

**Computer Science**  
**Applicable to students admitted in 2021-22**

**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, ENGG2760/ESTR2018, ENGG2780/ESTR2020	7
3. Required Courses:	
(a) CENG3420, CSCI3100, 3130, CSCI3150/ESTR3102, CSCI3160/ESTR3104, CSCI3180/ESTR3106, CSCI3250, 3251	21
(b) Research Component Courses[a]: CSCI4998, 4999	6
4. Choose any ONE from the following seven options:	15
(a) <u>General Computer Science</u> Elective Courses: Choose 15 units from AIST4010/ESTR4140, CSCI3230/ESTR3108, CSCI4180/ESTR4106, CSCI4250/ESTR4122, CSCI4430/ESTR4120, ENGG1820, (ENGG3802 and 3803), IERG4300/ESTR4300, STAT2005, 2006 and the AIST/CENG/CSCI courses of which at least 12 units must be from courses at 3000 or above level	
(b) <u>Stream 1: Intelligence Science</u> Required Courses: CSCI3230/ESTR3108 Elective Courses: Choose at least 9 units from the following: AIST3510/SEEM3510, AIST4010/ESTR4140, CSCI3220, 3320, 4190, 4230, CSCI4250/ESTR4122, CSCI5030, 5050, 5150, CSCI5160/ENGG5102, CSCI5170, CSCI5180/ENGG5103, CSCI5240, CSCI5250/ENGG5106, CSCI5280/ENGG5104, CSCI5350, 5390, CSCI5510/ENGG5108, CSCI5580, 5640, ENGG5781, IERG3320, IERG4300/ESTR4300 Remaining units can be chosen from the following: AIST/CENG/CSCI courses at 2000 or above level, ENGG1820, (ENGG3802 and 3803), STAT2005, 2006	
(c) <u>Stream 2: Database and Information Systems</u> Required Courses: CSCI3170 Elective Courses: Choose at least 9 units from the following: CSCI3220, CSCI3230/ESTR3108, CSCI3320, 4140, CSCI4160/ESTR4104, CSCI4180/ESTR4106, CSCI4190, CSCI4430/ESTR4120, CSCI5010, 5120, CSCI5180/ENGG5103, CSCI5250/ENGG5106, CSCI5470/ENGG5105, CSCI5510/ENGG5108, CSCI5550, 5570, 5590, 5620, 5630, 5650, ENGG5781, IERG4300/ESTR4300, IERG4330, SEEM3490, 4630, 5010 Remaining units can be chosen from the following: AIST/CENG/CSCI courses at 2000 or above level, ENGG1820, (ENGG3802 and 3803), STAT2005, 2006	
(d) <u>Stream 3: Rich Media</u> Required Courses: CSCI3260, 3280 Elective Courses: Choose at least 6 units from the following: AIST2010, AIST3510/SEEM3510, CSCI3230/ESTR3108, CSCI3290, 4120, CSCI4160/ESTR4104, CSCI4430/ESTR4120, CSCI5210, CSCI5280/ENGG5104, CSCI5390, 5460, CSCI5510/ENGG5108, CSCI5640 Remaining units can be chosen from the following: AIST/CENG/CSCI courses at 2000 or above level, ENGG1820, (ENGG3802 and 3803), IERG4300/ESTR4300, STAT2005, 2006	
(e) <u>Stream 4: Distributed Systems, Networks and Security</u> Required Courses: CSCI4180/ESTR4106, CSCI4430/ESTR4120	

Elective Courses:

Choose at least 6 units from the following:

CSCI3310, CSCI4130/IERG4130/ESTR4306, CSCI4140, CSCI4160/ESTR4104, CSCI4190, 5080, 5390, 5440, CSCI5470/ENGG5105, CSCI5510/ENGG5108, CSCI5550, 5570, 5590, 5600, 5630, 5650, IERG4210, IERG4300/ESTR4300, IERG4350

Remaining units can be chosen from the following:

AIST/CENG/CSCI courses at 2000 or above level, ENGG1820, (ENGG3802 and 3803), STAT2005, 2006

(f) Stream 5: Algorithms and Complexity

Elective Courses:

Choose at least 12 units from the following:

CSCI3220, 4230, CSCI4250/ESTR4122, CSCI5010, CSCI5160/ENGG5102, CSCI5170, 5240, 5320, 5350, 5440, 5450, 5560, 5580, IERG3300/ESTR3304, IERG5154, MATH3260, 4230, 4260

Remaining units can be chosen from the following:

AIST/CENG/CSCI courses at 2000 or above level, ENGG1820, (ENGG3802 and 3803), IERG4300/ESTR4300, STAT2006

(g) Stream 6: Data Analytics

Required Courses:

CSCI3320, STAT2006

Elective Course 1:

Choose at least 3 units from the following:

AIST4010/ESTR4140, CSCI3170, 3220, CSCI4180/ESTR4106, CSCI4190, 4230, CSCI4250/ESTR4122, CSCI5030, 5050, 5120, 5150, CSCI5180/ENGG5103, CSCI5510/ENGG5108, CSCI5550, 5570, 5580, 5620, 5630, 5640, 5650, IERG4230, IERG4330/ESTR4316

Elective Course 2:

Choose at least 3 units from the following:

RMSC4002, STAT3004, 4002, 4003, 4006

Remaining units can be chosen from the following:

AIST/CENG/CSCI courses at 2000 or above level, ENGG1820, (ENGG3802 and 3803), IERG4300/ESTR4300, STAT2003, 2005

**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[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. AIST/BMEG/CENG/CSCI/EEEN/ELEG/ENER/ENGG/ESTR/IERG/MAEG/SEEM 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.
  - [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 CSCI4998 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: Major Required: CSCI3130, CSCI3160/ESTR3104, ENGG2440/ ESTR2004, ENGG2760/ESTR2018 Major Elective(s): 3 units from stream required course / major elective courses	11 3
	2 <sup>nd</sup> term Faculty Package: ENGG1120/ESTR1005 Major Required: CENG3420, CSCI3100, CSCI3180/ESTR3106, ENGG2780/ESTR2020 Major Elective(s):	3 11
<b>Second Year of Attendance</b>	1 <sup>st</sup> term Major Required: CSCI3150/ESTR3102, CSCI4998 Major Elective(s): 6 units from stream required courses / major elective courses	6 6
	2 <sup>nd</sup> term Major Required: CSCI3250, 3251, 4999 Major Elective(s): 6 units from stream required courses / major elective courses	6 6
<b>Total (including Faculty Package):</b>		<b>52</b>