

# CS 271 Computer Architecture and Assembly Language Course Calendar\* Winter 2017

\*Assignments are due end-of-week Sunday 11:59pm unless otherwise specified. Schedule subject to change based on material pace.

New Assignments are in **BLACK**. Due Assignments are in **RED**.

Unit / Week	Topics
<p><b>#1:</b></p> <p><b>Program #1</b> <b>Week 1 Quiz</b></p> <p><b>Week 1 Quiz</b></p>	<ul style="list-style-type: none"> <li>• Introductions</li> <li>• Programming languages</li> <li>• Virtual machines</li> <li>• Computer architectures, processor types, metrics</li> <li>• Machine instructions, instruction execution cycle</li> <li>• CISC, x86 architectures, Intel IA-32 architecture</li> <li>• Introduction to MASM assembly language.</li> </ul> <p><b>Read Irvine Chapter 1</b> Chapter 2.1, 2.2, 2.3 Chapter 3.1, 3.2, 3.3 (pg 71 only), 3.4, 3.5</p>
<p><b>#2:</b></p> <p><b>Week 2 Quiz</b> <b>Program #2</b></p> <p><b>Week 2 Quiz</b> <b>Program #1</b></p>	<ul style="list-style-type: none"> <li>• MASM assembly language: <ul style="list-style-type: none"> <li>○ Constants, variables</li> <li>○ Libraries, assembling, linking, loading</li> <li>○ Addressing modes</li> <li>○ Arithmetic operations</li> <li>○ Conditions, decisions, repetition</li> </ul> </li> </ul> <p><b>Re-read Irvine Chapter 1.3, 1.4</b> <b>Read Irvine Chapter 4.1, 4.2, 4.5 (and 6.3)</b></p>
<p><b>#3:</b></p> <p><b>Week 3 Quiz</b></p> <p><b>Week 3 Quiz</b> <b>Program #2</b></p>	<ul style="list-style-type: none"> <li>• MASM assembly language: <ul style="list-style-type: none"> <li>○ Modular development</li> <li>○ Data validation</li> <li>○ Debugging</li> </ul> </li> <li>• Internal/external data representation</li> </ul> <p><b>Read Irvine Chapter 5.1, 5.2, 5.3, 5.4, 5.6, 5.7</b></p>
<p><b>#4:</b></p> <p><b>Week 4 Quiz</b> <b>Program #3</b></p> <p><b>Week 4 Quiz</b></p>	<ul style="list-style-type: none"> <li>• Binary arithmetic</li> <li>• Floating-point representation</li> <li>• Parity, error detection/correction, Hamming codes</li> </ul> <p><b>Read Irvine Chapter 6.1, 6.2, 6.3,</b> <b>Chapter 7.3</b> <b>Chapter 12.1</b></p>
<p><b>#5:</b></p> <p><b>Week 5 Quiz</b> <b>Program #4</b></p> <p><b>Week 5 Quiz</b> <b>Program #3</b></p>	<ul style="list-style-type: none"> <li>• MASM procedures: <ul style="list-style-type: none"> <li>○ Calls/returns</li> <li>○ Functional decomposition, parameters</li> <li>○ Documentation</li> </ul> </li> <li>• MASM assembly language: <ul style="list-style-type: none"> <li>○ The system stack</li> <li>○ Parameter passing</li> </ul> </li> </ul> <p><b>Read Irvine Chapter 4.4</b> <b>Read Irvine Chapter 8.1, 8.2</b></p>

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<p>#6: <b>Midterm Exam</b></p> <p><b>Program #4</b> <b>Midterm Exam</b></p>	<ul style="list-style-type: none"> <li>• Review for Midterm Exam</li> </ul> <p style="text-align: center;"><b>Midterm Exam</b> <b>Tuesday in class</b></p>
<p>#7: <b>Week 7 Quiz</b> <b>Program #5</b></p> <p><b>Week 7 Quiz</b></p>	<ul style="list-style-type: none"> <li>• MASM assembly language: <ul style="list-style-type: none"> <li>○ More parameter passing</li> <li>○ Random numbers</li> <li>○ Arrays, array parameters</li> </ul> </li> </ul> <p><b>Read Irvine Chapter 9.5</b></p>
<p>#8: <b>Week 8 Quiz</b> <b>Program #6</b></p> <p><b>Week 8 Quiz</b> <b>Program #5</b></p>	<ul style="list-style-type: none"> <li>• MASM assembly language: <ul style="list-style-type: none"> <li>○ Data-related operators</li> <li>○ Low-level I/O</li> </ul> </li> <li>• RPN</li> <li>• IA-32 floating-point unit (FPU)</li> </ul> <p><b>Read Irvine Chapter 9.1, 9.2, 9.4, 9.5</b> <b>Re-read Irvine Chapter 12.1</b></p>
<p>#9: <b>Week 9 Quiz</b></p> <p><b>Week 9 Quiz</b></p>	<ul style="list-style-type: none"> <li>• Recursion</li> <li>• MASM assembly language: <ul style="list-style-type: none"> <li>○ Macros</li> <li>○ String processing</li> </ul> </li> <li>• Digital logic level: <ul style="list-style-type: none"> <li>○ Gates, circuits, integrated circuits</li> </ul> </li> </ul>
<p>#10: <b>Week 10 Quiz</b></p> <p><b>Week 10 Quiz</b> <b>Program #6</b></p>	<ul style="list-style-type: none"> <li>• Parallelism</li> <li>• Advanced architectures</li> <li>• Review for final exam</li> </ul>
<p>#11: Finals Week</p>	<p style="text-align: center;"><b>Final Exam</b> <b>Wednesday 2:00pm in normal classroom</b></p>