

DOUBLE DEGREE PROGRAMME IN MATHEMATICS AND INFORMATION ENGINEERING

Study Scheme

This programme awards two degrees. The first is B.Sc. degree in Mathematics under the Information Science Stream. The second is the B.Eng. degree in Information Engineering. A student who has completed the first degree but not the second degree may opt to graduate with just the first degree. Meanwhile, a student may not opt to graduate with the second degree alone unless he/she is transferred into the Information Engineering Programme; application for such a transfer within the initial two years of study in this programme is automatically approved.

The normative period of study for the first degree and both degrees are three and four years respectively for an S.7 entrant and four years for an S.6 entrant. 1) A student who has completed the first degree but not the second degree in the normative period of study would remain in this double degree programme as a continuing student; and 2) A student who has not completed the first degree in the normative period of study would become a continuing student in the Mathematics Programme. The student may also remain in this double degree programme as a continuing student if the Department of Information Engineering so consents.

Applicable to students admitted in 2006-07 and thereafter

1. Requirements for B.Sc. Programme in Mathematics (First Degree)

A student is required to complete a minimum of 69 units of B.Sc. (Math) Major courses, including at least 60 units from Required and Group I Elective courses:

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|------|--|--------------|
| (i) | Required Courses: | 45/42* units |
| | CSC1110, 2100, ERG2020, IEG2051, 2810, MAT0310 (or 0320), 2010, 2020, 2030, 2040, 2050, 2060, 2080, 2090, 3230, 3280 (or ERG2040* as an equivalent) | |
| (ii) | Elective Courses: | |
| | (a) Group I Electives: | 15/18* units |
| | MAT2300, 3030, 3040, 3070, 3080, 3210, 3220, 3240, 3250, 3260, 3270, 3300, 3310, 4001, 4010, 4030, 4040, 4050, 4210, 4220, 4230, 4240 (or IEG4140# as an equivalent), MAT4250, 4260 (or IEG4200# as an equivalent) | |
| | (b) Group II Electives: | 9 units |
| | IEG3010#, 3050#, 4020#, 4060#, 4100#, 4130#, 4160#, 4190#, 5124#, 5154#, 5240# | |

Sub-total: 69 units

In addition, students are required to complete the following requirements from the University:

Free Electives	10 units
General Education	15 units
Physical Education	2 units
English Language ^Δ	3 units

Sub-total: 30 units

Total: 99 units

^Δ For example ELT1111, which is required for the B.Eng. Programme in Information Engineering.

- Notes: 1. All students should obtain Grade “D” or above in each of the courses of MAT2010, 2020, 2030 and 2040. Otherwise, they are required to repeat the courses. Students who cannot meet the Grade “D” requirement in any one of the courses mentioned above after two attempts will be required to withdraw from the University, unless otherwise decided by the Board of the Faculty to which they belong to or they are successful in obtaining transfer to another Major Programme in the next term. Please refer to Reg. 15.2(e) of the [General Regulations Governing Full-time Undergraduate Studies](#).
2. “*” sign above corresponds to the case when MAT2080 is exempted (see the description of the Information Science Stream in the Mathematics programme for detail about this exemption).
3. All mathematics courses at 2000 and above level, as well as course indicated by the “#” sign, are to be included in the calculation of the Major GPA for honour classification.
2. *Requirements for B.Eng. Programme in Information Engineering (Second Degree)*

Students are required to complete a minimum of 72 units of B.Eng. (IE) Major courses as follows:

(i)	Required Courses: CSC1110, 2100, ELE3230, ELT1111, ERG2020, 2040, 2310, 4910, 4920, IEG2051, 2810, 3080, 3310, 3810, 3821, MAT2010, 2020, 2030 Graduation Project as prescribed by ERG4910 and 4920 will carry a separate weight of 10% in honours classification.	51 units
(ii)	Elective Courses: Select a total of 21 units from Core Electives and Non-Core Electives, in which at least 15 units should be from Core Electives.	21 units
(a)	Core Electives: CSC3150, IEG3010, 3050, 3090, 3830, 3831, 3841, 4020, 4030, 4060, 4100, 4130, 4140 (or MAT4240 [#] as an equivalent), IEG4160, 4180, 4190, 4200 (or MAT4260 [#] as an equivalent), IEG5124, 5154, 5240, 5270, 5280, 5290	
(b)	Non-Core Electives: ACE2050, ACY1111, CSC2110, 3130, 3160, 3170, 3230, 3260, 5280, 5470, ECO1010, ELE3310, 3330, 4320, 4550, IEG7011, 7012, 7013, 7014, MAT3080 [#] , 3260 [#] , 3310 [#] , MGT1020, MKT2010, SEG2420, 2440, 3430, 3490, 3500, 3560, 4410	
	<hr/> <i>Subtotal:</i>	72 units

plus workshops, training sessions and industrial visits.

In addition, students are required to complete the following requirements from the University:

Free Electives	13 units
General Education	12 units
Physical Education	2 units
	<hr/> <i>Subtotal:</i>
	27 units
	<hr/> Total: 99 units

- Notes: 1. Group I and Group II Electives are listed in Requirements for B.Sc. Programme in Mathematics. Core and Non-core Electives are listed in Requirements for B.Eng. Programme in Information Engineering.
2. There are 44 units required by both degrees: CSC1110, 2100, ERG2020, 2040 (or its equivalent MAT3280), IEG2051, 2810 (1 unit), MAT2010, 2020, 2030, General Education (12 units), Physical Education (2 units), and ELT1111. All 9 units in Group II Electives belong to Core Electives. In addition, up to 12 units from the Group I Elective Courses MAT3080, 3260, 3310, 4240 (or its equivalent IEG4140), and 4260 (or its equivalent IEG4200) can be applied to Core and Non-core Electives.
3. All engineering courses at 3000 and above level, as well as courses indicated by the “#” sign, are to be included in the calculation of the Major GPA for honour classification.

4-Year Recommended Course Pattern for S7 Entrants (Note 4)

(assuming the exemption of MAT2080 from the requirements of the First Degree)

Term 1	Units	Term 2	Units
General Education	3	Physical Education	1
Physical Education	1	CSC2100	3
CSC1110	3	ERG2020	3
ELT1111	3	IEG2051	3
MAT2010	3	IEG2810	1
MAT2030	3	MAT2020	3
	—	MAT2040	3
	16		17
Term 3	Units	Term 4	Units
General Education	3	General Education	3
IEG3310	3	ERG2040 or MAT3280 (Note 2)	3
MAT3230	3	MAT2090	3
Group I Electives	6	Group I Elective	3
Group II Elective	3	Group II Elective	3
	—		—
	18		15
Term 5	Units	Term 6	Units
General Education	3	General Education	3
ERG2310	3	IEG3821	2
MAT2050 (Note 1)	3	MAT0320 (Note 3)	2
Group I Elective	3	MAT2060 (Note 1)	3
Group II Elective	3	Group I Electives	6
	—		—
	15		16
Term 7	Units	Term 8	Units
ELE3230	3	ERG4920	4
ERG4910	4	IEG3080	3
IEG3810	1	Core or Non-Core Electives	5-6
Core or Non-Core Electives	4-6		—
	—		—
	12-14		12-13

4-Year Recommended Course Pattern for S6 EAS Entrants (Note 5 and 6)

(assuming the exemption of MAT2080 from the requirements of the First Degree)

Term 1	Units	Term 2	Units
English Language	3	General Education	3
Physical Education	1	Physical Education	1
CSC1110	3	CSC2100	3
MAT1010	3	ERG2020	3
MAT2010	3	IEG2051	3
MAT2030	3	IEG2810	1
PHY1001	3	MAT2020	3
	—	MAT2040	3
	19		20
Term 3	Units	Term 4	Units
General Education	3	General Education	3
ELT2450	3	ERG2040 or MAT3280 (Note 2)	3
ERG2310	3	MAT2090	3
IEG3310	3	Group I Electives	6
MAT3230	3	Group II Elective	3
Group I Elective	3		
Group II Elective	3		
	—		—
	21		18
Term 5	Units	Term 6	Units
General Education	3	General Education	3
ELT1111	3	Chinese Language	3
ERG2310	3	IEG3821	2
MAT2050 (Note 1)	3	MAT0320 (Note 3)	2
Group I Elective	3	MAT2060 (Note 1)	3
Group II Elective	3	Group I Electives	6
	—		—
	18		19
Term 7	Units	Term 8	Units
General Education	3	General Education	3
ELE3230	3	ERG4920	4
ERG4910	4	IEG3080	3
IEG3810	1	Core or Non-Core Electives	3-6
Core or Non-Core Electives	3-6		
	—		—
	14-17		13-16

4-Year Recommended Course Pattern for S6 non-EAS Entrants (Note 5 and 6)

(assuming the exemption of MAT2080 from the requirements of the First Degree)

Term 1	Units	Term 2	Units
General Education	3	General Education	3
Physical Education	1	Physical Education	1
Cantonese Language	3	CSC1110	3
English Language	3	ELT2450	3
MAT0100 (Note 7)	1	ERG2020	3
MAT1010	3	IEG2051	3
PHY1001	3	IEG2810	1
	—	MAT1020 (Note 7)	3
	17		20
Term 3	Units	Term 4	Units
General Education	3	General Education	3
CSC2100	3	ERG2040 or MAT3280 (Note 2)	3
ELT1111	3	MAT2020	3
MAT2010	3	MAT2040	3
MAT2030	3	MAT2090	3
Group I Elective	3	Group I Elective	3
	18		18
Term 5	Units	Term 6	Units
Chinese Language	3	General Education	3
IEG3310	3	IEG3821	2
ERG2310	3	MAT0320 (Note 3)	2
MAT2050 (Note 1)	3	MAT2060 (Note 1)	3
MAT3230	3	Group I Electives	6
Group I Electives	6	Group II Elective	3
	21		19
Term 7	Units	Term 8	Units
General Education	3	General Education	3
ELE3230	3	ERG4920	4
ERG4910	4	IEG3080	3
IEG3810	1	Core or Non-Core Electives	6-9
Core or Non-Core Electives	6-9		—
	17-20		16-19

Notes: *Applicable to all S6 and S7 entrants*

1. A student may consider swapping MAT2050 and 2060 in terms 5 and 6 with Group 1 Electives in terms 3 and 4.
2. MAT3280 will be offered in both the first term and the summer session.
3. Students may instead take MAT0310 offered in the first term of a year.

Applicable to S7 entrants

4. The first three years in this plan fulfil all requirements for the first degree, including free electives. The whole 4-year plan also fulfils all requirements for both degrees, including free electives.

Applicable to all S6 entrants

5. Besides 9 units in Chinese/English Language, extra requirements for S6 entrants are the Major/Faculty Requirement for S6 Entrants of the Science Faculty, including (a) MAT1010, (b) one course from PHY1001, STA1310 or CSC1110, and (c) one 3-unit elective course. The above plan meets these requirements by MAT1010, PHY1001 and CSC1110. Compared to the study plan for S7 entrants, the extra subjects are Chinese/English Language (9 units), MAT1010 and PHY1001.
6. This 4-year plan fulfils all requirements for both degrees, including free electives. It also meets the minimum of 123 units in the University degree requirements for S6 entrant.

Applicable to S6 non-EAS entrants

7. These two are recommended electives for S6 non-EAS entrants. An alternative to MAT1020 is MAT2310 in the summer term after Term 2.