

**BACHELOR OF ENGINEERING IN  
SYSTEMS ENGINEERING AND MANAGEMENT  
(BENG SEM)**

**Student Handbook (2017-2018)**

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## 1 AIMS OF MAJOR

This Major aims to nurture the analytic skills of the students in *understanding, analyzing, managing, and improving* modern *enterprises and systems*, grounded on engineering principles and methods. An *enterprise* under consideration can be an engineering, business, governmental, or service-oriented organization. The targets of management and improvement can be the *operations and processes* within an enterprise, or the *products and services* offered by an enterprise. A BENG SEM student is trained to become an analytic and versatile graduate, capable of effecting positive impacts in these target areas in his or her organization.

In addition to the general education studies and language proficiency, to equip BENG SEM graduates with the competence needed, this Major includes the following core and elective components:

- University level mathematics and essential computer studies;
- Fundamental engineering sciences and design;
- Core components – foundational concepts and techniques in systems/enterprise engineering and management;
- Elective components – further concepts and techniques in total quality engineering, in statistical and data engineering, and in general systems/enterprise engineering and management;
- Problem solving, teamwork and integration skills development;
- Purposefully designed courses that infuse CityU’s unique discovery-enriched curriculum (DEC) concept.

### **Stream Aim and Objectives:**

#### Total Quality Engineering (TQE) Stream

This stream aims to equip BENG SEM students with analytical, technical, and managerial knowledge/ skills in the aspects of contemporary quality engineering and assurance system, as well as Total Quality Management. Students will acquire a broad understanding of the concepts, techniques and tools in the subject domain to enable them to identify and tackle diverse technical and managerial problems with effective use of contemporary technology and solutions in the quality engineering and related aspects.

#### Data Analytics (DA) Stream

This stream aims to equip BENG SEM students with mathematical, statistical, and computing knowledge/skills in aspects of Data Analytics and Data Science. Students will acquire a broad understanding of the concepts, tools, and problem-solving skills in statistics, analytics, data mining, machine learning, and information technology, as a way to obtain information from large, multidimensional datasets, data streams and complex systems. The objective of this stream is to prepare students who wish to pursue graduate degrees or enter the workforce in the field of data analytics, business intelligence, informatics, and any other data-intensive field in which new knowledge is discovered through patterns in data.

## **Intended Learning Outcomes of Major (MILOs)**

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

1. Apply knowledge of mathematics, science, and engineering, in particular to analyzing and improving systems and enterprises.
2. Design and conduct experiments, and analyze and interpret data that are relevant to the operations, processes, products and services in an enterprise.
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.
5. Identify, evaluate, formulate, solve engineering problems relevant to the operations, processes, products and services in an enterprise, and undertake projects of discovery and innovation.
6. Explain professional and ethical responsibility.
7. Communicate effectively.
8. Have knowledge in contemporary issues and an 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 4-year Degree</b>	<b>Advanced Standing I (Note 1)</b>	<b>Advanced Standing II (Senior-year Entry) (Note 2)</b>
Gateway Education requirement	30 credit units	21 credit units	12 credit units
College/School requirement	6 credit units	waived	waived
Major requirement	84 credit units (Core: 63 Elective: 21)	81 credit units (Core: 60 Elective: 21)	60 credit units (Core: 39 Elective: 21)
Free electives / Minor (if applicable)	N/A	N/A	N/A
<b>Minimum number of credit units required for the award</b>	<b>120 credit units</b>	<b>102 credit units</b>	<b>72 credit units</b>
<b>Maximum number of credit units permitted</b>	<b>144 credit units</b>	<b>114 credit units</b>	<b>84 credit units</b>

#### Normal Period of Study

	<b>Normative 4-year Degree</b>	<b>Advanced Standing I</b>	<b>Advanced Standing II (Senior-year Entry)</b>
Normal period of study	4 years	3 years	2 years
Maximum period of study	8 years	6 years	5 years

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

Note 2: For Associate Degree/Higher Diploma graduates admitted to the senior year.

**2.2 Gateway Education** (Please refer to [http://www.cityu.edu.hk/edge/ge/ge\\_requirements\\_new.htm](http://www.cityu.edu.hk/edge/ge/ge_requirements_new.htm))

	<b>Normative 4-year Degree</b>	<b>Advanced Standing I</b>	<b>Advanced Standing II (Senior-year Entry)</b>
<u>University requirements</u>			
English			
• GE1401 University English	3 credit units	3 credit units	Not a compulsory requirement
• Discipline-specific English: GE2410 English for Engineering	3 credit units	3 credit units	3 credit units
GE1501 Chinese Civilisation – History and Philosophy	3 credit units	3 credit units	Not a compulsory requirement
<u>Distributional requirements</u>	12 credit units	6 credit units	3 credit units
Area 1: Arts and Humanities Area 2: Study of Societies, Social and Business Organisations Area 3: Science and Technology	<i>(At least one course from each of the three areas)</i>	<i>(From two different areas)</i>	
<u>College/School-specified courses</u> ^	9 credit units	6 credit units	6 credit units
<b>Total</b>	<b>30 credit units</b>	<b>21 credit units</b>	<b>12 credit units</b>

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

Course Code	Course Title	Level	Credit Units	Remarks
<b>Normative 4-year Degree</b>				
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	
CS1102/ CS1302*	Introduction to Computer Studies/ Introduction to Computer Programming	B1	3	*Subject to sufficient enrollments.
<b>Advanced Standing I</b>				
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.
CS1102/ CS1302*	Introduction to Computer Studies/ Introduction to Computer Programming	B1	3	* Subject to sufficient enrollments. Students may be required to take a CS placement test to register for CS1302.
<b>Advanced Standing II (Senior-year Entry)</b>				
Take any courses not within the Major requirement (including Core Courses and Electives)			6	

### 2.3 English Language Requirement

Normative 4-year degree students and Advanced Standing I students who passed the 6 credit units of specified GE English courses, and Advanced Standing II students who passed the 3 credit units of discipline-specific GE English course 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, EL0200A English for Academic Purposes 1 and EL0200B 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 EL0200A 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 EL0200B. The credit units of EL0200A and EL0200B 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 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.

### 2.5 College/School Requirement, if any

Course Code	Course Title	Level	Credit Units	Remarks
<b>Normative 4-year Degree (6 credit units)</b>				
Science				
<i>Choose two from the following three subject areas:</i>				
<i>Physics</i>				
AP1201	General Physics I	B1	3	
<i>Chemistry</i>				
BCH1100	Chemistry	B1	3	
<i>Biology</i>				
BCH1200	Discovery in Biology	B1	3	
<b>Advanced Standing I (0 credit unit)</b>				
College Requirement waived.				
<b>Advanced Standing II (Senior-year Entry) (0 credit unit)</b>				
College Requirement waived.				

## 2.6 Major Requirement

### 2.6.1 Core Courses

**Normative 4- year Degree: 63 credit units**

**Advanced Standing I: 60 credits units**

**Advanced Standing II: 39 credit units (ASII students must take courses SEEM3024, SEEM3027, SEEM3032, SEEM3053, SEEM3060, SEEM3102, SEEM4066 and SEEM4068/ SEEM4116 with a total of 27 credit units. For the remaining 12 credit units, it will be decided based on students' academic background.)**

Course Code	Course Title	Level	Credit Units	Remarks
GE2319 or GE2336	Industrial Engineering and Management of Modern Enterprises or Understanding Phenomena Around Us: An Introduction to Systems Thinking	B2	3	
MA2172	Applied Statistics for Sciences and Engineering	B2	3	
MBE2106	Basic Engineering Materials and Processing	B2	2	
MBE2107	Basics of Mechanical Engineering	B2	2	
MBE2108	Introduction to Electromechanical Systems	B2	2	
SEEM2101	Introduction to Systems Engineering and Management	B2	3	
SEEM2102	Data Analytics and Statistical Methods	B2	3	
SEEM3020	Engineering Economic Analysis	B3	3	
SEEM3024	Ergonomics in Workplace Design	B3	3	
SEEM3027	Logistics and Materials Management	B3	3	
SEEM3032	Operations and Logistics Planning	B3	3	
SEEM3034	Work Design	B3	3	
SEEM3040	Engineering Database and Systems	B3	3	
SEEM3053	Quality Improvement Methodologies	B3	3	
SEEM3060	Operations Research	B3	3	
SEEM3102	Quality Engineering	B3	3	
SEEM3103	Process Analysis and Design	B3	3	
SEEM3106	Operations and Logistics Engineering Workshop	B3	3	
SEEM4066	Professional Engineering Practice	B4	3	
SEEM4109	Product and Service Design and Innovation	B4	3	
SEEM4068 or SEEM4116	Project (Individual) or Capstone Project II	B4	6	

## 2.6.2 Electives (21 credit units)

(Must earn at least 12 credit units from B4 level courses)

Students can select any 7 elective courses from the list below to fulfill the major's elective requirements. However, students may choose available stream(s) for specialization – see stream requirements for details.

Course Code	Course Title	Level	Credit Units	Remarks/Streams
MA2181	Mathematical Methods for Engineering	B2	3	
SEEM3057	Industrial Marketing for Engineers	B3	3	
SEEM3104	Product Testing and Certification	B3	3	TQE
SEEM3105	Bayesian Analysis	B3	3	DA
SEEM3116	Capstone Project I	B3	3	
SEEM4023	Occupational Health and Safety Management	B4	3	TQE
SEEM4024	Project Management	B4	3	TQE
SEEM4025	Quality Systems and Management	B4	3	TQE
SEEM4026	Systems Modelling, Optimization and Simulation	B4	3	DA
SEEM4043	Global Operations Management	B4	3	
SEEM4047	Directed Studies	B4	3	
SEEM4051	Facilities and Distribution Management	B4	3	
SEEM4059	Process Monitoring and Inspection Techniques	B4	3	TQE
SEEM4064	Reliability Engineering	B4	3	TQE
SEEM4103	Decision Analysis and Risk Management	B4	3	DA
SEEM4106	Operations Management of Production and Service Systems	B4	3	
SEEM4107	Financial Engineering for Engineers	B4	3	DA
SEEM4110	Statistical Design and Analysis of Experiments	B4	3	TQE
SEEM4111	Business Analytics & Data Visualization	B4	3	DA
SEEM4112	Computing Methods in Data Analytics	B4	3	DA
SEEM4113	Data Mining	B4	3	DA



### Total Quality Engineering (TOE) Stream

Students must take FIVE out of the following courses as part of their required electives:

SEEM3104	Product Testing and Certification
SEEM4023	Occupational Health and Safety Management
SEEM4024	Project Management
SEEM4025	Quality Systems and Management
SEEM4059	Process Monitoring and Inspection Techniques
SEEM4064	Reliability Engineering
SEEM4110	Statistical Design and Analysis of Experiments

### Data Analytics (DA) Stream

Students must take FIVE out of the following courses as part of their required electives:

SEEM3105	Bayesian Analysis
SEEM4026	Systems Modelling, Optimization and Simulation
SEEM4103	Decision Analysis and Risk Management
SEEM4107	Financial Engineering for Engineers
SEEM4111	Business Analytics & Data Visualization
SEEM4112	Computing Methods in Data Analytics
SEEM4113	Data Mining

Remarks: Course(s) under the major requirements may be waived for students of Advanced Standing I/II, depending on their academic qualifications.

## 2.7 Optional Courses

Course Code	Course Title	Credit Units	Remarks
FS4001	Co-operative Education Scheme (CES)	8	Internship (8 to 12 months)
FS4002	Industrial Attachment Scheme (IAS)	3	Internship (9 to 13 weeks)

## 2.8 Classification of Award

Classification	CGPA
1 <sup>st</sup> Class	CGPA 3.5 or above
2 <sup>nd</sup> Upper	CGPA 3.00 – 3.49
2 <sup>nd</sup> Lower	CGPA 2.50 – 2.99
3 <sup>rd</sup> Class	CGPA 2.00 – 2.49
Pass	CGPA 1.70 – 1.99

## 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 2017** 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 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.

#### 6 MAJOR PROGRAMME LEADER AND YEAR TUTORS

<u>Position</u>	<u>Staff Name</u>	<u>Tel.</u>	<u>Email</u>
<b>Major Programme Leader:</b>	Dr. K. S. Chin	3442-8306	mekschin@cityu.edu.hk
<b>Deputy Major Programme Leader:</b>	Dr. Sherman Ngan	3442-8400	scngan@cityu.edu.hk
<b>Stream Leaders:</b>			
Data Analytics (DA):	Dr. Zijun Zhang	3442-5328	zijzhang@cityu.edu.hk
Total Quality Engineering (TQE):	Dr. Matthias Tan	3442-5651	mathtan@cityu.edu.hk
<b>Year Tutors:</b>			
Year 1	Dr. Matthias Tan	3442-5651	mathtan@cityu.edu.hk
Year 2	Dr. Lishuai Li	3442-4726	lishuali@cityu.edu.hk

## 7 INFORMATION TO NEW STUDENTS

### 7.1 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”.
- ii) Log onto AIMS.
- iii) Click "Course Registration" menu.
- iv) Click "Weekly Schedule", choose the appropriate term and press "Submit".
- v) You will find your class schedule in matrix form.
- vi) Press the "View Detail Schedule" button at the bottom of your matrix timetable to display details of your class schedule.

### 7.2 How to get Instructors' handouts through Canvas

- i) Log onto the CityU e-Portal from any terminal on campus or off campus.
- ii) Enter the course under “My Courses”
- iii) Click “ Files ”.

### 7.3 How to check Major Programme Requirement and Course Syllabuses

Log onto the CityU home page and click “Academic Programmes”.

### 7.4 Course Registration for Semester A 2017-2018

For Semester A 2017-2018, 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 **1 August 2017**. 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. For non-web-enabled courses, approval is required from the major department and you can submit your change request by using the Add/Drop Form.

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”.
- Choose “Add or Drop Classes”.
- Select and choose the correct term.

- iii) Web registration begins on **21 August 2017** but you need to check your time ticket first from “AIMS”.
- iv) All add/drops end on **11 September 2017**.
- v) Detailed arrangements on Course Registration for Semester A 2017-2018 will be posted by **1 August 2017**. For details, please refer to ARRO website:  
<http://www.cityu.edu.hk/arro/crsreg/>.

## 7.5 How to access your Student Email Account

- 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 “**Email**”.
- ii) In the Email Services home page, click “**my.cityu.edu.hk**” under “**Student**” to go to CityU “**Office 365**” Sign In page.
- iii) At the “**Account**” field in the Sign In screen, enter your Office 365 account in the form of “*YourEID-c*”, where *YourEID* is your CityU Electronic ID.
- iv) At the “**Password**” field, enter your Office 365 Account password, then click “**Sign In**”.
- v) Then you can read and compose mail after signing in.

***Important notes:***

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

## 7.6 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 2017-2018, the application period is from **14 July 2017 to 2 September 2017**. For details, please refer to ARRO website: <http://www6.cityu.edu.hk/arro/content.asp?cid=10>.

## 7.7 Safety Orientation

All students are required to complete the on-line Safety Orientation through the Departmental On-line Information System (IntraMEL). And a Lab Tour session will be held by the Laboratory Office in week 1-2 of Semester A 2017-2018 for new students. Details and schedule of the lab tour session will be sent to you by e-mail.

## 7.8 Administrative Support from SEEM General Office

### Normal

Mon to Fri	8:30am 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:seemgo@cityu.edu.hk">seemgo@cityu.edu.hk</a>

# **Appendix I : Model Study Path**

**Model Study Path for BENG SEM 2017/2018 DSE Entry (Normative 4-year) (non-CES mode)**

Yr	Sem	Major Requirements					University Requirements		CUs	
<b>2017 / 18 (Year 1)</b>	<b>A</b>	College Specified - Mathematics 1  MA1200 Calculus and Basic Linear Algebra I (3)	College Specified - Computing  CS1102 Introduction to Computer Studies (3)	College Requirement -  BCH1100 / BCH1200 Chemistry (3) / Discovery in Biology (3)	SEEM2101 Introduction to Systems Engineering and Management (3)	GE2319 Industrial Engineering and Management of Modern Enterprises  or  GE2336 Understanding Phenomena Around Us: An Introduction to Systems Thinking (3)	English 1 -  GE1401 University English (3)		<b>15</b>	
	<b>B</b>	College Specified - Mathematics 2  MA1201 Calculus and Basic Linear Algebra II (3)	College Requirement -  AP1201 General Physics (3)				English 2 -  GE2410 English for Engineering (3)		GE1501 Chinese Civilisation – History and Philosophy (3)	<b>15</b>
	<b>S</b>						Gateway Education 1 (3)			<b>3</b>
<b>2018 / 19 (Year 2)</b>	<b>A</b>	MBE2106 Basic Engineering Materials and Processing (2)	MBE2107 Basics of Mechanical Engineering (2)	MA2172 Applied Statistics for Sciences and Engineering (3)	SEEM3032 Operations and Logistics Planning (3)	SEEM3106 Operations and Logistics Engineering Workshop (3)	Gateway Education 2 (3)	Gateway Education 3 (3)	<b>16</b>	
	<b>B</b>	SEEM2102 Data Analytics and Statistical Methods (3)	MBE2108 Introduction to Electromechanical Systems (2)	<del>MA2181</del> Mathematical Methods for Engineering (3)	SEEM3102 Quality Engineering (3)		Gateway Education 4 (3)		<b>14</b>	
	<b>S</b>									<b>0</b>
<b>2019 / 20 (Year 3)</b>	<b>A</b>	SEEM3027 Logistics and Materials Management (3)	SEEM3034 Work Design (3)	SEEM3040 Engineering Database and Systems (3)	SEEM3053 Quality Improvement Methodologies (3)	SEEM3060 Operations Research (3)			<b>15</b>	
	<b>B</b>	SEEM3024 Ergonomics in Workplace Design (3)	SEEM3020 Engineering Economic Analysis (3)	SEEM3103 Process Analysis and Design (3)	Major Elective 1 (3)	Major Elective 2 (3)			<b>15</b>	
	<b>S</b>								<b>0</b>	
<b>2020 / 21 (Year 4)</b>	<b>A</b>	SEEM4109 Product and Service Design and Innovation (3)	SEEM4068# Project (Individual) (3)	Major Elective 3 (3)	Major Elective 4 (3)	Major Elective 5 (3)			<b>15</b>	
	<b>B</b>	SEEM4066 Professional Engineering Practice (3)	SEEM4068# Project (Individual) (3)	Major Elective 6 (3)	Major Elective 7 (3)				<b>12</b>	
( ) indicates number of credit units							<b>Total credits required = 120</b>			

# SEEM4068 Project (Individual) / 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 SEM 2017/2018 DSE Entry (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 SEEM courses on a day-release basis for no more than one day per week.*

Yr	Sem	Major Requirements					University Requirements		CU's	
2017 / 18 (Year 1)	A	College Specified - Mathematics 1  MA1200 Calculus and Basic Linear Algebra I (3)	College Specified - Computing  CS1102 Introduction to Computer Studies (3)	College Requirement -  BCH1100 / BCH1200 Chemistry (3) / Discovery in Biology (3)	SEEM2101 Introduction to Systems Engineering and Management (3)	GE2319 Industrial Engineering and Management of Modern Enterprises  or  GE2336 Understanding Phenomena Around Us: An Introduction to Systems Thinking (3)	English 1 -  GE1401 University English (3)		15	
	B	College Specified - Mathematics 2  MA1201 Calculus and Basic Linear Algebra II (3)	College Requirement -  AP1201 General Physics (3)				English 2 -  GE2410 English for Engineering (3)		GE1501 Chinese Civilisation – History and Philosophy (3)	15
	S						Gateway Education 1 (3)			3
2018 / 19 (Year 2)	A	MBE2106 Basic Engineering Materials and Processing (2)	MBE2107 Basics of Mechanical Engineering (2)	MA2172 Applied Statistics for Sciences and Engineering (3)	SEEM3032 Operations and Logistics Planning (3)	SEEM3106 Operations and Logistics Engineering Workshop (3)	Gateway Education 2 (3)	Gateway Education 3 (3)	16	
	B	SEEM2102 Data Analytics and Statistical Methods (3)	MBE2108 Introduction to Electromechanical Systems (2)	MA2181 Mathematical Methods for Engineering (3)	SEEM3102 Quality Engineering (3)		Gateway Education 4 (3)		14	
	S						Major Elective 1 (3)			3
2019 / 20 (Year 3)	A	SEEM3027 Logistics and Materials Management (3)	SEEM3034 Work Design (3)	SEEM3040 Engineering Database and Systems (3)	SEEM3053 Quality Improvement Methodologies (3)	SEEM3060 Operations Research (3)			15	
	B	SEEM3024 Ergonomics in Workplace Design (3)	SEEM3020 Engineering Economic Analysis (3)	SEEM3103 Process Analysis and Design (3)	Major Elective 2 (3)	Major Elective 3 (3)			15	
	S				Major Elective 4 (3)	Major Elective 5 (3)			6	
2020 / 21 (Year 4)	A	SEEM4109 Product and Service Design and Innovation (3)	SEEM4068# Project (Individual) (3)	CES FS4001 (4)	Major Elective 6 (3)				13	
	B	SEEM4066 Professional Engineering Practice (3)	SEEM4068# Project (Individual) (3)	CES FS4001 (4)	Major Elective 7 (3)				13	
( ) indicates number of credit units							<b>Total credits required = 128</b>			

# SEEM4068 Project (Individual) / 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 SEM 2017/2018 DSE Entry (normative 4-year) (non-CES Go Global mode)

Yr	Sem	Major Requirements					University Requirements		CU's
2017 / 18 (Year 1)	A	College Specified - Mathematics 1 MA1200 Calculus and Basic Linear Algebra I (3)	College Specified - Computing CS1102 Introduction to Computer Studies (3)	College Requirement - BCH1100 / BCH1200 Chemistry (3) / Discovery in Biology (3)	SEEM2101 Introduction to Systems Engineering and Management (3)	GE2319 Industrial Engineering and Management of Modern Enterprises  or GE2336 Understanding Phenomena Around Us: An Introduction to Systems Thinking (3)	English 1 - GE1401 University English (3)	GE1501 Chinese Civilisation – History and Philosophy (3)	15
	B	College Specified - Mathematics 2 MA1201 Calculus and Basic Linear Algebra II (3)	College Requirement - AP1201 General Physics (3)				English 2 - GE2410 English for Engineering (3)		15
	S						Gateway Education 1 (3)	3	
2018 / 19 (Year 2)	A	MBE2106 Basic Engineering Materials and Processing (2)	MBE2107 Basics of Mechanical Engineering (2)	MA2172 Applied Statistics for Sciences and Engineering (3)	SEEM3032 Operations and Logistics Planning (3)	SEEM3106 Operations and Logistics Engineering Workshop (3)	Gateway Education 2 (3)	Gateway Education 3 (3)	16
	B	SEEM2102 Data Analytics and Statistical Methods (3)	MBE2108 Introduction to Electromechanical Systems (2)	<del>MA2181</del> Mathematical Methods for Engineering (3)	SEEM3102 Quality Engineering (3)		Gateway Education 4 (3)	14	
	S				Major Elective 1 (3)		Major Elective 2 (3)		6
2019 / 20 (Year 3)	A	SEEM3027 Logistics and Materials Management (3)	SEEM3034 Work Design (3)	SEEM3040 Engineering Database and Systems (3)	SEEM3053 Quality Improvement Methodologies (3)	SEEM3060 Operations Research (3)			15
	B	<b>Go Global Programme</b> <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 3 (3)	Major Elective 4 (3)			6
2020 / 21 (Year 4)	A	SEEM4109 Product and Service Design and Innovation (3)	SEEM4068# Project (Individual) (3)	Major Elective 5 (3)	Major Elective 6 (3)	Major Elective 7 (3)			15
	B	SEEM4066 Professional Engineering Practice (3)	SEEM4068# Project (Individual) (3)	SEEM3024 Ergonomics in Workplace Design (3)	SEEM3020 Engineering Economic Analysis (3)	SEEM3103 Process Analysis and Design (3)			15
( ) indicates number of credit units							<b>Total credits required = 120</b>		

# SEEM4068 Project (Individual) / 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 SEM 2017/2018 Entry (Advanced Standing I) (non-CES mode)

Yr	Sem	Major Requirements						University Requirements	CUs
2017 / 18 (Year 2)	A	MBE2106 Basic Engineering Materials and Processing (2)*	MBE2107 Basics of Mechanical Engineering (2)^	MA2172 Applied Statistics for Sciences and Engineering (3)	SEEM3032 Operations and Logistics Planning (3)	College Specified - Mathematics I  MA1200 Calculus and Basic Linear Algebra I (3)	SEEM2101 Introduction to Systems Engineering and Management (3)	English 2 - GE2410 English for Engineering (3)	19
	B	SEEM2102 Data Analytics and Statistical Methods (3)	MBE2108 Introduction to Electromechanical Systems (2)^	GE2336 Understanding Phenomena Around Us: An Introduction to Systems Thinking (3)	SEEM3102 Quality Engineering (3)	College Specified - Computing  CS1102 Introduction to Computer Studies (3)		English 1 - GE1401 University English (3)	17
	S							GE1501 Chinese Civilisation – History and Philosophy (3)	3
2018 / 19 (Year 3)	A	SEEM3027 Logistics and Materials Management (3)	SEEM3034 Work Design (3)	SEEM3040 Engineering Database and Systems (3)	SEEM3053 Quality Improvement Methodologies (3)	SEEM3060 Operations Research (3)			15
	B	SEEM3024 Ergonomics in Workplace Design (3)	SEEM3020 Engineering Economic Analysis (3)	SEEM3103 Process Analysis and Design (3)	SEEM3106 Operations and Logistics Engineering Workshop (3)	Major Elective 1 (3)	Major Elective 2 (3)		18
	S								0
2019 / 20 (Year 4)	A	SEEM4109 Product and Service Design and Innovation (3)	SEEM4068# Project (Individual) (3)	Major Elective 3 (3)	Major Elective 4 (3)	Major Elective 5 (3)			15
	B	SEEM4066 Professional Engineering Practice (3)	SEEM4068# Project (Individual) (3)	Major Elective 6 (3)	Major Elective 7 (3)			Gateway Education 2 (3)	15
( ) indicates number of credit units								<b>Total credits required = 102</b>	

\* Pre-requisite courses AP1201 or BCH1100 is waived for students admitted through Advanced Standing route if the course is not part of College Requirement  
 ^ Pre-requisite courses MA1201 or MA1301 is waived for students admitted through Advanced Standing route if the course is not a College-specified course  
 # SEEM4068 Project (Individual) / 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 SEM 2017/2018 Entry (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 SEEM courses on a day-release basis for no more than one day per week.*

Yr	Sem	Major Requirements						University Requirements	CUs
<b>2017 / 18 (Year 2)</b>	<b>A</b>	MBE2106 Basic Engineering Materials and Processing (2)*	MBE2107 Basics of Mechanical Engineering (2)^	MA2172 Applied Statistics for Sciences and Engineering (3)	SEEM3032 Operations and Logistics Planning (3)	College Specified - Mathematics 1  MA1200 Calculus and Basic Linear Algebra I (3)	SEEM2101 Introduction to Systems Engineering and Management (3)	English 2 - GE2410 English for Engineering (3)	<b>19</b>
	<b>B</b>	SEEM2102 Data Analytics and Statistical Methods (3)	MBE2108 Introduction to Electromechanical Systems (2)^	GE2336 Understanding Phenomena Around Us: An Introduction to Systems Thinking (3)	SEEM3102 Quality Engineering (3)	College Specified - Computing  CS1102 Introduction to Computer Studies (3)		English 1 - GE1401 University English (3)	<b>17</b>
	<b>S</b>			Gateway Education I (3)				GE1501 Chinese Civilisation – History and Philosophy (3)	<b>3</b>
<b>2018 / 19 (Year 3)</b>	<b>A</b>	SEEM3027 Logistics and Materials Management (3)	SEEM3034 Work Design (3)	SEEM3040 Engineering Database and Systems (3)	SEEM3053 Quality Improvement Methodologies (3)	SEEM3060 Operations Research (3)			<b>15</b>
	<b>B</b>	SEEM3024 Ergonomics in Workplace Design (3)	SEEM3020 Engineering Economic Analysis (3)	SEEM3103 Process Analysis and Design (3)	SEEM3106 Operations and Logistics Engineering Workshop (3)	Major Elective 1 (3)	Major Elective 2 (3)		<b>18</b>
	<b>S</b>						Major Elective 3 (3)	Gateway Education 2 (3)	<b>6</b>
<b>2019 / 20 (Year 4)</b>	<b>A</b>	SEEM4109 Product and Service Design and Innovation (3)	SEEM4068# Project (Individual) (3)	Major Elective 4 (3)	Major Elective 5 (3)	CES FS4001 (4)			<b>16</b>
	<b>B</b>	SEEM4066 Professional Engineering Practice (3)	SEEM4068# Project (Individual) (3)	Major Elective 6 (3)	Major Elective 7 (3)	CES FS4001 (4)			<b>16</b>
( ) indicates number of credit units								<b>Total credits required = 110</b>	

\* Pre-requisite courses AP1201 or BCH1100 is waived for students admitted through Advanced Standing route if the course is not part of College Requirement

^ Pre-requisite courses MA1201 or MA1301 is waived for students admitted through Advanced Standing route if the course is not a College-specified course

# SEEM4068 Project (Individual) / 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 SEM 2017/2018 Entry (Advanced Standing I) (non-CES Go Global mode)

Yr	Sem	Major Requirements						University Requirements	CUs
2017 / 18 (Year 2)	A	MBE2106 Basic Engineering Materials and Processing (2)*	MBE2107 Basics of Mechanical Engineering (2)^	MA2172 Applied Statistics for Sciences and Engineering (3)	SEEM3032 Operations and Logistics Planning (3)	College Specified - Mathematics 1  MA1200 Calculus and Basic Linear Algebra I (3)	SEEM2101 Introduction to Systems Engineering and Management (3)	English 2 - GE2410 English for Engineering (3)	19
	B	SEEM2102 Data Analytics and Statistical Methods (3)	MBE2108 Introduction to Electromechanical Systems (2)^	GE2336 Understanding Phenomena Around Us: An Introduction to Systems Thinking (3)	SEEM3102 Quality Engineering (3)	College Specified - Computing  CS1102 Introduction to Computer Studies (3)		English 1 - GE1401 University English (3)	17
	S			Gateway Education 1 (3)		Major Elective 1 (3)	Major Elective 2 (3)	GE1501 Chinese Civilisation – History and Philosophy (3)	9
2018 / 19 (Year 3)	A	SEEM3027 Logistics and Materials Management (3)	SEEM3034 Work Design (3)	SEEM3040 Engineering Database and Systems (3)	SEEM3053 Quality Improvement Methodologies (3)	SEEM3060 Operations Research (3)			15
	B	<b>Go Global Programme</b> <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 3 (3)	Major Elective 4 (3)		6
2019 / 20 (Year 4)	A	SEEM4109 Product and Service Design and Innovation (3)	SEEM4068# Project (Individual) (3)	Major Elective 5 (3)	Major Elective 6 (3)	Major Elective 7 (3)		Gateway Education 2 (3)	18
	B	SEEM4066 Professional Engineering Practice (3)	SEEM4068# Project (Individual) (3)	SEEM3024 Ergonomics in Workplace Design (3)	SEEM3020 Engineering Economic Analysis (3)	SEEM3103 Process Analysis and Design (3)	SEEM3106 Operations and Logistics Engineering Workshop (3)		18
( ) indicates number of credit units								<b>Total credits required = 102</b>	

\* Pre-requisite courses AP1201 or BCH1100 is waived for students admitted through Advanced Standing route if the course is not part of College Requirement

^ Pre-requisite courses MA1201 or MA1301 is waived for students admitted through Advanced Standing route if the course is not a College-specified course

# SEEM4068 Project (Individual) / 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.



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