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

BSc in Mathematics and Information Engineering

Mathematical Analysis
Algebra & Geometry
Differential Equations
Mathematical Modeling
Stochastic Processes
Probability

Networking
Multimedia Processing
Communication Systems
Software Engineering
Cyber Security

Broader Exposure

Deeper Thinking
Extend Logical Strength
Expand Professional Scope

Mathematical and Engineering Knowledge
Analytical Problem Solving
Innovative and Creative Solutions
Communication Skills and Professional Ethnics
This is an interdisciplinary programme jointly offered by Faculty of Engineering and Faculty of Science, with Department of Information Engineering and Department of Mathematics being responsible for the management and actual running of it. The programme is designed to equip students with solid fundamental knowledge on both mathematics and engineering, providing good prerequisites 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 both departments. Students who excel in their studies will have opportunities to take up research work at their later years of study. A first-year student in this programme may follow the general Engineering study scheme or the “Enrichment Mathematics” study scheme.

**Curriculum**

<table>
<thead>
<tr>
<th>Year</th>
<th>Information Engineering</th>
<th>Mathematics</th>
<th>Core Electives</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Final Year Project I</td>
<td>Linear Algebra II</td>
<td>Multimedia Coding &amp; Processing</td>
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<tr>
<td></td>
<td>Final Year Project II</td>
<td>Mathematical Analysis I</td>
<td>Simulation &amp; Statistical Analysis</td>
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<td></td>
<td>plus Major Elective Courses</td>
<td>Algebraic Structures</td>
<td>Intro to Stochastic Processes</td>
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<td>Ordinary Differential Equations</td>
<td>Wireless Communications</td>
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<td>3</td>
<td>Computer Networks</td>
<td>Data Structures</td>
<td>Optical Communications</td>
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<td>Information Engineering Lab</td>
<td>Signals and Systems</td>
<td>Digital Communications</td>
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<td></td>
<td>Microprocessors &amp; Comp Systems / Lab</td>
<td>Principles of Comm Systems / Lab</td>
<td>Cyber Security</td>
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<td>Information &amp; Software Engg Practice</td>
<td>plus Extra Foundation Courses</td>
<td>Graph Theory</td>
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<td>2</td>
<td>Data Structures</td>
<td>Adv. Calculus I &amp; II</td>
<td>Numerical Analysis</td>
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<tr>
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<td>Signals and Systems</td>
<td>Introductory Probability</td>
<td>Linear Programming</td>
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<td></td>
<td>Principles of Comm Systems / Lab</td>
<td>Complex Variables with Applications</td>
<td>Mathematical Modeling</td>
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<td>plus courses from Faculty Package</td>
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<td>Coding Theory &amp; Cryptography</td>
</tr>
<tr>
<td>1</td>
<td>Engineering Faculty Package or Enrichment Mathematics Study</td>
<td>Engineering Faculty Package or</td>
<td>Networks: Technology, Economics, &amp; Social Interactions</td>
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<tr>
<td></td>
<td>Scheme</td>
<td>Enrichment Mathematics Study Scheme</td>
<td>and more!</td>
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<td></td>
<td>plus Extra Foundation Courses</td>
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**Admission**

For further details, please refer to the brochure of the Faculty of Engineering or Faculty of Science, or visit the websites at http://www.erg.cuhk.edu.hk or http://www.math.cuhk.edu.hk

**Contact Persons / Enquiries**

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