## CS 3005: Programming in C++

### Spring 2018 Schedule

<table>
<thead>
<tr>
<th>Day</th>
<th>Topic</th>
<th>Work Due</th>
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<tbody>
<tr>
<td>W01</td>
<td>Functions, Code Blocks, Variables, Arithmetic, User I/O</td>
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<tr>
<td>W01</td>
<td>Comparisons, Conditionals, Counted Loops, Sentinel Loops</td>
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<tr>
<td>W01</td>
<td>Development Tools: Edit/Compile/Run</td>
<td>Drills in Canvas</td>
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<tr>
<td>H Jan. 15</td>
<td><em>Martin Luther King Jr. Day (no classes)</em></td>
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<tr>
<td>W02</td>
<td>Classes, Objects, Random Numbers</td>
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<tr>
<td>W02</td>
<td>Inheritance, Templates, Introduction to the Standard Template Library</td>
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<tr>
<td>W02</td>
<td>Development Tools: Make</td>
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<td>W02</td>
<td>Version Control: Add/Commit</td>
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<td>W02</td>
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<tr>
<td>W03</td>
<td>Memory Model: Stack, Heap and Static Memory</td>
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<tr>
<td>W03</td>
<td>Arrays, Pointers, Indexes</td>
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<tr>
<td>W03</td>
<td>Scope</td>
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<tr>
<td>W03</td>
<td>Development Tools: Debug/Memory Check</td>
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<tr>
<td>W03 (Jan27)</td>
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<tr>
<td>W04</td>
<td>Operator Overloading</td>
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<tr>
<td>W04</td>
<td>Dynamic Memory in Classes</td>
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<tr>
<td>W04</td>
<td>Development Cycle: Unit Tests</td>
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<td>W04 (Feb3)</td>
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<tr>
<td>W05</td>
<td>File I/O</td>
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<tr>
<td>W05</td>
<td>Types and Representations (Bitwise Operators)</td>
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<tr>
<td>W05</td>
<td>Development Cycle: BDD</td>
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<tr>
<td>W05 (Feb10)</td>
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<tr>
<td>W06</td>
<td>Creating Data Structures (Linked Lists)</td>
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<tr>
<td>W06</td>
<td>Better Random Numbers</td>
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<tr>
<td>W06</td>
<td>Arguments, Parameters, Return Values (Functions)</td>
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<tr>
<td>W06</td>
<td>Version Control: Push/Pull</td>
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<tr>
<td>W06 (Feb17)</td>
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<td>Assignment 4</td>
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<tr>
<td>H Feb. 19</td>
<td><em>President’s (no classes)</em></td>
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<tr>
<td>W07</td>
<td>Namespaces</td>
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<tr>
<td>W07</td>
<td>const</td>
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<tr>
<td>W07</td>
<td>Version Control: Branches</td>
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<tr>
<td>W07 (Feb24)</td>
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<td>Assignment 5</td>
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<tr>
<td>W08</td>
<td>Julia Set Introduction</td>
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<td>W08</td>
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<td>Midterm Examination</td>
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<tr>
<td>W09</td>
<td>Preprocessor, Conditionals, MACROS</td>
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<tr>
<td>W09</td>
<td>Inheritance, Polymorphism</td>
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<tr>
<td>W09</td>
<td>Templates: Generic Functions and Classes</td>
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<tr>
<td>W09 (Mar10)</td>
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<td>Assignment 7</td>
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<tr>
<td>H Mar 12-16</td>
<td><em>Spring Break (no classes)</em></td>
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<tr>
<td>Week</td>
<td>Lecture Topics</td>
<td>Assignments</td>
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<tr>
<td>W10</td>
<td>What’s in a DNA Strand?</td>
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<tr>
<td>W10</td>
<td>C-Strings (null-terminated arrays of chars)</td>
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<tr>
<td>W10</td>
<td>Development Cycle: Input Partitioning</td>
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<tr>
<td>W10</td>
<td>Review of Dynamic Memory, Pointers, Classes</td>
<td>Assignment 8</td>
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<tr>
<td>W11</td>
<td>OpenGL Introduction</td>
<td>Assignment 9</td>
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<tr>
<td>W11</td>
<td>OpenGL Example</td>
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<td>W11</td>
<td>Polymorphism (again), Beasts</td>
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<td>W11 (Mar31)</td>
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<tr>
<td>W12</td>
<td>TBA</td>
<td>Assignment 10</td>
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<tr>
<td>W12</td>
<td>Casting</td>
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<tr>
<td>W12</td>
<td>Beast Behavior</td>
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<td>W12 (Apr7)</td>
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<tr>
<td>W13</td>
<td>Exceptions (try/catch)</td>
<td>Assignment 11</td>
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<tr>
<td>W13</td>
<td>Standard template library (vector/stack/queue)</td>
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<td>W13</td>
<td>The TSP</td>
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<td>W13 (Apr14)</td>
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<tr>
<td>W14</td>
<td>Pointers and References (Asterisk vs Ampersand)</td>
<td>Assignment 12</td>
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<tr>
<td>W14</td>
<td>Standard template library (list/map/iterator)</td>
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<td>W14</td>
<td>TSP Good Cycles</td>
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<td>W14 (Apr21)</td>
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<tr>
<td>W15</td>
<td>Standard template library (algorithm)</td>
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<td>W15</td>
<td>Command Line Arguments</td>
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<td>W15</td>
<td>Recursion</td>
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<tr>
<td>W15</td>
<td>Final Exam Hints</td>
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<tr>
<td>H</td>
<td>Apr 26</td>
<td>Reading Day (no classes)</td>
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<td>Apr 27-May 3</td>
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<tr>
<td>W May 2</td>
<td>Final Exam 9:00 am - 10:50 am</td>
<td>Final Exam</td>
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Class announcements may modify schedule from that listed above.