

**College of Engineering**  
工學院

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



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  
**2021-2022**



*(Please note that the information given in this Handbook is accurate at the time of printing in August 2021. Changes to the information may be made from time to time without prior notification.)*

For further information, please contact:

Department of Advanced Design and Systems Engineering  
Room P6600, 6/F, Purple Zone  
Yeung Kin Man Academic Building  
City University of Hong Kong  
83 Tat Chee Avenue  
Kowloon Tong, Hong Kong

Tel: (852) 3442 9321  
Email: [adsego@cityu.edu.hk](mailto:adsego@cityu.edu.hk)  
Website: [www.cityu.edu.hk/adse](http://www.cityu.edu.hk/adse)

**BACHELOR OF ENGINEERING IN  
INTELLIGENT MANUFACTURING ENGINEERING  
(BENG ITME)**

**Student Handbook (2021-2022)**

| <u>Contents</u>  | <u>Page</u> |
|--|-------------|
| 1 AIMS OF MAJOR.....   | 2           |
| 2 DEGREE REQUIREMENT.....  | 3           |
| 3 ACADEMIC REGULATIONS AND GUIDELINES .....  | 7           |
| 4 ACADEMIC HONESTY .....   | 7           |
| 5 STUDENT DEVELOPMENT SERVICES (SDS).....  | 8           |
| 6 COMMUNICATIONS .....   | 8           |
| 7 MAJOR LEADER AND YEAR TUTOR.....   | 8           |
| 8 INFORMATION TO NEW STUDENTS .....  | 9           |
| 8.1 How to access your Personal Class Schedule.....  | 9           |
| 8.2 How to get Instructors’ handouts through Canvas .....                                  | 9           |
| 8.3 How to check Major Programme Requirement and Course Syllabuses.....                    | 9           |
| 8.4 Course Registration for Semester A 2021-2022.....                                      | 9           |
| 8.5 How to access your Student Email Account .....   | 10          |
| 8.6 Credit Exemption.....  | 10          |
| 8.7 Safety Orientation.....  | 10          |
| 8.8 Administrative Support from ADSE General Office .....                                  | 10          |
| <b>Appendix I : Model Study Path .....</b>   | <b>11</b>   |
| Model Study Path for BENG ITME 2021/2022 (normative 4-year) (non-CES mode).....            | 12          |
| Model Study Path for BENG ITME 2021/2022 (normative 4-year) (Optional CES mode) .....      | 13          |
| Model Study Path for BENG ITME 2021/2022 (normative 4-year) (non-CES Go Global mode) ..... | 14          |

# 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

| <b>Degree Requirement</b>                                    | <b>Normative<br/>4-year Degree</b>            |
|--|---|
| Gateway Education requirement                                | 30 credit units                               |
| College/School requirement                                   | 6 credit units                                |
| Major requirement  | 81 credit units<br>(Core: 66<br>Elective: 15) |
| Free electives / Minor (optional)                            | 3 credit units                                |
| <b>Minimum number of credit units required for the award</b> | <b>120 credit units</b>                       |

|   |                         |
|---|-------------------------|
| <b>Maximum number of credit units permitted</b> | <b>144 credit units</b> |
|---|-------------------------|

#### Normal Period of Study

|                         | <b>Normative<br/>4-year Degree</b> |
|-------------------------|------------------------------------|
| Normal period of study  | 4 years                            |
| Maximum period of study | 8 years                            |

## 2.1 Gateway Education

| Requirements   | Credit Units  |
|--|---|
| <u>University requirements</u>   |   |
| English  |   |
| • GE1401 University English  | 3 credit units  |
| • Discipline-specific English  | 3 credit units  |
| GE1501 Chinese Civilisation – History and Philosophy   | 3 credit units  |
| <u>Distributional requirements</u><br>Area 1: Arts and Humanities<br>Area 2: Study of Societies, Social and Business Organisations<br>Area 3: Science and Technology | 12 credit units<br>(At least one course from each of the three areas) |
| <u>College/School-specified courses</u> ^  | 9 credit units  |
| <b>Total</b>   | <b>30 credit units</b>  |

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

| Course Code       | Course Title   | Level | Credit Units |
|-------------------|--|-------|--------------|
| MA1200/<br>MA1300 | Calculus and Basic Linear Algebra I/<br>Enhanced Calculus and Linear Algebra I   | B1    | 3            |
| MA1201/<br>MA1301 | Calculus and Basic Linear Algebra II/<br>Enhanced Calculus and Linear Algebra II | B1    | 3            |
| ADSE2066          | Professional Engineering Practice  | B2    | 3            |

## 2.2 English Language Requirement

Normative 4-year degree 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 College/School Requirement

| Course Code | Course Title                         | Level | Credit Units | Remarks |
|-------------|--------------------------------------|-------|--------------|---------|
| CS1302      | Introduction to Computer Programming | B1    | 3            |         |
| PHY1201     | General Physics I                    | B1    | 3            |         |

## 2.5 Major Requirement

### 2.5.1 Core Courses

#### Normative 4- year Degree: 66 credit units

| Course Code           | Course Title  | Level | Credit Units | Remarks |
|-----------------------|---|-------|--------------|---------|
| EE1002                | Principles of Electrical Engineering  | 1     | 3            |         |
| ADSE2046              | Numerical Computation for Manufacturing and Systems Engineers                 | 2     | 3            |         |
| ADSE2339              | Smart City – a Systems Engineering Perspective                                | 2     | 3            |         |
| EE2005                | Electronic Devices and Circuits   | 2     | 3            |         |
| MSE2102               | Introduction to Materials Science and Engineering                             | 2     | 3            |         |
| SEEM2016              | Manufacturing Engineering Workshop  | 2     | 0            |         |
| SEEM2100              | Engineering Statistics and Experimentation                                    | 2     | 3            |         |
| MNE3007               | CAD/CAM   | 3     | 3            |         |
| MNE3046               | Automation Technology   | 3     | 3            |         |
| MNE3119               | Manufacturing Technology  | 3     | 3            |         |
| SEEM3003              | Design and Analysis of Manufacturing Processes and Systems                    | 3     | 3            |         |
| SEEM3004              | Production Planning and Control   | 3     | 3            |         |
| SEEM3060              | Operations Research   | 3     | 3            |         |
| SEEM3102              | Quality Engineering   | 3     | 3            |         |
| MSE4171               | Electronic Packaging and Materials  | 4     | 3            |         |
| SEEM4001              | Digital Manufacturing and Operations  | 4     | 3            |         |
| SEEM4003              | Artificial Intelligence and Augmented Reality in Manufacturing and Operations | 4     | 3            |         |
| SEEM4005              | Industrial Data and Manufacturing Analytics                                   | 4     | 3            |         |
| SEEM4006              | Semiconductor Manufacturing and Process Control                               | 4     | 3            |         |
| SEEM4036              | Manufacturing Systems Modelling and Optimization                              | 4     | 3            |         |
| SEEM4064              | Reliability Engineering   | 4     | 3            |         |
| SEEM4068/<br>SEEM4116 | Final Year Project/<br>Capstone Project II                                    | 4     | 6            |         |

## 2.5.2 Electives

### Normative 4-year Degree: 15 credit units

| Course Code | Course Title  | Level | Credit Units | Remarks   |
|-------------|---|-------|--------------|---|
| EE2000      | Logic Circuit Design                                      | 2     | 3            |   |
| MNE2109     | Engineering Mechanics                                     | 2     | 3            |   |
| SDSC2004    | Data Visualization  | 2     | 3            |   |
| EE3009      | Data Communications and Networking                        | 3     | 3            |   |
| EE3315      | Internet Technology                                       | 3     | 3            |   |
| MNE3059     | Intelligent Robot Design                                  | 3     | 3            |   |
| PHY3202     | Modern Physics  | 3     | 3            |   |
| SEEM3026    | Contemporary Human Factors for Industry 4.0               | 3     | 3            |   |
| SEEM3116    | Capstone Project I  | 3     | 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            |   |
| SEEM4007    | eLogistics and Supply Chain Management                    | 4     | 3            |   |
| SEEM4024    | Project Management  | 4     | 3            |   |
| SEEM4027    | Occupational Safety for Intelligent Manufacturing Systems | 4     | 3            |   |
| SEEM4035    | Quality and Environmental System and Management           | 4     | 3            |   |
| SEEM4047    | Directed Studies  | 4     | 3            |   |
| SEEM4103    | Decision Analysis and Risk Management                     | 4     | 3            |   |
| SEEM4108    | Product Development and Innovation                        | 4     | 3            |   |
| SEEM5009    | Industrial Marketing Management for Engineers             | 5     | 3            | For Undergraduate plus Taught Postgraduate Degree Programmes only |
| SEEM5010    | Engineering Management Principles and Concepts            | 5     | 3            |   |
| SEEM6009    | Project Management  | 6     | 3            |   |
| SEEM6012    | Technological Innovation and Entrepreneurship             | 6     | 3            |   |
| SEEM6015    | Supply Chain Management                                   | 6     | 3            |   |
| SEEM6103    | Financial Engineering for Engineering Managers            | 6     | 3            |   |
| SEEM6106    | Intelligent Manufacturing for Engineering Managers        | 6     | 3            |   |



## 2.6 Optional Courses

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

## 2.7 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        |
|--|-------------|
| <i>summa Cum Laude</i> (Highest Distinction) | the top 2%  |
| <i>magna Cum Laude</i> (High Distinction)    | the next 5% |
| <i>cum Laude</i> (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 2021** in order to access their course grades. For details, please refer to ARRO website: [http://www.cityu.edu.hk/provost/academic\\_honesty/](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

| <u>Position</u>             | <u>Staff Name</u> | <u>Tel.</u> | <u>Email</u>          |
|-----------------------------|-------------------|-------------|-----------------------|
| <b>Major Leader:</b>        | Dr. Siyang GAO    | 3442-4759   | siyangao@cityu.edu.hk |
| <b>Deputy Major Leader:</b> | Dr. Sherman NGAN  | 3442-8400   | scngan@cityu.edu.hk   |
| <b>Year Tutor:</b>          |                   |             |                       |
| <b>Year 1</b>               | 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 “Select Term” for the 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 “Academic”, then “Programme and Course Catalogue”.

### 8.4 Course Registration for Semester A 2021-2022

For Semester A 2021-2022, 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 **27 July 2021**. 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 for web-enabled courses 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 **9 August 2021**.

#### 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 **23 August 2021** but you need to check your time ticket first from “AIMS”.

- v) All add/drops end on **6 September 2021**.
- vi) Detailed arrangements on Course Registration for Semester A 2021-2022 will be available in early August 2021. 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) Access [www.cityu.edu.hk](http://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 Web Logon**.
- iii) Read through the whole page if you are not familiar with webmail. Then click the button "**M365 Sign-in page**" at the bottom.
- iv) Enter Sign-in ID in such format "**YourEID-c@my.cityu.edu.hk**" and click "**Next**".
- v) Click "**Sign in**" after keying in password.

***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 2021-2022, the application period is from **15 July 2021 to 28 August 2021**. 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 2021-2022. 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        |
| <i>Lunch Break</i> | <i>12:30pm to 1:45pm</i> |
| Sat                | Closed                   |

|          |  |
|----------|--|
| Inquiry: | 3442-9321  |
| Fax:     | 3442-0173  |
| Email:   | <a href="mailto:adsego@cityu.edu.hk">adsego@cityu.edu.hk</a> |

# **Appendix I : Model Study Path**

**Model Study Path for BENG ITME 2021/2022 (normative 4-year) (non-CES mode)**

| Yr                                   | Sem      | Major Requirements   |  |   |  | University Requirements |  | CU   |           |
|--------------------------------------|----------|--|--|---|--|-------------------------|--|--|-----------|
| <b>2021 / 22 (Year 1)</b>            | <b>A</b> | College Specified - MA1200<br>Calculus and Basic Linear Algebra I (3)      | College Specified - ADSE2066<br>Professional Engineering Practice (3)    | College Requirement - PHY1201<br>General Physics I (3)  |  |                         | English 1 - GE1401 University English (3)                                  | GE1501 Chinese Civilisation – History and Philosophy (3) | <b>15</b> |
|                                      | <b>B</b> | College Specified - MA1201<br>Calculus and Basic Linear Algebra II (3)     | College Requirement - CS1302<br>Introduction to Computer Programming (3) | EE1002<br>Principles of Electrical Engineering (3)  | ADSE2339<br>Smart City – a Systems Engineering Perspective (3) |                         | English 2 - Discipline-specific English GE2410 English for Engineering (3) |  | <b>15</b> |
|                                      | <b>S</b> |  |  |   |  |                         |  |  | <b>0</b>  |
| <b>2022 / 23 (Year 2)</b>            | <b>A</b> | MSE2102<br>Introduction to Materials Science and Engineering (3)           | SEEM2100<br>Engineering Statistics and Experimentation (3)               | EE2005<br>Electronic Devices and Circuits (3)   |  |                         | Gateway Education 1 (3)  | Gateway Education 2 (3)                                  | <b>15</b> |
|                                      | <b>B</b> | SEEM3003<br>Design and Analysis of Manufacturing Processes and Systems (3) | SEEM3060<br>Operations Research (3)                                      | ADSE2046<br>Numerical Computation for Manufacturing and Systems Engineers (3)                 | Free Elective 1 (3)  |                         | Gateway Education 3 (3)  | Gateway Education 4 (3)                                  | <b>18</b> |
|                                      | <b>S</b> | SEEM2016<br>Manufacturing Engineering Workshop (0)                         |  |   |  |                         |  |  | <b>0</b>  |
| <b>2023 / 24 (Year 3)</b>            | <b>A</b> | MNE3007<br>CAD/CAM (3)   | MNE3046<br>Automation Technology (3)                                     | SEEM3004<br>Production Planning and Control (3)   | SEEM3102<br>Quality Engineering (3)                            | Major Elective 1 (3)    |  |  | <b>15</b> |
|                                      | <b>B</b> | MNE3119<br>Manufacturing Technology (3)                                    | SEEM4064<br>Reliability Engineering (3)                                  | SEEM4001<br>Digital Manufacturing and Operations (3)  | SEEM4005<br>Industrial Data and Manufacturing Analytics (3)    | Major Elective 2 (3)    |  |  | <b>15</b> |
|                                      | <b>S</b> |  |  |   |  |                         |  |  | <b>0</b>  |
| <b>2024 / 25 (Year 4)</b>            | <b>A</b> | SEEM4068/SEEM4116<br>Final Year Project/ Capstone Project II (3)#          | SEEM4036<br>Manufacturing Systems Modelling and Optimization (3)         | SEEM4003<br>Artificial Intelligence and Augmented Reality in Manufacturing and Operations (3) | Major Elective 3 (3)   | Major Elective 4 (3)    |  |  | <b>15</b> |
|                                      | <b>B</b> | SEEM4068/SEEM4116<br>Final Year Project/ Capstone Project II (3)#          | MSE4171<br>Electronic Packaging and Materials (3)                        | SEEM4006<br>Semiconductor Manufacturing and Process Control (3)                               | Major Elective 5 (3)   |                         |  |  | <b>12</b> |
| ( ) indicates number of credit units |          |  |  |   |  |                         |  | <b>Total credits required = 120</b>                      |           |

# SEEM4068 Final Year Project / SEEM4116 Capstone Project II

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 2021/2022 (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  |           |
|--------------------------------------|----------|---|--|---|--|-------------------------|--|--|-----------|
| <b>2021 / 22 (Year 1)</b>            | <b>A</b> | College Specified - MA1200<br>Calculus and Basic Linear Algebra I (3)           | College Specified - ADSE2066<br>Professional Engineering Practice (3)    | College Requirement - PHY1201<br>General Physics I (3)  |  |                         | English 1 - GE1401 University English (3)                                  | GE1501 Chinese Civilisation – History and Philosophy (3) | <b>15</b> |
|                                      | <b>B</b> | College Specified - MA1201<br>Calculus and Basic Linear Algebra II (3)          | College Requirement - CS1302<br>Introduction to Computer Programming (3) | EE1002<br>Principles of Electrical Engineering (3)  | ADSE2339<br>Smart City – a Systems Engineering Perspective (3) |                         | English 2 - Discipline-specific English GE2410 English for Engineering (3) |  | <b>15</b> |
|                                      | <b>S</b> |   |  |   |  |                         |  |  | <b>0</b>  |
| <b>2022 / 23 (Year 2)</b>            | <b>A</b> | MSE2102<br>Introduction to Materials Science and Engineering (3)                | SEEM2100<br>Engineering Statistics and Experimentation (3)               | EE2005<br>Electronic Devices and Circuits (3)   |  |                         | Gateway Education 1 (3)  | Gateway Education 2 (3)                                  | <b>15</b> |
|                                      | <b>B</b> | SEEM3003<br>Design and Analysis of Manufacturing Processes and Systems (3)      | SEEM3060<br>Operations Research (3)                                      | ADSE2046<br>Numerical Computation for Manufacturing and Systems Engineers (3)                 | Free Elective 1 (3)  |                         | Gateway Education 3 (3)  | Gateway Education 4 (3)                                  | <b>18</b> |
|                                      | <b>S</b> | SEEM2016<br>Manufacturing Engineering Workshop (0)                              |  |   |  |                         |  |  | <b>0</b>  |
| <b>2023 / 24 (Year 3)</b>            | <b>A</b> | MNE3007<br>CAD/CAM (3)  | MNE3046<br>Automation Technology (3)                                     | SEEM3004<br>Production Planning and Control (3)   | SEEM3102<br>Quality Engineering (3)                            | Major Elective 1 (3)    |  |  | <b>15</b> |
|                                      | <b>B</b> | MNE3119<br>Manufacturing Technology (3)   | SEEM4064<br>Reliability Engineering (3)                                  | SEEM4001<br>Digital Manufacturing and Operations (3)  | SEEM4005<br>Industrial Data and Manufacturing Analytics (3)    | Major Elective 2 (3)    |  |  | <b>15</b> |
|                                      | <b>S</b> | Major Elective 3 (3)  |  |   |  |                         |  |  | <b>3</b>  |
| <b>2024 / 25 (Year 4)</b>            | <b>A</b> | SEEM4068 / SEEM4116<br>Final Year Project/ Capstone Project II (3) <sup>#</sup> | SEEM4036<br>Manufacturing Systems Modelling and Optimization (3)         | SEEM4003<br>Artificial Intelligence and Augmented Reality in Manufacturing and Operations (3) | Major Elective 4 (3)   | CES FS4001 (4)          |  |  | <b>16</b> |
|                                      | <b>B</b> | SEEM4068 / SEEM4116<br>Final Year Project/ Capstone Project II (3) <sup>#</sup> | MSE4171<br>Electronic Packaging and Materials (3)                        | SEEM4006<br>Semiconductor Manufacturing and Process Control (3)                               | Major Elective 5 (3)   | CES FS4001 (4)          |  |  | <b>16</b> |
| ( ) indicates number of credit units |          |   |  |   |  |                         |  | <b>Total credits required = 128</b>                      |           |

<sup>#</sup> SEEM4068 Final Year Project / SEEM4116 Capstone Project II

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 2021/2022 (normative 4-year) (non-CES Go Global mode)

| Yr                 | Sem | Major Requirements  |  |   |  |   | University Requirements  |  | CU's |
|--------------------|-----|---|--|---|--|---|--|--|------|
| 2021 / 22 (Year 1) | A   | College Specified - MA1200<br>Calculus and Basic Linear Algebra I (3)   | College Specified - ADSE2066<br>Professional Engineering Practice (3)    | College Requirement - PHY1201<br>General Physics I (3)  |  |   | English 1 - GE1401 University English (3)                                  | GE1501 Chinese Civilisation – History and Philosophy (3) | 15   |
|                    | B   | College Specified - MA1201<br>Calculus and Basic Linear Algebra II (3)  | College Requirement - CS1302<br>Introduction to Computer Programming (3) | EE1002<br>Principles of Electrical Engineering (3)  | ADSE2339<br>Smart City – a Systems Engineering Perspective (3) |   | English 2 - Discipline-specific English GE2410 English for Engineering (3) |  | 15   |
|                    | S   |   |  |   |  |   |  |  | 0    |
| 2022/ 23 (Year 2)  | A   | MSE2102<br>Introduction to Materials Science and Engineering (3)  | SEEM2100<br>Engineering Statistics and Experimentation (3)               | EE2005<br>Electronic Devices and Circuits (3)   |  |   | Gateway Education 1 (3)  | Gateway Education 2 (3)                                  | 15   |
|                    | B   | SEEM3003<br>Design and Analysis of Manufacturing Processes and Systems (3)  | SEEM3060<br>Operations Research (3)                                      | ADSE2046<br>Numerical Computation for Manufacturing and Systems Engineers (3)                 | MNE3119<br>Manufacturing Technology (3)                        |   | Gateway Education 3 (3)  | Gateway Education 4 (3)                                  | 18   |
|                    | S   | SEEM2016<br>Manufacturing Engineering Workshop (0)  |  | Free Elective 1 (3)   |  |   |  |  | 3    |
| 2023 / 24 (Year 3) | A   | MNE3007<br>CAD/CAM (3)  | MNE3046<br>Automation Technology (3)                                     | SEEM3004<br>Production Planning and Control (3)   | SEEM3102<br>Quality Engineering (3)                            | Major Elective 1 (3)  |  |  | 15   |
|                    | B   | <b>Go Global Programme</b><br><i>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.</i> |  |   |  |   |  |  | 0    |
|                    | S   | Major Elective 2 (3)  |  |   |  |   |  |  | 3    |
| 2024 / 25 (Year 4) | A   | SEEM4068 / SEEM4116<br>Final Year Project/ Capstone Project II (3) <sup>#</sup>   | SEEM4036<br>Manufacturing Systems Modelling and Optimization (3)         | SEEM4003<br>Artificial Intelligence and Augmented Reality in Manufacturing and Operations (3) | Major Elective 3 (3)   | Major Elective 4 (3)  |  |  | 15   |
|                    | B   | SEEM4068 / SEEM4116<br>Final Year Project/ Capstone Project II (3) <sup>#</sup>   | MSE4171<br>Electronic Packaging and Materials (3)                        | SEEM4001<br>Digital Manufacturing and Operations (3)  | SEEM4005<br>Industrial Data and Manufacturing Analytics (3)    | SEEM4006<br>Semiconductor Manufacturing and Process Control (3) | SEEM4064<br>Reliability Engineering (3)                                    |  | 18   |
|                    | S   | Major Elective 5 (3)  |  |   |  |   |  |  | 3    |
|                    |     |   |  |   |  |   | <b>Total credits required = 120</b>  |  |      |

( ) indicates number of credit units

<sup>#</sup> SEEM4068 Final Year Project / SEEM4116 Capstone Project II

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.





