Electronic Engineering
Applicable to students admitted in 2016-17

Major Programme Requirement

Students are required to complete a minimum of 75 units of courses as follows:

		Units
1.	Faculty Package: ENGG1100/ESTR1000, ENGG1110/ESTR1002, ENGG2601, 2602	9
2.	Foundation Science Courses:	9
(a)	6 units of Physics[a]: ENGG1310/ESTR1003, PHYS1110	
(b)	3 units of Science Course: CHEM1280, 1380, CSCI1120, LSCI1001, 1003	
3.	Foundation Mathematics Courses: ENGG1410/ESTR1004, ENGG2420/ESTR2000, ENGG2450/ESTR2005, MATH1510[b]	12
4.	Required Courses:	
(a)	ELEG2201, 2202, 2401, ELEG3201/ESTR3200, ENGG2030/ ESTR2206, ENGG2310/ESTR2300	18
(b)	Research Component Courses[c]: ELEG4998, 4999	6
5.	Elective Courses:	
(a)	Group A Electives (12 units chosen from the following courses and at least 9 units at 3000 or above level): BMEG3101#, 3420#, CSCI1020, 1030, 1040, 1050, CSCI2100/ESTR2102, CSCI2120, ELEG3202, ELEG3203/3213/ESTR3214, ELEG3204/3214/ESTR3202, ELEG3205, 3207, ELEG3301/ESTR3204, ELEG3302, ELEG3303/ESTR3206, ELEG3503, 3601, 3700/3710, 3701, 3910, ENGG3802, 3803, IERG3310#, SEEM2440/ESTR2500 (or DSME1030)[d]	12
(b)	Group B Electives (9 units chosen from the following courses): BMEG4103#, BMEG5540#/ELEG5302, EEEN4020#/ENER4020#/ESTR4402, ELEG4201, ELEG4203/ESTR4206, ELEG4204/ESTR4208, ELEG4205/4215, 4211, ELEG4213/ESTR4220, ELEG4214/ESTR4222, ELEG4301/ESTR4210, ELEG4302/4312, ELEG4311/ESTR4216, ELEG4501/ESTR4212, ELEG4502/4512, 4503, ELEG4511/ESTR4218, ELEG5101, ELEG5205/ENGG5281, ELEG5210, ELEG5280/ENGG5201, ELEG5301, 5303, 5491, 5501, 5502, ELEG5503/ENGG5202, ELEG5550	9
	Total:	**75**

In addition to fulfilling the above Major Programme Requirement, students may also challenge themselves by taking the following stream offered by the Faculty:

Engineering Leadership, Innovation, Technology and Entrepreneurship (ELITE) Stream[e]

Elective Courses:
15 units of courses[f]:

i) 12 units of ESTR courses of which at most 6 units of courses at 1000 or 2000 level and at least 6 units of courses at 3000 or 4000 level[g]
ii) 3 units of BMEG/CENG/CSCI/ELEG/ENGG/IERG/MAEG/SEEM courses at 5000 level[h]

Explanatory Notes:

1. Students who have completed the courses ENGG1110/ESTR1002, ENGG2601 and 2602 (or equivalent courses as approved by the Sub-Committee on Education Technologies) will be eligible to apply for exemption of 1 unit of University Core IT Requirement.
   Students are required to apply for the exemption. When exemption from a particular course is recognized, students can only be exempted from the course but not the units. Please follow the application procedures as announced by the IT Foundation Course Office at https://engg1000.cse.cuhk.edu.hk.
2. ELEG and ENGG courses at 2000 and above level listed in the Major Programme Requirement, ESTR2104, 2206, 2300, 4402, ESTR4998/4999 and ESTR courses of which the reciprocal departmental courses are ELEG courses as well as those labeled as # will be included in the calculation of Major GPA for honours classification, excluding courses in Faculty Package, Foundation Science courses and Foundation Mathematics courses.
3. Results of the graduation project as prescribed by ELEG4999/ESTR4999 will be included in the calculation for honours classification.
4. Guidance in course selection:
   Students who wish to pursue their career goals as a professional engineer, research scientist, or engineering entrepreneur may take the elective courses as recommended below:

   Professional Engineering
   a) Elective course: ELEG3700/3710
   b) ELEG4998 and 4999[c] in a topic of professional engineering nature

   Research
   a) Elective courses: ELEG3910 and an ELEG course at 5000 level
   b) ELEG4998 and 4999[c] in a topic of research nature

   Entrepreneurship
   a) Elective course: ENGG3802 and 3803
   b) ELEG4998 and 4999[c] in a topic of entrepreneurship nature (related to the project chosen for ENGG3803)

   Apart from the above career tracks, students may also take elective courses according to the particular areas listed below:

Biomedical Engineering	BMEG3101, 3420, 4103, ELEG5101
DSP and Multimedia Technology	ELEG3503, ELEG4501/ESTR4212, ELEG4502/ 4512, 4503, ELEG4511/ESTR4218, ELEG5491, 5501, 5502, ELEG5503/ENGG5202
Integrated Circuit Technology	ELEG3202, 3205, 3207, 4201, 4205/4215, 4211, 5210, ELEG5280/ENGG5201
Microelectronics and Photonics	BMEG5540/ELEG5302, EEEN4020/ENER4020/ ESTR4402, ELEG3301/ESTR3204, ELEG3302, ELEG3303/ESTR3206, ELEG4301/ESTR4210, ELEG4302/4312, ELEG4311/ESTR4216, ELEG5301, 5303, 5550
Microwave and Wireless Engineering	ELEG3203/3213/ESTR3214, ELEG3204/3214/ ESTR3202, ELEG4203/ESTR4206, ELEG4204/ ESTR4208, ELEG4213/ESTR4220, ELEG4214/

	ESTR4222, ELEG4501/ESTR4212, ELEG4503, ELEG4511/ESTR4218, ELEG5205/ENGG5281

[a] Students without HKDSE Physics or who have attained Level 2 or below in HKDSE Physics or Combined Science with Physics component shall take PHYS1003 in advance. PHYS1003 would be counted as a free elective but could not be used to fulfill the Foundation Science course requirements.

[b] i) Non-JUPAS admittees and JUPAS admittees with HKDSE Mathematics Extended Modules I or II are required to attend a Mathematics Placement Test. Students who fail or are absent from the Placement Test will be required to take MATH1020 in the same term when they take MATH1510.

ii) JUPAS admittees without HKDSE Mathematics Extended Modules I or II are required to take MATH1020 concurrently with MATH1510.

iii) Students who fail MATH1510 in Term 1 will have to retake the course in Term 2. The pre-assigned course, ENGG1410, will also be dropped.

[c] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for ELEG4998 and 4999.

[d] Students can take either one of the courses but not both.

[e] Details of the entrance and coursework requirements, and declaration procedures for the ELITE Stream can be found at the ELITE website (www.erg.cuhk.edu.hk/elite). Non-ELITE Engineering students may be allowed to take ESTR courses. Students are required to seek approval from their respective Major Programmes for using ESTR courses taken to fulfill the Major Programme Requirement. Details are available at the ELITE website.

[f] Students can use up to 9 units of courses which have been taken to fulfill the requirements of items 1 to 5 above to fulfill the elective requirements of the ELITE Stream. Item 4(b) Research Component Courses will not be included in these 9 units. A full list of ESTR courses is available at the ELITE website.

[g] Students can use BMEG/CENG/CSCI/ELEG/ENGG/IERG/MAEG/SEEM courses at 5000 level to substitute for ESTR courses at 3000 or 4000 level, subject to the approval of the Stream Director and the Associate Dean (Education).

[h] The requirement of at least 3 units of Engineering courses at 5000 level is a requirement for the ELITE Stream only. It should not be interpreted as a requirement of the Major Programme.

	Recommended Course Pattern	Units
First Year of Attendance	1st term Faculty Package: ENGG1110/ESTR1002 Major Required: CHEM1280/1380/CSCI1120/LSCI1001/1003, MATH1510, PHYS1110 Major Elective(s):	 3 6-9
	2nd term Faculty Package: ENGG1100/ESTR1000 Major Required: CHEM1280/1380/CSCI1120/LSCI1001/1003, ENGG1310/ESTR1003, ENGG1410/ESTR1004 Major Elective(s):	 3 6-9
Second Year of Attendance	1st term Major Required: ELEG2201, 2202, ENGG2420/ESTR2000 Major Elective(s):	 9
	2nd term Faculty Package: ENGG2601 Major Required: ELEG3201/ESTR3200, ENGG2030/ESTR2206, ENGG2450/ESTR2005	 2 9

	Major Elective(s):	
	Summer session Faculty Package: ENGG2602	 1
Third Year of Attendance	1st term Major Required: ELEG2401, ENGG2310/ESTR2300 Major Elective(s): 1 course	 6 3
	2nd term Major Required: Major Elective(s): 3 courses	 9
Fourth Year of Attendance	1st term Major Required: ELEG4998 Major Elective(s): 2 courses	 3 4
	2nd term Major Required: ELEG4999 Major Elective(s): 2 courses	 3 5
	Total (including Faculty Package):	**75**

Major Programme Requirement (for Associate Degree holders admitted to senior-year places)

Students are required to complete a minimum of 54 units of courses as follows:

		Units
1.	Faculty Package: ENGG1100/ESTR1000 (or ENGG1110/ESTR1002)[a], ENGG2601, 2602	6
2.	Foundation Mathematics Courses: ENGG1410/ESTR1004, ENGG2420/ESTR2000	6
3.	Required Courses:	
(a)	ELEG2401, ELEG3201/ESTR3200, ENGG2030/ESTR2206, ENGG2310/ESTR2300	12
(b)	Research Component Courses[b]: ELEG4998, 4999	6
4.	Elective Courses:	
(a)	Group A Electives (15 units chosen from the following courses and at least 9 units at 3000 or above level): BMEG3101#, 3420#, CSCI1020, 1030, 1040, 1050, CSCI2100/ESTR2102, CSCI2120, ELEG3202, ELEG3203/3213/ESTR3214, ELEG3204/3214/ESTR3202, ELEG3205, 3207, ELEG3301/ESTR3204, ELEG3302, ELEG3303/ESTR3206, ELEG3503, 3601, 3700/3710, 3701, 3910, ENGG3802, 3803, IERG3310#, SEEM2440/ESTR2500 (or DSME1030)[c]	15
(b)	Group B Electives (9 units chosen from the following courses): BMEG4103#, BMEG5540#/ELEG5302, EEEN4020#/ENER4020#/ESTR4402, ELEG4201, ELEG4203/ESTR4206, ELEG4204/ESTR4208, ELEG4205/4215, 4211, ELEG4213/ESTR4220, ELEG4214/ESTR4222, ELEG4301/ESTR4210, ELEG4302/4312, ELEG4311/ESTR4216, ELEG4501/ESTR4212, ELEG4502/4512, 4503, ELEG4511/ESTR4218, ELEG5101, ELEG5205/ENGG5281, ELEG5210, ELEG5280/ENGG5201, ELEG5301, 5303, 5491, 5501, 5502, ELEG5503/ENGG5202,	9

ELEG5550

Total: 54

In addition to fulfilling the above Major Programme Requirement, students may also challenge themselves by taking the following stream offered by the Faculty:

Engineering Leadership, Innovation, Technology and Entrepreneurship (ELITE) Stream[d]
Elective Courses:
15 units of courses[e]:

i) 12 units of ESTR courses of which at most 6 units of courses at 1000 or 2000 level and at least 6 units of courses at 3000 or 4000 level[f]
ii) 3 units of BMEG/CENG/CSCI/ELEG/ENGG/IERG/MAEG/SEEM courses at 5000 level[g]

Explanatory Notes:

1. ELEG and ENGG courses at 2000 and above level listed in the Major Programme Requirement, ESTR2104, 2206, 2300, 4402, ESTR4998/4999 and ESTR courses of which the reciprocal departmental courses are ELEG courses as well as those labeled as # will be included in the calculation of Major GPA for honours classification, excluding courses in Faculty Package, Foundation Science courses and Foundation Mathematics courses.
2. Results of the graduation project as prescribed by ELEG4999/ESTR4999 will be included in the calculation for honours classification.
3. Guidance in course selection:
   Students who wish to pursue their career goals as a professional engineer, research scientist, or engineering entrepreneur may take the elective courses as recommended below:

   Professional Engineering
   a) Elective course: ELEG3700/3710
   b) ELEG4998 and 4999[c] in a topic of professional engineering nature

   Research
   a) Elective courses: ELEG3910 and an ELEG course at 5000 level
   b) ELEG4998 and 4999[c] in a topic of research nature

   Entrepreneurship
   a) Elective course: ENGG3802 and 3803
   b) ELEG4998 and 4999[c] in a topic of entrepreneurship nature (related to the project chosen for ENGG3803)

   Apart from the above career tracks, students may also take elective courses according to the particular areas listed below:

Biomedical Engineering	BMEG3101, 3420, 4103, ELEG5101
DSP and Multimedia Technology	ELEG3503, ELEG4501/ESTR4212, ELEG4502/ 4512, 4503, ELEG4511/ESTR4218, ELEG5491, 5501, 5502, ELEG5503/ENGG5202
Integrated Circuit Technology	ELEG3202, 3205, 3207, 4201, 4205/4215, 4211, 5210, ELEG5280/ENGG5201
Microelectronics and Photonics	BMEG5540/ELEG5302, EEEN4020/ENER4020/ ESTR4402, ELEG3301/ESTR3204, ELEG3302, ELEG3303/ESTR3206, ELEG4301/ESTR4210, ELEG4302/4312, ELEG4311/ESTR4216, ELEG5301, 5303, 5550
Microwave and Wireless Engineering	ELEG3203/3213/ESTR3214, ELEG3204/3214/ ESTR3202, ELEG4203/ESTR4206, ELEG4204/ ESTR4208, ELEG4213/ESTR4220, ELEG4214/ ESTR4222, ELEG4501/ESTR4212, ELEG4503, ELEG4511/ESTR4218, ELEG5205/ENGG5281

[a] Students will be required to take either ENGG1100/ESTR1000 or ENGG1110/ESTR1002 based on their admission qualifications.

[b] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for ELEG4998 and 4999.

[c] Students can take either one of the courses but not both.

[d] Details of the entrance and coursework requirements, and declaration procedures for the ELITE Stream can be found at the ELITE website (www.erg.cuhk.edu.hk/elite).
Non-ELITE Engineering students may be allowed to take ESTR courses. Students are required to seek approval from their respective Major Programmes for using ESTR courses taken to fulfill the Major Programme Requirement. Details are available at the ELITE website.

[e] Students can use up to 9 units of courses which have been taken to fulfill the requirements of items 1 to 4 above to fulfill the elective requirements of the ELITE Stream. Item 3(b) Research Component Courses will not be included in these 9 units. A full list of ESTR courses is available at the ELITE website.

[f] Students can use BMEG/CENG/CSCI/ELEG/ENGG/IERG/MAEG/SEEM courses at 5000 level to substitute for ESTR courses at 3000 or 4000 level, subject to the approval of the Stream Director and the Associate Dean (Education).

[g] The requirement of at least 3 units of Engineering courses at 5000 level is a requirement for the ELITE Stream only. It should not be interpreted as a requirement of the Major Programme.

	Recommended Course Pattern (for Associate Degree holders admitted to senior-year places)	Units
First Year of Attendance	1st term Faculty Package: ENGG1100/1110/ESTR1000/1002 Major Required: ENGG2310/ESTR2300, ENGG2420/ESTR2000 Major Elective(s):	 3 6
	2nd term Faculty Package: ENGG2601 Major Required: ELEG3201/ESTR3200, ENGG1410/ESTR1004, ENGG2030/ESTR2206 Major Elective(s): 2 courses	 2 9 6
	Summer session Faculty Package: ENGG2602	 1
Second Year of Attendance	1st term Major Required: ELEG2401, 4998 Major Elective(s): 4 courses	 6 10
	2nd term Major Required: ELEG4999 Major Elective(s): 3 courses	 3 8
	Total (including Faculty Package):	**54**

Major Programme Requirement (for Higher Diploma holders admitted to senior-year places)

Students are required to complete a minimum of 51 units of courses as follows:

		Units
1.	Faculty Package: ENGG1100/ESTR1000 (or ENGG1110/ESTR1002)[a], ENGG2601, 2602	6

2.	Foundation Mathematics Courses: ENGG1410/ESTR1004, ENGG2420/ESTR2000	6
3.	Required Courses:	
(a)	ELEG2401 (or ENGG2030/ESTR2206)[b], ELEG3201/ESTR3200, ENGG2310/ESTR2300	9
(b)	Research Component Courses[c]: ELEG4998, 4999	6
4.	Elective Courses:	
(a)	Group A Electives (15 units chosen from the following courses and at least 9 units at 3000 or above level): BMEG3101#, 3420#, CSCI1020, 1030, 1040, 1050, CSCI2100/ ESTR2102, CSCI2120, ELEG3202, ELEG3203/3213/ESTR3214, ELEG3204/3214/ESTR3202, ELEG3205, 3207, ELEG3301/ESTR3204, ELEG3302, ELEG3303/ESTR3206, ELEG3503, 3601, 3700/3710, 3701, 3910, ENGG3802, 3803, IERG3310#, SEEM2440/ESTR2500 (or DSME1030)[d]	15
(b)	Group B Electives (9 units chosen from the following courses): BMEG4103#, BMEG5540#/ELEG5302, EEEN4020#/ENER4020#/ESTR4402, ELEG4201, ELEG4203/ESTR4206, ELEG4204/ESTR4208, ELEG4205/4215, 4211, ELEG4213/ESTR4220, ELEG4214/ESTR4222, ELEG4301/ESTR4210, ELEG4302/4312, ELEG4311/ESTR4216, ELEG4501/ESTR4212, ELEG4502/4512, 4503, ELEG4511/ESTR4218, ELEG5101, ELEG5205/ENGG5281, ELEG5210, ELEG5280/ENGG5201, ELEG5301, 5303, 5491, 5501, 5502, ELEG5503/ENGG5202, ELEG5550	9
	Total:	**51**

In addition to fulfilling the above Major Programme Requirement, students may also challenge themselves by taking the following stream offered by the Faculty:

Engineering Leadership, Innovation, Technology and Entrepreneurship (ELITE) Stream[e]
Elective Courses:
15 units of courses[f]:

i) 12 units of ESTR courses of which at most 6 units of courses at 1000 or 2000 level and at least 6 units of courses at 3000 or 4000 level[g]
ii) 3 units of BMEG/CENG/CSCI/ELEG/ENGG/IERG/MAEG/SEEM courses at 5000 level[h]

Explanatory Notes:

1. ELEG and ENGG courses at 2000 and above level listed in the Major Programme Requirement, ESTR2104, 2206, 2300, 4402, ESTR4998/4999 and ESTR courses of which the reciprocal departmental courses are ELEG courses as well as those labeled as # will be included in the calculation of Major GPA for honours classification, excluding courses in Faculty Package, Foundation Science courses and Foundation Mathematics courses.
2. Results of the graduation project as prescribed by ELEG4999/ESTR4999 will be included in the calculation for honours classification.
3. Guidance in course selection:
   Students who wish to pursue their career goals as a professional engineer, research scientist, or engineering entrepreneur may take the elective courses as recommended below:
   Professional Engineering
   a) Elective course: ELEG3700/3710
   b) ELEG4998 and 4999[c] in a topic of professional engineering nature

Research

a) Elective courses: ELEG3910 and an ELEG course at 5000 level
b) ELEG4998 and 4999[c] in a topic of research nature

Entrepreneurship

a) Elective course: ENGG3802 and 3803
b) ELEG4998 and 4999[c] in a topic of entrepreneurship nature (related to the project chosen for ENGG3803)

Apart from the above career tracks, students may also take elective courses according to the particular areas listed below:

Biomedical Engineering	BMEG3101, 3420, 4103, ELEG5101
DSP and Multimedia Technology	ELEG3503, ELEG4501/ESTR4212, ELEG4502/ 4512, 4503, ELEG4511/ESTR4218, ELEG5491, 5501, 5502, ELEG5503/ENGG5202
Integrated Circuit Technology	ELEG3202, 3205, 3207, 4201, 4205/4215, 4211, 5210, ELEG5280/ENGG5201
Microelectronics and Photonics	BMEG5540/ELEG5302, EEEN4020/ENER4020/ ESTR4402, ELEG3301/ESTR3204, ELEG3302, ELEG3303/ESTR3206, ELEG4301/ESTR4210, ELEG4302/4312, ELEG4311/ESTR4216, ELEG5301, 5303, 5550
Microwave and Wireless Engineering	ELEG3203/3213/ESTR3214, ELEG3204/3214/ ESTR3202, ELEG4203/ESTR4206, ELEG4204/ ESTR4208, ELEG4213/ESTR4220, ELEG4214/ ESTR4222, ELEG4501/ESTR4212, ELEG4503, ELEG4511/ESTR4218, ELEG5205/ENGG5281

[a] Students will be required to take either ENGG1100/ESTR1000 or ENGG1110/ESTR1002 based on their admission qualifications.

[b] Students will be required to take either ELEG2401 or ENGG2030/ESTR2206 based on their admission qualifications.

[c] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for ELEG4998 and 4999.

[d] Students can take either one of the courses but not both.

[e] Details of the entrance and coursework requirements, and declaration procedures for the ELITE Stream can be found at the ELITE website (www.erg.cuhk.edu.hk/elite).
Non-ELITE Engineering students may be allowed to take ESTR courses. Students are required to seek approval from their respective Major Programmes for using ESTR courses taken to fulfill the Major Programme Requirement. Details are available at the ELITE website.

[f] Students can use up to 9 units of courses which have been taken to fulfill the requirements of items 1 to 4 above to fulfill the elective requirements of the ELITE Stream. Item 3(b) Research Component Courses will not be included in these 9 units. A full list of ESTR courses is available at the ELITE website.

[g] Students can use BMEG/CENG/CSCI/ELEG/ENGG/IERG/MAEG/SEEM courses at 5000 level to substitute for ESTR courses at 3000 or 4000 level, subject to the approval of the Stream Director and the Associate Dean (Education).

[h] The requirement of at least 3 units of Engineering courses at 5000 level is a requirement for the ELITE Stream only. It should not be interpreted as a requirement of the Major Programme.

	Recommended Course Pattern (for Higher Diploma holders admitted to senior-year places)	Units

First Year of Attendance	1st term Faculty Package: ENGG1100/1110/ESTR1000/1002 Major Required: ENGG2310/ESTR2300, ENGG2420/ESTR2000 Major Elective(s):	 3 6
	2nd term Faculty Package: ENGG2601 Major Required: ELEG3201/ESTR3200, ENGG1410/ESTR1004, ENGG2030/ESTR2206[a] Major Elective(s): 1-2 course(s)	 2 6-9 3-6
	Summer session Faculty Package: ENGG2602	 1
Second Year of Attendance	1st term Major Required: ELEG2401[a], 4998 Major Elective(s): 4-5 courses	 3-6 10-13
	2nd term Major Required: ELEG4999 Major Elective(s): 3 courses	 3 8
	Total (including Faculty Package):	**51**
[a] Either one as required by the Department.		

Bachelor of Engineering (Electronic Engineering) and Bachelor of Business Administration (Integrated BBA Programme) Double Degree Option

1st Degree: Bachelor of Engineering (Electronic Engineering)

Major Programme Requirement

Students are required to complete a minimum of 75 units of courses as follows:

		Units
1.	Faculty Package: ENGG1100/ESTR1000, ENGG1110/ESTR1002, ENGG2601, 2602	9
2.	Foundation Science Courses:	9
(a)	6 units of Physics[a]: ENGG1310/ESTR1003, PHYS1110	
(b)	3 units of Science Course: CHEM1280, 1380, CSCI1120, LSCI1001, 1003	
3.	Foundation Mathematics Courses: ENGG1410/ESTR1004, ENGG2420/ESTR2000, ENGG2450/ESTR2005, MATH1510[b]	12
4.	Required Courses:	
(a)	ELEG2201, 2202, 2401, ELEG3201/ESTR3200, ENGG2030/ESTR2206, ENGG2310/ESTR2300	18
(b)	Research Component Courses[c]: ELEG4998, 4999	6
5.	Elective Courses:	
(a)	Group A Electives (12 units chosen from the following courses and at least 9 units at 3000 or above level): BMEG3101#, 3420#, CSCI1020, 1030, 1040, 1050,	12

	CSCI2100/ESTR2102, CSCI2120, ELEG3202, ELEG3203/3213/ESTR3214, ELEG3204/3214/ESTR3202, ELEG3205, 3207, ELEG3301/ESTR3204, ELEG3302, ELEG3303/ESTR3206, ELEG3503, 3601, 3700/3710, 3701, 3910, ENGG3802, 3803, IERG3310#, SEEM2440/ESTR2500 (or DSME1030)[d]	
(b)	Group B Electives (9 units chosen from the following courses): BMEG4103#, BMEG5540#/ELEG5302, EEEN4020#/ENER4020#/ESTR4402, ELEG4201, ELEG4203/ESTR4206, ELEG4204/ESTR4208, ELEG4205/4215, 4211, ELEG4213/ESTR4220, ELEG4214/ESTR4222, ELEG4301/ESTR4210, ELEG4302/4312, ELEG4311/ESTR4216, ELEG4501/ESTR4212, ELEG4502/4512, 4503, ELEG4511/ESTR4218, ELEG5101, ELEG5205/ENGG5281, ELEG5210, ELEG5280/ENGG5201, ELEG5301, 5303, 5491, 5501, 5502, ELEG5503/ENGG5202, ELEG5550	9
	Total:	**75**

In addition to fulfilling the above Major Programme Requirement, students may also challenge themselves by taking the following stream offered by the Faculty:

Engineering Leadership, Innovation, Technology and Entrepreneurship (ELITE) Stream[e]
Elective Courses:
15 units of courses[f]:

i) 12 units of ESTR courses of which at most 6 units of courses at 1000 or 2000 level and at least 6 units of courses at 3000 or 4000 level[g]
ii) 3 units of BMEG/CENG/CSCI/ELEG/ENGG/IERG/MAEG/SEEM courses at 5000 level[h]

Explanatory Notes:

1. Students who have completed the courses ENGG1110/ESTR1002, ENGG2601 and 2602 (or equivalent courses as approved by the Sub-Committee on Education Technologies) will be eligible to apply for exemption of 1 unit of University Core IT Requirement.
   Students are required to apply for the exemption. When exemption from a particular course is recognized, students can only be exempted from the course but not the units. Please follow the application procedures as announced by the IT Foundation Course Office at https://engg1000.cse.cuhk.edu.hk.
2. Students are advised to take some courses of the University Core Requirements or Major courses in summer sessions to reduce their course load in regular terms.
3. ELEG and ENGG courses at 2000 and above level listed in the Major Programme Requirement, ESTR2104, 2206, 2300, 4402, ESTR4998/4999 and ESTR courses of which the reciprocal departmental courses are ELEG courses as well as those labeled as # will be included in the calculation of Major GPA for honours classification, excluding courses in Faculty Package, Foundation Science courses and Foundation Mathematics courses.
4. Results of the graduation project as prescribed by ELEG4999/ESTR4999 will be included in the calculation for honours classification.
5. Guidance in course selection:
   Students who wish to pursue their career goals as a professional engineer, research scientist, or engineering entrepreneur may take the elective courses as recommended below:
   Professional Engineering
   a) Elective course: ELEG3700/3710
   b) ELEG4998 and 4999[c] in a topic of professional engineering nature
   Research
   a) Elective courses: ELEG3910 and an ELEG course at 5000 level

b) ELEG4998 and 4999[c] in a topic of research nature

Entrepreneurship

a) Elective course: ENGG3802 and 3803

b) ELEG4998 and 4999[c] in a topic of entrepreneurship nature (related to the project chosen for ENGG3803)

Apart from the above career tracks, students may also take elective courses according to the particular areas listed below:

Biomedical Engineering	BMEG3101, 3420, 4103, ELEG5101
DSP and Multimedia Technology	ELEG3503, ELEG4501/ESTR4212, ELEG4502/ 4512, 4503, ELEG4511/ESTR4218, ELEG5491, 5501, 5502, ELEG5503/ENGG5202
Integrated Circuit Technology	ELEG3202, 3205, 3207, 4201, 4205/4215, 4211, 5210, ELEG5280/ENGG5201
Microelectronics and Photonics	BMEG5540/ELEG5302, EEEN4020/ENER4020/ ESTR4402, ELEG3301/ESTR3204, ELEG3302, ELEG3303/ESTR3206, ELEG4301/ESTR4210, ELEG4302/4312, ELEG4311/ESTR4216, ELEG5301, 5303, 5550
Microwave and Wireless Engineering	ELEG3203/3213/ESTR3214, ELEG3204/3214/ ESTR3202, ELEG4203/ESTR4206, ELEG4204/ ESTR4208, ELEG4213/ESTR4220, ELEG4214/ ESTR4222, ELEG4501/ESTR4212, ELEG4503, ELEG4511/ESTR4218, ELEG5205/ENGG5281

[a] Students without HKDSE Physics or who have attained Level 2 or below in HKDSE Physics or Combined Science with Physics component shall take PHYS1003 in advance. PHYS1003 would be counted as a free elective but could not be used to fulfill the Foundation Science course requirements.

[b] i) Non-JUPAS admittees and JUPAS admittees with HKDSE Mathematics Extended Modules I or II are required to attend a Mathematics Placement Test. Students who fail or are absent from the Placement Test will be required to take MATH1020 in the same term when they take MATH1510.

ii) JUPAS admittees without HKDSE Mathematics Extended Modules I or II are required to take MATH1020 concurrently with MATH1510.

iii) Students who fail MATH1510 in Term 1 will have to retake the course in Term 2. The pre-assigned course, ENGG1410, will also be dropped.

[c] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for ELEG4998 and 4999.

[d] Students can take either one of the courses but not both.

[e] Details of the entrance and coursework requirements, and declaration procedures for the ELITE Stream can be found at the ELITE website (www.erg.cuhk.edu.hk/elite).

Non-ELITE Engineering students may be allowed to take ESTR courses. Students are required to seek approval from their respective Major Programmes for using ESTR courses taken to fulfill the Major Programme Requirement. Details are available at the ELITE website.

[f] Students can use up to 9 units of courses which have been taken to fulfill the requirements of items 1 to 5 above to fulfill the elective requirements of the ELITE Stream. Item 4(b) Research Component Courses will not be included in these 9 units. A full list of ESTR courses is available at the ELITE website.

[g] Students can use BMEG/CENG/CSCI/ELEG/ENGG/IERG/MAEG/SEEM courses at 5000 level to substitute for ESTR courses at 3000 or 4000 level, subject to the approval of the Stream Director and the Associate Dean (Education).

[h] The requirement of at least 3 units of Engineering courses at 5000 level is a requirement for the ELITE Stream only. It should not be interpreted as a requirement of the Major Programme.

Requirements for admission to the 2nd degree programme

1. Admission to the second degree programme is guaranteed if students have:

   i. fulfilled all graduation requirements of the first degree programme;
   ii. Major GPA of at least 3.0 upon completion of studies of the first degree programme (ERG); and
   iii. taken at least 30 relevant units, of which includes ELTU2014, ELTU3014 and mutually recognized courses by both the Engineering and Business Administration Faculties. In addition, students should have achieved a GPA of at least 3.0 in these courses while pursuing the first degree programme. For details of the mutually recognized courses, please refer to the explanatory notes on mutual recognition or exclusion.

   Students who do not satisfy the above requirements may still apply for admission to the second degree programme which has discretion to judge the suitability of the students for studying for the second degree through assessments like conducting interview, considering the recommendation from the first degree programme etc.

   Upon fulfillment of the requirements of the first degree programme, students can still choose to or not to pursue the second degree programme. If a student decides not to pursue the second degree programme but has fulfilled the requirements of a relevant BBA minor programme, a minor of that BBA programme would be awarded.

2nd Degree: Bachelor of Business Administration (Integrated BBA Programme)

Major Programme Requirement

Students are required to complete a minimum of 55 units of courses as follows:

		Units
1.	Faculty Package: DSME1030, 1040, MGNT1020	9
2.	Required Courses: ACCT2111, 2121, DSME2011, 2030, 2051, FINA2010, MGNT2510, 2610, 4010, MKTG2010	31
3.	Elective Courses (Concentration): Students must choose at least one concentration and take five or six courses among the courses prescribed under respective concentration area as follows:	15-18

(a) Business Economics
   (i) DSME2021, 4110;
   (ii) two courses selected from: DSME3030, 3050, 3080, 3090, 4040, 4080; and
   (iii) one DSME course at 3000 or above level, excluding the courses taken for fulfillment of requirement (i) or (ii)

(b) Business Analytics
   (i) DSME2021, 2040, 4020;
   (ii) one course selected from: DSME4070, 4240, 4260; and
   (iii) one course selected from: DSME3030, 4030, 4110, 4220, 4280, MKTG4120

(c) General Finance
   (i) DSME2021 or FINA2020;

(ii) 12 units of FINA courses at 3000 or above level, with no more than three 1-unit FINA courses, excluding the courses taken for fulfillment of requirement (iii); and
(iii) one course from FINA3070, 3080, 4040, 4130, 4140, 4390

(d) Financial Engineering
(i) DSME2021 or FINA2020;
(ii) four courses selected from: FINA3080, 3220, 4110, 4120, 4150, 4160, 4190, 4210, 4220, 4250, 4260, 4370, 4380; and
(iii) one course from FINA4040, 4130, 4140, 4390

(e) Insurance and Risk Management
(i) DSME2021 or FINA2020, and FINA3210;
(ii) three courses selected from: FINA2210, 3080, 3230, 3240, 3280, 4230, 4240; and
(iii) one course from FINA4040, 4130, 4140, 4270, 4291, 4390

(f) Management of International Business
(i) MGNT3580, 4150, MKTG3010; and
(ii) three courses selected from: MGNT3010, 3080, 4080, 4090, 4130, 4140, 4510, 4530, 4540, 4550, 4570, 4600, 4620

(g) Human Resource Management
(i) MGNT2040, 3010, MKTG3010; and
(ii) three courses selected from: MGNT3040, 3060, 3090, 4050, 4060, 4080, 4110, 4130, 4140, 4620

(h) Marketing
(i) MKTG3010, 3020, 3030, 4040; and
(ii) two courses selected from: MKTG3040, 3050, 3060, 4010, 4020, 4030, 4050, 4070, 4080, 4090, 4100, 4110, 4160

(i) Quantitative Marketing
(i) MKTG3010, 4080, 4090, 4120; and
(ii) two courses selected from: MKTG3020, 3030, 3060, 4030, 4040, 4070, 4130, 4150, 4160

(j) General Business
(i) DSME2021/FINA2020/MKTG3010; and
(ii) 12 units of DSME/FINA/MGNT/MKTG courses at 3000 or above level, excluding the courses taken for fulfillment of requirement (i), with no more than three 1-unit FINA courses

Total: 55-58

Explanatory Notes:

1. ACCT/DSME/FINA/IBBA/MGNT/MKTG courses at 2000 and above level (excluding ACCT2111 and 2121) will be included in the calculation of Major GPA for honours classification.
2. Double concentrations (i) among the finance-related concentration areas (i.e. any combination of General Finance, Financial Engineering, Insurance and Risk Management), and (ii) in Marketing and Quantitative Marketing are not allowed.
3. DSME2021 and the associated units can be used to satisfy concentration requirements of double concentrations within (a) to (e) and (j), except for the impermissible combination of concentrations as stipulated in Note 2 above.
   MKTG3010 and the associated units can be used to satisfy concentration requirements of double concentrations within (f) to (j), except for the impermissible combination of concentrations as stipulated in Note 2 above.
   FINA2020 and the associated units can be used to satisfy concentration requirements of double concentrations within (c) to (e) and (j), except for the impermissible combination of concentrations as stipulated in Note 2 above.
   MGNT3010 and the associated units can be used to satisfy concentration requirements of double concentrations within (f) and (g).

Explanatory Notes on Mutual Recognition or Exclusion:

1. DSME1030 and the associated units can be used to satisfy both the requirements of the first and second degrees.
2. DSME2011 and the associated units can be exempted from the requirement of the second degree by successfully completing ENGG2450/ESTR2005.
3. DSME4140 and the associated units can be exempted from the requirement of the second degree by successfully completing IERG3310.

Recommended Course Pattern

	1st degree: Bachelor of Engineering (Electronic Engineering)	Units	**2nd degree: Bachelor of Business Administration (Integrated BBA Programme)**	Units
First Year of Attendance	1st term Faculty Package: ENGG1110/ ESTR1002 Major Required: CHEM1280/ 1380/CSCI1120/LSCI1001/ 1003, MATH1510, PHYS1110 Major Elective(s):	 3 6-9	1st term Faculty Package: Major Required: Major Elective(s):	
	2nd term Faculty Package: ENGG1100/ ESTR1000 Major Required: CHEM1280/ 1380/CSCI1120/LSCI1001/ 1003, ENGG1310/ESTR1003, ENGG1410/ESTR1004 Major Elective(s):	 3 6-9	2nd term Faculty Package: Major Required: Major Elective(s):	
			Summer session Faculty Package: DSME1030/ 1040	 3
Second Year of Attendance	1st term Major Required: ELEG2201, 2202, ENGG2420/ESTR2000 Major Elective(s):	 9	1st term Faculty Package: DSME1030/ 1040 Major Required: Major Elective(s):	 3
	2nd term Faculty Package: ENGG2601 Major Required: ELEG3201/ ESTR3200, ENGG2030/ ESTR2206, ENGG2450/ ESTR2005 Major Elective(s):	 2 9	2nd term Major Required: Major Elective(s):	
	Summer session Faculty Package: ENGG2602	 1	Summer session Faculty Package: MGNT1020	 3

Third Year of Attendance	1st term Major Required: ELEG2401, ENGG2310/ESTR2300 Major Elective(s): Group A Elective	 6 3	1st term Major Required/Major Elective(s):	
	2nd term Major Required: Major Elective(s): Group A Electives	 6	2nd term Major Required/Major Elective(s):	9
Fourth Year of Attendance	1st term Major Required: ELEG4998 Major Elective(s): Group A Elective Group B Elective	 3 3 3	1st term Major Required/Major Elective(s):	6
	2nd term Major Required: ELEG4999 Major Elective(s): Group B Electives	 3 6	2nd term Major Required/Major Elective(s):	6
Fifth Year of Attendance			1st term Major Required/Major Elective(s):	12-15
			2nd term Major Required/Major Elective(s):	13
Total (including Faculty Package):		**75**	**Total (including Faculty Package):**	**55-58**

Minor Programme Title
Electronic Engineering

Minor Programme Requirement

Students are required to complete a minimum of 18 units of courses as follows:

		Units
1.	Required Courses: ELEG2201, 2202[a], ENGG2030/ESTR2206	9
2.	Elective Courses (at least 6 units of courses at 3000 or above level): BMEG3101, BMEG5540/ELEG5302, ELEG2401, ELEG3201/ESTR3200, ELEG3202, ELEG3203/3213/ESTR3214, ELEG3204/3214/ESTR3202, ELEG3205, 3207, ELEG3301/ESTR3204, ELEG3302, ELEG3303/ESTR3206, ELEG3503, 3601, 4201, ELEG4203/ESTR4206, ELEG4204/ESTR4208, ELEG4205/4215, 4211, ELEG4213/ESTR4220, ELEG4214/ESTR4222, ELEG4301/ESTR4210, ELEG4302/4312, ELEG4311/ESTR4216, ELEG4501/ESTR4212, ELEG4502/4512, 4503, ELEG4511/ESTR4218, ELEG5101, ELEG5205/ENGG5281, ELEG5210, ELEG5280/ENGG5201,	9

ELEG5301, 5303, 5491, 5501, 5502, ELEG5503/ENGG5202, ELEG5550, ENGG2310/ESTR2300

Total: 18

Explanatory Note:

[a] BMEG2300 is equivalent to ELEG2202.

Course List

Course Code	*Course Title*	*Unit(s)*
ELEG2201	Digital Circuits and Computing Systems	3
ELEG2202	Fundamentals of Electric Circuits	3
ELEG2401	Introduction to Embedded Systems	3
ELEG3201	Microelectronic Devices and Circuits	3
ELEG3202	Analog Integrated Circuits	3
ELEG3203	Electromagnetic Fields and Waves	3
ELEG3204	Wireless Technology and Systems	3
ELEG3205	Modern Digital Circuit Design	3
ELEG3207	Introduction to Power Electronics	3
ELEG3213	Fundamentals of Applied Electromagnetics	3
ELEG3214	Antennas and Wave Propagation for Wireless Communications	3
ELEG3301	Principles of Semiconductor Devices	3
ELEG3302	Fundamentals of Photonics	3
ELEG3303	Introduction to Optical Communications	3
ELEG3503	Introduction to Digital Signal Processing	3
ELEG3601	Introduction to Electric Power Systems	3
ELEG3700	Electronic Product Design and Development	2
ELEG3701	Embedded Systems Design	3
ELEG3710	Electronic Product Design and Development	3
ELEG3910	Undergraduate Research in Electronic Engineering	2
ELEG4201	CMOS Integrated Circuits	2
ELEG4203	Radio Frequency Electronics	2
ELEG4204	Advanced Radio Frequency Circuit Design	2
ELEG4205	Power Converter Circuits	2
ELEG4211	CMOS Digital Integrated Circuits Design	3
ELEG4213	Radio Frequency Electronics	3
ELEG4214	RF Circuits for Wireless Systems	3
ELEG4215	Power Converter Circuits	3
ELEG4301	Physics and Technology of Semiconductor Devices	2
ELEG4302	Microoptics	2
ELEG4311	Physics and Technology of Semiconductor Devices	3
ELEG4312	Micro-optic Devices and Systems	3
ELEG4501	Digital Signal Processing and Applications	2
ELEG4502	Digital Image Processing	2
ELEG4503	Modern Communication Systems	2
ELEG4511	Digital Signal Processing and Applications	3
ELEG4512	Digital Image Processing	3
ELEG4998	Final Year Project I	3
ELEG4999	Final Year Project II	3
ELEG5101	Advanced Medical Instrumentation and Biosensors	3
ELEG5205	Advanced Microwave Engineering	3
ELEG5210	CMOS Analog Integrated Circuits	3
ELEG5280	Analog-Digital ASIC Design	3
ELEG5301	Photonic Integrated Circuits	3

ELEG5302	Biophotonics	3
ELEG5303	Flexible Electronics – Physics and Technology	3
ELEG5491	Introduction to Deep Learning	3
ELEG5501	Speech and Audio Processing	3
ELEG5502	Video Coding Technology	3
ELEG5503	Pattern Recognition	3
ELEG5550	Micro- and Nano-Fabrication Laboratory	3
ENGG1310	Engineering Physics: Electromagnetics, Optics and Modern Physics	3
ENGG1410	Linear Algebra and Vector Calculus for Engineers	3
ENGG2030	Signals and Systems	3
ENGG2310	Principles of Communication Systems	3
ENGG2420	Complex Analysis and Differential Equations for Engineers	3
ENGG2450	Probability and Statistics for Engineers	3
ENGG3802	Introduction to Engineering Entrepreneurship	1
ENGG3803	Engineering Entrepreneurship Development Project	2
ENGG5201	Analog-Digital ASIC Design	3
ENGG5202	Pattern Recognition	3
ENGG5281	Advanced Microwave Engineering	3
ESTR1003	Engineering Physics: Electromagnetics, Optics and Modern Physics	3
ESTR1004	Linear Algebra and Vector Calculus for Engineers	3
ESTR2000	Complex Analysis and Differential Equations for Engineers	3
ESTR2005	Probability and Statistics for Engineers	3
ESTR2206	Signals and Systems	3
ESTR2300	Principles of Communication Systems	3
ESTR3200	Microelectronic Devices and Circuits	3
ESTR3202	Wireless Technology and Systems	3
ESTR3204	Principles of Semiconductor Devices	3
ESTR3206	Introduction to Optical Communications	3
ESTR3214	Fundamentals of Applied Electromagnetics	3
ESTR4206	Radio Frequency Electronics	2
ESTR4208	Advanced Radio Frequency Circuit Design	2
ESTR4210	Physics and Technology of Semiconductor Devices	2
ESTR4212	Digital Signal Processing and Applications	2
ESTR4216	Physics and Technology of Semiconductor Devices	3
ESTR4218	Digital Signal Processing and Applications	3
ESTR4220	Radio Frequency Electronics	3
ESTR4222	RF Circuits for Wireless Systems	3