Program Information

Academic Program: (334 new curriculum) B.Eng. in Systems Engineering and Engineering Management
Academic Year: 2019

Select Language: English

Study Scheme Learning Outcomes

Study Scheme

Systems Engineering and Engineering Management
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 (all courses in group (a) and one course from group (b) are required):	
(a)	ENGG2440/ESTR2004, ENGG2760/ESTR2018, ENGG2780/ESTR2020, MATH1510[a]	10
(b)	Physics Courses[b]: ENGG1310/ESTR1003, PHYS1003, 1110	3
(c)	Other Courses[c]: CHEM1280, 1380, CSCI1120/ESTR1100, CSCI1130/ESTR1102, ENGG2720/ESTR2014, ENGG2740/ESTR2016, LSCI1001, 1003, SEEM2440/ESTR2500, SEEM2460/ESTR2540	5
3.	Required Courses:	
(a)	CSCI2040#, CSCI2100#/ESTR2102, SEEM2420, 2602, 3410, SEEM3440/ESTR3500, SEEM3450/ESTR3502, SEEM3460/ESTR3504, SEEM3550/ESTR3506	24
(b)	Research Component Courses[d]: SEEM4998, 4999	6
4.	Elective Courses: AIST3510#/SEEM3510, CSCI4140#, ENGG1820, FINA3010#, IERG4210#, MATH4210#, MKTG2010#, RMSC2001#, SEEM2520, 3430, 3490, 3500, SEEM3570/ESTR3508, SEEM3580, SEEM3590/ESTR3509, SEEM3630/ESTR3510, SEEM3680/4680/ESTR3512/4504, SEEM4480, 4540, 4570, SEEM4600/ESTR4500, SEEM4610/ESTR4502, SEEM4630, 4670, SEEM4720/ESTR4506, SEEM4730/ESTR4508	18

Streams of Specialization
There are four streams: Business Information Systems, Financial Engineering, Logistics and Supply Chain Management, and Service Engineering and Management. 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 four 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, SEEM3490, SEEM3680/4680/ESTR3512/4504, SEEM4480, 4570, 4630, 4670

(b) Financial Engineering
Required Courses (6 units):
SEEM2520, SEEM3570/ESTR3508
Elective Courses (12 units):
MATH4210, SEEM3580, SEEM3590/ESTR3509, SEEM4480, SEEM4720/ESTR4506, SEEM4730/ESTR4508

(c) Logistics and Supply Chain Management
Required Courses (6 units):
SEEM4600/ESTR4500, SEEM4610/ESTR4502
Elective Courses (12 units):
MKTG2010, SEEM2520, 3500, SEEM3630/ESTR3510, SEEM3680/4680/ESTR3512/4504, SEEM4480, 4630

(d) Service Engineering and Management
Required Courses (6 units):
SEEM3630/ESTR3510, SEEM4670
Elective Courses (12 units):
MKTG2010, SEEM3500, SEEM3570/ESTR3508, SEEM3680/4680/ESTR3512/4504, SEEM4480, SEEM4610/ESTR4502, SEEM4630

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. 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.
3. 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 the requirements of the Stream of Specialization in Logistics and Supply Chain Management.

[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] The compulsory Physics 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 SEEM2440/ESTR2500 and 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). 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	1st term Faculty Package: ENGG1110/ESTR1002 Major Required: MATH1510, 1 or 2 Foundation courses Major Elective(s):	3 5-9
	2nd term Faculty Package: ENGG1120/ESTR1005, ENGG1130/ ESTR1006 Major Required: 1 or 2 Foundation courses Major Elective(s):	6 2-6
Second Year of Attendance	1st term Major Required: CSCI2040, ENGG2440/ESTR2004, ENGG2760/ESTR2018, SEEM2602	8

	ENGG2700/ESTR2018, SEEM2002 Major Elective(s):	
	2nd term Major Required: CSCI2100/ESTR2102, ENGG2780/ ESTR2020, SEEM2420 Major Elective(s):	8
Third Year of Attendance	1st term Major Required: SEEM3410, SEEM3440/ESTR3500, SEEM3460/ESTR3504 Major Elective(s): 1 course	9 3
	2nd term Major Required: SEEM3550/ESTR3506 Major Elective(s): 1 course	3 3
Fourth Year of Attendance	1st term Major Required: SEEM4998 Major Elective(s): 2 courses	3 6
	2nd term Major Required: SEEM3450/ESTR3502, SEEM4999 Major Elective(s): 2 courses	6 6
	Total (including Faculty Package):	**75**

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

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

		Units
1.	Faculty Package: ENGG1110/ESTR1002	3
2.	Foundation Courses: ENGG2450/ESTR2005	3
3.	Required Courses:	
(a)	CSCI2040#, CSCI2100#/ESTR2102, SEEM2420, 2602, 3410, SEEM3440/ESTR3500, SEEM3450/ESTR3502, SEEM3460/ ESTR3504, SEEM3550/ESTR3506	24
(b)	Research Component Courses[a]: SEEM4998, 4999	6
4.	Elective Courses: AIST3510#/SEEM3510, CSCI4140#, ENGG1820, FINA3010#, IERG4210#, MATH4210#, MKTG2010#, RMSC2001#, SEEM2520, 3430, 3490, 3500, SEEM3570/ESTR3508, SEEM3580, SEEM3590/ESTR3509, SEEM3630/ESTR3510, SEEM3680/4680/ESTR3512/4504, SEEM4480, 4540, 4570, SEEM4600/ESTR4500, SEEM4610/ESTR4502, SEEM4630, 4670, SEEM4720/ESTR4506, SEEM4730/ESTR4508	18

Streams of Specialization

There are four streams: Business Information Systems, Financial Engineering, Logistics and Supply Chain Management, and Service Engineering and Management. 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 four 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, SEEM3490, SEEM3680/4680/ ESTR3512/4504, SEEM4480, 4570, 4630, 4670

(b) Financial Engineering
Required Courses (6 units):
SEEM2520, SEEM3570/ESTR3508
Elective Courses (12 units):
MATH4210, SEEM3580, SEEM3590/ESTR3509, SEEM4480, SEEM4720/ESTR4506, SEEM4730/ESTR4508

(c) Logistics and Supply Chain Management
Required Courses (6 units):
SEEM4600/ESTR4500, SEEM4610/ESTR4502
Elective Courses (12 units):
MKTG2010, SEEM2520, 3500, SEEM3630/ESTR3510, SEEM3680/4680/ESTR3512/4504, SEEM4480, 4630

(d) Service Engineering and Management
Required Courses (6 units):
SEEM3630/ESTR3510, SEEM4670
Elective Courses (12 units):
MKTG2010, SEEM3500, SEEM3570/ESTR3508, SEEM3680/ 4680/ESTR3512/4504, SEEM4480, SEEM4610/ESTR4502,

SEEM4630

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[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 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 the requirements of the Stream of Specialization in Logistics and Supply Chain Management.

[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). 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.

	Recommended Course Pattern (for Associate Degree or Higher Diploma holders admitted to senior-year places)	Units
First Year of Attendance	1st term Faculty Package: ENGG1110/ESTR1002 Major Required: CSCI2040, CSCI2100/ESTR2102, SEEM2602, SEEM3410/3440/ESTR3500 Major Elective(s):	3 9
	2nd term Major Required: ENGG2450/ESTR2005, SEEM2420, SEEM3550/ESTR3506 Major Elective(s): 1 course	9 3
Second Year of Attendance	1st term Major Required: SEEM3410/3440/ESTR3500, SEEM3460/ ESTR3504, SEEM4998 Major Elective(s): 2 courses	9 6
	2nd term Major Required: SEEM3450/ESTR3502, SEEM4999 Major Elective(s): 3 courses	6 9
	Total (including Faculty Package):	**54**

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) and one course from group (b) are required):	
(a)	ENGG2440/ESTR2004, ENGG2760/ESTR2018, ENGG2780/ ESTR2020, MATH1510[a]	10
(b)	Physics Courses[b]: ENGG1310/ESTR1003, PHYS1003, 1110	3

(b)	Physics Courses[b]: ENGG1510/ESTR1005, PHYS1003, PHYS1004	5
(c)	Other Courses[c]: CHEM1280, 1380, CSCI1120/ESTR1100, CSCI1130/ESTR1102, ENGG2720/ESTR2014, ENGG2740/ESTR2016, LSCI1001, 1003, SEEM2440/ESTR2500, SEEM2460/ESTR2540	5
3.	Required Courses:	
(a)	CSCI2040#, CSCI2100#/ESTR2102, SEEM2420, 2602, 3410, SEEM3440/ESTR3500, SEEM3450/ESTR3502, SEEM3460/ESTR3504, SEEM3550/ESTR3506	24
(b)	Research Component Courses[d]: SEEM4998, 4999	6
4.	Elective Courses: AIST3510#/SEEM3510, CSCI4140#, ENGG1820, FINA3010#, IERG4210#, MATH4210#, MKTG2010#, RMSC2001#, SEEM2520, 3430, 3490, 3500, SEEM3570/ESTR3508, SEEM3580, SEEM3590/ESTR3509, SEEM3630/ESTR3510, SEEM3680/4680/ESTR3512/4504, SEEM4480, 4540, 4570, SEEM4600/ESTR4500, SEEM4610/ESTR4502, SEEM4630, 4670, SEEM4720/ESTR4506, SEEM4730/ESTR4508	18

Streams of Specialization

There are four streams: Business Information Systems, Financial Engineering, Logistics and Supply Chain Management, and Service Engineering and Management. 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 four 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, SEEM3490, SEEM3680/4680/ESTR3512/4504, SEEM4480, 4570, 4630, 4670	
(b)	Financial Engineering Required Courses (6 units): SEEM2520, SEEM3570/ESTR3508 Elective Courses (12 units): MATH4210, SEEM3580, SEEM3590/ESTR3509, SEEM4480, SEEM4720/ESTR4506, SEEM4730/ESTR4508	
(c)	Logistics and Supply Chain Management Required Courses (6 units): SEEM4600/ESTR4500, SEEM4610/ESTR4502 Elective Courses (12 units): MKTG2010, SEEM2520, 3500, SEEM3630/ESTR3510, SEEM3680/4680/ESTR3512/4504, SEEM4480, 4630	
(d)	Service Engineering and Management Required Courses (6 units): SEEM3630/ESTR3510, SEEM4670 Elective Courses (12 units): MKTG2010, SEEM3500, SEEM3570/ESTR3508, SEEM3680/4680/ESTR3512/4504, SEEM4480, SEEM4610/ESTR4502, SEEM4630	
	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. 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.
3. 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 the requirements of the Stream of Specialization in Logistics and Supply Chain Management.
4. 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, will also be dropped.

[b] The compulsory Physics 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 SEEM2440/ESTR2500 and 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). 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 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 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: DOTE[DSME]1030, 1040, MGNT1020	9
2.	Required Courses: ACCT2111, 2121, 2151 or 3151[a], DOTE[DSME]2011, 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) DOTE[DSME]2021, 4110;
(ii) two courses selected from: DOTE[DSME]3000, 3011, 3030, 3050, 3080, 3090, 4040, 4080; and
(iii) one DOTE[DSME] course at 3000 or above level, excluding the courses those taken for fulfillment of requirement (i) or (ii)

(b) Business Analytics
(i) DOTE[DSME]2021, 2040, 4020;
(ii) one course selected from: DOTE[DSME]4070, 4240, 4260; and
(iii) one course selected from: DOTE[DSME]3030, 4030, 4110, 4220, 4280, MKTG4120

(c) Finance
(i) DOTE[DSME]2021 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: MGNT3080, 4070, 4090, 4130, 4160, 4270, 4570, 4711, 4712, 4713

(e) Management of International Business
(i) MGNT3080, 3580, 4150; and
(ii) three courses selected from: MGNT3010, 3100, 4080, 4090, 4130, 4140, 4510, 4530, 4540, 4550, 4570, 4600, 4620

(f) Human Resource Management
(i) MGNT2040, 3010, 3090; and
(ii) three courses selected from: MGNT3040, 3060, 3100, 4050, 4060, 4080, 4110, 4130, 4140, 4620

(g) Marketing
(i) MKTG3010, 3020, 3030, 4040; and
(ii) two courses selected from: MKTG3040, 3050, 4010, 4020, 4030, 4050, 4070, 4080, 4090, 4110, 4160, 4200

(h) Big Data and Quantitative Marketing
(i) MKTG3010, 3060, 4080, 4120; and
(ii) two courses selected from: MKTG3020, 4030, 4050, 4070, 4090, 4150, 4160, 4170, 4180, 4190, 4200

(i) General Business
(i) 3 units of DOTE[DSME]/FINA/MGNT/MKTG courses at 2000 or above level; and
(ii) 12 units of DOTE[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/DOTE[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. DOTE[DSME]2021 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.

[ ] Subject area code “DSME” changed to “DOTE” with effect from 2024-25.

Explanatory Notes on Mutual Recognition or Exclusion:
1. DOTE[DSME]2011 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. DOTE[DSME]2051 and the associated units can be exempted from the requirement of the second degree by successfully completing SEEM3490.
3. DOTE[DSME]4120 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.

Recommended Course Pattern

	1st degree: Bachelor of Engineering (Systems Engineering and Engineering Management)	Units	**2nd degree: Bachelor of Business Administration (Integrated BBA Programme)**	Units
First Year of Attendance	1st term Faculty Package: ENGG1110/ ESTR1002 Major Required: MATH1510	 3 5.9	1st term Faculty Package: Major Required: Major Elective(s):	

	Major Required: MATH1510, 1 or 2 Foundation courses Major Elective(s):	3-9	Major Elective(s):	
	2nd term Faculty Package: ENGG1120/ ESTR1005, ENGG1130/ ESTR1006 Major Required: 1 or 2 Foundation courses Major Elective(s):	6 2-6	2nd term Faculty Package: Major Required: Major Elective(s):	
Second Year of Attendance	1st term Major Required: CSCI2040, ENGG2440/ESTR2004, ENGG2760/ESTR2018, SEEM2602 Major Elective(s):	8	1st term Faculty Package: DOTE[DSME]1030 Major Required: Major Elective(s):	3
	2nd term Major Required: CSCI2100/ ESTR2102, ENGG2780/ ESTR2020, SEEM2420 Major Elective(s):	8	2nd term Faculty Package: DOTE[DSME]1040, MGNT1020 Major Required: Major Elective(s):	6
Third Year of Attendance	1st term Major Required: SEEM3410, SEEM3440/ESTR3500, SEEM3460/ESTR3504 Major Elective(s): 2 courses	9 6	1st term Major Required: Major Elective(s):	
	2nd term Major Required: SEEM3550/ ESTR3506 Major Elective(s): 2 courses	3 6	2nd term Major Required: FINA2010, DOTE[DSME]2011 Major Elective(s):	7
Fourth Year of Attendance	1st term Major Required: SEEM4998 Major Elective(s): 2 courses	3 6	1st term Major Required: ACCT2111, MGNT2512, 2611 Major Elective(s):	6
	2nd term Major Required: SEEM3450/ ESTR3502, SEEM4999 Major Elective(s):	6	2nd term Major Required: ACCT2121, MKTG2010, MGNT2511 Major Elective(s): 1 course	7 3
Fifth Year of Attendance			1st term Major Required: ACCT2151/ 3151, DOTE[DSME]2030, 2051, IBBA3040 Major Elective(s): 2 courses	9-10 6
			2nd term Major Required: MGNT4010 Major Elective(s): 2-3 courses	3 6-9
	Total (including Faculty Package):	**75**	**Total (including Faculty Package):**	**56-60**

Minor Programme Title
Engineering 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, SEEM3450/ESTR3502	6
2.	Elective Courses: ENGG2760/ESTR2018, ENGG2780/ESTR2020, MKTG2010, 3010, SEEM2520, 3410, SEEM3440/ESTR3500, SEEM3490, 3500, SEEM3570/ESTR3508, SEEM3630/ESTR3510, SEEM3680/4680/ ESTR3512/4504, SEEM4480, SEEM4600/ESTR4500, SEEM4610/ESTR4502, SEEM4630	12
	Total:	**18**

Explanatory Note:
1. This Minor Programme is not applicable to students who major in Systems Engineering and Engineering Management and students with the Double Degree options in Systems Engineering and Engineering Management/Integrated BBA or Integrated BBA/Systems Engineering and Engineering Management.

Minor Programme Title
Financial Engineering

Minor Programme Requirement

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

		Units
1.	Required Courses: SEEM2520, SEEM3570/ESTR3508, SEEM4720/ESTR4506	9
2.	Elective Courses: ECON3410, 3420, ENGG2760/ESTR2018, ENGG2780/ESTR2020, FINA2010, 3010, 3030, MATH4210, RMSC2001, SEEM2420, 3410, SEEM3440/ESTR3500, SEEM3580, SEEM3590/ESTR3509, SEEM4480, SEEM4730/ESTR4508	9
	Total:	**18**

Explanatory Note:

1. This Minor Programme is not applicable to students who major in Systems Engineering and Engineering Management and students with the Double Degree options in Systems Engineering and Engineering Management/Integrated BBA or Integrated BBA/Systems Engineering and Engineering Management.

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
ENGG2450	Probability and Statistics for Engineers	3
ENGG2720	Complex Variables for Engineers	2
ENGG2740	Differential Equations for Engineers	2
ENGG2760	Probability for Engineers	2
ENGG2780	Statistics for Engineers	2
ESTR1003	Engineering Physics: Electromagnetics, Optics and Modern Physics	3
ESTR2004	Discrete Mathematics for Engineers	3
ESTR2005	Probability and Statistics 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
ESTR3508	Stochastic Models	3
ESTR3509	Investment Science	3
ESTR3510	Service Management	3
ESTR3512	Technology, Consulting and Analytics in Practice	3
ESTR4500	Logistics Management	3
ESTR4502	Supply Chain Management	3
ESTR4504	Technology, Consulting and Analytics in Practice	3
ESTR4506	Computational Finance	3
ESTR4508	Statistics Modeling and Analysis in Financial Engineering	3
SEEM2420	Operations Research I	3
SEEM2440	Engineering Economics	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
SEEM3490	Information Systems Management	3
SEEM3500	Quality Control and Management	3
SEEM3510	Human and Computer Interaction	3
SEEM3550	Fundamentals in Information Systems	3
SEEM3570	Stochastic Models	3
SEEM3580	Risk Analysis for Financial Engineering	3
SEEM3590	Investment Science	3
SEEM3630	Service Management	3
SEEM3680	Technology, Consulting and Analytics in Practice	3
SEEM4480	Decision Methodology and Applications	3
SEEM4540	Open Systems for E-Commerce	3
SEEM4570	System Design and Implementation	3
SEEM4600	Logistics Management	3
SEEM4610	Supply Chain Management	3
SEEM4630	E-Commerce Data Mining	3
SEEM4670	Service Systems	3
SEEM4680	Technology, Consulting and Analytics in Practice	3

SEEM4720	Computational Finance	3
SEEM4730	Statistics Modeling and Analysis in Financial Engineering	3
SEEM4998	Final Year Project I	3
SEEM4999	Final Year Project II	3

Study Scheme Learning Outcomes

Learning Outcomes

1. 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)
(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

2. Minor Programmes:

(i) Engineering Management

Upon completion of the Minor programme, students will have

(1) an understanding of the role of engineering management in manufacturing and service organizations
(2) the knowledge of how the engineering functions are integrated with other functional areas such as manufacturing, market research, etc.
(3) the ability to conduct assessment of new projects and ventures
(4) the ability to apply techniques and skills for managing projects

(ii) Financial Engineering

Upon completion of the Minor programme, students will have

(1) an understanding of financial instruments: their features, properties, design, pricing, and risk
(2) the ability to make use of mathematical models to design and price these financial instruments and to assess their risk
(3) the ability to make use of information technologies to support the analysis, marketing and trading of these financial instruments

Course Information

Return to Search Previous in List Next in List