# Curriculum Information Record for a Major/Degree

## Department of Electrical Engineering
### Effective from Semester A, 2024/2025
### For Students Admitted/Changed to the Major with Catalogue Term
### Semester A 2023/2024 and thereafter

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<br>• Gateway Education<br>• University Requirements<br>• College/School requirement | The same as student's admission term |
| b) Major<br>• 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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*Curriculum Information Record for a Major/Degree*
*Dec 2014*

# City University of Hong Kong

## Curriculum Information Record for a Major/Degree

### Department of Electrical Engineering
### Effective from Semester A, 2024/2025
### For Students Admitted/Changed to the Major with Catalogue Term
### Semester A 2023/2024 and thereafter

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## Part I   Major/Degree Overview

**Major**          (in English)    :    Electronic and Electrical Engineering

(in Chinese)    :    電子及電機工程學

**Degree**         (in English)    :    Bachelor of Engineering

(in Chinese)    :    工學士

**Award Title#**     (in English)    :    Bachelor of Engineering in Electronic and Electrical Engineering

(in Chinese)    :    工學士(電子及電機工程學)

*# 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).*

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 | 84 credit units (Core: 69 Elective:15) | 75 credit units (Core: 60 Elective: 15) | 63-72 credit units (Core: 48-57 Elective: 15) |
| Free electives / Minor (if applicable) | Optional | Optional | N.A. |
| **Minimum number of credit units required for the award** | **120 credit units** | **96 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.*

## 3. Aims of Major

The aims of this major are to provide students with an education in electronic and electrical technologies, and to prepare graduates 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 high-tech industry.

## 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 to meet desired needs within realistic constraints. | | | √ |

| 4. | function on multi-disciplinary teams. | √ | | |
|---|---|---|---|---|
| 5. | identify, 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/IT 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: 69 credit units**
    **Advanced Standing I: 60 credit units**
    **Advanced Standing II: 48-57 credit units**

| Course Code | Course Title | Level | Credit Units | Remarks |
|---|---|---|---|---|
| EE1000 | Programme Induction | B1 | 0 | |
| EE1001 | Foundations of Digital Techniques | B1 | 3 | Advanced Standing I/II: Not required |
| EE1002 | Principles of Electrical Engineering | B1 | 3 | Advanced Standing I/II: Not required |
| EE1004 | Foundations of Information Systems and Data Analysis | B1 | 3 | Advanced Standing I/II: Not required |
| GE1354 | Introduction to Electronic Design | B1 | 3 | Advanced Standing I/II: Not required |
| CS2311 | Computer Programming | B2 | 3 | Advanced Standing II: Not required |
| EE2000 | Logic Circuit Design | B2 | 3 | See remark # |
| EE2004 | Microcomputer Systems | B2 | 3 | See remark # |

| EE2005 | Electronic Devices and Circuits | B2 | 3 | See remark # |
|---|---|---|---|---|
| EE2066 | Engineers in Society | B2 | 3 | **Counted as "College-specified GE Course" for 4-year degree students.** **Counted as "Major Requirement" for Advanced Standing I/II students.** Students successfully completed **EE4085** are not required to take this course. |
| EE2104 | Introduction to Electromagnetics | B2 | 3 | |
| EE2108 | Computational Engineering Analysis | B2 | 3 | |
| MA2001 | Multi-variable Calculus & Linear Algebra | B2 | 3 | |
| EE3008 | Principles of Communications | B3 | 3 | |
| EE3070 | Design Project | B3 | 3 | |
| EE3109 | Applied Electromagnetics | B3 | 3 | |
| EE3114 | Systems & Control | B3 | 3 | |
| EE3115 | Applied Optoelectronic Devices | B3 | 3 | |
| EE3121 | Differential Equations for Electrical Engineering | B3 | 3 | |
| EE3122 | Analogue Circuit Fundamentals | B3 | 3 | |
| EE3123 | Introduction to Electric Power Systems | B3 | 3 | |
| EE3124 | Introduction to Electric Machines and Drives | B3 | 3 | |
| EE3210 | Signals and Systems | B3 | 3 | |
| EE4080 | Project | B4 | 6 | Students successfully completed **EE4087** are not required to take this course. A course to fulfill the internship/consultancy project/research project requirement for normative 4-year degree students. |
| EE4090 | Engineering Training | B4 | 0 | Students successfully completed **EE4085** are not required to take this course. |

# Upon admission, Advanced Standing II students will be reviewed on their qualifications and backgrounds to see if these courses are required for their major requirements.

2. **Electives (15 credit units)**
   **Students are required to take at least 5 electives from the elective list.**

**Elective List (choose 5 electives (15 credit units))**

| Course Code | Course Title | Level | Credit Units | Remarks |
|---|---|---|---|---|
| EE2331 | Data Structures and Algorithms | B2 | 3 | |
| EE2800 | Semiconductor Physics for Engineers | B2 | 3 | |
| EE3009 | Data Communications and Networking | B3 | 3 | |
| EE3206 | Java Programming and Applications | B3 | 3 | |
| EE3220 | System-on-Chip Design | B3 | 3 | |
| EE4015 | Digital Signal Processing | B4 | 3 | |
| EE4016 | Applications of AI with Deep Learning | B4 | 3 | |
| EE4017 | Internet Finance | B4 | 3 | |
| EE4035 | Optical Fibre Communications | B4 | 3 | |
| EE4036 | Wireless Communications | B4 | 3 | |
| EE4045 | Computer Controlled Systems | B4 | 3 | |
| EE4101 | Sustainable Energy Systems | B4 | 3 | |
| EE4105 | Principles of Lasers | B4 | 3 | |
| EE4107 | 5G Circuit Design | B4 | 3 | |
| EE4108 | Antennas for Wireless Communications and Sensing Connectivity | B4 | 3 | |
| EE4115 | Audio-Visual Engineering | B4 | 3 | |
| EE4142 | Introduction to Integrated Photonics | B4 | 3 | |
| EE4146 | Data Engineering and Machine Learning | B4 | 3 | |
| EE4221 | Cloud Computing Systems | B4 | 3 | |
| EE4316 | Mobile Data Networks | B4 | 3 | |

Note: Students successfully completed EE4086 can take one less elective course. See below.

3. **Optional Internship Courses**

| Course Code | Course Title | Level | Credit Units | Remarks |
|---|---|---|---|---|
| EE4085 | Internship: Engineering Practice | B4 | 3 | This internship course of 3CU can be used to fulfill **EE2066 Engineers in Society and EE4090 Engineering Training.**<br><br>A course to fulfill the internship/consultancy project/research project requirement for normative 4-year degree students. |
| EE4086 | Internship: Advanced Topics in Electrical Engineering | B4 | 3 | This internship course of 3CU can be used to fulfill **one elective.**<br><br>A course to fulfill the internship/consultancy project/research project requirement for |

| Course Code | Course Title | Level | Credit Units | Remarks |
|---|---|---|---|---|
| | | | | normative 4-year degree students. |
| EE4087 | Internship: Industrial Project | B4 | 6 | This internship course of 6CU can be used to fulfill **EE4080 Project.**<br><br>A course to fulfill the internship/consultancy project/research project requirement for normative 4-year degree students. |

Note: Students interested in internship can opt to take EE4085 only, OR EE4086/4087 in addition to successful completion of EE4085.

4. **Graduate Level Courses (electives for Undergraduate plus Master's Degree Programme)**
   a. Serving as electives for students enrolling in Undergraduate plus Master's Degree Programme.
   b. Students are expected to complete their **BEng degree requirements in their first 3.5 years of studies, out of which a maximum of 9CUs of MSc courses are taken as electives**, which will be transferred to fulfill the MSc degree requirements.

| Course Code | Course Title | Level | Credit Units | Remarks |
|---|---|---|---|---|
| EE5410 | Signal Processing | P5 | 3 | |
| EE5412 | Telecommunication Networks | P5 | 3 | |
| EE5425 | Fundamentals of Radio Frequency Circuit Engineering | P5 | 3 | |
| EE5435 | Advanced Topics in Applied Electromagnetics | P5 | 3 | |
| EE5436 | Fundamentals and Applications of Photonics | P5 | 3 | |
| EE5437 | Internet of Things Technologies for Future City Applications | P5 | 3 | |
| EE5815 | Topics in Security Technology | P5 | 3 | |
| EE6426 | Radio Frequency (RF) Circuit Engineering | P6 | 3 | |
| EE6428 | Optical Communications | P6 | 3 | |
| EE6603 | Wireless Communication Technologies | P6 | 3 | |
| EE6615 | Nanotechnology for Devices and Microsystems | P6 | 3 | |
| EE6617 | Detection and Estimation – Theory and Applications in Communications | P6 | 3 | |
| EE6618 | Three Dimensional (3D) Video Display Technology | P6 | 3 | |
| EE6619 | Antenna Design for Wireless Communications | P6 | 3 | |
| EE6620 | Linear Systems Theory and Design | P6 | 3 | |

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

| | | | MILOs | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | **M1** | **M2** | **M3** | **M4** | **M5** | **M6** | **M7** | **M8** | **M9** | **M10** |
| **City University Ideal Graduate Outcomes** | | | G02 | G02 | G02 | G03 | G02 | G01, 5 | G03 | G01, 4,5 | G04 | G02 |
| **Discovery-enriched Curriculum (DEC) elements*** | | | A2 | A3 | A3 | A1 | A2,3 | A1 | A2,3 | A1 | A1 | A2 |
| **Graduate Attributes (Professional bodies) (Optional) (Professional Body: HKIE)** | | | a | b, l | c | d | e | f | g, l | j, i | j | k, l |

| Course | | | MILOs (HKIE Required Outcomes) | | | | | | | | | | 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 Courses** | | | | | | | | | | | | | | | |
| EE1000 | Programme Induction | 0 | | | | | | | P | P | P | | ✓ | ✓ | ✓ |
| EE1001 | Foundations of Digital Techniques | 3 | T/P | T/P | T/P | | T/P | | T/P | | | P | ✓ | ✓ | |
| EE1002 | Principles of Electrical Engineering | 3 | T/P | | | | T/P | | T/P | P | P | | ✓ | ✓ | |
| EE1004 | Foundations of Information Systems and Data Analysis | 3 | T/P | | T/P | | T/P | | | | | | ✓ | ✓ | |
| GE1354 | Introduction to Electronic Design | 3 | T/P | T/P | T/P | P | T/P | | T/P | | | P | ✓ | ✓ | ✓ |
| CS2311 | Computer Programming | 3 | T/P | | T/P | | T/P | | | | | T/P | ✓ | ✓ | |
| EE2000 | Logic Circuit Design | 3 | T/P | P | T/P/M | | 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 | ✓ | ✓ | ✓ |
| EE2005 | Electronic Devices and Circuits | 3 | T/P | T/P/M | | | T/P | | T/P/M | | | P | ✓ | ✓ | |
| EE2104 | Introduction to Electromagnetics | 3 | T/P | | | | T/P | | | | | | ✓ | ✓ | |
| EE2108 | Computational Engineering Analysis | 3 | T/P/M | | | | T | | | | | T/P/M | ✓ | ✓ | |
| MA2001 | Multi-variable Calculus & Linear Algebra | 3 | T/P | | | | | | | | | | ✓ | ✓ | ✓ |
| EE3008 | Principles of Communications | 3 | T/P | T/P | | | T/P | | | T | | T | ✓ | ✓ | |
| EE3070 | Design Project | 3 | T/P | P/M | T/P/M | P/M | P/M | T/P/M | P | T/P/M | P/M | T/P/M | ✓ | ✓ | ✓ |
| EE3109 | Applied Electromagnetics | 3 | T/M | T | | T/M | T/M | | T | | | T/M | ✓ | ✓ | |
| EE3114 | Systems & Control | 3 | T/P | T | | T | T/P | | T/P/M | | | T | ✓ | ✓ | |
| EE3115 | Applied Optoelectronic Devices | 3 | T | | T | | T | | | | | | ✓ | ✓ | |
| EE3121 | Differential Equations for Electrical Engineering | 3 | T/P | | | | T | | | | | | ✓ | ✓ | ✓ |
| EE3122 | Analogue Circuit Fundamentals | 3 | T/P | T/P/M | | | T/P/M | | P | | | P | ✓ | ✓ | |
| EE3123 | Introduction to Electric Power Systems | 3 | T/P | T/P | | | T/P | | T | | | T/P | ✓ | ✓ | |
| EE3124 | Introduction to Electric Machines and Drives | 3 | T/P | T | | | T/P | | T | | | T/P | ✓ | ✓ | |
| EE3210 | Signals and Systems | 3 | T/P/M | T/P | T/P | | T/P/M | T | | T/M | T/M | P | ✓ | ✓ | |
| EE2066 | Engineers in Society | 3 | | | | | | T/P/M | | T/P/M | | | ✓ | ✓ | |

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| Code | Title | Credit | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EE4090 | Engineering Training | 0 | P | T/P/M | T/P/M | T/P/M | P | P/M | P | P | T/P/M | P/M | ✓ | ✓ | |
| EE4080 | Project | 6 | P/M | P | P | | P/M | P/M | P/M | P/M | P/M | P | ✓ | ✓ | ✓ |
| **Electives (choose 15 credits)** <br> **Students are required to take at least 5 electives from the elective list.** | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | |
| EE2331 | Data Structures and Algorithms | 3 | T/P | | T/P | | T/P/M | | | | | P | ✓ | ✓ | ✓ |
| EE2800 | Semiconductor Physics for Engineers | 3 | T/P | T/P | | | | | | | | | ✓ | ✓ | |
| EE3009 | Data Communication Networking | 3 | T/P | | | | T/P | | | | | T/P | ✓ | ✓ | |
| EE3206 | Java Programming and Applications | 3 | T/P | | T/P | | T/P | | | | | P | ✓ | ✓ | ✓ |
| EE3220 | System-on-Chip Design | 3 | T/P | P | T/P | P | T/P | | P | | | P | ✓ | ✓ | |
| EE4015 | Digital Signal Processing | 3 | T/P | | T/P | | T/P | | | | | | ✓ | ✓ | |
| EE4016 | Applications of AI with Deep Learning | 3 | T/P | | T/P | | T/P | | | | | | ✓ | ✓ | |
| EE4017 | Internet Finance | 3 | T/P | | T/P | | T/P | | | | | T/P | ✓ | ✓ | |
| EE4035 | Optical Fibre Communications | 3 | T/P | T/P | T/P | T | T/P | T | T/P | | | P | ✓ | ✓ | |
| EE4036 | Wireless Communications | 3 | T/P | | T/P | | T/P | | | | | | ✓ | ✓ | |
| EE4045 | Computer Controlled Systems | 3 | T/P | | T/P | | T/P | | | | | P | ✓ | ✓ | |
| EE4101 | Sustainable Energy Systems | 3 | T/P | | T/P | P | T/P | | P | P | | P | ✓ | ✓ | |
| EE4105 | Principles of Lasers | 3 | T/P | | T/P | | T/P | | | | | | ✓ | ✓ | |
| EE4107 | 5G Circuit Design | 3 | T/P | T/P | T/P | | T/P | | | | | | ✓ | ✓ | |
| EE4108 | Antennas for Wireless Communications for Sensing Connectivity | 3 | T/P | | T/P | | T/P | | | | | | ✓ | ✓ | |
| EE4115 | Audio-Visual Engineering | 3 | T/P | | T/P | | T/P | | | | | | ✓ | ✓ | |
| EE4142 | Introduction to Integrated Photonics | 3 | T/P | T/P | T/P | | T/P | | | | | | ✓ | ✓ | |
| EE4146 | Data Engineering and Machine Learning | 3 | T/P | | T/P | | T/P | | | | | | ✓ | ✓ | |
| EE4221 | Cloud Computing Systems | 3 | T/P | | T/P/M | | T/P | | | | | T/P | ✓ | ✓ | |
| EE4316 | Mobile Data Networks | 3 | T/P | T/P | T/P | T/P | T/P | | | | | | ✓ | ✓ | |
| **Optional Internship Courses** | | | | | | | | | | | | | | | |
| EE4085 | Internship: Engineering Practice | 3 | P | T/P/M | T/P/M | T/P/M | P | T/P/M | P | T/P/M | T/P/M | P/M | ✓ | ✓ | ✓ |
| EE4086 | Internship: Advanced Topics in Electrical Engineering | 3 | P | | T/P/M | | P | | | | | P/M | ✓ | ✓ | |
| EE4087 | Internship: Industrial Project | 6 | P/M | T/P/M | T/P/M | P | P/M | P/M | P/M | P/M | T/P/M | P/M | ✓ | ✓ | ✓ |

## 2. Curriculum Map (Postgraduate courses)

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

| Course Code & Title | MILOs (HKIE Required Outcomes) | | | | | | | | | | DEC | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | 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 |
| EE5410 Signal Processing | T/P | | T/P | | T/P | | | | | P | ✓ | ✓ | |
| EE5412 Telecommunication Networks | T/P | | | | | | | | | T/P | ✓ | | |
| EE5425 Fundamentals of Radio Frequency Circuit Engineering | T/P | T/P | T/P | | T/P | | | | | T/P | ✓ | ✓ | |
| EE5435 Advanced Topics in Applied Electromagnetics | T/P | T/P | T/P | | T/P | | | | | T/P | ✓ | | |
| EE5436 Fundamentals and Applications of Photonics | T/P | T/P | T/P | | T/P | | | | | | ✓ | ✓ | |
| EE5437 Internet of Things Technologies for Future City Applications | T/P | T/P | T/P | | T/P | | | | | T/P | ✓ | ✓ | ✓ |
| EE5815 Topics in Security Technology | T/P | T/P | T/P | T/P | T/P | | P | | | P | ✓ | ✓ | |
| EE6426 Radio Frequency (RF) Circuit Engineering | T/P | T/P | T/P | | T/P | | | | | T/P | ✓ | ✓ | |
| EE6428 Optical Communications | T/P | T/P | | | T/P | | | | | P | ✓ | ✓ | |
| EE6603 Wireless Communication Technologies | T/P | | T/P | | T/P | | | | | | ✓ | ✓ | |
| EE6615 Nanotechnology for Devices and Microsystems | T/P | T/P | | | T/P | | P | | | P | ✓ | ✓ | |
| EE6617 Detection and Estimation – Theory and Applications in Communications | T/P | | T/P | | T/P | | | | | P | ✓ | ✓ | |
| EE6618 Three Dimensional (3D) Video Display Technology | T/P | T/P | T/P | | T/P | | | | | | ✓ | ✓ | |
| EE6619 Antenna Design for Wireless Communications | T/P | T/P | T/P | | T/P | | | | | T/P | ✓ | ✓ | |
| EE6620 Linear Systems Theory and Design | T/P | | T/P | | T/P | | P | | P | | ✓ | ✓ | |

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.*

**HKIE Programme outcomes that describe what students are expected to know and to do by the time of graduation. These must include (Note 1):**
(a)    an ability to apply knowledge of mathematics, science, and engineering appropriate to the degree discipline
(b)    an ability to design and conduct experiments, as well as to analyse and interpret data
(c)    an ability to design a system, component or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
(d)    an ability to function on multi-disciplinary teams
(e)    an ability to identify, formulate and solve engineering problems

(f)    an ability to understand professional and ethical responsibility

(g)    an ability to communicate effectively

(h)    an ability to understand the impact of engineering solutions in a global and societal context, especially the importance of health, safety and environmental considerations to both workers and the general public

(i)    an ability to stay abreast of contemporary issues

(j)    an ability to recognise the need for, and to engage in life-long learning

(k)    an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice appropriate to the degree discipline

(l)    an ability to use the computer/IT tools relevant to the discipline along with an understanding of their processes and limitations

*Note 1: The graduate attributes are reproduced from the HKIE accreditation criteria for engineering degrees. The interpretation of these graduate attributes should be consistent with the requirements of the Washington Accord.*

**City University Ideal Graduate Outcomes**

G01:    Globally minded professional

G02:    Innovative and critical thinker

G03:    Effective communicator

G04:    Lifelong learner

G05:    Civically-oriented individual