

# MASTER OF SCIENCE IN COMPUTER SCIENCE

The purpose of this program is to prepare students for the Ph.D. program and/or a research/development career in the industry in the field of computer science. Students have the option to pursue thesis research or a project under the guidance of a faculty adviser.

## Curriculum

The Master of Science in Computer Science degree program requires a core curriculum of 12 credit hours and 20 credit hours of elective courses. The plan of study must consist of at least 32 credit hours, at least 20 of which must be 500-level CS courses.

Minimum Degree Credits	32
Minimum Core Course Credits	12
Minimum 500-Level CS Credit	20

## Degree Options

- **Coursework Only:** All degree requirement credit hours come from coursework.
- **Master's Project:** Elective credit hours can include up to five credit hours of master's project work (CS 597). A master's project comprises a high-quality paper submitted for publication as an article or as a technical report, or a high-quality piece of software. The software should be of distribution quality, but can be proprietary.
- **Master's Thesis:** Elective credit hours can include up to five credit hours of master's thesis work (CS 591). With adviser approval, up to three additional credit hours of CS 591 may be added. A student must successfully defend a thesis to apply CS 591 credit hours toward a degree. Students who complete both a project and a thesis can apply a maximum combined total of eight credit hours of CS 591 and CS 597 toward the degree.

## Core Courses

Regardless of the degree option students are required to take four core courses from the three core areas: programming, systems, and theory. The requirement is at least one course from the programming area, at least one course from the systems area, and at least two courses from the theory area.

Code	Title	Credit Hours
<b>Programming Core Courses</b>		<b>(3)</b>
Select a minimum of one course from the following:		3
CS 511	Topics in Computer Graphics	3
CS 512	Computer Vision	3
CS 525	Advanced Database Organization	3
CS 540	Syntactic Analysis of Programming Languages	3
CS 541	Topics in Compiler Construction	3
CS 546	Parallel and Distributed Processing	3
CS 551	Operating System Design and Implementation	3
CS 553	Cloud Computing	3
<b>Systems Core Courses</b>		<b>(3)</b>
Select a minimum of one course from the following:		3
CS 542	Computer Networks I: Fundamentals	3
CS 544	Computer Networks II: Network Services	3
CS 547	Wireless Networking	3
CS 550	Advanced Operating Systems	3
CS 555	Analytic Models and Simulation of Computer Systems	3
CS 570	Advanced Computer Architecture	3
CS 586	Software Systems Architectures	3
CS 543	Software-Defined Networking	3
<b>Theory Core Courses</b>		<b>(6)</b>
Select a minimum of two courses from the following:		6
CS 530	Theory of Computation	3
CS 533	Computational Geometry	3
CS 534	Types and Programming Languages	3

CS 535	Design and Analysis of Algorithms	3
CS 536	Science of Programming	3
CS 538	Combinatorial Optimization	3
CS 539	Game Theory: Algorithms and Applications	3
<b>Elective Courses</b>		<b>(20)</b>
Select 20 credit hours from the following:		20
CS 591	Research and Thesis of Masters Degree (Master's Thesis)	0-5
CS 597	Reading and Special Problems (Master's Project)	0-5
400- or 500-level CS courses		15-20
<b>Total Credit Hours</b>		<b>32</b>

**Notes:**

- All core courses must be satisfied by courses taken at Illinois Institute of Technology. Courses transferred for credit cannot be used to satisfy core course requirements. Core course credit hours do apply toward the 20-credit hour requirement for CS courses.
- Elective credit hours may include 400- and 500-level CS courses, certain courses transferred from other departments (pending adviser and departmental approval), and up to six credit hours of accelerated courses. CSP courses, Interprofessional Projects (IPROs), and deficiency courses (CS 201, CS 401, CS 402, and calculus) cannot be included. Consult the computer science department website ([science.iit.edu/computer-science](http://science.iit.edu/computer-science)) for details.