common core (March 2017)

> ***"The University common core:*** There was broad agreement that consideration should be given to **separately grouping the common core competency components**, in particular English language, but possibly Chinese language, quantitative reasoning and Healthy Lifestyle, to better focus the program and streamline its management."

* WGR4Y -- Working Group for Mid-term Review of the 4-year Degree

→Preliminary CUCE discussion

- May consider 2 groups of requirements:
  a) aim at achieving the broadening purpose; double-counting not allowed
  b) focus on competency building (e.g. QR, E-Comm, C-Comm and HLTH courses); double-counting allowed

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Issue 4: How to deal with double-counting?

→Preliminary CUCE discussion

- Need to consider the impact of removing double-counting on major programs
- May remove double-counting by removing the heavily double-counted QR area, and the language proficiency related E-Comm and C-Comm areas out of the common core. This may impact on the integrity of the common core program and its educational philosophy.
- For major programs that require a lot of double-counted credits to help bring the total graduation requirements within 120-126 credits, it was suggested to relax the 126-credit maximum.
- Adopt a top-down approach to develop courses for the common core. Establish a committee to identify themes or attributes that the common core would expect the students to learn and develop, then identify faculty members to develop courses along the line.

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Issue 5: Should "no-prerequisite" be a criteria for common core courses?

→ Recommended by the WGR4Y to relax the "no-prerequisite" rule (March 2017)

"It was also agreed that the **principle that only courses without pre-requisites** can be included in the common core has limited options for students and departments and might **be reconsidered**."

→ CUCE decision: to retain the "no-prerequisite" rule

Considerations: Including courses with prerequisite in the Common Core would allow students to pursue study in a subject area after finishing an introductory course, but at the same time exacerbating the tendency of students taking courses related to their major, thus working against the broadening objective

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Others

Issue 6: Diverse student background in a course is often cited by instructors as a challenge in tuning the level of the course materials to suit students' prior preparation and background, and engaging students in the class

Issue 7: Students' English language ability: science and engineering students often have difficulty with courses that require a lot of readings and writing work, e.g. humanities and social science courses

14

Observations from Feedback of the 2014-15 Cohort

[Data from FYES, SYES, TYES and SESQ conducted for the 2014-15 cohort between 2012-13 and 2017-18]

Level of interest in common core courses

- **"Moderate" to "High"** level of interest **in S&T, QR and SA** courses, but just a **"Moderate"** level of interest in **H and Arts** courses
- Students' interest was generally **aligned with their major study**

Perceived values of common core courses

- **Significant increase from "Agree"** (in the first 3 years) **to "Strongly Agree" in their final year**
- Students were **more able to appreciate the values of the common core when they were about to complete their UG studies**.
- **Two exceptions** for these two aspects:
  - "***helped me gain intellectual breadth across academic disciplines***" – *not much improvement in ratings in the four years*
  - *"**helped me appreciate human achievements**" – a slight decline in in rating in the final year*

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Attachment 2

Benchmark with local and overseas universities



Summary of CC & GE Programs

15 April 2019

General Education Models

Open Model	Distribution Model	Core Model	Core/Distribution model
No GE requirement	Take courses across the curriculum to fulfill an array of breadth requirements	A specific set of purpose-developed GE classes that do not fulfill other functions in an UG education plan	
Brown	Cornell Dartmouth Harvard Princeton University of Pennsylvania Yale Duke Stanford Northwestern UCLA /UC Berkeley U of Michigan/Washington /Wisconsin Middlebury/Oberlin /Pomona/Swarthmore /Williams	Columbia Yale-NUS MIT (science core) Cal Tech (science core) U of Chicago	Bryn Mawr Carnegie Mellon UT Austin

Princeton Report: Appendix C

General Education Requirements

- Make up about 1/3 of the BA curriculum
- Three basic areas of knowledge:
  - Humanities;
  - Social sciences; and
  - Natural sciences
- Three basic skill sets:
  - Writing;
  - Foreign language; and
  - Quantitative reasoning

Princeton Report: Appendix C

Local Institutions

Credit Requirements

Institution	GE credits A	Total credits in four-year programme B	Percentage A/B	
Essential skills included in GE				
CityU	30	120	25%	Gateway Education
HKBU	~~38~~ 18 (+13)	128	~~29.7%~~ 14%	General Education Programme
PolyU	30	120	25%	General University Requirements
HKUST	36	120	30%	Common Core Program
Essential skills NOT included in GE				
LU	~~33~~ 27-33	120	~~27.5%~~ 22.5-27.5%	Core Curriculum
CUHK	21	123	17.1%	University General Education
HKIEd	~~21~~ 22	120	~~17.5%~~ 18.3	General Education
HKU	36	240	15%	Common Core Curriculum

GE Requirements

Institution	GE Credits	Requirement		Note
CityU	30	• U req 9 credits (Eng & Chinese Civilisation) • Dist req 12 credits (H, SA, S&T) • School-spec req 9 credits		
PolyU	30	• Cluster area 12 credits • Lang & comm 9 credits • Freshman seminar 3 credits	• Leadership & intra-personal devel 3 credits • Service learning 3 credits • HLTH 0 credit	
HKUST	36	• Core req 30 credits (inc 9 credits SSC) • Core elect 6 credits	• Double-count 6-9 credits	
HKBU	18	• Foundational 9 units • Inter thematic 6 units • Capstone 3 units	• Uni Core 13 units (Eng 6, Chi 3, Art of Persuasion 2, HLTH 2)	Revised 2018
LU	27-33	• Common core 12 credits • 5 clusters 15-21 credits (optional 6 credits)		Revised 2018
CUHK	21	• GE foundation 6 units (In dialogue w Humanity and Nature) • 4 areas 9 units • College GE req 6 units		
HKIEd	22	• GE foundation 4 credits • Experiential learning 6 credits	• GE breadth 9 credits • GE consolidation 3 credits U ePortfolio	
HKU	36	• 6 6-credit courses, 1 from each of 4 AoLs but not more than 2 from any AoL • CC Clusters: 4 courses from Sustaining cities, cultures, and the earth / The universe and the question of meaning (since 2017/18) • Transdisciplinary minor: 4 cluster courses + 2 more (since 2017/18)		

Comparison

Institution	Culture and values	Lifestyle	Integration	Essential skills (language, etc)
City U Gateway Education	• Chinese civilization – history and philosophy			• University English and discipline-specific English
HKBU General Education	• History and civilization • Values and meaning of the life	Physical education		• Public speaking • Information management technology • Numeracy • University English • University Chinese
LU Core Curriculum	• The making of Hong Kong • Understanding morality • World history and civilisations			• Logic and critical thinking • Not included in Core Curriculum: English for Communication; Practical Chinese
CUHK General Education			• In dialogue with humanity • In dialogue with nature	• A common University Core develops generic competencies in and through Chinese, English, GE, IT and physical education

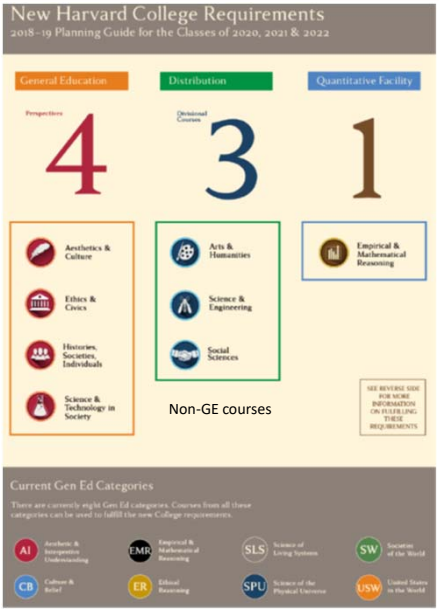
Institution	Culture and values	Lifestyle	Integration	Essential skills (language, etc)
HKIEd General Education			• Foundation course • Consolidation course	• Students take two mandatory English Language Proficiency courses in Year 1 as part of the English language enhancement programme. They also have to take mandatory non-credit-bearing courses in Chinese and Putonghua
PolyU General University Requirements (GUR)		Healthy lifestyle (non-credit)	• Freshman seminar • Service learning	• Leadership & intra-personal development • Language and communication (English and Chinese)
HKUST Common Core	Culture and value	Healthy lifestyle (non-credit)		• English communication • Chinese communication
HKU Common Core Curriculum	Appreciation of own culture and other cultures			• English • Chinese

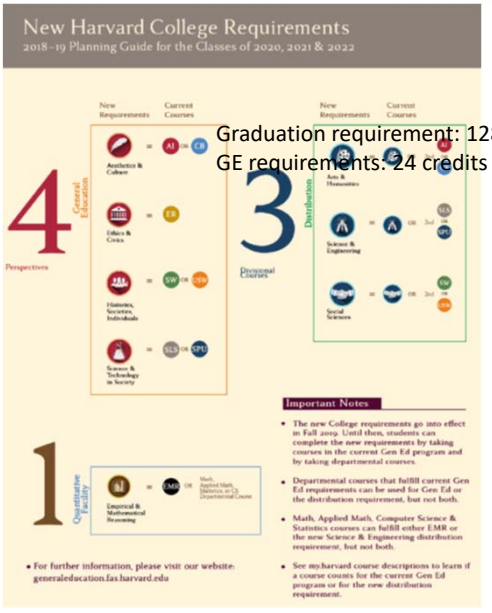
Comparison

Institution	Arts and Humanities	Social Sciences	Natural Sciences	Other
CityU	Arts and Humanities	Study of Societies, Social and Business Organizations	Science and Technology	
HKBU	Arts Communication/ Visual Arts	Social Sciences	Science/ Chinese Medicine	Business
LU	Humanities and the Arts	Management and Society Values, Cultures and Societies	Science, Technology and Society	Creativity and Innovation
CUHK	Self and Humanity	Society and Culture	Nature, Technology and the Environment	Chinese Cultural Heritage
HKIEd	Persons, Interpretations, Perspectives	Community, Society, Culture	Nature, Science, Technology	
PolyU	Human Nature, Relations and Development	Community, Organization and Globalization History, Culture and World Views	Science, Technology and Environment	
HKUST	Humanities	Social Analysis	Science and Technology Quantitative Reasoning	
HKU	Humanities	China: Culture, State and Society	Scientific and Technological Literacy	Global Issues

Oversea Institutions

Harvard





Graduation requirement: 128 credits
GE requirements: 24 credits

Princeton

Bachelor of Arts (A.B.)	Bachelor of Science in Engineering (B.S.E.)
Writing Requirement— 1 writing seminar in your first year Foreign Language Requirement— demonstrated proficiency or 1 to 4 terms of coursework depending on the language you choose and the level at which you start Distribution Requirements: Epistemology and Cognition (EC) — 1 course Ethical Thought and Moral Values (EM) — 1 course Historical Analysis (HA) — 1 course Literature and the Arts (LA) — 2 courses Social Analysis (SA) — 2 courses Quantitative Reasoning (QR) — 1 course Science and Technology (STL/STN)— 2 courses; at least 1 course must be a science and technology course with laboratory (STL)	School of Engineering and Applied Science Requirements 2 terms of mathematics, 2 terms of physics, and 1 term each of chemistry and computer science Writing Requirement— 1 writing seminar in your first year A minimum of 7 courses in the humanities and social sciences, which must include 1 course in 4 of the 6 areas listed below: Foreign Language (at the 107/108 level or above) Epistemology and Cognition (EC) Ethical Thought and Moral Values (EM) Historical Analysis (HA) Literature and the Arts (LA) Social Analysis (SA)

MIT

General Institute Requirements (GIRs)	
Science core	6 courses in math, phy, bio, and chem
HASS	Min 8 subjects in huma, arts, social sci
Communication	4 courses inc at least 2 relevant to major (writing & speaking)
Laboratory	
REST	2 subjects of restricted electives in S&T
Physical education	Min 4 courses and passing a 100-yard swim test

Counting credits at MIT is complicated and different for every student and major. However, as a rule of thumb, you can generalize that about **half of your time at MIT will be spent taking the GIRs**, and about half of your time will be spent specializing in your course(s) of study.

Caltech

Course	*Units*
1. Freshman Mathematics (Ma 1 abc)	27
2. Freshman Physics (Ph 1 abc)	27
3. Freshman Chemistry (Ch 1 ab)	15
4. Freshman Biology (Bi 1 or Bi 1 x)[1]	9
5. Menu Class (currently Ay 1, EE 1, ESE 1, Ge 1, or IST 4)	9
6. Freshman Chemistry Laboratory (Ch 3 a)[2]	6
7. Additional Introductory Laboratory	6
8. Scientific Writing[3]	3
9. Humanities Courses (as defined below)	36
10. Social Sciences Courses (as defined below)	36
11. Additional Humanities and Social Sciences Courses	36
12. Physical Education	9

Graduation requirement: 486 units
Core requirements: 219 units (45%)
Pages 230-231

Stanford

General Education Requirements	
Thinking Matters	1 course (out of 8 courses) OR 1 residence-based year-long program Immersion in the Arts: Living in Culture Structured Liberal Education
Ways of Thinking/Ways of Doing	11 Ways skill capacity-based courses
Writing and Rhetoric (WR)	WR 1: Writing and research-based argument WR 2: Writing, research and oral presentation of research WR 3: Writing in the Major
Language	1 year foreign language study

Graduation requirement: 180 units
GE requirements: ~ 51 units (28%)

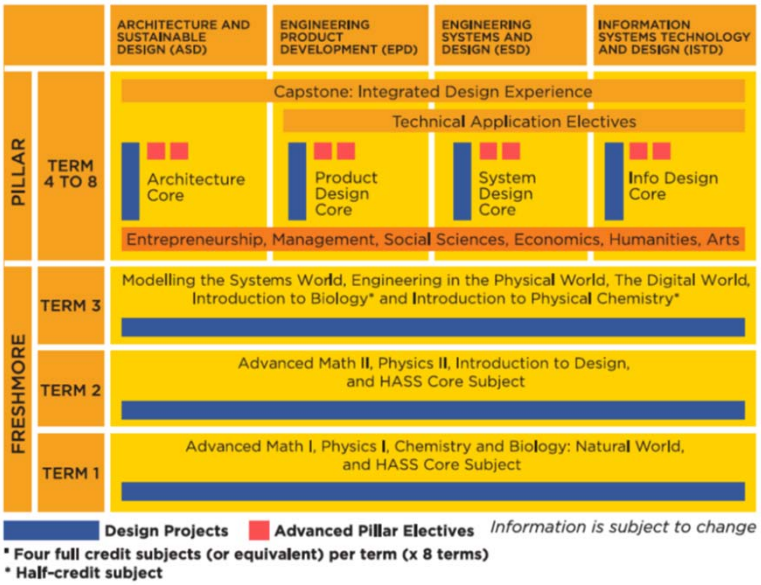
Olin College

Area	Minimum Credits Required
Engineering	46
Math and Science	30; of which at least 10 must be Math
AHS and Entrepreneurship	28; of which at least 12 must be AHS

AHS: Arts, Humanities and Social Science

Graduation requirement: 120 credits

Singapore U of Technology & Design (2009)

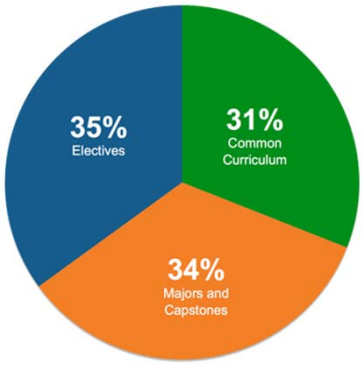


- Modelling the Systems World
- Engineering in the Physical World
- The Digital World
- Introduction to Physical Chemistry*
- Introduction to Biology*

- Advanced Mathematics II
- Physics II
- Introduction to Design
- Theorizing Society, the Self, and Culture

- Advanced Mathematics I
- Physics I
- Chemistry and Biology: Natural World
- World Texts and Interpretations

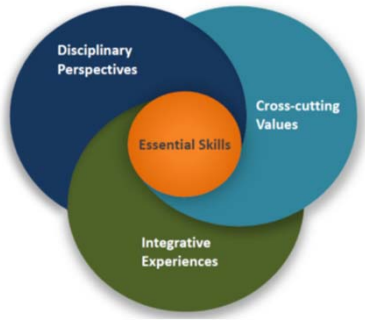
Yale-NUS College (2011)



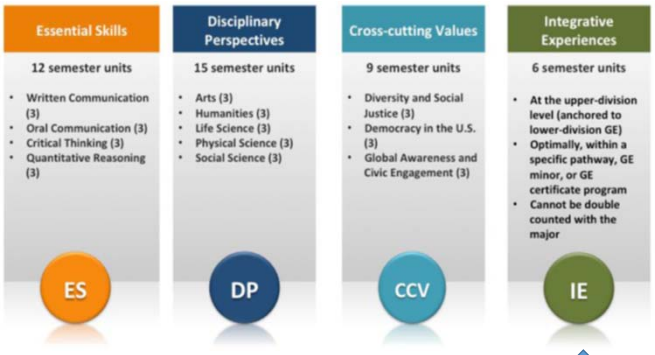
Year	Semester One	Semester Two
1	Literature & Humanities 1 Philosophy & Political Thought 1 Quantitative Reasoning Comparative Social Inquiry	Literature & Humanities 2 Philosophy & Political Thought 2 Scientific Inquiry 1 Elective
2	Modern Social Thought Scientific Inquiry 2 Two Electives	Four Electives
3	Historical Immersion (any time in Yr 3/4) Two Majors Elective	Three Majors Elective
4	Capstone Project Two Majors Elective	Capstone Project Two Majors Elective

Common Curriculum
The "half-life" of knowledge in many fields is changing so quickly that mastery of a single body of knowledge is inadequate for those who will be tomorrow's leaders. The solution: become highly skilled at crossing boundaries. Quickly adapt to new environments. Form meaningful collaborations and partnerships. Be prepared to master new challenges throughout your life. …

California State University



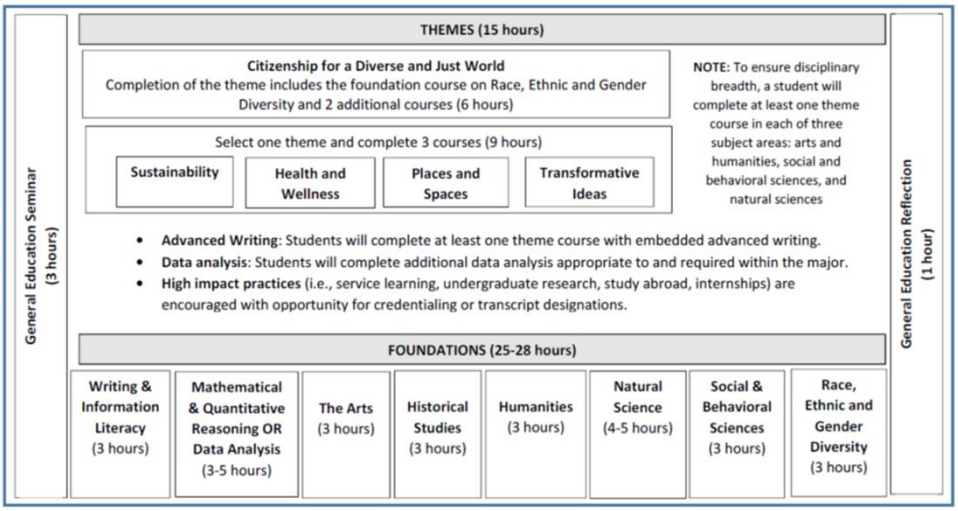
Total 42 units



Current:
Graduation requirement: 120 units
GE requirement: 48 units (inc 9 in upper division GE)
Streaming for different majors

Similar to HKU's Transdisciplinary minor

Ohio State University



Graduation requirement: 120 credits
GE requirement: 47 credits
Allow 9 (6) credits of overlap betw GE and major (minor)

CC/GE Education Program Review

Institution	Date
California State University	2019
University of Arizona	August 2018
Ohio State University	February 2018
Princeton University	October 2016
Harvard University	January 2016

Attachment 3

Extracts of the Minutes of the Steering Committee on Review of the Common Core Meeting

On 15 May 2019

2. Review of the General Education Reports of the Overseas Institutions

California State University

2.1 It was noted that the GE model in the California State University is a hybrid model, including distributional model and core model characteristics in it. The model includes certain elements: essential skills, disciplinary perspectives, cross-cutting values and integrative experiences.

2.2 It was commented that one of their objectives is to develop students to become engaged citizens, which is not included in our common core program. Another difference is about the area of cross-cutting value that is very specific in their program reform proposal with the emphasis on diversity, social justices, democracy in the US, global awareness and civic engagement.

2.3 It was noticed that the integrative experiences is challenging component setting out beyond the major, in the form as a six-credit capstone project, while the essential skills are to be taken in year one as foundation courses. Double-counting is not allowed and the total credits amount to 42 semesters units which is considered as very idealistic. The GE program is treated as a major program, with lower and upper level courses. Members were then further introduced to details of the courses in each area.

2.4 It was commented that the essential skills courses can be duplicated in the major courses, while disciplinary perspectives ones are appropriate as breath studies. It was further commented that the cross-cutting value courses are very clearly set out to teach the core value to students. The integrative experiences courses will be difficult to be implemented since it intends to make students to take them seriously.

2.5 In terms of the funding model, it was argued that the current one tends to encourage departments to maximize student numbers so the university will need to support the beginning of the courses like in integrative experiences area.

2.6 In sum, it was noted that the model in this proposal includes breath, complementary studies and a hybrid one with distributional model characteristics applied to year 2 studies and core model characteristics in the cross-cutting value in year 3 studies.

University of Arizona

2.7 It was explained that the existing GE program in the University of Arizona includes Foundations, Tier One, Tier Two and Diversity Emphasis. Tier One courses introduce students to fundament and Concepts pertinent to three study areas, while Tier Two offers more in-depth examination of particular disciplines. After reviewing the GE program, a wildcat core was proposed to the program.

2.8 Under the wildcat core, students can take gateway courses, for which students can choose multiple gateway groups; they can also take exploration courses for breath and depth in different categories. An example of gateway course GW1 was shown. The list of courses were all GE courses.

2.9 It was further explained that students can do only the gateway path, or only exploration path, or both paths together. There are additional requirements in diversity courses. The total credits to be taken will be the same from 11 courses amounting to 33 credits. It will take 5 years for implementing the new model.

2.10 As a whole, it was noted that the gateway courses are new, while the exploration courses are distributional and about depth, just like an option.

Ohio State University

2.11 It was noted that there were 3 clear goals set out for the GE program: 1. Successful students will demonstrate certain qualities, abilities and characteristics that prepare them to be engaged citizens and leaders for life; 2. Successful students will engage with and apply a range of important modes of human thought and inquiry; 3. Successful students will be educated global citizens who can examine significant aspects of the human condition in local, state, national and global settings today, and in the foreseeable future.

2.12 Members were introduced to the GE program structure: general education seminar (3 hours), themes (15 hours, Citizenship for a Diverse and Just World and to select one theme and complete 3 courses (9 hours)), foundations (25-28 hours) and general education reflection (1 hour). There will be no double-counting in the theme courses. For foundations courses, there will be co-teaching among departments.

2.13 In the report, it was noted that there were a lot of attention on the faculty and students' inputs and several rounds of consultation on goals and implementation issues.

2.14 Members compared the great difference between the integrated experiences (6 semester units) of the California State University GE model and the reflection (1 hour) of the Ohio State University.

2.15 It was commented that in the review for our common core program, there may be a lot changes but at the same time, some existing courses may be kept. It was suggested that for the set of new or existing courses, their ILOs can be unified so as to enable the delivery of what the real value of the common core courses. Members were shown to the list of expected learning outcomes of the foundations courses on the report which were very specific and clear.

2.16 Another suggestion was to modify our existing courses so that the program can really deliver the new theme or reinforced value we want to deliver after this common core review.

2.17 In response to the suggestion, it was explained that our common core program does not include themes but is a distributional model approach so there is a difference in structures between ours and the models shown in the other universities above.

Princeton University

2.18 It was noted that the GE program of Princeton University is a distributional model like our common core model. In the review, the definition of GE was broadened to include also a set of "Modes of learning" experiences which extend students' learning beyond the classroom setting. However, it was considered to be difficult to implement. There were also additional guiding principles. The committee noted that there might not be much census among the Task force in reaching the proposed terms.

2.19 Specific recommendations on and structure of the GE requirements were summarised and walked through among members. In sum, there were 12 course requirements in the GE program.

2.20 In the Princeton GE review, there was a proposal for introducing a 3-week January term so that students can take credit bearing courses in this period. Members noted that we have already had this arrangement in place.

2.21 It was told that the Princeton GE program allowed a lot of double-counting between GE and major because students can tag a number of courses between GE and majors as there are plenty overlapping in course requirements.

Harvard University

2.22 Members noted the background of the GE reform in the Harvard University and the current program is oriented around a global aim that is manifest in four philosophical principles: 1. To engage with large questions about the nature of civic virtue; 2. To explore questions of identity that are born of, supported by and constitutive of societies and traditions; 3. To investigate the ethical dimensions of what people say and do; and 4. To examine the nature of individual, social, scientific and technological change, including how one responds constructively and critically to it.

2.23 In 2009 students and faculty started to complain so the University reformed the GE program. The goal of the structure was twofold: a student was expected to know "a little of everything and something well."

2.24 The proposed components of the GE reform included: 1. The requirement to take four diverse courses tagging aesthetics, culture, interpretation; histories, societies, individuals; sciences and technology in Society; and ethics and civics; 2. Three distributional courses from departments across the divisions of FAS and SEAS; and 3. College or departmental requirements in writing, foreign language and quantitative facility. It was further noted that there were no double counting in the tagging system.

2.25 In the report, it was mentioned that the University would provide further resource support in offering GE courses but departments would compete for it. Each section of the class would be kept at 12 to 14 students. The University would have supplementary pay to faculty who teach GE courses.

Nanyang Technological University

2.26 It was noted that the report was primarily about reform in primary and secondary educations. Members were introduced to its detailed reforms and philosophies behind.

2.27 The UBESCO report (1996) was also introduced. Some learning skills were mentioned: learn to learn; learn to do; learn to be; and learn to live together. Then OECD (2005) report on the definition and selection of key competencies were discussed including "use tools interactively", "act autonomously" and "interact in heterogeneous groups".

2.28 Furthermore, members were introduced to the Cambridge approach to 21st Century skills and approaches to developing 21st century skills.

3. Conclusion

3.1 In sum, it was commented that the Princeton and Harvard GE models are different from the HKUST one. In terms of structure, they include more theme based courses and their GE is taken as its own program which is built upon foundations courses with theme based requirements. There is no relationship with the major. Double counting is allowed in some requirements.

3.2 Most of the GE programs as reviewed above involve heavy workload, for examples 42 credits in the California State model with foundations, distributional themes, integrative experiences and cross-cutting values.

3.3 Furthermore, there is not much talking about “citizens” in some universities. The GE programs in general do not involve so much in result but only process; the Princeton model is more about pedagogy.

3.4 It was further viewed that a number of the GE models cover distinguished areas in humanities but in the HKUST model, there is not so much differentiation into areas but just big category like Arts. It was much appreciated if the areas can be more fine-tuned and developed into distinguished categories in humanities, history, social sciences and so will be the outcomes as well.

3.5 Members also welcomed some GE models discussed above including a big foundation course and considered this big foundation idea interesting.

3.6 It was also noted that the review reports do not cover any mapping of GE objectives and graduate attributes explicitly.

Attachment 4

Schedule of Consultation Sessions

First Round Consultation (mid-September 2019 to mid-October 2019)

Parties involved:	Consultation date(s)/Time/Venue:
SSCI UG Coordinators and Faculty	17 September 2019, 2:30-3:30pm, Rm 6521 30 September 2019, 10:00-11:30am, Rm 2405
SENG UG Coordinators and Faculty	27 September 2019, 4:15-4:35pm, LTG 14 October 2019, 4:00-6:00pm, Rm 6538
SBM UG Coordinators and Faculty	25 September 2019, 11:00-12:00pm, LSK1036 2 October 2019, 10:00-11:20pm, LSK1036
SHSS UG Coordinators and Faculty	8 October 2019, 3:00-5:00pm, Rm 3365
IPO UG Coordinators and Faculty	9 October 2019, 10:30am-12:00pm, Rm 4379
Deans and IPO Director	8 October 2019, 12:20-1:20pm, LSK7012
Committee on Undergraduate Core Education (CUCE) and Course Review Panels (CRPs)	17 October 2019, 3:00-4:30pm, Rm3574

Summer 2020

CUS Special Meeting for discussion of initial proposals for GZ Campus	25 August 2020

Second Round Consultation (October 2020 to December 2020)

Parties involved:	Consultation date:
Committee on Undergraduate Core Education (CUCE)	12 October 2020
Deans meeting	16 October 2020
Open faculty consultation	22 October 2020
Associate Deans meeting	22 October 2020
Associate Deans, SHSS UG coordinators, and HUMA DH	9 November 2020
CUS	11 November, 2020
SSCI School Administrative Committee	18 November, 2020
HUMA DH and faculty	26 November, 2020
SENG Circle	3 December, 2020
Multiple other discussions with interested members of the University community	

Attachment 5

Summary of Notes on Consultation Sessions

First Round Consultation (mid-September 2019 to mid-October 2019)

Summary of comments collected in the first round consultation sessions for the newly proposed framework of the Common Core Program

Parties involved:	Consultation date(s)/Time/Venue:
SSCI UG Coordinators and Faculty	17 September 2019, 2:30-3:30pm, Rm 6521 30 September 2019, 10:00-11:30am, Rm 2405
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Committee on Undergraduate Core Education (CUCE) and Course Review Panels (CRPs)	17 October 2019, 3:00-4:30pm, Rm3574

Comments/Inputs from participants and some responses to the comments:

1. Creative Arts
   As Creative Arts will become a core course, students have to take it mandatorily. It was concerned that this will create issues, since not every student has talents for the Creative Arts discipline. (SSCI UG Coordinators)

   It was asked if the Creative Arts should be set out as a 3 credit academic course. In the Humanities course list, there are already courses for the Creative Arts area, including music courses, creative writing courses, etc. However, there were concerns about how to count in courses under the Creative Arts area. (SSCI Faculty)

2. Physical and Mental Wellness
   In view of the nature of the course, it was questioned what proportion should be divided between the physical wellness part and the mental wellness part for the course. Also, the course bears 3 credits. There were concerns about resources in developing the physical wellness course. Furthermore, it was suggested that assessment for the course could be based on how well the student has reflected on it. But it was viewed that assessment by reflection will have difficulty in grading. (SSCI UG Coordinators)

   It was concerned who are going to teach the Physical and Mental Wellness course. In view of the course structure, it was commented that details of the course should be worked out first but not just the framework. (SSCI Faculty)

There were concerns about whether the Physical and Mental Wellness course should be set out as a 3 credit academic course. In response, it was explained that it is still subject to discussion on whether this course should be included in the structure. (SSCI Faculty)

It was questioned why 3 credits were allocated to the Physical and Mental Wellness course. (SBM Faculty)

It was asked why the Physical and Mental Wellness course is set out as a 3-credit academic course. Some faculty suggested that the course should be assigned zero credit taking into account of the course nature. The others viewed that the course should not be assigned 3 credits without having set out the course contents. It was suggested that a sub-group should be set up to discuss further about the course development and arrangement. (IPO UG Coordinators and Faculty)

It was regarded as an important course in the program as it is good for the whole-person development. Also out of 120 program credits, this course just carries 3-credit. It was suggested that this course can be developed into multiple version as well. (Deans/IPO Director)

3. Computational Thinking/Data Analytics Mindsets course

It was commented that the Computational Thinking/Data Analytics Mindsets course teaches specific knowledge. This is considered as even narrower in scope of knowledge than the existing Quantitative Reasoning. (SSCI Faculty)

There were worries about whether the Global China Studies (GCS) students who normally do not have mathematics background are able to take the Computational Thinking course. In response, it was explained that the course is about computational thinking, algorithmic thinking and the mindsets on how to use data. It does not need much mathematics background. Some statistics would be taught in the course. It might even not need a basic programming requirement. To facilitate students in taking the course, a version might be created for the GCS students, or different strands might be set out. (SHSS UG Coordinators and Faculty)

The Computational Thinking/Data Analytics Mindsets course was regarded as being transformed from the existing Quantitative Reasoning courses. Students normally take the Calculus course which would already fulfill this area requirement. It was commented that students will be taking very a different course in the new framework. Furthermore, there would be multiple version of the course to be offered. (Deans/IPO Director)

This course requirement will be mandatory in the new framework. That means, all students are required to take it. However, the Global China Studies (GCS) students is not required to fulfill the computer course requirement at present. So there were concerns as under the new framework the GSC students are also required to take the Computational Thinking course. (Deans/IPO Director)

The Computational Thinking course is not a programming course. It was commented that to separate the Computer course and programming course is not ideal as the two components should come together in one course. In response, it was told that many majors require students to take a programming course. It was considered that a pre-requisite might be set for the Computational Thinking course. (Deans/IPO Director)

It was argued that every student should have basic programing skills. However, the course is about computational thinking, algorithmic thinking and data analysis. Those are foundation skill sets which are necessary for students in studies. (Deans/IPO Director)

There would be multiple version of the course. Multiple version might imply courses developed for respective Schools to fit their students' needs or a list of different course versions. It was concerned about that more faculty would be needed to teach it so there would be resource implication. (Deans/IPO Director)

In view of the nature of the course, it was questioned whether smaller classes may be needed in delivering the course. There might again be greater resource implication. In response, it was noted that resources would not vary given the class size remained the same. (Deans/IPO Director)

4. Foundation courses

   It was asked what multiple versions of courses was about for Creative Arts and Computational Thinking/Analytics Mindsets. In response, it was explained that different courses would be taught for multiple versions. (SENG UG Coordinators)

   It was asked whether there will be any changes in the outcomes of the English Communication and Chinese Communication courses. For this, it will rely on the Centre of Language Education to design or change the outcomes, as necessary. (SHSS UG Coordinators and Faculty)

5. Broadening courses

   The S & T carries 6 credits but in the new framework, it takes only 3 credits. This reduction in credits was concerned, since student will only need to take one S & T course under the new framework. As explained, due to the double-counting rule, students under the existing Common Core structure may in fact also only need to take one S & T course for the Common Core. (SSCI UG Coordinators)

   It was asked why there is not any Business courses in the framework. It was noted that Business courses will be incorporated in the Social Analysis area. In the Broadening category, it was suggested that the Humanities, Social Analysis and Science and Technology (S&T) areas could be modified, especially in S&T, which might be further sub-divided into different areas. (SSCI Faculty)

   It was concerned that the credit points have been redistributed among categories in the new framework. The cut in credit points, especially for S&T, was considered as having great impact to the Science and Engineering students. Some courses offered under the S&T area are good courses covering wide knowledge in the field which can also help to broaden students' knowledge. So students taking courses from the same school is also broadening in this sense. (SSCI Faculty)

   There were suggestions that alternative ways such as school-based or major-based could be set out for separating course areas. These ways could be helpful for the broadening purpose. (SENG UG Coordinators)

   In the new framework, the elective group has been deleted. It was commented that the taking away of elective choice would reduce students' flexibility in choosing the courses. (SENG UG Coordinators)

   The idea of introducing the broadening category was supported. (SBM Faculty)

   The 9 credits set out for the Broadening category was regarded as inadequate. This number of credits might not be enough to deliver what it is intended to deliver through the Broadening category. It was thus doubtful about why credits of the broadening category were redistributed to other categories. (SBM Faculty)

In the areas of the broadening category in the new framework, the credit requirement is reduced, compared to that of the existing structure. There were concerns in the reduction in credits required. (SBM Faculty)

It was further supported that school based boundary has been set out to restrict students from taking courses from particular areas as school based boundary would be helpful for the majority students in choosing courses for broadening purpose. (SBM Faculty)

On the other hand, there were counterviews that there would be diversity in major program within respective Schools. There was suggestion to set the boundary by majors instead. (SBM Faculty)

Also, it was further suggested that the areas Humanities, Social Analysis and Science and Technology can be modified or set as School-based instead of area-based. The latter suggestion may be more helpful for the broadening purpose. (SBM Faculty)

It was questioned if the Humanities area requirement would increase burden to the Humanities Division. In response, it was explained that there would be reduction in burden because of the reduction of credit load in the area. (SHSS UG Coordinators and Faculty)

There were concerns about the credit distribution. It was asked if the credit distribution among the areas is fixed. In response, it was told that the distribution is still subject to discussion and revision. The area based requirement might be revised, as suggested, to school-based or so. (SHSS UG Coordinators and Faculty)

In the new framework, students will be excluded from taking some area courses according to school basis. It was opined that the arrangement would deprive students from learning opportunities and interaction among peel groups in different areas. (IPO UG Coordinators and Faculty)

There were concerns about how to define the areas of Humanities, Social Analysis and Science and Technology. It was argued that the area definition will depend on how to classify relevant courses into respective areas. The relevant courses will teach the subject knowledge of particular area. Thus different areas will have different compartmentalization of courses. Resources allocation issues were raised regarding this way of course arrangement. (IPO UG Coordinators and Faculty)

At present, Science and Engineering students will tend to choose the elective courses from the Science and Technology (S&T) area. Under the new framework, it was commented that the ways in taking courses would be different since it would be school based to choose the area courses and also the elective requirement is taken away. Thus the demand for the S&T area would be down sized. (IPO UG Coordinators and Faculty)

It was argued that the broadening courses are not necessarily needed to be categorized as complimentary in nature. The course choice arrangement in the broadening category was considered as too prescriptive, since the arrangement would restrict students in exploring their choice in courses. (CUCE and CRPs)

It was suggested that the Computational Thinking/Data Analytics Mindsets and Creative Arts could be re-grouped under the broadening category so as to widen the choice of courses under this category. (CUCE and CRPs)

School-based boundary is set out for 9 credit of courses in choosing different areas under this category. Instead of a restriction on choice of courses in different areas, it was suggested that

students could be allowed to freely choose the courses up to the maximum of 9 credits. However, there was argument that some students might choose all courses from just one area and thus this is not aligned with the broadening purpose. (CUCE and CRPs)

6. Capstone Course

   The capstone course is a major revision to the Common Core framework. It was commented that as it will be of interdisciplinary nature, it will not be split and taken up by Schools; instead Schools will nominate faculty of the specialty concerned to design the course. (SSCI UG Coordinators)

   The idea of the capstone course was appreciated. However, there was concerns about its sustainability in the long run because it is not school-based so there will not be any school-based ownership of the course. (SSCI Faculty)

   In the curriculum, there is the existing capstone project requirement for the Science major students. It was suggested that students should be allowed to choose either to take the capstone course requirement for their majors or to take that for the Common Core program. (SSCI Faculty)

   It was doubted about how the coordination of the capstone course for delivery could be done in a systemic way as there would be different course designers coming from multi-disciplines. In response to this, it was noted that the core courses run by the CUHK demonstrate good and successful examples. This could be shown by that out of 5 points, their students placed 4.7 in the students' feedback survey. (SSCI Faculty)

   It was commented that there should be delicate teachers from relevant disciplines equipped with specific knowledge of the capstone theme to teach the course. Furthermore, since the topics are about current issues, they should be changed with time. In response, it was told that the teachers need not to be experts in the field but just facilitators in class with the detailed lesson plans and the well-developed course structure and the course topics would be changed after some years. (SSCI Faculty)

   Since the lesson plan will be very detailed and the course instructors are just facilitators but not experts in the field, there were worries that the teaching load would be very heavy for the instructors. (SSCI Faculty)

   To encourage students to study the capstone course, it was suggested to adopt pass and fail grading as this would benefit students. The suggestion was made also given that since the capstone course is a required course, students have to take it; and it would be very difficult to grade this kind of course. (SSCI Faculty)

   It was further suggested that the capstone course could be considered to be an optional requirement, instead of a compulsory one, in order to provide more flexibility. (SSCI Faculty)

   There was much concern about the teaching arrangement for the capstone courses. It was told that some departmental TTFs had expressed their expected difficulties in teaching the capstone courses in the role as facilitators in delivering the courses. Since the topics of the courses would be out of their expertise, they would lack an in-depth knowledge to teach them. Also the idea would be to invite those TTFs who are interested in teaching the courses to take up the teaching role. Given their concerns, there might be difficulties in recruiting suitable teaching staff for the delivery of the courses. (SENG UG Coordinators)

Furthermore, there was also concern about the course delivery arrangement. As suggested, if only 1 or 2 courses out of the 4 in the capstone category became very popular choices of students, most students tended to take these 1 or 2 courses; difficulties would then be created in terms of offer of course places and even students' study pattern. Though considerations have already been set out in the feasibility of course implementation about this scenarios, it was suggested that different mechanisms should be worked out to deal with the offer of course places. (SENG UG Coordinators)

Who can teach the capstone course in view of its multidisciplinary nature?
In response, it was told that the capstone course is not a school based course but is expected to be designed by faculty members of different disciplines. (SBM UG Coordinators)

What role is for the instructor of the capstone course in class?
It was explained that the instructors would be facilitators in class and students would have studied relevant teaching materials before class; since the instructors would not have full knowledge of the theme of the course, they would follow the lesson plans for the course to teach. (SBM UG Coordinators)

Since the capstone course is multidisciplinary, how should the instructors do the assessment for it?
It was commented that as the instructors may not have the domain knowledge, it could be very challenging for them to do the assessment. Furthermore, while the assessment done by the instructors may be subjective, it was suggested there could be a panel formed to collect and mark the assignment, instead of just the instructor doing the assessments by themselves. (SBM UG Coordinators)

The capstone course was introduced not just as a traditional course. There were concerns about the scalability of the course as it is a required course in the new framework. (SBM Faculty)

Furthermore, there were also concerns about what the layout and contexts of the course would be. It was told that the Steering Committee would work out the learning outcomes for the capstone course. In terms of the learning outcomes, there would be 75% identical but just 25% are context specific. (SBM Faculty)

It was further commented that the SBM major capstone course is very different from the capstone course proposed under the new framework of the Common Core program in terms of contents and depth. It was doubtful about the value of introducing the latter. (SBM Faculty)

There was suggestion that the capstone course could be substituted by other relevant courses. Individual programs should be allowed to customize their courses. (SBM Faculty)

It was commented that there would be difficulty to manage the capstone course considering that the course designers and the professors (who will come from different disciplines) would need to be closely coordinated. Given different interests and expertise among professors, and different teaching styles as well, that would definitely add to difficulties in both designing and implementing the course. (SBM Faculty)

In view of the medium of instruction, there were concerns on whether Chinese or English would be adopted; even in Chinese, whether it should be Cantonese or Putonghua. (SHSS UG Coordinators and Faculty)

The experience in teaching HUMA1000 was shared as the designers and facilitators of the course are different which is similar to the arrangement of the capstone course. The delivery of HUMA1000 was

regarded as not so successful. It was found that students of HUMA1000 did not appreciate the learning experience in taking this course. Also while the facilitators of the course might not have the expertise in the topics to be taught, it would be difficult to achieve what the course would intent to deliver. In view of the similar implementation experience, there was concerns about the feasibility of successful implementation of the capstone course. In this light, the Minerva teaching model was shared. Although the Minerva teaching experience was told to be a good model which can be adopted for the capstone course, it was commented that the nature of the capstone course is very different from the Minerva program. (SHSS UG Coordinators and Faculty)

In offer, 3 to 4 capstone courses will be offered so students have 3 to 4 themes to choose from the courses. There were concerns about that only 3 to 4 themes available for students to pick up would be rather limiting in their choice. The availability of 3 to 4 specific themes would not be broad enough to provide flexibility to students in their choice as well. However, it was clarified that the intention is not to focus on teaching the knowledge of the problem but on enabling students' understanding and appreciating the complexities of the topic. As an alternative, there was further suggestion that students could be allowed to identify problems by themselves, instead of picking up problems chosen for them. The suggestion was hard to be adopted because of heavy resource implications. (SHSS UG Coordinators and Faculty)

Also it was concerned about how to evaluate the outcomes. There was suggestion that some kinds of measurement should be set out for the outcomes of the course. (SHSS UG Coordinators and Faculty)

The capstone course is appreciated of its multidisciplinary nature. However, how to ensure relevant aspects of disciplines, including Humanities, is included in its design and contents was questioned. (SHSS UG Coordinators and Faculty)

The title "Capstone" was suggested to be changed. This was because the title has implication on the positioning of the course. Some new titles were proposed such as "Sustainability", "Grand Challenges", etc. (IPO UG Coordinators and Faculty)

Given the learning experience by the course, for benefit of students, it was further suggested that the course could be set out for studies at earlier year of study, say at year 2, instead of year 3. (IPO UG Coordinators and Faculty)

There were concerns about how to attract faculty to teach the course, since the course is not a school-based one. Though the CUHK has a successful experience in delivering similar common core courses, it was commented that the CUHK model is different from our model. The courses in CUHK are taught by a separate group of instructors who are full-time faculty dedicated to solely deliver the courses, while those in HKUST would be taught by the existing faculty who also get other teaching and research assignments. (IPO UG Coordinators and Faculty)

Blended learning flipped classroom model would be implemented for the capstone course with pre-class reading. However, the assumption that students would do pre-class reading was questioned. In response, it was argued that whether this teaching arrangement works would be dependent on how to structure the class. So it is important that there should be very structured and well-designed in-class materials for discussions. (IPO UG Coordinators and Faculty)

The capstone course will be a mandatory course under the new framework. There will be diversity of students taking the course since everyone has to do it. It was commented that there would be

difficulty in ensuring all students to play their role in doing the project set by the course. Thus delivery of the course was viewed as a challenging job. (IPO UG Coordinators and Faculty)

There were concerns that the course will be designed and delivered by different faculty. The instructors of the course need not to be experts in the topics as they are facilitators in delivering the course. In response, the Minerva model was suggested as a possible way of teaching this kind of course in terms of how it could be helpful in scaling up the classes. (IPO UG Coordinators and Faculty)

The Common Core program was considered as a small program with only 27 credit requirement, compared to a major program. Furthermore, there would not be enough training in different discipline areas so it would be difficult for students to work on the capstone course which would involve interdisciplinary knowledge. It was questioned whether it would be appropriate to include a capstone course in the program. (CUCE and CRPs)

To be more practical, there was a suggestion that the capstone would not be set out as a required course at the beginning; instead it could be piloted on a trial run basis to test if it could be worked out. Since the students admitted in 2020 would not take it until two years later, it would leave time for the development and trial of the course. (CUCE and CRPs)

The concept of the capstone course was supported. However, it was doubted if all students could do it as it would be set as a required course. It was suggested to be tested out as an elective for its trial run to see if it works or not. Thus before it is to be prescribed as a requirement, the course could be set as an elective instead of a required course. Also the course could be scaled down a bit as an elective rather than a required course; in terms of contents, it would be narrowed down to focus on competencies so that it would be easier for management. (CUCE and CRPs)

There was another suggestion that the capstone course could be retitled so as not to be so confusing in nature as implied by its name. (CUCE and CRPs)

The HUMA1000 was regarded as having similar teaching arrangement as this course. The course was considered as not successful in the teaching experience from the eye of the CUCE. In response, the successful Minerva model was shared. (CUCE and CRPs)

7. Overall
   Since the total credits for the Common Core will be reduced from 36 to 30, it was commented that there will be impact on the honor classification calculation. Under the new framework, it is intended to deliver new transferrable skills and competency to students. There were concerns that a lot of uncertainty may be arising. (SSCI UG Coordinators)

   Participants expressed reservation in the drastic changes proposed to the Common Core program. It should be very careful in reviews and proposals for the revisions. There should be strong justifications in any changes proposed. (CUCE and CRPs)

8. School-sponsored courses (SSC)
   In the new framework, the SSCs have been deleted. It was suggested that while a lot resources have been put into SSCs, some SSCs could be retained in the new structure. (SSCI Faculty)

   The School-sponsored course requirement will be deleted under the new framework. It was questioned why the requirement is taken away. Despite the deletion of the requirement, the existing courses could still be offered in future. (SHSS UG Coordinators and Faculty)

9. Double-counting rule

   In the new framework, there will be a reduction of 6 credits resulting in the total credits of 30. It was concerned that the credit reduction would affect some programs. However, it was clarified that with the existing double-counting rule, students normally take 6 credits in courses which can be double-counted with the school requirement or the major requirement, resulting in taking 30 total credits, instead of 36 credits, for solely common core courses. Since in the new framework, no double-counting would be allowed, there would basically be no impact in the 6 credit reduction. (SENG UG Coordinators)

   In the new framework, the double-counting rule is not allowed. This new rule was supported. (SBM Faculty)

10. KPI

    It was asked how to measure if the implementation of the new framework works. It was suggested that KPIs could be set out for measurement on what students have learned, especially for the capstone course and also foundation courses. (SBM Faculty)

    It was asked how to measure of the effectiveness of the implementation of the Common Core program. In response, students' SQF results were regarded as one way to see the effectiveness. It is needed to think about how to measure what we intend to deliver, especially for the capstone course. Some attributes might be identified to spell out the themes of the course. (Deans/IPO Director)

11. Transitional arrangement

    The review of the common core program involves much changes. The changes will affect the teaching staff as new teaching staff and rearrangement of the existing staff might be needed. Thus the implementation of the new framework was concerned as it will have implication in the period for transitional arrangement (SHSS UG Coordinators and Faculty).

12. Implementation schedule

    There were concerns about the implementation schedule in view of the burden in submitting course proposals for the new common core program since more than 300 courses would be needed to be reviewed and migrated for the common core course list. The process would involve much manpower issues to be sorted out. (CUCE and CRPs)

13. Entrepreneurship

    In the new framework, the entrepreneurship discipline has not been put into any area of studies. It was asked whether it should be explicitly embedded into a particular area of studies as it is a popular discipline which is to be promoted to students. It was further suggested that the entrepreneurship mindset could be embedded in the capstone course or other area of studies, but the problem is concerned with how to incorporate it into the area. (SSCI UG Coordinators)

14. Flexibility in course choice

    Elective choice was suggested to be set up for students to choose, especially from the Creative Arts and Computational thinking/Data Analytics Mindsets. This would give students a higher flexibility in their studies. (SSCI Faculty)

    It was further suggested that more flexibility should be given to students to let them to choose their courses from different areas from the foundation and broadening categories, except Chinese and English. A maximum limit of credits could be set up, instead of setting limit on the credits to be taken in each given area. (SSCI Faculty)

Second Round of Consultation on the Newly Proposed Common Core Framework

Part I: Notes on Consultation with the Committee on Undergraduate Core Education (CUCE)

Date:	12 October 2020 (Monday)
Time:	2:30 pm to 4:30 pm (discussed as an AOB item at the 56th CUCE meeting)
Channel:	via an online platform Zoom
Participants (Members of the CUCE):	Prof Percy Dias, Chairman (ISOM) Prof Tim Woo, Secretary (UCE/CEI) Prof Melody Chao (MGMT) Prof King Chow (DSTO) Prof Arthur Lau (IPO) Prof Jensen Li (PHYS) Prof Sean McMinn (CLE) Dr Sai Lok Nam (HUMA) Mr James Prince (ARO) Prof Chii Shang (CIVL) Prof Jing Wang (ISOM) Dr Trevor Webb (PRVST)
In attendance:	Prof Anirban Mukhopadhyay (APTL), Chairperson of the Steering Committee

Revised proposal for consultation (Fall 2020):

CC Group	Credits	Common Core Area	Credits breakdown
Experiencing Years 3-4	3	• Common Concerns Project: A choice of 4 structured & carefully designed courses, each based on a different interdisciplinary theme but the same learning outcomes and pre-requisites in Foundations and Broadening • UxOP: UROP, UTOP, UPOP	3
Broadening (with specific outcomes) Years 2-3	12	Arts (Creative, computational… Multiple versions)	Different requirements for different programs
		Humanities (H)	
		Science (S)	
		Technology (T)	
		Social Analysis (SA)	
Foundations (Skillsets & Mindsets) Year 1	15	Critical Thinking and Data Literacy	3
		English Communication	6
		Chinese Communication	3
		Habits, Mindsets, and Wellness	3
	30	**Total Credits Required (no double-counting)**	30

Feedback on two major issues were raised and discussed:

1. <u>Double Counting Policy</u>

   A CUCE member pointed out that SENG students currently fulfilled the general foundation requirements (e.g. mathematics) using the double counting allowance. It was wondered how students could fulfil these requirements and how SENG could fulfil the Hong Kong Institution of Engineers (HKIE) accreditation requirements without double counting.

   It was explained that:

   (a) The 6-credit reduction in total credit requirements for the Common Core Program from 36 credits to 30 credits could be used to fulfil the requirements of those general foundation courses.

(b) Schools would be given the discretion, subject to approval by the relevant committee(s), to make the necessary adjustments in the credit requirements to fit in the study pathway for their programs. Further discussion with the Associate Deans would be arranged to work out the details.

2. Experiencing Courses

2.1 A member stated that summer internship and project-based courses of at least 8-9 credits were already covered in the SENG curriculum which are similar to the experiencing courses; and asked if double counting could be allowed.

It was responded that:

(a) No double counting would be allowed.

(b) The Student Engagement and Satisfaction Questionnaire (SESQ) revealed that students who have participated in internship programs and experiential learning are generally more satisfied with their HKUST experience. It would be good to have more internship programs and experiential learning with an aim to increase overall satisfaction levels.

(c) The University had committed to the University Grants Committee (UGC) as one of our key performance indicators (KPIs) to offer more experiential learning courses. Yet, it was noted from an instructor self-reporting process that on average only 8.5 student credit-hours were devoted to such courses. There was room for the University to take more actions to fulfil our commitment.

(d) The common core internship experience (UPOP) would be different from those offered by the Schools (focusing on major programs), with an added emphasis on cross-disciplinary communications.

(e) Students who are less interested in internship may choose from other experiencing courses such as UROP (Undergraduate Research Opportunities Program), UTOP (Undergraduate Teaching Opportunities Program) and Common Concerns Project which would also provide students with cross-disciplinary learning experience.

2.2 A follow-up comment was made that some SENG internship programs were scheduled in the summer of students' 3rd year of study. Flexibility should be allowed in the arrangement of these programs and experiencing courses with a holistic view.

It was agreed that flexibility would be allowed and students could complete the experiencing requirements in their 4th year of study.

Part 2: Notes on Open Faculty Consultation Session

Date: 22 October 2020 (Thursday)
Time: 12:00 nn to 2:00 pm
Channel: via an online platform Zoom
Presented by: Prof. Anirban Mukhopadhyay (APTL), Chairperson of the Steering Committee
Participants: Faculty members, HKUST
No. of participants: 60

Revised proposal for consultation (Fall 2020):

CC Group	Credits	Common Core Area	Credits breakdown
Experiencing Years 3-4	3	UxOP: UROP, UTOP, UPOP, UCOP • A choice of 4 structured & carefully designed programs, each with a different focus but commonalities in learning outcomes, requirement for cross-disciplinary, global, and systems thinking and communications, and pre-requisites in Foundations and Broadening	3
Broadening (with specific outcomes) Years 2-3	12	Creative and Computational Arts	Program-specific requirements
		Humanities (H)	
		Science (S)	
		Technology (T)	
		Social Analysis (SA)	
Foundations (skillsets & mindsets) Year 1	15	Cognitive Foundations of University Education: Critical Thinking and Data Literacy	3
		Behavioral Foundations of University Education: Habits, Mindsets, and Wellness	3
		English Communication	6
		Chinese Communication	3
	30	**Total Credits Required (no double-counting)**	30

Major comments from participants and responses to the comments:

A. Program Framework

1. <u>Scaffolding Structure</u>

1.1 Some faculty members were confused about the term "scaffolding" as part of the structure in the revised framework.

It was explained that "scaffolding" is a term used for a Common Core program which included pre-requisites. The proposed scaffolding structure would work as follows:

(a) The Common Core Program would be migrated from a "distributional" model without pre-requisite requirement among common core courses to a "scaffolding" model with pre-requisites build in the three common core groups namely Foundations, Broadening, and Experiencing. Foundations courses would serve as pre-requisites to Experiencing courses. The nature of the pre-requisite relationships between Foundations and Broadening courses, and between Broadening and Experiencing courses, would be reviewed once there was a clearer understanding of which existing Common Core courses would be migrated into the Broadening section.

(b) There would be scaffolding of transferrable skills in terms of a collection of competencies that the University desires our graduates to possess. This would be a different route from, yet supplementary to, the academic content of the courses. Rather than technical knowledge as imparted in these Common Core courses, the competencies embedded in the teaching would be explicitly spelled out such that both instructors and students can see the connection among courses in a stronger and more effective way. This was indeed a new

concept that many HKUST colleagues are not familiar with, and therefore, two faculty members from the Minerva Schools at KGI are spending two years as virtual visiting scholars at HKUST to help us with it. They are currently working with the Center for Language Education (CLE) to develop a set of competencies for the E-Core and C-Core courses as pilot run of the competency-embedded teaching and assessment. More details would be available after the pilot run.

It was elaborated that it would be an iterative process to review whether it is more appropriate to adopt (a) a hard structure with a specific course serving as pre-requisite to another course; or (b) a laissez-faire structure with a certain number of credits in the Foundations/Broadening group being set as pre-requisite requirement to Broadening/Experiencing group. A thorough study on intended learning outcomes (ILOs), competencies, and their mappings of the courses would be necessary if this proposed framework were to be approved.

1.2 It was commented that the outcome-based learning outcomes of the current framework which had been implemented for 10 years were functioning pretty well.

It was explained that students generally did not see the connection between learning outcomes of different common core courses. Moreover, effective and objective measurement of the achievement of these learning outcomes was currently missing, since they were currently measured using subjective instructor self-reports, and were not systematically tracked over time, either within a course or for a given student. Competencies, on the other hand, can be tracked and measured over time in a more objective manner.

2. <u>Program-based Exclusions</u>

2.1 It was enquired if there would be any restriction for schools/programs to decide the program-specific requirements in the Broadening group. Some faculty members worried if schools/programs may act against the broadening objective in favour of their students by assigning all of the 12 credits to common core areas relevant to their major programs; which would in effect cut out the Division of Humanities (HUMA) entirely. There was also the opposite concern that all of the 12 credits might be assigned to the humanities (H) area; which would put HUMA under pressure to deliver the requirement.

It was responded that the procedural details would be discussed with the Associate Deans. While it was not preferred to impose too many restrictions, some clauses would be needed in view of such anticipated violations of the Common Core objectives.

B. Courses

3. <u>Project-based Courses</u>

3.1 The Undergraduate Experiential Opportunities Programs (UxOP) were proposed as cross-disciplinary project-based experiential courses. A faculty member from the Division of Integrative Systems and Design (ISD) pointed out that ISD students are required to take more than 20 credits of project-based courses and to work for a company in their 4th year of study; and asked if they can be exempted from this requirement.

It was explained that the proposed experiential projects would be different from the school/major projects such as the science and engineering capstone projects and the ISD projects which focus mainly on technical knowledge in specific field of study. The experience the Committee proposed would be cross-disciplinary in nature. It was also observed that rather than “too many” project courses, University-wide only 8.5 credit-hours were spent in structured active learning.

4. UxOP

4.1 UROP (Undergraduate Research Opportunities Program), in its current form, is credit-bearing but not grade-bearing. With the small enrolment numbers, some faculty members were willing to take this task up even though it does not count towards their teaching load. It was worried that UROP would be ruined if it is upscaled to 2,000 students and made both credit- and grade-bearing.

It was clarified that the UROP would not be upscaled. Rather, it would probably be remain niche, with about 100 students as is current.

4.2 There was a concern on the pre-requisite requirement for UROP, which was not currently in place, under the new scaffolding structure.

It was explained that there would be two scaffolding elements for UROP: (a) the normal progression from UROP 1100 to UROP 2100 and so forth; and (b) the complement to the common core requirement with UROP 1100 being the pre-requisite to the new common core UROP course. Students would be required to conduct self-reflections and discuss and present their research findings to other students in the course, who would be from other disciplines. All of these activities would be designed to be not related to the student's research topic but rather to the designated ILOs and competencies, especially cross-disciplinarity and communications.

4.3 A faculty member raised his concern that UxOP may work against the broadening purpose in the sense that students may stay in their comfort zone in selecting the "x" and the research/teaching/practice topic. It was also suggested that non-academic staff be deployed to manage the heavy-loaded logistical work for UxOP.

These will surely be taken into consideration when working out the details of the framework and requirements.

5. Critical Thinking and Data Literacy Course

5.1 Critical Thinking and Data Literacy were proposed as cognitive foundations under the revised framework. It was expressed that critical thinking has already been covered in many school/major courses, and indeed, the whole spectrum of many programs; contents of which might largely be overlapped with this new common core course. Given that no double counting would be allowed, some faculty members asked if there can be any exemption to this requirement.

It was explained that while "critical thinking" can be interpreted in different ways, the term "Critical Thinking" has a very specific connotation as laid out in the course proposal and ILOs. These pertain to the ability to parse a problem, identify information sources, and evaluate the available data and assess plausible solutions, which are a set of skills that are transferrable across contexts. The alarming situation of the flat/declining scores in Critical Thinking in the Annual Assessment of Graduate Attributes and Information Literacy Tests (AAGA) for the classes of 2019 and 2020, as well as the criticism from employers, reveal the compelling need for the University to invest in and strengthen our teaching of the generic "Critical Thinking" skills.

5.2 A faculty member stated that the idea to incorporate critical thinking into the common core curriculum was supported. Yet, such "critical thinking" had well been covered in multi-disciplinary programs such as the ISD program with various systems/design thinking courses.

It was further explained that HKUST was good at introducing innovative programs for small groups of students but a broader curriculum would be needed to reach the larger student body. Also, Critical Thinking as defined for this proposal course is more primitive than the ISD courses.

Indeed, it is an initial step in both design thinking and systems thinking, which are taught in a few programs at HKUST, but the majority of our students do not have access to these courses. Besides, the proposed course has some flexi-modules for students from different programs to choose from, because it would be hard for a single program to provide students with the exposure to all modules structured in it. It was agreed that more concrete details of the requirement would be worked out to minimize the overlaps with existing courses to the extent possible.

5.3 There was a question on whether an instructor can propose another course if he/she views that the Critical Thinking and Data Literacy course does not cover the perspective of his/her expertise.

It was answered that any instructors who are interested in the course could join the course development team to design it. The principle was to create a course that could open students' minds with different perspectives.

6. Creative and Computational Arts Courses

6.1 It was enquired about the breakdowns of the educational needs on Creative and Computational Arts (A) courses.

It was clarified that a collection of arts courses covering visual arts, photography, music, film/animation, creative writing/poetry, theatre, dance, etc. would be covered. Different levels of courses would be provided for students with different levels of abilities and interests. Focus of the learning outcomes would be placed on the exposure, process, experience and appreciation of various arts forms.

6.2 It was asked whether a new academic unit would be established or different sets of course codes would be assigned for the arts courses given that no double counting would be allowed.

There would be assignment of different course codes based on (a) the assessment of competencies and mappings of existing courses; (b) the willingness and motivation of SHSS/instructors in migrating the current courses into the new framework and in developing new courses; and (c) no double counting would be allowed.

6.3 Some faculty members stated that all creative arts courses are covered in the new/proposed minor programs in creative arts. Tremendous burden would be put on students who are interested in taking these as minors if double counting is not allowed.

HUMA was suggested to look at those courses to decide which are suitable for minors and which are more relevant to the common core. Different versions of the courses might be introduced so that students could take some for their minor requirements and others for the common core requirements.

7. Incorporation of Human Factors

7.1 A HUMA faculty member raised out that the current system did not accustom students to the human factors which instructors of other fields often find it difficult to deal with especially after the various incidents in Hong Kong over the past year. While supporting the proposed framework, the faculty asked as to how human factors, human conditions, and the educational objectives would be bundled into the Critical Thinking and Data Literacy course.

It was explained that human factors are critical elements and Humanities would remain as a common core area in the Broadening group. It was expected that each student should take at least one course in the H and/or A areas in this group. HUMA also had an important role to play in the Critical Thinking and Data Literacy course with the perspectives of logic, communication,

etc. in critical thinking. It was emphasized that the limitation on human factors elements related to the extent of desire that HUMA faculty members expressed in participating in framing the new/migrated common core courses.

C. Others

8. Timeline

8.1 As the only offering unit for H courses in the University, HUMA enquired about the implementation timeline of the new framework.

It was reminded that the target was to get Senate's approval on the final proposal in February 2021, after which the implementation plan and transitional arrangement would be devised. Pilot run of new courses would be arranged from September 2021 to June 2022. The new Common Core Program would be launched for Fall 2022 intake by which all Foundations courses should be ready. Since students were expected to take Broadening courses (including H and A courses) in their 2nd and 3rd years of study, these courses should be ready by Fall 2023.

9. Resources Implication

9.1 With the re-distribution of credit requirements in the Broadening and Foundations groups, it was asked if there is any resources implication.

It was answered that the total reduction of 6 credits from 36 credits to 30 credits for the entire Common Core Program would be used to compensate the cancellation of double counting. Re-distribution of credit requirements among different areas was expected. For example, credits for quantitative reasoning (QR) area would be taken away, credits for H and A areas would probably be increased, etc. The Undergraduate Core Education (UCE) Team was working on the relevant statistics and would provide a clearer picture on the impact in the near future.

10. Incentives to Departments/Instructors

10.1 A faculty member raised the incentive issue for the Committee's consideration as to how departments/instructors will be motivated to offer common core courses when a common prefix, *CORE*, instead of a departmental prefix is adopted, together with the cancellation of double counting policy, under the revised framework.

11. Effectiveness of the Program

11.1 It was argued 50% of HKUST faculty members would not care about any of the changes in the Common Core Program framework.

It was responded that this claim should not avoid the University from implementing any changes with the hope to improve the Common Core Program.

11.2 Another comment was made as regards the effect on the improvements to the teaching and learning in addressing the issues of "HKUST has less pride in its education" and "research-focused universities systematically marginalize teaching" as long as untenured faculty are told to focus on research.

It was re-emphasized that the Committee was proposing changes to the Common Core Program as appropriate at its best attempt. If the issue is with the message that the School Deans or Department/Division Heads send to their faculty, then this should be dealt with at the School or Department/Division level.

11.3 It was questioned how we could tell if there will be any improvement in 5 years.

It was clarified that one of the objectives of the scaffolding structure is to be able to assess outcomes and competencies clearly and objectively, to answer questions like this.

Part 3: **Notes on Consultation in the Meeting among APTL and Associate Deans**

Date:	**22 October 2020 (Thursday)**
Time:	**4:00pm to 6:10 pm** (discussed as the last agenda item in the meeting for an hour)
Channel:	via an online platform Zoom
Participants:	Prof. Anirban Mukhopadhyay (APTL) Convener Prof. Jimmy Fung (IPO) Prof. Allen Huang (SBM) Ms. Renee Kou (ARO) Prof. Pakwo Leung (SSCI) Ms. Anne Luk (ARO) Prof. Philip Mok (SENG) Prof. Melinda Whong (SHSS, CLE) Prof. Carine Yiu (SHSS) Ms. Sophie Tsa (PRVST) Secretary

Since most members of the meeting had attended the open consultation on the same day, APTL invited the Associate Deans/Representative of IPO to give their comments and feedback on the proposal. The discussion on the Common Core revamp lasted for over an hour and the major comments from participants and responses to the comments were listed below:

1.1 A member pointed out that if the double-counting policy was removed in Common Core program, then many courses would be migrated to Common Core rather than remained as major electives, and this would hurt majors with low enrolments.

It was responded that Academic Director of UCE and his team were working on estimating the impact and we would have a better idea of the numbers in some weeks. Department / Division Heads had the autonomy in determining which courses would migrate to CC and it was up to CUCE to accept these.

1.2 A member argued that many people had many reservations about the proposal. Broadening was a waste because only one course from every section did not mean any depth in the subject matter.

It was answered that this was a criticism of the current structure as well. Overall, the University believed in the objective of broadening students' exposure. The Steering Committee had considered many models of universities in the US and HK and were recommending what we believe was best suited and applicable for our purposes.

1.3 A member suggested that the broadening restriction should be limited to the first major only.

It was agreed that this was a good suggestion. Many students would choose their majors in the second year, so they would need to know the restrictions at that time, and the administration could not retroactively impose restrictions if a student were to add an additional major later.

1.4 A member said that he fully supported the proposal. However, after this revamp, our students might still believe that CC was a waste of time. Many students just wanted to focus on their majors.

It was responded that we would need to communicate this better. The system of tracking competencies would help. The Director of CLE also pointed out that we would need to do a better job of telling students what they had learned.

1.5 A member advised that from his experience of organising similar teacher practice courses, UTOP needs to be discipline-specific (in terms of the subjects being taught, like UROP is in terms of the subjects being researched).

It was responded that the idea was very relevant and helpful. It was understood that if a Physics student did an outreach to a Physics high school class, this arrangement should be fine. The cross-disciplinary component would come in the form of the pre-engagement training and the post-engagement sharing and reflections.

1.6 A member commented that “you are making us sign a blank cheque” since many details of the proposal have not been fully developed yet.

It was responded that once the full proposal with all the details were ready, we would send to Associate Deans/IPO representative for scrutinizing.

Part 4: **Feedback from Nominated Students**

Date:	**21 October 2020 (Wednesday)**
Time:	**1:30pm to 2:30 pm** (discussed for half an hour)
Channel:	In-person in the Library
Participants:	Prof. Anirban Mukhopadhyay (APTL) Convener Nominated students from SSCI (BIBU), SENG (MAE), and SBM (ECON); names concealed to protect identity

As the first in a series of planned informal interactions with students, the APTL requested SSCI, SENG, and SBM to nominate one student each for a casual chat over drinks and snacks. The current social distancing regulations forced the group size to be four, and hence only one representative was invited from each of the three largest Schools (SHSS and IPO were requested to nominate students for a later date). The discussion on the Common Core revamp lasted for half an hour following a half-hour discussion on the online learning experience. Afterwards, the three students emailed the APTL the following comments about the current and proposed Common Core:

SSCI student

1. Students cannot enroll in the courses they want until final/ senior years.
2. For courses required students to be TA, there are a few courses you may want to have a look: LIFS 4200 and BIBU 4820 by Prof. Ng
3. Some courses in the level 3 common core could have a selection process, since smaller class size may have a better learning experience for classes that are project-led.

SENG student

1. The necessity of SSC courses (they are not necessarily the best courses)

SBM student

1. I think the current common core curriculum requires too many credit, maybe could reduce 1-2 courses. Also, as <the other two students> had mentioned, we don't really see the point of SSC courses as they don't seemed very different than other CC, though they are usually more competitive in course registration.
2. Positive towards the proposed new CC scheme. My only concerns are the capacity problem, UROP GPA requirement, and the effectiveness of the TA 3000-level experience course (UTOP?). Some students in UTOP could be very passive since TA need not to actively reach out to students in the course, if it is a big class with many TAs.

Revised Curriculum

Current Common Core Framework

The requirements comprise a total of 36 credits (out of 120-126 credits) to be elected from 8 broad core areas, of which 9 credits must be taken from school-sponsored courses (SSCs). Students are expected to complete the majority of the common core credits in Year 1 and 2. The 6 credits of English Communication are to be taken in the first year.

Common Core Area	Credits		Note
	Required	Elective	
Humanities (H)	6*	6	* 3 credits must be from H SSCs.
Social Analysis (SA)	6*		* 3 credits must be from SA SSCs.
Science and Technology (S&T)	6*		* 3 credits must be from S&T SSCs.
Quantitative Reasoning (QR)	3		
Arts	0		
English Communication	6**	Nil	**Must be taken in the 1st year of study
Chinese Communication	3	Nil	
Healthy Lifestyle	Non-credit	Nil	
Total Credits Required	**36 (6-9 can be double counted)**		**Note: "SSCs" denotes "School-Sponsored Courses"**

Proposed New Framework and Progressing Pathway of Common Core Program

Under the new framework, the total credits of the Common Core structure will be changed to 30 credits with courses in a three-tier of grouping.

CC Groups	Credits	Common Core Areas	Credit breakdown
Experiencing Years 3-4	3	**UxOP: UROP, UTOP, UPOP, UCOP** • A choice of 4 structured & carefully designed programs, each with a different focus but commonalities in learning outcomes, requirement for cross-disciplinary, global, and systems thinking and communications, and pre-requisites in Foundations and Broadening	3
Broadening (with specific outcomes) Years 2-3	12	**Arts (A)**	**Program-specific requirements**
		Humanities (H)	
		Science (S)	
		Technology (T)	
		Social Analysis (SA)	
Foundations (Skillsets & Mindsets) Year 1	15	**Cognitive Foundations of University Education: Critical Thinking and Data Literacy**	3
		Behavioral Foundations of University Education: Habits, Mindsets, and Wellness	3
		English Communication	6
		Chinese Communication **#**	3
	30	**Total Credits Required (no double-counting)**	**30**

Chinese Communication need not necessarily be taken in Year 1.

More details about the program specific requirements for the Broadening group are provided in **Attachment 6b**.

Initial Proposals for new courses and UxOPs

Attachment 7		Initial Proposal for Cognitive Foundations of University Education: Critical Thinking and Data Literacy
Attachment 8		Initial Proposal for Behavioral Foundations of University Education: Habits, Mindsets, and Wellbeing
Attachment 9		Initial Proposal for a new Common Core area in the Broadening Group: Arts
Attachment 10		Initial Proposal for a new Common Core area in the Experiencing Group: **U**ndergraduate E**x**periential **O**pportunities **P**rograms (UxOPs)
	Attachment 10a	**UROP**: **U**ndergraduate **R**esearch **O**pportunities **P**rogram
	Attachment 10b	**UTOP**: **U**ndergraduate **T**eaching **O**pportunities **P**rogram
	Attachment 10c	**UPOP**: **U**ndergraduate **P**ractice **O**pportunities **P**rogram
	Attachment 10d	**UCOP**: **U**ndergraduate Global **C**hallenges and **O**pportunities Program

Attachment 6b

Proposed Common Core Credit Requirements for Each School/Program - proposed by corresponding Schools/IPO in the Broadening CC Group

2021-01-05

CC Group	Credits	Common Core Area	Credit Breakdown												
Experiencing (Years 3-4)	**3**	UxOP: UROP, UTOP, UPOP, UCOP	3												
Broadening (Years 2-3)	**12**		**SSCI[1]**	**SENG[2, 3]**	**Special case under SENG: BIEN, CENG, CEEV**	**SBM[4, 5, 6]**	**SHSS (GCS)**	**IPO**				**JS Programs**				
								IIM	**EVMT**	**DDP[6] (SSCI & SBM)**	**DDP[6] (SENG & SBM)**	**BIBU (SSCI & SBM)**	**DSCT (SSCI & SENG)**	**MAEC (SSCI & SBM)**	**QSA (SSCI & SHSS)**	**RMBI (SSCI, SENG, SBM)**
		Arts (A)	3	3	Min 3	3	Min 3	student specific requirements	3	Min 3	Min 3	Min 3	Min 3	Min 3	3	Min 3
		Humanities (H)	3	3	Min 3	3			3	Min 3	Min 3	Min 3	Min 3	Min 3	3	Min 3
		Science (S)		3	0-3	3	Min 3		3		Min 3				3	
		Technology (T)	3			3	Min 3		3	Min 3		Min 3		Min 3	3	
		Social Analysis (SA)	3	3	Min 3								Min 3			
Foundations (Year 1)	**15**	Cognitive Foundations of University Education: Critical Thinking and Data Literacy	3												
		Behavioral Foundations of University Education: Habits, Mindsets, and Wellness	3												
		English Communication	6												
		Chinese Communication[#]	3												
	30	**Total Credits Required**	**30**												

[#] *Chinese Communication need not necessarily be taken in Year 1*

[1] Include SSCI programs: BCB, BIOT, BISC, CHEM, DASC, MATH, OST, PHYS

[2] Include SENG programs: AE, CIEV, CIVL, COMP, COSC, CPEG, DA, ELEC, IEEM, ISDN, MECH, SUSE

[3] COSC program will tentatively follow the credit requirements for other SENG programs. The credit requirements will be reviewed upon confirmation on the administrative rules on double major students.

[4] Include SBM programs: ACCT, ECOF, ECON, FINA, GBM, GBUS, IS, MARK, MGMT, OM, QFIN

[5] A specific set of credit requirements for the WBB program will be developed in consultation with partner universities.

[6] Pathways may differ for students with special requirements such as in programs offered in partnership with other institutions, not in 4-year programs, with a large number of transferred credits, etc. Such students should contact their program offices.

Initial Proposal for Cognitive Foundations of University Education: Critical Thinking and Data Literacy (3 credits)

Why have a Common Core course on Critical Thinking and Data Literacy?

The world is facing serious challenges such as climate change, economic inequality, mass migration, job losses due to automation, and pandemics. Responding to these challenges is critical. However, given the increased spread of fake news and people increasingly living inside filter bubbles, even getting a consensus on recognizing these challenges has become difficult. Once a problem is recognized, responding to them requires gathering information/data, questioning assumptions and biases, evaluating alternatives, proposing solutions, and critically evaluating them. In all of this, the ability to read, understand, create, and communicate data is very important. Why should we believe what we believe? Why should we act in a certain way? Why should we study what we study? What should be our goal in life? All of these questions require critical thinking and data literacy.

There is some evidence that critical thinking and data literacy skills need to be further developed in graduates: According to employers, critical thinking skills are one of the top three soft skills that are missing in applicants.[1] Data literacy has also been identified as a critical skill for the 21st century[2] (Bryla 2018). Nearly three in four employers claim that students they hire after multiple years of formal education lack the ability to think critically and solve problems. This is despite the claims of universities that they are developing these very skills.[3] At HKUST, the Annual Assessment of Graduate Attributes (AAGA) exercise revealed there is scope for further improving the critical thinking skills of HKUST students[4].

The Common Core has goals of developing these extremely important skills for HKUST graduates as they navigate their personal and professional lives. Critical thinking and Data Literacy is required in all fields: Scientists have to evaluate what inferences they can draw from an experiment. Business managers need to think about which markets to target? Engineers need to decide which technology to choose to solve a problem? At a personal level, an individual has to decide whether to believe a news article; or at a much deeper level what her goals in life should be? Given the increased availability of data, graduates should be comfortable at using data to support their thinking. This Common Core course will expose students to a wide variety of applications of critical thinking and data literacy: in personal and professional life, whether it be in science, engineering, humanities or business.

Critical Thinking in the Common Core Framework versus in Majors

As mentioned, many universities claim to teach Critical Thinking but employers feel differently. This discrepancy may be reconciled by noting that critical thinking skills may be being taught (indirectly) in many courses under different subjects or disciplines, but students tend to learn only the particular ways in which critical thinking is applied in the discipline-specific context of the course, instead of learning it as a transferrable skill or competency itself. Hence, students compartmentalize these

[1] https://www.shrm.org/about-shrm/Documents/SHRM%20State%20of%20Workplace_Bridging%20the%20Talent%20Gap.pdf
[2] Bryla 2018: Data literacy : A critical skill for the 21st century https://www.tableau.com/about/blog/2018/9/data-literacy-critical-skill-21st-century-94221

[3] https://www.insidehighered.com/views/2020/03/02/teaching-students-think-critically-opinion
[4] AAGA 2018/19: Annual Assessment of Graduate Attributes

critical thinking techniques and are not able to (maybe not even aware of the need) to apply critical thinking skills in other contexts outside the subject area they had learned the skills in.

The Common Core reform aims to teach Critical Thinking more intentionally and explicitly as a transferrable skill, and structure the curriculum or materials to help students to learn to apply this core skill across multiple contexts (with the help of the computerised competency tracking system) so that they will be able to apply the same skill in future contexts that possibly do not even exist today. Moreover, students in some Majors take related courses such as Computational Thinking, Design Thinking, or Systems Thinking. Critical Thinking is a primitive of such courses, since they usually cover more advanced material. Hence Critical Thinking is appropriate for a Common Core course.

Course Intended Learning Outcomes (CILO):

After taking the course, students will be able to:

- identify an issue/situation/problem
- analyse the elements/facts of a specific situation/problem
- gather and interpret relevant information/data/sources for the situation/problem
- establish relevant criteria and standards for acceptable solutions
- clarify assumptions made
- construct well-reasoned solutions/conclusions, supported by facts/data
- predict implications and consequences of the solutions/conclusions
- make and communicate decisions, with data when appropriate

Proposed implementation

The course is proposed to be taught in a blended-learning mode with flexible modules that students can choose based on their interests. The online component (e.g., online lecture videos) of the blended-learning course will be common to all students. Each module (lasting ~ 2-3 weeks) will focus on applications of critical thinking and data literacy in sciences, humanities, engineering, and business. Students will have to choose at least one module related to each of the above. Across these application areas, the underlying concepts and Intended Learning Outcomes relating to Critical Thinking and Data Literacy will be the same.

Lectures	*Modules*
Online (Common to all students)	**Flexi-modules (pick modules out of this list)** Critical thinking and Data Literacy in Sciences (I, II, III, IV…) Critical thinking and Data Literacy in Business (I, II, III, IV…) Critical thinking and Data Literacy in Engineering (I, II, III, IV…) Critical thinking and Data Literacy in personal life (I, II, III, IV..)

Similar courses at HKUST and other major universities

- Critical Thinking in Contemporary Society (HKU Common Core)
- Critical Thinking (CUHK General Education)
- Critical Thinking in Business (City, University of London)
- Critical Thinking (University of Michigan)

- Mindware: Critical Thinking for the Information Age (University of Michigan / Coursera)
- HUMA1710 The Art of Thinking in the HK Context
- HUMA1720 Logic
- HUMA1920 Introduction to Moral Philosophy
  (the three HKUST courses have a total enrolment of 180-240 students every year)

Initial Proposal for Behavioral Foundations of University Education: Habits, Mindsets, and Wellbeing (3 credits)

There is an "epidemic of anxiety" in Hong Kong, and the HKUST community is not immune. The events of 2019 and 2020, with the social unrest and Covid-19 pandemic, have revealed the magnitude of this crisis, and as "the University of Stress and Tension", we are not immune. This course seeks to build the foundations of transferable skills relating to self-management, teamwork, and wellness for university students transitioning to a diverse, dynamic, and international environment.

This blended, experiential, community-based course aims to increase students' awareness of their wellness and their confidence as Year 1 learners, as well as their sense of belonging, which is an important aspect of overall wellbeing. Course content will be delivered through a combination of online and face-to-face learning. Experiential workshops will provide opportunities for students to practise and assess wellness skills and reflect on and discuss how they can integrate these practices into their personal and working lives.

Course Intended Learning Outcomes (CILO)

After taking the course, students will be able to:

1. Cultivate an awareness and understanding of "wellness", physical and mental, and its importance
2. Learn how to take care of wellness using a variety of theories, practices, and experiences
3. Learn practical aspects of self-management, goal pursuit, responding to challenges and failure, and effective teamwork in a diverse, dynamic, and international environment
4. Build sustainable habits promoting wellbeing while in University and beyond

Background

Supporting student learning and development is the main function of a university. The relationship between well-being and learning is a complex one. On the one hand, well-being is a predictor of learning. On the other hand, learning is crucial for the occurrence of well-being because successful learning is a source of enjoyment at university.

Well-being is about much more than just enjoyment or other ephemeral feelings. It is an individual and social value as well as a basic psychological need. Much research has converged on the definition of well-being as a set of affective, cognitive, social, and physiological characteristics. Around the world, there is increasing concern regarding the well-being of students in higher education settings. For example, a Canadian study of over 42,000 students found that 67% of respondents had felt very lonely within the last 12 months, nearly 60% had felt things were hopeless, and 42% had felt so depressed it was difficult to function (National College Health Assessment II: Canadian Reference Group Report Fall 2016, American College Health Association, 2016). In Australia in 2016, the National Union of Students found that 67% of students rated their mental health as "fair" or "poor", and 65% reported high or very high psychological distress. Only 1.6% reported that no symptoms of mental health problems impacted their study in the past year (https://headspace.org.au/assets/Uploads/headspace-NUS-Publication-Digital.pdf). The 2020 United Nations World Happiness Survey found that Hong Kong was ranked 75th amongst the 153 surveyed countries/regions, slipping 29 places from its rank of 46th in the first such survey conducted in 2012, just eight years previously. Indeed, as

many as 14% of HKUST undergraduate students sought support from HKUST Counselling Services during the academic year 2019-20, and in Hong Kong overall the situation is so serious that the PEP for 2022-2025 explicitly calls for Universities to discuss how they plan to address mental health related issues in the university student population. More generally, the Okanagan Charter, an international charter, calls on institutions across the world to embed health into all aspects of campus culture and says 'Health promoting universities and colleges transform the health and sustainability of our current and future societies, strengthen communities and contribute to the well-being of people, places and the planet.'

At HKUST, the existing HLTH 1010 Healthy Lifestyle course is not credit-bearing, and there is much evidence that students attend the hours required of them merely to complete the requirements as a formality. Moreover, setting up the sessions requires a significant input of time, effort, and resources from non-academic staff at DSTO. The proposed course will retain the desired aspects of HLTH 1010, namely the physical, socio-emotional, and community-based activities, with academic content including measurable ILOs delivered in a blended-learning mode, small-group experiential learning, and graded reflections.

Possible lecture content (in no particular order; two lectures possible on some topics)

- The science of mental wellness (how the brain works/neuroplasticity etc.)
- Psychology and well-being (positive psychology +)
- Philosophies/theories of well-being (hedonism / eudaimonism / stoicism / life satisfaction / flourishing etc.)
- Self-understanding / Assessing wellness and planning for growth / Character strengths survey
- Growth mindset
- Kindness, social connections, and well-being / spreading positivity
- Models of wellness / people, passion, possibility / inspiring possibility
- The politics and economics of well-being
- Awareness of disorder
- Stress and coping
- Health behaviors

Possible Workshops (physical, mental, and social domains; with written reflections on each)

- Physical / sports activity (indoor, outdoor, and water sports)
- Meditation and mindfulness
- Stress management/resilience
- Time management
- Test/exam anxiety
- Communicating effectively/assertiveness and conflict management
- Healthy relationships
- Multi-cultural sensibility
- Diversity

Assessments

Online quizzes on lecture content 30%
Wellness surveys and journal 25%
Community project 25%
Physical / sports skills 10%
Peer evaluations of engagement and contributions 10%

Similar Courses at other Major Universities

Yale: Psychology and the Good Life (most popular Undergraduate course at Yale; now also available as a MOOC "The Science of Wellbeing", with over 3,000,000 students)

> This course will teach you a set of scientifically-validated strategies for living a more satisfying life. Throughout the course, we'll explore what new results in psychological science teach us about how to be happier, how to feel less stressed, and how to flourish more. We'll then have a chance to put these scientific findings into practice by building the sorts of habits that will allow us to live a happier and more fulfilling life. We'll also discuss how to apply these findings beyond our own lives to make our communities and our planet better too.
>
> The course begins by introducing some misconceptions that you too may have about what makes for a satisfying life. We'll see that many things we think matter for our happiness—wealth, material possessions, and even good grades—simply don't. In fact, recent studies suggest that these goals may even undermine our sense of wellbeing. We'll then take a good hard look at the psychological biases and dumb features of our mind that lead us astray, biases that make it hard for us to see what makes us happy and make us seek out the wrong sorts of things. We'll then discuss what psychology research shows about what we really should strive for to live a satisfying life. Having gotten our life goals straight, we'll talk about how to put these new life goals into practice. We'll review scientifically-validated strategies for harnessing our cognitive biases to live a better and more satisfying life. We'll also talk about how to prevent procrastination and how to harness our automatic processes to better achieve our goals. We'll end the course by thinking critically about how to use what we've learned both to hack our own happiness and to make a difference in our communities.

Stanford "Designing Your Stanford"

> Designing Your Stanford is a class about getting more out of, rather than cramming more into, Stanford. This course helps Freshmen and Sophomores craft a more fulfilling college experience by sharing practical design thinking tools and ideas. Topics include the purpose of college, major selection, educational wayfinding, and innovating college outcomes - all applied through an introduction to Design Thinking. This seminar class incorporates small group discussion, in-class activities, field exercises, personal reflection, and individual coaching.
>
> Many of us arrive freshman year having heard that the next four years will represent the best of our lives. But as wonderful as the Stanford experience often proves to be, it almost always presents a slew of difficult decisions and stressful tradeoffs. How do you choose a single major given the disparate interests you have? How do you discover all of the exciting opportunities Stanford has to offer? And once you've discovered them, how do you possibly choose among them? Most critically, how do you leave Stanford after four years feelings satisfied with the experience? Designing Your Stanford aims to help students navigate these thorny questions. Using a process rooted in Design Thinking, the course equips students with tools to design a college experience that better aligns with who they are and what they hope to get from Stanford.

Stanford "Designing Your Life"

> This course applies the mindsets and innovation principles of design thinking to the "wicked problem" of designing your life and vocation. The course introduces design thinking processes

through application: students practice awareness and empathy, define areas of life and work on which they want to work, ideate about ways to move forward, try small prototypes, and test their assumptions. The course is highly interactive. The course will include brief readings, writing, reflections, and in-class exercises. Expect to practice ideation and prototyping methodologies, decision making practices and to participate in hands on activities in pairs, trios, and small groups. Also includes roleplaying, assigned conversations with off campus professionals, guest speakers, and individual mentoring and coaching. It will conclude with creation of 3 versions of the next 5 years and prototype ideas to begin making those futures a reality. Open to juniors, seniors and 5th year coterms, all majors. All enrolled and waitlisted students should attend class on day 1 for admission. Additional course information at http://www.designingyourlife.org.

Syllabi from similar courses at other universities: https://ppc.sas.upenn.edu/resources/course-syllabi-teachers

Overview of research on existing courses: https://www.researchgate.net/publication/325889738_Wellness_Promotion_Courses_in_University_Settings_A_Review_of_the_Outcome_Research/fulltext/5b2afd880f7e9b1d00a0038a/Wellness-Promotion-Courses-in-University-Settings-A-Review-of-the-Outcome-Research.pdf

Courses with Similar Content at UST

SOSC 1980 Psychology and Everyday Life (average annual enrolment ~1000)

The course covers various issues that students will encounter during their transition to adulthood. Students who have taken this course can apply the principles and concepts in meeting the many challenges in everyday life so as to achieve a more adaptive personal growth and better psychological adjustment. Some topics include understanding of the self, interpersonal attraction and love, sexuality, interpersonal communication, stress and coping, and work-related issues.

LANG 1002 English for University Studies (Course taken by all incoming 1st year students; first unit called “People, Passion, Possibilities”)

Subthemes: 1. Passion and proficiency; this course and you – discussion about what the two terms mean and link between the two (if any); challenges that being at university/taking LANG 1002 will pose, especially being open-minded and curious.

2. Passion for learning – discussion of questions like ‘What excites you about being at university?’ ‘What are you looking forward to learning?’ ’What kind of person do you want to be at the end of your time here?’ ’Why did you choose HKUST?’

3. Passion for a cause – examples set by people like Leonardo DiCaprio, Angelina Jolie, Annie Leonard (The Story of Stuff), Boyan Slat (the Ocean Cleanup project) – how passion can promote possibility.

4. Inspiring possibility – speeches by well-known people like Steve Jobs as well as lesser-known people like Yo-Yo Master, Black, and Toastmasters International winner, Kwong Yue Yang.

Language skills development: Storytelling + giving a short speech to inspire possibility in other students (e.g., an imagined group from their own secondary school). Students coached to help their audience develop a 'possibility mindset**'.**

Initial Proposal for a new Common Core area in the Broadening Group: Arts

In the current Common Core program, it is possible for a UST student to go through four years without a single course in the Arts. We therefore propose to create a separate category for "Arts" in the "Broadening" section, with the aim of **exposing students to courses that have an explicit expressive, creative, or studio arts element**. This will broaden their horizons and lead them to experience and experiment with a large variety of diverse art forms, covering visual arts, photography, music (composition, voice, instrumental), film/animation, creative writing/poetry, theatre, dance, and so forth. Students will be able to **experience and experiment in studio arts settings, and express themselves in analog, computational, or mixed media formats**. The program will leverage space in the forthcoming Shaw Auditorium, as well as the Computational Media and Arts thrust area in the Guangzhou campus.

Intended Learning Outcomes:

After taking the courses in the area of Arts, students will be able to:

1. appreciate the theory, history and practice of the arts

2. cultivate artistic literacy, nurture aesthetic sensitivity and cultural awareness

3. develop creativity through the practice and application of art skills and conceptual thinking

4. express oneself through various art forms or media

Description of Arts in the Broadening group of Common Core:

Arts courses in the Common Core will broaden the horizon of our students with a large variety of art forms, covering visual arts, photography, music (composition, voice, instrumental), film/animation, creative writing/poetry, theatre, dance, and so forth. Students can experience and experiment with them in studio arts settings, and express themselves through analog, computational, or mixed media formats. The program will leverage space in the forthcoming Shaw Auditorium, as well as the Computational Media and Arts thrust area in the Guangzhou campus.

Initial Proposal for Undergraduate Experiential Opportunities Programs (UxOP)

Experiential learning is a process through which students develop knowledge, skills, and values from direct experiences. It refers to a broad spectrum of educational experiences, such as academic courses, service learning, undergraduate research, and internship opportunities, etc.

On average, HKUST students spend only about 8.5 credit-hours engaging in structured active learning. However, students who have experiential learning or internship experience report greater satisfaction with their major programs. Therefore, we propose to create the "Undergraduate Experiential Opportunities Programs (UxOP)" as the third tier in the Common Core. UxOP will consist of the following four programs, each having pre-requisites in Foundations and Broadening, of which students will be required to take one:

UROP: **U**ndergraduate **R**esearch **O**pportunities **P**rogram (more details in **Attachment 10a**)

UTOP: **U**ndergraduate **T**eaching **O**pportunities **P**rogram (more details in **Attachment 10b**)

UPOP: **U**ndergraduate **P**ractice **O**pportunities **P**rogram (more details in **Attachment 10c**)

UCOP: **U**ndergraduate Global **C**hallenges and **O**pportunities Program (more details in **Attachment 10d**)

Intended Learning Outcomes:

After taking the course, students will be able to:

1. Understand and appreciate a topical issue from the perspective of a researcher, teacher, or knowledge worker
2. Demonstrate critical thinking and the ability to analyze the issue using appropriate methods
3. Communicate with others having different disciplinary backgrounds in addressing the issue
4. Reflect on their experience and its implications for their own future learning

UROP: **U**ndergraduate **R**esearch **O**pportunities **P**rogram

- Upper level course in UROP sequence
- 3 credits instead of 1
- Research part as usual as per a regular upper-level UROP course
- Small-group cross-disciplinary presentations
- Students to organize a cross-disciplinary conference for each other
- Graded reflection

UTOP: **U**ndergraduate **T**eaching **O**pportunities **P**rogram

- Team-TA for undergraduate course or high school outreach
- Core training in pedagogical skills
- Group project with faculty mentor
- Student evaluations
- Students to organize a cross-disciplinary conference for each other
- Graded reflection

UPOP: **U**ndergraduate **P**ractice **O**pportunities **P**rogram

- Structured internship with faculty mentor
- List of approved firms/NGOs

- Area of work in internship different from student's major
- Pre-internship training
- Graded evaluation from internship supervisor
- Students to organize a cross-disciplinary conference for each other
- Graded reflection

UCOP: **U**ndergraduate Global **C**hallenges and **O**pportunities **P**rogram

- Theme-based group project
- Cross-disciplinary teams
- Themes relate to UN Sustainable Development Goals and Grand Challenges
- Four or five themes to be offered each year
- Possible themes: Aging, Food, Housing, Sustainable Production
- Emphases on process of problem structuring, identification of relevant data, and communications with stakeholders
- Graded reflection

Initial Proposal

UROP: Undergraduate Research Opportunities Program

A new 3-credit UROP course can serve as an experiential learning opportunity for students who are interested in deepening their research skills, exercising critical thinking, while strengthening their inter-disciplinary communication skills. This course would be separately offered independent of the present 1-credit UROP course series, but possibly with a pre-requisite in UROP1100. At the end of each academic term, there will be a UROP conference, where students will make presentations describing their UROP projects. Assessment will be based on a teaching portfolio and successful completion of the training modules.

Faculty members from different background can contribute their expertise in guiding students from scientific, social, humanistic, management and technological points of view. It is hoped that the large number of faculty involved in inter-disciplinary projects (such as CRF, AOE, Theme-based) would be willing to supervise the projects.

Given the nature of existing student interest in research (the current size of UROP 2100 is about 100 students every year) and the faculty efforts involved in supervision, we expect the scale of UROP in the Common Core to be similar to the current scale.

Course description

The UROP Common Core course will integrate the objectives of tackling a selected issue of complex and inter-disciplinary nature, exercising critical thinking, and communicating the conclusions effectively. Students registered in the course will join inter-disciplinary research groups supervised by faculty members from different backgrounds. Students will have opportunities to organize a conference communicating their conclusions interactively with members of other research groups.

Initial Proposal

UTOP: Undergraduate Teaching Opportunities Program

The UTOP program will provide an experiential learning opportunity for students who are interested in taking on projects that have a focus on teaching or instruction. This could include coaching groups in project or experiential courses, mentoring, outreach to local high school students, community involvement, helping to design courses, developing course materials and technology, or other similar activities. UTOP students will participate in a series of training modules to help them develop the skills required for development and communication of their teaching projects. Then they will each work on an individual project with a faculty mentor. At the end of each academic year, there will be a UTOP conference, where students will make presentations describing their UTOP activity. Assessment will be based on a teaching portfolio and successful completion of the training modules.

Three elements:

- Core training in pedagogical skills (delivered by CEI), similar to the training program for GTAs.
- Individual UTOP project with a faculty mentor.
- UTOP students will not be a 'GTA-Junior.'

Build on a number of initiatives already underway at HKUST.

- Many examples of students and faculty working to mentor and provide science education to the wider community,
- The use of student coaches and instructors in project-based courses (among others).

Adding the training component, and developing a set of guidelines for UTOP projects, can ensure that all participants have a chance to develop key skills that are useful.

Initial Proposal

UPOP (Undergraduate Practice Opportunities Program) is proposed as a 3-credit common core capstone course, fulfilling the following ILOs:

1) Understand and appreciate the inter-disciplinary nature of a complex issue of societal importance
2) Work and communicate with others having different disciplinary backgrounds
3) Understand and communicate with different stakeholders
4) Demonstrate critical thinking and design thinking and the ability to develop tangible innovations

UPOP will be a structured internship with a faculty mentor. These internships will be outside the student's declared major and with a firm/NGO identified from an approved list. The internship will follow a brief pre-internship training that will be common to all students. Moreover, after the internship period, the student will be evaluated by their supervisor at the firm/NGO, and this evaluation will serve as a component of the grade. They will then organize a "cross-disciplinary" conference for each other, and write a reflection, which will be graded, on their experiences. Students taking UPOP must have completed the Foundations courses in the Common Core curriculum.

Initial Proposal

UCOP: Undergraduate Global Challenges and Opportunities Program

UCOP will consist of a suite of 4 or 5 theme-based projects, from which students can select any one to work on. The themes will relate to the UN Sustainable Development Goals and Global Grand Challenges, with possible themes including Aging, Food, Housing, and Sustainable Production. These themes will be developed by cross-disciplinary teams of HKUST faculty (possibly in line with Research Centers and Institutes such as the Center for Aging Science) and the courses will be co-taught by these faculty, or taught by a different member of the faculty team in every offering. Students will work in cross-disciplinary teams to address the focal Challenge. Emphases will be placed on the process of problem structuring, the identification of relevant data, and communications with stakeholders

Intended Learning Outcomes

After taking the UCOP course, students will be able to:

1. Understand and appreciate the inter-disciplinary nature of a complex, topical issue of societal importance
   - be able to articulate the major disciplines (including the social science, technology, humanistic, and economic/business/sustainable aspects) involved in the selected issue
   - be able to appreciate using concrete examples on how multi-disciplinary approach is critical to understand the problem and show how these interdisciplinary issues interact with each other
   - understand the cultural/ethnic/racial dimension of the issue, if any, and be able to explain them from a historical/cultural background

2. Communicate with others having different disciplinary backgrounds to explore the issue from different perspectives
   - be able to identify the challenges encountered in communicating/discussing with other from different disciplinary backgrounds, and how to circumvent those difficulties
   - be able to articulate the different perspectives provided by people from different disciplines
   - be able to contrast a perspective from a different discipline with the perspective your own discipline holds and articulate what added value or insight one may get having this additional perspective

3. Demonstrate critical thinking and the ability to analyze the issue using appropriate methods, qualitative and quantitative

Attachment 11

Demand Model and Transistional Arrangement



Demand Model and Transitional Arrangement

1

Steady-state Course Demand Model

(to be reviewed for course demand projection for outstanding cohorts under the existing framework and for the new framework)

2019-20 Projected Demand for Common Core Places to be Provided by Each School - Average Total For Fall/Spring [Dated: 2019-03-29]

(UG Intake: 2,723, including 2,034 (local FYFD) + 508 (non-local FY) + 151 (local senior year students) + 30 (other local/non-local senior year students)

10% buffer

6 credits evenly distributed among 5 areas

1/3 : 2/3 split

Even split

4Y Common Core Requirements					Places to be Provided by Schools					
Common Core Areas	Credits	No. of Courses	2019-20 Average Total for Fall/Spring (Course Places)	x1.1	SCIE	SENG	SBM *	SHSS		
								SOSC *	HUMA	CLE
H - SSC	3	1	1,362	1,498					1,498	
H - Non-SSC	3	1	1,362	1,498					1,498	
H - Core Electives	1.2	0.4	545	599					599	
SA - SSC	3	1	1,362	1,498			499	998		
SA - Non-SSC	3	1	1,362	1,498			499	998		
SA - Core Electives	1.2	0.4	545	599			200	399		
S&T - SSC	3	1	1,362	1,498	749	749				
S&T - Non-SSC	3	1	1,362	1,498	749	749				
S&T - Core Electives	1.2	0.4	545	599	300	300				
Core Electives: QR	1.2	0.4	545	599	300	300				
Core Electives: Arts	1.2	0.4	545	599					599	
Sub-total (H, SA, S&T, Core electives)	**24**	**8**	**10,892**	**11,981**	**2,097**	**2,097**	**1,198**	**2,396**	**4,193**	--
QR (Note 1)	3	1	1,362	1,498						
E-Comm	6	2	2,723	2,995						
C-Comm (Note 2)	3	1	1,362	1,498						
Sub-total (QR, E-Comm, C-Comm)	**12**	**4**	**5,446**	**5,991**						
Total for 2019-20 (All Areas)	**36**	**12**	**16,338**	**17,972**						

Common Core Areas	Credits		Note
	Required	Elective	
Humanities (H)	6 *		* 3 credits must be from **H SSCs**
Social Analysis (SA)	6 *		* 3 credits must be from **SA SSCs**
Science and Technology (S&T)	6 *	6	* 3 credits must be from **S&T SSCs**
Quantitative Reasoning (QR)	3		
Arts	0		
English Communication	6 **	Nil	**Must be taken in the 1st year of study
Chinese Communication	3	Nil	
Healthy Lifestyle	Non-credit	Nil	
Total credits required	36		SSCs = School-Sponsored Courses

* As per agreement by SBM and SHSS on 8 Feb 2012, SBM and SHSS will provide one-third and two-thirds of the SA cou

Note 1: This estimated QR demand is expected to be met through courses offered by SCIE and SENG to meet the school [illegible]

Note 2: The split was based on past C-Comm enrollment statistics indicating that the percentage of C-Comm courses offered by HUMA and CLE was roughly 20% and 80% respectively.

2

No. of Active Common Core Courses (as of 2019-20 Summer)

(assuming all the courses can be migrated)

Offering School	Current Area	Proposed Area (subject to Schools' confirmation)	No. of Active Courses (Grouped by Proposed Area)
		Total	263
SHSS	H (67) H+C-Comm (3) H+SA (1)	Humanities	71
SHSS	Arts	Arts	35
SHSS	H+Arts (14) H+Arts+C-Comm (2)	Humanities / Arts	16
SSCI	S&T	Science	16
SENG	S&T (25) Arts+S&T+QR (1) SA+S&T (1)	Technology	27
IPO	S&T (6)	Science / Technology	7
JS	S&T (1)		
SBM	SA (16) SA+S&T (1) SA+QR (1)	Social Analysis	65
SHSS	SA (42) H+SA (1) SA+S&T (1)		
IPO	SA (2)		
JS	SA (1)		
IPO	SA+S&T	Science / Technology / Social Analysis	3
SSCI	QR (4)	Critical Thinking and Data Literacy	9
SENG	QR (4)		
JS	QR (1)		
SHSS	E-Comm	English Communication	2
SHSS	C-Comm	Chinese Communication	11
DSTO	HLTH	Habits, Mindsets, and Wellness	1

3

Timeline for Revamp

Ongoing – Spring 2021
by UCE and CUCE

- Develop scaffolding structure
- Fine-tune area ILOs
- Develop competencies and mappings of competencies
- Develop general criteria, course demand projection, course place distribution by schools, course migration arrangement, system development, etc.

by UCE

Initial screening of existing CC courses

by Schools

Course review by Schools

Phasing out courses

Migrated courses

New courses

Course review by CUCE

Implementation (pilot run / course offering)

Steady stage (2026 afterwards)

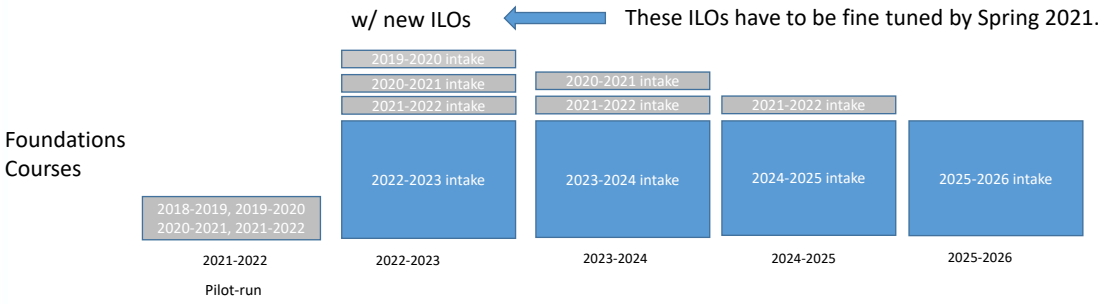
Competency and tracking system

Key milestones for first cohort
Foundations courses: ready by 2022
Broadening courses: ready by 2023
Experiencing courses: ready by 2024

4

In the transition period for Foundations courses

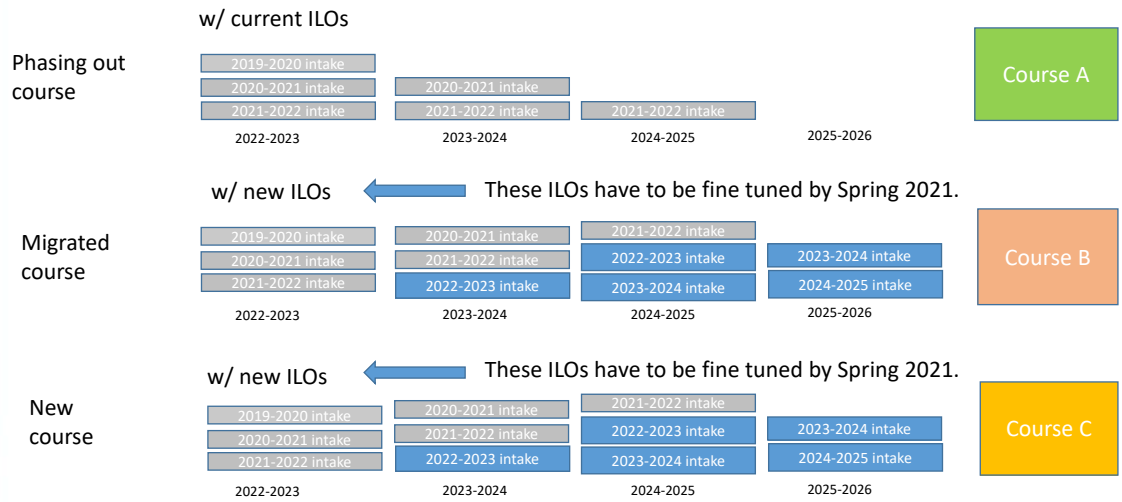
Assume all students under the new framework will take Foundations courses in Yr 1, and that some students under the existing framework (cohorts 2019-2022) are interested in the courses.



5

In the transition period for Broadening courses

Assume all students under the new framework will take Broadening courses in Yr 2-3, and that some students under the existing framework (cohorts 2019-2022) are also taking the migrated courses.



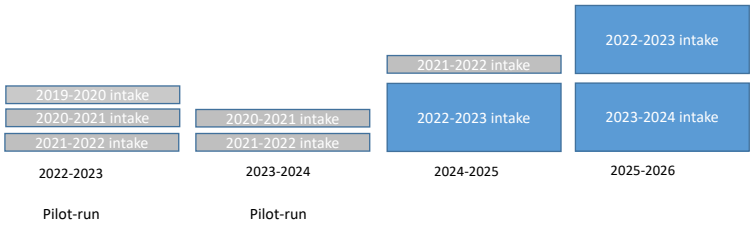
6

In the transition period for Experiencing courses

Assume all students under the new framework will take Experiencing courses in Yr 3-4, and that some students under the existing framework (cohorts 2019-2022) are interested in the courses.

w/ new ILOs ← These ILOs have to be fine tuned by Spring 2021.

Experiencing Courses



7

Attachment 12

Committee on Undergraduate Core Education

Working Group on Review of the Common Core Program

(to be confirmed upon approval of the final proposal on the new Common Core Program framework by the Senate)

Terms of reference

To advise and make recommendations to the Committee on Undergraduate Core Education (CUCE) on the scaffolding structure, common core area intended learning outcomes (ILOs), competencies, and mappings of competencies of the Common Core Program of the University, including, but not limited to:

(a) developing the scaffolding structure in the new Common Core Program framework;
(b) reviewing, and revising if necessary, the ILOs of the common core areas;
(c) developing the desired competencies and the corresponding assessment rubrics; and
(d) developing the principle and mechanism on the mappings of the competencies.

Membership

Convenor:

Academic Director (Undergraduate Core Education)
- Professor Kam Tim WOO

Members:

1. One representative each from the Schools of Science, Engineering, and Business & Management nominated by the Deans
2. One representative each from the Division of Humanities, Division of Social Science and Center for Language Education of the School of Humanities and Social Science nominated by the Dean of Humanities and Social Science
3. One representative from the Interdisciplinary Programs Office nominated by the Director of the Interdisciplinary Programs Office

Co-opted Members:

1. Two visiting faculty from the Minerva Schools at KGI
   - Professor Abha AHUJA, Associate Professor, Natural Sciences
   - Professor Erin KAMLER, Assistant Professor, Arts and Humanities

Resource Persons:

1. Associate Provost (Teaching and Learning)
   - Professor Anirban MUKHOPADHYAY
2. One representative from the Academic Registry nominated by the Academic Registrar
3. One representative from the Center for Education Innovation nominated by the Acting Director of the Center for Education Innovation
4. One representative from the Information Technology Services Center nominated by the Director of the Information Technology Services Center

Term of service

Starting from 4 February 2021 till the completion of the tasks expectedly by June 2021

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Approval of Undergraduate Course

Section 1: Academic Administration [1]

1.1 Catalog

a) Course to be effective from: Academic Year _____ Term _____

b) Department Code[3]: _____ Subject Area[3]: _____ Course Number [4]: _____

Previous Course Code[5]: _____

c) Full Title[6] *(max. 100 characters)*: _____

d) Abbreviated Title[7] *(max. 30 characters)*: _____

e) Course Credits[8]: ◯ Fixed: _____ ◯ Range: From _____ To _____

f) Catalog Description[9] *(word limit = 150)*:

g) Grading Type[10]: ◯ Letter Grades ◯ Distinction/Credit/Pass/Fail ◯ Pass/ Fail
◯ Distinction/Pass/Fail ☐ Others *(please specify):* _____

h) ☐ Prerequisites[11]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained

i) ☐ Corequisites[12]:

Course Code	Course Title

j) ☐ Exclusions[13]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained

k) ☐ Co-listing[14]: ☐ Multi-coding[14]:

Course Code	Course Title

l) Other Enrollment Restrictions[15] ◯ No ◯ Yes

☐ Instructor's approval required

☐ Restricted to specified student group(s)
(please specify, e.g. year and program of study): _____

☐ Others *(please specify):* _____

m) Medium of Instruction/Materials[16]: ◯ English ◯ Others, (Pls specify and provide a justification in Section 1.3):

n) Allow course repetition for credit[17]: ◯ No ◯ Yes

1.2 Contribution of course to Programs of Study [Check all appropriate boxes below]

	Program of Study	As		
☐ Major		☐ Required Course	☐ Elective	☐ Prerequisite
☐ Minor		☐ Required Course	☐ Elective	☐ Prerequisite
☐ Common Core				
☐ Others (pls specify):		☐ Required Course	☐ Elective	☐ Prerequisite

1.3 Rationale for Introducing this course and other relevant information [18]

For courses proposed for trial run to be a common core course under the proposed new Common Core Program framework, please check the appropriate box below.

The course is intended to be a common core course under the new Common Core Program framework in the:

☐ Foundations group ☐ Broadening group ☐ Experiencing group

Note: This course will be considered as a regular undergraduate course for course development purposes. Its contribution to the Common Core will only be considered when there is sufficient information as outlined in Section 3 of this form for consideration by the relevant course review panel(s) and the Committee on Undergraduate Core Education (CUCE).

Rationale for introducing this course and other relevant information:

Section 2A: Learning Outcomes and Alignment *(for courses not proposed to be Common Core Courses)*

2.1 Key Course Intended Learning Outcomes *(Should not normally exceed six or eight outcomes)*

Upon completion of this course, students are expected to be able to do the following:

	Course ILOs	**Nature of the learning outcomes** *(A - Knowledge/Content Related; B - Academic Skills/Competencies; C - Others)*
1		
2		
3		
4		
5		
6		
7		
8		

2.2 Contribution of Learning Outcomes to Programs of Study identified in Section 1.2

(Please also complete Section 4.1)

	Program of study 1: _____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1		
2		
3		
4		
5		
6		
7		
8		

	Program of study 2: _____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1		
2		
3		
4		
5		
6		
7		
8		

Section 2B: Additional Information[2] *(for courses not proposed to be Common Core Courses)*

2.3 Planned Teaching & Learning Arrangement

	Teaching & Learning Arrangement	Weekly Scheduled Hours/ Estimated Weekly Learning Hours	Indicate which course ILOs this activity serves to achieve *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
Face-to face activities	☐ Lecture*			
	☐ Tutorial*			
	☐ Seminar/Small-class*			
	☐ Laboratory*			
	*Does the above scheduled component(s) involve structured active learning activities? [19] ◯ No ◯ Yes *If yes, please specify for each scheduled component, the percentage and the type of active learning involved in the "Additional Information" column.*			
	☐ Others (e.g. fieldtrip, visit, etc.), *pls specify:* _____			
Online activities	☐ Online lecture videos			
	☐ Other online learning tasks, *pls specify:* _____			
	The total learning hours of the course# is equivalent to _____ hours [8] *# including both scheduled instructional hours and hours for self-study activities & assessment*			

- *For course adopting a pedagogic approach other than lecture, tutorial and laboratory, please indicate the pedagogy used:*

◯ Blended learning [20] ◯ Pure online delivery [21]

◯ Experiential learning [22] ◯ Others, *pls specify:*_____

2.4 Planned Assessment Weightings

Assessment Task	Proportion of Final Grade (%)	Indicate which course ILOs this task is to assess *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
☐ In-class test			
☐ Mid-term test			
☐ Final exam			
☐ Written assignment			
☐ Project report			
☐ Presentation			
☐ Learning portfolio			
☐ Course participation			
☐ Peer evaluation			
☐ Others (e.g. proctored online exam, etc.), *pls specify:* _____			

2.5 Course Duration

◯ 1 term ◯ 2 terms ◯ Others, *pls specify:* _____

2.6 Planned Frequency of Offerings [Check all appropriate boxes]:

☐ Every Fall ☐ Every Winter

☐ Every Spring ☐ Every Summer

☐ No fixed pattern

☐ Other *(pls specify):* _____

2.7 Course outline attached ◯ No ◯ Yes

- **Internationalization:**

Internationalization in a course refers to course content and/or pedagogic approaches which incorporate an intercultural and international perspective. Examples may include:

- Collaboration with overseas institutions to develop and adopt international course content, or to arrange international field trip
- Insertion of international theme as part of the course
- Integrating the course content with international material as examples or case studies
- Elements to provide global diversified perspectives and/or practices around the world

Please briefly list or summarize any component(s) in the course that contributes to internationalizing the curriculum:

2.8 Resources

Request extra resources for teaching this course? ◯ No ◯ Yes

Section 3: Learning Outcomes and Alignment *(for Common Core Course)*

3.1 Course Objectives: Please outline what this course aims to achieve

Alignment with Common Core program goals (Details here): Check the appropriate box(es) below to indicate which Common Core goal(s) this course aims to achieve, and explain briefly how this course would help to achieve the selected Common Core goal(s).

Common Core Program Goals	Explain briefly how this course would serve to achieve this goal
☐ **Broadening horizons**: to allow students to gain intellectual breadth and an appreciation of intellectual achievements across and beyond the main academic disciplines of their studies	
☐ **A passion for learning**: to spark students' passion for learning and enhance their higher order intellectual abilities: analysis and evaluation; judgment and critical thinking; defining and solving problems	
☐ **A lifelong pursuit of excellence**: to provide a foundation for students' life-long development through personal growth, preparation for future careers and opportunities to make contributions to the community	

3.2 Course Intended Learning Outcomes (CILOs) (should not normally exceed 6-8 outcomes)

Upon completion of this course, students are expected to be able to do the following:

	Course ILOs	Weighting (%)
1		
2		
3		
4		
5		
6		

3.3 Course Outline

Week	**Topics**	**Briefly outline what this topic will cover** *(Include reading assignments if available)*	**Indicate which course ILOs this topic is related to** *(Write CILO-1, CILO-2, etc.)*
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			

- **Internationalization:**

Internationalization in a course refers to course content and/or pedagogic approaches which incorporate an intercultural and international perspective. Examples may include:
- Collaboration with overseas institutions to develop and adopt international course content, or to arrange international field trip
- Insertion of international theme as part of the course
- Integrating the course content with international material as examples or case studies
- Elements to provide global diversified perspectives and/or practices around the world

Please briefly list or summarize any component(s) in the course that contributes to internationalizing the curriculum:

3.4 Proposed Common Core Area and Alignment of Course ILOs with Area ILOs

(1) Check one common core area. If the course is proposed to be listed under more than one area, it should contain a significant amount (say 50%) of content related to each of the proposed areas.

(2) Check those area ILOs that this course will contribute to.

Common Core Areas and the Area ILOs	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*	**With reference to the course content/topics, briefly elaborate how these course ILOs can achieve the stated Area ILOs**
☐ **Humanities**		
☐ **H1**: Comprehend and narrate human phenomena from the perspectives of humanities disciplines		
☐ **H2**: Appreciate and articulate diverse human values, feelings, reason and creativity in various forms of expression		
☐ **Social Analysis**		
☐ **SA1:** Analyze key societal and behavioral issues by applying relevant social scientific approaches in different contexts		
☐ **SA2:** Communicate a concern about key societal issues as responsible citizens		
☐ **Science & Technology**		
☐ **ST1:** Comprehend and apply the basic principles of science and methods of scientific inquiry		
☐ **ST2:** Evaluate the social and philosophical implications of scientific discoveries and technological development		
☐ **Quantitative Reasoning**		
☐ **QR1:** Use mathematical models or quantitative methods to formulate, analyze and solve problems that they encounter in their daily and professional lives		
☐ **QR2:** Choose an appropriate method to represent and process a given set of quantitative data and to draw inferences from such data in a systematic and logical way		
☐ **Arts**		
☐ **A1:** Appreciate the theory, history and practice of the arts		
☐ **A2:** Express themselves through various art forms or media		
☐ **English Communication**		
☐ **E1:** Use English to achieve communicative purposes appropriate to the academic and social context		
☐ **Chinese Communication**		
☐ **C1:** Students with Chinese backgrounds will be able to use Putonghua and Standard Written Chinese to achieve communicative purposes appropriate to the context, be it academic, social or professional		
☐ **C2:** Students with non-Chinese backgrounds will be able to achieve basic communicative purposes in Putonghua		
☐ **Healthy Lifestyle**		
☐ **HL1:** Recognize the importance of physical, psychological, social, and occupational wellness		
☐ **HL2:** Develop strategies to manage their lives		
☐ **HL3:** Acquire new sports skills and maintain a higher level of physical wellness through a variety of activities		

3.5 Planned Teaching and Learning Arrangement

a) Planned Class Size: _____

b) Teaching Activities:

Teaching and Learning Arrangement		Weekly Scheduled Hours/ Estimated Weekly Learning Hours	Typical Class Size	Indicate which course ILOs this teaching activity serves to achieve *(Write CILO-1, CILO-2, etc.)*	(1) Briefly outline what the course instructor/students will do in this teaching activity; and (2) explain in what ways this activity can achieve the stated course ILO
Face-to face activities	☐ Lecture*				
	☐ Tutorial*				
	☐ Seminar/Small-class*				
	☐ Laboratory*				
	*Does the above scheduled component(s) involve structured active learning activities? [19] ◯ No ◯ Yes *If yes, please specify for each scheduled component, the percentage and the type of active learning involved in the last column above*				
	☐ Others (e.g. fieldtrip, visit, etc.), *pls specify:* _____				
Online activities	☐ Online lecture videos				
	☐ Other online learning tasks, *pls specify:* _____				
The total learning hours of the course* is equivalent to _____ hours [8] ** including both scheduled instructional hours and hours for self-study activities & assessment*					

- *For course adopting a pedagogic approach other than lecture, tutorial and laboratory, please indicate the pedagogy used:*

◯ Blended learning [20] ◯ Pure online delivery [21]

◯ Experiential learning [22] ◯ Other, *pls specify:*_____

Additional information about how these teaching activities help to deliver the course ILOs

3.6 Planned Assessment Tasks

Assessment Task	**Proportion of Final Grade** (%)	**Indicate which course ILOs this task is to assess** *(Write CILO-1, CILO-2, etc.)*	**(1) Briefly outline what students are required to do in this task; and (2) explain in what ways this task can assess the stated course ILO**
☐ In-class test			
☐ Mid-term test			
☐ Final exam			
☐ Written assignment			
☐ Project report			
☐ Presentation			
☐ Learning portfolio			
☐ Course participation			
☐ Peer evaluation			
☐ Others (e.g. proctored online exam, etc.), *pls specify:* _____			

Additional information about how these assessment tasks help to assess students' achievement of the course ILOs

3.7 Textbook/Required Learning Materials

	Details *(title, author, publisher, publication year, web address etc.)*
1	
2	
3	

3.8 Recommended/Supplementary Learning Materials

	Details *(title, author, publisher, publication year, web address etc.)*
1	
2	
3	

3.9 Instructor / Course Coordinator

Role	**Name**	**Department**	**Position**
☐ Coordinator			
☐ Instructor			

3.10 Course Duration

◯ 1 term ◯ 2 terms ◯ Others, *pls specify:* _____

3.11 Planned Frequency of Offerings [Check all appropriate boxes]:

- ☐ Every Fall
- ☐ Every Winter
- ☐ Every Spring
- ☐ Every Summer
- ☐ No fixed pattern
- ☐ Other *(pls specify):* _____

3.12 Resources

Request extra resources for teaching this course? ◯ No ◯ Yes

Details about the extra resources required:

Have these extra resources been secured? ◯ No ◯ Yes

Section 4: Development, Concurrence and Approval

4.1 Contribution to the Program Learning Outcomes

(To be completed by EACH of the program(s) of study noted under Section 1.2)

☐ The course contributes to this Major/Minor* Program: _____

(Delete as appropriate)*

☐ The relevant **program learning outcomes are attached**.

☐ On behalf of this program of study, I confirm that the course will contribute appropriately to overall program learning outcomes.

	Position / Name:	Signature	Date
Program Director / Head of Department:			

☐ The course contributes to this Major/Minor* Program: _____

(Delete as appropriate)*

☐ The relevant **program learning outcomes are attached**.

☐ On behalf of this program of study, I confirm that the course will contribute appropriately to overall program learning outcomes.

	Position / Name:	Signature	Date
Program Director / Head of Department:			

4.2 Approvals

Department/Program unit level Recommendation

	Position / Name:	Signature	Date
☐ Offering Department/Program Unit: *(Please specify unit):* _____			
☐ Recommending School/IPO: *(Please specify):* _____			

School-level Concurrence

	Name of School/Unit	Position / Name	Signature	Date
☐				
☐				
☐				
☐				
☐				

Notes:

(1) Academic Administration
Information in these sections will be considered by the Committee as a basis for approval of the proposed new course.

(2) Additional Information
Data in this section does not require approval of the Committee. It is presented to the Committee only as supplementary information to assist the Committee in evaluation of the course.

(3) Department Code and Subject Area
They refer to the offering department and the discipline of the course. For instance, a Global Business course should put "SBM" in the field of "Department Code" and "GBUS" in "Subject Area".

(4) Course Number
1xxx = an introductory course; 2xxx = an intermediate course; 3xxx/4xxx = an advanced course / course for specialist study

(5) Previous Course Code
Applicable only if the course had been offered before as a special topics course.

(6) Full Title
The title will appear in all official documents. Max. length = 100 characters (spaces included)

(7) Abbreviated Title
Should be a direct abbreviation of the title. An abbreviated title must be provided when the full title exceeds 30 characters (including space).

(8) Course Credits and Total Learning Hours
In the assignment of credits to courses, reference should be made to the 'benchmark' assignment of 3 credits for courses with 3 instructional hours per week for a full term, and requiring 2 hours per week of self-study activities for each instructional hour. This benchmark implies a total of 40 to 50 learning hours per credit. For this calculation, 'instructional hours' means all required, scheduled hours of instruction.
It should be noted that the hours for all scheduled components and other teaching activities may not add up to the total learning hours of a course, for the reason that students may be expected to engage in other self-study activities and/or assessment that are not listed as teaching arrangements under Section 2.3

(9) Catalog Description
Provide an outline of the course in about 30 words (3 lines) (Max word count = 150). See the current issue of Course Catalog for reference formats..

(10) Grading Type
The default grading type for courses is letter grades. If a course adopts a grading type other than letter grades, such as PP, P/F or DI/PA/F, it will be specified in the course description for easy reference by students.

(11) Prerequisite(s)
A prerequisite may be an attainment in public examination or an existing/previously offered course (including special topics courses). The prerequisite must be obtained, or taken and passed before a student may register for credit in this (proposed) course.

(12) Corequisite(s)
A corequisite is a course which must be taken prior to, or at the same time as, the specified course.

(13) Exclusion(s)
Students who have achieved a specified attainment in public examinations or have completed, or are registered in, a specified course may not register for credit in an excluded course.

(14) Co-listing and Multi-coding
Co-listed courses are two or more courses that share the most or all lectures and other learning activities, but differ at least partially in assessment schemes or assignments under each of the courses. Proposal that involves co-listing request should be accompanied by a separate, duly completed form for co-listing and submitted to the CUS Secretariat.
A multi-coded course is a single course that is offered under two or more course codes with identical course content and assessment scheme. Proposal that involves multi-coding request should include in section 1.3 the necessary supporting information, i.e. (i) rationale for the multi-coding request including evidence that the course has sufficient elements in the subject area of the new code requested, and that the requested new code could benefit the students by reflecting their affiliation with a particular discipline; and (ii) confirmation that students registered under different codes of the course are treated identically with only one set of course content and assessment arrangement..

(15) Other Enrollment Restrictions
Enrollment restrictions are set to restrict the class enrollment to a specified group of students (e.g. "For Science students in their second year of study", "For GBUS students only", "For students with instructor's approval only") on top of prerequisites/corequisites. For most cases, departments/units do not need to set fixed enrollment restrictions and tick the box "No". They can work out a "reserved quota" with ARR, Academic Registry per each time of course offering to prioritize certain groups of students (e.g. students studying relevant major or minor programs).
If enrollment restrictions are set, please tick the box "Yes" and specify what enrollment restrictions are. In case of changes to the enrollment restrictions, a course change proposal should be submitted.

(16) Medium of Instruction/Materials
Exceptions to the general University policy that English is the medium of instruction will only be permitted when the courses are related to the area of Chinese studies and are approved by the School of Humanities and Social Science. Courses approved to be taught in Chinese will carry a [PU] or [CA] notation in the course description, which indicates the spoken language used in teaching: [PU] stands for Putonghua; and [CA] for Cantonese.
Courses marked with a [C] in the catalog description are not taught in Chinese but may require students to read materials in Chinese.
Some courses may use different medium of instruction/materials, either in Chinese or English, for different sections. They will be denoted by a combination of [CA], [PU], [C] and [EN]. Students are expected to check the medium of instruction/materials to be used before course enrollment.

(17) Allow course repetition for credits
In general, students who have passed a course may not repeat the same course. However, for some courses such as special topics, seminars, directed studies, service learning, study trips, internships and so forth, departments may propose that the course may be repeated for credit.

(18) Rationale for introducing this course and other relevant information
Other relevant information includes, *e.g., justification for using language other than English as the medium of instruction/materials, the reason for allowing students to repeat the course for credits, rationale for requesting multi-coding arrangement.*

(19) Structured Face-to-face Active Learning Activities

Structured face-to-face active learning activities generally include in-class small group discussions, small group problem solving sessions, presentations with peer-evaluation, hands-on prototype building and design, and other learning activities where students are engaged in very active learning modes while the instructor(s) and TA(s) play the facilitator role. Tutorials where instructors or TAs teach problem solving and give examples on the board, or laboratory sessions with very procedural step-by-step experiments in which students note observations and record data, and complete a lab report after the lab are not considered as structured face-to-face active learning.

(20) Blended Learning *(subject to the final wordings of definitions to be adopted in the UAA exercise)*

At HKUST, blended learning usually refers as a blend of online and face-to-face teaching, where the online component may be in form of online video lectures/demonstrations, and/or other online activities. In accordance with the guideline approved by the Senate in April 2015, the total hours of face-to-face teaching activities (such as classroom, lab and tutorial) of a blended learning course should be at least 50% of such activities as offered in ordinary in-class mode.

For this type of course, concurrence should be sought from the Center for Education Innovation.

(21) Pure Online Delivery

For credit bearing online courses, undergraduate students are allowed to use at most 6 credits earned from these courses to count towards the graduation requirements, according to the policy approved by the Senate in June 2017.

For this type of course, concurrence should be sought from the Center for Education Innovation.

(22) Experiential Learning *(subject to the final wordings of definitions to be adopted in the UAA exercise)*

Experiential learning is a process which students are involved in the hands-on experiences and through which students can develop knowledge, skills, and attitudes. Learning considered "experiential" contains the following elements:

- Authentic and real-life experiences for students to engage intellectually, emotionally, socially, and/or physically
- Opportunities for students to pose questions, investigate, experiment, take initiative, make decisions, and be accountable for the results
- Reflective processes that lead to analysis, critical thinking, and synthesis
- A well-designed learning experience that allows students to learn from natural consequences, mistakes, and successes

For this type of course, concurrence should be sought from the Center for Education Innovation.

CUS/13 January 2021
Agenda Item 8
File: 05/21

COMMITTEE ON UNDERGRADUATE STUDIES

Paper for: Discussion/Decision

Title: **Major Program Changes to the BSc Program in Integrative Systems and Design**

Purpose: The School of Engineering submits a program change proposal for the BSc program in Integrative Systems and Design. The program proposal is considered a major change and presented to CUS for consideration and endorsement

Submitted by: School of Engineering

Prepared by: CUS Secretariat

BACKGROUND

1. In accordance with the guidelines laid down by the Senate, program change proposals that are identified by the CUS Secretariat as major changes in nature should be presented to the CUS for consideration and to the Senate for approval.

THE PROPOSAL

2. The BSc program in Integrative Systems and Design (ISDN), offered by the Division of Integrative Systems & Design (ISD), was approved by the Senate for introduction in 2018-19. ISD would like to propose a few key changes to enhance the program curriculum.

3. One of the major proposed curricular changes is the addition of three required fundamental technical courses, totaling 10 credits, as faculty members observe the need for second-year students to possess a common set of technical skills which are important for a good design of a system.

4. In connection with the addition of the required fundamental technical courses, the credits for Product Management and Entrepreneurship and Project-Related electives are reduced from 9 to 6 and from 22 to 15, respectively, to keep the number of credits for the curriculum to 120 credits. The reduction of credits for the Product Management and Entrepreneurship would not have much impact on the students' capabilities; and the reduction for Project-Related electives would be compensated by the addition of the required fundamental technical courses.

5. The proposal also comes with minor adjustments in the required fundamental courses and required design fundamental courses and design electives (see Appendix).

6. Despite the above changes, the total required credits for ISDN would be maintained at 120 credits (upon deduction of the allowable 9 reused credits of Common Core).

7. The full proposal presenting the details of the changes and the revised curricula of ISDN are given in the Appendix.

8. The curricula changes are proposed to take effect from Fall 2021-22 and be applicable to the student cohort of 2020-21 and thereafter. The new curriculum was presented to the 20 Year-1 students from 2020-21 cohort. Written consent about agreeing to the proposed changes was obtained from 19 students, except for the student who is on study leave from 7 September to 31 August 2022. The summary of written consent collected and a sample of the written consent are provided at Attachment to the Appendix.

ACTION SOUGHT

9. CUS is invited to consider and recommend, as appropriate, to the Senate for approval the proposed major program changes to ISDN as presented in the Appendix for implementation in Fall 2021-22.

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Changes to Existing Undergraduate Program

Section 1: General Information

a) The program is a : Major ◉ Minor ○ Other ○

b) Title: Integrative Systems and Design

c) School/IPO recommending the change(s): School of Engineering

d) Offering Department(s): Division of Integrative Systems & Design

e) Effective term for the change(s) proposed: Fall 2021-22

f) Changes proposed applicable to student cohorts of: Intake of Fall 2020 and onward

Section 2: Submission and Recommendation

Proposal Submission and Recommendation

Offering Department/Program Unit	*Position*	*Name*	*Date*
Division of Integrative Systems & Design	Head of Dept	Prof Chi Ying TSUI	30-Nov-20

Recommending School/IPO	*Position*	*Name*	*Date*
School of Engineering	Associate Dean	Prof Philip K.T. MOK	30-Dec-20

Concurrence

School/Dept/Program Unit	*Position*	*Name*	*Date*
Dept of Computer Science and Engineering	UG Coordinator	Prof Qiong LUO	4-Dec-20
Center for Language Education	Director	Prof Melinda WHONG	4-Dec-20
Dept of Mathematics	UG Coordinator	Dr Tsz-Kin LAM	3-Dec-20
Dept of Physics	UG Coordinator	Prof Bradley A FOREMAN	16-Dec-20
Student Innovation for Global Health Technology	Director	Prof Ying CHAU	8-Dec-20
Dept of Industrial Engineering & Decision Analytics	UG Coordinator	Prof Jiheng ZHANG	3-Dec-20
Enterpreneurship (SSCI)	Associate Dean	Prof Pakwo LEUNG	3-Dec-20
Enterpreneurship (SBM)	Associate Dean	Prof Allen HUANG	7-Dec-20
Dept of Finance	UG Coordinator	Prof Ekkachai SAENYASIRI	3-Dec-20
Dept of Information Systems, Business Statistics & Operations Management - IS	UG Coordinator	Prof Garvin Percy DIAS	3-Dec-20
Dept of Information Systems, Business Statistics & Operations Management - OM	Head of Dept	Prof Shaohui ZHENG	3-Dec-20
Dept of Marketing	UG Coordinator	Prof Ralf VAN DER LANS	16-Dec-20

Section 3: Recommended Change

The following changes are recommended:

☐ Change to the program title

New program title: _____

☐ Change in enrollment requirements

Please specify the change:

☐ Addition/deletion* of an Option, track or concentration of a major *(*delete as appropriate)*

Name of Option/track/concentration:

☒ Changes to required course(s)

ISDN 2601- Internet of Things: From Component Skills to System Integration (3 credits)	■ Add	☐ Remove
ISDN 2602 - Mechatronic Systems Design with Embedded Computing (3 credits)	■ Add	• Remove
ISDN 3601 - Mechanics and Materials (4 credits)	■ Add	• Remove
ISDN2700 *(Previous Course Code: ISDN3200)* - Graphic Design (2 credits)	■ Add	• Remove
PHYS 1001 - Physics and the Modern Society	• Add	■ Remove

☒ Changes to elective requirements

ISDN 4330 - Ergonomics in Design (2 credits)	■ Add	☐ Remove
ISDN3200 - Graphic Design (2 credits)	☐ Add	■ Remove
	☐ Add	☐ Remove
	☐ Add	☐ Remove
	☐ Add	☐ Remove
	☐ Add	☐ Remove

☒ Credit changes

Course Code	Credit increase (+) or decrease (-)	Final Credit
Product Management and Entrepreneurship electives	-3	6
Project-related electives	-7	15
Design Electives	-2	3

☒ Other changes

Course Code	Changes
ISDN 2300	Change Full title from "Digital Design" to "Introduction to 3D design" and Catalog description (with effective from Fall 21-22 stated in the course change proposal)
ISDN 3200	Change to ISDN 2700

Section 4: Documentation Required

		Please indicate if documentation is attached
a)	Reasons for proposing the changes	☒
b)	Feedback from stakeholders, including student feedback	☒
c)	Revised curriculum	☒
d)	Revised sample student pathways	☒
e)	Impact on educational objectives and intended learning outcomes	☐
f)	Transitional arrangements	☐

Reasons for proposing the changes

1. **Addition of three required fundamental technical courses (ISDN 2601, 2602 and 3601)**
   The addition of these three fundamental technical courses is a result of our annual retreat on UG curriculum held on June 19, 2020. Faculty members discovered that our second-year students need a common set of technical skills, such as IoT, basic knowledge of mechatronic systems, materials, and materials properties as well as the responses of materials when they are subjected to loads. These skills are very important for a good design of a system.

2. **Reduction of credits for Product Management and Entrepreneurship electives and Project-Related electives.**
   The credits of Product Management and Entrepreneurship electives and Project-Related electives are reduced from 9 to 6 and from 22 to 15, respectively because we add 10 credits of required fundamental technical courses and we want to keep the number of credits for the curriculum to 120 credits. The reduction of 3 credits for the product management and entrepreneurship electives was discussed by the UG Curriculum Committee which supports this decision because product management and entrepreneurship is a strong component in the yearlong project course, especially the 4th year project course. Hence, the reduction of 3 credits would not have much impact on the students' capabilities in this area. The reduction of 7 credits for the project-related electives would be more than compensated by an increase of 10 credits in fundamental technical skills. Students will be equipped with the necessary technical skills to handle the year-long projects.

3. **Changing ISDN 3200 to ISDN 2700. Addition of ISDN 2700 as a required design fundamental course and Reduction of credits in Design Electives**
   The change of ISDN 3200 to ISDN 2700 is proposed because this course will be offered to 2nd year students instead of 3rd year students.

   Graphic design, which involves effective visualization of communication concepts, is one of the important components in visual communication. ISD students who possess graphic communication skill will show their new product ideas and new products much more effectively.

   As ISDN 2700 is proposed to be changed from an elective to a required course (2 credits) and to keep the existing number of credits for the curriculum to be 120 credits, the credits for design electives will be reduced from 5 to 3 credits.

4. **Addition of ISDN 4330 as a design elective**
   The addition of ISDN 4330 will provide students more choices in the design elective.

5. **Removal of PHYS 1001 as one of the choices for the required fundamental courses**

   The removal of PHYS 1001 as one of the choices for the fundamental courses because ISDN 3601 requires PHYS 1111 or PHYS 1112 or PHYS1312 as a pre-requisite. This decision should make it clear to students that they should not take PHYS 1001 if they are qualified to take PHYS 1111 or PHYS 1112 or PHYS1312.

Feedback from stakeholders

The proposed new curriculum was presented to the 1st year students on Dec. 9, 2020. We have not received any objection from the students to the new curriculum. (Attachment)

BSc ISD Program curriculum (Total 120 credits)

(1) University Common Core: 36 credits

Common Core Areas	Credits	
	Required	Electives
Humanities (H)	6	6
Social Analysis (SA)	6	
Science and Technology (S&T)	6	
Quantitative Reasoning (QR)	3	
English Communication	6	Nil
Chinese Communication	3	Nil
Healthy Lifestyle	0	Nil
Total credits	36	

(2) Additional English Courses 6 credits

Course No.	Course Title	Credit(s)
LANG 2030	Technical Communication I	3
LANG 4032	Technical Communication II for IEDA and ISDN	3
Total credits		6

(3) Required Fundamental Courses 12 credits

Course No.	Course Title	Credit	Credits after common core course doubling counting
ENGG 1010	Academic Orientation	0	0
*MATH 1013	Calculus IB	3**	0
*,#MATH 1014	Calculus II	3	3
PHYS~~1001~~/1111/ 1112/1312	~~Physics and the Modern Society~~/General Physics I/General Physics I with Calculus/ Honors General Physics I	3**	0
COMP 1021/1022P	Introduction to Computer Science/Introduction to Computing with Java	3**	0
Total credits		12	3

** These are common core course credits

*Note: [(MATH 1012 OR MATH 1013 OR MATH 1023) AND (MATH 1014 OR MATH 1024)] OR [MATH 1020]

MATH 1014 can be replaced by another COMP course upon approval of the advisor.

(4) Required Design Fundamental Courses: 18 credits

Course No.	Course Title	Credit(s)
ISDN 1002	Redefining problems for the real needs	3
ISDN 1004	Sketching	1
ISDN 1006	Human-centered Innovation	3
ISDN 2200	Systems Thinking and Design	3
ISDN 2300	Introduction to 3D Design	3
ISDN 2400	Physical Prototyping	3
ISDN 2700 *[Previous Course Code: ISDN3200]*	Graphic Design	2
Total credits		18

(5) Required Technical Fundamental Courses: 10 credits

Course No.	Course Title	Credit(s)
ISDN 2601	Internet of Things: From Component Skills to System Integration	3
ISDN 2602	Mechatronic Systems Design with Embedded Computing	3
ISDN 3601	Mechanics and Materials	4

(6) Elective Design Courses – 3 credits from the list below

Course No.	Course Title	Credit(s)
**ENGG 1300	Design Thinking for Health Innovation	3
**ISDN 2000	What is Design and Why Design (a Common Core course)	3
ISDN 2100	Storytelling in Design	1
ISDN 2500	Introduction to Systems Design Engineering	3
ISDN 3100	Design for Sustainability	2
ISDN 3300	Interaction Design	2
ISDN 4300	Materials Selection in Product Design	3
ISDN 4320	Design Thinking	3
ISDN 4330	Ergonomics in Design	2

IEDA 2150	Product Design	3
IEDA 4650	Engineering Psychology	3

(7) Product Management and Entrepreneurship Elective Courses – 6 credits from the list below

Course No.	Course Title	Credit(s)
ENTR 3100	Industrial Landscape: Understanding the Elements to Start a Business	3
FINA 2203	Fundamentals of Business Finance	3
IEDA 4170	Product Design and Lifecycle Management	3
ISDN 3350	Global Product Development	3
ISDN 3360	From Product Innovations to Successful Technology Startups	3
ISDN 4200	Product Management	3
ISOM 1380	Technology and Innovation: Social and Business Perspectives	3
ISOM 2030	Business Protections for Innovations	3
ISOM 2700	Operations Management	3
ISOM 4020	Innovation Management and Technology Entrepreneurship	3
MARK 2120	Marketing Management	3

(8) Project-based Courses – 23 credits

Course No.	Course Title	Credit(s)
ISDN- 2001	Second Year Design Project I	1
ISDN- 2002	Second Year Design Project II	4
ISDN- 3001	Third Year Design Project I	4
ISDN- 3002	Third Year Design Project II	4
ISDN- 4001	Final year Design Project I	5
ISDN- 4002	Final year Design Project II	5
Total credits		23

(9) Project-related Elective Courses – 15 credits

Summary of requirements

Requirement	Credits	Credits after common core course doubling counting
(1) University Common Core	36	36
(2) Additional English Courses	6	6
(3) Required Fundamental Courses	12	3
(4) Required Design Fundamental Courses	18	18
(5) Required Technical Fundamental Courses	10	10
(6) Elective Design Courses	3	3
(7) Product Management and Entrepreneurship Elective Courses	6	6
(8) Project-based Courses	23	23
(9) Project-related Elective Courses	15	15
Total	**129**	**120**

(For students admitted in 2020-21 under the 4-year degree)

BSc in Integrative Systems and Design

In addition to the requirements of their major programs, students are required to complete the University requirements for graduation. For details please refer to the respective section on this website.

Some courses can be used to fulfill both Major and University Common Core Requirements. Students may reuse a maximum of 9 credits of these courses to count towards both Requirements.

Students may use no more than 6 credits earned from courses offered in pure online delivery mode to satisfy the graduation requirements of a degree program. This 6-credit limit does not apply to credits obtained through the credit transfer procedures of the University.

For students graduating with an additional major, they must take all the requirements specified for that major, within which they must complete at least 20 single-counted credits. These 20 credits cannot be used to fulfill any other requirements for graduation except for the 120-credit degree requirement.

Major Requirements

Required Course(s)

			Credit(s) attained
ISDN	1002	Redefining Problems for the Real Needs	3
ISDN	1004	Sketching	1
ISDN	1006	Human-centered Innovation	3
ISDN	2001	Second Year Design Project I	1
ISDN	2002	Second Year Design Project II	4
ISDN	2200	Systems Thinking and Design	3
ISDN	2300	~~Digital Design~~ Introduction to 3D design (effective from Spring 20-21)	3
ISDN	2400	Physical Prototyping	3
ISDN	3001	Third Year Design Project I	4
ISDN	3002	Third Year Design Project II	4
ISDN	4001	Final Year Design Project I	5
ISDN	4002	Final Year Design Project II	5
COMP		Note: COMP 1021 OR COMP 1022P	3
COMP	1021	Introduction to Computer Science	3
COMP	1022P	Introduction to Computing with Java	3
ENGG	1010	Academic Orientation	0
LANG	2030	Technical Communication I	3
LANG	4032	Technical Communication II for IEDA and ISDN	3
MATH		Note: [MATH 1012 OR MATH 1013 OR MATH 1023 AND (MATH 1014 OR MATH 1024)] OR [MATH 1020] (Subject to approval of the program office, MATH 1014/1024 may be replaced by a COMP course)	4-7
MATH	1012	Calculus IA	4
MATH	1013	Calculus IB	3
ISDN	2601	Internet of Things : From Component Skills to System Integration	3
ISDN	2602	Mechatronic Systems Design with Embedded Computing	3
ISDN	3601	Mechanics and Materials	4

Add

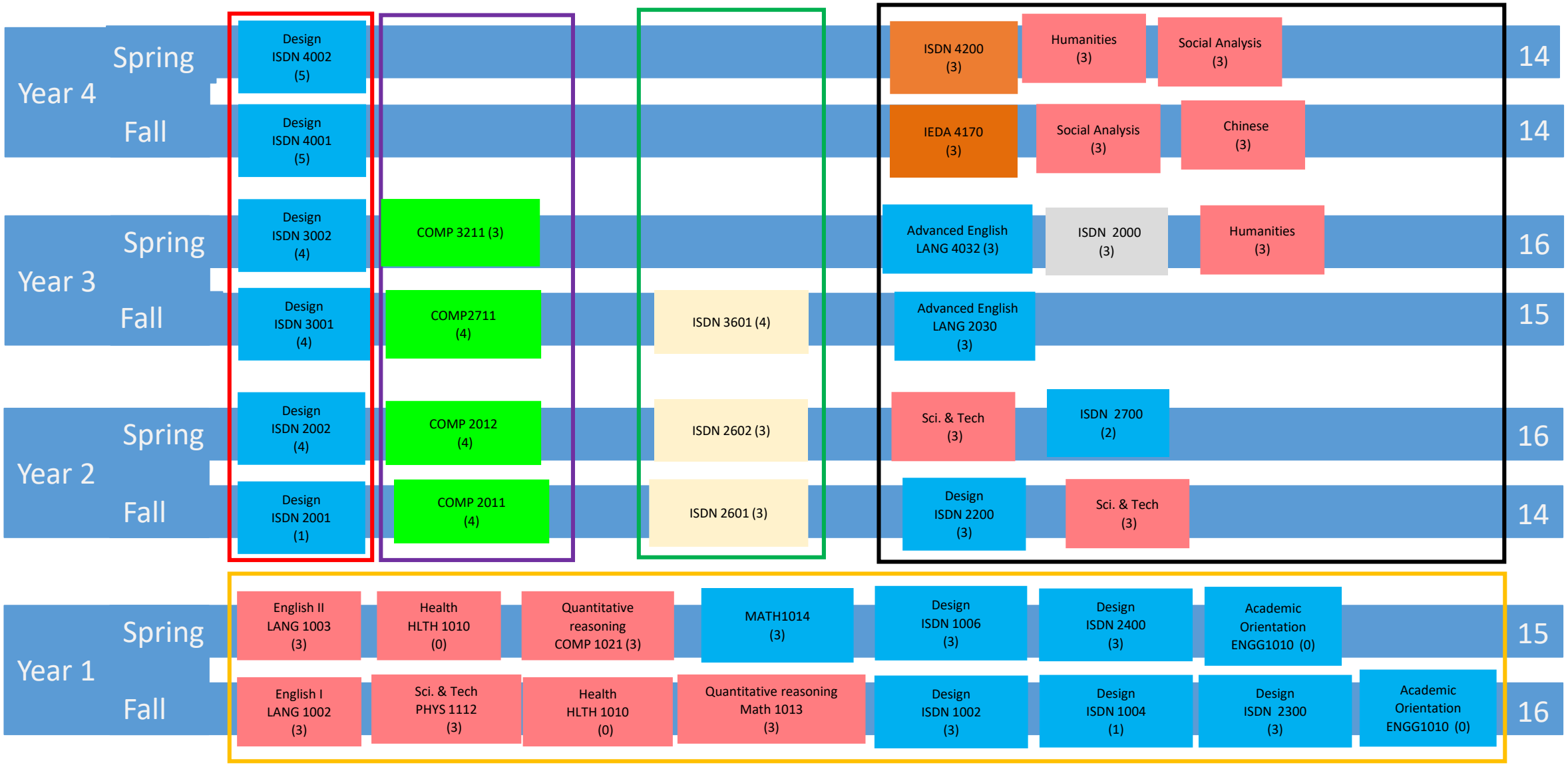
Add:ISDN 2700 Graphic Design 2

MATH	1014	Calculus II	3
MATH	1020	Accelerated Calculus	4
MATH	1023	Honors Calculus I	3
MATH	1024	Honors Calculus II	3
PHYS		Note: ~~PHYS 1001 OR~~ PHYS 1111 OR PHYS 1112 OR PHYS 1312	3
~~PHYS~~	~~1001~~	~~Physics and the Modern Society~~	~~3~~
PHYS	1111	General Physics I	3
PHYS	1112	General Physics I with Calculus	3
PHYS	1312	Honors General Physics I	3

Elective(s)

			Minimum credit(s) required	
ISDN/ENGG/ IEDA		Design Electives (Courses from the specified elective list)	~~5~~	3 (Reduced by 2 credits)
ISDN	2000	What is Design and Why Design?	3	
ISDN	2100	Storytelling in Design	1	
ISDN	2500	Introduction to Systems Design Engineering	3	
ISDN	3100	Design for Sustainability	2	
~~ISDN~~	~~3200~~	~~Graphic Design~~	~~2~~	
ISDN	3300	Interaction Design	2	
ISDN	4300	Materials Selection in Product Design	3	
ISDN	4320	Design Thinking	3	
ENGG	1300	Design Thinking for Health Innovation	3	
IEDA	2150	Product Design	3	
IEDA	4650	Engineering Psychology	3	
ISDN	4330	Ergonomics in Design	2	
ISDN/ENTR/ IEDA/SBM		Product Management and Entrepreneurship Electives (Courses from the specified elective list)	~~9~~	6 (Reduced by 3 credits)
ISDN	3350	Global Product Development	3	
ISDN	3360	From Product Innovations to Successful Technology Startups	3	
ISDN	4200	Product Management	3	
ENTR	3100	Industrial Landscape: Understanding the Elements to Start a Business	3	
IEDA	4170	Product Design and Lifecycle Management	3	
FINA	2203	Fundamentals of Business Finance	3	
ISOM	1380	Technology and Innovation: Social and Business Perspectives	3	
ISOM	2030	Business Protections for Innovations	3	
ISOM	2700	Operations Management	3	
ISOM	4020	Innovation Management and Technology Entrepreneurship	3	
MARK	2120	Marketing Management	3	
ISDN		Project-related Electives (Courses from the specified elective list. Students should seek approval of their advisor for the choices of courses.)	~~22~~	15 (Reduced by 7 credits)

Normative Study pattern for an ISD student (For 20-21 intake and onwards)



The Hong Kong University of Science and Technology

School of Engineering

An Example on Student's Pathway (as of Fall 2021-22)

<< Declaration of major

School:		**School of Engineering**		Student's Pathways (i.e. Study Pattern)									
Department:		**Division of Integrative Systems and Design**		Pathway 1									
Program:		**BSc in Integrative Systems and Design**		Background: HKDSE 4 Core + 2 Elec□ Profile:									
Course Offering□ Dept□ (course code prefix)	Course Code	Course Title / Courses List	Credits	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	**Sub-total**	**Remarks**
Major Requirements													
Major Required Courses and Electives													
ISDN	1002	Redefining Problems for the Real Needs	3	3								3	
ISDN	1004	Sketching	1	1								1	
ISDN	1006	Human-centered Innovation	3		3							3	
ISDN	2001	Second Year Design Project I	1			1						1	
ISDN	2002	Second Year Design Project II	4				4					4	
ISDN	2200	Systems Thinking and Design	3			3						3	
ISDN	2300	Digital Design	3	3								3	
ISDN	2400	Physical Prototyping	3		3							3	
ISDN	2601	Internet of Things : From Component Skills to System Integration	3			3						3	
ISDN	2602	Mechatronic Systems Design with Embedded Computing	3				3					3	
ISDN	2700	Graphic Design	2				2					2	
ISDN	3001	Third Year Design Project I	4					4				4	
ISDN	3002	Third Year Design Project II	4						4			4	
ISDN	3601	Mechanics and Materials	4					4				4	
ISDN	4001	Final Year Design Project I	5							5		5	
ISDN	4002	Final Year Design Project II	5								5	5	
COMP□ COMP□ COMP	 1021□ 1022P	Note: COMP 1021 OR COMP 1022P□ Introduction to Computer Science□ Introduction to Computing with Java	3 3 3		3*							3	* Double count as common core course
ENGG	1010	Academic Orientation	0	0	0							0	
LANG	2030	Technical Communication I	3					3				3	
LANG	4032	Technical Communication II for IEDA and ISDN	3						3			3	
MATH□ MATH□ MATH□ MATH□ MATH□ MATH□ MATH	 1012□ 1013□ 1014□ 1020□ 1023□ 1024	Note: [MATH 1012 OR MATH 1013 OR MATH 1023 AND□ (MATH 1014 OR MATH 1024)] OR [MATH 1020] (Subject□ to approval of the program office, MATH 1014/1024 may be□ replaced by a COMP course) □ Calculus IA□ Calculus IB□ Calculus II□ Accelerated Calculus□ Honors Calculus I□ Honors Calculus II	4-7 4 3 3 4 3 3	3*	3							3	1) *MATH1013 - Double count as common core course 2) For students who chose the technical stream of Computer Science, MATH1014 is not a compulsory course.
PHYS□ ~~PHYS~~□ PHYS□ PHYS□ PHYS	 ~~1001~~□ 1111□ 1112□ 1312	Note: ~~PHYS 1001 OR~~ PHYS 1111 OR PHYS 1112 OR□ PHYS 1312 □ ~~Physics and the Modern Society~~□ General Physics I□ General Physics I with Calculus□ Honors General Physics I	3 ~~3~~ 3 3 3	3*								3	* Double count as common core course
ISDN		Project-related Electives (Courses from the specified elective list. Students should seek approval of their advisor for the choices of courses.)	15			4	4	4	3			15	
ISDN/ENGG/IEDA		Design Electives (Courses from the specified elective list)	3						3			3	
ISDN/ENTR/IEDA/SBM		Product Management and Entrepreneurship Electives (Courses from the specified elective list)	6							3	3	6	
Required credits for Major Required Courses and Electives			91-94									90	
University CORE													
CORE	C3 - C12	U CORE - Others	30	6	3	3	3		3	6	6	30	
CORE	C1 & C2	U CORE - English Language	6	3	3							6	
Sub-total for University CORE			36									36	
				Term load (excl. free credits)									
				16	15	14	16	15	16	14	14		
				120 #									

<< Declaration of major

Notes:

* Courses offered in winter term

To graduate, students should complete at least 120 credits in approved courses. They may need to take courses additional to the required and elective courses as specified above to meet this minimum credit requiremer

>> The content of this example is not necessarily equivalent to a complete list of graduation requirements of the program. Students should refer to the Program Catalog/UG Curriculum Handbook for updated graduation requirements. For up-to-date information on course offering and scheduling, students should check it out from respective School and Department.

Attachment to Appendix

as of 16 Dec 2020

Progress of Collecting Written Consent from ISD Students (20-21 cohort)						
Student ID	**Student Name**	**Cohort Term**	**Current Academic Plan**	**Current Program Status**	**Provided Written Consent?**	**Remarks**
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Leave	N	- Due to the commitment of National Service for Singapore Armed Forces, the student is taking study leave from 7 Sept 2020 to 31 Aug 2022. - ISD sent email to inform him about the proposed program changes, but his written consent is outstanding.
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	
[redacted]	[redacted]	2020-21 Fall	BSc(ISD): 4Y	Active in Program	Y	- The student is taking PHYS1001 in Fall 20-21 - She provided her written consent and was well informed about the proposed program changes.

Agreement on the New Curriculum of the BSc in ISDN program

I agree with the changes made by the Division of Integrative Systems and Design (ISD) on the BSc ISDN program and I am well informed with the changes listed in the attached proposal and its impact to the students of 2020 21 cohort.

Student Name: [redacted]

Signature: [redacted]

Date: 10/12/2020

CUS/13 January 2021
Agenda Item 9
File: 06/21

COMMITTEE ON UNDERGRADUATE STUDIES

Paper for: Discussion/Decision

Title: **New Courses and Major Course Changes**

Purpose: To approve proposals of introducing new courses and major course changes for implementation in Spring 2020-21 and beyond

Submitted by: Schools

Prepared by: CUS Secretariat

BACKGROUND

1. The Senate, at its 5th meeting held on 17 December 1991, delegated the authority to the CUS to approve new undergraduate courses with the proviso that approvals and disapprovals be reported to the Senate for information.

NEW COURSES AND MAJOR COURSE CHANGES

2. The CUS Secretariat has received 13 proposals for introducing new courses and making major changes to existing courses.

School	Course code	Title	
New Courses (*Appendix 1)**			
SSCI	CHEM 2550 (2)	Synthetic Chemistry Laboratory I	*(2 credits)*
	CHEM 2555 (2)	Molecular Characterization Chemistry Laboratory I	*(2 credits)*
SENG	CIVL 4560 (2)	Urban Hydroclimate and the Built Environment	*(3 credits)*
	COMP 2211 (2)	Exploring Artificial Intelligence	*(3 credits)*
	ELEC 4210 (1)	Control System Design	*(3 credits)*
	ENEG 4210 (1)	Optimization of Energy Systems	*(3 credits)*
	ISDN 2601 (2)	Internet of Things: From Component Skills to System Integration	*(3 credits)*
	ISDN 2602 (3)	Mechatronic Systems Design with Embedded Computing	*(3 credits)*
	ISDN 3601 (2)	Mechanics and Materials	*(4 credits)*
	ISDN 4330 (2)	Ergonomics in Design	*(2 credits*

Major Course Changes ***(Appendix 2a - Changes made to catalog data)****			
SENG	ISDN 4000 (1)	Special Topics	*(1-3 credits)*
	ISDN 3200 (2)	Graphic Design	*(2 credits)*
(Appendix 2b – Course to adopt blended learning mode)*#			
SBM	ISOM 3260 (2)	Database Design and Administration	*(4 credits)*

(1) to take effect in Spring 2020-21
(2) to take effect in Fall 2021-22
(3) to take effect in Spring 2021-22

** Starred items NOT to be discussed at the meeting, unless they are un-starred per members' request.*
The proposal for adopting blended learning as the mode of delivery has been reviewed and endorsed by the Committee on Teaching and Learning Innovation (CTLI) under the Center for Education Innovation (CEI).

3. All proposals have been vetted by the CUS Secretariat and all starred items will be approved directly without further deliberation, unless members request to un-star the proposed course(s) for discussion. Details of the above new courses and major course changes are provided in Appendices 1 and 2 respectively. The appendices are available at http://ugadmin.ust.hk/cus-documents/cus167/.

ACTION SOUGHT

4. CUS is invited to consider, and approve as appropriate, (a) 10 new undergraduate courses and (b) major course changes for 3 courses for implementation in Spring 2020-21 and beyond as presented in Appendices 1 and 2 respectively.

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Approval of Undergraduate Course

Section 1: Academic Administration [1]

1.1 Catalog

a) Course to be effective from: Academic Year 2021-2022 Term Fall

b) Department Code[3]: CHEM Subject Area[3]: ***CHEM*** Course Number [4]: **2550**

Previous Course Code[5]:

c) Full Title[6] *(max. 100 characters)*: Synthetic Chemistry Laboratory I

d) Abbreviated Title[7] *(max. 30 characters)*:

e) Course Credits[8]: (X) Fixed: 2 ( ) Range: From To

f) Catalog Description[9] *(word limit = 150)*:

This is the laboratory course designed for students who enrolled in CHEM 2110 Organic Chemistry I and CHEM 2210 Inorganic Chemistry I. It includes a series of organic and inorganic experiments related to the theory learnt in the lecture courses. Students will be trained to perform a wide range of basic synthetic chemistry laboratory techniques, operate chemical instruments in laboratory, relate the physical and chemical principles and theory in practice and develop their data interpretation and analyzing skills. For CHEM students only.

g) Grading Type[10]: (X) Letter Grades ( ) Distinction/Credit/Pass/Fail ( ) Pass/ Fail ( ) Distinction/Pass/Fail [ ] Others *(please specify)*:

h) [x] Prerequisites[11]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained
CHEM 1050	Lab for General Chemistry I

i) [x] Corequisites[12]:

Course Code	Course Title
CHEM2110	Organic Chemistry I
CHEM2210	Inorganic Chemistry I

j) [x] Exclusions[13]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained
CHEM 2155	Fundamental Organic Chemistry Lab

k) [ ] Co-listing[14]: [ ] Multi-coding[14]:

Course Code	Course Title

l) Other Enrollment Restrictions[15] ( ) No ( ) Yes

[ ] Instructor's approval required

[x] Restricted to specified student group(s) *(please specify, e.g. year and program of study)*: For CHEM Major students

[ ] Others *(please specify)*:

m) Medium of Instruction/Materials[16]: (x) English ( ) Others, (Pls specify and provide a justification in Section 1.3): _____

n) Allow course repetition for credit[17]: (x) No ( ) Yes

1.2 *Contribution of course to Programs of Study* [Check all appropriate boxes below]

[x] Major

Program of Study	As		
BSc. in Chemistry	[x] Required Course	[ ] Elective	[ ] Prerequisite

[ ] Minor

Program of Study	As		
	[ ] Required Course	[ ] Elective	[ ] Prerequisite

[ ] Common Core

[ ] Others (pls specify):

Program of Study	As		
	[ ] Required Course	[ ] Elective	[ ] Prerequisite

1.3 *Rationale for Introducing this course and other relevant information* [18]

This course was designed and introduced to suit chemistry major students who are enrolling in Organic Chemistry I and Inorganic Chemistry I, in which it provides students some hands-on experience in organic synthesis and metal complexes formation. Various laboratory methods of characterization of organic and inorganic substances will be also introduced.

Section 2A: Learning Outcomes and Alignment *(for courses not proposed to be Common Core Courses)*

2.1 *Key Course Intended Learning Outcomes (Should not normally exceed six or eight outcomes)*

Upon completion of this course, students are expected to be able to do the following:

	Course ILOs	**Nature of the learning outcomes** *(A - Knowledge/Content Related; B - Academic Skills/Competencies; C - Others)*
1	Describe the fundamentals of organic and inorganic chemistry.	A
2	Assess and manage the risks of organic and inorganic chemical substances and laboratory procedures.	A, B
3	Conduct analysis and interpretation of experimental data of synthetic chemistry.	B
4	Conduct standard laboratory procedures involved in fundamental chemical synthesis and instrumental work.	B
5	Operate a range of chemical instrumentation.	B
6	Work independently and collaborate in team work	C
7		
8		

2.2 *Contribution of Learning Outcomes to Programs of Study identified in Section 1.2*

(Please also complete Section 4.1)

	Program of study 1: B Sc in Chemistry **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	Describe the fundamentals of chemistry including the structure, reactivity and properties of chemical substances and the states of matter	CILO 1
2	Assess and manage the risks and hazards associated with chemical substances and laboratory procedures and evaluate their potential impact on the environment.	CILO 2
3	Analyze and interpret experimental data, critically assess data from literature sources and extract and apply useful data from those sources.	CILO 3
4	Conduct the standard laboratory procedures involved in synthetic and instrumental work	CILO 4
5	Operate a range of chemical instrumentation demonstrating adequate hands-on experience.	CILO 5
6	Demonstrate self-awareness and the ability to work independently and collaborate effectively with other people in a team	CILO 6
7		
8		

	Program of study 2: _____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1		
2		
3		
4		
5		
6		
7		
8		

Section 2B: Additional Information[2] *(for courses not proposed to be Common Core Courses)*

2.3 Planned Teaching & Learning Arrangement

	Teaching & Learning Arrangement	Weekly Scheduled Hours/ Estimated Weekly Learning Hours	Indicate which course ILOs this activity serves to achieve *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
Face-to face activities	☐ Lecture*			
	☒ Tutorial*	1	CILO 1, CILO 2, CILO 3	
	☐ Seminar/Small-class*			
	☒ Laboratory*	3	CILO 4, CILO 5, CILO 6	
	*Does the above scheduled component(s) involve structured active learning activities?[19] ◉ No ○ Yes *If yes, please specify for each scheduled component, the percentage and the type of active learning involved in the "Additional Information" column.*			
	☐ Others (e.g. fieldtrip, visit, etc.), *pls specify:* _____			
Online activities	☐ Online lecture videos			
	☐ Other online learning tasks, *pls specify:* _____			
	The total learning hours of the course# is equivalent to 80 **hours**[8] *# including both scheduled instructional hours and hours for self-study activities & assessment*			

- *For course adopting a pedagogic approach other than lecture, tutorial and laboratory, please indicate the pedagogy used:*

○ Blended learning[20] ○ Pure online delivery[21]

○ Experiential learning[22] ○ Others, *pls specify:*_____

2.4 Planned Assessment Weightings

Assessment Task	Proportion of Final Grade (%)	Indicate which course ILOs this task is to assess *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
☒ In-class test	20	CILO 1, CILO 2, CILO 3	
☐ Mid-term test			
☐ Final exam			
☒ Written assignment	35	CILO 1, CILO 2, CILO 3	
☐ Project report			
☐ Presentation			
☐ Learning portfolio			
☐ Course participation			
☐ Peer evaluation			
☒ Others (e.g. proctored online exam, etc.), *pls specify:* Lab performance	45	CILO 4, CILO 5, CILO 6	

2.5 *Course Duration*

(x) 1 term ( ) 2 terms ( ) Others, *pls specify:* _____

2.6 *Planned Frequency of Offerings [Check all appropriate boxes]:*

[x] Every Fall
[ ] Every Spring
[ ] No fixed pattern
[ ] Other *(pls specify):* _____
[ ] Every Winter
[ ] Every Summer

2.7 *Course outline attached*

(x) No ( ) Yes

- **Internationalization:**

Internationalization in a course refers to course content and/or pedagogic approaches which incorporate an intercultural and international perspective. Examples may include:

- Collaboration with overseas institutions to develop and adopt international course content, or to arrange international field trip
- Insertion of international theme as part of the course
- Integrating the course content with international material as examples or case studies
- Elements to provide global diversified perspectives and/or practices around the world

Please briefly list or summarize any component(s) in the course that contributes to internationalizing the curriculum:

2.8 *Resources*

Request extra resources for teaching this course? (x) No ( ) Yes

Section 4: Development, Concurrence and Approval

4.1 Contribution to the Program Learning Outcomes

The course is confirmed by the following Major/Minor program department(s)/unit(s) as indicated in Section 1.2 that it would contribute appropriately to overall program learning outcomes.

Department/Program unit	*Position*	*Name*	*Date*
Dept of Chemistry	UG Coordinator	Prof Xuhui HUANG	28-Oct-20

4.2 Approvals

Recommendation from offering department(s) and School(s)/IPO

Offering Department/Program Unit	*Position*	*Name*	*Date*
Dept of Chemistry	UG Coordinator	Prof Xuhui HUANG	28-Oct-20

Recommending School/IPO	*Position*	*Name*	*Date*
School of Science	Associate Dean	Prof Pak Wo LEUNG	9-Nov-20

Concurrence from other Schools or departments/units

School/Dept/Program Unit	*Position*	*Name*	*Date*

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Approval of Undergraduate Course

Section 1: Academic Administration [1]

1.1 Catalog

a) Course to be effective from: Academic Year 2021-2022 Term Fall

b) Department Code[3]: CHEM Subject Area[3]: ***CHEM*** Course Number [4]: **2555**

Previous Course Code[5]:

c) Full Title[6] *(max. 100 characters)*: Molecular Characterization Chemistry Laboratory I

d) Abbreviated Title[7] *(max. 30 characters)*:

e) Course Credits[8]: (X) Fixed: 2 ( ) Range: From To

f) Catalog Description[9] *(word limit = 150)*:

This is the laboratory course corresponding to the lectures of CHEM 2410 Physical Chemistry I and CHEM 2310 Fundamentals of Analytical Chemistry. The topic of experiments covered in this course are closely connected with the topics covered in the lecture courses, such as electrochemical equilibrium, chemical instrumental analysis, thermodynamics, etc. For CHEM students only.

g) Grading Type[10]: (X) Letter Grades ( ) Distinction/Credit/Pass/Fail ( ) Pass/ Fail ( ) Distinction/Pass/Fail [ ] Others *(please specify)*:

h) [x] Prerequisites[11]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained
CHEM 1050	Lab for General Chemistry I
(CHEM 2409 OR MATH 2351)	Mathematical Methods for Physical Chemistry OR Introduction to Differential Equations

i) [x] Corequisites[12]:

Course Code	Course Title
CHEM 2310	Fundamentals of Analytical Chemistry
CHEM 2410	Physical Chemistry I: Equilibrium Thermodynamics and Statistical Mechanics

j) [x] Exclusions[13]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained
CHEM 2355	Fundamental Analytical Chemistry Lab

k) [ ] Co-listing[14]: [ ] Multi-coding[14]:

Course Code	Course Title

l) Other Enrollment Restrictions[15] ( ) No ( ) Yes

[ ] Instructor's approval required

[x] Restricted to specified student group(s) *(please specify, e.g. year and program of study)*: For CHEM Major students

[ ] Others *(please specify)*:

m) Medium of Instruction/Materials[16]: (x) English ( ) Others, (Pls specify and provide a justification in Section 1.3): _____

n) Allow course repetition for credit[17]: (x) No ( ) Yes

1.2 *Contribution of course to Programs of Study* [Check all appropriate boxes below]

[x] Major

Program of Study	As		
BSc. in Chemistry	[x] Required Course	[ ] Elective	[ ] Prerequisite

[ ] Minor

Program of Study	As		
	[ ] Required Course	[ ] Elective	[ ] Prerequisite

[ ] Common Core

[ ] Others (pls specify):

Program of Study	As		
	[ ] Required Course	[ ] Elective	[ ] Prerequisite

1.3 *Rationale for Introducing this course and other relevant information* [18]

This is a practical course designed for students who are taking the lectures of Physical Chemistry I and Fundamentals of Analytical Chemistry, in which it provides students some hands-on experience, with the use of analytical instruments or physical equipment, to apply what they learned in lectures in practical term. The main topics include electrochemical equilibrium, GC-FID analysis, etc.

Section 2A: Learning Outcomes and Alignment *(for courses not proposed to be Common Core Courses)*

2.1 *Key Course Intended Learning Outcomes (Should not normally exceed six or eight outcomes)*

Upon completion of this course, students are expected to be able to do the following:

	Course ILOs	**Nature of the learning outcomes** *(A - Knowledge/Content Related; B - Academic Skills/Competencies; C - Others)*
1	Apply the instrumental techniques to analytical chemical analyses.	A, B, C
2	Demonstrate physical chemical principles by practical experiments.	A, B, C
3	Conduct lab analysis following lab procedures independently.	B, C
4	Calculate, explain and interpret experimental data.	A, B
5		
6		
7		
8		

2.2 *Contribution of Learning Outcomes to Programs of Study identified in Section 1.2*

(Please also complete Section 4.1)

	Program of study 1: B Sc in Chemistry **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	Explain the essential facts, principles and theories across the four principal areas of chemistry, i.e. analytical, organic, inorganic and physical.	CILO 1, CILO 2, CILO 4
2	Analyze and interpret experimental data, critically assess data in literature and extract useful data from it.	CILO 4
3	Conduct standard laboratory procedures involved in synthetic and instrumental work.	CILO 1, CILO 2, CILO 3
4	Operate a range of chemical instrumentation with adequate hands-on experiences.	CILO 1, CILO 2, CILO 3
5	Assess and manage the risks of chemical substances and laboratory procedures by evaluating their potential impact on the environment.	CILO 1, CILO 2, CILO 3
6	Demonstrate self awareness, work independently and collaborate effectively with other people in a team.	CILO 1, CILO 2, 3 CILO
7		
8		

	Program of study 2: _____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1		
2		
3		
4		
5		
6		
7		
8		

Section 2B: Additional Information[2] *(for courses not proposed to be Common Core Courses)*

2.3 Planned Teaching & Learning Arrangement

	Teaching & Learning Arrangement	Weekly Scheduled Hours/ Estimated Weekly Learning Hours	Indicate which course ILOs this activity serves to achieve *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
Face-to face activities	☐ Lecture*			
	☒ Tutorial*	1	CILO 1, CILO 2, CILO 4	
	☐ Seminar/Small-class*			
	☒ Laboratory*	3	CILO 1, CILO 2, CILO 3, CILO 4	
	*Does the above scheduled component(s) involve structured active learning activities? [19] (x) No ( ) Yes *If yes, please specify for each scheduled component, the percentage and the type of active learning involved in the "Additional Information" column.*			
	☐ Others (e.g. fieldtrip, visit, etc.), *pls specify:* _____			
Online activities	☐ Online lecture videos			
	☐ Other online learning tasks, *pls specify:* _____			
	The total learning hours of the course# is equivalent to 30 **hours** [8] *# including both scheduled instructional hours and hours for self-study activities & assessment*			

- *For course adopting a pedagogic approach other than lecture, tutorial and laboratory, please indicate the pedagogy used:*

( ) Blended learning [20] ( ) Pure online delivery [21]

( ) Experiential learning [22] ( ) Others, *pls specify:*_____

2.4 Planned Assessment Weightings

Assessment Task	Proportion of Final Grade (%)	Indicate which course ILOs this task is to assess *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
☒ In-class test	20	CILO 1, CILO 2, CILO 4	
☐ Mid-term test			
☐ Final exam			
☒ Written assignment	60	CILO 1, CILO 2, CILO 3, CILO 4	
☐ Project report			
☐ Presentation			
☐ Learning portfolio			
☐ Course participation			
☐ Peer evaluation			
☒ Others (e.g. proctored online exam, etc.), *pls specify:* Lab Performance	20	CILO 3	

2.5 *Course Duration*

(x) 1 term ( ) 2 terms ( ) Others, *pls specify:* _____

2.6 *Planned Frequency of Offerings* *[Check all appropriate boxes]:*

[x] Every Fall
[ ] Every Spring
[ ] No fixed pattern
[ ] Other *(pls specify):* _____
[ ] Every Winter
[ ] Every Summer

2.7 *Course outline attached* (x) No ( ) Yes

- **Internationalization:**

Internationalization in a course refers to course content and/or pedagogic approaches which incorporate an intercultural and international perspective. Examples may include:

- Collaboration with overseas institutions to develop and adopt international course content, or to arrange international field trip
- Insertion of international theme as part of the course
- Integrating the course content with international material as examples or case studies
- Elements to provide global diversified perspectives and/or practices around the world

Please briefly list or summarize any component(s) in the course that contributes to internationalizing the curriculum:

2.8 *Resources*

Request extra resources for teaching this course? (x) No ( ) Yes

Section 4: Development, Concurrence and Approval

4.1 Contribution to the Program Learning Outcomes

The course is confirmed by the following Major/Minor program department(s)/unit(s) as indicated in Section 1.2 that it would contribute appropriately to overall program learning outcomes.

Department/Program unit	*Position*	*Name*	*Date*
Dept of Chemistry	UG Coordinator	Prof Xuhui HUANG	28-Oct-20

4.2 Approvals

Recommendation from offering department(s) and School(s)/IPO

Offering Department/Program Unit	*Position*	*Name*	*Date*
Dept of Chemistry	UG Coordinator	Prof Xuhui HUANG	28-Oct-20

Recommending School/IPO	*Position*	*Name*	*Date*
School of Science	Associate Dean	Prof Pak Wo LEUNG	9-Nov-20

Concurrence from other Schools or departments/units

School/Dept/Program Unit	*Position*	*Name*	*Date*

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Approval of Undergraduate Course

Section 1: Academic Administration [1]

1.1 Catalog

a) Course to be effective from: Academic Year 2021-2022 Term Fall

b) Department Code[3]: CIVL Subject Area[3]: *CIVL* Course Number [4]: 4560

Previous Course Code[5]: CIVL4100H

c) Full Title[6] *(max. 100 characters)*: Urban Hydroclimate and the Built Environment

d) Abbreviated Title[7] *(max. 30 characters)*: Urban Hydroclimate

e) Course Credits[8]: ● Fixed: 3 ○ Range: From _____ To _____

f) Catalog Description[9] *(word limit = 150)*:

This course is a mixture of lecture, reading, and group project focused on urban hydroclimate and the built environment, particularly their interactions through the energy-water-climate nexus. Lectures will cover mathematical laws and physical concepts of heat, moisture and mass transport in the built environment, as well as implications of urban hydroclimate on smart city development in the 21st century. Through hands-on tutorials, students will learn a numerical model and use it to explore the impact of neighborhood design on urban thermal environment, including the usage of novel engineering materials, urban landscape and building technology.

g) Grading Type[10]: ● Letter Grades ○ Distinction/Credit/Pass/Fail ○ Pass/ Fail
○ Distinction/Pass/Fail ☐ Others *(please specify)*: _____

h) ☐ Prerequisites[11]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained

i) ☐ Corequisites[12]:

Course Code	Course Title

j) ☐ Exclusions[13]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained

k) ☐ Co-listing[14]: ☐ Multi-coding[14]:

Course Code	Course Title

l) Other Enrollment Restrictions[15] ● No ○ Yes

☐ Instructor's approval required

☐ Restricted to specified student group(s)
(please specify, e.g. year and program of study): _____

☐ Others *(please specify)*: _____

m) Medium of Instruction/Materials[16]: ● English ○ Others, (Pls specify and provide a justification in Section 1.3):

n) Allow course repetition for credit[17]: ● No ○ Yes

1.2 *Contribution of course to Programs of Study* [Check all appropriate boxes below]

■ Major

Program of Study	As		
CIVL, CIEV	☐ Required Course	■ Elective	☐ Prerequisite

☐ Minor

Program of Study	As		
	☐ Required Course	☐ Elective	☐ Prerequisite

☐ Common Core

☐ Others (pls specify):

Program of Study	As		
	☐ Required Course	☐ Elective	☐ Prerequisite

1.3 *Rationale for Introducing this course and other relevant information* [18]

Urbanization process has significantly modified the environment we live in during the past decades. Anthropogenic activities create unique hydroclimate over urban areas, which has important effects on human society. While global population is being increasingly urbanized, the fundamental knowledge of urban hydroclimate and its linkage with city development are not included in the existing curriculum. This course intends to fill this gap by teaching undergraduate students the physical principles governing the energy, water, and mass transport in cities. Students will learn the complex water-energy-climate nexus within the built environment and its interaction with urban hydroclimate. On this basis, group projects are designed to allow students to investigate the impact of various engineering materials/neighborhood design on the hydroclimate in different cities. Through this practice, students will have the opportunity to explore how scientific knowledge can be applied to moderate the undesirable consequences of urban development and help build sustainable and resilient cities.

The course has been offered twice as a special topic course in 2019 Spring and 2020 Spring. Students have shown great interest in the topic and provided positive feedbacks on the course content. And thus turning it into a regular course will be beneficial for the undergraduate programs.

Section 2A: Learning Outcomes and Alignment *(for courses not proposed to be Common Core Courses)*

2.1 *Key Course Intended Learning Outcomes (Should not normally exceed six or eight outcomes)*

Upon completion of this course, students are expected to be able to do the following:

	Course ILOs	**Nature of the learning outcomes** *(A - Knowledge/Content Related; B - Academic Skills/Competencies; C - Others)*
1	Formulate and solve heat, moisture, and mass transport problems in the built environment using governing equations	A
2	Describe the water-energy-climate nexus in cities	A
3	Conduct neighborhood planning and sustainability analysis through numerical models	A, B
4	Identify the hydroclimate challenges cities face in the near future and their potential engineering solutions	A, B
5	Understand the broad impact of engineering infrastructure on urban development and environmental sustainability	A
6		

2.2 *Contribution of Learning Outcomes to Programs of Study identified in Section 1.2*

(Please also complete Section 4.1)

	Program of study 1: _____BEng in Civil Engineering_____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	**PO1:** Acquire fundamental knowledge in mathematics and science on which civil engineering research and practice are based.	*CILO-1, CILO-2*
2	**PO2:** Understand fundamental principles of engineering science relevant to civil engineering disciplines.	*CILO-2, CILO-4*
3	**PO5:** Develop an ability to identify and formulate civil engineering problems, and propose feasible solutions with an appreciation of their underlying assumptions, uncertainties, constraints, and technical limitations.	*CILO-1, CILO-3*
4	**PO7:** Develop an appreciation of the breadth of civil engineering, and acquire basic knowledge in several disciplines to enable effective performance within a multidisciplinary work environment.	*CILO-4, CILO-5*
5	**PO9:** Develop an ability to communicate and present ideas effectively, including oral, written, and technical writing skills, and to function effectively within and among teams with a variety of backgrounds and interests.	*CILO-3*
6		

	Program of study 2: ___ BEng in Civil and Environmental Engineering_____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	**PO1:** Acquire fundamental knowledge in mathematics and science on which civil and environmental engineering research and practice are based.	*CILO-1, CILO-2*
2	**PO2:** Understand fundamental principles of engineering science relevant to civil engineering disciplines.	*CILO-2, CILO-4*
3	**PO5:** Develop an ability to identify and formulate civil and environmental engineering problems, and propose feasible solutions with an appreciation of their underlying assumptions, uncertainties, constraints, and technical limitations.	*CILO-1, CILO-3*
4	**PO6:** Develop technical competency to design civil and environmental engineering components and systems, with an understanding of the principles behind the design methodologies	*CILO-2, CILO-3*
5	**PO7:** Develop an appreciation of the breadth of civil and environmental engineering, and acquire basic knowledge in several disciplines to enable effective performance	*CILO-4, CILO-5*

	within a multidisciplinary work environment.	
6	**PO9:** Develop an ability to communicate and present ideas effectively, including oral, written, and technical writing skills, and to function effectively within and among teams with a variety of backgrounds and interests.	*CILO-3*
7		
8		

Section 2B: Additional Information[2] *(for courses not proposed to be Common Core Courses)*

2.3 *Planned Teaching & Learning Arrangement*

	Teaching & Learning Arrangement	Weekly Scheduled Hours/ Estimated Weekly Learning Hours	Indicate which course ILOs this activity serves to achieve *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
Face-to face activities	■ Lecture*	**3/6**	*CILO-1, CILO-2, CILO-3, CILO-4, CILO-5*	
	☐ Tutorial*			
	☐ Seminar/Small-class*			
	☐ Laboratory*			
	*Does the above scheduled component(s) involve structured active learning activities? [19] ● No ○ Yes *If yes, please specify for each scheduled component, the percentage and the type of active learning involved in the "Additional Information" column.*			
	☐ Others (e.g. fieldtrip, visit, etc.), *pls specify:* _____			
Online activities	☐ Online lecture videos			
	☐ Other online learning tasks, *pls specify:* _____			
	The total learning hours of the course# is equivalent to ____120_____ hours [8] *# including both scheduled instructional hours and hours for self-study activities & assessment*			

- *For course adopting a pedagogic approach other than lecture, tutorial and laboratory, please indicate the pedagogy used:*

○ Blended learning [20] ○ Pure online delivery [21]

○ Experiential learning [22] ○ Others, *pls specify:*_____

2.4 *Planned Assessment Weightings*

Assessment Task	Proportion of Final Grade (%)	Indicate which course ILOs this task is to assess *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
☐ In-class test			
☐ Mid-term test			
☐ Final exam			
■ Written assignment	**30**	*CILO-1, CILO-4*	*Three homework assignments*
■ Project report	**40**	*CILO-2, CILO-3, CILO-4, CILO-5*	*Group project in 2 phases: Phase 1 requires each student to finish their own task (individual report 20%), Phase 2 is teamwork on comparing results from phase I (group report 20%)*
■ Presentation	**20**	*CILO-2, CILO-3, CILO-4, CILO-5*	
☐ Learning portfolio			
■ Course participation	**10**	*CILO-1, CILO-4, CILO-5*	
☐ Peer evaluation			

2.5 *Course Duration*

● 1 term ○ 2 terms ○ Others, *pls specify:* _____

2.6 *Planned Frequency of Offerings [Check all appropriate boxes]:*

- ■ Every Fall
- ☐ Every Spring
- ☐ No fixed pattern
- ☐ Other *(pls specify):* _____
- ☐ Every Winter
- ☐ Every Summer

2.7 *Course outline attached* ○ No ● Yes

- **Internationalization:**

Internationalization in a course refers to course content and/or pedagogic approaches which incorporate an intercultural and international perspective. Examples may include:

- Collaboration with overseas institutions to develop and adopt international course content, or to arrange international field trip
- Insertion of international theme as part of the course
- Integrating the course content with international material as examples or case studies
- Elements to provide global diversified perspectives and/or practices around the world

Please briefly list or summarize any component(s) in the course that contributes to internationalizing the curriculum:

2.8 *Resources*

Request extra resources for teaching this course? ● No ○ Yes

Week	Topics	**Briefly outline what this topic will cover** *(Include reading assignments if available)*	**Indicate which course ILOs this topic is related to** *(Write CILO-1, CILO-2, etc.)*
1	History and future of urbanization	-Global trend of urbanization and its environmental impact -Heterogeneous urban surfaces in the built environment	*CILO-2, CILO-4*
2	Radiation exchange in the built environment	-What are the heat transfer mechanisms and surface radiation budgets in cities? -How thermal properties and building morphology affect urban radiation?	*CILO-1*
3	Urban surface energy balance	-Radiative trapping in the built environment and its controlling parameters -Difference in energy balance between urban and rural areas	*CILO-1, CILO-4*
4	Urban heat island	-Causes for different types of urban heat islands -Latest researches on urban heat island	*CILO-4, CILO-5*
5	Urban water cycle	-Urban water budget and its difference from rural water budget -Urban impacts on runoff hydrograph	*CILO-1*
6	Urban precipitation and stormwater management	-Urban drainage system design for stormwater management -Principles of precipitation generation and urban precipitation modification	*CILO-1, CILO-4*
7	Hands-on tutorial and group project discussion	-Tutorial on urban simulations using Matlab -Introduction on group projects and assign specific tasks to individual students	*CILO-3*
8	Water-energy-climate nexus in cities	-Interactions between urban hydroclimate and the built environment -Impact of water-energy-climate nexus on smart city development -Latest researches on engineering solutions and urban policies tackling environmental sustainability	*CILO-2, CILO-4, CILO-5*
9	Urban atmosphere	-What are the factors influencing urban hydroclimate? -Vertical structure and dynamic of urban boundary layer	*CILO-1*
10	Turbulent air flows in cities	-Air flow regimes under the interactions among different buildings -Key characteristics of turbulent flows	*CILO-1, CILO-4*
11	Urban air quality and multi-scale modeling	-Wind profiles in the built environment and their impacts on pollution dispersion -Multi-scale modeling of urban hydroclimate	*CILO-1, CILO-3, CILO-4*
12	Building Energy Consumption	-Interaction between building energy consumption and urban hydroclimate -Numerical simulations of building energy consumption	*CILO-2, CILO-4*
13	Course project presentation	-Group presentation on neighborhood design to enhance thermal environment and sustainability	*CILO-3, CILO-4, CILO-5*

Section 4: Development, Concurrence and Approval

4.1 Contribution to the Program Learning Outcomes

The course is confirmed by the following Major/Minor program department(s)/unit(s) as indicated in Section 1.2 that it would contribute appropriately to overall program learning outcomes.

Department/Program unit	*Position*	*Name*	*Date*
Dept of Civil and Environmental Engineering	UG Coordinator	Prof Jack CHENG	2-Nov-20
Dept of Civil and Environmental Engineering	UG Coordinator	Prof Jack CHENG	2-Nov-20

4.2 Approvals

Recommendation from offering department(s) and School(s)/IPO

Offering Department/Program Unit	*Position*	*Name*	*Date*
Dept of Civil and Environmental Engineering	UG Coordinator	Prof Jack CHENG	2-Nov-20

Recommending School/IPO	*Position*	*Name*	*Date*
School of Engineering	Associate Dean	Prof Philip K. T. MOK	14-Dec-20

Concurrence from other Schools or departments/units

School/Dept/Program Unit	*Position*	*Name*	*Date*
Dual Degree Program in Technology and Management	UG Coordinator	Prof Betty LIN	10-Nov-20

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Approval of Undergraduate Course

Section 1: Academic Administration [1]

1.1 Catalog

a) Course to be effective from: Academic Year 2021-22 Term Fall

b) Department Code[3]: CSE Subject Area[3]: COMP Course Number [4]: 2211

Previous Course Code[5]:

c) Full Title[6] *(max. 100 characters)*: Exploring Artificial Intelligence

d) Abbreviated Title[7] *(max. 30 characters)*: Exploring AI

e) Course Credits[8]: ● Fixed: 3 ○ Range: From To

f) Catalog Description[9] *(word limit = 150)*:

This course aims to give a gentle introduction to the basic elements of artificial intelligence (AI) through understanding examples from various applications and hands-on experimentation using AI software tools. In addition to covering the technical aspect of AI through such topics as search and problem solving, knowledge representation, probabilistic reasoning, machine learning, computer vision and image processing, speech and language processing, and robotics, this course will also study the historical perspective, social and ethical implications, as well as potential and limitations of AI.

g) Grading Type[10]: ● Letter Grades ○ Distinction/Credit/Pass/Fail ○ Pass/ Fail ○ Distinction/Pass/Fail ☐ Others *(please specify)*:

h) ■ Prerequisites[11]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained
COMP 1021 OR	Introduction to Computer Science
COMP 1029P	Python Programming Bridging Course

i) ☐ Corequisites[12]:

Course Code	Course Title

j) ■ Exclusions[13]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained
COMP 3211	Fundamentals of Artificial Intelligence
COMP 4211	Machine Learning
COMP 4221	Introduction to Natural Language Processing
COMP 4331	Data Mining
COMP 4332	Big Data Mining and Management
COMP 4421	Image Processing
COMP 4471	Deep Learning in Computer Vision
COMP 4901K	Machine Learning for Natural Language Processing
COMP 4901L	Foundations of Computer Vision
ELEC 4130	Digital Image Processing
ELEC 4230	Deep Learning for Natural Language Processing
IDPO 4110	Practical Machine Learning

ISOM 3360	Data Mining for Business Analytics
MATH 4336	Introduction to Mathematics of Image Processing
MATH 4432	Statistical Machine Learning
RMBI 4310	Advanced Data Mining for Risk Management and Business
COMP 5211	Advanced Artificial Intelligence
COMP 5331	Knowledge Discovery in Databases
COMP 5212	Machine Learning
COMP 5213	Introduction to Bayesian Networks
COMP 5221	Natural Language Processing
COMP 5222	Statistical Learning Models for Text and Graph Data
COMP 5223	Perception and Information Processing for Robotics
COMP 5421	Computer Vision

k) ☐ Co-listing[14]: ☐ Multi-coding[14]:

Course Code	Course Title

l) Other Enrollment Restrictions[15] ● No ○ Yes

☐ Instructor's approval required

☐ Restricted to specified student group(s)
(please specify, e.g. year and program of study): _____

☐ Others *(please specify):* _____

m) Medium of Instruction/Materials[16]: ● English ○ Others, (Pls specify and provide a justification in Section 1.3):

_____

n) Allow course repetition for credit[17]: ● No ○ Yes

1.2 *Contribution of course to Programs of Study [Check all appropriate boxes below]*

■ Major

Program of Study	As		
COMP, COSC, COGBM, CPEG, CPGBM	☐ Required Course	■ Elective	☐ Prerequisite

☐ Minor

Program of Study	As		
	☐ Required Course	☐ Elective	☐ Prerequisite

☐ Common Core

■ Others (pls specify):

Program of Study	As		
Extended Major in AI (Major + AI)	☐ Required Course	■ Elective	☐ Prerequisite

1.3 *Rationale for Introducing this course and other relevant information[18]*

Although there is plenty of hype from mass media about artificial intelligence (AI), the unprecedented successes of AI in a number of real-world applications are undeniable. This 2000-level course serves to give a gentle introduction to both the technical and non-technical aspects of AI suitable for most if not all students at HKUST. No prerequisites will be required for students to understand the conceptual aspects of the course. However, prior experience in basic Python programming gained from an introductory course such as COMP 1021 (Introduction to Computer Science) or COMP 1029P (Python Programming Bridging Course) will allow students to make use of AI software tools to build interesting applications. Incorporating this practical facet as an integral part of the course will help students get more excited about the subject and practise AI thinking through realistic

examples. With this course serving to give a quick overview of some basic elements of AI, we hope to inspire and encourage students to learn more later by taking more specialized, advanced AI courses.
The reason of including the list of advanced courses as **one-way exclusion** is to prevent students who have taken advanced AI courses to take COMP2211 for easy credits, and we will not change exclusions of these advanced AI courses, so students who have taken COMP2211 can still go on to take these advanced courses. In addition, we intend to include COMP2211 as alternative required course in the curriculum of Major+AI after launching it at least once.

Section 2A: Learning Outcomes and Alignment *(for courses not proposed to be Common Core Courses)*

2.1 *Key Course Intended Learning Outcomes (Should not normally exceed six or eight outcomes)*

Upon completion of this course, students are expected to be able to do the following:

	Course ILOs	**Nature of the learning outcomes** *(A - Knowledge/Content Related; B - Academic Skills/Competencies; C - Others)*
1	Demonstrate general understanding of the historical perspective and development of artificial intelligence (AI)	A
2	Demonstrate fundamental understanding of the basic elements of AI thinking	B
3	Demonstrate proficiency in applying basic principles and techniques of AI and using AI software tools to solve problems in a range of applications	B
4	Demonstrate awareness of the social and ethical implications as well as potential and limitations of AI	A
5		
6		
7		
8		

2.2 *Contribution of Learning Outcomes to Programs of Study identified in Section 1.2*

(Please also complete Section 4.1)

	Program of study 1: COMP/COSC **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	#1 An ability to apply knowledge of computing and mathematics appropriate to the discipline	CILO-3
2	#2 An ability to apply knowledge of a computing specialization, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models	CILO-2, CILO-3
3	#3 An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution	CILO-2, CILO-3
4	#4 An ability to design, implement and evaluate a computer-based system, process, component, or program to meet desired needs	CILO-2, CILO-3
5	#6 An understanding of professional, ethical, legal, security and social issues and responsibilities	CILO-4
6	#7 An ability to communicate effectively with a range of audiences	CILO-3
7	#8 An ability to analyze the local and global impact of computing on individuals, organizations, and society	CILO-4
8	#10 An ability to use current techniques, skills, and tools necessary for computing practices	CILO-2, CILO-3

	Program of study 2: CPEG **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	#1 An ability to apply knowledge of mathematics, science, and computer engineering	CILO-3
2	#2 An ability to analyze an engineering problem and identify the hardware and/or software requirements appropriate to its solution	CILO-2, CILO-3
3	#3 An ability to design and implement a computer-based system including embedded systems encompassing hardware and/or software to meet desired needs	CILO-2, CILO-3
4	#5 An ability to identify, formulate and solve computer engineering problems subject	CILO-2, CILO-3

	to practical constraints	
5	#6 An ability to understand professional and ethical responsibility	CILO-4
6	#7 An ability to communicate effectively with a range of audience	CILO-3
7	#8 An ability to understand the local and global impact of computer engineering solutions on individuals, organizations, and society	CILO-4
8	#9 An ability to understand contemporary global, economic, environmental, and societal issues, and their potential connection with computer engineering	CILO-4
9	#11 An ability to use the techniques, skills, and modern engineering tools necessary for solving computer engineering problems	CILO-2, CILO-3
10	#12 An ability to use hardware and/or software tools to effectively solve engineering problems with an understanding of their processes and limitations	CILO-2, CILO-3

	Program of study 3: Major + AI **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	Identify emerging technology and innovations that will create opportunities and values for people, business and society	CILO-1, CILO-2, CILO-4
2	Integrate knowledge and mindset drawn from different disciplines	CILO-2, CILO-3
3	Apply innovative knowledge and practical problem-solving skills to tackle real business, scientific or socio-economic problems relevant to their Major areas	CILO-3
4		
5		
6		
7		
8		

Section 2B: Additional Information[2] *(for courses not proposed to be Common Core Courses)*

2.3 *Planned Teaching & Learning Arrangement*

	Teaching & Learning Arrangement	Weekly Scheduled Hours/ Estimated Weekly Learning Hours	Indicate which course ILOs this activity serves to achieve *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
Face-to face activities	■ Lecture*	3	CILO-1, CILO-2, CILO-3, CILO-4	
	☐ Tutorial*			
	☐ Seminar/Small-class*			
	■ Laboratory*	1	CILO-3	
	*Does the above scheduled component(s) involve structured active learning activities? [19] ● No ○ Yes *If yes, please specify for each scheduled component, the percentage and the type of active learning involved in the "Additional Information" column.*			
	☐ Others (e.g. fieldtrip, visit, etc.), *pls specify:* _____			
Online activities	☐ Online lecture videos			
	☐ Other online learning tasks, *pls specify:* _____			

The total learning hours of the course# is equivalent to 120 hours [8]
including both scheduled instructional hours and hours for self-study activities & assessment

- *For course adopting a pedagogic approach other than lecture, tutorial and laboratory, please indicate the pedagogy used:*

○ Blended learning [20] ○ Pure online delivery [21]
○ Experiential learning [22] ○ Others, *pls specify:*_____

2.4 *Planned Assessment Weightings*

Assessment Task	Proportion of Final Grade (%)	Indicate which course ILOs this task is to assess *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
☐ In-class test			
■ Mid-term test	15%	CILO-1, CILO-2, CILO-3, CILO-4	
■ Final exam	40%	CILO-1, CILO-2, CILO-3, CILO-4	
☐ Written assignment			
■ Project report	30%	CILO-2, CILO-3	2-3 programming projects
■ Presentation	5%	CILO-2, CILO-3	
☐ Learning portfolio			
■ Course participation	5%	CILO-1, CILO-2, CILO-3, CILO-4	
■ Peer evaluation	5%	CILO-2, CILO-3	
☐ Others (e.g. proctored online exam, etc.), *pls specify:* _____			

2.5 *Course Duration*

● 1 term ○ 2 terms ○ Others, *pls specify:* _____

2.6 *Planned Frequency of Offerings* *[Check all appropriate boxes]:*

- ■ Every Fall
- ■ Every Spring
- ☐ No fixed pattern
- ☐ Other *(pls specify):* _____
- ☐ Every Winter
- ☐ Every Summer

2.7 *Course outline attached* ○ No ● Yes

- **Internationalization:**

Internationalization in a course refers to course content and/or pedagogic approaches which incorporate an intercultural and international perspective. Examples may include:

- Collaboration with overseas institutions to develop and adopt international course content, or to arrange international field trip
- Insertion of international theme as part of the course
- Integrating the course content with international material as examples or case studies
- Elements to provide global diversified perspectives and/or practices around the world

Please briefly list or summarize any component(s) in the course that contributes to internationalizing the curriculum:

2.8 *Resources*

Request extra resources for teaching this course? ● No ○ Yes

COMP 2211: Exploring Artificial Intelligence

Catalog Description

This course aims to give a gentle introduction to the basic elements of artificial intelligence (AI) through understanding examples from various applications and hands-on experimentation using AI software tools. In addition to covering the technical aspect of AI through such topics as search and problem solving, knowledge representation, probabilistic reasoning, machine learning, computer vision and image processing, speech and language processing, and robotics, this course will also study the historical perspective, social and ethical implications, as well as potential and limitations of AI.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Demonstrate general understanding of the historical perspective and development of artificial intelligence (AI).
- Demonstrate fundamental understanding of the basic elements of AI thinking.
- Demonstrate proficiency in applying basic principles and techniques of AI and using AI software tools to solve problems in a range of applications.
- Demonstrate awareness of the social and ethical implications as well as potential and limitations of AI.

Major Topics

Brief history
Search and problem solving
Knowledge representation
Probabilistic reasoning
Machine learning
Computer vision and image processing
Speech and language processing
Robotics
Social and ethical implications
Potential and limitations

An innovative approach will be adopted to cover some basic elements of the technical topics through interesting examples. Specifically, the topics will not be covered one-by-one separately. Instead, real-world examples that require integrative use of multiple topics will be chosen for illustration. For example, AI for games will be used to illustrate search and problem solving, knowledge representation, and machine learning; AI for autonomous vehicles to illustrate computer vision, machine learning, and robotics; AI for conversational agents (or chatbots) to illustrate speech/language processing and machine learning; AI for healthcare to illustrate image processing and machine learning; etc.

Reference Books

Hadelin de Ponteves. ***AI Crash Course****: A fun and hands-on introduction to machine learning, reinforcement learning, deep learning, and artificial intelligence with Python.* Packt Publishing. 2019.

Denis Rothman, Matthew Lamons, Rahul Kumar, Abhishek Nagaraja, Amir Ziai, and Ankit Dixit. ***Python: Beginner's Guide to Artificial Intelligence****: Build applications to intelligently interact with the world around you using Python.* Packt Publishing. 2018.

Online courses:

- AI for Everyone (https://www.coursera.org/learn/ai-for-everyone)
- AI Foundations for Everyone Specialization (https://www.coursera.org/specializations/ai-foundations-for-everyone)
- Machine Learning for All (https://www.coursera.org/learn/uol-machine-learning-for-all)
- Artificial Intelligence A-Z: Learn How to Build an AI (https://www.udemy.com/course/artificial-intelligence-az/)

Section 4: Development, Concurrence and Approval

4.1 Contribution to the Program Learning Outcomes

The course is confirmed by the following Major/Minor program department(s)/unit(s) as indicated in Section 1.2 that it would contribute appropriately to overall program learning outcomes.

Department/Program unit	*Position*	*Name*	*Date*
Dept of Computer Science and Engineering	UG Coordinator	Dr Qiong LUO	12-Nov-20
Computer Engineering Program	Program Director	Prof Wilfred NG	17-Nov-20
Interdisciplinary Programs Office	Chair of IUSC	Prof Jimmy FUNG	19-Nov-20

4.2 Approvals

Recommendation from offering department(s) and School(s)/IPO

Offering Department/Program Unit	*Position*	*Name*	*Date*
Dept of Computer Science and Engineering	UG Coordinator	Dr Qiong LUO	12-Nov-20

Recommending School/IPO	*Position*	*Name*	*Date*
School of Engineering	Associate Dean	Prof Philip K. T. MOK	14-Dec-20

Concurrence from other Schools or departments/units

School/Dept/Program Unit	*Position*	*Name*	*Date*
Interdisciplinary Programs Office	Chair of IUSC	Prof Jimmy FUNG	19-Nov-20
Dual Degree Program in Technology and Management	UG Coordinator	Prof Betty LIN	13-Nov-20
Dept of Electronic & Computer Engineering	UG Coordinator	Prof Weichuan YU	16-Nov-20
Dept of Information Systems, Business Statistics & Operations Management - IS	Deputy Head of Dept	Prof Kai Lung HUI	20-Nov-20
Computer Engineering Program	Program Director	Prof Wilfred NG	17-Nov-20
Risk Management and Business Intelligence Program	UG Coordinator	Dr Jiying WANG	17-Nov-20
Dept of Mathematics	UG Coordinator	Dr Tsz Kin LAM	16-Nov-20

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Approval of Undergraduate Course

Section 1: Academic Administration [1]

1.1 Catalog

a) Course to be effective from: Academic Year 2020-21 Term Spring

b) Department Code[3]: ECE Subject Area[3]: *ELEC* Course Number [4]: 4210

Previous Course Code[5]: ELEC4010G

c) Full Title[6] *(max. 100 characters)*: Control System Design

d) Abbreviated Title[7] *(max. 30 characters)*: Control System Design

e) Course Credits[8]: (X) Fixed: 3 ( ) Range: From _____ To _____

f) Catalog Description[9] *(word limit = 150)*:

In the lectures, the following topics will be covered: time-domain and frequency-domain system modeling and analysis, optimal control, robust control, computer aided control designs, digital control. In the experiments, the students will be asked to design and implement controllers for a magnetic suspension system, an inverted pendulum system, and a tower crane system.

g) Grading Type[10]: (X) Letter Grades ( ) Distinction/Credit/Pass/Fail ( ) Pass/ Fail ( ) Distinction/Pass/Fail [ ] Others *(please specify)*: _____

h) [x] Prerequisites[11]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained
ELEC3200 or	System Modeling, Analysis and Control
MECH3610	Control Principles

i) [ ] Corequisites[12]:

Course Code	Course Title

j) [ ] Exclusions[13]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained

k) [ ] Co-listing[14]: [ ] Multi-coding[14]:

Course Code	Course Title

l) Other Enrollment Restrictions[15] (X) No ( ) Yes

[ ] Instructor's approval required

[ ] Restricted to specified student group(s) _____

[ ]

(please specify, e.g. year and program of study): _____

Others *(please specify):* _____

m) Medium of Instruction/Materials[16]: (X) English ( ) Others, (Pls specify and provide a justification in Section 1.3): _____

n) Allow course repetition for credit[17]: (X) No ( ) Yes

1.2 *Contribution of course to Programs of Study [Check all appropriate boxes below]*

[x] Major

Program of Study	As		
BEng(ELEC)	[ ] Required Course	[x] Elective	[ ] Prerequisite

[ ] Minor

Program of Study	As		
	[ ] Required Course	[ ] Elective	[ ] Prerequisite

[ ] Common Core

[ ] Others (pls specify):

Program of Study	As		
	[ ] Required Course	[ ] Elective	[ ] Prerequisite

1.3 *Rationale for Introducing this course and other relevant information [18]*

Control systems are an integral part of manufacturing industry. The new development in a smart society, including robotics and autonomous vehicle technology, calls for more advanced control systems. Control techniques are now even used to address social problems. There is a timely demand for this course.

This course has been offered for quite a few times in UST. It uses a textbook written by the course developer and uses some lab facility developed by the course developer. It has been well received by the students.

Section 2A: Learning Outcomes and Alignment *(for courses not proposed to be Common Core Courses)*

2.1 *Key Course Intended Learning Outcomes (Should not normally exceed six or eight outcomes)*

Upon completion of this course, students are expected to be able to do the following:

	Course ILOs	**Nature of the learning outcomes** *(A - Knowledge/Content Related; B - Academic Skills/Competencies; C - Others)*
1	Have an in-depth understanding of time-domain and frequency-domain methods as well as their relationships in dynamic system modeling, analysis and control.	A
2	Use several techniques for control system design.	B
3	Understand further the importance of feedback and its limitations.	A
4	Skillfully use CAD tools (such as MATLAB and SIMULINK) in control system modeling, analysis and control.	B
5	Equip themselves with experience in controlling real physical systems.	A
6		
7		
8		

2.2 *Contribution of Learning Outcomes to Programs of Study identified in Section 1.2*

(Please also complete Section 4.1)

	Program of study 1: _____ELEC_____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	An ability to apply knowledge of mathematics, science and Electronic and Computer Engineering.	CILO-1,CILO-2,CILO-3
2	An ability to design and conduct experiments, as well as to analyze and interpret data.	CILO-4, CILO-5
3	An ability to design efficient and economical Electronic and Computer Engineering systems, components or process subject to practical constraints.	CILO-1, CILO-2, CILO-3,CILO-5
4	An ability to function in a multi-disciplinary environment through teamwork.	
5	An ability to identify, formulate and solve Electronic and Computer Engineering problems.	
6	An ability to understand professional practices and ethical responsibilities.	
7	An ability to communicate effectively.	
8	An ability to understand contemporary global, regional, economic, environmental, and social issues, and the corresponding role and the impact of Electronic and Computer engineers.	
9	An ability to recognize the need for, and to engage in life-long learning.	
10	An ability to use current techniques, skills and engineering tools necessary for solving Electronic and Computer Engineering problems.	CILO-4, CILO-5
11	An ability to use the computer/IT tools relevant to the Electronic and Computer Engineering along with an understanding of their processes and limitations.	CILO-4, CILO-5

Section 2B: Additional Information[2] *(for courses not proposed to be Common Core Courses)*

2.3 *Planned Teaching & Learning Arrangement*

	Teaching & Learning Arrangement	Weekly Scheduled Hours/ Estimated Weekly Learning Hours	Indicate which course ILOs this activity serves to achieve *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
Face-to face activities	[x] Lecture*	**3**	**CILO-1, CILO-2, CILO-3**	
	[ ] Tutorial*			
	[ ] Seminar/Small-class*			
	[x] Laboratory*	**1**	**CILO-4, CILO-5**	
	*Does the above scheduled component(s) involve structured active learning activities? [19] (X) No ( ) Yes *If yes, please specify for each scheduled component, the percentage and the type of active learning involved in the "Additional Information" column.*			
	[ ] Others (e.g. fieldtrip, visit, etc.), *pls specify:* _____			
Online activities	[ ] Online lecture videos			
	[ ] Other online learning tasks, *pls specify:* _____			
	The total learning hours of the course# is equivalent to _____120____ hours [8] *# including both scheduled instructional hours and hours for self-study activities & assessment*			

- *For course adopting a pedagogic approach other than lecture, tutorial and laboratory, please indicate the pedagogy used:*

( ) Blended learning [20] ( ) Pure online delivery [21]

( ) Experiential learning [22] ( ) Others, *pls specify:*_____

2.4 *Planned Assessment Weightings*

Assessment Task	Proportion of Final Grade (%)	Indicate which course ILOs this task is to assess *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
[ ] In-class test			
[ ] Mid-term test			
[x] Final exam	**40%**	**CILO-1, CILO-2, CILO-3**	
[x] Written assignment	**30%**	**CILO-1, CILO-2, CILO-3, CILO-4**	
[ ] Project report			
[ ] Presentation			
[ ] Learning portfolio			
[ ] Course participation			
[ ] Peer evaluation			
[x] Others (e.g. proctored online exam, etc.), *pls specify:* _____*Lab*_____	**30%**	**CILO- 4, CILO-5**	

2.5 *Course Duration*

(X) 1 term ◯ 2 terms ◯ Others, *pls specify:* _____

2.6 *Planned Frequency of Offerings* *[Check all appropriate boxes]:*

☐ Every Fall ☐ Every Winter

☒ Every Spring ☐ Every Summer

☐ No fixed pattern

☐ Other *(pls specify):* _____

2.7 *Course outline attached* ◯ No ◉ Yes

- **Internationalization:**

Internationalization in a course refers to course content and/or pedagogic approaches which incorporate an intercultural and international perspective. Examples may include:

- Collaboration with overseas institutions to develop and adopt international course content, or to arrange international field trip
- Insertion of international theme as part of the course
- Integrating the course content with international material as examples or case studies
- Elements to provide global diversified perspectives and/or practices around the world

Please briefly list or summarize any component(s) in the course that contributes to internationalizing the curriculum:

2.8 *Resources*

Request extra resources for teaching this course? (X) No ◯ Yes

ELEC4210: Control System Design

Lecture Outline

Week	Description
1	Stabilization
2	Regulation, 2DOF controllers
3	Case study 1
4	Performance analysis
5	Optimal control
6	Case study 2
7	Uncertain system analysis
8	Robust control
9	Case study 3
10	State-space analysis
11	State-space synthesis
12	Case study 4
13	Advanced topics

Section 4: Development, Concurrence and Approval

4.1 Contribution to the Program Learning Outcomes

The course is confirmed by the following Major/Minor program department(s)/unit(s) as indicated in Section 1.2 that it would contribute appropriately to overall program learning outcomes.

Department/Program unit	*Position*	*Name*	*Date*
Dept of Electronic & Computer Engineering	Head of Dept	Prof Bertram SHI	18-Nov-20

4.2 Approvals

Recommendation from offering department(s) and School(s)/IPO

Offering Department/Program Unit	*Position*	*Name*	*Date*
Dept of Electronic & Computer Engineering	UG Coordinator	Prof Weichuan YU	18-Nov-20

Recommending School/IPO	*Position*	*Name*	*Date*
School of Engineering	Associate Dean	Prof Philip K. T MOK	14-Dec-20

Concurrence from other Schools or departments/units

School/Dept/Program Unit	*Position*	*Name*	*Date*
Dept of Mechanical & Aerospace Engineering	UG Coordinator	Prof Baoling HUANG	18-Nov-20
Dual Degree Program in Technology and Management	UG Coordinator	Prof Betty LIN	24-Nov-20

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Approval of Undergraduate Course

Section 1: Academic Administration [1]

1.1 Catalog

a) Course to be effective from: Academic Year 2020/2021 Term Spring

b) Department Code[3]: SUSEE Subject Area[3]: ENEG Course Number [4]: 4210

Previous Course Code[5]: N/A

c) Full Title[6] *(max. 100 characters)*: Optimization of Energy Systems

d) Abbreviated Title[7] *(max. 30 characters)*:

e) Course Credits[8]: ◉ Fixed: 3 ○ Range: From ____ To ____

f) Catalog Description[9] *(word limit = 150)*:

Optimization practice, theory, and implementation with applications in energy. Topics include: foundations of linear and nonlinear programming; constrained and multiobjective optimization; optimization under uncertainty; multidisciplinary optimization; discrete optimization. The focus is on the application of optimization methods to solve energy engineering problems.

g) Grading Type[10]: ■ Letter Grades ○ Distinction/Credit/Pass/Fail ○ Pass/ Fail ○ Distinction/Pass/Fail ☐ Others *(please specify)*: ____

h) ■ Prerequisites[11]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained
CENG 2210 or MECH 2310	Chemical and Biological Engineering Thermodynamics or Thermodynamics

i) ☐ Corequisites[12]:

Course Code	Course Title

j) ☐ Exclusions[13]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained

k) ☐ Co-listing[14]: ☐ Multi-coding[14]:

Course Code	Course Title

l) Other Enrollment Restrictions[15] ■ No ○ Yes

☐ Instructor's approval required

☐ Restricted to specified student group(s) ____

☐

(please specify, e.g. year and program of study): _____

Others *(please specify):* _____

m) Medium of Instruction/Materials[16]: ■ English ○ Others, (Pls specify and provide a justification in Section 1.3): _____

n) Allow course repetition for credit[17]: ■ No ○ Yes

1.2 *Contribution of course to Programs of Study [Check all appropriate boxes below]*

■ Major

Program of Study	As		
SUSEE CENG, CEEV	☐ Required Course	■ Elective	☐ Prerequisite
	☐ Required Course	☐ Elective (for Energy Option)	☐ Prerequisite

☐ Minor

Program of Study	As		
	☐ Required Course	☐ Elective	☐ Prerequisite

☐ Common Core

☐ Others (pls specify):

Program of Study	As		
	☐ Required Course	☐ Elective	☐ Prerequisite

1.3 *Rationale for Introducing this course and other relevant information [18]*

Optimization is needed in engineering to find the best or optimal designs. Therefore, it is critical to optimize processes so that a chosen quantity, the objective function, is maximized or minimized. For example, energy efficiency or profit may be maximized, while energy inputs or costs may be minimized. In turn, the energy industry's success and growth are strongly tied to the optimization of systems and processes.

Optimization in energy is particularly important as engineers need to find optimal design and operation leading to minimizing costs and maximizing efficiencies. In that context, it is critical that engineers formulate and solve optimization problems. To do that, the objective functions and constraints need to be formulated and understood not only in the context of a single optimization but also within the framework of large multidisciplinary teams that operate under uncertainty. In that context, multidisciplinary optimization and optimization under uncertainty play a critical role.

In short, the course aims to introduce techniques for the optimization modeling and the economic evaluation of industrial process and energy systems and to develop the skills required to identify the opportunity and implement optimization-based decision support tools in energy processes and systems. It covers the problem statement, modeling process and systems, solving methods for the simulation, and the single and multiobjective optimization strategies. Topics cover process systems engineering, process and system modeling and simulation, economic evaluation, optimization strategies, and data reconciliation.

Textbooks:

1. M.J. Kochenderfer, and T.A. Wheeler, Algorithms for Optimization, The MIT Press (2019)
2. I. Dincer, M.A. Rosen, and P. Ahmadi, Optimization of Energy Systems, Wiley, 1st Edition (2017).
3. O. Erdinc, Optimization in Renewable Energy Systems, Butterworth-Heinemann (2017)
4. L.T. Bielger, Nonlinear Programming: Concepts, Algorithms, and Applications to Chemical Processes, Society for Industrial and Applied Mathematics (2010)

2.1 *Key Course Intended Learning Outcomes (Should not normally exceed six or eight outcomes)*

Upon completion of this course, students are expected to be able to do the following:

	Course ILOs	**Nature of the learning outcomes** *(A - Knowledge/Content Related; B - Academic Skills/Competencies; C - Others)*
1	Formulate optimization problems related to energy	A, B
2	Solve optimization problems	B
3	Visualize and present optimization results	B
4	Analyze heat and power production optimization	A, B
5	Optimize storage systems under uncertainty	A, B
6		
7		
8		

2.2 *Contribution of Learning Outcomes to Programs of Study identified in Section 1.2*

(Please also complete Section 4.1)

	Program of study 1: _____SUSEE_____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	Apply sustainable energy engineering principles in a wide range of settings;	CILO-1, CILO-4, CILO-5
2	Design processes and products in the realm of energy engineering to meet societal needs;	CILO-4, CILO-5
3	Develop an awareness of contemporary issues as they relate to engineering;	CILO-1, CILO-3
4	Solve energy and related problems critically and creatively;	CILO-1, CILO-2
5	Communicate clearly and concisely both in writing and orally;	CILO-3
6	Function effectively in multi-cultural and multidisciplinary teams;	
7	Pursue lifelong learning as self-regulated learners;	
8	Exercise integrity, high ethical standards, and care in their personal and professional lives; and	
9	Select and use appropriate engineering tools and data effectively.	CILO-1, CILO-2, CILO-3

	Program of study 1: _____CENG_____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	Apply chemical engineering principles in a wide range of settings;	CILO-1, CILO-4, CILO-5
2	Design processes and products in the realm of chemical engineering to meet societal needs;	CILO-4, CILO-5
3	Develop an awareness of contemporary issues as they relate to engineering	CILO-1, CILO-3
4	Solve chemical engineering and related problems critically and creatively;	CILO-1, CILO-2
5	Communicate clearly and concisely both in writing and orally;	CILO-3
6	Function effectively in multi-cultural and multidisciplinary teams;	

7	Pursue lifelong learning as self-regulated learners;	
8	Exercise integrity, high ethical standards, and care in their personal and professional lives; and	
9	Select and use appropriate engineering tools and data effectively.	CILO-1, CILO-2, CILO-3

	Program of study 1: _____CEEV_____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	Apply chemical and environmental engineering principles in a wide range of settings;	CILO-1, CILO-4, CILO-5
2	Design processes and products in the realm of chemical and environmental engineering to meet societal needs;	CILO-4, CILO-5
3	Develop an awareness of contemporary issues as they relate to engineering;	CILO-1, CILO-3
4	Solve chemical and environmental engineering and related problems critically and creatively;	CILO-1, CILO-2
5	Communicate clearly and concisely both in writing and orally;	CILO-3
6	Function effectively in multi-cultural and multidisciplinary teams;	
7	Pursue lifelong learning as self-regulated learners;	
8	Exercise integrity, high ethical standards, and care in their personal and professional lives; and	
9	Select and use appropriate engineering tools and data effectively.	CILO-1, CILO-2, CILO-3

Section 2B: Additional Information[2] *(for courses not proposed to be Common Core Courses)*

2.3 *Planned Teaching & Learning Arrangement*

	Teaching & Learning Arrangement	Weekly Scheduled Hours/ Estimated Weekly Learning Hours	Indicate which course ILOs this activity serves to achieve *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
Face-to face activities	■ Lecture*	3	CILO-1, CILO-2, CILO-3, CILO-4, CILO-5	Activities will include frontal lectures and in-class coding exercises
	☐ Tutorial*			
	☐ Seminar/Small-class*			
	☐ Laboratory*			
	*Does the above scheduled component(s) involve structured active learning activities?[19] ◉ No ○ Yes *If yes, please specify for each scheduled component, the percentage and the type of active learning involved in the "Additional Information" column.*			
	☐ Others (e.g. fieldtrip, visit, etc.), *pls specify:* _____			
Online activities	☐ Online lecture videos			
	☐ Other online learning tasks, *pls specify:* _____			
	The total learning hours of the course# is equivalent to ____135_____ hours[8] *# including both scheduled instructional hours and hours for self-study activities & assessment*			

- *For course adopting a pedagogic approach other than lecture, tutorial and laboratory, please indicate the pedagogy used:*

○ Blended learning[20] ○ Pure online delivery[21]

○ Experiential learning[22] ○ Others, *pls specify:*_____

2.4 *Planned Assessment Weightings*

Assessment Task	Proportion of Final Grade (%)	Indicate which course ILOs this task is to assess *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
☐ In-class test			
☐ Mid-term test			
☐ Final exam			
■ Written assignment	**40%**	CILO-1, CILO-2, CILO-4, CILO-5	**Individual project among those assigned**
■ Project report	**30%**	CILO-1, CILO-2, CILO-3, CILO-4, CILO-5	**Individual project among those assigned**
■ Presentation	**30%**	CILO-1, CILO-2, CILO-3, CILO-4, CILO-5	
☐ Learning portfolio			
☐ Course participation			
☐ Peer evaluation			
☐ Others (e.g. proctored online exam, etc.), *pls specify:* _____			

2.5 *Course Duration*

(■) 1 term ( ) 2 terms ( ) Others, *pls specify:* _____

2.6 *Planned Frequency of Offerings* *[Check all appropriate boxes]:*

[ ] Every Fall
[ ] Every Winter
[■] Every Spring
[ ] Every Summer
[ ] No fixed pattern
[ ] Other *(pls specify):* _____

2.7 *Course outline attached* ( ) No (■) Yes

- **Internationalization:**

Internationalization in a course refers to course content and/or pedagogic approaches which incorporate an intercultural and international perspective. Examples may include:

- Collaboration with overseas institutions to develop and adopt international course content, or to arrange international field trip
- Insertion of international theme as part of the course
- Integrating the course content with international material as examples or case studies
- Elements to provide global diversified perspectives and/or practices around the world

Please briefly list or summarize any component(s) in the course that contributes to internationalizing the curriculum:

2.8 *Resources*

Request extra resources for teaching this course? (■) No ( ) Yes

Course Outline:

Week	Topic
1	Introduction to Modeling and Optimization of Thermal Systems
2	Introduction to Basic Optimization Concepts and Numerical Optimization Code
3	Bracketing and Local Descent
4	First- and Second-Order Methods
5	Direct Methods: Pattern Search and the Symplex
6	Stochastic Methods - Adam
7	Population Methods
8	Linear Constrained Optimization and Multiobjective Optimization – Concurrent Optimization of Battery Parameters
9	Optimization under Uncertainty
10	Bayesian Optimization and Probabilistic Methods
11	Discrete Optimization
12	Multidisciplinary Optimization in Engineering Design
13	Optimal Design of Hybrid Renewable Energy Systems

Section 4: Development, Concurrence and Approval

4.1 Contribution to the Program Learning Outcomes

The course is confirmed by the following Major/Minor program department(s)/unit(s) as indicated in Section 1.2 that it would contribute appropriately to overall program learning outcomes.

Department/Program unit	*Position*	*Name*	*Date*
Dept of Chemical and Biological Engineering	Program Director	Prof Ying CHAU	23-Oct-20
Dept of Chemical and Biological Engineering	Program Director	Prof Minhua SHAO	23-Oct-20

4.2 Approvals

Recommendation from offering department(s) and School(s)/IPO

Offering Department/Program Unit	*Position*	*Name*	*Date*
Dept of Chemical and Biological Engineering	Program Director	Prof Minhua SHAO	23-Oct-20

Recommending School/IPO	*Position*	*Name*	*Date*
School of Engineering	Associate Dean	Prof Philip K. T. MOK	14-Dec-20

Concurrence from other Schools or departments/units

School/Dept/Program Unit	*Position*	*Name*	*Date*
Dual Degree Program in Technology and Management	UG Coordinator	Prof Betty LIN	30-Oct-20
Dept of Mechanical & Aerospace Engineering	UG Coordinator	Prof Baoling HUANG	3-Nov-20

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Approval of Undergraduate Course

Section 1: Academic Administration [1]

1.1 Catalog

a) Course to be effective from: Academic Year 2021-2022 Term Fall

b) Department Code[3]: ISDN Subject Area[3]: ISDN Course Number [4]: 2601

Previous Course Code[5]: New Course

c) Full Title[6] *(max. 100 characters)*: Internet of Things: From Component Skills to System Integration

d) Abbreviated Title[7] *(max. 30 characters)*:

e) Course Credits[8]: (X) Fixed: 3 ( ) Range: From To

f) Catalog Description[9] *(word limit = 150)*:

This course introduces the fundamental concepts and skills on how to design an IoT (Internet of Things) system. The course includes fundamental theory and practical hands-on labs and projects for the student to acquire the basic knowledge on several key components for IoT systems, including circuits and sensors, signal processing, embedded systems, and communication and networking. The integration of different components is an important topic for this course. The students will acquire the knowledge through lectures, practical hands-on labs, and projects.

g) Grading Type[10]: (X) Letter Grades ( ) Distinction/Credit/Pass/Fail ( ) Pass/ Fail ( ) Distinction/Pass/Fail [ ] Others *(please specify)*:

h) [ ] Prerequisites[11]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained

i) [ ] Corequisites[12]:

Course Code	Course Title

j) [x] Exclusions[13]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained
ELEC1200	A System View of Communications: from Signals to Packets

k) [ ] Co-listing[14]: [ ] Multi-coding[14]:

Course Code	Course Title

l) Other Enrollment Restrictions[15] (X) No ( ) Yes

Instructor's approval required

Restricted to specified student group(s) *(please specify, e.g. year and program of study):* See section 1.3

Others *(please specify):*

m) Medium of Instruction/Materials[16]: (X) English ( ) Others, (Pls specify and provide a justification in Section 1.3):

n) Allow course repetition for credit[17]: (X) No ( ) Yes

1.2 *Contribution of course to Programs of Study* *[Check all appropriate boxes below]*

[X] Major

Program of Study	As		
Integrative Systems and Design (ISDN)	[X] Required Course	[ ] Elective	[ ] Prerequisite

[ ] Minor

Program of Study	As		
	[ ] Required Course	[ ] Elective	[ ] Prerequisite

[ ] Common Core

[ ] Others (pls specify)

Program of Study	As		
	[ ] Required Course	[ ] Elective	[ ] Prerequisite

1.3 *Rationale for Introducing this course and other relevant information* [18]

This proposed course is a required course for the second-year students in ISD. Students are going to learn about the component skills and system integration for Internet of Things (IoT). This course covers basic knowledge in several areas of electronic engineering including sensor and circuits, signal and system, communications, etc. After taking this course, student should be equipped with basic knowledge for IoT and ready to take higher level courses in related areas.

Before the official launching of ISDN2601, a pilot run of this course in special topic format (ISDN4000G) will be offered in Fall & Spring 20-21

For ISD students who completed ELEC1200, they would not be required to take ISDN2601. ISD would allow them to use ELEC1200 to replace ISDN2601 as course deviation.

Section 2A: Learning Outcomes and Alignment *(for courses not proposed to be Common Core Courses)*

2.1 *Key Course Intended Learning Outcomes (Should not normally exceed six or eight outcomes)*

Upon completion of this course, students are expected to be able to do the following:

	Course ILOs	**Nature of the learning outcomes** *(A - Knowledge/Content Related; B - Academic Skills/Competencies; C - Others)*
1	Describe how an IoT system works	A
2	Identify the basic components of an IoT system	A
3	Learn how different components are integrated	A
4	Acquire hands-on experiment technique	B
5	Apply the knowledge in designing simple IoT system	B
6	Carry out performance analysis of an IoT system	B
7	Work and communicate effectively in a team	B
8	Conduct personal reflection from time to time	B

2.2 *Contribution of Learning Outcomes to Programs of Study identified in Section 1.2*

(Please also complete Section 4.1)

	Program of study 1: _____ISDN_____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	Be capable to identify and formulate problems in a multidisciplinary environment with an understanding of science, engineering, technology, business and design issues and constraints	CILO-1, CILO-2, CILO-3, CILO-6
2	Develop innovative problem-solving skills through hands-on learning and application of knowledge of science, engineering and design in integrative systems	CILO-4
3	Integrate knowledge and skills using a team-based, project-based pedagogy to be experts in tackling challenging problems considering ethics and societal needs	CILO-7, CILO-8
4	Be able to communicate and perform as a design expert in individual and team-based environments	CILO-7
5	Be life-long learners	CILO-5
6		
7		
8		

	Program of study 2: _____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1		
2		
3		

Section 2B: Additional Information[2] *(for courses not proposed to be Common Core Courses)*

2.3 Planned Teaching & Learning Arrangement

	Teaching & Learning Arrangement	Weekly Scheduled Hours/ Estimated Weekly Learning Hours	Indicate which course ILOs this activity serves to achieve *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
Face-to face activities	[X] Lecture*	**2**	**CILO-1, CILO-2, CILO-3, CILO-5 and CILO-6**	
	[ ] Tutorial*			
	[ ] Seminar/Small-class*			
	[X] Laboratory*	**2**	CILO-4, CILO-7, CILO-8	
	*Does the above scheduled component(s) involve structured active learning activities? [19] (X) No ( ) Yes *If yes, please specify for each scheduled component, the percentage and the type of active learning involved in the "Additional Information" column.*			
	[ ] Others (e.g. fieldtrip, visit, etc.), *pls specify:* _____			
Online activities	[ ] Online lecture videos			
	[ ] Other online learning tasks, *pls specify:* _____			
	The total learning hours of the course# is equivalent to _____120____ hours [8] *# including both scheduled instructional hours and hours for self-study activities & assessment*			

- *For course adopting a pedagogic approach other than lecture, tutorial and laboratory, please indicate the pedagogy used:*

( ) Blended learning [20] ( ) Pure online delivery [21]

( ) Experiential learning [22] ( ) Others, *pls specify:*_____

2.4 *Planned Assessment Weightings*

Assessment Task	Proportion of Final Grade (%)	Indicate which course ILOs this task is to assess *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
[x] In-class test	**10%**	**CILO-1, CILO-2, CILO-3, CILO-5, CILO-6, CILO-8**	
[x] Mid-term test	**25%**	**CILO-1, CILO-2, CILO-3, CILO-5, CILO-6, CILO-8**	
[ ] Final exam			
[x] Written assignment	**10%**	**CILO-1, CILO-2, CILO-3, CILO-4, CILO-5, CILO-6, CILO-8**	
[x] Project report	**20%**	**CILO-1, CILO-2, CILO-3, CILO-4, CILO-5, CILO-6, CILO-7**	
[x] Presentation	**5%**	**CILO-1, CILO-2, CILO-3, CILO-4, CILO-5, CILO-6, CILO-7**	
[ ] Learning portfolio			
[ ] Course participation			
[ ] Peer evaluation			
[x] Others (e.g. proctored online exam, etc.), *pls specify:* ___Lab_____	**30%**	**CILO-1, CILO-2, CILO-3, CILO-4, CILO-5, CILO-6, CILO-7**	

2.5 *Course Duration*

(X) 1 term ( ) 2 terms ( ) Others, *pls specify:* _____

2.6 *Planned Frequency of Offerings [Check all appropriate boxes]:*

[x] Every Fall
[ ] Every Winter
[ ] Every Spring
[ ] Every Summer
[ ] No fixed pattern
[ ] Other *(pls specify):* _____

2.7 *Course outline attached*

( ) No (X) Yes

- **Internationalization:**

Internationalization in a course refers to course content and/or pedagogic approaches which incorporate an intercultural and international perspective. Examples may include:

- Collaboration with overseas institutions to develop and adopt international course content, or to arrange international field trip
- Insertion of international theme as part of the course
- Integrating the course content with international material as examples or case studies
- Elements to provide global diversified perspectives and/or practices around the world

Please briefly list or summarize any component(s) in the course that contributes to internationalizing the curriculum:

2.8 *Resources*

Request extra resources for teaching this course? (X) No ( ) Yes

ISDN 2601: Internet of Things: From Component Skills to System Integration

Course Description:

The course introduces the fundamental concepts and skills on how to design an IoT (Internet of Things) system. The course includes fundamental theory and practical hands-on labs and projects for the student to acquire the basic knowledge on several key components for IoT systems, including circuits and sensors, signal processing, embedded systems, and communication and networking. The integration of different components is an important topic for this course. The students will acquire the knowledge through lectures, practical hands-on labs, and projects.

Intended learning outcomes (ILOs) of the course:

- Describe how an IoT system works
- Identify the basic components of an IoT system
- Learn how different components are integrated
- Acquire hands-on experiment technique
- Apply the knowledge in designing simple IoT system
- Carry out performance analysis of an IoT system

Coverage:

Part I: Circuits and Sensors

1. Introduction
2. Circuits
3. Amplifier
4. Sensor
5. Actuator

Part II: Signal Processing

1. Signals and systems
2. Analog to digital conversion
3. Impulse response
4. Frequency analysis
5. Analog Modulation

Part III: Communication and Networking

1. Communication systems
2. Source coding
3. Channel coding
4. Modulation
5. Networking, MQTT
6. Machine Learning and Data Analytics

Lab Arrangement

1. Lab1: Circuits and amplifier
2. Lab2: Sensor and actuator
3. Lab3: ADC
4. Lab4: Frequency analysis and analog modulation
5. Lab5: Source and channel coding
6. Lab6: Networking and MQTT

Section 4: Development, Concurrence and Approval

4.1 Contribution to the Program Learning Outcomes

The course is confirmed by the following Major/Minor program department(s)/unit(s) as indicated in Section 1.2 that it would contribute appropriately to overall program learning outcomes.

Department/Program unit	*Position*	*Name*	*Date*
Division of Integrative Systems & Design	Head of Division	Prof Chi Ying TSUI	30-Nov-20

4.2 Approvals

Recommendation from offering department(s) and School(s)/IPO

Offering Department/Program Unit	*Position*	*Name*	*Date*
Division of Integrative Systems & Design	Head of Division	Prof Chi Ying TSUI	30-Nov-20

Recommending School/IPO	*Position*	*Name*	*Date*
School of Engineering	Associate Dean	Prof Philip K. T. MOK	14-Dec-20

Concurrence from other Schools or departments/units

School/Dept/Program Unit	*Position*	*Name*	*Date*
Dept of Electronic & Computer Engineering	UG Coordinator	Prof Weichuan YU	3-Dec-20

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Approval of Undergraduate Course

Section 1: Academic Administration [1]

1.1 Catalog

a) Course to be effective from: Academic Year 2021-2022 Term Spring

b) Department Code[3]: ISDN Subject Area[3]: ISDN Course Number [4]: 2602

Previous Course Code[5]: New Course

c) Full Title[6] *(max. 100 characters)*: Mechatronic Systems Design with Embedded Computing

d) Abbreviated Title[7] *(max. 30 characters)*:

e) Course Credits[8]: (x) Fixed: 3 ( ) Range: From To

f) Catalog Description[9] *(word limit = 150)*:

This course provides an introductory experience into the design of mechatronic systems and the corresponding controller using embedded computing platform. The course includes fundamental theory and also practical hands-on labs and projects for the student to acquire the basic knowledge of designing mechatronic systems and using embedded system to control. In the lab sessions, students design and build a succession of mechatronic subsystems, leading to an integrated system in a final project. Lectures topics include embedded system design, basic electronics, use of sensors and actuators, system modelling, measurement and control, and appreciation of how mechatronic systems solve real-world problems.

g) Grading Type[10]: (x) Letter Grades ( ) Distinction/Credit/Pass/Fail ( ) Pass/ Fail ( ) Distinction/Pass/Fail [ ] Others *(please specify)*:

h) [ ] Prerequisites[11]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained

i) [ ] Corequisites[12]:

Course Code	Course Title

j) [x] Exclusions[13]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained
ELEC 1100	Introduction to Electro-Robot Design
MECH 2907	Mechatronic Design and Prototyping

k) [ ] Co-listing[14]: [ ] Multi-coding[14]:

Course Code	Course Title

l) Other Enrollment Restrictions[15] (x) No ( ) Yes

Instructor's approval required

Restricted to specified student group(s) *(please specify, e.g. year and program of study)*: See section 1.3

Others *(please specify)*:

m) Medium of Instruction/Materials[16]: (x) English ( ) Others, (Pls specify and provide a justification in Section 1.3): _____

n) Allow course repetition for credit[17]: (x) No ( ) Yes

1.2 *Contribution of course to Programs of Study [Check all appropriate boxes below]*

[x] Major

Program of Study	As		
Integrative Systems and Design (ISDN)	[x] Required Course	[ ] Elective	[ ] Prerequisite

[ ] Minor

Program of Study	As		
	[ ] Required Course	[ ] Elective	[ ] Prerequisite

[ ] Common Core

[ ] Others (pls specify):

Program of Study	As		
	[ ] Required Course	[ ] Elective	[ ] Prerequisite

1.3 *Rationale for Introducing this course and other relevant information [18]*

This proposed course is a required course for the second-year students in ISD. Students are going to learn about the basic design knowledge and skill to build a mechatronic system to solve real world problems. This course covers basic knowledge on how to build a mechatronic system and using embedded system to build the controller. The course covers several areas of electronic engineering and mechanical engineering including sensor and circuits, embedded processor, system modelling, control function, instrumentation and measurement, etc. After taking this course, student should be equipped with basic knowledge for mechatronic system design and ready to take higher level courses in related areas.

Before the official launching of ISDN2602, a pilot run of this course in special topic format (ISDN4000I) will be offered in Spring 20-21.

For ISD students who completed ELEC1100 or MECH2907, they would not be required to take ISDN2602. ISD would allow them to use ELEC1100 or MECH2907 to replace ISDN2602 as course deviation.

Section 2A: Learning Outcomes and Alignment *(for courses not proposed to be Common Core Courses)*

2.1 *Key Course Intended Learning Outcomes (Should not normally exceed six or eight outcomes)*

Upon completion of this course, students are expected to be able to do the following:

	Course ILOs	**Nature of the learning outcomes** *(A - Knowledge/Content Related; B - Academic Skills/Competencies; C - Others)*
1	Describe how an embedded system work and Learn how to program an embedded system and how the software and hardware work together	A
2	Learn the basics of electrical circuits and electronic devices	A
3	Learn the basics of sensor and actuator theory and able to design sensor circuits for simple applications	A
4	Learn the theoretical and practical aspects of measurement system design, system modelling and control system design	A
5	Gain hands-on experience in designing and constructing basic mechatronic systems as well implementing the control algorithms using embedded system	B
6	Appreciate how mechatronic systems solve the real-world problem	B
7	Work as a team to prototype a system	B
8		

2.2 *Contribution of Learning Outcomes to Programs of Study identified in Section 1.2*

(Please also complete Section 4.1)

	Program of study 1: _____ISDN_____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	Be capable to identify and formulate problems in a multidisciplinary environment with an understanding of science, engineering, technology, business and design issues and constraints	CILO-1, CILO-6, CILO-7
2	Develop innovative problem-solving skills through hands-on learning and application of knowledge of science, engineering and design in integrative systems	CILO-2, CILO-3, CILO-4, CILO-5, CILO-7
3	Integrate knowledge and skills using a team-based, project-based pedagogy to be experts in tackling challenging problems considering ethics and societal needs	CILO- 1, CILO-6
4	Be able to communicate and perform as a design expert in individual and team-based environments	CILO-1, CILO-6, CILO-7
5	Be life-long learners	CILO-1, CILO-2, CILO-3, CILO-4, CILO-5, CILO-7
6		
7		
8		

	Program of study 2: _____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1		
2		
3		
4		

Section 2B: Additional Information[2] *(for courses not proposed to be Common Core Courses)*

2.3 *Planned Teaching Arrangement*

	Teaching & Learning Arrangement	Weekly Scheduled Hours/ Estimated Weekly Learning Hours	Indicate which course ILOs this activity serves to achieve *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
Face-to face activities	[X] Lecture*	2	CILO-1, CILO-2, CILO-3, CILO-4, CILO-5, CILO-6	
	[ ] Tutorial*			
	[ ] Seminar/Small-class*			
	[X] Laboratory*	2	CILO-1, CILO-2, CILO-3, CILO-5, CILO-7	
	*Does the above scheduled component(s) involve structured active learning activities?[19] (X) No ( ) Yes *If yes, please specify for each scheduled component, the percentage and the type of active learning involved in the "Additional Information" column.*			
	[X] Others (e.g. fieldtrip, visit, etc.), *pls specify:* *team work and meetings* *Course Project*	1	CILO-7	
Online activities	[ ] Online lecture videos			
	[ ] Other online learning tasks, *pls specify:* _____			
	The total learning hours of the course# is equivalent to _____120____ hours[8] *# including both scheduled instructional hours and hours for self-study activities & assessment*			

- *For course adopting a pedagogic approach other than lecture, tutorial and laboratory, please indicate the pedagogy used:*

( ) Blended learning[20] ( ) Pure online delivery[21]

( ) Experiential learning[22] ( ) Others, *pls specify:*_____

2.4 *Planned Assessment Weightings*

Assessment Task	Proportion of Final Grade (%)	Indicate which course ILOs this task is to assess *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
[x] In-class test	10%	CILO-1, CILO-2, CILO-3, CILO-4	
[x] Mid-term test	25%	CILO-1, CILO-2, CILO-3, CILO-4, CILO-5	
[ ] Final exam			
[x] Written assignment	10%	CILO-1, CILO-2, CILO-3, CILO-4	
[x] Project report	25%	CILO-1, CILO-2, CILO-3, CILO-4, CILO-5, CILO-6, CILO-7	
[x] Presentation	5%	CILO-1, CILO-2, CILO-3, CILO-4, CILO-5, CILO-6, CILO-7	
[ ] Learning portfolio			
[x] Course participation	5%	CILO-6, CILO-7	
[ ] Peer evaluation			
[x] Others, *pls specify:* *_Lab reports*	20%	CILO-1, CILO-2, CILO-3, CILO-5, CILO-7	

2.5 *Course Duration*

(X) 1 term ( ) 2 terms ( ) Others, *pls specify:* _____

2.6 *Planned Frequency of Offerings* *[Check all appropriate boxes]:*

[ ] Every Fall
[ ] Every Winter
[x] Every Spring
[ ] Every Summer
[ ] No fixed pattern
[ ] Other *(pls specify):* _____

2.7 *Course outline attached* ( ) No (X) Yes

2.8 *Resources*

Request extra resources for teaching this course? (X) No ( ) Yes

ISDN 2602 Mechatronic Systems Design with Embedded Computing

Course Outline

Week #	Topic
1	Introduction to Mechatronics Systems and Embedded System
2	System Response modelling and analysis
3	Computer Organization – Embedded Processors and software
4	Embedded System Interface
5	Measurement and Manipulation principles
	Midterm
6	Sensors – Position Sensors, Drivers, Optical Encoder
7	Actuators – DC Motor, Servo Motor, Steppers
8	Data acquisition and conversion
9	Basic electronics and driver circuits
10	Control system design and tuning
11	Case studies in system integration
	Final Project Presentation

Textbook

Introduction to Mechatronics and Measurement Systems, 4th edition by D. Alciatore and M. Histand, McGraw-Hill, 2012.

Labs Outline

Five Labs will be held in the consecutive 5 weeks in group size of 2.

1. Embedded Systems Basic – Setting up and embedded programming
2. Implementing simple controller with embedded processors
3. Basic input and output system
4. Sensor modules, ADC
5. Pulse width modulation – PWM generation

Section 4: Development, Concurrence and Approval

4.1 Contribution to the Program Learning Outcomes

The course is confirmed by the following Major/Minor program department(s)/unit(s) as indicated in Section 1.2 that it would contribute appropriately to overall program learning outcomes.

Department/Program unit	*Position*	*Name*	*Date*
Division of Integrative Systems & Design	Head of Division	Prof Chi Ying TSUI	30-Nov-20

4.2 Approvals

Recommendation from offering department(s) and School(s)/IPO

Offering Department/Program Unit	*Position*	*Name*	*Date*
Division of Integrative Systems & Design	Head of Division	Prof Chi Ying TSUI	30-Nov-20

Recommending School/IPO	*Position*	*Name*	*Date*
School of Engineering	Associate Dean	Prof Philip K. T. MOK	14-Dec-20

Concurrence from other Schools or departments/units

School/Dept/Program Unit	*Position*	*Name*	*Date*
Dept of Electronic & Computer Engineering	UG Coordinator	Prof Weichuan YU	3-Dec-20
Dept of Mechanical & Aerospace Engineering	UG Coordinator	Prof Baoling Huang	2-Dec-20

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Approval of Undergraduate Course

Section 1: Academic Administration [1]

1.1 Catalog

a) Course to be effective from: Academic Year 2021-2022 Term Fall

b) Department Code[3]: ISD Subject Area[3]: ISDN Course Number [4]: 3601

Previous Course Code[5]: New course

c) Full Title[6] *(max. 100 characters)*: Mechanics and Materials

d) Abbreviated Title[7] *(max. 30 characters)*:

e) Course Credits[8]: ◉ Fixed: 4 ○ Range: From To

f) Catalog Description[9] *(word limit = 150)*:

An experiential learning course using lectures and project to introduce students to foundations of mechanics, mechanical properties and structures of materials. It covers the deformation and failure modes of solid mechanical objects when subjected to various types of loads. The behavior is linked to mechanical properties of materials, including metals, polymers and composites. Characterization methods of mechanical properties will also be covered.

g) Grading Type[10]: ◉ Letter Grades ○ Distinction/Credit/Pass/Fail ○ Pass/ Fail ○ Distinction/Pass/Fail ☐ Others *(please specify)*:

h) ☒ Prerequisites[11]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained
(PHYS 1112 / PHYS 1111 / PHYS1312)	(General Physics 1 / General Physics I with Calculus/Honors General Physics I)
& MATH1014	& Calculus II

i) ☐ Corequisites[12]:

Course Code	Course Title

j) ☒ Exclusions[13]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained
MECH2040	Solid Mechanics 1
CIVL2120	Mechanics of materials

k) ☐ Co-listing[14]: ☐ Multi-coding[14]:

Course Code	Course Title

l) Other Enrollment Restrictions[15] ◉ No ○ Yes

☐ Instructor's approval required

☐ Restricted to specified student group(s) *(please specify, e.g. year and program of study)*:

☐ Others *(please specify)*:

m) Medium of Instruction/Materials[16]: ◉ English ○ Others, (Pls specify and provide a justification in Section 1.3):

n) Allow course repetition for credit[17]: ◉ No ○ Yes

1.2 *Contribution of course to Programs of Study* [Check all appropriate boxes below]

[x] Major

Program of Study	As		
Integrative Systems & Design	[x] Required Course	[ ] Elective	[ ] Prerequisite

[ ] Minor

Program of Study	As		
	[ ] Required Course	[ ] Elective	[ ] Prerequisite

[ ] Common Core

[ ] Others (pls specify):

Program of Study	As		
	[ ] Required Course	[ ] Elective	[ ] Prerequisite

1.3 *Rationale for Introducing this course and other relevant information* [18]

Design of mechanical objects is fundamental to the design of integrative systems. This involves a good understanding of materials and their properties, and familiarity with how such properties are measured; it also requires a good understanding of how the design will behave mechanically in response to the loads that it will be subjected to, and the conditions under which it might fail mechanically (e.g. by plastic deformation, fracture, etc.)
In this course, students will be assigned design projects, which will require their investigation and learning about the theoretical foundations of these topics, as well as a practical application of them.

The course will introduce students to important types of materials, their atomic and crystal structure, as well as how this structure varies when subjected to external stimuli (e.g. loads, plastic deformation, heat, cooling etc.). Foundation topics include Atomic structure, Crystal structure, Defects and Dislocations, Elastic and plastic properties, Theories of failure, Diffusion, Phase transformations and Glass transition temperatures.

In understanding the behavior of parts under loading, students will learn about stress and strains, torsion, transformations of stresses, and various important stress conditions common in designs, including bending loads, deflection of statically indeterminate structures, buckling.

NOTE: Before the official launching of ISDN3601, a pilot run of this course in special topic format (ISDN4000J) will be offered in Spring 20-21, with Prof Ajay Joneja and Mitch Li as co-instructors.

Section 2A: Learning Outcomes and Alignment *(for courses not proposed to be Common Core Courses)*

2.1 *Key Course Intended Learning Outcomes (Should not normally exceed six or eight outcomes)*

Upon completion of this course, students are expected to be able to do the following:

	Course ILOs	**Nature of the learning outcomes** *(A - Knowledge/Content Related; B - Academic Skills/Competencies; C - Others)*
1	To understand basic mechanical properties of materials	A
2	To be able to explain atomic structure of materials and how it changes under stimuli	A and B
3	To quantitatively and qualitatively understand the relationship between material properties and behavior under loads	A
4	To understand failure modes of materials under stress	A
5	To apply knowledge of material properties, their relationship between stresses and strains under loads, into practical product design	B
6		
7		
8		

2.2 *Contribution of Learning Outcomes to Programs of Study identified in Section 1.2*

(Please also complete Section 4.1)

	Program of study 1: _____BSc in ISDN_____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	Be capable to identify and formulate problems in a multidisciplinary environment with an understanding of science, engineering, technology, business and design issues and constraints	CILO-1, CILO-2, CILO-3, CILO-4, CILO-5
2	Develop innovative problem-solving skills through hands-on learning and application of knowledge of science, engineering and design in integrative systems	CILO-4, CILO-5
3	Integrate knowledge and skills using a team-based, project-based pedagogy to be experts in tackling challenging problems considering ethics and societal needs	CILO-5
4	Be able to communicate and perform as a design expert in individual and team-based environments	CILO-4, CILO-5
5	Be life-long learners	CILO-5
6		
7		
8		

	Program of study 2: _____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1		
2		
3		
4		
5		
6		
7		
8		

Section 2B: Additional Information[2] *(for courses not proposed to be Common Core Courses)*

2.3 *Planned Teaching & Learning Arrangement*

	Teaching & Learning Arrangement	Weekly Scheduled Hours/ Estimated Weekly Learning Hours	Indicate which course ILOs this activity serves to achieve *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
Face-to face activities	[x] Lecture*	3	CILO-1, CILO-2, CILO-3, CILO-4, CILO-5	
	[ ] Tutorial*			
	[ ] Seminar/Small-class*			
	[x] Laboratory*	2	CILO-1, CILO-3, CILO-4, CILO-5	**Some structured labs, and a course project done in teams**
	*Does the above scheduled component(s) involve structured active learning activities? [19] ◯ No (X) Yes *If yes, please specify for each scheduled component, the percentage and the type of active learning involved in the "Additional Information" column.*			
	[ ] Others (e.g. fieldtrip, visit, etc.), *pls specify:* _____			
Online activities	[ ] Online lecture videos			
	[ ] Other online learning tasks, *pls specify:* _____			
	The total learning hours of the course# is equivalent to _____180____hours [8] *# including both scheduled instructional hours and hours for self-study activities & assessment*			

- *For course adopting a pedagogic approach other than lecture, tutorial and laboratory, please indicate the pedagogy used:*

◯ Blended learning [20] ◯ Pure online delivery [21]

◯ Experiential learning [22] ◯ Others, *pls specify:*_____

2.4 *Planned Assessment Weightings*

Assessment Task	Proportion of Final Grade (%)	Indicate which course ILOs this task is to assess *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
[ ] In-class test			
[x] Mid-term test	**25**	**CILO 1, 2**	
[x] Final exam	**25**	**CILO 1, 2, 3, 4**	**Mostly CILO 3, 4**
[ ] Written assignment			
[x] Project report	**30**	**CILO 1, 2, 3, 4, 5**	**Assesses project work and report**
[ ] Presentation			
[x] Home work	**10**	**CILO 1, 2, 3, 4**	
[ ] Course participation			
[ ] Peer evaluation			
[x] Others (e.g. proctored online exam, etc.), *pls specify:* *LAB*	**10**	**CILO 1, 2, 3, 4, 5**	

2.5 *Course Duration*

(●) 1 term ( ) 2 terms ( ) Others, *pls specify:* _____

2.6 *Planned Frequency of Offerings [Check all appropriate boxes]:*

[ ] Every Fall
[ ] Every Winter
[ ] Every Spring
[ ] Every Summer
[x] No fixed pattern
[ ] Other *(pls specify):* _____

2.7 *Course outline attached*

( ) No (●) Yes

- **Internationalization:**

Internationalization in a course refers to course content and/or pedagogic approaches which incorporate an intercultural and international perspective. Examples may include:

- Collaboration with overseas institutions to develop and adopt international course content, or to arrange international field trip
- Insertion of international theme as part of the course
- Integrating the course content with international material as examples or case studies
- Elements to provide global diversified perspectives and/or practices around the world

Please briefly list or summarize any component(s) in the course that contributes to internationalizing the curriculum:

2.8 *Resources*

Request extra resources for teaching this course? (●) No ( ) Yes

ISDN3601 Course outline

Week 1-5

Atomic structures, Crystals, Phase changes in metals and polymers

Amorphous and semicrystalline polymers, copolymers and composites

Elastic and plastic deformations, dislocations/slip and relationship with manufacturing processes

Failure modes and analyses in metals, polymers and composites

Week 6-11

Stress, strain and their relationship

Stress analysis, statically indeterminate problems

Torsion, shear

Stress transformations, Mohr circle

Bending, Transverse loading of beams

Stress analysis using software/FEM (Ansys, SolidWorks)

Plastic deformation and fracture

Columns, buckling

Energy method

Week 13

Project presentations

Section 4: Development, Concurrence and Approval

4.1 Contribution to the Program Learning Outcomes

The course is confirmed by the following Major/Minor program department(s)/unit(s) as indicated in Section 1.2 that it would contribute appropriately to overall program learning outcomes.

Department/Program unit	*Position*	*Name*	*Date*
Division of Integrative Systems & Design	Head of Division	Prof Chi Ying TSUI	30-Nov-20

4.2 Approvals

Recommendation from offering department(s) and School(s)/IPO

Offering Department/Program Unit	*Position*	*Name*	*Date*
Division of Integrative Systems & Design	Head of Division	Prof Chi Ying TSUI	30-Nov-20

Recommending School/IPO	*Position*	*Name*	*Date*
School of Engineering	Associate Dean	Prof Philip K. T. MOK	14-Dec-20

Concurrence from other Schools or departments/units

School/Dept/Program Unit	*Position*	*Name*	*Date*
Dept of Physics	UG Coordinator	Prof Bradley A FOREMAN	16-Dec-20
Dept of Mechanical & Aerospace Engineering	UG Coordinator	Prof Baoling Huang	7-Dec-20
Dept of Civil and Environmental Engineering	UG Coordinator	Prof Jack C P CHENG	4-Dec-20
Dept of Mathematics	UG Coordinator	Dr Tsz Kin LAM	28-Dec-20

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY
Approval of Undergraduate Course

Section 1: Academic Administration [1]

1.1 Catalog

a) Course to be effective from: Academic Year 2021-22 Term Fall

b) Department Code[3]: ISD Subject Area[3]: ISDN Course Number [4]: ISDN 4330

Previous Course Code[5]:

c) Full Title[6] *(max. 100 characters)*: Ergonomics in Design

d) Abbreviated Title[7] *(max. 30 characters)*:

e) Course Credits[8]: ☑ Fixed: 2 ○ Range: From To

f) Catalog Description[9] *(word limit = 150)*:

Many of the products marketed today have the word "ergonomic" attached to them. How ergonomic are they? The course is designed to provide a basic understanding of ergonomics in design through the introduction of human anatomy, anthropometry, and modeling techniques with the aim of improving safety, productivity, comfort and health of people

g) Grading Type[10]: ☑ Letter Grades ○ Distinction/Credit/Pass/Fail ○ Pass/ Fail ○ Distinction/Pass/Fail ☐ Others *(please specify)*:

h) ☐ Prerequisites[11]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained

i) ☐ Corequisites[12]:

Course Code	Course Title

j) ☐ Exclusions[13]:

Course Code / Public Exam	Course Title / Exam Subject and Level / Grade attained

k) ☐ Co-listing[14]: ☐ Multi-coding[14]:

Course Code	Course Title

l) Other Enrollment Restrictions[15] ☑ No ○ Yes

☐ Instructor's approval required

☐ Restricted to specified student group(s)
(please specify, e.g. year and program of study): _____

☐ Others *(please specify):* _____

m) Medium of Instruction/Materials[16]: ☑ English ○ Others, (Pls specify and provide a justification in Section 1.3):

_____

n) Allow course repetition for credit[17]: ☑ No ○ Yes

1.2 *Contribution of course to Programs of Study* [Check all appropriate boxes below]

☑ Major

Program of Study	As		
Integrative Systems & Design	☐ Required Course	☑ Elective	☐ Prerequisite

☐ Minor

Program of Study	As		
	☐ Required Course	☐ Elective	☐ Prerequisite

☐ Common Core

☐ Others (pls specify):

Program of Study	As		
	☐ Required Course	☐ Elective	☐ Prerequisite

1.3 *Rationale for Introducing this course and other relevant information* [18]

Many of the products marketed today have the word "ergonomic" attached to them. How ergonomic are they? Students in design ought to understand the capabilities and limitation of people so that they can be accommodated as and when necessary as it is critical for good usability and user experience.

Section 2A: Learning Outcomes and Alignment *(for courses not proposed to be Common Core Courses)*

2.1 *Key Course Intended Learning Outcomes (Should not normally exceed six or eight outcomes)*

Upon completion of this course, students are expected to be able to do the following:

	Course ILOs	**Nature of the learning outcomes** *(A - Knowledge/Content Related; B - Academic Skills/Competencies; C - Others)*
1	Apply ergonomic principles for the creation of safer, healthier and more efficient and effective products and activities	A
2	Apply anthropometric tables for evaluation and design criteria for products	A
3	Design a workplace according to ergonomic principles	B
4	Identify engineering solutions to improve human performance and reduce the risk of discomfort and injury when interacting with products	B
5		
6		
7		
8		

2.2 *Contribution of Learning Outcomes to Programs of Study identified in Section 1.2*

(Please also complete Section 4.1)

	Program of study 1: BSc Integrative Systems & Design **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1	Be capable to identify and formulate problems in a multidisciplinary environment with an understanding of science, engineering, technology, business and design issues and constraints	
2	Develop innovative problem-solving skills through hands-on learning and application of knowledge of science, engineering and design in integrative systems	CILO-3, CILO-4
3	Integrate knowledge and skills using a team-based, project-based pedagogy to be experts in tackling challenging problems considering ethics and societal needs	
4	Be able to communicate and perform as a design expert in individual and team-based environments	CILO-1, CILO_2
5	Be life-long learners	
6		
7		
8		

	Program of study 2: _____ **Program ILOs**	**To be achieved through these course ILOs** *(Write CILO-1, CILO-2, etc.)*
1		
2		
3		
4		
5		
6		
7		
8		

Section 2B: Additional Information[2] *(for courses not proposed to be Common Core Courses)*

2.3 *Planned Teaching Arrangement*

	Teaching & Learning Arrangement	Weekly Scheduled Hours/ Estimated Weekly Learning Hours	Indicate which course ILOs this activity serves to achieve *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
Face-to face activities	☒ Lecture*	**1**	**CILO-1, CILO-2, CILO-3, CILO-4**	
	☐ Tutorial*			
	☐ Seminar/Small-class*			
	☒ Laboratory*	**3**	**CILO-2, CILO-3, CILO-4**	
	*Does the above scheduled component(s) involve structured active learning activities? [19] ⊗ No ○ Yes *If yes, please specify for each scheduled component, the percentage and the type of active learning involved in the "Additional Information" column.*			
	☐ Others (e.g. fieldtrip, visit, etc.), *pls specify:* ___			
Online activities	☐ Online lecture videos			
	☐ Other online learning tasks, *pls specify:* _____			
	The total learning hours of the course# is equivalent to 52 hours (instruction) + 28 hours (preparation) = 80 hours [8] *# including both scheduled instructional hours and hours for self-study activities & assessment*			

- *For course adopting a pedagogic approach other than lecture, tutorial and laboratory, please indicate the pedagogy used:*

○	Blended learning [20]	○	Pure online delivery [21]
○	Experiential learning [22]	○	Others, *pls specify:*_____

2.4 *Planned Assessment Weightings*

Assessment Task	Proportion of Final Grade (%)	Indicate which course ILOs this task is to assess *(Write CILO-1, CILO-2, etc.)*	Additional Information *(optional)*
☑ In-class test: 5 tests	**60**	CILO-1, CILO-2, CILO-3, CILO-4	
☐ Mid-term test			
☐ Final exam			
☑ Written assignment: 4 reports	**40**	CILO-1, CILO-2, CILO-3, CILO-4	
☐ Project report			
☐ Presentation			
☐ Learning portfolio			
☐ Course participation			
☐ Peer evaluation			
☐ Others, *pls specify:* _____			

2.5 *Course Duration*

(✓) 1 term ( ) 2 terms ( ) Others, *pls specify:* _____

2.6 *Planned Frequency of Offerings* *[Check all appropriate boxes]:*

[ ] Every Fall
[ ] Every Winter
[ ] Every Spring
[ ] Every Summer
[x] No fixed pattern
[ ] Other *(pls specify):* _____

2.7 *Course outline attached* ( ) No (✓) Yes

2.8 *Resources*

Request extra resources for teaching this course? (✓) No ( ) Yes

ISDN 4330 Ergonomics in Design Course Syllabus

1. Overview and Introduction

   Introduction to Ergonomics
   Application of Ergonomics with real life examples.
   Definition and History of Ergonomics
   Ergonomics Awareness through one's own-self
   Human-centered design
   Case study
   Design objectives
   Learning activity (Short report): identify and report 5 misfits between equipment and people

2. Musculoskeletal system (3 hours + 3 hours supplementary materials)

   Musculoskeletal system basics
   Structures
   Muscles and their working principles.
   Human Spine, Vertebrae and Discs, Pelvis and pelvic tilt
   Spine range of motion
   Joint Range of Motion
   Reach and implications
   Vision and lines of sight
   Learning activity (Short report): find range of motion for hand, arm and shoulders and design a hand tool.

3. Hand held tool and equipment design

   Strength
   Blix curve (demos of bioefeedback device)
   Hand tool design basics
   Strength in varying postures (demos with hand dynamometer)
   Sports equipment design
   Postures during tool use
   Consequences of poor design
   Learning activity (Short report): Design a prototype handle for a hand tool.

4. Design for sitting

   Spine and sitting
   Critical dimensions for sitting/standing
   Seat design principles
   Seated work
   Workstation design hierarchy

5. Anthropometry for design

   Principles of measurement
   Measurement techniques
   Data reporting
   Statistical Analysis
   Use of Tables and percentiles for design
   Forecasting and Estimation
   Golden ratio
   Design Criteria using anthropometric data
   Human Foot and related dimensions
   Fitting feet to footwear
   Footwear design
   Learning activity (Short report): Measure the anthropometric dimensions of one person and design a workstation.

Section 4: Development, Concurrence and Approval

4.1 Contribution to the Program Learning Outcomes

The course is confirmed by the following Major/Minor program department(s)/unit(s) as indicated in Section 1.2 that it would contribute appropriately to overall program learning outcomes.

Department/Program unit	*Position*	*Name*	*Date*
Division of Integrative Systems & Design	Head of Division	Prof Chi Ying TSUI	30-Nov-20

4.2 Approvals

Recommendation from offering department(s) and School(s)/IPO

Offering Department/Program Unit	*Position*	*Name*	*Date*
Division of Integrative Systems & Design	Head of Division	Prof Chi Ying TSUI	30-Nov-20

Recommending School/IPO	*Position*	*Name*	*Date*
School of Engineering	Associate Dean	Prof Philip K. T. MOK	14-Dec-20

Concurrence from other Schools or departments/units

School/Dept/Program Unit	*Position*	*Name*	*Date*

Appendix 2a*
to CUS 06/21

Major Course Changes to Take Effect in Spring 2020-21 and Beyond

School of Engineering

Code	**From:**	**To:**
ISDN 3200(2)		
Code:	ISDN 3200	ISDN 2700
Catalog description:	This course is geared towards understanding the process of solving visual problems with words and pictures. It covers the fundamentals of graphic design including line, space and form, color theory, layout and composition, image-making, and typography.	This course aims to get the students acquainted with a number of basic components used to build a coherent and meaningful graphic project/entity, which are central to understanding visual communication on fundamental level. This is done through series of lectures and related assignments where these are broken down and applied with special purposes. Necessary technical requirements for digital and physical/material application are covered at the start, after which main design tools (image and text) are analyzed along with basic visual design rules and guidelines (unity, hierarchy, balance, contrast, etc.) followed by addressing elements to build a fundamental graphic narrative (color, reduced visuals, full visuals, infographics), concluded by application of aforementioned items across different media: Deliverables - Poster, Booklet, Digital Presentation, with consistency in translation of semiotic values and with showcasing basic visual literacy in execution of each as a final requirement.
Course Type:	ISDN3200 is a course under Design Electives in BSc (ISDN) program curriculum for 2018-19, 19-20, 20-21 student cohort.	ISDN2700 is propsoed to be a required course in BSc (ISDN) program curriculum for student cohort (2020-21 and onwards) For 2018-19,19-20 cohort, ISDN2700 remains to be a course under Design Electives in BSc (ISDN) program curriculum.
Reason(s):	We would like to focus on 3D models design and presentation and create better connections with other ISDN courses. ISDN 3200 is proposed to change to ISDN 2700 because it will be offered in the second year instead of the third year. ISDN 2700 is proposed to change from an elective to a required design fundamental course. Graphic design, which involves effective visualization of communication concepts is one of the important components in visual communication. ISD students who possess graphic communication skill will show their new product ideas and new products much more effectively.	

ISDN 4000[1]

Course credit(s):	1-3	1-4
Reason(s):	As the total learning hours of some special topic courses are more than 150, the no. of credit of ISDN4000 has to be increased from 1-3 credits to 1-4 credits.	

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(1) to take effect in Spring 2020-21
(2) to take effect in Fall 2021-22

** Starred items NOT to be discussed at the meeting, unless they are un-starred per members' request.*

Approval of an existing undergraduate course to be delivered through blended learning or pure online delivery

Where an existing HKUST UG course is to be delivered through blended learning (usually referred as "blended online and on-campus mode") or pure online delivery, course change proposal involving "Adoption of mode of delivery other than lecture/ tutorial/ laboratory", with concurrence sought from the E-learning Taskforce under CEI, should be submitted to the CUS for approval

Course code	ISOM3260
Title of the course	Database Design and Administration
Credits	4

Proposed mode of delivery	☑ Blended Learning	◯ Pure online delivery

The blended learning proposal of ISOM3260 was approved by the Committee for Teaching and Learning Innovation (CTLI) in Dec 2019. The course development was kickstarted in Jan 2020 with the support from CEI. The course development will be completed by Dec 2020. The course team, consists of two instructors – Prof. James Thong and Dr. Muller Cheung, is going to launch the course in Blended Learning mode in Fall 2021.

Detailed description of the mode of delivery and how the component(s) are delivered:

Online activities

1. Readings
   Readings include in-class pre-reading materials, lab manuals and selected chapters of the software documentation

2. Videos (including concept videos and lab/practical videos) and online quiz
   Concept videos illustrate the database concepts by animations, visuals with appropriate annotation with narrations.
   The database concepts introduced in the concept videos will be further elaborated through the illustration and demonstration of database software and tools in the practical videos. The videos shall be produced by screencast with narration. Students are expected to watch the videos and grasp the basic skills for the coming laboratory session. We highly appreciate interactive videos with in-video questions and subtitles.

Students will be required to take an online quiz each week, after going through the readings and videos. The quiz will be related to the online materials of that week. Students will submit the answers through Canvas Assignments before the coming in-class session.

Offline activities

1. In-class session

After discussing and evaluating the review questions from the online quizzes, students are expected to participate in groups to design databases through diagramming and other exercises. More in-depth discussion on the database design and administration will be covered.

2. Laboratory session

Students will design, develop and manage databases and build database applications using the CASE tool, SQL management tools and the database development software. Instructor will recap the lab/practical videos and demonstrate more advanced database design and programming skills. Students will then be given no less than 50% of the laboratory time for the group projects. Instructors will provide technical support and scaffold student groups to refine the database design and database application of the group projects. Each week, the laboratory instructor will give instructions to students regarding the tasks to be completed during the lab session, and this will be part of the Lab Submission. The laboratory sessions and the lab/practical videos are crucial for students to complete a semester-wide database development project.

The Midterm and Final examinations will cover online materials, in-class materials, and the materials discussed in laboratory sessions.

Planned Teaching & Learning Arrangement			
Teaching and Learning Arrangement		**Total Scheduled Hours/ Estimated Total Learning Hours**	
		Existing	**Revised**
Face-to-face activities	☑ Lecture	12 classes * 2 hours 24 hours	12 classes * 2 hours 24 hours
	☑ Tutorial Note: Tutorial hours are reduced because group activities are now conducted during lectures.	12 tutorials * 1 hour 12 hours	-
	☐ Seminar/Small-class	-	-
	☑ Laboratory	12 labs * 2 hours 24 hours	12 labs * 2 hours 24 hours
	Others (e.g. fieldtrip, visit, etc.),	-	-

	Subtotal (1)	60	48
Online activities	☑ Online lecture videos and practical/lab videos	-	12 weeks * 1 hour 12 hours
	☑ Other online learning tasks, pls specify: Weekly online quiz	-	12 quizzes * 0.5 hour 6 hours
	☑ Readings	12 weeks * 0.5 hour 6 hours	12 weeks * 0.5 hour 6 hours
Expected time for self-study and assessment	☑ Required assignments	Group Project 13 weeks * 4 hours 52 hours	Group Project 13 weeks * 4 hours 52 hours
	☑ Tests and examinations	Midterm: 1.5 hours Final: 2.5 hours 4 hours	Midterm: 1.5 hours Final: 2.5 hours 4 hours
	☑ Expected time for self-study and preparation	Review of course materials 13 weeks * 2.5 hours 32.5 hours	Review of online materials: 13 weeks * 1 hour Review of class exercises 13 weeks * 1.5 hours 32.5 hours
	Total learning hours commitment	154.5	160.5

Planned Assessment Weightings		
Assessment Tasks	**Proportion of Final Grade (%)**	
	Existing	**Revised**
☐ In-class test		-
☑ Mid-term test	25	20
☑ Final exam	40	35
☐ Written assignment		-
☑ Project report	30	30
☐ Presentation		-
☐ Learning portfolio		-
☐ Course participation		-
☐ Peer evaluation		-
☑ Others (e.g. proctored online exam, etc.), *pls specify:* Lab submission Weekly online quiz	5	5 10
Total	100	100

Remarks:

(1) For courses to be offered in blended learning mode, the total hours of face-to-face activities (such as classroom, lab and tutorial) should be at least 50% of such activities as offered in ordinary in-class mode.

(2) A limit will be set on the number of credits earned from pure online courses that could be used to satisfy the graduation requirements of a degree program. At the undergraduate level, the limit is 6 credits and this does not apply to credits obtained through credit transfer as they are handled by existing credit transfer procedures of the University.

(3) Undergraduate students taking credit bearing online courses must be assessed by rigorous assessment such as proctored examinations.

CUS/13 January 2021
Agenda Item 10
File: 07/21

COMMITTEE ON UNDERGRADUATE STUDIES

Paper for: Information

Title: **Minor Changes to Courses and Programs**

Purpose: Departments/Schools reported for information of CUS the minor changes to courses and programs that are effective from Spring 2020-21 and beyond

Prepared by: CUS Secretariat

BACKGROUND

1. Departments have submitted proposals for minor changes to courses and programs, which have been endorsed by the respective School Boards, to take effect from Spring 2020-21 and beyond.

2. Summaries of the proposed minor changes to courses and programs are presented in Appendices 1 and 2 respectively. These changes will be incorporated and published in the *Program and Course Catalog* as appropriate.

3. Additional information on these changes shown on the forms of *Undergraduate Course Change/ Deletion* and *Changes to the Existing Undergraduate Program* will be available upon request.

ACTION SOUGHT

4. CUS is invited to note for information the minor changes to courses and programs, to take effect from Spring 2020-21 and beyond, as presented in Appendices 1 to 2.

Appendix 1
to CUS 07/21

Minor Course Changes to Take Effect in Spring 2020-21 and Beyond

School of Science

Code	From:	To:
LIFS 1903[(1)]		
Catalog description:	This is a practical course accompanied by the lecture course LIFS 1901. It provides students with some basic concepts and some hands-on experience in biological investigation within the areas covered by LIFS 1901. The emphasis is on the understanding and application of the scientific principles underlying the experimental designs and procedures. Graded P or F.	This is a practical course accompanied by the lecture course LIFS 1901. It provides students with some basic concepts and some hands-on experience in biological investigation within the areas covered by LIFS 1901. The emphasis is on the understanding and application of the scientific principles underlying the experimental designs and procedures. Graded P or F. For students in their first, second year of study; or third or fourth year students with instructor's approval.
Enrollment restriction:	N/A	Students in their third or fourth year of study should seek instructor's approval prior to enrollment in the course.
LIFS 1904[(1)]		
Catalog description:	This is a practical course accompanied by the lecture course LIFS 1902. It provides students with some basic concepts and hands-on experience in biological investigation within the areas covered by LIFS 1902, including plant biology, human biology and ecology. The emphasis is on the understanding and application of the scientific principles underlying the experiments. Graded P or F.	This is a practical course accompanied by the lecture course LIFS 1902. It provides students with some basic concepts and hands-on experience in biological investigation within the areas covered by LIFS 1902, including plant biology, human biology and ecology. The emphasis is on the understanding and application of the scientific principles underlying the experiments. Graded P or F.For students in their first and second year of study; or third and fourth year students with instructor's approval.
Enrollment restriction:	N/A	Students in their third or fourth year of study should seek instructor's approval prior to enrollment in the course
SCIE 1120[(1)]		
Exclusion(s):	Nil	Any 2000-level or above courses in CHEM, LIFS, CENG, BIEN.

School of Engineering

Code	From:	To:
CIVL 4330[(2)]		
Prerequisite(s):	CIVL 2110 AND MATH 2011 AND MATH 2111	CIVL2120 AND MATH2011 AND MATH 2350

COMP 2611[1]		
Exclusion(s):	ELEC 2300	ELEC2300 or ELEC2350
COMP 3511[1]		
Prerequisite(s):	COMP 2611 OR [ELEC 2300 AND (COMP 2011 OR COMP 2012H)]	COMP 2611 OR [(ELEC2300 or ELEC2350) AND (COMP 2011 OR COMP 2012H)]
COMP 4521[1]		
Prerequisite(s):	(COMP 2611 OR ELEC 2300) AND COMP 3511	[COMP 2611 OR (ELEC2300 or ELEC2350)] AND COMP 3511
COMP 4611[1]		
Prerequisite(s):	COMP 2611 or ELEC 2300	COMP 2611 or ELEC2300 or ELEC2350
ELEC 1100[1]		
Catalog description:	The course introduces the fundamental knowledge on the design, implementation and evaluation of a robot and its sub-systems. It covers the basic principles of analog and digital circuits as well as robot sensing and control mechanisms. Students have to apply the knowledge and principles learned to design and build a functional robot by the end of the course. Students who have completed ELEC 2200, ELEC 2400, ELEC 2410, or ELEC 2420, must obtain instructor's approval to take this course.	The course introduces the fundamental knowledge on the design, implementation and evaluation of a robot and its sub-systems. It covers the basic principles of analog and digital circuits as well as robot sensing and control mechanisms. Students have to apply the knowledge and principles learned to design and build a functional robot by the end of the course. Students who have completed ELEC2200, ELEC2350, ELEC2400, ELEC2420 or ELEC3310 must obtain instructor's approval to take this course.
ELEC 2350[1]		
Exclusion(s):	COMP 2611, ELEC 2300	COMP 2611, ELEC 2300, ISDN 4000F
ELEC 3300[1]		
Prerequisite(s):	COMP 2611 OR ELEC 2300 OR ELEC 2350	COMP 2611 OR ELEC 2300 OR ELEC 2350 OR ISDN 4000F
ELEC 3310[1]		
Exclusion(s):	ELEC 2200	ELEC 2200, ISDN 4000D
ELEC 4310[1]		
Prerequisite(s):	(COMP 2611 AND ELEC 2200) OR ELEC 2300	(COMP 2611 AND (ELEC 2200 OR ELEC3310)) OR ELEC 2300 OR ELEC 2350 OR ISDN 4000F
ELEC 4320[1]		
Prerequisite(s):	ELEC 2300	ELEC 2300 OR ELEC 2350 OR ISDN 4000F
ELEC 4330[1]		
Prerequisite(s):	ELEC 2300 OR ELEC 2350	ELEC 2300 OR ELEC 2350 OR ISDN 4000F

ELEC 4410[1]		
Prerequisite(s):	ELEC 2200	ELEC 2200 OR ELEC 3310 OR ISDN 4000D
ISDN 2300[2]		
Full title:	Digital Design	Introduction to 3D Design
Catalog description:	This course will provide the theoretical principles and real-life examples of a wide variety of digital design technology. The course includes using computer-aided techniques to convert sketches into digital ones. Topics covered will include 3D scanning and digital sculpturing, NURBS, 3D rendering, and Animation and computer aided engineering to check the designs.	This course will provide the theoretical principles and real-life examples of a wide variety of digital design technology. The course includes using computer-aided techniques to convert sketches into digital 3D models, animate static 3D models into computer animation, and finally render the 3D models to become the final product image or video. The course also describes how the 3D models and renderings are being used in Virtual Reality and Augmented Reality. Topics covered will include Photogrammetry, Fundamentals of 3D Modeling, NURBS, Principles of Traditional Animation, Computer Animation, 3D Rendering, Virtual Reality and Augmented Reality. Instructor's approval is required for enrollment in the course.
MECH 1907[1]		
Catalog description:	Introduction to the field of Aerospace engineering, discussion of basic aerospace systems and disciplines, working vocabulary of the field. Basic concepts. Demonstration through examples. Wind tunnel visit.	Introduction to the field of Aerospace engineering, discussion of basic aerospace systems and disciplines, working vocabulary of the field. Basic concepts. Demonstration through examples.
MECH 2907[1]		
Delivery mode:	This course's aim is to broaden the professional and engineering interests of students by enhancing their practicum/team-based experience through initiatives different from those of traditional lectures and tutorials. This is a project-based course to develop the students' knowledge/experience in designing and building a practical mechatronics system (formerly called Industrial Training). Students will work in teams to identify the needs for their designed prototype. Also, students will be given the opportunity to design and build various mechatronics components including electronic circuits, motors, sensors, etc. from CAD drawings, and practise their engineering knowledge through all laboratory sessions. The main goal is to develop and nurture skills in problem-solving, communication, interpersonal interaction, project and time management, etc. via the entire project.	This course's aim is to broaden the professional and engineering interests of students by enhancing their practicum/team-based experience through initiatives different from those of traditional lectures and tutorials. This is a project-based course to develop the students' knowledge/experience in designing and building a practical mechatronics system (formerly called Industrial Training). Students will work in teams to identify the needs for their designed prototype. Also, students will be given the opportunity to design and build various mechatronics components including electronic circuits, motors, sensors, etc. from CAD drawings, and practise their engineering knowledge through all laboratory sessions. The main goal is to develop and nurture skills in problem-solving, communication, interpersonal interaction, project and time management, etc. via the entire project. [EXP]

School of Business and Management

Code	From:	To:
ISOM 2310[2]		
Full title:	Chronicle of Internet Commerce	Fundamentals of E-Commerce: Business, Technology, and the Society
ISOM 2500[1]		
Exclusion(s):	CIVL 2160, IEDA 2510, LIFS 3150, MATH 2411, MATH 3423	In Spring 2020-21, CIVL 2160, IEDA 2510, IEDA 2520, IEDA 2540, LIFS 3150, MATH 2411, MATH 3423; Effective from 2021-22 Fall, CIVL 2160, IEDA 2520, IEDA 2540, LIFS 3150, MATH 2411, MATH 3423
RMBI 4980[2]		
Prerequisite(s):	Nil	COMP4331 OR ISOM3360

Interdisciplinary Programs Office

Code	From:	To:
ENVR 4010[1]		
Catalog description:	Faculty directed independent study of selected topics in Environmental issues. For EVMT students and students with consent from the instructor. Graded P or F.	Faculty directed independent study of selected topics in Environmental issues. For EVMT students and students with consent from the instructor. Graded letter grade or P/F subject to different offerings.

(1) to take effect in Spring 2020-21
(2) to take effect in Fall 2021-22

Appendix 2
to CUS 07/21

Minor Program Changes to Take Effect in Spring 2020-21 and Beyond

School of Science

BSc in Chemistry *(for 2020-21 intake and after)* (2)

- Change(s) to required courses:
  - Add CHEM 2500 and CHEM 2555
  - Remove CHEM 2150, CHEM 2250, CHEM 2350 and CHEM 2450

Program:

BSc in Data Science and Technology *(for 2017-18 intake and after)* (1)

- Change(s) to required courses:
  - (LANG 2010/ LANG 2010H OR LANG 2030/ LANG 2030H) AND (LANG 3021 OR LANG 4030) instead of (LANG 2010 AND LANG 3021) OR (LANG 2030 AND LANG 4030)

Undergraduate Minor Program in Actuarial Mathematics (1)

- Change(s) to elective requirements:
  - Add IEDA 2540 as one of the courses to replace MATH 2411

School of Engineering

BEng in Computer Engineering *(for 2017-18 intake and after)* (1)

- Change(s) to elective requirements under:
  - *Requirements for COMP/ELEC electives*
    - Area Courses (At least 2 courses should be taken from one single area and at least 2 courses outside that area. Courses taken as Major Required Courses may not be counted towards the elective requirement.)
  - *Artificial Intelligence / Theory Area*
    - Add COMP 4471, COMP 5223, ELEC 3180, ELEC 3210, ELEC 4230 and ELEC 4240
  - *Communications Area*
    - Remove ELEC 4630 (sunset course already removed from the 2020-21 course catalog)
  - *Embedded System / Robotics Area*
    - Add COMP 4511, ELEC 3210 and ELEC 4250
  - *Graphic / Multimedia Area*
    - Add COMP 4471
  - *Semiconductor / VLSI Area*
    - Add ELEC 3310
  - *Signal Processing Area*
    - Remove ELEC 4140 (sunset course already removed from the 2020-21 course catalog)

BEng in Computer Science *(for 2017-18 intake and after)* [(1)]

- Change(s) to specific elective requirements under:
  - *Artificial Intelligence / Theory Area*
    - Remove COMP 5312 (sunset course approved by CPS in May 2019)
  - *Software / Database Area*
    - Remove COMP 5312 (sunset course approved by CPS in May 2019)

BEng in Mechanical Engineering *(for 2019-20 intake and after)* [(1)]

- Change(s) to required courses:
  - Add MECH 3710 as an alternative to 'MECH 3300 or MECH 3420 OR MECH 3520'

Undergraduate Minor Program in Design *(for 2018-19 intake and before)* [(1)]

- Change(s) to required courses:
  - Add ISDN 1100

Undergraduate Minor Program in Design *(for 2019-20 intake and after)* [(2)]

- Changes to elective requirements:
  - Replace the course code of ISDN 3200 with ISDN 2700

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(1) to take effect in Spring 2020-21
(2) to take effect in Fall 2021-22