Bachelor of Science (Hons) in
Mathematics and Information Engineering

JUPAS CODE **JS4733**

MATHEMATICS

Analysis
Calculus · Algebra
Discrete Math · Probability

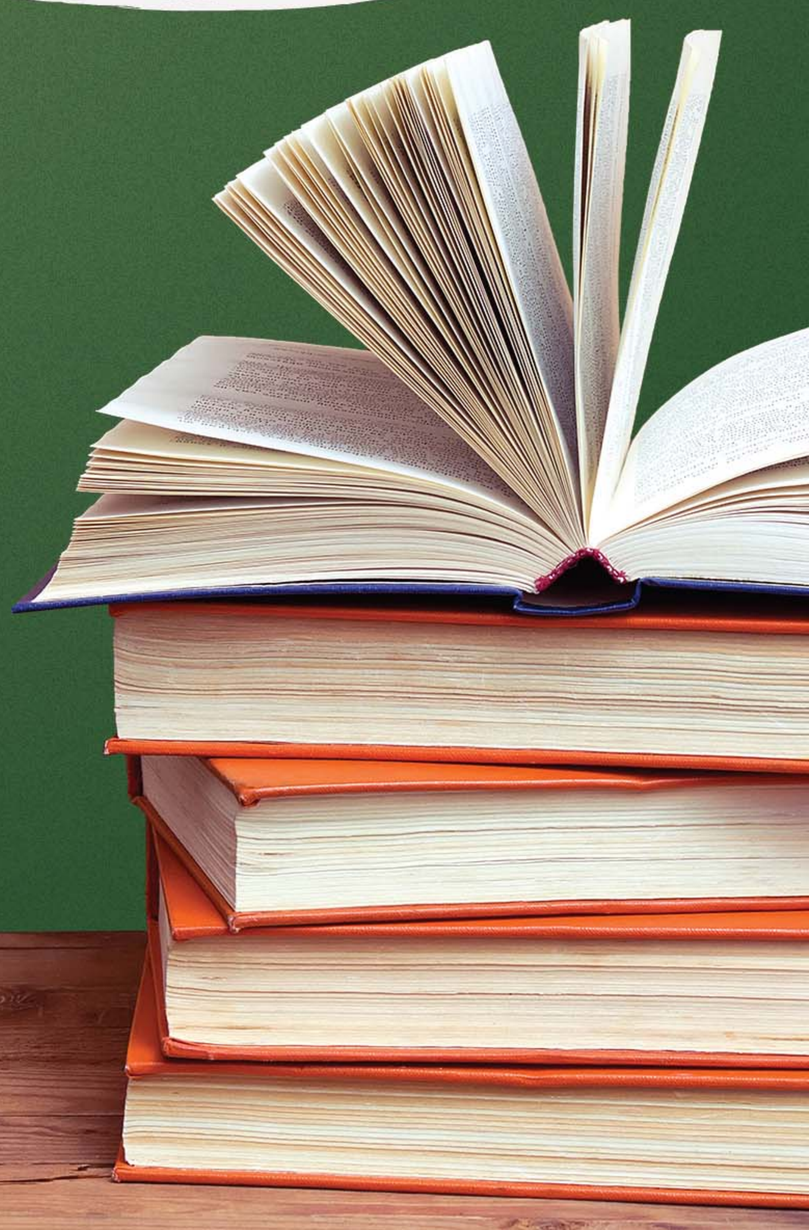
Algorithms
Data Structures
Information Theory
Signal Processing

Machine Learning · Big Data
Communications
Networking
Cyber Security

INFORMATION SCIENCE

Objectives :

- *Acquire Analytical Problem Solving Skills*
- *Ability to develop Innovative and Creative Solutions*
- *Attain Solid Foundation for Research*



www.mie.cuhk.edu.hk

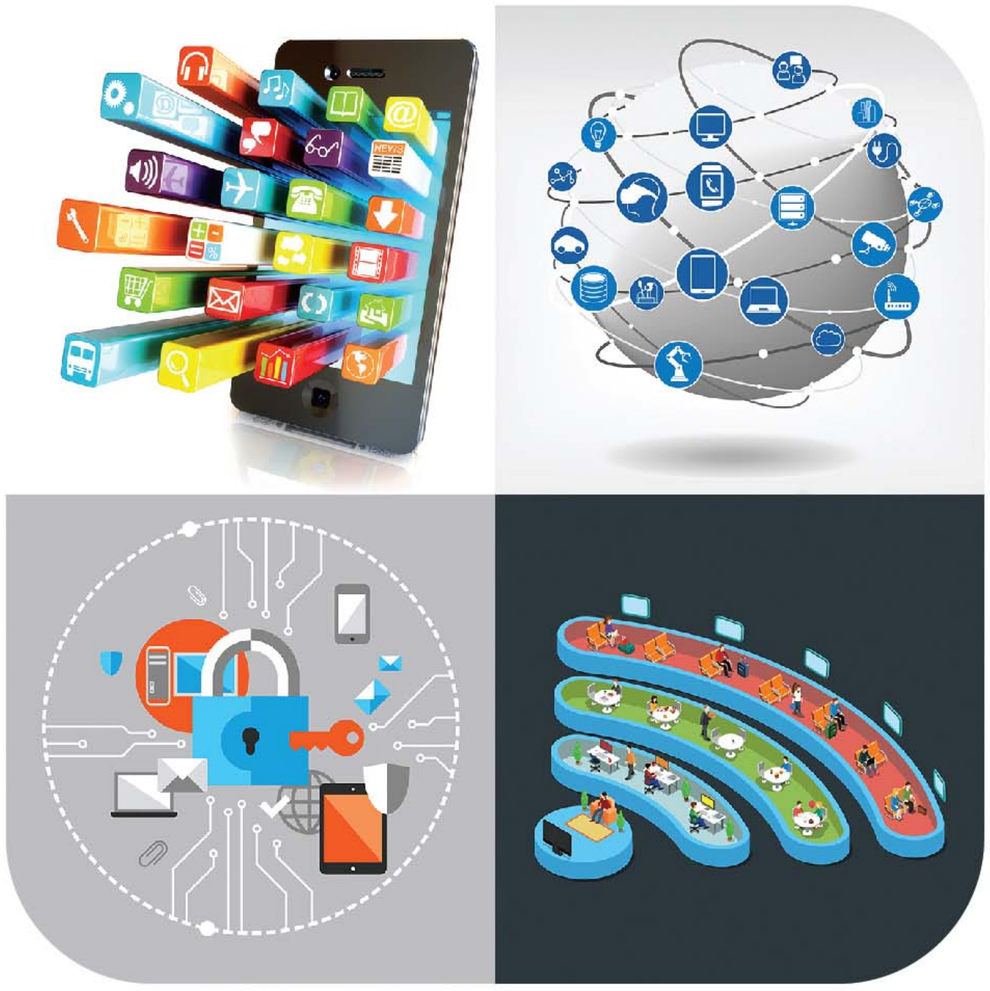
An interdisciplinary programme jointly offered by
Department of Information Engineering and
Department of Mathematics

“Mathematics is our Passion ...

Overview

Mathematics and Information Engineering (MIEG) is a selective interdisciplinary programme jointly offered by the Faculty of Science and the Faculty of Engineering, with the Department of Mathematics and the Department of Information Engineering being responsible for the management and operations.

This is a rewarding programme designed to equip gifted students with solid fundamental knowledge in mathematics, information and computer sciences. MIEG graduates go for postgraduate studies at the top universities worldwide or pursue independent research or careers in various sectors.



Research

Independent Studies

Programme Features

The programme places strong emphasis on research and encourages independent studies under the supervision of professors from either department. Students who excel in their studies will have opportunities to take up research work during their later years of study.

JUPAS

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Admission Channels for Different Qualifications

For secondary school students taking HKDSE. Admission is based on the results of **4 Core and 2 Electives with subject weighting.**

Category	Subject Group	Min. Level	Weight
Core	English Language	**4**	**1**
	Chinese Language	**3**	**1**
	Mathematics (Compulsory Part)	**5**	**2**
	Liberal Studies	**3**	**0.5**
Elective	Mathematics Extended Module I or II	**5**	**2**
	Physics / Chemistry / Biology / Combined Science / Information and Communication Technology	**4**	**1.5**
	All other Elective Subjects		**1**

… Engineering is our Profession.”

Curriculum

Year 1 Beginner
Single-variable Calculus, Linear Algebra
Foundations of Modern Mathematics, Basic Programming

Year 2 Intermediate
Multi-variable Calculus, Advanced Linear Algebra
Discrete Math and Probability, Fourier Analysis and Applications
Data Structures, Advanced Programming

Year 3 Advanced
Real and Complex Analysis, Algebra
Digital Communications, Analysis of Algorithms, Computer Networks

Year 4 Expert
Final Year Project
Major Electives: Random Processes, Information Theory,
Image Processing, Machine Learning, Cybersecurity, etc.

Graduation Requirements

Major Requirement
87 units

+

University Core Requirement
39 units

=

126 units

80+ Major Electives for you to choose, from fields of ***Big Data, Information Processing, Cyber Security, Internet Engineering, Telecommunications, Computer Networking, Software Engineering, and Mathematics***.

Non-JUPAS (Local)

For local applicants with qualifications other than HKDSE, such as GCE-AL, IB, SAT/AP or other qualifications, please check the programme website for relevant information.

International

For non-local applicants who require a student visa, or entry permit to study in Hong Kong, and with overseas qualifications such as GCE-AL, International-AL, IB, and other high school qualifications from recognised institutions, please contact us for more information.

Mainland

Mainland China students who are current Gaokao candidates (应届高考生) must apply through the National Colleges and Universities Enrolment System (全国普通高校统一招生计划)

Note: Applications of these two schemes will be assessed on a case-by-case basis.

Testimonials

LIN Yinyin
2020 graduate

Currently an MSc student in EECS at UC Berkeley.

"The mathematical bottom-up type of thinking and the engineering top-down type of thinking -- these two types of thinking trained us to be both creative and rigorous."

LI Chenghui
2018 graduate

First destination: MSc in IT at CMU. Currently a Research Engineer at Facebook Reality Labs (FRL).

"The MIEG programme is undoubtedly good for pursuing a higher degree. Most of the graduates can get some nice offers when applying for a Master or PhD degree after graduation."

DAI Yaxu
2016 graduate

First destination: MSc in CSE at UC San Diego. Currently a Project Manager at SenseTime.

"There are amazing resources for you to experience the excitement of coursework, research, and internship. Many approachable professors will help you achieve your goals."

YIN Zi
2013 graduate

First destination: PhD in EE at Stanford. Currently a Quantitative Analyst at D. E. Shaw & Co.

"Good engineering capability is required for experimentation, and a sharp math mind is needed for the understanding and analysis of results. A complete research cycle consists of both aspects."

Contact Persons

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