COMPSCI 125: Introduction to Computer Science I
4-credit course with 4 lecture hours per week
Course Coordinator: Amit Jain

Textbook(s) and Supplemental Material

Catalog Description
Introduction to object-oriented problem solving and programming. Software development process. Data and expressions, conditionals and loops, arrays and lists. Introduction to object-oriented design, UML diagrams, developing graphical user interfaces, basic searching and sorting. Note: COMPSCI 119 or 120 recommended for students with no programming experience.

PREREQ: MATH 144 or MATH 147 or satisfactory math placement score.

Required

Goals for the Course
Successful students will be expected to:

- design object-oriented solutions to programming problems
- implement working solutions to programming problems using good coding and documentation styles
- explain basic concepts of computer science such as algorithms, abstraction, encapsulation and inheritance
- use an Integrated Development Environment that is specialized for program development with reasonable proficiency

Outcomes Addressed
a. an ability to apply knowledge of computing and mathematics appropriate to the discipline
b. an ability to analyze a problem, and identify and define the computing requirements appropriate to its solution
c. an ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs
i. an ability to use current techniques, skills, and tools necessary for computing practice
k. an ability to apply design and development principles in the construction of software systems of varying complexity

Outcomes Assessed: None

Topics Covered
What is Computer Science?
Using Eclipse
Data and Expressions
Using Classes and Objects
Writing Classes
Conditionals and Loops
More Conditionals and Loops
Object-oriented design
Arrays
Graphical User Interfaces
Inheritance
Uniform Modeling Language
Polymorphism
Exceptions

Grading
Letter grades are assigned to students based on numerical scores for the following activities:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>In-class exercises</td>
<td>5%</td>
</tr>
<tr>
<td>Programming Assignments</td>
<td>45%</td>
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<tr>
<td>First Exam</td>
<td>10%</td>
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<tr>
<td>Second Exam</td>
<td>10%</td>
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<tr>
<td>Final</td>
<td>20%</td>
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Curriculum Category Content (Credits)

<table>
<thead>
<tr>
<th>Area</th>
<th>Core</th>
<th>Advanced</th>
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<tbody>
<tr>
<td>Algorithms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Software Design</td>
<td>3</td>
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<tr>
<td>Computer Architecture</td>
<td></td>
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</tr>
<tr>
<td>Data Structures</td>
<td>1</td>
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<tr>
<td>Programming Languages</td>
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