



## Program Information

**Academic Program:** (334 new curriculum) B.Eng. in Systems Engineering and Engineering Management

**Academic Year:** 2022

**Select Language:**

[Study Scheme](#)

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## Study Scheme

### Systems Engineering and Engineering Management Applicable to students admitted in 2022-23

#### 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 (all courses in group (a), one course from group (b), and one course from group (c) are required): (a) ENGG2440/ESTR2004, ENGG2760/ESTR2018, ENGG2780/ ESTR2020, MATH1510[a], SEEM2440/ESTR2500 (b) Programming Courses: CSCI1120/ESTR1100, CSCI1130/ ESTR1102 (c) Other Courses[b][c]: ENGG1310/ESTR1003, ENGG2720/ ESTR2014, ENGG2740/ESTR2016, PHYS1003, 1110, SEEM2460/ESTR2540	18
3. Required Courses: (a) CSCI2040#, CSCI2100#/ESTR2102, SEEM2420, 2602, 3410, SEEM3440/ESTR3500, SEEM3450/ESTR3502, SEEM3550/ ESTR3506, SEEM3650/ESTR3516 (b) Research Component Courses[d]: SEEM4998, 4999	24  6
4. Elective Courses: AIST3510#/SEEM3510, CSCI4140#, ENGG1820, FTEC4001#, 4002#, 4005#, 4007#, IERG4210#, MKTG2010#, SEEM2520, 3430, SEEM3460/ESTR3504, SEEM3490, 3500, 3580, SEEM3590/ESTR3509, SEEM3620/ESTR3514, SEEM3630/ESTR3510, SEEM3680/ESTR3512, SEEM4540, 4570, 4630, 4670, SEEM4720/ESTR4506, SEEM4730/ESTR4508, SEEM4750/ESTR4510, SEEM4760/ESTR4512	18

#### Streams of Specialization

There are two streams: Business Information Systems, and Decision Analytics. Students choosing a stream should take at least six courses from the corresponding list for their chosen stream. Students who do not wish to specialize in any of the two streams should follow a study scheme devised with the advice of the academic advisers of the Department.

- (a) Business Information Systems  
Required Courses (6 units):  
SEEM3430, 4540  
Elective Courses (12 units):  
AIST3510/SEEM3510, CSCI4140, ENGG1820, FTEC4001, 4005,  
4007, IERG4210, SEEM3460/ESTR3504, SEEM3490,  
SEEM3680/ESTR3512, SEEM4570, 4630
- (b) Decision Analytics  
Required Courses (6 units):

SEEM3620/ESTR3514, SEEM4760/ESTR4512

Elective Courses (12 units):

ENGG1820, FTEC4002, 4005, MKTG2010, SEEM2520, 3500, 3580,  
SEEM3590/ESTR3509, SEEM3630/ESTR3510, SEEM4630, 4670,  
SEEM4720/ESTR4506, SEEM4730/ESTR4508, SEEM4750/  
ESTR4510

**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. ENGG, ESTR and SEEM courses at 2000 and above level as well as those labeled as # will be included in the calculation of Major GPA for honours classification, excluding courses in Faculty Package and Foundation courses.
  2. Full exemption from the qualifying examination will be granted by the Chartered Institute of Logistics and Transport in Hong Kong (CILTHK) to graduates with successful completion of courses MKTG2010, SEEM2520, SEEM3620/ESTR3514 and SEEM4750/ESTR4510 plus a final year project in transport/logistics.
- [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/ESTR1006, will also be dropped.
- [b] If students choose a Physics course from this group, the course shall be taken in accordance with students' HKDSE results or placement test results as follows:
- 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 ENGG1310/ESTR1003 or PHYS1110.
  - ii) Students with HKDSE results but did not attain the academic levels as stated in (i) shall take PHYS1003.
  - 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 ENGG1310/ESTR1003 or PHYS1110. Students who fail or are absent from the placement test shall take PHYS1003.
- [c] Students are recommended to take SEEM2460/ESTR2540.
- [d] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for SEEM4998 and 4999.
- [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](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.
- [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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<b>First Year of Attendance</b>	1 <sup>st</sup> term Faculty Package: ENGG1110/ESTR1002 Major Required: MATH1510 Major Elective(s):	3 3
	2 <sup>nd</sup> term Faculty Package: ENGG1120/ESTR1005, ENGG1130/ESTR1006 Major Required: 1 Foundation course Major Elective(s):	6 2
<b>Second Year of Attendance</b>	1 <sup>st</sup> term Major Required: CSCI1120/1130/ESTR1100/1102, ENGG2440/ESTR2004, ENGG2760/ESTR2018, SEEM2440/ESTR2500 Major Elective(s):	11
	2 <sup>nd</sup> term Major Required: CSCI2100/ESTR2102, ENGG2780/ESTR2020, SEEM2420, 2602 Major Elective(s):	9
<b>Third Year of Attendance</b>	1 <sup>st</sup> term Major Required: CSCI2040, SEEM3410, SEEM3440/ESTR3500 Major Elective(s): 1 course	8 3
	2 <sup>nd</sup> term Major Required: SEEM3550/ESTR3506, SEEM3650/ESTR3516 Major Elective(s): 1 course	6 3
<b>Fourth Year of Attendance</b>	1 <sup>st</sup> term Major Required: SEEM4998 Major Elective(s): 2 courses	3 6
	2 <sup>nd</sup> term Major Required: SEEM3450/ESTR3502, SEEM4999 Major Elective(s): 2 courses	6 6
<b>Total (including Faculty Package):</b>		<b>75</b>

### Major Programme Requirement (for Associate Degree or Higher Diploma holders admitted to senior-year places)

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

	Units
1. Faculty Package: ENGG1110/ESTR1002	3
2. Foundation Mathematics Courses: ENGG2760/ESTR2018, ENGG2780/ESTR2020	4
3. Required Courses:	
(a) CSCI2040#, CSCI2100#/ESTR2102, SEEM2420, 2602, 3410, SEEM3440/ESTR3500, SEEM3450/ESTR3502, SEEM3550/ESTR3506, SEEM3650/ESTR3516	24
(b) Research Component Courses[a]: SEEM4998, 4999	6
4. Elective Courses:	18
AIST3510#/SEEM3510, CSCI4140#, ENGG1820, FTEC4001#, 4002#, 4005#, 4007#, IERG4210#, MKTG2010#, SEEM2520, 3430, SEEM3460/ESTR3504, SEEM3490, 3500, 3580, SEEM3590/ESTR3509, SEEM3620/ESTR3514, SEEM3630/ESTR3510, SEEM3680/ESTR3512, SEEM4540, 4570, 4630, 4670, SEEM4720/ESTR4506, SEEM4730/ESTR4508, SEEM4750/ESTR4510, SEEM4760/ESTR4512	

### Streams of Specialization

There are two streams: Business Information Systems, and Decision Analytics. Students choosing a stream should take at least six courses from the corresponding list for their chosen stream. Students who do not wish to specialize in any of the two streams should follow a study scheme devised

with the advice of the academic advisers of the Department.

- (a) Business Information Systems  
 Required Courses (6 units):  
 SEEM3430, 4540  
 Elective Courses (12 units):  
 AIST3510/SEEM3510, CSCI4140, ENGG1820, FTEC4001, 4005,  
 4007, IERG4210, SEEM3460/ESTR3504, SEEM3490,  
 SEEM3680/ESTR3512, SEEM4570, 4630
- (b) Decision Analytics  
 Required Courses (6 units):  
 SEEM3620/ESTR3514, SEEM4760/ESTR4512  
 Elective Courses (12 units):  
 ENGG1820, FTEC4002, 4005, MKTG2010, SEEM2520, 3500,  
 3580, SEEM3590/ESTR3509, SEEM3630/ESTR3510, SEEM4630,  
 4670, SEEM4720/ESTR4506, SEEM4730/ ESTR4508,  
 SEEM4750/ESTR4510

**Total:** 55

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[b]

Elective Courses:

15 units of courses[c]:

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

Explanatory Notes:

1. ENGG, ESTR and SEEM courses at 2000 and above level as well as those labeled as # will be included in the calculation of Major GPA for honours classification, excluding courses in Faculty Package and Foundation Mathematics courses.
  2. Full exemption from the qualifying examination will be granted by the Chartered Institute of Logistics and Transport in Hong Kong (CILTHK) to graduates with successful completion of courses MKTG2010, SEEM2520, SEEM3620/ESTR3514 and SEEM4750/ESTR4510 plus a final year project in transport/logistics.
- [a] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for SEEM4998 and 4999.
  - [b] 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.
  - [c] 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.
  - [d] 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).
  - [e] 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.

	<b>Recommended Course Pattern (for Associate Degree or Higher Diploma holders admitted to senior-year places)</b>	Units
<b>First Year of Attendance</b>	1 <sup>st</sup> term Faculty Package: ENGG1110/ESTR1002 Major Required: CSCI2040, ENGG2760/ESTR2018 Major Elective(s): 1 course	3 4 3
	2 <sup>nd</sup> term Major Required: CSCI2100/ESTR2102, ENGG2780/ ESTR2020, SEEM2420, 2602, SEEM3550/ESTR3506 Major Elective(s): 1 course	12 3

<b>Second Year of Attendance</b>	1 <sup>st</sup> term	
	Major Required: SEEM3410, SEEM3440/ESTR3500, SEEM4998	9
	Major Elective(s): 2 courses	6
	2 <sup>nd</sup> term	
	Major Required: SEEM3450/ESTR3502, SEEM3650/ESTR3516, SEEM4999	9
	Major Elective(s): 2 courses	6
<b>Total (including Faculty Package):</b>		<b>55</b>

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

**1st Degree: Bachelor of Engineering (Systems Engineering and Engineering Management)**

**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 (all courses in group (a), one course from group (b), and one course from group (c) are required): (a) ENGG2440/ESTR2004, ENGG2760/ESTR2018, ENGG2780/ESTR2020, MATH1510[a], SEEM2440/ESTR2500 (b) Programming Courses: CSCI1120/ESTR1100, CSCI1130/ESTR1102 (c) Other Courses[b][c]: ENGG1310/ESTR1003, ENGG2720/ESTR2014, ENGG2740/ESTR2016, PHYS1003, 1110, SEEM2460/ESTR2540	18
3. Required Courses: (a) CSCI2040#, CSCI2100#/ESTR2102, SEEM2420, 2602, 3410, SEEM3440/ESTR3500, SEEM3450/ESTR3502, SEEM3550/ESTR3506, SEEM3650/ESTR3516 (b) Research Component Courses[d]: SEEM4998, 4999	24 6
4. Elective Courses: AIST3510#/SEEM3510, CSCI4140#, ENGG1820, FTEC4001#, 4002#, 4005#, 4007#, IERG4210#, MKTG2010#, SEEM2520, 3430, SEEM3460/ESTR3504, SEEM3490, 3500, 3580, SEEM3590/ESTR3509, SEEM3620/ESTR3514, SEEM3630/ESTR3510, SEEM3680/ESTR3512, SEEM4540, 4570, 4630, 4670, SEEM4720/ESTR4506, SEEM4730/ESTR4508, SEEM4750/ESTR4510, SEEM4760/ESTR4512	18

**Streams of Specialization**

There are two streams: Business Information Systems, and Decision Analytics. Students choosing a stream should take at least six courses from the corresponding list for their chosen stream. Students who do not wish to specialize in any of the two streams should follow a study scheme devised with the advice of the academic advisers of the Department.

- (a) Business Information Systems  
Required Courses (6 units):  
SEEM3430, 4540  
Elective Courses (12 units):  
AIST3510/SEEM3510, CSCI4140, ENGG1820, FTEC4001, 4005, 4007, IERG4210, SEEM3460/ESTR3504, SEEM3490, SEEM3680/ESTR3512, SEEM4570, 4630
- (b) Decision Analytics  
Required Courses (6 units):  
SEEM3620/ESTR3514, SEEM4760/ESTR4512  
Elective Courses (12 units):  
ENGG1820, FTEC4002, 4005, MKTG2010, SEEM2520, 3500, 3580, SEEM3590/ESTR3509, SEEM3630/ESTR3510, SEEM4630, 4670,

SEEM4720/ESTR4506, SEEM4730/ESTR4508, SEEM4750/  
ESTR4510

**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. ENGG, ESTR and SEEM courses at 2000 and above level as well as those labeled as # will be included in the calculation of Major GPA for honours classification, excluding courses in Faculty Package and Foundation courses.
2. Full exemption from the qualifying examination will be granted by the Chartered Institute of Logistics and Transport in Hong Kong (CILTHK) to graduates of the first degree with successful completion of courses MKTG2010, SEEM2520, SEEM3620/ESTR3514 and SEEM4750/ESTR4510 plus a final year project in transport/logistics.
3. 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.
  - [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/ESTR1006, will also be dropped.
  - [b] If students choose a Physics course from this group, the course shall be taken in accordance with students' HKDSE results or placement test results as follows:
    - 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 ENGG1310/ESTR1003 or PHYS1110.
    - ii) Students with HKDSE results but did not attain the academic levels as stated in (i) shall take PHYS1003.
    - 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 ENGG1310/ESTR1003 or PHYS1110. Students who fail or are absent from the placement test shall take PHYS1003.
  - [c] Students are recommended to take SEEM2460/ESTR2540.
  - [d] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for SEEM4998 and 4999.
  - [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](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.
  - [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.

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 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 programme 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 56 units of courses as follows:

	Units
1. Faculty Package: DSME1030, 1040, MGNT1020	9
2. Required Courses: ACCT2111, 2121, 2151 or 3151[a], DSME2011, 2030, 2051, FINA2010, IBBA3040, MGNT2511, 2512, 2611, 4010, MKTG2010	32-33
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: DSME3000, 3011, 3030, 3050, 3080, 3090, 4040, 4080; and	
(iii) one DSME course at 3000 or above level, excluding the courses 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) Finance	
(i) DSME2021 or FINA2020; and	
(ii) 15 units of FINA courses at 3000 or above level, with no more than three 1-unit FINA courses	
(d) Entrepreneurship	
(i) MGNT1070, 2070, 3070, 4170; and	
(ii) two courses selected from: MGNT4070, 4090, 4130, 4270, 4570	
(e) Management of International Business	
(i) MGNT3580, 4150; and	
(ii) four courses selected from: MGNT3010, 3080, 3100, 4080, 4090, 4110, 4130, 4140, 4510, 4530, 4540, 4550, 4570	
(f) Human Resource Management	
(i) MGNT2040, 3010; and	
(ii) four courses selected from: MGNT3040, 3060, 3090, 3100, 4050, 4060, 4080, 4110, 4130, 4140	
(g) Marketing	
(i) MKTG3010, 3020, 3030, 4040; and	
(ii) two courses selected from: MKTG3040, 3050, 4010, 4020, 4030, 4050, 4070, 4080, 4090, 4110, 4160	
(h) Big Data and Quantitative Marketing	

- (ii) **Big Data and Quantitative Marketing**
  - (i) MKTG3010, 3060, 4080, 4090; and
  - (ii) two courses selected from: MKTG3020, 4030, 4050, 4120, 4150, 4160, 4170, 4180, 4190
- (i) **General Business**
  - (i) 3 units of DSME/FINA/MGNT/MKTG courses at 2000 or above level; 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: 56-60**

**Explanatory Notes:**

1. ACCT/DSME/FINA/IBBA/MGNT/MKTG courses at 2000 and above level (excluding ACCT2111, 2121, IBBA3040, MGNT2511 and 2512) will be included in the calculation of Major GPA for honours classification.
  2. Double concentrations in Marketing and Big Data 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 (c).  
MGNT3010 and the associated units can be used to satisfy concentration requirements of double concentrations within (e) and (f).
  4. Courses taken for the concentration requirements of General Business Concentration cannot be counted towards the requirements of concentrations (a) to (h).
  5. Students claiming Entrepreneurship Concentration are not allowed to declare Minor in Entrepreneurship and Innovation.
- [a] ACCT2151 and ACCT3151 are mutually exclusive. Students who would like to pursue a career in accounting profession are advised to take ACCT3151 instead of ACCT2151.

**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 ENGG2450/ESTR2005 OR ENGG2760/ESTR2018 and ENGG2780/ESTR2020.
2. DSME2051 and the associated units can be exempted from the requirement of the second degree by successfully completing SEEM3490.
3. DSME4120 and the associated units can be exempted from the requirement of the second degree by successfully completing SEEM3430.
4. FINA3010 and the associated units can be used to satisfy both the requirements of the first and second degrees.
5. MKTG2010 and the associated units can be used to satisfy both the requirements of the first and second degrees.

<b>Recommended Course Pattern</b>				
	<b>1<sup>st</sup> degree: Bachelor of Engineering (Systems Engineering and Engineering Management)</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: ENGG1110/ ESTR1002 Major Required: MATH1510 Major Elective(s):	3 3	1 <sup>st</sup> term Faculty Package: Major Required: Major Elective(s):	
	2 <sup>nd</sup> term Faculty Package: ENGG1120/ ESTR1005, ENGG1130/ ESTR1006 Major Required: 1 Foundation course Major Elective(s):	6 2	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: CSCI1120/ 1130/ESTR1100/1102, ENGG2440/ESTR2004, ENGG2760/ESTR2018, SEEM2440/ESTR2500 Major Elective(s):	11	1 <sup>st</sup> term Faculty Package: DSME1030 Major Required: Major Elective(s):	3



	2 <sup>nd</sup> term Major Required: CSCI2100/ ESTR2102, ENGG2780/ ESTR2020, SEEM2420, 2602 Major Elective(s):	9	2 <sup>nd</sup> term Faculty Package: DSME1040, MGNT1020 Major Required: Major Elective(s):	6
<b>Third Year of Attendance</b>	1 <sup>st</sup> term Major Required: CSCI2040, SEEM3410, SEEM3440/ ESTR3500 Major Elective(s): 2 courses	8 6	1 <sup>st</sup> term Major Required: Major Elective(s):	
	2 <sup>nd</sup> term Major Required: SEEM3550/ ESTR3506, SEEM3650/ ESTR3516 Major Elective(s): 1 course	6 3	2 <sup>nd</sup> term Major Required: FINA2010, DSME2011 Major Elective(s):	7
<b>Fourth Year of Attendance</b>	1 <sup>st</sup> term Major Required: SEEM4998 Major Elective(s): 3 courses	3 9	1 <sup>st</sup> term Major Required: ACCT2111, MGNT2512, 2611 Major Elective(s):	6
	2 <sup>nd</sup> term Major Required: SEEM3450/ ESTR3502, SEEM4999 Major Elective(s):	6	2 <sup>nd</sup> term Major Required: ACCT2121, MKTG2010, MGNT2511 Major Elective(s): 1 course	7 3
<b>Fifth Year of Attendance</b>			1 <sup>st</sup> term Major Required: ACCT2151/ 3151, DSME2030, 2051, IBBA3040 Major Elective(s): 2 courses	9-10 6
			2 <sup>nd</sup> term Major Required: MGNT4010 Major Elective(s): 2-3 courses	3 6-9
<b>Total (including Faculty Package):</b>		<b>75</b>	<b>Total (including Faculty Package):</b>	<b>56-60</b>

**Minor Programme Title**

Logistics and Supply Chain Management

**Minor Programme Requirement**

Students are required to complete a minimum of 18 units of courses, with at least 6 units at 3000 or above level, as follows:

	Units
1. Required Courses: SEEM2420, SEEM3620/ESTR3514, SEEM4750/ESTR4510	9
2. Elective Courses: Any 3 courses from the following: SEEM3440/ESTR3500, SEEM3450/ESTR3502, SEEM3500, SEEM3630/ESTR3510, SEEM3650/ESTR3516, SEEM4670, SEEM4760/ESTR4512	9
<b>Total:</b>	<b>18</b>

## Explanatory Note:

- This Minor Programme is not applicable to students who major in Systems Engineering and Engineering Management and the Bachelor of Engineering (Systems Engineering and Engineering Management) and Bachelor of Business Administration (Integrated BBA Programme) Double Degree Option; and students in the Mathematics-Multidisciplinary Stream of Mathematics Major Programme.

**Course List**

Course Code	Course Title	Unit(s)
ENGG1310	Engineering Physics: Electromagnetics, Optics and Modern Physics	3
ENGG1820	Engineering Internship	1
ENGG2440	Discrete Mathematics for Engineers	3
ENGG2720	Complex Variables for Engineers	2

Course Code	Course Title	Credits
ENG2740	Differential Equations for Engineers	2
ENG2760	Probability for Engineers	2
ENG2780	Statistics for Engineers	2
ESTR1003	Engineering Physics: Electromagnetics, Optics and Modern Physics	3
ESTR2004	Discrete Mathematics for Engineers	3
ESTR2014	Complex Variables for Engineers	2
ESTR2016	Differential Equations for Engineers	2
ESTR2018	Probability for Engineers	2
ESTR2020	Statistics for Engineers	2
ESTR2500	Engineering Economics	3
ESTR2540	Introduction to Data Science	3
ESTR3500	Operations Research II	3
ESTR3502	Engineering Innovation and Entrepreneurship	3
ESTR3504	Computer Processing Concepts	3
ESTR3506	Fundamentals in Information Systems	3
ESTR3509	Investment Science	3
ESTR3510	Service Management	3
ESTR3512	Technology, Consulting and Analytics in Practice	3
ESTR3514	Introduction to Logistics and Supply Chain Management	3
ESTR3516	Fundamentals in Decision and Data Analytics	3
ESTR4506	Computational Finance	3
ESTR4508	Statistics Modeling and Analysis in Financial Engineering	3
ESTR4510	Advances in Logistics and Supply Chain Management	3
ESTR4512	Stochastic Models for Decision Analytics	3
SEEM2420	Operations Research I	3
SEEM2440	Engineering Economics	3
SEEM2550	Differential Equations	3
SEEM2460	Introduction to Data Science	3
SEEM2520	Fundamentals in Financial Engineering	3
SEEM2602	Systems Engineering Practicum	1
SEEM3410	System Simulation	3
SEEM3430	Information Systems Analysis and Design	3
SEEM3440	Operations Research II	3
SEEM3450	Engineering Innovation and Entrepreneurship	3
SEEM3460	Computer Processing Concepts	3
SEEM3470	Dynamic Optimization and Applications	3
SEEM3490	Information Systems Management	3
SEEM3500	Quality Control and Management	3
SEEM3510	Human and Computer Interaction	3
SEEM3550	Fundamentals in Information Systems	3
SEEM3580	Risk Analysis for Financial Engineering	3
SEEM3590	Investment Science	3
SEEM3620	Introduction to Logistics and Supply Chain Management	3
SEEM3630	Service Management	3
SEEM3650	Fundamentals in Decision and Data Analytics	3
SEEM3680	Technology, Consulting and Analytics in Practice	3
SEEM4540	Open Systems for E-Commerce	3
SEEM4570	System Design and Implementation	3
SEEM4630	E-Commerce Data Mining	3
SEEM4670	Service Systems	3
SEEM4720	Computational Finance	3
SEEM4730	Statistics Modeling and Analysis in Financial Engineering	3
SEEM4750	Advances in Logistics and Supply Chain Management	3
SEEM4760	Stochastic Models for Decision Analytics	3
SEEM4998	Final Year Project I	3
SEEM4999	Final Year Project II	3

[Study Scheme](#)

[Learning Outcomes](#)

## Learning Outcomes

### Major Programme:

Through the course of their studies, SEEM students will have developed:

- (1) The ability to apply knowledge of mathematics, science, and engineering appropriate to the degree discipline (K/S).

- degree discipline (K/S) ;
- (2) The ability to design and conduct experiments, as well as to analyze and interpret data (K/S) ;
  - (3) The ability to design a system, component, or process to meet desired needs within realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability (K/S) ;
  - (4) The ability to function in multi-disciplinary teams (S/V) ;
  - (5) The ability to identify, formulate, and solve engineering problems (K/S) ;
  - (6) The understanding of professional and ethical responsibility (V) ;
  - (7) The ability to communicate effectively (S) ;
  - (8) The ability to understand the impact of engineering solutions in a global and societal context, especially the importance of health, safety and environmental considerations to both workers and the general public (V) ;
  - (9) The ability to stay abreast of contemporary issues (S/V) ;
  - (10) The ability to recognize the need for, and to engage in life-long learning (V) ;
  - (11) The ability to use the techniques, skills, and modern engineering tools necessary for engineering practice appropriate to the degree discipline (K/S) ;
  - (12) The ability to use the computer/IT tools relevant to the discipline along with an understanding of their processes and limitations (K/S/V) ;
  - (13) The ability to apply the skills relevant to the discipline of operations research and information technology and their applications in engineering and managerial decision making, especially in financial services, logistics and supply chain management, business information systems, and service engineering and management (K/S) .

**K = Knowledge outcomes S =Skills outcomes V = Values and attitude outcomes**

#### Minor Programme:

Upon completion of their studies, LSCM students will have developed:

- (1) An understanding of the role of logistics and supply chain management in modern economics;
- (2) The ability to apply knowledge of mathematics, science, and engineering appropriate to logistics and supply chain management;
- (3) The ability to identify, formulate, and solve problems in logistics and supply chain management;
- (4) The ability to use the techniques, skills, and modern engineering tools necessary for engineering practice appropriate to logistics and supply chain management;
- (5) The ability to apply the skills relevant to the discipline of logistic and supply chain management in related innovations, such as in the areas of e-commerce, the incorporation of supply chain with techniques of block chain and big data analytics.

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