COMPUTER SCIENCE (M.S.)

Requirements

Background courses

Students with insufficient background for graduate-level computer science courses may need to take background coursework. Credits do not apply toward the M.S. program. Students entering the program without an undergraduate degree in computer science may need to take one or more of the following, depending on their background:

Course	Title	Credits
CISC 5220	Data Structures	3
CISC 5250	Computer Organization	3
CISC 5300	Computer Programming C++	3
CISC 5400	Discrete Structures	3

Degree Requirements

The master's degree requires 30 credits of coursework beyond the bachelor's degree, which includes 24 credits of coursework and six credits of a culminating project. It can be completed by a full-time student in three or four semesters. Students are required to choose a concentrations based on their interests. A B-average (3.000) must be maintained in courses taken for the master's degree.

Course	Title	Credits
Foundation Courses		
CISC 5325	Database	3
CISC 5595	Operating Systems	3
CISC 5825	Computer Algorithms	3
CISC 5200	Computer Language Theory	3
One Advanced Software course (any additional class in the Software concentration)		3
Two courses from any of the following concentrations: [1]		**6**
Software		
Artificial Intelligence		
Cybersecurity		
Data Analytics		
Networks and Systems		
One additional course from any concentration area.		**3**
One of the following options:		**6**
Thesis Paper & Research		
CISC 8598	M.S. Computer Science Thesis I	
CISC 8599	M.S. Computer Science Thesis II	
Course and Capstone		
One additional elective course [2]		
CISC 6597	Capstone Project in Computer Science	
Total Credits		30

[1] A list of courses for each concentration can be found on the Concentrations page (p. 1).

[2] Any additional graduate-level CISC course may apply, except for those listed under Background Courses above.

Concentrations

Software concentration courses

Courses in this group have the CSSO attribute.

Course	Title	Credits
CISC 5030	Internet and Web Programming	3
CISC 5350	Financial Programming	3
CISC 5380	Programming with Python	3
CISC 5410	Mobile Device Programming	3
CISC 5500	Data Analytics Tools and Scripting	3
CISC 5520	Programming Languages	3
CISC 5550	Cloud Computing	3
CISC 5835	Algorithms for Data Science	3
CISC 5850	The Social Network	3
CISC 5950	Big Data Programming	3
CISC 6100	Software Engineering	3
CISC 6300	Computational Finance	3
CISC 6352	Advanced Computational Finance	3
CISC 6375	Object Software Design	3
CISC 6400	Robotics and Animation	3
CISC 6795	Java Programming	3
CISC 6875	Parallel Computations	3

Artificial Intelligence concentration courses

Courses in this group have the CSAI attribute.

Course	Title	Credits
CISC 5109	Big Data Analytics	3
CISC 5700	Cognitive Computing	3
CISC 5800	Machine Learning	3
CISC 5900	Information Fusion	3
CISC 6400	Robotics and Animation	3
CISC 6525	Artificial Intelligence	3
CISC 6550	Systems Neuroscience	3

Cybersecurity concentration courses

Courses in this group have the CSCY attribute.

Course	Title	Credits
CISC 5009	Network Essentials	3
CISC 5650	Cybersecurity Essentials	3
CISC 5660	Data Science for Cybersecurity	3
CISC 5725	Network Administration	3
CISC 5728	Security of e-Systems and Networks	3
CISC 5750	Information Security and Ethics	3
CISC 6070	Red Teaming	3
CISC 6600	Secure Cyber Networks	3
CISC 6630	Wireless Security	3
CISC 6650	Forensic Computing	3
CISC 6655	Cloud Computing Security	3
CISC 6680	Intrusion Detection and Network Forensics	3

CISC 6800	Malware Analytics and Software Security	3
CISC 6920	Incident Response and Risk Management	3
CISC 7050	Penetration Testing	3

Data Analytics concentration courses

Courses in this group have the CSDA attribute.

Course	Title	Credits
CISC 5109	Big Data Analytics	3
CISC 5500	Data Analytics Tools and Scripting	3
CISC 5700	Cognitive Computing	3
CISC 5790	Data Mining	3
CISC 5800	Machine Learning	3
CISC 5835	Algorithms for Data Science	3
CISC 5850	The Social Network	3
CISC 5900	Information Fusion	3
CISC 5950	Big Data Programming	3
CISC 6550	Systems Neuroscience	3
CISC 6700	Medical Informatics	3

Networks and Systems concentration courses

Courses in this group have the CSNS attribute.

Course	Title	Credits
CISC 5009	Network Essentials	3
CISC 5030	Internet and Web Programming	3
CISC 5410	Mobile Device Programming	3
CISC 5550	Cloud Computing	3
CISC 5725	Network Administration	3
CISC 5728	Security of e-Systems and Networks	3
CISC 6500	Bioinformatics	3
CISC 6600	Secure Cyber Networks	3
CISC 6630	Wireless Security	3
CISC 6680	Intrusion Detection and Network Forensics	3
CISC 6725	Computer Networks	3
CISC 6735	Wireless Networks	3
CISC 6795	Java Programming	3