

Energy and Environmental Engineering
Applicable to students admitted in 2018-19

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, ENGG1410/ ESTR1004	9
2.	Foundation Science Courses[a]:	9
(a)	PHYS1110[b]	
(b)	Two courses from the following: CHEM1380[c], ENGG1310/ESTR1003, LSCI1001, 1003, PHYS1003[b]	
3.	Foundation Mathematics Courses: ENGG2420/ESTR2000, ENGG2430/ESTR2002, MATH1510[d]	9
4.	Required Courses:	
(a)	EEEN2020, 2030, EEEN2040/ESTR2404, EEEN2602, ELEG2202#, 3207#, ESSC2800#, MAEG2030/ESTR2402, MAEG2601, 3030	27
(b)	Research Component Courses[e]: EEEN4998, 4999	6
5.	Elective Courses:	15
(a)	Core Electives (at least 6 units): ARCH3424# (or EEEN4070), EEEN3010/ESTR3410, EEEN3030/ESTR3402, EEEN4020/ESTR4402, ESSC4240#	
(b)	Non-core Electives[f]: ARCH5431#, CHEM4280#, CSCI1020, 1040, 1050, CSCI2100#/ESTR2102, EEEN3020/ESTR3400, EEEN4010/ ESTR4400, EEEN4030/ESTR4404, EEEN4050/ESTR4422, EEEN4060/ESTR4424, ELEG3601#, ENGG1820, ENSC3230#, 4240#, ESSC2020, 3200#, 3220#, 3320#, 3600#, 3800#, 4540#, GRMD2404, 3202#, 3203#, 3403#, 4202#, 4204#, 4401#, MAEG3050/ESTR3406, MAEG3920, MAEG4030/ESTR4412, MAEG4080/ESTR4420, MAEG5120, 5140, 5150, PHYS4420#	

Streams

Students may specialize in any of the three streams by completing a minimum of 12 units of courses prescribed by that stream. Students may choose not to specialize in any stream or to specialize in more than one stream.

Sustainable Energy Technology

- (a) Required Courses:
EEEN3030/ESTR3402, EEEN4020/ESTR4402
- (b) Elective Courses:
CHEM4280, EEEN4010/ESTR4400, EEEN4030/ESTR4404,
EEEN4050/ESTR4422, EEEN4060/ESTR4424, ELEG3601,

MAEG5120, 5150

Green Building Technology

(a) Required Courses:

ARCH3424 (or EEEN4070), EEEN3010/ESTR3410

(b) Elective Courses:

ARCH5431, EEEN3020/ESTR3400, MAEG3050/ESTR3406,
MAEG3920, MAEG4030/ESTR4412, MAEG5150

Environmental Engineering

(a) Required Courses:

ESSC4240, GRMD3203

(b) Elective Courses:

ARCH3424 (or EEEN4070), ARCH5431, ENSC3230, 4240,
ESSC2020, GRMD4204, MAEG4080/ESTR4420, MAEG5140

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^[g]

Elective Courses:

15 units of courses^[h]:

- 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^[i]
- ii) 3 units of BMEG/CENG/CSCI/ELEG/ENGG/IERG/MAEG/SEEM courses at 5000 level^[j]

Explanatory Notes:

- 1. Students who have fulfilled the Major Programme Requirements of their respective Engineering programmes (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. EEEN, ENGG and MAEG courses at 2000 and above level as well as those labeled as #, and their reciprocal ESTR courses 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. Students satisfying all the requirements of a stream (except the ELITE Stream, which will be officially recorded on the academic transcript) will be given a certifying letter upon request. Further information is available from the Department.

[a] Students cannot take two LSCI courses to fulfill the requirements of Foundation Science courses in item 2(b).

[b] PHYS1110 is a required Foundation Science course. Students who have passed PHYS1110 shall not take PHYS1003 afterwards, otherwise PHYS1003 will be counted as a free elective and cannot be used to fulfill the Foundation Science course requirements.

PHYS1003 shall be taken in accordance with students' HKDSE results or placement test results as follows:

- i) Students with HKDSE results but did not attain the following academic

levels shall take PHYS1003 before taking PHYS1110: Level 4 or above in HKDSE Mathematics (Compulsory Part) AND Level 4 or above in Physics or Level 5 or above in Combined Science with Physics Component.

ii) Students without HKDSE results shall sit for the placement test arranged by the Department of Physics. Students who fail or are absent from the placement test shall take PHYS1003 before taking PHYS1110.

[c] Major students are strongly advised to take CHEM1380.

[d] 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.

[e] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for EEEN4998 and 4999.

[f] Students are allowed to take a maximum of 3 units from the following elective list: CSCI1020, 1040, 1050, CSCI2100/ESTR2102.

[g] 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.

[h] 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.

[i] 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).

[j] 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	1 st term Faculty Package: ENGG1100/1110/ESTR1000/1002 Major Required: CHEM1380/ENGG1310/ESTR1003/ LSCI1001/1003/PHYS1003/1110, MATH1510 Major Elective(s):	3 6-9
	2 nd term Faculty Package: ENGG1100/1110/ESTR1000/1002, ENGG1410/ESTR1004 Major Required: CHEM1380/ENGG1310/ESTR1003/ LSCI1001/1003/PHYS1003/1110 Major Elective(s):	6 3-6

Second Year of Attendance	1 st term Major Required: EEEN2020, ELEG2202, ENGG2420/ ESTR2000 Major Elective(s): 0 or 1 course	9 0-3
	2 nd term Major Required: EEEN2040/ESTR2404, ENGG2430/ ESTR2002, MAEG2030/ESTR2402, MAEG2601 Major Elective(s):	11
	Summer session Major Required: EEEN2602	1
Third Year of Attendance	1 st term Major Required: ELEG3207, ESSC2800 Major Elective(s): 0 or 1 course	6 0-3
	2 nd term Major Required: EEEN2030, MAEG3030 Major Elective(s): 0 or 1 course	6 0-3
Fourth Year of Attendance	1 st term Major Required: EEEN4998 Major Elective(s): 1 to 2 course(s)	3 3-6
	2 nd term Major Required: EEEN4999 Major Elective(s): 1 to 2 course(s)	3 3-6
Total (including Faculty Package):		75

Energy and Environmental Engineering
Applicable to students admitted in 2019-20

Major Programme Requirement

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

		Units
1.	Faculty Package: ENGG1110/ESTR1002, ENGG1120/ESTR1005, ENGG1130/ ESTR1006	9
2.	Foundation Courses: ENGG2720/ESTR2014, ENGG2740/ESTR2016, MAEG1020, MATH1510[a], PHYS1110[b]	13
3.	Required Courses:	
(a)	EEEN2020, 2030, EEEN2040/ESTR2404, EEEN2602, EEEN3030/ESTR3402, ELEG2202#, 3207#, ESSC2800#, MAEG2030/ESTR2402, MAEG2601, 3030, MAEG4030/ ESTR4412	33
(b)	Research Component Courses[c]: EEEN4998, 4999	6
4.	Elective Courses:	
(a)	Core Electives (at least 6 units): ARCH3424# (or EEEN4070), EEEN3010/ESTR3410, EEEN4020/ESTR4402, EEEN4050/ESTR4422, EEEN4060/ESTR4424, ESSC4240#, MAEG3050/ESTR3406, MAEG4080/ESTR4420	14
(b)	Non-core Electives[d]: ARCH5431#, CHEM4280#, CSCI1020, 2040#, CSCI2100#/ ESTR2102, EEEN3020/ESTR3400, EEEN4010/ESTR4400, EEEN4030/ESTR4404, ELEG3601#, ENGG1820, ENGG2760/ ESTR2018, ENGG2780/ESTR2020, ENSC3230#, 4240#, ESSC2020, 3200#, 3220#, 3320#, 3600#, 3800#, 4540#, GRMD2404, 3202#, 3203#, 3403#, 4202#, 4204#, 4401#, MAEG3920, 5120, 5140, 5150, PHYS4420#	

Streams

Students may specialize in any of the three streams by completing a minimum of 12 units of courses prescribed by that stream. Students may choose not to specialize in any stream or to specialize in more than one stream.

Sustainable Energy Technology

- (a) Required Courses:
EEEN4020/ESTR4402
- (b) Elective Courses:
CHEM4280, EEEN4010/ESTR4400, EEEN4030/ESTR4404,
EEEN4050/ESTR4422, EEEN4060/ESTR4424, ELEG3601,
MAEG5120, 5150

Green Building Technology

- (a) Required Courses:

ARCH3424 (or EEEN4070), EEEN3010/ESTR3410

- (b) Elective Courses:
ARCH5431, EEEN3020/ESTR3400, MAEG3050/ESTR3406,
MAEG3920, 5150

Environmental Engineering

- (a) Required Courses:
ESSC4240, GRMD3203
- (b) Elective Courses:
ARCH3424 (or EEEN4070), ARCH5431, ENSC3230, 4240,
ESSC2020, GRMD4204, MAEG4080/ESTR4420, MAEG5140

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 fulfilled the Major Programme Requirements of their respective Engineering programmes (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. EEEN, ENGG and MAEG courses at 2000 and above level as well as those labeled as #, and their reciprocal ESTR courses will be included in the calculation of Major GPA for honours classification, excluding courses in Faculty Package and Foundation courses.
 3. Students satisfying all the requirements of a stream (except the ELITE Stream, which will be officially recorded on the academic transcript) will be given a certifying letter upon request. Further information is available from the Department.
- [a] 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, ENGG1130, will also be dropped.
- [b] i) Students who have attained Level 4 or above in HKDSE Mathematics (Compulsory Part) AND Level 4 or above in Physics or Level 5 or above in Combined Science with Physics Component shall take PHYS1110.
- ii) Students with HKDSE results but did not attain the academic levels as stated

- in (i) shall take PHYS1003 in advance. PHYS1003 will be counted as a free elective but cannot be used to fulfill the Foundation course requirements.
- iii) Students without HKDSE results shall sit for the placement test arranged by the Department of Physics. Students who pass the placement test shall take PHYS1110. Students who fail or are absent from the placement test shall take PHYS1003 in advance. PHYS1003 will be counted as a free elective but cannot be used to fulfill the Foundation course requirements.
- [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 EEEN4998 and 4999.
- [d] Students are allowed to take a maximum of 3 units from the following elective list: CSC11020, 2040, CSC12100/ESTR2102.
- [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	Units
First Year of Attendance	1 st term Faculty Package: ENGG1110/ESTR1002 Major Required: MATH1510, PHYS1110 Major Elective(s):	3 3-6
	2 nd term Faculty Package: ENGG1120/ESTR1005, ENGG1130/ ESTR1006 Major Required: MAEG1020, PHYS1110 Major Elective(s):	6 3-6
Second Year of Attendance	1 st term Major Required: EEEN2020, ELEG2202, ENGG2720/ ESTR2014 Major Elective(s): 0 or 1 course	8 0-3
	2 nd term Major Required: EEEN2040/ESTR2404, ENGG2740/ ESTR2016, MAEG2030/ESTR2402, MAEG2601 Major Elective(s):	10
	Summer session Major Required: EEEN2602	1

Third Year of Attendance	1 st term Major Required: ELEG3207, ESSC2800, MAEG4030/ ESTR4412 Major Elective(s): 0 or 1 course	9 0-3
	2 nd term Major Required: EEEN2030, EEEN3030/ESTR3402, MAEG3030 Major Elective(s): 0 or 1 course	9 0-3
Fourth Year of Attendance	1 st term Major Required: EEEN4998 Major Elective(s): 1 to 2 course(s)	3 3-6
	2 nd term Major Required: EEEN4999 Major Elective(s): 1 to 2 course(s)	3 3-6
Total (including Faculty Package):		75

Energy and Environmental Engineering
Applicable to students admitted in 2020-21

Major Programme Requirement

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

		Units
1.	Faculty Package: ENGG1110/ESTR1002, ENGG1120/ESTR1005, ENGG1130/ ESTR1006	9
2.	Foundation Courses: ENGG2720/ESTR2014, ENGG2740/ESTR2016, MAEG1020, MATH1510[a], PHYS1110[b]	13
3.	Required Courses:	
(a)	EEEN2020, 2030, EEEN2040/ESTR2404, EEEN2602, EEEN3030/ESTR3402, ELEG2202#, 3207#, ESSC2800#, MAEG2030/ESTR2402, MAEG2601, 3030, MAEG4030/ ESTR4412	33
(b)	Research Component Courses[c]: EEEN4998, 4999	6
4.	Elective Courses:	
(a)	Core Electives (at least 6 units): ARCH3424# (or EEEN4070), EEEN3010/ESTR3410, EEEN4020/ESTR4402, EEEN4050/ESTR4422, EEEN4060/ESTR4424, ESSC4240#, MAEG3050/ESTR3406, MAEG4080/ESTR4420	14
(b)	Non-core Electives[d]: ARCH5431#, CHEM1380, 4280#, CSCI1020, 2040#, CSCI2100#/ ESTR2102, EEEN3020/ESTR3400, EEEN4010/ESTR4400, EEEN4030/ESTR4404, ELEG3601#, ENGG1820, ENGG2760/ ESTR2018, ENGG2780/ESTR2020, ENSC2515 (or EESC2515), ENSC3230#, 4240#, 4535# (or EESC4335#), ESSC2020, 3200#, 3220#, 3320#, 3600#, 3800#, 4540#, GRMD2404, 3202#, 3203#, 3403#, 4202#, 4204#, 4401#, MAEG3920, 5120, 5140, 5150, PHYS4420#	

Streams

Students may specialize in any of the three streams by completing a minimum of 12 units of courses prescribed by that stream. Students may choose not to specialize in any stream or to specialize in at most two streams.

Sustainable Energy Technology

- (a) Required Courses:
EEEN4020/ESTR4402
- (b) Elective Courses:
CHEM4280, EEEN4010/ESTR4400, EEEN4030/ESTR4404,
EEEN4050/ESTR4422, EEEN4060/ESTR4424, ELEG3601,
MAEG5120, 5150

Green Building Technology

- (a) Required Courses:
ARCH3424 (or EEEN4070), EEEN3010/ESTR3410
- (b) Elective Courses:
ARCH5431, EEEN3020/ESTR3400, MAEG3050/ESTR3406,
MAEG3920, 5150

Environmental Engineering

- (a) Required Courses:
ESSC4240, GRMD3203
- (b) Elective Courses:
ARCH3424 (or EEEN4070), ARCH5431, ENSC3230, 4240,
ESSC2020, GRMD4202, 4204, MAEG4080/ESTR4420,
MAEG5140

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 fulfilled the Major Programme Requirements of their respective Engineering programmes (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. EEEN, ENGG and MAEG courses at 2000 and above level as well as those labeled as #, and their reciprocal ESTR courses will be included in the calculation of Major GPA for honours classification, excluding courses in Faculty Package and Foundation courses.
 3. Students satisfying all the requirements of a stream (except the ELITE Stream, which will be officially recorded on the academic transcript) will be given a certifying letter upon request. Further information is available from the Department.
- [a] 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, ENGG1130, will also be dropped.
- [b] i) Students who have attained Level 4 or above in HKDSE Mathematics (Compulsory Part) AND Level 4 or above in Physics or Level 5 or above in

	<p>Combined Science with Physics Component shall take PHYS1110.</p> <p>ii) Students with HKDSE results but did not attain the academic levels as stated in (i) shall take PHYS1003 in advance. PHYS1003 will be counted as a free elective but cannot be used to fulfill the Foundation course requirements.</p> <p>iii) Students without HKDSE results shall sit for the placement test arranged by the Department of Physics. Students who pass the placement test shall take PHYS1110. Students who fail or are absent from the placement test shall take PHYS1003 in advance. PHYS1003 will be counted as a free elective but cannot be used to fulfill the Foundation course requirements.</p>
[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 EEEN4998 and 4999.
[d]	Students are allowed to take a maximum of 3 units from the following elective list: CSCI1020, 2040, CSCI2100/ESTR2102.
[e]	<p>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).</p> <p>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.</p>
[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	Units
First Year of Attendance	1 st term Faculty Package: ENGG1110/ESTR1002 Major Required: MATH1510, PHYS1110 Major Elective(s):	3 3-6
	2 nd term Faculty Package: ENGG1120/ESTR1005, ENGG1130/ ESTR1006 Major Required: MAEG1020, PHYS1110 Major Elective(s):	6 3-6
Second Year of Attendance	1 st term Major Required: EEEN2020, ELEG2202, ENGG2720/ ESTR2014 Major Elective(s): 0 or 1 course	8 0-3
	2 nd term Major Required: EEEN2040/ESTR2404, ENGG2740/ ESTR2016, MAEG2030/ESTR2402, MAEG2601 Major Elective(s):	10
	Summer session Major Required: EEEN2602	1

Third Year of Attendance	1 st term Major Required: ELEG3207, ESSC2800 Major Elective(s): 1 to 2 course(s)	6 3-6
	2 nd term Major Required: EEEN2030, EEEN3030/ESTR3402, MAEG3030 Major Elective(s): 0 or 1 course	9 0-3
Fourth Year of Attendance	1 st term Major Required: EEEN4998, MAEG4030/ESTR4412 Major Elective(s): 0 or 1 course	6 0-3
	2 nd term Major Required: EEEN4999 Major Elective(s): 1 to 2 course(s)	3 3-6
Total (including Faculty Package):		75

Energy and Environmental Engineering
Applicable to students admitted in 2021-22

Major Programme Requirement

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

		Units
1.	Faculty Package: ENGG1110/ESTR1002, ENGG1120/ESTR1005, ENGG1130/ ESTR1006	9
2.	Foundation Courses: ENGG2720/ESTR2014, ENGG2740/ESTR2016, MAEG1020, MATH1510[a], PHYS1110[b]	13
3.	Required Courses:	
(a)	EEEN2020, 2030, EEEN2040/ESTR2404, EEEN2602, EEEN3030/ESTR3402, ELEG2202#, 3207#, ESSC2800#, MAEG2030/ESTR2402, MAEG2601, 3030, MAEG4030/ ESTR4412	33
(b)	Research Component Courses[c]: EEEN4998, 4999	6
4.	Elective Courses:	
(a)	Core Electives (at least 6 units): ARCH3424# (or EEEN4070), EEEN3010/ESTR3410, EEEN4020/ESTR4402, EEEN4050/ESTR4422, EEEN4060/ESTR4424, ESSC4240#, MAEG3050/ESTR3406, MAEG4080/ESTR4420	14
(b)	Non-core Electives[d]: ARCH5431#, CHEM1380, 4280#, CSCI1020, 2040#, CSCI2100#/ ESTR2102, EEEN3020/ESTR3400, EEEN4010/ESTR4400, EEEN4030/ESTR4404, ELEG3601#, ENGG1820, ENGG2760/ ESTR2018, ENGG2780/ESTR2020, ENSC2515 (or EESC2515), ENSC3230#, 4240#, 4535# (or EESC4335#), ESSC2020, 3200#, 3220#, 3320#, 3600#, 3800#, 4540#, GRMD2404, 3202#, 3203#, 3403#, 4202#, 4204#, 4401#, MAEG3920, 5120, 5140, 5150, PHYS4420#	

Streams

Students may specialize in any of the three streams by completing a minimum of 12 units of courses prescribed by that stream. Students may choose not to specialize in any stream or to specialize in at most two streams.

Sustainable Energy Technology

- (a) Required Courses:
EEEN4020/ESTR4402
- (b) Elective Courses:
CHEM4280, EEEN4010/ESTR4400, EEEN4030/ESTR4404,
EEEN4050/ESTR4422, EEEN4060/ESTR4424, ELEG3601,
MAEG5120, 5150

Green Building Technology

- (a) Required Courses:
ARCH3424 (or EEEN4070), EEEN3010/ESTR3410
- (b) Elective Courses:
ARCH5431, EEEN3020/ESTR3400, MAEG3050/ESTR3406,
MAEG3920, 5150

Environmental Engineering

- (a) Required Courses:
ESSC4240, GRMD3203
- (b) Elective Courses:
ARCH3424 (or EEEN4070), ARCH5431, ENSC3230, 4240,
ESSC2020, GRMD4202, 4204, MAEG4080/ESTR4420,
MAEG5140

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 fulfilled the Major Programme Requirements of their respective Engineering programmes (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. EEEN, ENGG and MAEG courses at 2000 and above level as well as those labeled as #, and their reciprocal ESTR courses will be included in the calculation of Major GPA for honours classification, excluding courses in Faculty Package and Foundation courses.
 3. Students satisfying all the requirements of a stream (except the ELITE Stream, which will be officially recorded on the academic transcript) will be given a certifying letter upon request. Further information is available from the Department.
- [a] 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, ENGG1130, will also be dropped.
- [b] i) Students who have attained Level 4 or above in HKDSE Mathematics (Compulsory Part) AND Level 4 or above in Physics or Level 5 or above in

	<p>Combined Science with Physics Component shall take PHYS1110.</p> <p>ii) Students with HKDSE results but did not attain the academic levels as stated in (i) shall take PHYS1003 in advance. PHYS1003 will be counted as a free elective but cannot be used to fulfill the Foundation course requirements.</p> <p>iii) Students without HKDSE results shall sit for the placement test arranged by the Department of Physics. Students who pass the placement test shall take PHYS1110. Students who fail or are absent from the placement test shall take PHYS1003 in advance. PHYS1003 will be counted as a free elective but cannot be used to fulfill the Foundation course requirements.</p>
[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 EEEN4998 and 4999.
[d]	Students are allowed to take a maximum of 3 units from the following elective list: CSCI1020, 2040, CSCI2100/ESTR2102.
[e]	<p>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).</p> <p>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.</p>
[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	Units
First Year of Attendance	1 st term Faculty Package: ENGG1110/ESTR1002 Major Required: MATH1510, PHYS1110 Major Elective(s):	3 3-6
	2 nd term Faculty Package: ENGG1120/ESTR1005, ENGG1130/ ESTR1006 Major Required: MAEG1020, PHYS1110 Major Elective(s):	6 3-6
Second Year of Attendance	1 st term Major Required: EEEN2020, ELEG2202, ENGG2720/ ESTR2014 Major Elective(s): 0 or 1 course	8 0-3
	2 nd term Major Required: EEEN2040/ESTR2404, ENGG2740/ ESTR2016, MAEG2030/ESTR2402, MAEG2601 Major Elective(s):	10
	Summer session Major Required: EEEN2602	1

Third Year of Attendance	1 st term Major Required: ELEG3207, ESSC2800 Major Elective(s): 1 to 2 course(s)	6 3-6
	2 nd term Major Required: EEEN2030, EEEN3030/ESTR3402, MAEG3030 Major Elective(s): 0 or 1 course	9 0-3
Fourth Year of Attendance	1 st term Major Required: EEEN4998, MAEG4030/ESTR4412 Major Elective(s): 0 or 1 course	6 0-3
	2 nd term Major Required: EEEN4999 Major Elective(s): 1 to 2 course(s)	3 3-6
Total (including Faculty Package):		75

EEEN4050/ESTR4422, EEEN4060/ESTR4424, ELEG3601,
MAEG5120, 5150

Green Building Technology

- (a) Required Courses:
EEEN3010/ESTR3410, EEEN4070
- (b) Elective Courses:
EEEN3020/ESTR3400, MAEG3050/ESTR3406, MAEG3920, 5150

Environmental Engineering

- (a) Required Courses:
ESSC4240 (or EESC4240), GRMD3203
- (b) Elective Courses:
EEEN4070, ENSC3230 (or EESC3230), ENSC4240 (or
EESC4340), ESSC2020 (or EESC2020), GRMD4202, 4204,
MAEG4080/ESTR4420, MAEG5140

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. EEEN, ENGG and MAEG courses at 2000 and above level as included in the Major Programme Requirement as well as those labeled as #, and their reciprocal ESTR courses will be included in the calculation of Major GPA for honours classification, excluding courses in Faculty Package and Foundation courses.
2. Students satisfying all the requirements of a stream (except the ELITE Stream, which will be officially recorded on the academic transcript) will be given a certifying letter upon request. Further information is available from the Department.

- [a] 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, ENGG1130, will also be dropped.
- [b] i) Students who have attained Level 4 or above in HKDSE Mathematics (Compulsory Part) AND Level 4 or above in Physics or Level 5 or above in Combined Science with Physics Component shall take PHYS1110.
- ii) Students with HKDSE results but did not attain the academic levels as stated in (i) shall take PHYS1003 in advance. PHYS1003 will be counted as a free elective but cannot be used to fulfill the Foundation course requirements.
- iii) Students without HKDSE results shall sit for the placement test arranged by the Department of Physics. Students who pass the placement test shall take

PHYS1110. Students who fail or are absent from the placement test shall take PHYS1003 in advance. PHYS1003 will be counted as a free elective but cannot be used to fulfill the Foundation course requirements.

- [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 EEEN4998 and 4999.
- [d] Students are allowed to take a maximum of 3 units from the following elective list: CSCI1020, 2040, CSCI2100/ESTR2102.
- [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	Units
First Year of Attendance	1 st term Faculty Package: ENGG1110/ESTR1002 Major Required: MATH1510, PHYS1110 Major Elective(s):	3 3-6
	2 nd term Faculty Package: ENGG1120/ESTR1005, ENGG1130/ESTR1006 Major Required: MAEG1020, PHYS1110 Major Elective(s):	6 3-6
Second Year of Attendance	1 st term Major Required: EEEN2020, ELEG2202, ENGG2720/ESTR2014 Major Elective(s): 0 or 1 course	8 0-3
	2 nd term Major Required: EEEN2040/ESTR2404, ENGG2740/ESTR2016, MAEG2030/ESTR2402, MAEG2601 Major Elective(s):	10
	Summer session Major Required: EEEN2602	1
Third Year of Attendance	1 st term Major Required: ELEG3207, ESSC2800 (or EESC2800) Major Elective(s): 1 to 2 course(s)	6 3-6
	2 nd term Major Required: EEEN2030, EEEN3030/ESTR3402, MAEG3030	9

	Major Elective(s): 0 or 1 course	0-3
Fourth Year of Attendance	1 st term	
	Major Required: EEEN4998, MAEG4030/ESTR4412	6
	Major Elective(s): 0 or 1 course	0-3
	2 nd term	
	Major Required: EEEN4999	3
	Major Elective(s): 1 to 2 course(s)	3-6
Total (including Faculty Package):		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]
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Explanatory Notes:

1. EEEN, ENGG and MAEG courses at 2000 and above level as included in the Major Programme Requirement as well as those labeled as #, and their reciprocal ESTR courses will be included in the calculation of Major GPA for honours classification, excluding courses in Faculty Package and Foundation courses.
 2. Students satisfying all the requirements of a stream (except the ELITE Stream, which will be officially recorded on the academic transcript) will be given a certifying letter upon request. Further information is available from the Department.
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- 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, ENGG1130, will also be dropped.
- [b] i) Students who have attained Level 4 or above in HKDSE Mathematics (Compulsory Part) AND Level 4 or above in Physics or Level 5 or above in Combined Science with Physics Component shall take PHYS1110.
- ii) Students with HKDSE results but did not attain the academic levels as stated in (i) shall take PHYS1003 in advance. PHYS1003 will be counted as a free elective but cannot be used to fulfill the Foundation course requirements.
- iii) Students without HKDSE results shall sit for the placement test arranged by the Department of Physics. Students who pass the placement test shall take PHYS1110. Students who fail or are absent from the placement test shall take PHYS1003 in advance. PHYS1003 will be counted as a free elective but cannot be used to fulfill the Foundation course requirements.
- [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 EEEN4998 and 4999.
- [d] Students are allowed to take a maximum of 3 units from the following elective list: CSCI1020, 2040, CSCI2100/ESTR2102.
- [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	Units
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	2 nd term Faculty Package: ENGG1120/ESTR1005, ENGG1130/ESTR1006 Major Required: MAEG1020, PHYS1110 Major Elective(s):	6 3-6
Second Year of Attendance	1 st term Major Required: EEEN2020, ELEG2202, ENGG2720/ESTR2014 Major Elective(s): 0 or 1 course	8 0-3
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	Summer session Major Required: EEEN2602	1
Third Year of Attendance	1 st term Major Required: ELEG3207, EESC2800 Major Elective(s): 1 to 2 course(s)	6 3-6
	2 nd term Major Required: EEEN2030, EEEN3030/ESTR3402, MAEG3030 Major Elective(s): 0 or 1 course	9 0-3
Fourth Year of Attendance	1 st term Major Required: EEEN4998, MAEG4030/ESTR4412 Major Elective(s): 0 or 1 course	6 0-3
	2 nd term Major Required: EEEN4999 Major Elective(s): 1 to 2 course(s)	3 3-6
Total (including Faculty Package):		75