

www.clcillinois.edu/programs/mcs

PROGRAM OVERVIEW

Engineering, Math and Physical Sciences
Division, Room T302, (847) 543-2044

**Degree: Associate in Science
Plan 11AB**

This program is **recommended** for students pursuing a B.S. or B.A. in Computer Science with a math or liberal arts focus. The following courses are recommended for students who have not decided on a specific four year college or university. Once a transfer school is selected, students **should meet** with a Student Development Counselor or advisor to determine which CLC courses will also meet transfer requirements. Four year schools offering a B.S. or B.A. in Computer Science with a math or liberal arts focus include Loyola, DePaul, Elmhurst, University of Illinois at Urbana-Champaign (UIUC College of Liberal Arts and Sciences) Northern Illinois University (NIU), University of Wisconsin Parkside and Northeastern Illinois University.

Students desiring a B.S. in Computer Science with an engineering focus may want to pursue the program of study recommended under Engineering and Computer Science (Associates of Engineering Science) www.clcillinois.edu/programs/egr.

All course prerequisites must be met. Additionally, students are required to select one course from the International/Multicultural list on page 28 of the 2020-21 catalog at www.clcillinois.edu/catalog to meet graduation requirements. A grade of C or better is required for all English course requirements.

FIRST SEMESTER		15
MCS 141	Computer Science I	4
MTH 144	Precalculus	5
ENG 121	English Composition I	3
HUM 127	Critical Thinking <i>or</i>	
PHI 122	Logic	3

SECOND SEMESTER		14
MCS 142	Computer Science II	3
MTH 145	Calculus and Analytic Geometry I	5
ENG 122	English Composition II <i>or</i>	
ENG 126	Advanced Composition: Scientific and Technical Communication Social & Behavioral Sciences Elective	3 3

THIRD SEMESTER		15
MCS 240	Computer Organization and Architecture	3
MTH 146	Calculus and Analytic Geometry II	4
PHY 123	Physics for Science and Engineering I	5
CMM 121	Fundamentals of Speech	3

FOURTH SEMESTER		16
BIO 120	Environmental Biology <i>or</i>	
BIO 141	Concepts in Biology <i>or</i>	
BIO 161	General Biology I	4
MTH 244	Discrete Mathematics Fine Arts Elective Physical Life Science Elective Social and Behavioral Sciences Elective	3 3 3 3

Note: This plan includes **recommendations** for students who plan to major in this subject at a four year school. Students who follow this plan will meet the requirements of a general transfer degree (A.A. or A.S). The CLC degree earned will be a general transfer degree, not a degree in this specific area of study.

TYPICAL JOBS

- Data Scientist
- Software Engineer
- Actuarial Scientist
- Statistician
- Operations Research Analyst
- Database Administrator
- Web developer
- Mathematics Educator
- Computer Science Educator
- Information Security Analyst
- Computational Mathematician
- Biostatistician

JOB DUTIES

- Conduct research into fundamental computer and information science as theorists, designers or inventors
- Solve or develop solutions to problems in the field of computer hardware and software

GETTING STARTED

For steps on how to apply and register, visit www.clcillinois.edu/admission.

TYPICAL TRANSFER SCHOOLS

- University of Illinois at Chicago
- University of Illinois at Urbana-Champaign
- Northern Illinois University
- University of Wisconsin at Milwaukee
- University of Wisconsin at Madison
- Illinois Institute of Technology
- Illinois State University
- Milwaukee School of Engineering
- University of Wisconsin Parkside
- DePaul University

www.clcillinois.edu/transfer

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ABOUT THIS PROGRAM

Computer Science (CS) vs. Computer Information Technology (CIT)

CS has a more technical emphasis, where CIT has a more business emphasis. For example, CS has more math classes to take, e.g. calculus and discrete math, and CIT has more business classes, e.g. accounting and finance.

Getting Started: First Classes

The beginning CS student takes math and computer programming, specifically MTH 144 Precalculus and MCS 141 CS1. Or, depending on a student's math background, MTH 108 Intermediate Algebra and MCS 121 Computer Science Concepts.

You cannot take a programming class until you have completed MTH 108 Intermediate Algebra or higher.

Intro Course: Computer Science Concepts

Computer Science Concepts (MCS 121) is not a core CS class. It is for the student who wants to take an introductory CS class before taking a programming class.

It is an introduction of computing systems for the computer science major, e.g. data representation, programming languages, operating systems, applications software and networks.

Programming Language

The CLC computer science programming courses use Java as the programming language vehicle for instruction. It is one of the predominant object-oriented programming (OOP) languages.

COMPUTER SCIENCE COURSES

Computer Science Concepts (MCS 121)

The course previews the fundamental concepts and applications of computer science through a survey of topics including: algorithms and problem solving, programming, computer organization, networking, databases, artificial intelligence and graphics.

Computer Programming for Engineers and Scientists (MCS 140)

This is a course in algorithm and problem solving using the Java programming language. It is intended for engineers to program in the context of scientific applications.

Computer Science I (MCS 141)

The first in a sequence of courses for majors in computer science, this course introduces a disciplined approach to problem-solving, algorithm development and data abstraction. The course covers branching, repetition and sequence control structures; object-oriented program design, testing and documentation using good programming style; and arrays, objects and files.

Computer Science II (MCS 142)

Using the Java computer language, this course presents such topics as string processing, internal searching and sorting, recursion; and data structures such as stacks, queues, linked lists, trees and graphs.

Computer Organization and Architecture (MCS 240)

Topics include data representation, Boolean algebra and digital logic, assembly language, memory and I/O storage systems.

CONTACT INFO

Grayslake Campus
19351 W. Washington St.
Grayslake, IL 60030

Shyam Kurup

(847) 543-2697
skurup@clcillinois.edu

Scott Reed

(847) 543-2909
reed@clcillinois.edu

Jon Sprague

(847) 543-2639
jsprague@clcillinois.edu

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Physical Science Division
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