Program Information

Academic Program: (334 new curriculum) B.Eng. in Financial Technology
Academic Year: 2022

Select Language: English

Study Scheme Learning Outcomes

Study Scheme

Financial Technology
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: CSCI1120/1130/ESTR1100/1102, ENGG2440/ESTR2004, ENGG2760/ESTR2018, ENGG2780/ESTR2020, MATH1510[a]	13
3.	Required Courses:	
(a)	CSCI2100#/ESTR2102, CSCI4130#/IERG4130#/ESTR4306, ECON2011#, FINA2310#, FTEC2101/ESTR2520, FTEC3001, 3002, SEEM2520#, SEEM3550#/ESTR3506, SEEM3590#/ESTR3509	30
(b)	Research Component Courses[b]: FTEC4998, 4999	6
(c)	Practicum Course: FTEC2602	1
(d)	Legal Course: FTEC2001	2
4.	Elective Courses:	14
(a)	At least 6 units from FTEC4001, 4002, 4003, FTEC4004/IERG4004#, FTEC4005, 4006, 4007, 4008	
(b)	Courses from at least 3 subject areas[c]: ACCT2111#, AIST4010#/ESTR4140, CSCI2040#, 2120#, CSCI3150#/ESTR3102, CSCI3160#/ESTR3104, CSCI3320#, CSCI4160#/ESTR4104, CSCI4180#/ESTR4106, CSCI4430#/IERG3310#/ESTR3310/ESTR4120, ECON2021#[d], ENGG1820, FINA3020#, 3030#, 3070#, 3210#, 4010#, IERG4080#/ESTR4312, IERG4210#, MKTG4120#, SEEM3410#, SEEM3450#/ESTR3502, SEEM3570#/ESTR3508, SEEM3580#, SEEM4730#/ESTR4508	
	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 FTEC 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 the Faculty Package and Foundation Courses.

[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] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for FTEC4998 and 4999. These 6 units cannot be used to fulfill the Elective Courses requirement of the ELITE Stream.

[c] ESTR courses will be counted as their reciprocal departmental subject areas.

[d] Students who intend to pursue the Bachelor of Engineering (Financial Technology) and Bachelor of Business Administration (Integrated BBA Programme) Double Degree Option should not take the elective course ECON2021 because the required course DOTE[DSME]1040 of the Integrated BBA Programme is not for students who have

taken ECON2021.

[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.

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

	Recommended Course Pattern	Units
First Year of Attendance	1st term Faculty Package: Major Required: FINA2310, MATH1510 Major Elective(s):	6
	2nd term Faculty Package: ENGG1110/ESTR1002, ENGG1120/ESTR1005, ENGG1130/ESTR1006 Major Required: ECON2011 Major Elective(s):	9 3
Second Year of Attendance	1st term Major Required: CSCI1120/1130/ESTR1100/1102, ENGG2440/ESTR2004, ENGG2760/ESTR2018, SEEM2520 Major Elective(s):	11
	2nd term Major Required: CSCI2100/ESTR2102, ENGG2780/ESTR2020, FTEC2001, FTEC2101/ESTR2520, FTEC2602 Major Elective(s):	11
Third Year of Attendance	1st term Major Required: CSCI4130/IERG4130/ESTR4306, FTEC3001 or 3002, SEEM3590/ESTR3509 Major Elective(s):	9
	2nd term Major Required: FTEC3001 or 3002, SEEM3550/ESTR3506 Major Elective(s): 1 course	6 3
Fourth Year of Attendance	1st term Major Required: FTEC4998 Major Elective(s): 2 courses	3 6
	2nd term Major Required: FTEC4999 Major Elective(s): 2 courses	3 5
	Total (including Faculty Package):	**75**

	Recommended Course Pattern for CUHK students in fulfillment of requirements of the DDP with Peking University (PKU) (BSc in Financial Mathematics)	Units
First Year of Attendance (Study at PKU)	Faculty Package: 2 courses Major Required: MATH1510 University Core: 2 PHED courses	At least 32 units including courses to be transferred to CUHK[a]
Second Year of Attendance (Study at PKU)	Faculty Package: 1 course Major Required: CSCI2100/ESTR2102, ECON2011, ENGG2760/ESTR2018, FINA2310, SEEM2520 University Core: 2 University GE courses of 4 units (in Areas A and C)[b]	
Third Year of Attendance (Study at CUHK)	1st term[c] Major Required: CSCI1120/1130/ESTR1100/1102, CSCI4130/IERG4130/ESTR4306[d], ENGG2440/ESTR2004 University Core: CHLT1001, ELTU1001 or 1002, ENGG1004	9 9
	2nd term Major Required: ENGG2780/ESTR2020, FTEC2001[d], FTEC2101/ESTR2520[f], FTEC2602, FTEC3001 or 3002[d], SEEM3550/ESTR3506[d] University Core: CHLT1002, 0-1 College GE course [d][g], 0-2 courses from Understanding China and Hong Kong in the Wider Constitutional Order	14 4
	Summer Session University Core: 1 UGFH/UGFN course[d]	3

Fourth Year of Attendance (Study at CUHK)	1st term Major Required: FTEC3001 or 3002[d], FTEC4998[h], SEEM3590/ESTR3509 Major Elective(s): 1 course[e] University Core: ELTU3xxx, 1 College GE course[d][g], 0-2 courses from Understanding China and Hong Kong in the Wider Constitutional Order	9 3 5-6
	2nd term Major Required: FTEC4999[h] Major Elective(s): 4 courses[e] University Core: 1 UGFH/UGFN course[d]	3 12 3
	Units taken at CUHK:	**74-75**
	Units taken at PKU and recognized by CUHK:	**32**
	Total:	**106-107**[e][i]

Explanatory Notes:

[a] Mutual recognition of courses: CUHK requirement to be fulfilled by PKU courses

CUHK Courses		**PKU Courses**
ENGG1110	Problem Solving by Programming	Intro to Computing
ENGG1120	Linear Algebra for Engineers	Advanced Algebra I, II
ENGG1130	Multivariable Calculus for Engineers	Mathematical Analysis III
ENGG2760	Probability for Engineers	Probability Theory
MATH1510	Calculus for Engineers	Mathematical Analysis I, II
CSCI2100	Data Structures	Data Structures
ECON2011	Basic Microeconomics	Microeconomics
FINA2310	Fundamentals of Business Finance	Corporate Finance
SEEM2520	Fundamental in Financial Engineering	Introduction to Financial Math

[b] CUHK students can take the following General Education Courses offered by PKU and transfer the courses and units towards fulfillment of University General Education Requirements of CUHK in Areas A and C. Students should complete the minimum units of courses at CUHK before graduation and may refer to the General Regulations Governing Full-time Undergraduate Studies for details.

Designated courses offered by PKU		**Recommendations from OUGE**
2033530	Ancient Chinese Culture	The course can be considered as an equivalent course of UGEA2110 *An Introduction to Chinese Culture* (3 units), and exemption of 3 units in Area A can be granted.
3032360	History of Chinese Culture	The course can be considered as an equivalent course of UGEA2110 *An Introduction to Chinese Culture* (3 units), and exemption of 3 units in Area A can be granted.
2131110	Politics and Culture in Traditional China	The course can be considered for exempting 3 units in Area A.
1339320	The Historical Geography of China	The course can be considered for exempting 3 units in Area A.
2431560	American Culture and Society	The course can be considered for exempting 3 units in Area C.
3130280	Gender Studies	The course can be considered for exempting 3 units in Area C. Due to significant overlapping in course content with UGEC1209 *Thinking Gender: An Introduction to Women's and Gender Studies*, course restriction of UGEC1209 shall apply.
1339180	Global Cultural Geography	The course can be considered for exempting 3 units in Area C.
1831990	Inter-cultural Communication	The course can be considered for exempting 3 units in Area C.

[c] Students taking a term load exceeding the maximum will need to seek approval from the Registrar.

[d] Courses taken at CUHK can be transferred to fulfill 19 units of General Education and Free Elective Courses of the requirements of the Bachelor of Science in Financial Mathematics at PKU.

[e] In addition to the 5 elective courses, students are required to take another 3 units of courses in order to fulfil 18 units of Selected Major Courses of the requirements of the Bachelor of Science in Financial Mathematics at PKU. In this connection, students need to take a total of 109 to 110 units (instead of 106 to 107 units) at CUHK.

[f] FTEC2101/ESTR2520 Optimization Methods taken at CUHK can be transferred to fulfill 3 units of Major Core Course of the requirements of the Bachelor of Science in Financial Mathematics at PKU.

[g] The recommended course pattern of College GE courses varies slightly depending on students' College affiliation.

[h] FTEC4998 and 4999 taken at CUHK can be transferred to fulfill 3 units of the Graduation Thesis of the requirements of the Bachelor of Science in Financial Mathematics at PKU.

[i] Students are required to complete at least 50 units of Major courses at CUHK.

	Recommended Course Pattern for PKU students in fulfillment of requirements of the DDP with CUHK (BEng in Financial Technology)	Units
First Year of Attendance (Study at PKU)	Faculty Package: 2 courses Major Required: MATH1510 University Core: 1 PHED courses	At least 27 units including courses to be

(Study at PKU)	University Core: 3 UGEB courses	courses to be transferred to CUHK[a]
Second Year of Attendance (Study at PKU)	Faculty Package: 1 course Major Required: CSCI2100/ESTR2102, ECON2011, ENGG2760/ESTR2018, FINA2310, SEEM2520	
Third Year of Attendance (Study at CUHK)	1st term Major Required: CSCI1120/1130/ESTR1100/1102, CSCI4130/IERG4130/ESTR4306[b], ENGG2440/ESTR2004 Major Elective(s): 2 courses[c]	9 6
	2nd term Major Required: ENGG2780/ESTR2020, FTEC2001[b], FTEC2101/ESTR2520[d], FTEC2602, FTEC3001 or 3002[b], SEEM3550/ESTR3506[b] University Core: 1 UGFH/UGFN course[b]	14 3
Fourth Year of Attendance (Study at CUHK)	1st term Major Required: FTEC3001 or 3002[b], FTEC4998[e], SEEM3590/ESTR3509 University Core: ELTU3xxx, 1 College GE course[b][f], Understanding China or Hong Kong in the Wider Constitutional Order	9 5-6
	2nd term Major Required: FTEC4999[e] Major Elective(s): 3 courses[c] University Core: 1 University GE (Area A) course[b][g], Understanding China or Hong Kong in the Wider Constitutional Order	3 9 3
	Units taken at CUHK:	**61-62**
	Units taken at PKU and recognized by CUHK:	**27**
	Total:	**88-89**[h]

Explanatory Notes:

[a] Mutual recognition of courses: CUHK requirement to be fulfilled by PKU courses

CUHK Courses		**PKU Courses**
ENGG1110	Problem Solving by Programming	Intro to Computing
ENGG1120	Linear Algebra for Engineers	Advanced Algebra I, II
ENGG1130	Multivariable Calculus for Engineers	Mathematical Analysis III
ENGG2760	Probability for Engineers	Probability Theory
MATH1510	Calculus for Engineers	Mathematical Analysis I, II
CSCI2100	Data Structures	Data Structures
ECON2011	Basic Microeconomics	Microeconomics
FINA2310	Fundamentals of Business Finance	Corporate Finance
SEEM2520	Fundamental in Financial Engineering	Introduction to Financial Math

[b] Courses taken at CUHK can be transferred to fulfill 19 units of General Education and Free Elective Courses of the requirements of the Bachelor of Science in Financial Mathematics at PKU.

[c] In addition to the 5 elective courses, students are required to take another 3 units of courses in order to fulfil 18 units of Selected Major Courses of the requirements of the Bachelor of Science in Financial Mathematics at PKU. In this connection, students need to take a total of 91 to 92 units (instead of 88 to 89 units) at CUHK.

[d] FTEC2101/ESTR2520 Optimization Methods taken at CUHK can be transferred to fulfill 3 units of Major Core Course of the requirements of the Bachelor of Science in Financial Mathematics at PKU.

[e] FTEC4998 and 4999 taken at CUHK can be transferred to fulfill 3 units of the Graduation Thesis of the requirements of the Bachelor of Science in Financial Mathematics at PKU.

[f] The recommended course pattern of College GE courses varies slightly depending on students' College affiliation.

[g] The 2 units of University GE Area A course can be replaced by an additional GE Foundation course (viz. completing BOTH of the GE Foundation courses) on the condition that the PKU students would have taken course(s) relevant to Area A in PKU. The following is a list of pre-approved GE courses offered by PKU relevant to Area A.

Designated courses offered by PKU		**Recommendations from OUGE**
2033530	Ancient Chinese Culture	The course can be considered as an equivalent course of UGEA2110 *An Introduction to Chinese Culture* (3 units), and exemption of 3 units in Area A can be granted.
3032360	History of Chinese Culture	The course can be considered as an equivalent course of UGEA2110 *An Introduction to Chinese Culture* (3 units), and exemption of 3 units in Area A can be granted.
2131110	Politics and Culture in Traditional China	The course can be considered for exempting 3 units in Area A.
1339320	The Historical Geography of China	The course can be considered for exempting 3 units in Area A.

[h] Students are required to complete at least 50 units of Major courses at CUHK.

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. Foundation Courses:	7

	CSCI1120/1130/ESTR1100/1102, ENGG2760/ESTR2018, ENGG2780/ESTR2020	
2.	Required Courses:	
(a)	CSCI2100#/ESTR2102, CSCI4130#/IERG4130#/ESTR4306, ECON2011#, FTEC2101/ESTR2520, FTEC3001, 3002, SEEM2520#, SEEM3550#/ESTR3506	24
(b)	Research Component Courses[a]: FTEC4998, 4999	6
(c)	Practicum Course: FTEC2602	1
(d)	Legal Course: FTEC2001	2
3.	Elective Courses:	15
(a)	At least 6 units from FTEC4003, FTEC4004/IERG4004#, FTEC4007, 4008	
(b)	Courses from at least 3 subject areas[b] outside FTEC: ACCT2111#, AIST4010#/ESTR4140, CSCI2040#, 2120#, CSCI3150#/ESTR3102, CSCI3160#/ESTR3104, CSCI3320#, CSCI4160#/ESTR4104, CSCI4180#/ESTR4106, CSCI4430#/IERG3310#/ESTR3310/ESTR4120, ECON2021#, ENGG1820, FINA2310#, 3020#, 3030#, 3070#, 3210#, 4010#, FTEC4001, 4002, 4005, 4006, IERG4080#/ESTR4312, IERG4210#, MKTG4120#, SEEM3410#, SEEM3450#/ESTR3502, SEEM3570#/ESTR3508, SEEM3580#, SEEM3590#/ESTR3509, SEEM4730#/ESTR4508	
	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[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. ENGG, ESTR and FTEC 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 the 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 FTEC4998 and 4999. These 6 units cannot be used to fulfill the Elective Courses requirement of the ELITE Stream.

[b] ESTR courses will be counted as their reciprocal departmental subject areas.

[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 3 above to fulfill the elective requirements of the ELITE Stream. Item 2(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	1st term Major Required: CSCI1120/1130/ESTR1100/1102, ECON2011, ENGG2760/ESTR2018, SEEM2520 Major Elective:	11
	2nd term Major Required: CSCI2100/ESTR2102, ENGG2780/ESTR2020, FTEC2001, FTEC2101/ESTR2520, FTEC2602 Major Elective(s): 1 course	11 3
Second Year of Attendance	1st term Major Required: CSCI4130/IERG4130/ESTR4306, FTEC3001 or 3002, FTEC4998 Major Elective(s): 2 courses	9 6

	2nd term Major Required: FTEC3001 or 3002, FTEC4999, SEEM3550/ESTR3506	9
	Major Elective(s): 2 courses	6
	Total:	**55**

Financial Technology and Integrated BBA Programme Double Major Programme

Major Programme Requirement

Students are required to complete a minimum of 90 units of courses as follows:

		Units
1.	Faculty Package: ENGG1120/ESTR1005, ENGG1130/ESTR1006, MGNT1020	9
2.	Required Courses:	
(a)	1st Major: Financial Technology i) Foundation Courses: CSCI1120/1130/ESTR1100/1102, ENGG2440/ESTR2004, ENGG2760/ESTR2018, ENGG2780/ESTR2020, MATH1510[a] ii) Required Courses: CSCI2100#/ESTR2102, CSCI4130#/IERG4130#/ESTR4306, DOTE[DSME]1030#, FINA2010#, FTEC2101/ESTR2520, FTEC3001[b], 3002, SEEM3550#/ESTR3506, SEEM3590#[b]/ESTR3509[b]	40
(b)	2nd Major: Integrated BBA Programme ACCT2111#, 2121, 2151#, DOTE[DSME]1040#, 2030#, FTEC4003[b], IBBA3040#, MGNT2611, 4010, MKTG2010#	26
3.	Elective Courses:	
(a)	1st Major: Financial Technology 3 units from the following: FTEC4001, 4002, FTEC4004/IERG4004#, FTEC4005, 4006, 4007, 4008	3
(b)	2nd Major: Integrated BBA Programme[b] i) 3 units of DOTE[DSME]/FINA/MGNT/MKTG courses at 2000 or above level, excluding DOTE[DSME]2011, 2051, 4220, FINA3080, 4110, MGNT2511, 2512 and courses taken for fulfilment of requirement (ii) below ii) One course from the following: FINA3020, 3030, 3070, 3210, 4010	6
4.	Research Component/ Capstone Course/ Final Year Project[c]: FTEC4998, 4999	6
	Total:	90

In addition to fulfilling the above Major Programme Requirement, students may also challenge themselves by taking the following stream offered by the Faculty of Engineering:

Engineering Leadership, Innovation, Technology and Entrepreneurship (ELITE) Stream[d]
Elective Courses:
15 units of courses[e]:
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[f]
ii) 3 units of BMEG/CENG/CSCI/ELEG/ENGG/IERG/MAEG/SEEM courses at 5000 level[g]

Explanatory Notes:
1. ENGG, ESTR and FTEC 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 the Faculty Package and Foundation Courses.
2. Students are not allowed to declare Minor in Business.
3. Students should have gone through a selection process in order to be admitted to this Double Major Programme.

[a] i) Non-JUPAS admittees and JUPAS admittees with HKDSE Mathematics Extended Modules I or II are required to attend a Mathematics Placement Test of the Faculty of Engineering. 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] Courses taken to fulfill the requirements of items 2(a)(ii), 2(b) and 3(b) will be used to fulfill the requirement of General Business Concentration of the Integrated BBA Programme.

[c] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for FTEC4998 and 4999. These 6 units cannot be used to fulfill the Elective Courses requirement of the ELITE Stream.

[d] 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.

[e] Students can use up to 9 units of courses which have been taken to fulfill the

[e]	Students can use up to 9 units of courses which have been taken to fulfill the requirements of items 1 to 3 above to fulfill the elective requirements of the ELITE Stream. Item 4 Research Component/ Capstone Course/ Final Year Project will not be included in these 9 units. A full list of ESTR courses is available at the ELITE website.
[f]	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) of the Faculty of Engineering.
[g]	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 Double Major Programme.
[ ]	Subject area code "DSME" changed to "DOTE" with effect from 2024-25.

	Recommended Course Pattern	Units
First Year of Attendance	1st term Faculty Package: MGNT1020 Financial Technology Major Required: DOTE[DSME]1030, MATH1510 Major Elective(s):	 3 6
	2nd term Faculty Package: ENGG1120/ESTR1005, ENGG1130/ ESTR1006 Integrated BBA Major Required: DOTE[DSME]1040, IBBA3040 Major Elective(s):	 6 4
Second Year of Attendance	1st term Financial Technology Major Required: CSCI1120/1130/ ESTR1100/1102, ENGG2440/ESTR2004, ENGG2760/ ESTR2018 Integrated BBA Major Required: ACCT2111 Major Elective(s):	 8 3
	2nd term Financial Technology Major Required: CSCI2100/ ESTR2102, ENGG2780/ESTR2020, FINA2010, FTEC2101/ ESTR2520 Integrated BBA Major Required: ACCT2121 Major Elective(s):	 11 3
Third Year of Attendance	1st term Financial Technology Major Required: CSCI4130/ IERG4130/ESTR4306, FTEC3001 or 3002, SEEM3590/ ESTR3509 Integrated BBA Major Required: ACCT2151, DOTE[DSME]2030 Major Elective(s):	 9 5
	2nd term Financial Technology Major Required: FTEC3001 or 3002, SEEM3550/ESTR3506 Integrated BBA Major Required: MKTG2010 Financial Technology Major Elective(s): 1 course	 6 3 3
Fourth Year of Attendance	1st term Major Required: FTEC4998 Integrated BBA Major Required: MGNT2611 Integrated BBA Major Elective(s): 1 course	 3 2 3
	2nd term Major Required: FTEC4999 Integrated BBA Major Required: FTEC4003, MGNT4010 Integrated BBA Major Elective(s): 1 course	 3 6 3
	Total (including Faculty Package):	**90**

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

1st Degree: Bachelor of Engineering (Financial Technology)

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: CSCI1120/1130/ESTR1100/1102, ENGG2440/ESTR2004, ENGG2760/ESTR2018, ENGG2780/ESTR2020, MATH1510[a]	13
3.	Required Courses:	
(a)	CSCI2100#/ESTR2102, CSCI4130#/IERG4130#/ESTR4306, ECON2011#, FINA2310#, FTEC2101/ESTR2520, FTEC3001, 3002, SEEM2520#, SEEM3550#/ESTR3506, SEEM3590#/ESTR3509	30
(b)	Research Component Courses[b]: FTEC4998, 4999	6

(c)	Practicum Course: FTEC2602	1
(d)	Legal Course: FTEC2001	2
4.	Elective Courses:	14
(a)	At least 6 units from FTEC4001, 4002, 4003, FTEC4004/IERG4004#, FTEC4005, 4006, 4007, 4008	
(b)	Courses from at least 3 subject areas[c]: ACCT2111#, AIST4010#/ESTR4140, CSCI2040#, 2120#, CSCI3150#/ESTR3102, CSCI3160#/ESTR3104, CSCI3320#, CSCI4160#/ESTR4104, CSCI4180#/ESTR4106, CSCI4430#/IERG3310#/ESTR3310/ESTR4120, ENGG1820, FINA3020#, 3030#, 3070#, 3210#, 4010#, IERG4080#/ESTR4312, IERG4210#, MKTG4120#, SEEM3410#, SEEM3450#/ESTR3502, SEEM3570#/ESTR3508, SEEM3580#, SEEM4730#/ESTR4508	
	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[d]
Elective Courses:
15 units of courses[e]:

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

Explanatory Notes:

1. ENGG, ESTR and FTEC 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 the Faculty Package and Foundation Courses.

[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] Students who have declared to specialize in the ELITE Stream will be required to complete 6 units of ESTR4998 and 4999 to substitute for FTEC4998 and 4999. These 6 units cannot be used to fulfill the Elective Courses requirement of the ELITE Stream.

[c] ESTR courses will be counted as their reciprocal departmental subject areas.

[d] 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.

[e] 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.

[f] 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).

[g] 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 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) 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, 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 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 Bid 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

the second degree by successfully completing ENGG2490/ESTR2009 OR ENGG2760/ESTR2018 and ENGG2780/ESTR2020.

2. FINA2010 and the associated units can be exempted from the requirement of the second degree by successfully completing FINA2310.
3. DOTE[DSME]1030 and the associated units can be exempted from the requirement of the second degree by successfully completing ECON2011.

Recommended Course Pattern				
	1st degree: Bachelor of Engineering (Financial Technology)	Units	**2nd degree: Bachelor of Business Administration (Integrated BBA Programme)**	Units
First Year of Attendance	1st term Faculty Package: Major Required: FINA2310, MATH1510 Major Elective(s):	6	1st term Faculty Package: Major Required: Major Elective(s):	
	2nd term Faculty Package: ENGG1110/ESTR1002, ENGG1120/ESTR1005, ENGG1130/ESTR1006 Major Required: ECON2011 Major Elective(s):	9 3	2nd term Faculty Package: Major Required: Major Elective(s):	
Second Year of Attendance	1st term Major Required: CSCI1120/ 1130/ESTR1100/1102, ENGG2440/ESTR2004, ENGG2760/ESTR2018 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, FTEC2001, FTEC2101/ESTR2520, FTEC2602 Major Elective(s):	11	2nd term Faculty Package: DOTE[DSME]1040, MGNT1020 Major Required: Major Elective(s):	6
Third Year of Attendance	1st term Major Required: CSCI4130/ IERG4130/ESTR4306, FTEC3001 or 3002, SEEM2520, SEEM3590/ESTR3509 Major Elective(s):	12	1st term Major Required: DOTE[DSME]2011 Major Elective(s):	4
	2nd term Major Required: FTEC3001 or 3002, SEEM3550/ESTR3506 Major Elective(s): 1 course	6 3	2nd term Major Required: FINA2010 Major Elective(s):	3
Fourth Year of Attendance	1st term Major Required: FTEC4998 Major Elective(s): 2 courses	3 6	1st term Major Required: ACCT2111, MGNT2512, 2611 Major Elective(s):	6
	2nd term Major Required: FTEC4999 Major Elective(s): 2 courses	3 5	2nd term Major Required: ACCT2121, MKTG2010, MGNT2511 Major Elective(s): 1 course	7 3
Fifth Year of Attendance			1st term Major Required: ACCT2151 or 3151, DOTE[DSME]2030, IBBA3040 Major Elective(s): 3 courses	6-7 9
			2nd term Major Required: MGNT4010, DOTE[DSME]2051 Major Elective(s): 1-2 courses	6 3-6
	Total (including Faculty Package):	**75**	**Total (including Faculty Package):**	**56-60**

Course List

Course Code	*Course Title*	*Unit(s)*
ENGG1820	Engineering Internship	1
ENGG2440	Discrete Mathematics for Engineers	3
ENGG2760	Probability for Engineers	2
ENGG2780	Statistics for Engineers	2
ESTR2004	Discrete Mathematics for Engineers	3
ESTR2018	Probability for Engineers	2
ESTR2020	Statistics for Engineers	2

ESTR2020	Statistics for Engineers	2
ESTR2520	Optimization Methods	3
FTEC2001	FinTech Regulation and Legal Policy	2
FTEC2101	Optimization Methods	3
FTEC2602	Financial Technology Practicum	1
FTEC3001	Financial Innovation and Structured Products	3
FTEC3002	Introduction to Financial Infrastructures	3
FTEC4001	Advanced Database Technologies	3
FTEC4002	Behavioral Analytics	3
FTEC4003	Data Mining for FinTech	3
FTEC4004	E-payment Systems and Cryptocurrency Technologies	3
FTEC4005	Financial Informatics	3
FTEC4006	Internet Finance	3
FTEC4007	Introduction to Blockchain and Distributed Ledger Technology	3
FTEC4008	Natural Language Processing for FinTech	3
FTEC4998	Final Year Project I	3
FTEC4999	Final Year Project II	3

Study Scheme Learning Outcomes

Learning Outcomes

1. Major Programme:

Upon completion of their studies, FinTech 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); and
(13) the ability to apply the skills relevant to the discipline of financial technology in financial innovations, especially in the areas of payment systems, investment decisions and financial product developments, financial big data analytics, internet finance, and cyber and data security (K/S).

2. Financial Technology and Integrated BBA Programme Double Major Programme:

Upon completion of the programme, students should:

(1) have effective business communication skills (S).
(2) be able to apply knowledge of mathematics, science, and engineering and problem-solving skills that support them to make business decisions (K/S).
(3) have the ability to design and conduct experiments, as well as to analyze and interpret data (K/S).
(4) have 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).
(5) have the ability to integrate business knowledge in a business environment (K/S/V).
(6) have the ability to propose strategies in a global environment (K/S/V).
(7) have the ability to be aware of the ethical issues in a business context (V).
(8) have the ability to function in multi-disciplinary teams (S/V).
(9) have the ability to identify, formulate, and solve engineering problems in a business context (K/S).
(10) have 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).
(11) have the ability to stay abreast of contemporary issues (S/V).
(12) have the ability to recognize the need for, and to engage in life-long learning (V).
(13) have the ability to use the techniques, skills, and modern engineering tools necessary for engineering and business practice appropriate to the degree discipline (K/S).
(14) have the ability to use the computer/IT tools relevant to the discipline along with an understanding of their processes and limitations (K/S/V).
(15) have the ability to apply the skills relevant to the discipline of financial technology in financial innovations, especially in the areas of payment systems, investment decisions and financial product developments, financial big data analytics, internet finance, and cyber and data security (K/S).

K = Knowledge outcomes S = Skills outcomes V = Values and attitudes outcomes

Course Information

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