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) at 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 37 of the 2019-20 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCS 141</td>
<td>Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>MTH 144</td>
<td>Precalculus</td>
<td>5</td>
</tr>
<tr>
<td>ENG 121</td>
<td>English Composition I</td>
<td>3</td>
</tr>
<tr>
<td>HUM 127</td>
<td>Critical Thinking</td>
<td>3</td>
</tr>
<tr>
<td>PHI 122</td>
<td>Logic</td>
<td>3</td>
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SECOND SEMESTER 14

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<th>Course</th>
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<tbody>
<tr>
<td>MCS 142</td>
<td>Computer Science II</td>
<td>3</td>
</tr>
<tr>
<td>MTH 145</td>
<td>Calculus and Analytic Geometry</td>
<td>5</td>
</tr>
<tr>
<td>ENG 122</td>
<td>English Composition II or Advanced Composition: Scientific and Technical Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENG 126</td>
<td>Social &amp; Behavioral Sciences Elective</td>
<td>3</td>
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THIRD SEMESTER 15

<table>
<thead>
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<th>Course</th>
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<tbody>
<tr>
<td>MCS 240</td>
<td>Computer Organization and Architecture</td>
<td>3</td>
</tr>
<tr>
<td>MTH 146</td>
<td>Calculus and Analytic Geometry II</td>
<td>4</td>
</tr>
<tr>
<td>PHY 123</td>
<td>Physics for Science and Engineering I</td>
<td>5</td>
</tr>
<tr>
<td>CMM 121</td>
<td>Fundamentals of Speech</td>
<td>3</td>
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FOURTH SEMESTER 15-16

<table>
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<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BIO 120</td>
<td>Environmental Biology or Concepts in Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIO 141</td>
<td>Concepts in Biology</td>
<td>3</td>
</tr>
<tr>
<td>BIO 161</td>
<td>General Biology I</td>
<td>4</td>
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<tr>
<td>MTH 244</td>
<td>Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>MTH 244</td>
<td>Fine Arts Elective</td>
<td>3</td>
</tr>
<tr>
<td>MTH 244</td>
<td>Physical Life Science</td>
<td>2-3</td>
</tr>
<tr>
<td>MTH 244</td>
<td>Social and Behavioral</td>
<td>3</td>
</tr>
<tr>
<td>MTH 244</td>
<td>Sciences Elective</td>
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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
• Biostatistican

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
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.

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.

CONTACT INFO

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