Master of Science in Computer Science

Programme	Master of Science in Computer Science 理學碩士(計算機科學)
Award Title	Master of Science in Computer Science 理學碩士(計算機科學)
Offering Academic Unit	Department of Computer Science
Mode of Study	Combined mode

Normal Period of Study

- 1 year (Full-time)
- 2 years (Part-time/Combined mode)

Maximum Period of Study

- 2.5 years (Full-time)
- 5 years (Part-time/Combined mode)

Credit Units Required for Graduation

• Master of Science in Computer Science - 30 credit units
• Postgraduate Diploma in Computer Science - 24 credit units

Programme Aims

The programme aims to (1) enable computer professionals to strengthen and upgrade their technical capabilities in computer software development, (2) broaden students' knowledge and deepen their understanding of key issues of specific areas in computer science, including artificial intelligence, data science, information security, multimedia, and other related contemporary technologies, and (3) prepare graduates to take up research and advanced innovative development work in the industry or pursue higher research studies.

Programme Intended Learning Outcomes (PILOs)

Upon successful completion of this Programme, students should be able to:
1. apply tools and techniques in the development of computer systems and propose solutions;
2. apply computer network, software and data engineering concepts and technologies, as well as domain-specific tools and techniques, in the design of quality computer software;
3. work effectively as member of a team in the development of computer software systems;
4. delineate key issues of specific areas in computer science and develop potential solutions for tackling problems in these areas.

Programme Requirements

Courses in the programme are categorized into **Core Courses** and **Electives**. The list of Electives is divided into two groups: **Group I** and **Group II**. To obtain the award of Master of Science in Computer Science, students are required to take

all 9 credit units of the Core Courses, AND

at least 21 credit units of Electives, including at least 3 credit units of Electives in Group I.

Some of the Electives are also designated as **Stream (Core or Elective) Courses** of the **Artificial Intelligence (AI) Stream, Data Science (DS) Stream** or **Information Security (IS) Stream**. Students may choose to

concentrate on a stream by taking at least 12 credit units of the stream courses, including all the stream core course(s), if any, and no more than 3 credit units of courses of each of the other streams, OR

take any Electives ***without concentration on any stream***.

1. Core Courses (9 credit units)

Course Code	Course Title	Credit Units	Remarks
CS5222	Computer Networks and Internets	3	
CS5351	Software Engineering	3	
CS5481	Data Engineering	3	

2. Electives (21 credit units)

Group I (at least 3 credit units)

Course Code	Course Title	Credit Units	Remarks
CS5487	Machine Learning: Principles and Practice	3	AI Stream Elective
CS6493	Natural Language Processing	3	AI Stream Elective
CS6535	Guided Study in Artificial Intelligence	3	AI Stream Elective
CS5286	Algorithms and Techniques for Web Searching	3	DS Stream Elective
CS5296	Cloud Computing: Theory and Practice	3	DS Stream Elective
CS5489	Machine Learning: Algorithms and Applications	3	DS Stream Elective
CS6536	Guided Study in Data Science	3	DS Stream Elective
CS5293	Topics on Information Security	3	IS Stream Elective
CS6290	Privacy-enhancing Technologies	3	IS Stream Elective
CS6537	Guided Study in Information Security	3	IS Stream Elective
CS5188	Virtual Reality Technologies and Applications	3	
CS5367	Computer Games Design	3	
CS6187	Vision and Language	3	
CS6382	Algorithm Analysis and Game Theory	3	
CS6487	Topics in Machine Learning	3	
CS6520	Project	6	
CS6521	Research/Internship Project	6	

Group II

Course Code	Course Title	Credit Units	Remarks
CS5491	Artificial Intelligence	3	AI Stream Core

CS5187	Vision and Image	3	AI Stream Elective
CS5486	Intelligent Systems	3	AI Stream Elective
CS5483	Data Warehousing and Data Mining	3	DS Stream Elective
CS5488	Big Data Algorithms and Techniques	3	DS Stream Elective
CS5285	Information Security for eCommerce	3	IS Stream Elective
CS5288	Cryptography: Theory and Practice	3	IS Stream Elective
CS5294	Information Security Technology Management	3	IS Stream Elective
CS5182	Computer Graphics	3	
CS5185	Multimedia Technologies and Applications	3	
CS5282	Practical Optimization Algorithms and Techniques	3	
CS5348	Software Quality Engineering	3	
CS6175	Virtual Reality and Game-Engine Technologies	3	
CS6491	Topics in Optimization and its Applications in Computer Science	3	
EC5001	Introduction to eCommerce	3	

Additional Information

The programme allows early exit with a Postgraduate Diploma in Computer Science as an intermediate award.

No. of credit units required:

all 9 credit units of the Core Courses, and

at least 15 credit units of Electives, including at least 3 credit units of Electives in Group I

Related Links

Department of Computer Science