CIR-MAJ

香港城市大學
City University of Hong Kong

Curriculum Information Record for a Major/Degree

Department of Electrical Engineering
Effective from Semester A, 2019/20
For Students Admitted/Changed to the Major with Catalogue Term Semester A 2015/2016

The information provided on this form is the official record of the major/degree. It will be used for City University's database, various City University publications (including websites) and documentation for students and others as required.

In specifying the curriculum for a major/degree, "catalogue term" is used to determine the set of curriculum requirements that a student is following. By mapping the student record and the version of curriculum rules applicable, the graduation requirements of individual students will be evaluated accordingly. The catalogue terms of curriculum requirements that students will follow are summarized below (BUS/04/A5R):

Requirements	Catalogue Term
a) Common Requirements • Gateway Education • University Language • College/School requirement	The same as student's admission term
b) Major • For normative 4-year degree students who will join the majors allocation exercise	Effective term of the declared major
• For advanced standing students and 4-year degree students who already have a major at the time of admission	The same as student's admission term
• For students who have changed major	Effective term of the changed major
c) Stream	Follow the effective term of the associated major

Prepared / Last Updated by

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HCS/sw 31-Mar-15, 30-Jun-15, 15-Jul-16, Updating curriculum map 15-Aug-16, AS/sh 19 Sept-16, AS/sh 15-Jun-17, AS/sh 15-Jan-18, AS/sh 19-Nov-18, AS/sh 15-May-19, sh Dept Name Change 31-May-19, AS/sh 17-Jun-19

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Part I Major/Degree Overview

Major

(in English) : Information Engineering

(in Chinese) : 資訊工程學

Degree

(For students admitted to the University in 2015/16 and thereafter)

(in English) : Bachelor of Engineering

(in Chinese) : 工學士

(For students admitted to the University in 2014/15 and before)

(in English) : Bachelor of Engineering (Honours)

(in Chinese) : 榮譽工學士

Award Title[#]

(For students admitted to the University in 2015/16 and thereafter)

(in English) : Bachelor of Engineering in Information Engineering

(in Chinese) : 工學士(資訊工程學)

(For students admitted to the University in 2014/15 and before)

(in English) : Bachelor of Engineering (Honours) in Information Engineering

(in Chinese) : 資訊工程學榮譽工學士

 # Please make reference to the "Guidelines on Award Titles" approved by the Senate when proposing new award titles or changes to existing award titles (Senate/86/A5R).

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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	2.5 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. 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	Not required	Not required
Major requirement	75 credit units (Core: 63 Elective: 12)	75 credit units (Core: 63 Elective: 12)	72 credit units (Core: 60 Elective:12)
Free electives	9 credit units	Optional	N.A.
Minor (if applicable)	Optional	Optional	N.A.
Minimum number of credit units required for the award	**120 credit units**	**96 credit units**	**84 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.*

3. Aims of Major

The aims of this major are to provide students with an education in information engineering, and to prepare them to have the necessary knowledge, skills and understanding to pursue a career as professional engineers. The contents covered aim to have breadth to allow graduates to work across boundaries as well as depth to equip and prepare them to meet the demands of employers as well as the demands for pursuing postgraduate studies. Through this experience, our graduates will also have the ability and vision that will enable them to become independent life-long learners in this rapidly changing information age.

4. Intended Learning Outcomes of Major (MILOs)

(Please state what the student is expected to be able to do on completion of the major according to a given standard of performance.)

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

No.	*MILOs*	*Discovery-enriched curriculum related learning outcomes (please tick where appropriate)*		
		A1	*A2*	*A3*
1.	apply knowledge of mathematics science and engineering.		√	
2.	design and conduct experiments as well as to analyze and interpret data.			√
3.	design a system, component, or process that conforms to a given specification within realistic constraints.			√
4.	function on multi-disciplinary teams.	√		
5.	identify, evaluate, formulate and solve engineering problems.		√	√
6.	be aware of professional and ethical responsibilities.	√		
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.	recognise the need for life-long learning.	√		
10.	use necessary engineering tools.		√	

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishments of discovery/innovation/creativity through producing/constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Part II 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.)

1. Core Courses

Normative 4-year Degree: 63 credit units

Advanced Standing I: 63 credit units

Advanced Standing II: 60 credit units

Course Code	Course Title	Level	Credit Units	Remarks
CS2311	Computer Programming	B2	3	Advanced Standing II: Not required
EE2000	Logic Circuit Design	B2	3	
EE2004	Microcomputer Systems	B2	3	
EE2108	Engineering Analysis	B2	3	
EE2301	Basic Electronic Circuits	B2	3	
EE2311	Object-oriented Programming and Design	B2	3	
EE2331	Data Structures and Algorithms	B2	3	
MA2001	Multi-variable Calculus & Linear Algebra	B2	3	
CS3103	Operating Systems	B3	3	
CS3402	Database Systems	B3	3	
EE3008	Principles of Communications	B3	3	
EE3009	Data Communications and Networking	B3	3	
EE3013	Engineers in Society	B3	0	Students having completed EE4081 Professional Internship Program (6CU) are not required to take this course and one other elective#. For those who have completed 12-month internship in EE4081 are not required to take EE4095 Engineering Training II for Information Engineering.
EE3210	Signals and Systems	B3	3	
EE3313	Applied Queueing Systems	B3	3	
EE3315	Internet Technology	B3	3	
EE3316	Information Product Design	B3	3	

MA3001	Differential Equations	B3	3	
EE4093	Engineering Training I for Information Engineering	B4	0	
EE4095	Engineering Training II for Information Engineering	B4	0	
EE4221	Cloud Computing Systems	B4	3	
EE4382	Project	B4	9	

#ASII students of 2015/16 catalogue term in major will need to apply for exceeding the maximum study load by 3 credit units if they are approved to take EE4081. EE3013 Engineers in Society, a non-credit bearing course, is to be replaced by EE3012 Engineers in Society (3CU) for 2016/17 catalogue term in major and thereafter.

2. Electives (12 credit units)

Students are required to take at least FOUR electives of which no more than ONE Level-3 elective should be taken.

Course Code	Course Title	Level	Credit Units	Remarks
CS3367	Essentials of Software Engineering	B3	3	
CS3391	Advanced Programming	B3	3	
CS4273*	Distributed System Technologies & Programming	B4	3	
CS4274	Distributed Computing Technologies	B4	3	
CS4335	Design and Analysis of Algorithms	B4	3	
CS4367	Computer Games Design	B4	3	
CS4482	Advanced Database Systems	B4	3	
EE3101	Communication Engineering	B3	3	
EE3209	Data Management Techniques	B3	3	
EE4014	Business Data Communication Networks	B4	3	
EE4015	Digital Signal Processing	B4	3	
EE4016	Engineering Application of Artificial Intelligence	B4	3	
EE4017	Internet Finance	B4	3	
EE4036	Wireless Communications	B4	3	
EE4146	Data Engineering and Learning Systems	B4	3	
EE4208	Computer Graphics for Engineers	B4	3	
EE4209	Digital Audio Technology	B4	3	
EE4212	Cryptography and Information Theory	B4	3	
EE4213	Human-Computer Interaction	B4	3	
EE4215	Cybersecurity Technology	B4	3	
EE4216*	Modern Web Applications	B4	3	
EE4218	Computer Architecture	B4	3	
EE4211	Computer Vision	B4	3	
EE4304	iOS Mobile App Development and Networking	B4	3	
EE4316	Mobile Data Networks	B4	3	

*Exclusive course

3. Optional One-year Internship

Course Code	Course Title	Level	Credit Units	Remarks
EE4081	Professional Internship Program	B4	6	Students having completed EE4081 Professional Internship Program (6CU) will take one less elective (3CU) and are not required to take EE3013 Engineers in Society (0CU)#. For those who have completed 12-month internship in EE4081 are not required to take EE4095 Engineering Training II for Information Engineering.

#ASII students of 2015/16 catalogue term in major will need to apply for exceeding the maximum study load by 3 credit units if they are approved to take EE4081. EE3013 Engineers in Society, a non-credit bearing course, is to be replaced by EE3012 Engineers in Society (3CU) for 2016/17 catalogue term in major and thereafter.

Part III Admission Requirements for Entry to the Major, if any

(Admission requirements here refers to specific requirements for students already admitted to the College/School/Department with an undeclared major. Academic units can state the prerequisites required for admission to the major.)

Nil

Part IV Accreditation by Professional / Statutory Bodies

The major is accredited by the Hong Kong Institution of Engineers (HKIE).

Part V Additional Information

Nil

Part VI Curriculum Map

(The curriculum map shows the mapping between courses and the MILOs. It should cover all courses designed specifically for the major.)

Course			MILOs										DEC		
Code	**Title**	**Credit**	**M1 (a)**	**M2 (b, l)**	**M3 (c)**	**M4 (d)**	**M5 (e)**	**M6 (f)**	**M7 (g, l)**	**M8 (h, i)**	**M9 (j)**	**M10 (k, l)**	**A1**	**A2**	**A3**
Core Course															
CS2311	Computer Programming	3	T/P		T/P		T/P					T/P	✓	✓	
EE2000	Logic Circuit Design	3	T/P	P	T/P/M		P	T/P	P/M			P	✓	✓	
EE2004	Microcomputer Systems	3	T/P	T/P/M	T/P/M	P/M	T/P		P/M			T/P/M	✓	✓	✓
EE2108	Engineering Analysis	3	T/P/M				T					T/P/M	✓	✓	
EE2301	Basic Electronic Circuits	3	T/P	T/P/M			T		T			T	✓	✓	
EE2311	Object-Oriented Programming and Design	3	T/P		T/P		T/P					P	✓	✓	
MA2001	Multi-variable Calculus and Linear Algebra	3	T/P										✓	✓	✓
MA3001	Differential Equations	3	T/P										✓	✓	✓
EE4093	Engineering Training I for Information Engineering	0	T/P	P/M	T/P		P	T/P			P/M	T/P	✓	✓	
CS3103	Operating Systems	3	T/P	T	T/P		T					T/P	✓	✓	
CS3402	Database Systems	3	T/P		T/P		T/P					P	✓	✓	
EE2331	Data Structures and Algorithms	3	T/P		T/P		T/P/M					P	✓	✓	
EE3009	Data Communications and Networking	3	T/P				T/P					T/P/M	✓	✓	
EE3210	Signals and Systems	3	T/P/M	T/P	T/P		T/P	T		T	T	P	✓	✓	
EE3313	Applied Queueing Systems	3	T/P/M		T/P		T/P		P				✓	✓	
EE3316	Information Product Design	3	T/P	P	T/P/M	P/M	P/M	T/P/M	P/M	P/M	P/M	T/P	✓	✓	✓
EE3315	Internet Technology	3	T/P	T/P/M		P/M	T/P/M		P			P	✓	✓	
EE4095	Engineering Training II for Information Engineering	0	P	T/P	T/P	T/P/M	P	P/M	P	P	P/M	T/P/M	✓	✓	
EE3008	Principles of Communications	3	T/P	T/P			T/P			T		T	✓	✓	
EE3013	Engineers in Society	0						T/P/M		T/P/M			✓	✓	
EE4221	Cloud Computing Systems	3	T/P		T/P/M		T/P					T/P	✓	✓	
EE4382	Project	9	P/M	P	P		P/M	P/M	P/M	P/M	P/M	P	✓	✓	✓
Electives (Choose 12 credits with at most one level 3 course)															
EE3101	Communication Engineering	3	T/P	T/P		P	T/P		P			P	✓	✓	
EE3209	Data Management Techniques	3	T/P		T/P		T/P					T/P	✓	✓	
EE4014	Business Data Communication Networks	3	T/P		T/P		T/P					P	✓	✓	
EE4015	Digital Signal Processing	3	T/P		T/P		T/P						✓	✓	
EE4016	Engineering Applications of Artificial Intelligence	3	T/P		T/P		T/P						✓	✓	

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Course			MILOs										DEC		
Code	**Title**	**Credit**	**M1 (a)**	**M2 (b, l)**	**M3 (c)**	**M4 (d)**	**M5 (e)**	**M6 (f)**	**M7 (g, l)**	**M8 (h, i)**	**M9 (j)**	**M10 (k, l)**	**A1**	**A2**	**A3**
EE4017	Internet Finance	3	T/P		T/P		T/P					T/P	✓	✓	
EE4036	Wireless Communications	3	T/P		T/P		T/P						✓	✓	
EE4146	Data Engineering and Learning Systems	3	T/P		T/P		T/P						✓	✓	
EE4208	Computer Graphics for Engineers	3	T/P		T/P		T/P					P	✓	✓	
EE4209	Digital Audio Technology	3	T/P	T/P	T/P		T/P						✓	✓	
EE4212	Cryptography and Information Theory	3	T/P				T/P						✓	✓	
EE4213	Human-Computer Interaction	3	T/P		T/P		T/P					P	✓	✓	✓
EE4215	Cybersecurity Technology	3	T/P	T/P	T/P	T/P	T/P		P			P	✓	✓	
EE4216	Modern Web Applications	3	T/P		T/P		T/P				P	P	✓	✓	
EE4218	Computer Architecture	3	T/P		T/P		T/P			T			✓	✓	
EE4211	Computer Vision	3	T/P	T/P			T/P					T/P	✓	✓	
EE4304	iOS Mobile App Development and Networking	3	T/P	T/P	T/P	T/P	T/P					P	✓	✓	
EE4316	Mobile Data Networks	3	T/P	T/P	T/P	T/P	T/P						✓	✓	
CS3367	Essentials of Software Engineering	3	T/P		T/P		T/P						✓	✓	
CS3391	Advanced Programming	3	T/P		T/P		T/P					P	✓	✓	
CS4273	Distributed System Technologies & Programming	3	T/P		T/P		T/P						✓	✓	
CS4274	Distributed Computing Technologies	3	T/P		T/P		T/P						✓	✓	
CS4335	Design and Analysis of Algorithms	3	T/P		T/P		T/P					P	✓	✓	
CS4367	Computer Games Design	3	T/P		T/P		T/P					T/P	✓	✓	
CS4482	Advanced Database Systems	3	T/P		T/P		T/P					P	✓	✓	
Optional One-year Internship															
EE4081	Professional Internship Program	6				P	P	T/P/M	P	T/P/M			✓	✓	✓
Remark: Students having completed EE4081 Professional Internship Program (6CU) will take one less elective (3CU) and are not required to take EE3013 Engineers in Society (0CU). For those who have completed 12-month internship in EE4081 are not required to take EE4095 Engineering Training II for Information Engineering.															

T-taught, P-practiced, M-measured

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishments of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.