Data Structures Using C++

CSE 2122

Course Description:
Introduction to programming in C++ and object-oriented programming; encapsulation using classes, inheritance, etc.

Course Goals / Objectives:
Be competent with concepts of object-oriented programming and abstraction mechanisms
Be competent with the concepts of classes, member functions and variables, constructors, destructors, inheritance, and access mechanisms
Be competent with the concepts of prototype functions, functions, parameters, return values, overloading, and operators
Be familiar with control structures, dynamic memory allocation, arrays, and pointers

Course Topics:

- Introduction to course computing environment
- Basic features, getting started, basic data types
- Advanced data types, functions without returned values
- Classes, members, constructors
- Friends, destructors, returned values in functions
- Operators
- Inheritance
- Flow of control, dynamic memory allocation, arrays and pointers
Grades Breakdown:

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Percent</th>
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<tbody>
<tr>
<td>Programming labs</td>
<td>30%</td>
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<tr>
<td>Midterms</td>
<td>30%</td>
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<tr>
<td>Final exam</td>
<td>40%</td>
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Designation:
Elective

Instruction Modes:
In Person (75-100% campus; 0-24% online)

Representative Textbooks and Other Course Materials:

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Year</th>
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<tbody>
<tr>
<td>Problem Solving with C++</td>
<td>Walter Savitch</td>
<td></td>
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