

# **PROGRAMME HANDBOOK** 課程手冊

## Master of Arts in Mathematics and Pedagogy

數學及教學文學碩士

## **2019/20 Entry** 二零一九至二零年度入學

Every effort has been made to ensure that information contained in this Programme Handbook is correct. Changes may be made from time to time and the University reserves the right to make amendments to any information contained in this Programme Handbook without prior notice.

In the event of inconsistency between information contained in this Programme Handbook and any University or Programme policies and regulations or where an interpretation of the Programme Handbook is required, the decision of the University will be final.

The general information of the Master of Arts in Mathematics and Pedagogy Programme has been posted on the website of Department of Mathematics and Information Technology. Please visit the website at

https://www.eduhk.hk/mit/view.php?secid=6026

Programme Contact Information:

**Department of Mathematics and Information Technology** 

<b>Opening Hours:</b>	Monday – Friday	8:30 am – 5:20 pm
	Saturday, Sunday & Public	Closed
	Holiday	
Location:	D4-1/F-19A	
Tel:	2948 8221	
Fax:	2948 7726	
Email:	mit@eduhk.hk	

本校力求編入此課程手冊內的資料準確無誤,惟本校可隨時更改或修訂其內容,無須另行通知。

此課程手冊所載資料如與本校整體或個別課程之政策與條例出現分歧,又或於內容詮釋上出現歧義,則以本校之最後決定作準。

數學及教學文學碩士課程資料已經上載於數學與資訊科技學系的網頁,請參閱<u>https://www.eduhk.hk/mit/view.php?secid=6026</u>

#### 課程查詢:

#### 數學與資訊科技學系

辦公時間:	星期一至五	8:30 am – 5:20 pm
	星期六,星期日及公眾假期	休息
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#### **Faculty of Liberal Arts and Social Sciences**

Faculty Website: www.eduhk.hk/flass

#### Department of Mathematics and Information Technology Master of Arts in Mathematics and Pedagogy 2019/20 Entry

### **Table of Contents**

SECT	TION 1 PROGRAMME INFORMATION	4
1.1	Basic Programme Information	4
1.2	Programme Aims	5
1.3	Course Registration	5
1.4	Programme Structure and Curriculum	5
1.5	Academic Regulations	6
1.6	Academic Calendar	10
SECT	TION 2 COURSE INFORMATION	12
2.1	List of Courses	12
2.2	Course Synopsis	13
SECT	TION 3 GENERAL INFORMATION	17
3.1	Basic Programme Information	17
3.2	Personal Timetable	17
3.3	Useful Telephone Directory	18
3.4	Campus Map	

Disclaimer: Any aspect of the course (including, without limitation, the content of the Course and the manner in which the Course is taught) may be subject to change at any time at the sole discretion of the University. Without limiting the right of the University to amend the course, it is envisaged that changes may be required due to factors such as staffing, enrolment levels, logistical arrangements and curriculum changes.

Every effort has been made to ensure that information contained in this handbook is correct. Changes to any aspects of the programmes may be made from time to time due to unforeseeable circumstances beyond our control and the University reserves the right to make amendments to any information contained in this handbook without prior notice. The University accepts no liability for any loss or damage arising from any use or misuse of or reliance on any information contained in this handbook.

## SECTION 1 PROGRAMME INFORMATION

#### **1.1 Basic Programme Information**

Programme Title:	Master of Arts in Mathematics and Pedagogy	
Programme Code:	A1M085 (full-time mode)	
	C2M007 (part-time mode)	
Programme Leader:	Dr Ling Man Ho Alpha	
Email:	amhling@eduhk.hk	
General Enquiries:	2948 8221 (Mr Michael Wong)	

#### **Programme Duration**

Students normally take one (for full-time)/two years (for part-time) to complete the programme.

#### **Class Venue and Time**

Classes are held at Tai Po Campus, Tseung Kwan O Study Centre and/or Kowloon Tong Satellite Study Centre of the University. Students will normally attend evening classes from 6:30 - 9:20 pm on weekdays and/or classes on Saturdays.

#### **Hosting Department**

Department of Mathematics and Information Technology

#### **Medium of Instruction**

The medium of instruction is English supplemented with Chinese.

#### **Location of Online Programme Information**

https://www.eduhk.hk/mit/view.php?secid=6026

#### **1.2 Programme Aims**

This programme aims to:

- broaden students' knowledge in mathematics;
- help students realise how to teach mathematics in school from an advanced mathematical standpoint;
- expose students to different classroom environments and innovative pedagogical practices in mathematics;
- cultivate synergy between subject knowledge and pedagogy in mathematics; and
- foster students' critical thinking to enable them to become reflective practitioners.

#### **1.3** Course Registration

It is the students' responsibility to ensure completion of course registration before they attend lectures and conduct assessment tasks. In performing course registration on-line via The Portal, students should take particular care to ensure that the whole registration process is completed. Incomplete course registration will result in the students being barred from lectures and assessment activities, and their grades will not be recorded on their transcripts.

#### **1.4 Programme Structure and Curriculum**

The programme comprises 24 credit points (cps). Each course is worth 3 cps.

4 Core Courses (Mathematical Studies)	12 cps
4 Core Courses (Pedagogy in Mathematics)	12 cps
Total:	24 cps

\*\*Any aspect of the course (including, without limitation, the content of the Course and the manner in which the Course is taught) may be subject to change at any time at the sole discretion of the University. Without limiting the right of the University to amend the course, it is envisaged that changes may be required due to factors such as staffing, enrolment levels, logistical arrangements and curriculum changes.

#### 1.5 Academic Regulations

#### 1.5.1 Course Enrolment

- Students must ensure the completion of course registration before the course starts. Students who have not registered for any course in a semester (for full-time students) / two consecutive semesters (for part-time students) (excluding the summer semester) will be considered to have withdrawn from their programme at the University unless deferment of studies has been approved by the relevant Programme Leader/Coordinator.
- Students are required to view the Consolidated e-Billing in The Portal student portal which includes all fees / charges such as tuition fees, hall fees, caution money, etc. in one billing. Students should settle the payment on or before the specified deadline. Tuition fees paid are non-refundable.
- Registration in some courses is restricted to students having the necessary prerequisites.
- Students can add or drop a course during the add-drop period or before the third class meeting. Students are permitted to drop a course after the add-drop period but before the examination period or the deadline for submission of final assignments or presentation, whichever applicable, only for strong personal reasons, such as serious illnesses; the grade W (Withdrawn) will be recorded on the students' transcript.
- Failure to attend a course does not automatically result in the course being dropped. Please refer to para 1.5.7 for the regulation on Leave of Absence.
- A visiting student is not enrolled in any particular programme, but may take courses. Students who have completed their programme but wish to take further courses will be considered as visiting students.

#### 1.5.2 Double Registration

• Students who are enrolled in any full-time award-bearing programmes (lasting for one year or longer) of the University are not permitted to simultaneously register for another qualification at the University or a post-secondary qualification at any institutions except with prior approval by the Registrar. Violation of this regulation will lead to discontinuation of studies from the University. In case of doubt, students should seek advice from the Registry.

#### 1.5.3 Period of Study

• The length of a programme is stipulated in the curriculum. To complete the curriculum, students are required to complete satisfactorily all the specified course requirements including coursework, school attachment, block practice, internship or similar programme required activities, as applicable.

• The maximum period of study for a programme will be determined as follows:

Normative Length of Programme	Maximum Period of Study
1 Year	2 Years
2 Years	4 Years

- Students are expected to graduate within the stipulated period of study, inclusive of any change of programmes/majors, periods of leave of absence, deferment of study, suspension of study and Field Experience activities. Students who fail to complete a programme within the maximum period of study will normally be required to discontinue their studies at the University (as stipulated in 1.5.6).
- Students who wish to extend their period of study beyond the maximum programme duration are required to apply in writing to obtain prior approval from the Programme Leader/Coordinator. Likewise, students who wish to pursue a fast track to complete a programme below its normal period of study should obtain prior approval accordingly.
- Extension fees will be charged to students who have to extend their studies beyond the normal duration (i.e. 1 year for full-time and 2 years for part-time).

#### 1.5.4 Credit Transfer

- Credit Transfer may be granted for courses completed successfully at the University previously or another accredited tertiary institution.
- The transferred courses will appear on the student's transcript. The credit points transferred will be counted towards the graduation requirements but will be excluded from the calculation of the student's GPA. Students may apply for credit transfer within the first two weeks of each semester in each academic year.
- The total number of credit points transferred will not exceed 50% of the total credit points of the programme.

#### 1.5.5 Graduation Requirements

- Students are responsible for the completion of all the graduation requirements of the programme in which they are officially enrolled. To graduate, students must:
- (i) achieve the minimum number of credit points required by the programme and satisfy all other stipulated programme requirements such as Field Experience, language exit requirements, and Dissertation/Thesis/Research Project (if applicable);
- (ii) obtain a Programme GPA of 2.00 or above.
- (iii) complete the requirements as prescribed by the programme.

#### 1.5.6 Discontinuation of Studies

- A student will normally be required to discontinue his / her studies at the University if he/she:
- (i) fails to have probation lifted after he/she has been put on academic probation for two consecutive semesters; or
- (ii) has received warning(s) but has failed to improve to meet the expectations of the University with respect to professional and personal behavior; or
- (iii) has exceeded the maximum period of study without prior approval as stipulated in 1.5.3; or
- (iv) has simultaneously registered for another qualification at the University or a postsecondary qualification at any institutions without prior approval as stipulated in 1.5.2.; or
- (v) fails to meet the graduation requirement as prescribed by the Programme.
- Normally, students who are required to discontinue their studies at the University will not be considered for re-admission to the same programme in the following three academic years.

#### 1.5.7 Leave of Absence

- In exceptional circumstances where students need to take a leave of absence for 30% of scheduled classes / lectures or more, students should inform their course lecturers and are required to obtain prior approval from the Programme Leader/Coordinator by submitting a leave application form.
- Students who are absent for 30% of scheduled classes/lectures or more in a course without prior permission as stated above will be given a grade F (Fail) by their course lecturers. The grade F will be recorded on the students' transcript.
- When necessary, individual courses/course lecturers/programmes/departments may specify their attendance requirements.

#### 1.5.8 Deferment and Withdrawal

• Students can apply for deferment of study if there is a genuine need. The period of deferment in each application is normally one semester. The deferment period is included

in the maximum period of study (as stipulated in 1.5.3). A continuation fee per semester is required upon approval of the application. Students who have not settled the continuation fee will be considered to have withdrawn from the programme of study at the University (as stipulated in 1.5.1), No re-instatement of student status will be considered for withdrawal students.

- Students who fail to return to the University to resume studies at the end of the approved period of deferment will be considered to have withdrawn from the programme, effective on the day following the deferment period.
- Students who wish to withdraw from the studies shall submit a withdrawal form to the University. Effective date of withdrawal is given 3 working days from the date of submission of the completed form.

#### 1.5.9 Academic Honesty

- Students are required to carry out all academic activities honestly and in good faith. Any act that contravenes standards of academic honesty such as plagiarism, impersonation, cheating in examinations and collusion is strictly prohibited by the University.
- Any alleged cases of academic misconduct will be handled by the Head of the academic department concerned, who will then conduct a thorough investigation. An investigation report should be sent to the relevant Associate Dean who will consider whether there are prima facie grounds for referring the case to the Student Disciplinary Committee for further consideration, decision and action. Any proven act of academic misconduct may result in suspension of studies, postponement of graduation, dismissal from the University or other forms of penalties.

\*\*Students are advised to refer to the website of the Graduate School (<u>https://www.eduhk.hk/gradsch/</u>) for the most updated and complete version of academic regulations for taught postgraduate programmes.

## 1.6 Academic Calendar

	S	Μ	Т	W	Т	F	S		Events		Public Holidays
	Augu	st, 201	19								
					1	2	3				
	4	5	6	7	8	9	10				
	11	12	13	14	15	16	17				
	18	19	20	21	22	23		21 Aug	Programme Orientation		
	25	26	27	28	29	30	31				
	Septe	mber									
1	1	2	3	4	5	6	7	2 Sep:	Programme Commencement Date for 2019/20		
2	8	9	10	11	12	13	14	2 - 14 Sep:	Add/ Drop Period for Sem I	14 Sep:	Day following Chinese Mid-Autumn Festival
3	15	16	17	18	19	20	21				
4	22	23	24	25	26	27	28				
5	29	30									
	Octob	ber									
5	00100		1	2	3	4	5			1 Oct:	National Day
6	6	7	8	9	10	11	12	10 Oct:	Aquatic Meet	7 Oct:	Chung Yeung Festival
7	13	14	15	16	17	18	19				
8	20	21	22	23	24	25	r	26 Oct:	Information Day		
9	27	28	29	30	31				·		
	Nove	mber									
9	-		_		_	1	2				
10	3	4	5	6	7	8	9				
11	10	11	12	13	14 21	15	16	22.22.X	The Osth Construction		
12	17	18	19	20	21	22			The 25 <sup>th</sup> Congreation Last day of Teaching for Sem		
13	24	25	26	27	28	29	30	30 Nov:	I		
]	Decer	nber									
14	1	2	3	4	5	6	7	2-14 Dec:	Examination Period		
14	8	2 9	10	4 11	12	13	, 14		2		
	15	16	17	18	19	20		16-31 Dec:	Semester Break		
	22	23	24	25	26	27	28			25 Dec: 26 Dec:	Christmas Day First weekday after
	29	30	31								Christmas Day
	_/										

Week	S	М	Т	W	Т	F	S		Events		Public Holidays
	Janua	ry, 20	)20								
1				1	2	3	4	2 Jan:	1st teaching day of Sem II	1 Jan:	First day of January
2	5	6	7	8	9	10	11	2 - 15 Jan:	Add/ Drop Period for Sem II		
3	12	13	14	15	16	17	18	14 Jan: 15 Jan:	Grade Release Date Athletic Meet		
4	19	20	21	22	23	24	25	10 0 411		25-28 Jan:	Lunar New Year's Holiday
	26	27	28	29	30	31		25-31 Jan:	Lunar New Year Break		
	Febru	iary					1				
5	2	3	4	5	6	7	1 8				
6	9	10	- 11	12	13	, 14	15				
7	16	17	18	12	20	21	22				
8	23	24	25	26	27	28	29				
	Marc	h									
9	1	2	3	4	5	6	7				
9 10	8	2 9	5 10	4 11	5 12	0 13	7 14				
10	15	16	10	18	12 19	20	21				
12	22	23	24	25	26	20 27	28				
13	29	30	31	-	-		-				
	April										
13				1	2	3	4			4 Apr: 10-13	Ching Ming Festival
14	5	6	7	8	9	10	11	10-16 Apr:	Easter Break	Apr:	Easter Public Holidays
14	12	13	14	15	16	17	18	15 Apr:	Last day of Teaching for Sem II		
15	19	20	21	22	23	24	25				
16	26	27	28	29	30					30 Apr:	Buddha's Birthday
	May					1	2			1 May:	Labour Day
	3	4	5	6	7	1 8	2 9			1 Iviay.	Labour Day
	10	11	12	13	, 14	15	16				
	17	18	19	20	21	22	23	19 May - 1	Examination Period		
	24	25	26	27	28	29	30	Jun			
	31	-0	20	_ '	_0	_/	20				

The above calendar contains mainly dates which are related to the Programme. For a more comprehensive overview and an up-to-date version of the University calendar, please visit the Registry website.

## **SECTION 2 COURSE INFORMATION**

## 2.1 List of Courses

Area/ Requirements	Course Code	Course Title	Credit Points	Faculty/ Dept.	Recommended Year - Semester
Mathematical	Studies			-	
Core	MTH6128	Algebra and Number Theory	3	MIT	2-1
Core	MTH6129	Foundations of Geometry	3	MIT	1-1
Core	MTH6130	Probability and Statistics	3	MIT	1-2
Core	MTH6131	Calculus and Mathematical Modelling	3	MIT	2-1
Pedagogy in M	athematics				
Core	MTH6116	Mathematical Thinking and Assessment	3	MIT	1-2
Core	MTH6118	History and Pedagogy of Mathematics	3	MIT	2-2
Core	MTH6133	Instructional Design in Mathematics	3	MIT	1-1
Core	MTH6134	Technology for Mathematics Teaching: An Inquiry Approach	3	MIT	2-2

#### MIT – Department of Mathematics and Information Technology

1.	Course Code	: MTH6128
	Course Title	: Algebra and Number Theory
	Status	: Core
	Credit Point(s)	: 3
	Department	: Mathematics and Information Technology

This course provides an introductory overview of basic Number theory and Modern Algebra. It provides an opportunity for students to learn algebraic structures in Mathematics and to develop students' ability to apply the strategies, techniques and theorems learned in this course to solve problems in Mathematics, and to appreciate the beauty, unity and necessity of abstraction of mathematical concepts.

2.	Course Code	: MTH6129
	Course Title	: Foundations of Geometry
	Status	: Core
	Credit Point(s)	: 3
	Department	: Mathematics and Information Technology

This course aims to introduce various approaches to the study of mathematical ideas, properties, and relationships in geometry with specific emphasis on Euclidean geometry and its insights extended to non-Euclidean geometries.

This course will broaden the students' understanding of geometry and its implications, and provide a rigorous treatment on the foundation of Euclidean geometry. Topics in Euclidean Geometry including Euclid's Elements, congruence, geometric inequalities, parallelism, the Pythagorean Theorem are studied from an advanced standpoint. The approach to the material will be axiomatic and proofs will be required throughout. Incidence Geometry will be introduced to show how axioms affect geometric structure.

A brief treatment on non-Euclidean geometry together with the historical development of these areas will provide students with a fuller understanding of the evolution and application of mathematical concepts.

This course will equip school teachers with a sound knowledge of geometry as well as a deep understanding of its important role in problem-solving. They will gain from this course both competence and confidence to teach school geometry.

3. Course Code : MTH6130
Course Title : Probability and Statistics
Status : Core
Credit Point(s) : 3
Department : Mathematics and Information Technology

This course aims at introducing students to the basics of statistics, including standard probability distributions, sampling distributions, parameter estimations, inference and statistical decision based on hypothesis testing. This course provides an introductory overview of probability and statistics. The basics of random variables are introduced. With these basics in place, concepts of sampling distributions and techniques of data analysis and hypothesis testing are then introduced and discussed.

4.	Course Code	: MTH6131
	Course Title	: Calculus and Mathematical Modelling
	Status	: Core
	Credit Point(s)	: 3
	Department	: Mathematics and Information Technology

We aim to let students learn practical and modelling skills, beyond elementary calculus, in solving various daily life problems that are originally raised from different dynamical situations. This course will enable students to experience the different kinds of modelling techniques to solve real life problems in various situations. Practical applications and approaches will be employed with the aids of problem solving techniques in differential equations and difference equations while optimization and numerical techniques will also be introduced.

#### **Pedagogy in Mathematics**

Course Code : MTH6133
 Course Title : Instructional Design in Mathematics
 Status : Core
 Credit Point(s) : 3
 Department : Mathematics and Information Technology

This course introduces students to the basics of mathematics teaching. Curriculum reform around the world has come to a consensus that mathematics education should prepare students to be competent mathematical problem solvers as well as critical thinkers. To this end, covering the whole syllabus and working on a variety of mathematical problems do not constitute of whole spectrum of work of a professional mathematics teacher. Coupled with sound mathematical knowledge, mathematics teachers are expected to facilitate students to develop meanings for and from their mathematical experiences. This course seeks to equip teachers with the necessary background knowledge and skills to accomplish this.

2.	Course Code	: MTH6134
	Course Title	: Technology for Mathematics Teaching: An Inquiry Approach
	Status	: Core
	Credit Point(s)	: 3
	Department	: Mathematics and Information Technology

This course aims to introduce the use of ICT in teaching and learning school mathematics guided by an inquiry approach. Through questioning, investigation, and experimentation with mathematical concepts, students will develop knowledge and insight in the technological pedagogical content knowledge of mathematics. This course extends the learning of the course "Instructional Design in Mathematics" into the specific domain of application of ICT.

The course starts with an introduction to the socio-cultural framework of learning community and inquiry, and the pedagogical significance of using ICT in the mathematics classroom. These will be followed by introducing students to different ICT environments in mathematics education that are relevant to school mathematics; specifically, calculator, spreadsheet, dynamic geometry, graphing, dynamic statistic and web-based resources. Students will engage in using different ICT environments to explore school mathematics concepts and design teaching tasks under an inquiry and collaborative approach.

3.	Course Code	: MTH6116	
	Course Title	: Mathematical Thinking and Assessment	
	Status	: Core	
	Credit Point(s)	: 3	
	Department	: Mathematics and Information Technology	

Mathematical thinking is an important domain for studying cognitive development in children and an essential topic of formal instruction in schools. Mathematical achievement changes markedly as children progress through school, and differences among individuals often are striking. This course is designed to enable students to understand how children gain mathematical knowledge, and to further their own mathematical development. It focuses on the models of mathematics learning and cognitive development, as well as the assessment of students' understanding and applications of mathematical concepts.

4.	Course Code	: MTH6118
	Course Title	: History and Pedagogy of Mathematics
	Status	: Core
	Credit Point(s)	: 3
	Department	: Mathematics and Information Technology

History and Pedagogy of Mathematics (HPM) is one of the main areas of studies of the ICMI (International Commission on Mathematical Instruction). The development of mathematics and mathematics education in relation to history of mathematics will be discussed in this course. It focuses on topics such as the development of number systems, arithmetic, geometry and algebra in ancient China, as well as their influences on mathematics education.

### **SECTION 3 GENERAL INFORMATION**

#### **3.1 Basic Programme Information**

For teaching and learning related facilities and services, please refer to publications issued by the Registry, Student Affairs Office, Library, Centre for Learning, Teaching and Technology, and Office of the Chief Information Officer.

Matters concerning the Programme will be announced via email or the Intranet. Students are strongly advised to visit The Portal (the University's student portal) at <u>http://portal.eduhk.hk</u>, and to check their EdUHK emails and the intranet messages regularly for important information and announcement. These are the major means of communication in the University.

#### **3.2** Personal Timetable

The personal timetable can be accessed via The Portal (<u>http://portal.eduhk.hk</u>). Students are advised to check their personal timetables from time to time particularly onwards the commencement of the semester for the most updated version.

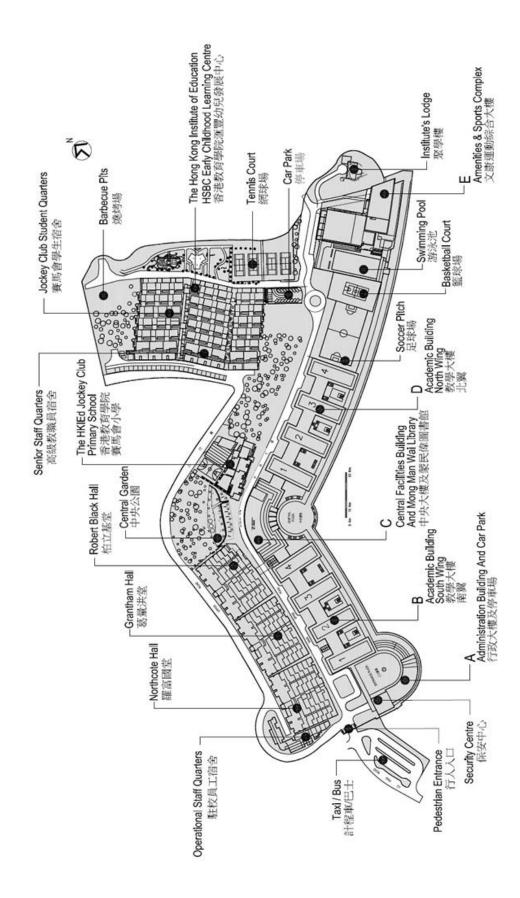
## **3.3** Useful Telephone Directory

## Administrative Unit

	<u>Telephone</u>	<u>Fax</u>
Registry		
Information Centre (A-G/F-11)	2948 6177	2948 8273
Mong Man Wai Library (Block C)		
General Enquiries	2948 6653	2948 8195
Tesung Kwan O Study Centre Library		
General Enquiries and Other Services	2190 8521	2190 8522
<b>Centre for Language in Education (B2-G/F-0</b>	3)	
General Enquiries	2948 7896 /	2948 8042
-	2948 7029 /	
	2948 8044	
Arthur Samy Language Learning	2948 7402 /	2948 7403
Centre (ASLLC) (B3-G/F-05)	2948 7403	
Centre for Learning, Teaching and Technolog	w (F_1/F_01)	
General Enquiries	2948 7047	2948 7046
General Enquines	29107017	29107010
Office of the Chief Information Officer (C-LP-20)		
Help Desk Hotline	2948 6601	2948 6520
Student Affairs Office (A-1/F-01)	2048 (720 /	2049 (240
General Enquiries	2948 6720 /	2948 6240
	2948 6721	2040 (771
Counselling and Career Service Centre	2948 6245	2948 6771
(A-1/F-07)	2040 1640	2125 (142
Northcote Hall	2948 1649	3125 6142
Grantham Hall	2948 1568	3125 6136
Robert Black Hall	2948 0221	3125 6148
Jockey Club Student Quarters	3125 6002	3125 6342

## Students' Union (D1-P-03A)

SU Executive Council	2948 6622 (independent line)	2948 0095
Amenities and Sports Complex (E-LP2-16)	2948 8844	2948 8237
The EdUHK Sports Centre (55 Yau King La	<b>ine)</b> 2638 1245	2638 1277
Health Centre (Medical Clinic) (A-1/F-21) (appointment & enquiry)	2948 6262	2948 6258
Health Centre (Dental Clinic) (A-1/F-21) (appointment & enquiry)	2948 6783	2948 6253
Security Control Centre (A-G/F-03) Campus Emergency No. (24-Hour)	2948 8000	2948 8001
Bank Bank of East Asia (C-P-12)	3609 3332	3609 3023





Brailled direction map is posted aside the security centre