



**Deeper Thinking... Fundamentals of Mathematics...**

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

Mathematical and Engineering Knowledge  
 Analytical Problem Solving  
 Innovative & Creative Solutions  
 Communication Skills & Professional Ethics

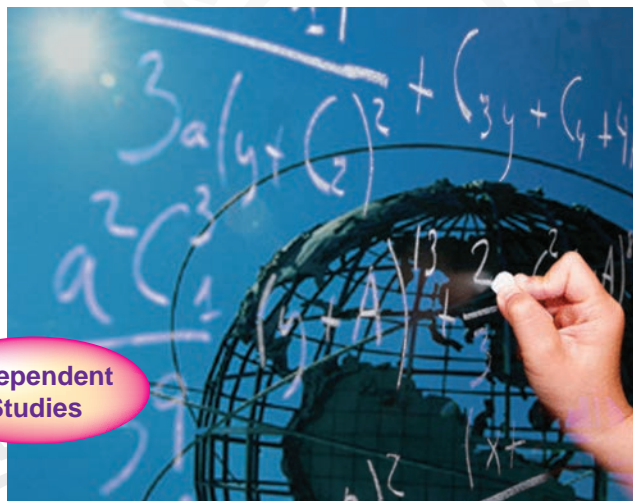
**...Broader Outcomes...**

Networking  
 Big Data Systems  
 Multimedia Processing  
 Communication Systems  
 Software Engineering  
 Cyber Security

**...Fundamentals of Information Engineering...**

# Mathematics and Information Engineering

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. A first-year student in this programme may follow the general Engineering study scheme or the "Enrichment Mathematics" study scheme.

## Curriculum

Information Engineering + Mathematics		Wide Range of Electives	
Major Requirement including Faculty Package (81 units)			
Year 4	Final Year Project I and Final Year Project II <i>plus major electives</i>	Web-scale Information Analytics Programming Big Data Systems Internet of Things Building Scalable Internet-based Services Social Media & Human Info Interaction Image & Video Processing Multimedia Coding and Processing Simulation & Statistical Analysis Intro to Stochastic Processes Digital Communication Applied Cryptography Cyber Security Graph Theory Numerical Analysis Linear Programming Mathematical Modeling Networks: Technology, Economics, & Social Interactions and MORE!	
Year 3	Info & Software Engg Practice Computer Networks Info Infrastructure Design Lab Communications Lab  <i>plus Major Elective Courses</i>		<i>Specialized</i> <i>Professional</i>
Year 2	Programming Lab Basic Analog & Digital Circuits Data Structures Signals and Systems  <i>plus an Extra Foundation Course &amp; Major Elective Courses</i>		<i>Advanced</i>
Year 1	Engineering Faculty Package or Enrichment Mathematics Study Scheme  <i>plus Extra Foundation Courses</i>		<i>Fundamental</i>
*Plus University Core Requirement, including English Language, Chinese Language, General Education, Physical Education & IT Training.*			

## Admission

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

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