

Information 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: ENGG2440/ESTR2004, IERG2060/ESTR2304, MATH1510[a], and one of the following courses: AIST1110, CHEM1280, 1380, CSCI1120/ESTR1100, CSCI1130/ESTR1102, ELEG2700, ENGG1310/ESTR1003[b], ENGG2720/ESTR2014, ENGG2740/ESTR2016, ENGG2780/ESTR2020, FTEC2101/ESTR2520, LSCI1001, 1003, MAEG1020, PHYS1003[b], 1110[b], SEEM2440/ESTR2500, SEEM2460/ESTR2540 | 11 |
| 3. | Required Courses: | |
| (a) | CSCI2100/ESTR2102, IERG1810, IERG2051/ESTR2302, IERG2080/ESTR2306, IERG2310/ESTR2300, IERG2470/ESTR2308, IERG2602/3840[c]/3842, 3060, IERG3080/ESTR3308, IERG3310/ESTR3310, IERG3800, 3810, 3820 | 29 |
| (b) | Research Component Courses[d]: IERG4998, 4999 | 6 |
| 4. | Elective Courses: Out of the 20 Elective Course units, at least 15 units should be from the following courses: CSCI3150/ESTR3102, CSCI3160/ESTR3104, ENGG1820, IERG3010/ESTR3300, IERG3050, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG3320/ESTR3306, IERG3830, IERG4004/FTEC4004, IERG4030/ESTR4320, IERG4060, IERG4080/ESTR4312, IERG4090/ESTR4302, IERG4100/ESTR4304, IERG4110/ESTR4314, IERG4120/ESTR4328, IERG4130/CSCI4130/ESTR4306, IERG4150/ESTR4322, IERG4160, IERG4180/ESTR4308, IERG4190, 4210, 4220, 4230, IERG4300/ESTR4300, IERG4320/ESTR4324, IERG4330/ESTR4316, IERG4340, 4350, IERG4360/ESTR4326, IERG4831, 4841, 4851, 5020, IERG5040/ENGG5392, IERG5090, IERG5100/ENGG5303, IERG5110, 5130, 5140, IERG5154/ENGG5301, IERG5200, 5230, IERG5240/ENGG5383, IERG5254, 5280, 5290, IERG5300/ENGG5302, IERG5310, 5320, 5330, 5340, 5350, 5360, 5380, 5590 | 20 |

The remaining units, if any, can be fulfilled by any AIST/BMEG/CENG/CSCI/EEEN/ELEG/ENER/ENGG/ESTR/FTEC/MAEG/SEEM course(s) at 3000 and above level.

Streams

Students may choose not to specialize in any stream or to specialize in no more than two streams and complete a minimum of 12 units of courses prescribed by the stream.

Big Data: Systems and Applications

CSCI3320, CSCI4180/ESTR4106, CSCI4190, ELEG5491, IERG3320/ESTR3306, IERG4080/ESTR4312, IERG4120/ESTR4328, IERG4160, 4230, IERG4300/ESTR4300 (required), IERG4320/ESTR4324, IERG4330/ESTR4316, IERG5130, 5350

Communications

IERG3010/ESTR3300, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG4030/ESTR4320, IERG4060, IERG4100/ESTR4304, IERG4110/ESTR4314, IERG4130/CSCI4130/ESTR4306, IERG4230, 4340, 4851, 5020, IERG5040/ENGG5392, IERG5100/ENGG5303, IERG5110, 5200, 5230, 5280, 5330

Cyber Security

CSCI3150/ESTR3102, IERG4004/FTEC4004, IERG4120/ESTR4328, IERG4130/CSCI4130/ESTR4306 (required), IERG4150/ESTR4322, IERG4210, 4220, 4350, IERG4360/ESTR4326, IERG4851, IERG5240/ENGG5383, IERG5310, 5320, 5360, 5590

Internet Engineering

CSCI3150/ESTR3102 (required), IERG3050, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG4080/ESTR4312, IERG4090/ESTR4302, IERG4130/CSCI4130/ESTR4306, IERG4180/ESTR4308, IERG4190, 4210, 4831, 4841, 4851, 5090, 5280

Information Science

CSCI3160/ESTR3104, IERG3010/ESTR3300, IERG3050, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG4100/ESTR4304, IERG4190, IERG4300/ESTR4300, IERG4320/ESTR4324, IERG5154/ENGG5301, IERG5200, 5254, 5290, IERG5300/ENGG5302, IERG5380, 5400

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. AIST/BMEG/CENG/CSCI/EEEN/ELEG/ENER/ENGG/ESTR/FTEC/IERG/MAEG/SEEM required and major elective courses at 2000 and above level as well as IERG2060/ESTR2304 will be included in the calculation of Major GPA for honours classification excluding courses in Faculty Package and Foundation courses (except IERG2060/ESTR2304).
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. For details, please refer to the Department for information.

- [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 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] CSCI2720 is not for students who have taken IERG3840, while the former is a required course for Minor in Computer Science. Students pursuing Minor in Computer Science should take IERG3842 to fulfill the Major Programme Requirement of Information Engineering.
- [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 IERG4998 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 | 1 st term Faculty Package: ENGG1110/ESTR1002 Major Required: MATH1510 Major Elective(s): | 3 3 |
| | 2 nd term Faculty Package: ENGG1120/ESTR1005, ENGG1130/ ESTR1006 Major Required: 1 Foundation Course Major Elective(s): | 6 2-3 |
| Second Year of Attendance | 1 st term Major Required: ENGG2440/ESTR2004, IERG1810, IERG2051/ESTR2302, IERG2060/ESTR2304, IERG2080/ESTR2306 Major Elective(s): | 13 |
| | 2 nd term Major Required: CSCI2100/ESTR2102, IERG2310/ ESTR2300, IERG2470/ESTR2308, IERG2602/3840/3842, 3820 | 11 |

| | | |
|---|---|--------------|
| | Major Elective(s): | |
| Third Year of Attendance | 1 st term Major Required: IERG3080/ESTR3308, IERG3310/ ESTR3310, IERG3800 | 7 |
| | Major Elective(s): 1 course | 2-3 |
| | 2 nd term Major Required: IERG3060, 3810 | 4 |
| | Major Elective(s): 3 courses | 9 |
| Fourth Year of Attendance | 1 st term Major Required: IERG4998 | 3 |
| | Major Elective(s): 2 courses | 6 |
| | 2 nd term Major Required: IERG4999 | 3 |
| | Major Elective(s): 1 course | 3 |
| Total (including Faculty Package): | | 75-77 |

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

Students are required to complete a minimum of 52 units of courses as follows:

| | Units |
|--|-------|
| 1. Faculty Package: ENGG1120/ESTR1005 | 3 |
| 2. Foundation Courses: ENGG2440/ESTR2004 | 3 |
| 3. Required Courses: | |
| (a) CSCI2100/ESTR2102, IERG2051/ESTR2302, IERG2310/ESTR2300, IERG2470/ESTR2308, IERG2602/3840[a]/3842, 3060, IERG3080/ESTR3308, IERG3310/ESTR3310, IERG3800, 3810, 3820 | 25 |
| (b) Research Component Courses[b]: IERG4998, 4999 | 6 |
| 4. Elective Courses: | 15 |
| Out of the 15 Elective Course units, at least 9 units should be from the following courses: CSCI3150/ESTR3102, CSCI3160/ESTR3104, ENGG1820, IERG1810, IERG2060/ESTR2304, IERG2080/ESTR2306, IERG3010/ESTR3300, IERG3050, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG3320/ESTR3306, IERG3830, IERG4004/FTEC4004, IERG4030/ESTR4320, IERG4060, IERG4080/ESTR4312, IERG4090/ESTR4302, IERG4100/ESTR4304, IERG4110/ESTR4314, IERG4120/ESTR4328, IERG4130/CSCI4130/ESTR4306, IERG4150/ESTR4322, IERG4160, IERG4180/ESTR4308, IERG4190, 4210, 4220, 4230, IERG4300/ESTR4300, IERG4320/ESTR4324, IERG4330/ESTR4316, IERG4340, 4350, IERG4360/ESTR4326, IERG4831, 4841, 4851, 5020, IERG5040/ENGG5392, IERG5090, IERG5100/ENGG5303, IERG5110, 5130, 5140, IERG5154/ENGG5301, IERG5200, 5230, IERG5240/ENGG5383, IERG5254, 5280, 5290, IERG5300/ENGG5302, IERG5310, 5320, 5330, 5340, 5350, 5360, 5680, 5400, 5590 | |

The remaining units, if any, can be fulfilled by any AIST/BMEG/CENG/CSCI/EEEN/ELEG/ENER/ENGG/ESTR/FTEC/MAEG/SEEM course(s) at 3000 and above level.

Streams

Students may choose not to specialize in any stream or to specialize in no more than two streams and complete a minimum of 12 units of courses prescribed by the stream.

Big Data: Systems and Applications

CSCI3320, CSCI4180/ESTR4106, CSCI4190, ELEG5491, IERG3320/ESTR3306, IERG4080/ESTR4312, IERG4120/ESTR4328, IERG4160, 4230, IERG4300/ESTR4300 (required), IERG4320/ESTR4324, IERG4330/ESTR4316, IERG5130, 5350

Communications

IERG3010/ESTR3300, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG4030/ESTR4320, IERG4060, IERG4100/ESTR4304, IERG4110/ESTR4314, IERG4130/CSCI4130/ESTR4306, IERG4230, 4340, 4851, 5020, IERG5040/ENGG5392, IERG5100/ENGG5303, IERG5110, 5200, 5230, 5280, 5330

Cyber Security

CSCI3150/ESTR3102, IERG4004/FTEC4004, IERG4120/ESTR4328, IERG4130/CSCI4130/ESTR4306 (required), IERG4150/ESTR4322, IERG4210, 4220, 4350, IERG4360/ESTR4326, IERG4851, IERG5240/ENGG5383, IERG5310, 5320, 5360, 5590

Internet Engineering

CSCI3150/ESTR3102 (required), IERG3050, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG4080/ESTR4312, IERG4090/ESTR4302, IERG4130/CSCI4130/ESTR4306, IERG4180/ESTR4308, IERG4190, 4210, 4831, 4841, 4851, 5090, 5280

Information Science

CSCI3160/ESTR3104, IERG3010/ESTR3300, IERG3050, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG4100/ESTR4304, IERG4190, IERG4300/ESTR4300, IERG4320/ESTR4324, IERG5154/ENGG5301, IERG5200, 5254, 5290, IERG5300/ENGG5302, IERG5380, 5400

Total:

 52

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[c]

Elective Courses:

15 units of courses[d]:

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

Explanatory Notes:

1. AIST/BMEG/CENG/CSCI/EEEN/ELEG/ENER/ENGG/ESTR/FTEC/IERG/MAEG/ SEEM required and major elective courses at 2000 and above level 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. For details, please refer to the Department for information.

- [a] CSCI2720 is not for students who have taken IERG3840, while the former is a required course for Minor in Computer Science. Students pursuing Minor in Computer Science should take IERG3842 to fulfill the Major Programme Requirement of Information Engineering.
- [b] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for IERG4998 and 4999.
- [c] 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.
- [d] 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.
- [e] 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).
- [f] 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 | 1 st term Faculty Package: | |
| | Major Required: CSCI2100/ESTR2102, ENGG2440/ ESTR2004, IERG2051/ESTR2302 Major Elective(s): | 9 |
| | 2 nd term Faculty Package: ENGG1120/ESTR1005 Major Required: IERG2310/ESTR2300, IERG2470/ ESTR2308, IERG2602/3840/3842, IERG3310/ESTR3310, IERG3800, 3820 Major Elective(s): | 3 12 |
| Second Year of Attendance | 1 st term Major Required: IERG3080/ESTR3308, IERG4998 Major Elective(s): 3 courses | 6 9 |
| | 2 nd term Major Required: IERG3060, 3810, 4999 Major Elective(s): 2 courses | 7 6 |
| | Total (including Faculty Package): | 52 |

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

1st Degree: Bachelor of Engineering (Information Engineering)

Major Programme Requirement

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

| | |
|---------------------|------------|
| 1. Faculty Package: | Units 9 |
|---------------------|------------|

ENGG1110/ESTR1002,
ENGG1130/ESTR1006

ENGG1120/ESTR1005,

2. Foundation Courses: 11

ENGG2440/ESTR2004, IERG2060/ESTR2304, MATH1510[a], and one of the following courses:

AIST1110, CHEM1280, 1380, CSCI1120/ESTR1100,
CSCI1130/ESTR1102, ELEG2700, ENGG1310/ESTR1003[b],
ENGG2720/ESTR2014, ENGG2740/ESTR2016,
ENGG2780/ESTR2020, FTEC2101/ESTR2520, LSCI1001, 1003,
MAEG1020, PHYS1003[b], 1110[b], SEEM2440/ESTR2500,
SEEM2460/ESTR2540

3. Required Courses:

(a) CSCI2100/ESTR2102, IERG1810, IERG2051/ESTR2302, 29
IERG2080/ESTR2306, IERG2310/ESTR2300, IERG2470/ESTR2308,
IERG2602/3840[c]/3842, 3060, IERG3080/ESTR3308,
IERG3310/ESTR3310, IERG3800, 3810, 3820

(b) Research Component Courses[d]: 6
IERG4998, 4999

4. Elective Courses: 20

Out of the 20 Elective Course units, at least 15 units should be from the following courses:

CSCI3150/ESTR3102, CSCI3160/ESTR3104, ENGG1820,
IERG3010/ESTR3300, IERG3050, IERG3280/ESTR3302,
IERG3300/ESTR3304, IERG3320/ESTR3306, IERG3830,
IERG4004/FTEC4004, IERG4030/ESTR4320, IERG4060,
IERG4080/ESTR4312, IERG4090/ESTR4302, IERG4100/ESTR4304,
IERG4110/ESTR4314, IERG4120/ESTR4328,
IERG4130/CSCI4130/ESTR4306, IERG4150/ESTR4322, IERG4160,
IERG4180/ESTR4308, IERG4190, 4210, 4220, 4230,
IERG4300/ESTR4300, IERG4320/ESTR4324, IERG4330/ESTR4316,
IERG4340, 4350, IERG4360/ESTR4326, IERG4831, 4841, 4851, 5020,
IERG5040/ENGG5392, IERG5090, IERG5100/ENGG5303, IERG5110,
5130, 5140, IERG5154/ENGG5301, IERG5200, 5230,
IERG5240/ENGG5383, IERG5254, 5280, 5290, IERG5300/ENGG5302,
IERG5310, 5320, 5330, 5340, 5350, 5360, 5380, 5400, 5590

The remaining units, if any, can be fulfilled by any AIST/BMEG/
CENG/CSCI/EEEN/ELEG/ENER/ENGG/ESTR/FTEC/MAEG/SEEM
course(s) at 3000 and above level.

Streams

Students may choose not to specialize in any stream or to specialize in no more than two streams and complete a minimum of 12 units of courses prescribed by the stream.

Big Data: Systems and Applications

CSCI3320, CSCI4180/ESTR4106, CSCI4190, ELEG5491,
IERG3320/ESTR3306, IERG4080/ESTR4312, IERG4120/ESTR4328,
IERG4160, 4230, IERG4300/ESTR4300 (required), IERG4320/ESTR4324,
IERG4330/ESTR4316, IERG5130, 5350

Communications

IERG3010/ESTR3300, IERG3280/ESTR3302, IERG3300/ESTR3304,
IERG4030/ESTR4320, IERG4060, IERG4100/ESTR4304,
IERG4110/ESTR4314, IERG4130/CSCI4130/ESTR4306, IERG4230, 4340,
4851, 5020, IERG5040/ENGG5392, IERG5100/ENGG5303, IERG5110, 5200,
5230, 5280, 5330

Cyber Security

CSCI3150/ESTR3102, IERG4004/FTEC4004, IERG4120/ESTR4328,
IERG4130/CSCI4130/ESTR4306 (required), IERG4150/ESTR4322,
IERG4210, 4220, 4350, IERG4360/ESTR4326, IERG4851,
IERG5240/ENGG5383, IERG5310, 5320, 5360, 5590

Internet Engineering

CSCI3150/ESTR3102 (required), IERG3050, IERG3280/ESTR3302,
IERG3300/ESTR3304, IERG4080/ESTR4312, IERG4090/ESTR4302,
IERG4130/CSCI4130/ESTR4306, IERG4180/ESTR4308, IERG4190, 4210,
4831, 4841, 4851, 5090, 5280

Information Science

CSCI3160/ESTR3104, IERG3010/ESTR3300, IERG3050,
IERG3280/ESTR3302, IERG3300/ESTR3304, IERG4100/ESTR4304,
IERG4190, IERG4300/ESTR4300, IERG4320/ESTR4324,
IERG5154/ENGG5301, IERG5200, 5254, 5290, IERG5300/ENGG5302,
IERG5380, 5400

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. AIST/BMEG/CENG/CSCI/EEEN/ELEG/ENER/ENGG/ESTR/FTEC/IERG/MAEG/SEEM required and major elective courses at 2000 and above level as well as IERG2060/ESTR2304 will be included in the calculation of Major GPA for honours classification excluding courses in Faculty Package and Foundation courses (except IERG2060/ESTR2304).
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. For details, please refer to the Department for information.
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 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] CSCI2720 is not for students who have taken IERG3840, while the former is a required course for Minor in Computer Science. Students pursuing Minor in Computer Science should take IERG3842 to fulfill the Major Programme Requirement of Information Engineering.
- [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 IERG4998 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 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 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) 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, 4090; and
 - (ii) two courses selected from: MKTG3020, 4030, 4050, 4120, 4150, 4160, 4170, 4180, 4190, 4200
- (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 Note on Mutual Recognition or Exclusion:

1. DSME4140 and the associated units can be exempted from the requirement of the second degree by successfully completing IERG3310/ESTR3310.

Recommended Course Pattern

| | 1st degree: Bachelor of Engineering (Information Engineering) | Units | 2nd degree: Bachelor of Business Administration (Integrated BBA Programme) | Units |
|---------------------------------|--|--------------|--|--------------|
| First Year of Attendance | 1 st term Faculty Package: ENGG1110/ ESTR1002 Major Required: MATH1510 Major Elective(s): | 3 3 | 1 st term Faculty Package: Major Required: Major Elective(s): | |
| | 2 nd term Faculty Package: ENGG1120/ ESTR1005, ENGG1130/ ESTR1006 | 6 | 2 nd term Faculty Package: Major Required: Major Elective(s): | |

| | | | | |
|----------------------------------|---|----------|--|-------------|
| | Major Required: 1 Foundation Course Major Elective(s): | 2-3 | | |
| | | | Summer session Faculty Package: MGNT1020 | 3 |
| Second Year of Attendance | 1 st term Major Required: ENGG2440/ ESTR2004, IERG1810, IERG2051/ESTR2302, IERG2060/ESTR2304, IERG2080/ESTR2306 Major Elective(s): | 13 | 1 st term Faculty Package: 1-2 courses (DSME1030, MGNT1020 recommended) Major Required: Major Elective(s): | 3-6 |
| | 2 nd term Major Required: CSCI2100/ ESTR2102, IERG2310/ ESTR2300, IERG2470/ ESTR2308, IERG2602/3840/3842, 3820 Major Elective(s): | 11 | 2 nd term Faculty Package: 1-2 courses (DSME1040, MGNT1020 recommended) Major Required: 0-1 course from MGNT2511 Major Elective(s): | 3-6 0-1 |
| | | | Summer session Major Required: 0-1 course from MGNT2511 (if not taken) | 0-1 |
| Third Year of Attendance | 1 st term Major Required: IERG3080/ ESTR3308, IERG3310/ ESTR3310, IERG3800 Major Elective(s): | 7 | 1 st term Major Required: ACCT2111, DSME2011, and 0-2 courses from IBBA3040, MKTG2010 Major Elective(s): | 7-11 |
| | 2 nd term Major Required: IERG3060, 3810 Major Elective(s): 2 courses | 4 5-6 | 2 nd term Major Required: ACCT2121, and 0-3 courses from FINA2010, IBBA3040, MKTG2010 (if not taken) Major Elective(s): 0-1 course | 3-10 0-3 |
| Fourth Year of Attendance | 1 st term Major Required: IERG4998 Major Elective(s): 3 courses | 3 9 | 1 st term Major Required: ACCT2151 (or 3151), FINA2010 (if not taken), and 0-2 courses from DSME2030, MGNT2611 Major Elective(s): | 2-11 |
| | 2 nd term Major Required: IERG4999 Major Elective(s): 2 courses | 3 6 | 2 nd term Major Required: DSME2051, and 0-3 courses from ACCT2151 (or 3151), DSME2030, MGNT2611 (if not taken) Major Elective(s): 1 course | 3-11 3 |
| Fifth Year of Attendance | | | 1 st term Major Required: 0-2 courses from MGNT2512, 4010 Major Elective(s): 1-3 courses | 0-4 3-9 |
| | | | 2 nd term Major Required: 0-2 courses from MGNT2512, 4010 (if not taken) | 0-4 |

| | | | |
|---|--------------|---|--------------|
| | | Major Elective(s): 2-3 courses | 6-9 |
| Total (including Faculty Package): | 75-77 | Total (including Faculty Package): | 56-60 |

Minor Programme Title

Information Engineering

Minor Programme Requirement

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

| | Units |
|--|-----------|
| 1. Required Courses: IERG2310/ESTR2300, IERG3310/ESTR3310 | 6 |
| 2. Elective Courses: CSCI3150/ESTR3102, CSCI3160/ESTR3104, IERG3010/ESTR3300, IERG3050, IERG3280/ESTR3302, IERG3300/ESTR3304, IERG3320/ESTR3306, IERG4004/FTEC4004, IERG4030/ESTR4320, IERG4060, IERG4080/ESTR4312, IERG4090/ESTR4302, IERG4100/ESTR4304, IERG4110/ESTR4314, IERG4120/ESTR4328, IERG4130/CSCI4130/ESTR4306, IERG4150/ESTR4322, IERG4160, IERG4180/ESTR4308, IERG4190, 4210, 4220, 4230, IERG4300/ESTR4300, IERG4320/ESTR4324, IERG4330/ESTR4316, IERG4340, 4350, IERG4360/ESTR4326, IERG5020, IERG5040/ENGG5392, IERG5090, IERG5100/ENGG5303, IERG5110, 5130, 5140, IERG5154/ENGG5301, IERG5200, 5230, IERG5240/ENGG5383, IERG5254, 5280, 5290, IERG5300/ENGG5302, IERG5310, 5320, 5330, 5340, 5350, 5360, 5380, 5400, 5590 | 12 |
| Total: | 18 |

Course List

| Course Code | Course Title | Unit(s) |
|-------------|--|---------|
| ENGG1310 | Engineering Physics: Electromagnetics, Optics and Modern Physics | 3 |
| ENGG1820 | Engineering Internship | 1 |
| ENGG2420 | Complex Analysis and Differential Equations for Engineers | 3 |
| ENGG2440 | Discrete Mathematics for Engineers | 3 |
| ENGG2720 | Complex Variables for Engineers | 2 |
| ENGG2740 | Differential Equations for Engineers | 2 |
| ENGG2780 | Statistics for Engineers | 2 |
| ENGG5301 | Information Theory | 3 |
| ENGG5302 | Random Processes | 3 |
| ENGG5303 | Advanced Wireless Communications | 3 |
| ENGG5383 | Applied Cryptography | 3 |
| ENGG5392 | Lightwave System Technologies | 3 |
| 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 |
| ESTR2020 | Statistics for Engineers | 2 |
| ESTR2300 | Principles of Communication Systems | 3 |
| ESTR2302 | Signals and Systems | 3 |
| ESTR2304 | Basic Analog and Digital Circuits | 3 |
| ESTR2306 | Introduction to Systems Programming | 3 |
| ESTR2308 | Probability Models and Applications | 3 |
| ESTR3300 | Digital Communications | 3 |
| ESTR3302 | Networks: Technology, Economics, and Social Interactions | 3 |
| ESTR3304 | Introduction to Stochastic Processes | 3 |
| ESTR3306 | Social Media and Human Information Interaction | 3 |
| ESTR3308 | Information and Software Engineering Practice | 3 |
| ESTR3310 | Computer Networks | 3 |
| ESTR4300 | Web-scale Information Analytics | 3 |
| ESTR4302 | Networking Protocols and Systems | 3 |
| ESTR4304 | Wireless Communication Systems | 3 |
| ESTR4306 | Introduction to Cyber Security | 3 |
| ESTR4308 | Network Software Design and Programming | 3 |
| ESTR4312 | Building Scalable Internet-based Services | 3 |
| ESTR4314 | Hands-on Wireless Communication | 3 |
| ESTR4316 | Programming Big Data Systems | 3 |
| ESTR4320 | Optical Communications | 3 |
| ESTR4322 | Introduction to Cryptography | 3 |
| ESTR4324 | Data Science in Practice | 3 |
| ESTR4326 | Blockchain and Applications | 3 |
| ESTR4328 | Functional Programming | 3 |
| IERG1080 | Introduction to Python for Engineering Applications | 3 |
| IERG1810 | Electronic Circuit Design Laboratory | 1 |
| IERG2051 | Signals and Systems | 3 |
| IERG2060 | Basic Analog and Digital Circuits | 3 |
| IERG2080 | Introduction to Systems Programming | 3 |
| IERG2310 | Principles of Communication Systems | 3 |
| IERG2470 | Probability Models and Applications | 3 |
| IERG2602 | Engineering Practicum | 1 |
| IERG3010 | Digital Communications | 3 |
| IERG3050 | Simulation and Statistical Analysis | 3 |
| IERG3060 | Microcontrollers and Embedded Systems | 3 |
| IERG3080 | Information and Software Engineering Practice | 3 |
| IERG3280 | Networks: Technology, Economics, and Social Interactions | 3 |
| IERG3300 | Introduction to Stochastic Processes | 3 |
| IERG3310 | Computer Networks | 3 |
| IERG3320 | Social Media and Human Information Interaction | 3 |
| IERG3800 | Information Infrastructure Design Lab | 1 |
| IERG3810 | Microcontrollers and Embedded System Laboratory | 1 |
| IERG3820 | Communications Laboratory | 1 |
| IERG3830 | Product Design and Development | 3 |
| IERG3840 | Web Application Development Project | 1 |
| IERG3842 | Mobile Network Application Development Project | 1 |
| IERG4004 | E-payment Systems and Cryptocurrency Technologies | 3 |
| IERG4030 | Optical Communications | 3 |
| IERG4060 | Real-time Embedded Systems | 3 |
| IERG4080 | Building Scalable Internet-based Services | 3 |

| | | |
|----------|--|---|
| IERG4090 | Networking Protocols and Systems | 3 |
| IERG4100 | Wireless Communication Systems | 3 |
| IERG4110 | Hands-on Wireless Communication | 3 |
| IERG4120 | Functional Programming | 3 |
| IERG4130 | Introduction to Cyber Security | 3 |
| IERG4150 | Introduction to Cryptography | 3 |
| IERG4160 | Image and Video Processing | 3 |
| IERG4180 | Network Software Design and Programming | 3 |
| IERG4190 | Multimedia Coding and Processing | 3 |
| IERG4210 | Web Programming and Security | 3 |
| IERG4220 | Secure Software Engineering | 3 |
| IERG4230 | Introduction to Internet of Things | 3 |
| IERG4300 | Web-scale Information Analytics | 3 |
| IERG4320 | Data Science in Practice | 3 |
| IERG4330 | Programming Big Data Systems | 3 |
| IERG4340 | Emerging Technologies in Information Engineering | 3 |
| IERG4350 | Cloud Computing Security | 3 |
| IERG4360 | Blockchain and Applications | 3 |
| IERG4831 | Networking Laboratory I | 2 |
| IERG4841 | Networking Laboratory II | 2 |
| IERG4851 | Cyber Security Laboratory | 1 |
| IERG4998 | Final Year Project I | 3 |
| IERG4999 | Final Year Project II | 3 |
| IERG5020 | Telecommunication Switching and Network Systems | 3 |
| IERG5040 | Lightwave System Technologies | 3 |
| IERG5090 | Advanced Networking Protocols and Systems | 3 |
| IERG5100 | Advanced Wireless Communications | 3 |
| IERG5110 | Signal Processing in Wireless Communications and Sensing | 3 |
| IERG5130 | Probabilistic Models and Inference Algorithms for Machine Learning | 3 |
| IERG5140 | Lightwave Networks | 3 |
| IERG5154 | Information Theory | 3 |
| IERG5200 | Channel Coding and Modulation | 3 |
| IERG5230 | Algorithms and Realization of Internet of Things Systems | 3 |
| IERG5240 | Applied Cryptography | 3 |
| IERG5254 | Network Information Theory | 3 |
| IERG5280 | Mobile Networking | 3 |
| IERG5290 | Network Coding Theory | 3 |
| IERG5300 | Random Processes | 3 |
| IERG5310 | Security and Privacy in Cyber Systems | 3 |
| IERG5320 | Digital Forensics | 3 |
| IERG5330 | Network Economics | 3 |
| IERG5340 | IT Innovation and Entrepreneurship | 3 |
| IERG5350 | Reinforcement Learning | 3 |
| IERG5360 | Program Representation, Modeling and Understanding for Software Security | 3 |
| IERG5380 | Quantum Information Processing | 3 |
| IERG5400 | Theory of Probability | 3 |
| IERG5590 | Advanced Topics in Blockchain | 3 |