# CS 3005: Programming in C++

## Fall 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>
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<tr>
<td>W01</td>
<td>Drills in Code Grinder</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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<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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<tr>
<td>W02</td>
<td>Drills in Code Grinder</td>
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<tr>
<td>H Sep 3</td>
<td>Labor Day (no classes)</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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<td>W03</td>
<td>Development Tools: Debug/Memory Check</td>
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<tr>
<td>W03 (Sep7)</td>
<td>Assignment 1</td>
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<tr>
<td>W04</td>
<td>Operator Overloading</td>
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<td>W04</td>
<td>Dynamic Memory in Classes</td>
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<td>W04</td>
<td>Development Cycle: Unit Tests</td>
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<tr>
<td>W04 (Sep14)</td>
<td>Assignment 2</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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<td>W05</td>
<td>Development Cycle: BDD</td>
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<tr>
<td>W05 (Sep21)</td>
<td>Assignment 3</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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<td>W06</td>
<td>Version Control: Push/Pull</td>
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<td>W06 (Sep28)</td>
<td>Assignment 4</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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<td>W07</td>
<td>Version Control: Branches</td>
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<td>W07 (Oct5)</td>
<td>Assignment 5</td>
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<td>M Oct 8</td>
<td>Midterm Examination</td>
<td>Midterm Examination</td>
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<tr>
<td>W08</td>
<td>Julia Set Introduction</td>
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<td>H Oct 11-12</td>
<td>Fall Break (no classes)</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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<td>W09 (Oct19)</td>
<td>Assignment 6</td>
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<tr>
<td>W10</td>
<td>What’s in a DNA Strand?</td>
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<td>W10</td>
<td>C-Strings (null-terminated arrays of chars)</td>
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<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>
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<td>Week 10 (Oct26)</td>
<td>Assignment 7</td>
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<tr>
<td>Week 11</td>
<td>OpenGL Introduction</td>
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<tr>
<td>Week 11</td>
<td>OpenGL Example</td>
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<tr>
<td>Week 11 (Nov2)</td>
<td>Polymorphism (again), Beasts</td>
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<td>Week 12</td>
<td>TBA</td>
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<tr>
<td>Week 12</td>
<td>Casting</td>
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<tr>
<td>Week 12</td>
<td>Beast Behavior</td>
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<td>Week 12 (Nov9)</td>
<td>Assignment 8</td>
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<td>Week 13</td>
<td>Exceptions (try/catch)</td>
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<td>Week 13</td>
<td>Standard template library (vector/stack/queue)</td>
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<td>Week 13</td>
<td>The TSP</td>
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<td>Week 13 (Nov16)</td>
<td>Assignment 9</td>
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<tr>
<td>Week 14</td>
<td>Pointers and References (Asterisk vs Ampersand)</td>
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<tr>
<td>Week 14</td>
<td>Standard template library (list/map/iterator)</td>
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<td>Week 14</td>
<td>TSP Good Cycles</td>
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<td>H Nov 21-23</td>
<td>Thanksgiving Break (no classes)</td>
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<td>Week 15</td>
<td>Assignment 10</td>
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<td>Week 15</td>
<td>Standard template library (algorithm)</td>
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<td>Week 15</td>
<td>Command Line Arguments</td>
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<td>Week 15</td>
<td>Recursion</td>
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<td>Week 15 (Nov30)</td>
<td>Assignment 11</td>
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<td>Week 16</td>
<td>Review</td>
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<td>Week 16</td>
<td>Final Exam Hints</td>
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<td>Week 16 (Dec7)</td>
<td>Assignment 12</td>
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<td>Dec 10-14</td>
<td>Final Exams</td>
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Class announcements may modify schedule from that listed above.