

**Energy and Environmental Engineering**  
**Applicable to students admitted in 2016-17**

**Title of Double Degree Programme/Option**

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

**1st Degree: Bachelor of Engineering (Energy and Environmental 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 [a]:	9
(a) PHYS1110	
(b) One course from: CHEM1380[b], LSCI1001, 1003	
(c) i) One course from the following[c][d]: CHEM1380[b], ENGG1310/ESTR1003, LSCI1001, 1003	
OR	
ii) PHYS1003[e]	
3. Foundation Mathematics Courses: ENGG1410/ESTR1004, ENGG2420/ESTR2000, ENGG2430/ ESTR2002, MATH1510[f]	12
4. Required Courses:	
(a) EEEN2020, 3010, ELEG2202#, 3207#, ESSC2800#, MAEG2030/ ESTR2402, MAEG3030, SEEM2540#	24
(b) Research Component Courses[g]: EEEN4998, 4999	6
5. Elective Courses (select a total of 15 units from Core Electives and Non-core Electives, in which at least 6 units should be from Core Electives):	15
(a) Core Electives: ARCH3424#, EEEN3030/ESTR3402, EEEN4020/ESTR4402, ESSC4240#	
(b) Non-core Electives[h]: ARCH5431#, CHEM4280#, CSC11020, 1040, 1050, CSC12100#/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, 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

### **Green Building Technology**

- (a) Required Courses:  
ARCH3424, 5431
- (b) Elective Courses:  
EEEN3020/ESTR3400, MAEG3050/ESTR3406, MAEG3920,  
MAEG4030/ESTR4412

### **Environmental Engineering**

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

**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[i]**

Elective Courses:

15 units of courses[j]:

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

Explanatory Notes:

1. Students who have completed the courses ENGG1110/ESTR1002, ENGG2601 and 2602 (or equivalent courses as approved by the Subcommittee of 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/index.html>.
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.

4. Students are advised to take some courses in summer sessions to reduce their course load in regular terms.
  - [a] Students cannot take two LSCI courses to fulfill the requirements of Foundation Science Courses in items 2(a) – (c).
  - [b] Major students are strongly advised to take CHEM1380.
  - [c] For students who have attained Level 3 or above in HKDSE Physics or Combined Science with Physics component or equivalent.
  - [d] Courses used to fulfill item 2(b) requirement cannot be used to fulfill item 2(c) requirement.
  - [e] For students without HKDSE Physics or who have attained Level 2 or below in HKDSE Physics or Combined Science with Physics component or equivalent.
  - [f]
    - i) Students (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) Engineering students (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.
  - [g] 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.
  - [h] Students are allowed to take a maximum of 3 units from the following elective list: CSCI1020, 1040, 1050, CSCI2100/ESTR2102.
  - [i] 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](http://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.
  - [j] Students can use up to 9 units of courses which have been taken to fulfill the requirements of items 1 to 5 above (excluding item 4(b) Research Component Courses) to fulfill the elective requirements of the ELITE Stream. A full list of ESTR courses is available at the ELITE website.
  - [k] 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).
  - [l] 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 2<sup>nd</sup> 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 a reasonable number of units (30 units as mutually agreed by both the Engineering and Business Administration Faculties) of courses prescribed by the second degree programme and have achieved a GPA of at least 3.0 in these courses while pursuing the first degree programme. These second degree programme courses include the required language courses and the mutually recognized courses of the double degree programme.

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 of this double degree programme can 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 and other than those 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; and	
(iii) one course from FINA4040, 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, 4140, 4510, 4530, 4540, 4550, 4570, 4600, 4620
- (g) Human Resource Management
- (i) MGNT2040, 3010, MKTG3010; and
- (ii) three courses selected from: MGNT3040, 3060, 4050, 4060, 4080, 4110, 4130, 4140, 4620
- (h) Marketing
- (i) MKTG3010, 3020, 3030, 4040; and
- (ii) two courses selected from: MKTG3040, 3050, 4010, 4020, 4030, 4050, 4070, 4080, 4090, 4100, 4110
- (i) Quantitative Marketing
- (i) MKTG3010, 4080, 4090, 4120; and
- (ii) two courses selected from: MKTG3020, 3030, 4030, 4040, 4070, 4130, 4150
- (j) General Business
- (i) DSME2021/FINA2020/MKTG3010; and
- (ii) 12 units of DSME/FINA/MGNT/MKTG courses at 3000 or above level, 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. DSME2011 and the associated units can be exempted from the requirement of the second degree by successfully completing ENGG2430/ESTR2002.

**Recommended Course Pattern**

	<b>1<sup>st</sup> degree: Bachelor of Engineering (Energy and Environmental Engineering)</b>	Units	<b>2<sup>nd</sup> degree: Bachelor of Business Administration (Integrated BBA Programme)</b>	Units
<b>First Year of Attendance</b>	1 <sup>st</sup> term Faculty Package: ENGG1100/1110/ESTR1000/1002 Major Required: CHEM1380/ENGG1310/ESTR1003/LSCI1001/1003/PHYS1003/1110, MATH1510 Major Elective(s):	3 6-9	1 <sup>st</sup> term Faculty Package: Major Required: Major Elective(s):	
	2 <sup>nd</sup> term Faculty Package: ENGG1100/1110/ESTR1000/1002 Major Required: CHEM1380/ENGG1310/ESTR1003/LSCI1001/1003/PHYS1003/1110, ENGG1410/ESTR1004 Major Elective(s):	3 6-9	2 <sup>nd</sup> term Faculty Package: Major Required: Major Elective(s):	
<b>Second Year of Attendance</b>	1 <sup>st</sup> term Major Required: EEEN2020, ELEG2202, ENGG2420/ESTR2000 Major Elective(s):	9	1 <sup>st</sup> term Faculty Package: DSME1030, MGNT1020 Major Required: Major Elective(s):	6
	2 <sup>nd</sup> term Faculty Package: ENGG2601 Major Required: ENGG2430/ESTR2002, MAEG2030/ESTR2402, SEEM2540 Major Elective(s)	2 9	2 <sup>nd</sup> term Faculty Package: DSME1040 Major Required: DSME2011 Major Elective(s):	3 4
	Summer session Faculty Package: ENGG2602	1		
<b>Third Year of Attendance</b>	1 <sup>st</sup> term Major Required: ELEG3207, ESSC2800 Major Elective(s):	6	1 <sup>st</sup> term Major Required: ACCT2111 Major Elective(s):	3
	2 <sup>nd</sup> term Major Required: EEEN3010, MAEG3030 Major Elective(s): 1 course	6 3	2 <sup>nd</sup> term Major Required: ACCT2121, MKTG2010 Major Elective(s):	6
<b>Fourth Year of Attendance</b>	1 <sup>st</sup> term Major Required: EEEN4998 Major Elective(s): 2 courses	3 6	1 <sup>st</sup> term Major Required: DSME2030, FINA2010 Major Elective(s):	6
	2 <sup>nd</sup> term Major Required: EEEN4999 Major Elective(s): 2 courses	3 6	2 <sup>nd</sup> term Major Required: DSME2051, MGNT2510 Major Elective(s):	6
<b>Fifth Year of</b>			1 <sup>st</sup> term	

<b>Attendance</b>			Major Required: MGNT2610	3
			Major Elective(s): 2-3 courses	6-9
			2 <sup>nd</sup> term	
			Major Required: MGNT4010	3
			Major Elective(s): 2-3 courses	6-9
<b>Total (including Faculty Package):</b>		<b>75</b>	<b>Total (including Faculty Package):</b>	<b>55-58</b>