College of Engineering
工學院

Department of Advanced Design and Systems Engineering
先進設計及系統工程學系

CityU
香港城市大學
City University of Hong Kong

Bachelor of Engineering in Intelligent Manufacturing Engineering
工學士（智能製造工程學）

Student Handbook
2022-2023

For further information, please contact:

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BACHELOR OF ENGINEERING IN

INTELLIGENT MANUFACTURING ENGINEERING
(BENG ITME)

Student Handbook (2022-2023)

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1   AIMS OF MAJOR

This major emphasizes the integration of basic knowledge in intelligent manufacturing systems, innovative process design and automation, advanced manufacturing technologies, systems modeling and optimization, and quality and reliability engineering, with particular emphasis on electronics and semiconductor manufacturing. This multi-disciplinary program aims to produce graduates who are capable of using cutting-edge engineering knowledge, computational, experimental and analytical techniques to plan, design, implement and improve technology-based manufacturing and operations systems and enterprises.

Intended Learning Outcomes of Major (MILOs)

Upon successful completion of this Major, a BENG ITME graduate should be able to:

1.   Apply knowledge of mathematics, science, engineering, and intelligent manufacturing engineering to analyzing and improving operations systems and performance of enterprises, particularly in electronics and semiconductor manufacturing.

2.   Design and conduct experiments, and analyze and interpret data that are relevant to the planning, processes, logistics, and operations systems in an enterprise, particularly in electronics and semiconductor manufacturing.

3.   Design processes, systems, products and services, to meet desired needs within realistic constraints such as economic, environmental, health and safety, manufacturability, and sustainability.

4.   Function effectively and responsibly in multi-disciplinary teams to achieve synergetic benefits.

5.   Identify, evaluate, formulate, solve engineering problems relevant to the planning, processes, logistics and operations systems in an enterprise, and undertake projects of discovery and innovation.

6.   Explain professional and ethical responsibility.

7.   Demonstrate effective communication.

8.   Have knowledge in contemporary issues and awareness of the impact of engineering solutions in a broad, global and societal context.

9.   Recognize the need for, and an ability to engage in life-long learning.

10.   Use necessary engineering and IT skills and tools for engineering practice, discovery and innovation.

2   DEGREE REQUIREMENT

2.1   Minimum Number of Credit Units Required for the Award

Degree Requirement	Normative 4-year Degree	Advanced Standing I (Note 1)
Gateway Education requirement	30 credit units	21 credit units
College/School requirement	6 credit units	Waived
Major requirement	81 credit units (Core: 66 Elective: 15)	75 credit units (Core: 63 Elective: 12)
Free electives / Minor (optional)	3 credit units	N/A
Minimum number of credit units required for the award	**120 credit units**	**96 credit units**

Maximum number of credit units permitted	**144 credit units**	**114 credit units**

Normal Period of Study

	Normative 4-year Degree	Advanced Standing I
Normal period of study	4 years	3 years
Maximum period of study	8 years	6 years

Note 1: For students with recognised Advanced Level Examination or equivalent qualifications.

2.1 Gateway Education

(Please refer to
https://www.cityu.edu.hk/catalogue/ug/current/catalogue/catalogue_UC.htm?page=B/ge_requirement.htm)

	Normative 4-year Degree	Advanced Standing I
<u>University requirements</u>		
English		
• GE1401 University English	3 credit units	3 credit units
• Discipline-specific English	3 credit units	3 credit units
GE1501 Chinese Civilisation – History and Philosophy	3 credit units	3 credit units
<u>Distributional requirements</u> Area 1: Arts and Humanities Area 2: Study of Societies, Social and Business Organisations Area 3: Science and Technology	12 credit units *(At least one course from each of the three areas)*	6 credit units *(From two different areas)*
College/School-specified courses ^	9 credit units	6 credit units
Total	**30 credit units**	**21 credit units**

^College/School-specified courses for fulfilling the Gateway Education requirement

Course Code	Course Title	Level	Credit Units	Remarks
Normative 4-year Degree				
MA1200/ MA1300	Calculus and Basic Linear Algebra I/ Enhanced Calculus and Linear Algebra I	B1	3	
MA1201/ MA1301	Calculus and Basic Linear Algebra II/ Enhanced Calculus and Linear Algebra II	B1	3	
ADSE2066	Professional Engineering Practice	B2	3	
Advanced Standing I				
MA1200/ MA1300	Calculus and Basic Linear Algebra I/ Enhanced Calculus and Linear Algebra I	B1	3	Students exempted from MA1200 or MA1300 should take any other course(s) not within the Major Requirement (including core courses and electives) in order to meet the minimum curriculum requirement.
ADSE2066	Professional Engineering Practice	B2	3	

2.2 English Language Requirement

Normative 4-year degree students and Advanced Standing I students who passed the 6 credit units of specified GE English courses are recognized as fulfilling the University's English Language Requirement.

Students scoring below Level 4 in HKDSE English Language or Grade D in HKALE AS-level Use of English or students who do not possess an equivalent qualification are required to complete two 3-credit unit courses, LC0200A English for Academic Purposes 1 and LC0200B English for Academic Purposes 2, prior to taking the GE English courses. Students who demonstrate that they have achieved a grade B or above in their overall course results for LC0200A will achieve 3 credits and also be considered to have satisfied the pre-requisite for entry to the GE English courses without needing to take LC0200B. The credit units of LC0200A and LC0200B will not be counted towards the minimum credit units required for graduation and will not be included in the calculation of the cumulative grade point average (CGPA). However, they will be counted towards the maximum credit units permitted.

2.3 Chinese Language Requirement

Students scoring below Level 4 in HKDSE Chinese Language, or below Grade D in HKALE AS-level Chinese Language and Culture will be required to complete a 3-credit unit course CHIN1001 University Chinese I. The 3 credit units will not be counted towards the minimum credit units required for graduation and will not be included in the calculation of the cumulative grade point average (CGPA). However, they will be counted towards the maximum credit units permitted.

2.4 Internship/Consultancy Project/Research Project Requirement

Normative 4-year degree students admitted in 2022/23 and thereafter are required to fulfil the internship/consultancy project/research project requirement in accordance with the requirements stipulated by the respective College/School. The curriculum-related internship courses should be credit-bearing with a minimum of 3 credit units and a minimum internship duration of no less than 4 weeks/160 hours. The consultancy project/research project courses should involve student work (inclusive of timetabled teaching hours) of no less than 160 hours. These courses may be included as part of the College/School requirement or the major requirement as stipulated by the respective College/School (Senate/121/AR9).

2.5 College/School Requirement

Course Code	Course Title	Level	Credit Units
Normative 4-year Degree (6 credit units)			
CS1302	Introduction to Computer Programming	B1	3
PHY1201	General Physics I	B1	3
Advanced Standing I (0 credit unit)			
College Requirement waived.			

2.6 Major Requirement

2.6.1 Core Courses

Normative 4- year Degree: 66 credit units
Advanced Standing I: 63 credit units (ADSE2339 is waived for students admitted into ASI.)

Course Code	Course Title	Level	Credit Units	Remarks
ADSE2010	Fundamental Engineering Analysis and Design for Manufacturing Engineers I	B2	3	
ADSE2011	Fundamental Engineering Analysis and Design for Manufacturing Engineers II	B2	3	
ADSE2016	Manufacturing Engineering Workshop	B2	0	
ADSE2046	Numerical Computation for Manufacturing and Systems Engineers	B2	3	
ADSE2100	Engineering Statistics and Experimentation	B2	3	
ADSE2339	Smart City – a Systems Engineering Perspective	B2	3	Waived for students admitted into ASI.
MSE2102	Introduction to Materials Science and Engineering	B2	3	
ADSE3003	Design and Analysis of Manufacturing Processes and Systems	B3	3	
ADSE3004	Production Planning and Control	B3	3	
ADSE3060	Operations Research	B3	3	
ADSE3102	Quality Engineering	B3	3	
MNE3007	CAD/CAM	B3	3	
MNE3046	Automation Technology	B3	3	
MNE3119	Manufacturing Technology	B3	3	
ADSE4001	Digital Manufacturing and Operations	B4	3	
ADSE4003	Artificial Intelligence and Augmented Reality in Manufacturing and Operations	B4	3	
ADSE4005	Industrial Data and Manufacturing Analytics	B4	3	
ADSE4006	Semiconductor Manufacturing and Process Control	B4	3	
ADSE4036	Manufacturing Systems Modelling and Optimization	B4	3	
ADSE4064	Reliability Engineering	B4	3	
MSE4171	Electronic Packaging and Materials	B4	3	
ADSE4068/ ADSE4068C/ ADSE4116	Final Year Project/ Final Year Project/ Capstone Project II	B4	6	A course to fulfil the internship/ consultancy project/research project requirement for normative 4-year degree students

2.6.2 Electives

Normative 4-year Degree: 15 credit units
Advanced Standing I: 12 credit units

Course Code	Course Title	Level	Credit Units	Remarks
EE1002	Principles of Electrical Engineering	1	3	
EE2000	Logic Circuit Design	2	3	
EE2005	Electronic Devices and Circuits	2	3	
MNE2109	Engineering Mechanics	2	3	
SDSC2004	Data Visualization	2	3	
ADSE3026	Contemporary Human Factors for Industry 4.0	3	3	
ADSE3101	Basic Methodologies and Tools for Risk Engineering	3	3	
ADSE3116	Capstone Project I	3	3	
EE3009	Data Communications and Networking	3	3	
EE3315	Internet Technology	3	3	
MNE3059	Intelligent Robot Design	3	3	
PHY3202	Modern Physics	3	3	
ADSE4007	eLogistics and Supply Chain Management	4	3	
ADSE4024	Project Management	4	3	
ADSE4027	Occupational Safety for Intelligent Manufacturing Systems	4	3	
ADSE4035	Quality and Environmental System and Management	4	3	
ADSE4047	Directed Studies	4	3	
ADSE4103	Decision Analysis and Risk Management	4	3	
ADSE4108	Product Development and Innovation	4	3	
MNE4032	Robotics and Machine Vision	4	3	
MNE4048	Advanced Manufacturing Technologies	4	3	
MSE4127	Smart Sensors: From Engineering to Applications	4	3	
MSE4175	Advanced Technology in Biomedical Devices	4	3	
MSE4178	Nanostructures & Nanotechnology	4	3	
PHY4265	Semiconductor Physics and Devices	4	3	
ADSE5009	Industrial Marketing Management for Engineers	5	3	**For Undergraduate plus Taught Postgraduate Degree Programmes only** A maximum of 9 credit units of P5 and/or P6 courses can be used to fulfill the MSc degree requirements.
ADSE5010	Engineering Management Principles and Concepts	5	3	
ADSE6009	Project Management	6	3	
ADSE6012	Technological Innovation and Entrepreneurship	6	3	
ADSE6015	Supply Chain Management	6	3	

Course Code	Course Title	Level	Credit Units	Remarks
ADSE6103	Financial Engineering for Engineering Managers	6	3	
ADSE6106	Intelligent Manufacturing for Engineering Managers	6	3	

2.7 Optional Courses

Course Code	Course Title	Level	Credit Units	Remarks
FS2002	Industrial Attachment Scheme	2	3	Minimum 6 weeks
FS3002	Industrial Attachment Scheme	3	3	Minimum 6 weeks
FS4001	Co-operative Education Scheme (CES)	4	8	Internship (8 to 12 months)
FS4002	Industrial Attachment Scheme	4	3	Minimum 6 weeks

2.8 Classification of Award

Degrees with Distinction are awarded based on the CGPA ranking for students in the respective departments/schools graduating in the same semester/term.

Classification	CGPA
summa Cum Laude (Highest Distinction)	the top 2%
magna Cum Laude (High Distinction)	the next 5%
cum Laude (Distinction)	the next 8%

For more details, please go to https://www.cityu.edu.hk/arro/content.asp?cid=405

3 ACADEMIC REGULATIONS AND GUIDELINES

Students should observe the University's academic regulations and guidelines at all times. More information can be available by referring to the following websites maintained by the Academic Regulations and Records Office (ARRO).

ARRO Homepage: http://www.cityu.edu.hk/arro/

4   ACADEMIC HONESTY

Academic honesty is central to the conduct of academic work. Students are responsible for knowing and understanding the Rules on Academic Honesty. To enhance students' understanding on academic honesty, all students are required to complete a tutorial on academic honesty and make a declaration on their understanding of this core academic principle online on or before **30 November 2022** in order to access their course grades. For details, please refer to ARRO website: http://www.cityu.edu.hk/provost/academic_honesty

5   STUDENT DEVELOPMENT SERVICES (SDS)

The SDS offers many student-centred services to students. It provides support and assistance for students in the following areas:

- Attainment of an all-round development
- Enrichment of campus life
- Development of career plans and choices
- Solving personal problems
- Enhancement of physical and mental well-being
- Provision of financial assistance
- Scholarship application
- Welfare provisions

6   COMMUNICATIONS

Listed below are the normal channels of communication between students and courses / major / department:

a) Students having difficulties in a course of study should first talk to the course teacher concerned.
b) A student who wishes to discuss the overall organization of the major should speak to the Major Programme Leader.
c) A student who wishes to discuss issues on a particular part of the major should speak to the relevant Major Programme Year Tutor.
d) The major's Joint Staff & Student Consultative Committee helps to facilitate consultation and communication. A student from each entry cohort will be elected to sit in the Committee.
e) In addition, a student from each entry catalog term will be elected to sit in the Major Programme Committee which meets every semester to discuss major-related matters.
f) Students should feel free to approach their respective academic advisors for advice regarding their study plan or personal and career development.

7   MAJOR LEADER AND YEAR TUTOR

Position	Staff Name	Tel.	Email
Major Leader:	Dr. Siyang GAO	3442-4759	siyangao@cityu.edu.hk
Deputy Major Leader:	Dr. Sherman NGAN	3442-8400	scngan@cityu.edu.hk
	Dr. Andy CHOW	3442-2155	andychow@cityu.edu.hk
Year Tutor:			
Year 1	Dr. Louis LIU	3442-9536	mekpliu@cityu.edu.hk
Year 2	Dr. Andy CHOW	3442-2155	andychow@cityu.edu.hk

8   INFORMATION TO NEW STUDENTS

8.1 How to access your Personal Class Schedule

i) Go to ***http://www.cityu.edu.hk*** from any terminal on campus or off campus, then point to "**Quick Links**" at the top and click "**AIMS**". Log onto AIMS.
ii) Click "**Course Registration**" menu. Then click "**Main Menu for web add/drop**".
iii) Choose "**Weekly Schedule**" then select appropriate term and press "**Submit**".
iv) You will find your class schedule in matrix form.
v) Press the "**View Detail Schedule**" button at the bottom of your matrix timetable to display details of your class schedule.

8.2 How to get Instructors' handouts through Canvas

i) Go to the CityU e-Portal from any terminal on campus or off campus.
ii) Choose "**Canvas**" and login.
iii) Enter the course under "**My Courses**". Click "**Files**".

8.3 How to check Major Programme Requirement and Course Syllabuses

Log onto the CityU home page and click "**Academics**", then "**Programme and Course Catalogue**".

8.4 Course Registration for Semester A 2022-2023

For Semester A 2022-2023, students will be pre-registered in required courses and major electives in most cases if possible.

i) The date for release of your class schedule is **26 July 2022**. Please check your curriculum requirements, review your study plan and then make appropriate adjustments to your pre-registered courses.

ii) Add/Drop of courses can be made through AIMS during the web registration period.

iii) For non-web-enabled courses, approval is required from the course offering department. You can submit your request through AIMS starting from **8 August 2022**.

> **How to do the Add/Drop:**
> - Go to *http://www.cityu.edu.hk* from any terminal on campus or off campus and click "AIMS".
> - Log onto "AIMS" and then click "Course Registration".
> - Click "Main Menu for web add/drop".
> - Choose "Add or Drop Classes".

iv) Web registration begins on **22 August 2022** but you need to check your time ticket first from "AIMS".

v) All add/drops end on **5 September 2022**.

vi) Detailed arrangements on Course Registration for Semester A 2022-2023 will be available in early August 2022. For details, please refer to ARRO website: http://www.cityu.edu.hk/arro/content.asp?cid=163

8.5 How to access your Student Email Account

i) Go to www.cityu.edu.hk and point to "**QUICK LINKS**" at the top of the screen and select "**Email**".

ii) In the Email Services home page, click "**@my.cityu.edu.hk**" under the column of "**Student**" to go to **M365 Sign-in Page**.

iii) At the M365 Sign-in Page, please enter your **CityU EID** and **password** to login.

iv) You can read and compose mail after signing in.

> *Important notes:*
> For email communication:
> please state your *student name, number and contact telephone number*.

8.6 Credit Exemption

Applications for course exemption must be made before the first semester of the student's admission. Students granted course exemption are required to take other courses to make up the credits required for fulfilling the award requirements. For Semester A 2022-2023, the application period is from **7 July 2022 to 26 August 2022**. For details, please refer to ARRO website: http://www6.cityu.edu.hk/arro/content.asp?cid=10.

8.7 Safety Orientation

All students are required to complete the online Safety Orientation. The Laboratory Office will hold a Lab Tour session in week 1-2 of Semester A 2022-2023. Details and schedule of the lab tour session will be sent to students by e-mail.

8.8 Administrative Support from ADSE General Office

Mon to Fri	9:00am to 5:30 pm
Lunch Break	*12:30pm to 1:45pm*
Sat	Closed

Inquiry:	3442-9321
Fax:	3442-0173
Email:	adsego@cityu.edu.hk

Appendix I : Model Study Path

Model Study Path for BENG ITME 2022/2023 (normative 4-year) (non-CES mode)

Yr	Sem	Major Requirements					University Requirements		CUs
2022/ 23 (Year 1)	**A**	College Specified - MA1200 Calculus and Basic Linear Algebra I (3)	College Specified - ADSE2066 Professional Engineering Practice (3)	College Requirement - PHY1201 General Physics I (3)			English 1 - GE1401 University English (3)	GE1501 Chinese Civilisation – History and Philosophy (3)	**15**
	B	College Specified - MA1201 Calculus and Basic Linear Algebra II (3)	College Requirement - CS1302 Introduction to Computer Programming (3)	ADSE2010 Fundamental Engineering Analysis and Design for Manufacturing Engineers I (3)	ADSE2339 Smart City – a Systems Engineering Perspective (3)		English 2 - Discipline-specific English GE2410 English for Engineering (3)		**15**
	S								**0**
2023 / 24 (Year 2)	**A**	MSE2102 Introduction to Materials Science and Engineering (3)	ADSE2100 Engineering Statistics and Experimentation (3)	ADSE2011 Fundamental Engineering Analysis and Design for Manufacturing Engineers II (3)			Gateway Education 1 (3)	Gateway Education 2 (3)	**15**
	B	ADSE3003 Design and Analysis of Manufacturing Processes and Systems (3)	ADSE3060 Operations Research (3)	ADSE2046 Numerical Computation for Manufacturing and Systems Engineers (3)	Free Elective 1 (3)		Gateway Education 3 (3)	Gateway Education 4 (3)	**18**
	S	ADSE2016 Manufacturing Engineering Workshop (0)							**0**
2024 / 25 (Year 3)	**A**	MNE3007 CAD/CAM (3)	MNE3046 Automation Technology (3)	ADSE3004 Production Planning and Control (3)	ADSE3102 Quality Engineering (3)	Major Elective 1 (3)			**15**
	B	MNE3119 Manufacturing Technology (3)	ADSE4064 Reliability Engineering (3)	ADSE4001 Digital Manufacturing and Operations (3)	ADSE4005 Industrial Data and Manufacturing Analytics (3)	Major Elective 2 (3)			**15**
	S								**0**
2025 / 26 (Year 4)	**A**	ADSE4068/ADSE4116 Final Year Project/ Capstone Project II (3)	ADSE4036 Manufacturing Systems Modelling and Optimization (3)	ADSE4003 Artificial Intelligence and Augmented Reality in Manufacturing and Operations (3)	Major Elective 3 (3)	Major Elective 4 (3)			**15**
	B	ADSE4068/ADSE4116 Final Year Project/ Capstone Project II (3)	MSE4171 Electronic Packaging and Materials (3)	ADSE4006 Semiconductor Manufacturing and Process Control (3)	Major Elective 5 (3)				**12**
( ) indicates number of credit units								**Total credits required = 120**	

Note: Students can take Major electives from Year 3 depending on their overall study plan, and some elective courses may be available for study in the evenings only.

Model Study Path for BENG ITME 2022/2023 (normative 4-year) (Optional CES mode)

Co-operative Education Scheme (CES) is a 2-semester placement programme situated in Year 4 Study (for optional CES mode). The CES comprises two components: final year project and industrial placement at a company. During the training period, students take ADSE courses on a day-release basis for no more than one day per week.

Yr	Sem	Major Requirements					University Requirements		CUs
2022/23 (Year 1)	A	College Specified - MA1200 Calculus and Basic Linear Algebra I (3)	College Specified - ADSE2066 Professional Engineering Practice (3)	College Requirement - PHY1201 General Physics I (3)			English 1 - GE1401 University English (3)	GE1501 Chinese Civilisation – History and Philosophy (3)	15
	B	College Specified - MA1201 Calculus and Basic Linear Algebra II (3)	College Requirement - CS1302 Introduction to Computer Programming (3)	ADSE2010 Fundamental Engineering Analysis and Design for Manufacturing Engineers I (3)	ADSE2339 Smart City – a Systems Engineering Perspective (3)		English 2 - Discipline-specific English GE2410 English for Engineering (3)		15
	S								0
2023 / 24 (Year 2)	A	MSE2102 Introduction to Materials Science and Engineering (3)	ADSE2100 Engineering Statistics and Experimentation (3)	ADSE2011 Fundamental Engineering Analysis and Design for Manufacturing Engineers II (3)			Gateway Education 1 (3)	Gateway Education 2 (3)	15
	B	ADSE3003 Design and Analysis of Manufacturing Processes and Systems (3)	ADSE3060 Operations Research (3)	ADSE2046 Numerical Computation for Manufacturing and Systems Engineers (3)	Free Elective 1 (3)		Gateway Education 3 (3)	Gateway Education 4 (3)	18
	S	ADSE2016 Manufacturing Engineering Workshop (0)							0
2024 / 25 (Year 3)	A	MNE3007 CAD/CAM (3)	MNE3046 Automation Technology (3)	ADSE3004 Production Planning and Control (3)	ADSE3102 Quality Engineering (3)	Major Elective 1 (3)			15
	B	MNE3119 Manufacturing Technology (3)	ADSE4064 Reliability Engineering (3)	ADSE4001 Digital Manufacturing and Operations (3)	ADSE4005 Industrial Data and Manufacturing Analytics (3)	Major Elective 2 (3)			15
	S	Major Elective 3 (3)							3
2025 / 26 (Year 4)	A	ADSE4068C / ADSE4116 Final Year Project/ Capstone Project II (3)#	ADSE4036 Manufacturing Systems Modelling and Optimization (3)	ADSE4003 Artificial Intelligence and Augmented Reality in Manufacturing and Operations (3)	Major Elective 4 (3)	CES FS4001 (4)			16
	B	ADSE4068C / ADSE4116 Final Year Project/ Capstone Project II (3)	MSE4171 Electronic Packaging and Materials (3)	ADSE4006 Semiconductor Manufacturing and Process Control (3)	Major Elective 5 (3)	CES FS4001 (4)			16
( ) indicates number of credit units								**Total credits required = 128**	

Note: Students can take Major electives from Year 3 depending on their overall study plan, and some elective courses may be available for study in the evenings only.

Model Study Path for BENG ITME 2022/2023 (normative 4-year) (non-CES Go Global mode)

Yr	Sem	Major Requirements						University Requirements		CUs
2022/23 (Year 1)	A	College Specified - MA1200 Calculus and Basic Linear Algebra I (3)	College Specified - ADSE2066 Professional Engineering Practice (3)	College Requirement - PHY1201 General Physics I (3)				English 1 - GE1401 University English (3)	GE1501 Chinese Civilisation – History and Philosophy (3)	15
	B	College Specified - MA1201 Calculus and Basic Linear Algebra II (3)	College Requirement - CS1302 Introduction to Computer Programming (3)	ADSE2010 Fundamental Engineering Analysis and Design for Manufacturing Engineers I (3)	ADSE2339 Smart City – a Systems Engineering Perspective (3)			English 2 - Discipline-specific English GE2410 English for Engineering (3)		15
	S									0
2023 / 24 (Year 2)	A	MSE2102 Introduction to Materials Science and Engineering (3)	ADSE2100 Engineering Statistics and Experimentation (3)	ADSE2011 Fundamental Engineering Analysis and Design for Manufacturing Engineers II (3)				Gateway Education 1 (3)	Gateway Education 2 (3)	15
	B	ADSE3003 Design and Analysis of Manufacturing Processes and Systems (3)	ADSE3060 Operations Research (3)	ADSE2046 Numerical Computation for Manufacturing and Systems Engineers (3)	MNE3119 Manufacturing Technology (3)			Gateway Education 3 (3)	Gateway Education 4 (3)	18
	S	ADSE2016 Manufacturing Engineering Workshop (0)			Free Elective 1 (3)					3
2024 / 25 (Year 3)	A	MNE3007 CAD/CAM (3)	MNE3046 Automation Technology (3)	ADSE3004 Production Planning and Control (3)	ADSE3102 Quality Engineering (3)	Major Elective 1 (3)				15
	B	*Go Global Programme* — The Go-Global Programme situated in Semester B of Year 3 Study (for non-CES Go Global mode) is a one-semester overseas exchange study at one of our partner universities outside of Hong Kong. Our past students have chosen destinations including universities in Sweden, Finland, The Netherlands, Germany, UK, USA, Taiwan, etc.								0
	S	Major Elective 2 (3)								3
2025 / 26 (Year 4)	A	ADSE4068 / ADSE4116 Final Year Project/ Capstone Project II (3)#	ADSE4036 Manufacturing Systems Modelling and Optimization (3)	ADSE4003 Artificial Intelligence and Augmented Reality in Manufacturing and Operations (3)	Major Elective 3 (3)	Major Elective 4 (3)				15
	B	ADSE4068 / ADSE4116 Final Year Project/ Capstone Project II (3)	MSE4171 Electronic Packaging and Materials (3)	ADSE4001 Digital Manufacturing and Operations (3)	ADSE4005 Industrial Data and Manufacturing Analytics (3)	ADSE4006 Semiconductor Manufacturing and Process Control (3)	ADSE4064 Reliability Engineering (3)			18
	S	Major Elective 5 (3)								3
( ) indicates number of credit units									**Total credits required = 120**	

Note: Students can take Major electives from Year 3 depending on their overall study plan, and some elective courses may be available for study in the evenings only.

Model Study Path for BENG ITME 2022/2023 Advanced Standing I (non-CES mode)

Yr	Sem	Major Requirements					University Requirements	CUs
2022 / 23 (Year 2)	A	College Specified - ADSE2066 Professional Engineering Practice (3)	College Specified - MA1200 Calculus and Basic Linear Algebra I (3)	MSE2102 Introduction to Materials Science and Engineering (3)	ADSE2046 Numerical Computation for Manufacturing and Systems Engineers (3)		English 1 - GE1401 University English (3)	15
	B	ADSE3003 Design and Analysis of Manufacturing Processes and Systems (3)	ADSE3060 Operations Research (3)	ADSE2100 Engineering Statistics and Experimentation (3)	ADSE2010 Fundamental Engineering Analysis and Design for Manufacturing Engineers I (3)		English 2 - Discipline-specific English GE2410 English for Engineering (3)	15
	S	ADSE2016 Manufacturing Engineering Workshop (0)					GE1501 Chinese Civilisation – History and Philosophy (3)	3
2023 / 24 (Year 3)	A	MNE3007 CAD/CAM (3)	MNE3046 Automation Technology (3)	ADSE3004 Production Planning and Control (3)	ADSE3102 Quality Engineering (3)	ADSE2011 Fundamental Engineering Analysis and Design for Manufacturing Engineers II (3)		15
	B	MNE3119 Manufacturing Technology (3)	ADSE4064 Reliability Engineering (3)	ADSE4001 Digital Manufacturing and Operations (3)	ADSE4005 Industrial Data and Manufacturing Analytics (3)	Major Elective 1 (3)		15
	S						Gateway Education 1 (3)	3
2024 / 25 (Year 4)	A	ADSE4068/ADSE4116 Final Year Project/ Capstone Project II (3)	ADSE4036 Manufacturing Systems Modelling and Optimization (3)	ADSE4003 Artificial Intelligence and Augmented Reality in Manufacturing and Operations (3)	Major Elective 2 (3)		Gateway Education 2 (3)	15
	B	ADSE4068/ADSE4116 Final Year Project/ Capstone Project II (3)	MSE4171 Electronic Packaging and Materials (3)	ADSE4006 Semiconductor Manufacturing and Process Control (3)	Major Elective 3 (3)	Major Elective 4 (3)		15
( ) indicates number of credit units							**Total credits required = 96**	

Note: Students can take Major electives from Year 3 depending on their overall study plan, and some elective courses may be available for study in the evenings only.

Model Study Path for BENG ITME 2022/2023 Advanced Standing I (Optional CES mode)

Co-operative Education Scheme (CES) is a 2-semester placement programme situated in Year 4 Study (for optional CES mode). The CES comprises two components: final year project and industrial placement at a company. During the training period, students take ADSE courses on a day-release basis for no more than one day per week.

Yr	Sem	Major Requirements					University Requirements	CUs
2022 / 23 (Year 2)	A	College Specified - ADSE2066 Professional Engineering Practice (3)	College Specified - MA1200 Calculus and Basic Linear Algebra I (3)	MSE2102 Introduction to Materials Science and Engineering (3)	ADSE2046 Numerical Computation for Manufacturing and Systems Engineers (3)		English 1 - GE1401 University English (3)	15
	B	ADSE3003 Design and Analysis of Manufacturing Processes and Systems (3)	ADSE3060 Operations Research (3)	ADSE2100 Engineering Statistics and Experimentation (3)	ADSE2010 Fundamental Engineering Analysis and Design for Manufacturing Engineers I (3)		English 2 - Discipline-specific English GE2410 English for Engineering (3)	15
	S	ADSE2016 Manufacturing Engineering Workshop (0)					GE1501 Chinese Civilisation – History and Philosophy (3)	3
2023 / 24 (Year 3)	A	MNE3007 CAD/CAM (3)	MNE3046 Automation Technology (3)	ADSE3004 Production Planning and Control (3)	ADSE3102 Quality Engineering (3)	ADSE2011 Fundamental Engineering Analysis and Design for Manufacturing Engineers II (3)	Gateway Education 1 (3)	18
	B	MNE3119 Manufacturing Technology (3)	ADSE4064 Reliability Engineering (3)	ADSE4001 Digital Manufacturing and Operations (3)	ADSE4005 Industrial Data and Manufacturing Analytics (3)	Major Elective 1 (3)	Gateway Education 2 (3)	18
	S	Major Elective 2 (3)						3
2024 / 25 (Year 4)	A	ADSE4068C/ADSE4116 Final Year Project/ Capstone Project II (3)	ADSE4036 Manufacturing Systems Modelling and Optimization (3)	ADSE4003 Artificial Intelligence and Augmented Reality in Manufacturing and Operations (3)	Major Elective 3 (3)	CES FS4001 (4)		16
	B	ADSE4068C/ADSE4116 Final Year Project/ Capstone Project II (3)	MSE4171 Electronic Packaging and Materials (3)	ADSE4006 Semiconductor Manufacturing and Process Control (3)	Major Elective 4 (3)	CES FS4001 (4)		16
( ) indicates number of credit units							**Total credits required = 104**	

Note: Students can take Major electives from Year 3 depending on their overall study plan, and some elective courses may be available for study in the evenings only.

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(Aug 2022)

Model Study Path for BENG ITME 2022/2023 Advanced Standing I (non-CES Go Global mode)

Yr	Sem	Major Requirements						University Requirements	CUs
2022 / 23 (Year 2)	A	College Specified - ADSE2066 Professional Engineering Practice (3)	College Specified - MA1200 Calculus and Basic Linear Algebra I (3)	MSE2102 Introduction to Materials Science and Engineering (3)	ADSE2046 Numerical Computation for Manufacturing and Systems Engineers (3)			English 1 – GE1401 University English (3)	15
	B	ADSE3003 Design and Analysis of Manufacturing Processes and Systems (3)	ADSE3060 Operations Research (3)	ADSE2100 Engineering Statistics and Experimentation (3)	ADSE2010 Fundamental Engineering Analysis and Design for Manufacturing Engineers I (3)	MNE3119 Manufacturing Technology (3)		English 2 – Discipline-specific English GE2410 English for Engineering (3)	18
	S	ADSE2016 Manufacturing Engineering Workshop (0)						GE1501 Chinese Civilisation – History and Philosophy (3)	3
2023 / 24 (Year 3)	A	MNE3007 CAD/CAM (3)	MNE3046 Automation Technology (3)	ADSE3004 Production Planning and Control (3)	ADSE3102 Quality Engineering (3)	ADSE2011 Fundamental Engineering Analysis and Design for Manufacturing Engineers II (3)	Major Elective 1 (3)		18
	B	*Go Global Programme* The Go-Global Programme situated in Semester B of Year 3 Study (for non-CES Go Global mode) is a one-semester overseas exchange study at one of our partner universities outside of Hong Kong. Our past students have chosen destinations including universities in Sweden, Finland, The Netherlands, Germany, UK, USA, Taiwan, etc.							0
	S	Major Elective 2 (3)						Gateway Education 1 (3)	6
2024 / 25 (Year 4)	A	ADSE4068C/ADSE4116 Final Year Project/ Capstone Project II (3)	ADSE4036 Manufacturing Systems Modelling and Optimization (3)	ADSE4003 Artificial Intelligence and Augmented Reality in Manufacturing and Operations (3)	Major Elective 3 (3)	Major Elective 4 (3)		Gateway Education 2 (3)	18
	B	ADSE4068C/ADSE4116 Final Year Project/ Capstone Project II (3)	MSE4171 Electronic Packaging and Materials (3)	ADSE4006 Semiconductor Manufacturing and Process Control (3)	ADSE4064 Reliability Engineering (3)	ADSE4001 Digital Manufacturing and Operations (3)	ADSE4005 Industrial Data and Manufacturing Analytics (3)		18

( ) indicates number of credit units　　　　　　　　　　　　　　　　　　　　　　　　　　**Total credits required = 96**

Note:　　Students can take Major electives from Year 3 depending on their overall study plan, and some elective courses may be available for study in the evenings only.

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