BACHELOR OF ENGINEERING (HONS) IN

MANUFACTURING SYSTEMS ENGINEERING (BENG MFSE)*

Student Handbook (2015-2016)

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** The award title will be changed to **Bachelor of Engineering in Manufacturing Systems Engineering 工學士 (製造系統工程學)** from the 2015/16 student intakes onwards, including students admitted with Advanced Standing.*

1. AIMS OF MAJOR

This Major aims to equip students of diverse background with analytical, technical, managerial, and professional skills in and knowledge of Manufacturing Systems Engineering so as to prepare them to play key engineering and managerial roles in globalized manufacturing and engineering services operations.

Intended Learning Outcomes of Major (MILOs)

Upon successful completion of this Major, students should be able to:

1. organize and utilize information for the interactions between diverse manufacturing resources to meet specified manufacturing objectives;
2. conceptualize, analyze, select and apply mechanical entities and manufacturing processes in the manufacture of discrete products;
3. plan the implementation and utilization of electrical/electronic devices, computer hardware and software and communication and control systems for the automation of manufacturing and engineering enterprises;
4. identify and solve system-level issues concerning manufacturing productivity, quality and competitiveness with emphasis on Computer Integrated Manufacturing Systems;
5. develop and implement effective procedures to manage manufacturing activities in industries;
6. develop and implement efficient "process engineering" and innovative "design for manufacture" solutions in discrete products manufacturing;
7. demonstrate the creativity, analytical and problem solving skills in the context of manufacturing engineering; and
8. meet the core competency required for corporate membership of professional bodies, such as the Hong Kong Institute of Engineers (HKIE).

2. DEGREE REQUIREMENT

2.1 Normal and Maximum Period of Study

	Normative 4-year Degree	**Advanced Standing I (Note 1)**	**Advanced Standing II (Senior-year Entry) (Note 2)**
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 as senior-year intake students.

2.2 Minimum Number of Credit Units Required for the Award and Maximum Number of Credit Units Permitted

Degree Requirements	**Normative 4-year Degree**	**Advanced Standing I**	**Advanced Standing II (Senior-year Entry)**
Gateway Education requirement *****	30 credit units	21 credit units	12 credit units
College/School requirement *****	6 credit units	waived	waived
Major requirement	78 or 81** credit units (Core: 60 or 63** Elective: 18)	69 credit units+ (Core: 60 Elective: 9)	63 credit units+ (Core: 57 Elective: 6)
Free electives / Minor (if applicable)	6 or 3** credit units	0 credit unit	0 credit unit
Minimum number of credit units required for the award	**120 credit units**	**90 credit units**	**75 credit units**
Maximum number of credit units permitted	**144 credit units**	**114 credit units**	**84 credit units**

***** *For details, please refer to the Curriculum Information Record for Common Requirements.*

+ Course exemptions granted to individual students should be made up within electives in the Major Requirement.

**Students under the Normative Four-Year Degree should complete AP1201 or BCH1100 whichever is not taken towards fulfilling the College Requirement.

2.3 Gateway Education

(The catalogue term of the Gateway Education requirement that students will follow will be the same as their admission term.)

Curriculum Catalogue Term	**Semester A 2014/15**	**Semester A 2015/16**	
	Normative 4-year Degree	**Advanced Standing I (Note 1)**	**Advanced Standing II (Senior-year Entry) (Note 2)**
University requirements			
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
Distributional requirements 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)*	3 credit units
College/School-specified courses ^	9 credit units	6 credit units	6 credit units
Total	**30 credit units**	**21 credit units**	**12 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	
CS1102/ CS1302	Introduction to Computer Studies/ Introduction to Computer Programming*	B1	3	*Subject to sufficient enrollments.
Advanced Standing I (for MFSE, MTE and NRE)				
• Students who have not passed the MA placement test arranged by the Mathematics department should take *MA1200 Calculus and Basic Linear Algebra I* (3 credit units) and *MA1201 Calculus and Basic Linear Algebra II* (3 credit units) as College-specified courses. • Students who have passed the MA placement test arranged by the Mathematics department should take *MA1201 Calculus and Basic Linear Algebra II* (3 credit units) and *CS1102 Introduction to Computer Studies* or *CS1302 Introduction to Computer Programming* (3 credit units) as College-specified courses. Students may be required to take a CS placement test to register for *CS1302 Introduction to Computer Programming*.			
Advanced Standing II (Senior-year Entry)				
Take any courses not within the Major requirements (including Core Courses and Electives)				

2.4 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 a 6-credit unit course EL0200 English for Academic Purpose prior to taking the GE English courses. The 6 credit units of EL0200 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 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.

2.6 College/School Requirement, if any

(The catalogue term of the College/School requirement that students will follow will be the same as their admission term.)

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

2.7 Major Requirement

- The catalogue term of the major requirement that students will follow will be the effective term of the declared/allocated major.
- For normative 4-year degree students who will join the majors allocation exercise, the catalogue term of major requirement will be one year after admission.
- For advanced standing students and 4-year degree students who already have a major at the time of admission, the catalogue term of major requirement will be the same as their admission term.

2.7.1 Core Courses (60 or 63[#] credit units)

- **Advanced Standing I students: 60 credit units**
- **Advanced Standing II students: 57 credit units[@]**

Course Code	Course Title	Level	Credit Units	Remarks
AP1201 / BCH1100	General Physics I / Chemistry	B1	3	[#] If not taken under College requirement. Waived for students admitted with Advanced Standing
MA2172 / MA2177	Applied Statistics for Sciences and Engineering / Engineering Mathematics and Statistics	B2	3	Note: MA2172 for students admitted with Advanced Standing II
MBE2003	Mechanics	B2	3	
MBE2016	Engineering Graphics	B2	3	
MBE2020	Engineering Workshop Practice	B2	0	
MBE2029	Electrical and Electronic Principles I	B2	3	
MBE2034	Engineering Materials and Processing	B2	3	
MBE2036	Engineering Computing	B2	3	
MBE2101	Thermo and Fluid Dynamics	B2	3	
MBE3006	Plastics Engineering	B3	3	
MBE3007	CAD/CAM	B3	3	
MBE3010	Mechanical Design	B3	3	
MBE3019	Metrology and Applications	B3	3	
MBE3046	Automation Technology	B3	3	
MBE3050	Design for Manufacturing and Manufacturing Systems	B3	3	
SEEM3032	Production and Operations Planning	B3	3	
SEEM3062	Quality Engineering I	B3	3	
MBE4005	Finite Element Analysis	B4	3	
MBE4066	Professional Engineering Practice	B4	3	
MBE4068 / MBE4116 / FS4004 [+]	Project (Individual) / Capstone Project II / Overseas Research Internship Scheme	B4	9	

[+] ***Students who have opted for FS4001 cannot register for FS4004.***

[@] ***3 credit units of core courses are to be waived for students admitted with Advanced Standing II from the B2 level courses: MA2172, MBE2003, MBE2016, MBE2020, MBE2029, MBE2034, MBE2036 and MBE2101 based on the academic background of students.***

2.7.2 Electives (18 credit units)

- Advanced Standing I students are required to complete at least 9 credit units of electives, in addition to credit units required to make up for exempted core courses
- Advanced Standing II students are required to complete at least 6 credit units of electives, in addition to credit units required to make up for exempted core courses

Course Code	Course Title	Level	Credit Units	Remarks
MBE3024	Ergonomics in Workplace Design	B3	3	Group 1: (Design, Manufacture and Automation) • *Normative 4-year degree students must earn at least 9 credit units from Group 1* • *ASI students must earn at least 6 credit units from Group 1* • *ASII students must earn at least 3 credit units from Group 1*
MBE3034	Work Design	B3	3	
MBE3049	Control Principles	B3	3	
MBE4001	Mold and Die Design	B4	3	
MBE4002	Computer Aided Process Planning	B4	3	
MBE4032	Robotics and Machine Vision	B4	3	
MBE4033	Product Development: Methodologies and Solutions	B4	3	
MBE4046	Green Industrial Systems	B4	3	
MBE4048	Advanced Manufacturing Technologies	B4	3	
MBE4067	Virtual Prototyping and Manufacturing	B4	3	
SEEM3020	Engineering Economic Analysis	B3	3	Group 2: (System and Technology Management)
SEEM3027	Logistics and Materials Management	B3	3	
SEEM3040	Engineering Database and Systems	B3	3	
SEEM3053	Quality Improvement Methodologies	B3	3	
SEEM3056	Engineering Management Principle and Practice	B3	3	
SEEM3057	Industrial Marketing for Engineers	B3	3	
MBE4031	Management of Technological Innovation	B4	3	
MBE4034	Product Development: Managerial Approach	B4	3	
MBE4041	Maintenance Services for Utilities, Buildings and Industry	B4	3	
SEEM4020	Enterprise Information Systems	B4	3	
SEEM4024	Project Management	B4	3	
SEEM4026	Systems Modelling and Simulation	B4	3	
FS2001	Workshop-based Study in Science and Engineering	B2	3	Group 1 or Group 2: To be decided by the Course Leader depending on the nature of the project or coursework
MBE3116	Capstone Project I	B3	3	
MBE4047[#]	Directed Studies	B4	3	

[#] *Only for special occasions*

Note: Elective courses will be updated from time to time

2.8 Optional Courses

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

2.9 Classification of Award

Classification	CGPA
1st Class	CGPA 3.5 or above
2nd Upper	CGPA 3.00 – 3.49
2nd Lower	CGPA 2.50 – 2.99
3rd 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 website 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 2015** in order to access their course grades.
For details, please refer to Office of the Provost's
website: *http://www.cityu.edu.hk/provost/academic_honesty/university_requirment_on_academic_honesty.htm*

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 Leader.
c) A student who wishes to discuss issues on a particular part of the major should speak to the relevant 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 cohort 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 LEADER AND YEAR TUTORS

Position	Staff Name	Tel/Email
Major Leader:	Dr. W. Y. MA	3442-9548 / mewma@cityu.edu.hk
Deputy Major Leader:	Dr. Meng HUA	3442-8443 / memnghua@cityu.edu.hk

Year Tutors (By Cohort and Programme Code):

2014 BENG4/DSE & 2015 BENG3/ASI	Dr. Zuankai WANG	3442-2170 / zuanwang@cityu.edu.hk
2013 BENG4/DSE & 2014 BENG3/ASI 2015 BENG2/ASII	Dr. Meng HUA	3442-8443 / memnghua@cityu.edu.hk
2012 BENG4/DSE, 2013 BENG3/ASI & 2014 BENG2/ASII	Dr. Patrick P. L. WONG	3442-8427 / meplwong@cityu.edu.hk

7. INFORMATION TO NEW STUDENTS

7.1 How to access your Personal Class Schedule

i) Go to CityU home page (www.cityu.edu.hk) from any terminal on campus or off campus.
ii) Log onto "Portal" under "Quick Links".
If you have problems in logging in, please follow the instructions in "Having problems logging?".
iii) Under the tab "Student", you can find a quick link "Student Schedule" to view your timetable for current semester. Timetable for Semester A 2015/16 is available from 28 July 2015 onwards.

7.2 How to get Instructors' handouts through Canvas

i) Log onto Canvas (https://canvas.cityu.edu.hk) from any terminal on campus or off campus
ii) Click "View All or Customize" under "Courses" to see all courses you have registered in current and previous semesters.

7.3 How to check Major Requirement and Course Syllabuses

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

To access DegreeWorks, please go to the “Study Plan” tab in AIMS. For details, please refer to ARRO website: *www6.cityu.edu.hk/arro/content.asp?cid=248*

7.4 Course Registration for Semester A 2015-2016

For Semester A 2015-2016, 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 **28 July 2015**. 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 “Students”.
- Log onto “AIMS” and then click “Course Registration”.
- Choose “Add or Drop Classes”.

iii) Web registration begins on **17 August 2015** but you need to check your time ticket first from “AIMS”.
iv) All add/drops end on **7 September 2015**.
v) Detailed arrangements on Course Registration for Semester A 2015-2016 will be posted by **28 July 2015**. 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 homepage, click “@**my.cityu.edu.hk**” under “Student” to go to the 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 “Log On”.

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

7.6 Course Exemption/Credit Transfer

Applications for course exemption or credit transfer 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 2015-2016, the application period is from **15 July 2015 to 29 August 2015.** For details, please refer to ARRO website:
http://www6.cityu.edu.hk/arro/content.asp?cid=10

7.7 Laboratory Safety Orientation

All students are REQUIRED to complete the on-line Laboratory Safety Orientation through the Departmental On-line Information System (IntraMEL). A Lab Tour session will be held by the Laboratory Office in week 1 of Semester A 2015-16 for interested students. Details of the session will be sent to you by e-mail.

7.8 Administrative Support from General Office

Normal

Mon to Fri	8:30 am to 5:30 pm
Lunch Break	*12:30 pm to 1:45 pm*
Sat	Closed

Inquiry:	3442-8420
Fax:	3442-0172
Email:	mbego@cityu.edu.hk