CUS/17 March 2021
Agenda Item 8
File: 14/21

COMMITTEE ON UNDERGRADUATE STUDIES

Paper for: Discussion/Decision

Title: **Curricula and Discipline Titles for Individual Candidates under the Framework of Individualized Interdisciplinary Major**

Purpose: The Interdisciplinary Programs Office has submitted the curricula and discipline titles for two candidates under the framework of Individualized Interdisciplinary Major for consideration by CUS

Submitted by: Interdisciplinary Programs Office

Prepared by: CUS Secretariat

BACKGROUND

1. At its 127th meeting held on 25 June 2015, the Senate approved the introduction of the framework of Individualized Interdisciplinary Major (IIM), under which students may create their own BSc program in IIM with self-defined curriculum and discipline title to meet their academic goal that cannot be satisfied by any existing major offered by the University. Students completed the program will be conferred an award of BSc in Individualized Interdisciplinary Major (*interdisciplinary study title*) 【理學士 (跨學科自選主修 - 跨學科名稱)】. Students admitted to Schools or other majors may apply for IIM from the Spring term of their first year of study but no later than the Spring term of their second year of study.

2. The Senate also delegated the authority to the CUS to approve the curriculum and discipline title for individual IIM students upon recommendation by the Individualized Major Advisory Committee (IMAC) and the Interdisciplinary Undergraduate Studies Committee (IUSC) under the Interdisciplinary Programs Office (IPO).

PROPOSED CURRICULA & DISCIPLINE TITLES

3. With endorsement by the IMAC and IUSC, the IPO has recently submitted the proposed curricula and discipline titles for 2 IIM candidates, as follows:

Candidate	Proposed IIM
1	BSc in Individualized Interdisciplinary Major (Medical Engineering) 理學士 (跨學科自選主修 – 醫學工程)
2	BSc in Individualized Interdisciplinary Major (Anthropomorphism in Interactive Systems) 理學士 (跨學科自選主修 – 交互系統擬人論)

4. The proposed curricula (including benchmarking summary) of the selected candidates are presented in Appendix 1. They have been reviewed and confirmed by the IMAC and IUSC to have conformed to the approved framework as set out in Appendix 2, and that its scope cannot be satisfied by any existing Major offered by the University.

ACTION SOUGHT

5. CUS is invited to consider and approve as appropriate the proposed curricula and discipline titles under the framework of IIM as presented in Appendix 1 for the two individual candidates.

Appendix 1
to CUS 14/21

Summary of the Proposed Curricula and Discipline Titles and Supplementary Information on Individualized Major Advisory Committee (IMAC) for Individual IIM Candidates

<table>
<tr><th rowspan="2">Candidate</th><th rowspan="2">Proposed discipline title</th><th colspan="3">Proposed curriculum (in credits)</th><th rowspan="2">Total required credits discounting 9 credits reused for UCore</th></tr>
<tr><th>Fundamental courses</th><th>Required courses</th><th>Electives</th></tr>
<tr><td rowspan="2">1</td><td>BSc in Individualized Interdisciplinary Major
(Medical Engineering)
理學士(跨學科自選主修 – 醫學工程)</td><td>6-7</td><td>66</td><td>18+</td><td>117+</td></tr>
<tr><td colspan="5">IMAC membership
<u>Chair:</u>
Prof King-Lau CHOW (IIM Program Director, ex-officio)

<u>Members:</u>
Prof Yi-Kuen LEE (MAE)
(Primary faculty advisor)
Prof Tsz Wai WONG (CBE)
Prof Bertram E SHI (ECE)</td></tr>
<tr><td rowspan="2">2</td><td>BSc in Individualized Interdisciplinary Major
(Anthropomorphism in Interactive Systems)
理學士(跨學科自選主修 – 交互系統擬人論)</td><td>6-7</td><td>60</td><td>18+</td><td>111+</td></tr>
<tr><td colspan="5">IMAC membership
<u>Chair:</u>
Prof King-Lau CHOW (IIM Program Director, ex-officio)

<u>Members:</u>
Prof Pan HUI (CSE)
(Primary faculty advisor)
Prof Qifeng CHEN (CSE)
Prof King-Lau CHOW (LIFS)</td></tr>
</table>

The Hong Kong University of Science and Technology
Interdisciplinary Programs Office
Individualized Interdisciplinary Major Program (IIM)
Proposed Curriculum (Candidate 1)

Title of the Proposed IIM: **(English) BSc in Individualized Interdisciplinary Major (Medical Engineering)**
(Chinese) 理學士 (跨學科自選主修 - 醫學工程)

Proposed Course List

Part A: Fundamental Courses

No.	Course Code	Course Title	No. of Credits	Remarks
1	COMP 1021 OR COMP 1022P OR COMP1022Q OR ISOM 2010	Introduction to Computer Science Introduction to Computing with Java Introduction to Computing with Excel VBA Introduction to Information System	3	Required by IIM framework
2	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	

Total no. of credits earned for Fundamental Courses: **6-7**

Part B: Required Courses (including 3 IIMP courses and at least 48 credits self-planed courses, of which at least 12 credits must be at 3000-level or above.)

No.	Course Code	Course Title	No. of Credits	Remarks
1	IIMP 2000	Academic and Professional Development	0	Required by IIM framework
2	IIMP 4980	Interdisciplinary Capstone Project I	3	
3	IIMP 4990	Interdisciplinary Capstone Project II	3	
4	BIEN 1010	Introduction to Biomedical Engineering (S&T)	3	Self-planned courses
5	BIEN 2410	Cellular and Systems Physiology for Engineers	3	
6	BIEN 3010	Biodesign: A taste of solving real-life healthcare problems	3	
7	BIEN 3410	Introduction to Bioinstrumentation and Bioimaging	3	
8	ELEC 2100	Signals and Systems	4	
9	ELEC 2400	Electronic Circuits	4	
10	ELEC 3200	System Modelling, Analysis and Control	4	
11	ELEC 4220	Introduction to Robotics: From Mobile robots to manipulator	4	
12	ELEC 4250	Robotic Manipulation and Mobility	3	
13	ELEC 4810	Introduction to Bioinstrumentation and Biosensors	4	
14	LIFS 1901	General Biology I	3	
15	MECH 2020	Statics and Dynamics	3	
16	MECH 2907	Mechatronic Design and Prototyping	3	
17	MECH 4710	Introduction to Robotics	3	
18	PHYS 1113	Lab for Gen. Physics I	1	
19	PHYS 1112	General Physics I	3	
20	PHYS 1114	General Physics II	3	
21	LANG 2030	Technical Communication I	3	Eng Lang endorsed by CLE
22	LANG 4035	Technical Communication II for Chemical and Biological Engineering	3	

Total no. of credits earned for Required Courses: **66**

Part C: Elective Courses (at least 18 credits self-planed courses, of which at least 9 credits must be at 3000-level or above.)

No.	Course Code	Course Title	No. of Credits	Remarks
1	COMP 2011	C++ Programming	3	Self-planned courses
2	COMP 3211	Fundamentals of Artificial Intelligence	3	
3	COMP 4211	Machine Learning	3	
4	ELEC 2600	Probability and random processes in engineering	4	
5	ELEC 3300	Introduction to Embedded Systems	4	
6	ELEC 4820	Medical Imaging	3	
7	ISDN 2200	Systems Thinking and Design	3	
8	MATH 2011	Multivariable Calculus	3	
9	MATH 2111	Matrix Algebra and Applications	3	
10	MATH 2351	Introduction to Differential Equations	3	
11	MECH 2520	Design and Manufacturing I	3	
12	MECH 3030	Mechanisms of Machinery	3	

13	151-0621-00L	Microsystems: Process Technology and Integration	3	Courses from ETH Zurich
14	227-0993-10L	Bioelectronics and Biosensors	3	
15	376-1714-00L	Biocompatible Materials	2	
16	376-0021-00L	Materials and Mechanics in Medicine	2	
17	151-0601-00L	Theory of Robotics and Mechatronics	2	
18	151-0604-00L	Microrobotics	2	
19	227-0385-10L	Biomedical Imaging	2	

Total no. of credits earned for Elective Courses: **18+**

Part D: University Common Core Courses (including LANG 1002 and LANG 1003) (36 credits)

Total no. of credits earned for University Common Core Courses: **36**

Total no. of credits of IIM **126+**

Total required credits discounting 9 reused credits for Common Core **117+**

** To graduate, student should complete at least 120 credits. He/she may need to take courses additional to the required and elective courses as specified above to meet this minimum credit requirement.*

The Hong Kong University of Science and Technology
Interdisciplinary Programs Office
Individualized Interdisciplinary Major Program (IIM)
Proposed Curriculum (Candidate 2)

Title of the Proposed IIM: **(English) BSc in Individualized Interdisciplinary Major (Anthropomorphism in Interactive Systems)**
(Chinese) 理學士 (跨學科自選主修 –交互系統擬人論)

Proposed Course List

Part A: Fundamental Courses

No.	Course Code	Course Title	No. of Credits	Remarks
1	COMP 1021 OR COMP 1022P OR COMP1022Q OR ISOM 2010	Introduction to Computer Science Introduction to Computing with Java Introduction to Computing with Excel VBA Introduction to Information System	3	Required by IIM framework
2	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	

Total no. of credits earned for Fundamental Courses: **6-7**

Part B: Required Courses (including 3 IIMP courses and at least 48 credits self-planed courses, of which at least 12 credits must be at 3000-level or above.)

No.	Course Code	Course Title	No. of Credits	Remarks
1	IIMP 2000	Academic and Professional Development	0	Required by IIM framework
2	IIMP 4980	Interdisciplinary Capstone Project I	3	
3	IIMP 4990	Interdisciplinary Capstone Project II	3	
4	COMP 2011	Programming with C++	4	Self-planned courses
5	COMP 2012	Object-Oriented Programming and Data Structures	4	
6	COMP 2711	Discrete Mathematical Tools for Computer Science	4	
7	COMP 3711	Design and Analysis of Algorithms	3	
8	COMP 4411	Computer Graphics	3	
9	COMP 4461	Human-Computer Interaction	3	
10	ELEC 2600	Probability and Random Processes in Engineering	4	
11	ELEC 4230	Deep Learning for Natural Language Processing	3	
12	ISDN 3300	Interaction Design	2	
13	MATH 1014	Calculus II	3	
14	MATH 2011	Introduction to Multivariable Calculus	3	
15	SOSC 1960	Discovering Mind and Behavior	3	
16	SOSC 2210	Social Psychology	3	
17	SOSC 2980	Personality Psychology	3	
18	SOSC 2990	Developmental Psychology	3	
19	LANG 2030	Technical Communication I	3	Eng Lang endorsed by CLE
20	LANG 4030	Technical Communication II for CSE & CPEG	3	

Total no. of credits earned for Required Courses: **60**

Part C: Elective Courses (at least 18 credits self-planed courses, of which at least 9 credits must be at 3000-level or above.)

No.	Course Code	Course Title	No. of Credits	Remarks
1	COMP 2611	Computer Organization	4	Self-planned courses
2	COMP 3111	Software Engineering	4	
3	COMP 3511	Operating Systems	3	
4	COMP 4421	Image Processing	3	
5	COMP 4431	Multimedia Computing	3	
6	COMP 4471	Deep Learning in Computer Vision	3	
7	COMP 4521	Mobile Application Development	3	
8	ELEC 1100	Introduction to Electro-Robot Design	4	
9	ELEC 2100	Signals and Systems	4	
10	ELEC 2200	Digital Circuits and Systems	4	
11	ELEC 3170	Digital Media and Multimedia Applications	4	
12	ELEC 4310	Embedded System Design	4	
13	ENTR 3360	From Product Innovations to Successful Technology Startups	3	
14	ENTR 4911	IT Entrepreneurship	3	
15	HUMA 2595	Science, Technology and Modern Life	3	
16	ISDN 2300	Digital Design	3	

17	ISDN 2400	Physical Prototyping	3
18	ISDN 3100	Design for Sustainability	2
19	ISDN 3350	Global Product Development	3
20	ISDN 4320	Design Thinking	3
21	ISOM 1380	Technology and Innovation: Social and Business Perspective	3
22	ISOM 4020	Innovation Management and Technology Entrepreneurship	3
23	MARK 3420	Consumer Behaviour	4
24	MARK 4450	Brand Management	4
25	MATH 2111	Matrix Algebra and Applications	3
26	MGMT 2110	Organizational Behaviour	3
27	MGMT 3140	Negotiation	4
28	MGMT 4220	Entrepreneurship and Innovation	4

Total no. of credits earned for Elective Courses: **18+**

Part D: University Common Core Courses (including LANG 1002 and LANG 1003) (36 credits)

Total no. of credits earned for University Common Core Courses: **36**

Total no. of credits of IIM **120+**

Total required credits discounting 9 reused credits for Common Core **111+**

** To graduate, student should complete at least 120 credits. He/she may need to take courses additional to the required and elective courses as specified above to meet this minimum credit requirement.*

Benchmarking for BSc in IIM (Medical Engineering) - Candiate 1

Name of Institution	HKUST	John Hopkins University	Stevens Institute of Technology	University of Hong Kong	University of Tuebingen and University of Stuttgart Cross-Uni Program
Name of Program	**BSc in IIM (Medical Engineering)**	**BSc in Biomedical Engineering**	**BSc in Biomedical Engineering**	**BSc in Biomedical Engineering**	**Bsc. In Medizin Technik (Medical Technology/Engineering)**
Number of Credits	133	129	143	240	180 (European Credits)
List of Required Courses	BIEN 1010 Introduction to Biomedical Engineering BIEN 2410 Cellular and Systems Physiology for Engineers BIEN 3010 Biodesign: A taste of solving real life healthcare problems BIEN 3410 Introduction to Bioinstrumentation and Bioimaging ELEC 1100 Introduction to ElectroRobot Design ELEC 2100 Signals and Systems ELEC 2400 Electronic Circuits ELEC 3200 System Modelling, Analysis and Control ELEC 4220 Introduction to Robotics: From Mobile Robots to Manipulator ELEC 4250 Robotic Manipulation and Mobility ELEC 4810 Introduction to Bioinstrumentation and Biosensors LIFS 1901 General Biology I MECH 1906 Mechanical Engineering for Modern Life MECH 2020 Statics and Dynamics MECH 2520 Design and Manufacruring I MECH 2907 Mechatronic Design and Prototyping MECH 4710 Introduction to Robotics PHYS 1112 General Physics I + PHYS 1113 Laboratory for Gen. Physics I PHYS 1114 General Physics II MATH 1020 Accelerated Calculus COMP 1022P Intrduction to Java Programming LANG 2030H Technical Communication I (Honours) LANG 4035 Technical Communication II SCIE 1120 Chemistry and Life University common core courses	Physics I and II with Labs Introductory Chemistry I and II with Labs Calculus I, II and III Linear Algebra and Differential Equations At least one additional semester of statistics (300-level and higher) Humanities and Social Sciences (18 credits) Biomedical Engineering Base Camp Structural Biology of Cells + laboratory Molecules and Cells Statistical Physics Biological Models and Simulations Linear Signals and Systems Nonlinear Dynamics of Biological Systems Linear Systems and Controls Systems Biology of the Cell Biomedical Data Science + Laboratory Computational Medicine + Laboratory Neuroengineering Laboratory Build and Imager	General Chemistry I and II Introduction to Programming Engineering Graphics + Design Differential Calculus Multivariable Calculus Mechanics and Mechanics of Solids Circuits and Systems Differential Equations Electricity and Magnetism Introduction to Biomedical Engineering Biology and Biotechnology Thermodynamics Materials Processing Biomedical Digital Signal Processing Biomaterials Biomechanics Cell Biology Probability and Statistics for Engineers Transport in Biological Systems Engineering Economics Engineering Physiology Bioethics Organic Chemistry I and II Biosystems Simulation and Control Medical Instrumentation and Imaging	Funamental Mechanics Electricity and Electronics Computer Programming Thermofluid Mechanics Calculus and Ordinary differential equations Linear algebra, probability and statistics Fundamentals of Chemistry and biology for biomedical engineering Engineering in biology and medicine Life Sciences I (Biochemistry) and II (Cell Biology and Physiology) Biomedical Signals and linear systems Multivariable Calculus and partial differential equations Biomechanics for Biomedical engineering Life Sciences III (Physiology) Medical Imaging Biomaterials science and engineering Statistics and Mathematical Analysis for biomedical engineering	Higher Mathematics I, II and III Experimental Physics I and II Human Biology I, II and III Technical Mechanics Introduction to Chemistry Biomechanics Introduction to Biochemistry Foundations in Optics Foundations in System Dynamics and Control Systems Building Medical Devices Materials for Implants Electronics Bio and Chemical Sensors Computer Science and Programming
List of Elective Courses	COMP 2011 C++ Programming COMP 3211 Fundamentals of Artificial Intelligence COMP 4211 Machine Learning MATH 2011 Multivariable Calculus MATH 2111 Matrix Algebra and Applications MATH 2351 Introduction to Differential Equations ELEC 2600 Probability and Random Processes in Engineering ELEC 4820 Medical Imaging ISDN 2200 Systems Thinking and Design 151-0621-00L Microsystems: Process Technology and Integration 227-0993-10L Bioelectronics and Biosensors 376-1714-00L Biocompatible Materials 376-0021-00L Materials and Mechanics in Medicine 151-0601-00L Theory of Robotics and Mechatronics 151-0604-00L Microrobotics 227-0385-10L Biomedical Imaging	Focus Area: Imaging and Medical Devices.**Choose 21 credits from:** Structure of Materials / Mechanical and Electronic Properties of Materials Biomaterials I / Materials Characterisation / Biomaterials II / Micro and Nano structured materials and devices / Bio-inspired Processing of Audio-Visual Signals / Intro to Mechatronics / Microprocessor Lab I / Control Systems / Programmable Device Lab / Signals, Systems and Machine Learning / Image Processing and Analysis / Computation for Engineering / FPGA Synthesis Lab / Design of Biomedical Instruments and Systems / Medical Imaging Systems and Analysis / Digital Signal Processing / Information Theory / Electronics Design Lab / Advanced Microprocessor Lab / Advanced ECE Engineering team project / Control Systems Design / Bio-photonics lab / CAD Design of Digital VLSI Systems / Ultrasound and Photoacoustic Beamforming / Microfabrication Lab / Wavelets and Filter Banks / Random Signal Analysis / Magnetic Resonance in Medicine / Engineering Design Process / Computer-Aided Design / Robot Sensors and Actuators / Mechatronics / Molecular Spectroscopy and Imaging / Effective and Economic design for biomedical instrumentation / Robot Devices Kiinematics, Dynamics and Control / Biosensing and BioMEMS / Haptic Interface design for HRI / Robot devices, kinematics, dynamics and control / Colloids and nanoparticles / Optimisation / Dynamical Systems / Applied Statistics and Data Analysis / Intro to Probability / Intro to Stochastic Processes / Intro to Statistics / Monte Carlo Methods / Data Mining / Graph Theory / Mathematical Image Analysis / Statistical Theory / Nonlinear Optimisation / Applied Bioelectrical Engineering / Rehabilitation Engineering / X-Ray imaging and Computed Tomography / Learning Theory / Imaging Instrumentation / Build an Imager / Biomedical Photonics / Surgery for Engineers / Augmented Reality / Computer Integrated Surgery / Computer Vision / Algorithms for Sensor Based Robotics / Intro to Machine Learning / Deep Learning / Electronics and Instrumentation	Humanities and free electives	Choose 30 credits from the following electives: Contemporary topics in Biomedical Technology Biomedical instrumentation and systems Biomedical signals processing and modeling in medical applications Control and instrumentation Stem cells biotechnologies in regenerative medicine Biomaterials design and applications Cell and tissue engineering Biomechanics and biomedical technologies Molecular and cellular biomechanics Transport phenomena in biological systems Advanced physiological science Electromagnetics in biomedicine Biophotonics Magnetic Resonance Imaging Biomedical Ultrasonics Essential Molecular Biology Essential Proteomics Genome science Sequence Bioinformatics University Core electives	**Choose two concentration fields from**: Bioimplants, Sensors and Signals, electrical sensors, medical optics, software automation, minimally invasive surgical technologies, nanoanalytics in medicine, medical imaging technologies. Materials for Medical applications, Biomechanics, Control Systems, Interfacial Engineering, Medical Device Design and Construction
Website		https://www.bme.jhu.edu/academics/undergraduate/undergraduate-degree-requirements/	https://www.stevens.edu/schaefer-school-engineering-science/departments/biomedical-engineering/undergraduate-programs/mission-objectives-outcomes	https://engg.hku.hk/home/syllabuses/Syllabuses-BME-18-19-4Y.pdf	https://www.student.uni-stuttgart.de/studiengang/Medizintechnik-B.Sc-00001./?page=studienaufbau#studienaufbau-freitext-3-0

Benchmarking for BSc in IIM (Anthropomorphism in Interactive Systems) - Candidate 2

Name of Institution	**HKUST**	**HKUST**	**CUHK**	**HKUST**
Name of Program	**BSc in IIM (Anthropomorphism In Interactive Systems)**	**BEng in Computer Science**	**Psychology**	**BEng in Computer Engineering**
Number of Credits	120	120	123	120
List of Required Courses	IIMP 2000 Academic and Professional Development IIMP 4980 Interdisciplinary Capstone Project I IIMP 4990 Interdisciplinary Capstone Project II COMP 1021 Introduction to Computer Science COMP 2011 Programming with C++ COMP 2012 Object-Oriented Programming and Data Structures COMP 2711 Discrete Mathematical Tools for Computer Science COMP 3711 Design and Analysis of Algorithms COMP 4411 Computer Graphics COMP 4461 Human-Computer Interaction ELEC 2600 Probability and Random Processes in Engineering ELEC 4230 Deep Learning for Natural Language Processing ISDN 3300 Interaction Design MATH 1014 Calculus II MATH 2011 Introduction to Multivariable Calculus HUMA 1000 Cultures and Values HUMA 1620 Human Culture and Society HUMA 2330 Anime HUMA 3630 Community and Cultural Identity SOSC 1960 Discovering Mind and Behavior SOSC 2210 Social Psychology SOSC 2980 Personality Psychology SOSC 2990 Developmental Psychology	COMP 1021 Introduction to Computer Science COMP 2011 Programming with C++ COMP 2012 Object-Oriented Programming and Data Structures COMP 2711 Discrete Mathematical Tools for Computer Science COMP 2611 Computer Organization COMP 3111 Software Engineering COMP 3511 Operating Systems COMP 3711 Design and Analysis of Algorithms MATH 1014 Calculus II	PSYC 1000 General Psychology PSYC 2190 Physiological Psychology PSYC 2240 Sensation and Perception PSYC 2540 Developmental Psychology PSYC 2620 Social Psychology PSYC 2650 Personality Psychology	COMP 1021 Introduction to Computer Science COMP 2011 Programming with C++ COMP 2012 Object-Oriented Programming and Data Structures COMP 2711 Discrete Mathematical Tools for Computer Science COMP 2611 Computer Organization COMP 3111 Software Engineering COMP 3511 Operating Systems COMP 3711 Design and Analysis of Algorithms MATH 1014 Calculus II MATH 2011 Introduction to Multivariable Calculus ELEC 1100 Introduction to Electro-Robot Design ELEC 2100 Signals and Systems
List of Elective Courses	COMP 2611 Computer Organization COMP 3111 Software Engineering COMP 3511 Operating Systems COMP 4421 Image Processing COMP 4431 Multimedia Computing COMP 4471 Deep Learning in Computer Vision COMP 4521 Mobile Application Development ELEC 1100 Introduction to Electro-Robot Design ELEC 2100 Signals and Systems ELEC 2200 Digital Circuits and Systems ELEC 3170 Digital Media and Multimedia Applications ELEC 4310 Embedded System Design ENTR 3360 From Product Innovations to Successful Technology Startups ENTR 4911 IT Entrepreneurship HUMA 2595 Science, Technology and Modern Life ISDN 2300 Digital Design ISDN 2400 Physical Prototyping ISDN 3100 Design for Sustainability ISDN 3350 Global Product Development ISDN 4320 Design Thinking ISOM 1380 Technology and Innovation: Social and Business Perspective ISOM 4020 Innovation Management and Technology Entrepreneurship MARK 3410 Promotion and Advertising Management MARK 3420 Consumer Behaviour MARK 4450 Brand Management MATH 2111 Matrix Algebra and Applications MGMT 2110 Organizational Behaviour MGMT 3140 Negotiation	COMP 4411 Computer Graphics COMP 4421 Image Processing COMP 4431 Multimedia Computing COMP 4461 Human-Computer Interaction COMP 4471 Deep Learning in Computer Vision COMP 4521 Mobile Application Development	PSYC 1030 Psychology of Personal Growth PSYC 1040 Perspectives in Human Sexuality PSYC 1050 Consciousness PSYC 3001 Special Topics in Cognitive Science PSYC 3002 Special Topics in Education and Human Development PSYC 3003 Special Topics in Social and Industrial-Organizational Psychology PSYC 3610 Culture and Psychology PSYC 3630 Culture, Groups and Social Behaviour PSYC 3640 Psychology of Gender PSYC 3660 Emotion and Motivation	COMP 4411 Computer Graphics COMP 4421 Image Processing COMP 4431 Multimedia Computing COMP 4461 Human-Computer Interaction COMP 4521 Mobile Application Development ELEC 3170 Digital Media and Multimedia Applications ELEC 4310 Embedded System Design ELEC 4230 Deep Learning for Natural Language Processing
Website	N/A	https://ugadmin.ust.hk/prog_crs/ug/202021/pdf/20-21comp.pdf	https://joinus.psy.cuhk.edu.hk/index.php/courses2	http://ugadmin.ust.hk/prog_crs/pdf/ug/cpeg.pdf

Past Record on the Approved Discipline Titles for Individual IIM Candidates

Candidate	Approved discipline title	Year of approval
1	BSc in Individualized Interdisciplinary Major (Bionics) 理學士(跨學科自選主修 - 仿生學)	**2016**
2	BSc in Individualized Interdisciplinary Major (Computational Cognitive Science) 理學士(跨學科自選主修 - 計算認知科學)	**2016**
3	BSc in Individualized Interdisciplinary Major (Environmental Geoscience) 理學士(跨學科自選主修 - 環境地球科學)	**2016**
4	BSc in Individualized Interdisciplinary Major (Bioenergy Management) 理學士(跨學科自選主修 - 生物能源管理學)	**2016**
5	BSc in Individualized Interdisciplinary Major (Human-Computer Interaction) 理學士(跨學科自選主修 – 人機互動)	**2017**
6	BSc in Individualized Interdisciplinary Major (Behavioral Consumer Science) 理學士(跨學科自選主修 – 消費行為科學)	**2019**
7	BSc in Individualized Interdisciplinary Major (Brain Computer Interface) 理學士(跨學科自選主修 – 腦機介面)	**2019**
8	BSc in Individualized Interdisciplinary Major (Human-Computer Interaction) 理學士(跨學科自選主修 –人機互動)	**2020**
9	BSc in Individualized Interdisciplinary Major (Built Environmental Design) 理學士(跨學科自選主修 –建築環境設計)	**2020**

(For students admitted in 2020-21 under the 4-year degree)

Curriculum Framework of BSc Program in Individualized Interdisciplinary Major

This is an individualized program with curriculum and discipline title initiated by the student and approved by the University. Student completed the program will be conferred an award of BSc in Individualized Interdisciplinary Major *(interdisciplinary study title).*

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

Fundamental Course(s)

			Credit(s) attained
COMP/ISOM		Note: COMP 1021 OR COMP 1022P OR ISOM 2010	3
COMP	1021	Introduction to Computer Science	3
COMP	1022P	Introduction to Computing with Java	3
ISOM	2010	Introduction to Information Systems	3
MATH		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
MATH	1020	Accelerated Calculus	4
MATH	1023	Honors Calculus I	3

Required Course(s)

			Credit(s) attained
IIM		Note: Courses planned by the students (with endorsement by the Individualized Major Advisory Committee and approved by the University, of which at least 12 credits must be at 3000-level or above.)	At least 48
IIMP	2000	Academic and Professional Development	0
IIMP	4980	Interdisciplinary Capstone Project I	3
IIMP	4990	Interdisciplinary Capstone Project II	3
LANG		Note: English language courses planned by the students (with endorsement by the Individualized Major Advisory Committee, the Center for Language Education and approved by the University.)	6

Elective(s)

			Minimum credit(s) required
IIM		Courses planned by the students (with endorsement by the Individualized Major Advisory Committee and approved by the University, of which at least 9 credits must be at 3000-level or above.)	18