

MS Degree Course Requirements

Updated course list on 3/12/2021

Each degree candidate will be required to pass, with an average of B or better, and not more than two grades below B, the following minimum number of credits, distributed to include core courses and electives.

Core courses (12 credits, 4 courses):

- COMP.5030 Algorithms
- One course from Group II
- One course from Group III
- One course from Group IV

Group I (Foundations):

COMP.5020 Foundations of Computer Science
COMP.5030 Algorithms
COMP.5310 Design of Programming Languages
COMP.5340 Compiler Construction
COMP.7100 Approximation Algorithms

Group II (Systems and Networks):

COMP.5150 Operating Systems I
COMP.5160 Operating Systems II
COMP.5300 Special Topics
COMP.5610 Computer & Network Security I
COMP.5620 Computer & Network Security II
COMP.5630 Data Communications I
COMP.5640 Data Communications II
COMP.5660 Malware Analysis
COMP.5670 IoT Security and Privacy
COMP.5690 Computer and Network Forensics
COMP.6610 Advanced Topics in Network Security

Group III (Human-Computer Interaction, Visualization, Robotics and AI):

COMP.5230 Computer Vision I
COMP.5270 Human Computer Interaction
COMP.5280 Evaluation of Human-Computer Interaction
COMP.5410 Data Visualization
COMP.5420 Natural Language Processing
COMP.5430 Artificial Intelligence
COMP.5440 Data Mining

COMP.5450 Machine Learning
COMP.5460 Computer Graphics I
COMP.5470 Computer Graphics II
COMP.5480 Robot Design
COMP.5490 Mobile Robots
COMP.5495 Robot Learning
COMP.5520 Foundations in Digital Health
COMP.5500 Topics
COMP.6440 Advanced Topics in Data Mining

Group IV (Information Management and Analysis):

COMP.5130 Internet and Web Systems I
COMP.5140 Internet and Web Systems II
COMP.5510 Bioinformatics for CS
COMP.5730 Database I
COMP.5740 Database II
COMP.5800 Topics in Computer Science
COMP.6730 Advanced Database Systems

Electives (18 credits, 6 courses in the COMP.5*** and COMP.6*** series or up to six credits from the list below:)

List of other approved courses:

COMP.7010 Computer Science Research
COMP.7030 Computer Science Research
EECE.5560 Fundamentals of Robotics
EECE.5821 Computer Architecture and Design

Total: 30 credits

Master's Thesis

An optional master's thesis can be substituted for six credits and can be used to substitute for two elective courses. Students who wish to do a thesis must file a *Proposed Thesis Committee* form with the Graduate Coordinator prior to beginning working on the thesis.