Master of Science in Computer Science

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2024 Cohort

Program	Master of Science in Computer Science 理学硕士（电脑科学）
Award Title	Master of Science in Computer Science 理学硕士（电脑科学）

Note: *The following curriculum information is subject to periodic review and changes*

Normal and Maximum Period of Study

	Years
Normal period of study	2 years
Maximum period of study	3 years

Number of Credit Units Required for the Award

Requirements	Credit Units
University requirement	3 credit units
Core courses	21 credit units
Elective courses	15 credit units
Graduate Research, Internship and Innovation	6 credit units
Total Credits	**45 credit units**

Program Aims

The program 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.

Program Intended Learning Outcomes (PILOs)

Upon successful completion of this Program, 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 a 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.

Program Requirement

1. University Requirement (3 CUs)

Course Code	Course Title	Credit Units	Remarks
IP5901	新时代中国特色社会主义理论与实践 Theory and Practice of Socialism with Chinese Characteristics in the New Era	2	
IP5902	自然辩证法概论 Dialectics of Nature	1	Choose 1 from IP5902 and IP5903
IP5903	马克思主义与社会科学方法论 Marxism and Methodology of Social Sciences	1	

2. Core Courses (21 CUs)

Course Code	Course Title	Credit Units
CS5222	Computer Networks and Internets	3
CS5351	Software Engineering	3
CS5481	Data Engineering	3
CS5182	Computer Graphics	3
CS5285	Information Security for eCommerce	3
CS6382	Algorithm Analysis and Game Theory	3
CS5489	Machine Learning: Algorithms and Applications	3

3. Elective Course (15 CUs)

Any credits earned beyond the 6-credit requirement in Graduate Research, Internship, and Innovation may be applied toward the Elective Courses requirement.

Course Code	Course Title	Credit Units
CS5185	Multimedia Technologies and Applications	3
CS5187	Vision and Image	3
CS5188	Virtual Reality Technologies and Applications	3
CS5282	Practical Optimization Algorithms and Techniques	3
CS5286	Algorithms and Techniques for Web Searching	3
CS5288	Cryptography: Theory and Practice	3
CS5293	Topics on Information Security	3
CS5294	Information Security Technology Management	3
CS5296	Cloud Computing: Theory and Practice	3
CS5348	Software Quality Engineering	3
CS5367	Computer Games Design	3
CS5483	Data Warehousing and Data Mining	3
CS5486	Intelligent Systems	3
CS5487	Machine Learning: Principles and Practice	3
CS5488	Big Data Algorithms and Techniques	3
CS5491	Artificial Intelligence	3
CS6175	Virtual Reality and Game-Engine Technologies	3
CS6187	Vision and Language	3
CS6290	Privacy-enhancing Technologies	3
CS6487	Topics in Machine Learning	3
CS6491	Topics in Optimization and its Applications in Computer Science	3
CS6493	Natural Language Processing	3
CS6535	Guided Study in Artificial Intelligence	3
CS6536	Guided Study in Data Science	3
CS6537	Guided Study in Information Security	3

4. Graduate Research, Internship and Innovation (6 CUs)

Enrollment in the following courses is restricted to students who have attained second year standing. First-year students are not eligible to register for these offerings.

Students are required to complete a minimum of 6 credits and may take up to 12 credits from this category. Any credits earned beyond the 6-credit requirement may be applied toward the Elective Courses requirement. Students may enroll in only one of the following options per semester: Research Project, Internship Project, or Innovation Project.

Course Code	Course Title	Credit Units	Remarks
CS6521DG	Advanced Research	12	Open for registration in Semester A
ITP6001	Internship Project	6	Open for registration in Semester A
ITP6002	Internship Project	6	Open for registration in Semester B
INP6001	Innovation Project	6	Open for registration in Semester A/B

If there is any inconsistency or ambiguity between the page contents and the Academic Regulations (AR), rules and guidelines, the AR, rules and guidelines shall prevail.

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