Bachelor of Science in Mathematics and Information Engineering

**Mathematics**
- Analysis
- Calculus
- Differential Equations
- Discrete Math
- Probability
- Algorithms
- Signal Processing
- Communications
- Machine Learning
- Big Data
- Software Engineering
- Networking
- Cyber Security

**Objectives:**
1. Acquire Analytical Problem Solving Skills
2. Ability to develop Innovative and Creative Solutions
3. Attain Solid Foundation for Research

**Information Science**

www.mie.cuhk.edu.hk

An interdisciplinary programme jointly offered by
Department of Information Engineering and
Department of Mathematics
This is an interdisciplinary programme jointly offered by the Faculty of Engineering and the Faculty of Science, with the Department of Information Engineering and the Department of Mathematics being responsible for the management and actual running of it. The programme is designed to equip students with fundamental knowledge in both mathematics and engineering, providing a solid foundation for further studies at the graduate school level or pursuing independent research or careers in various sectors.

**Programme Features**

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

### Curriculum

#### Information Engineering + Mathematics

<table>
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<tr>
<th>Year</th>
<th>Major Requirement including Faculty Package (87 units)</th>
<th>Electives</th>
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<tbody>
<tr>
<td></td>
<td>Engineering Faculty Package or Enrichment Mathematics Study Scheme plus Extra Foundation Courses</td>
<td>Web-scale Information Analytics</td>
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<td>plus an Extra Foundation Course &amp; Major Elective Courses</td>
<td>Probabilistic Models &amp; Inference Algorithms for Machine Learning</td>
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<td>Information &amp; Software Engg Practice - Mathematical Analysis I Complex Variables with Applications - Computer Networks Information Infrastructure Design Lab - Linear Algebra II Principles of Communication Systems - Communications Lab</td>
<td>Internet of Things</td>
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<td>plus Major Elective Courses</td>
<td>Building Scalable Internet-based Services</td>
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<td>Final Year Project I and Final Year Project II Design and Analysis of Algorithms</td>
<td>Social Media &amp; Human Info Interaction</td>
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<td>plus major electives</td>
<td>Multimedia Coding and Processing</td>
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*Plus University Core Requirement, including English Language, Chinese Language, General Education, Physical Education & IT Training.*


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