

## CS 271 Computer Architecture and Assembly Language Course Calendar\* Summer 2020

\*NOTE: Weeks are shown Sunday through Sunday. Assignments are due the 2<sup>nd</sup> Sunday, unless otherwise noted.

\*NOTE: Subject to change based on material pace

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

Unit / Week	Topics
<p><b>#1:</b> 06/21 – 06/28</p> <p><b>Syllabus Quiz</b> <b>Week 1 Summary Exercises</b> <b>Program #1</b></p> <p><b>Syllabus Quiz</b> <b>Week 1 Summary Exercises</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 – 2.3 Chapter 3.1 – 3.5</p>
<p><b>#2:</b> 06/28 – 07/05</p> <p><b>Week 2 Summary Exercises</b> <b>Program #2</b> <b>Quiz #1</b></p> <p><b>Week 2 Summary Exercises</b> <b>Program #1</b> <b>Quiz #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> <li>○ Modular development</li> <li>○ Data validation &amp; Debugging</li> </ul> </li> <li>• Internal/external data representation</li> </ul> <p><b>Re-read Irvine Chapter 1.3, 1.4</b> <b>Read Irvine Chapter 4.1, 4.2, 4.5 (and 6.2)</b> Chapter 5 (Section 5.5 is optional)</p>
<p><b>#3:</b> 07/05 – 07/12</p> <p><b>Week 3 Summary Exercises</b></p> <p><b>Week 3 Summary Exercises</b> <b>Program #2</b></p>	<ul style="list-style-type: none"> <li>• Binary arithmetic</li> <li>• Floating-point representation</li> <li>• Parity</li> <li>• Error detection/correction,</li> <li>• Hamming codes</li> </ul> <p><b>Read Irvine Chapter 6.1, 6.2</b> Chapter 7.3, Chapter 12.1</p>
<p><b>#4:</b> 07/12 – 07/19</p> <p><b>Week 4 Summary Exercises</b> <b>Program #3</b> <b>Midterm Exam</b></p> <p><b>Week 4 Summary Exercises</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>• The System Stack &amp; passing parameters</li> </ul> <p><b>Read Irvine Chapter 4.4</b> <b>Read Irvine Chapter 8.1, 8.2</b></p> <p style="text-align: center;"><b>Midterm Exam</b> <b>(Available Saturday – Monday only)</b></p>

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<p>#5: 07/19 – 07/26</p> <p><b>Week 5 Summary Exercises Program #4</b></p> <p><b>Week 5 Summary Exercises Program #3</b></p>	<ul style="list-style-type: none"> <li>• MASM assembly language: <ul style="list-style-type: none"> <li>○ Detailed parameter passing</li> <li>○ More on the system stack</li> <li>○ Random numbers</li> <li>○ Arrays</li> <li>○ Array parameters</li> </ul> </li> </ul>
<p>#6: 07/26 – 08/02</p> <p><b>Week 6 Summary Exercises Program #5 Quiz #2</b></p> <p><b>Week 6 Summary Exercises Program #4 Quiz #2</b></p>	<ul style="list-style-type: none"> <li>• MASM assembly language: <ul style="list-style-type: none"> <li>○ Data-related operators</li> <li>○ <i>n</i>-Dimensional arrays and string processing</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>Read Irvine Chapter 12.2</b></p>
<p>#7: 08/02 – 08/09</p> <p><b>Week 7 Summary Exercises</b></p> <p><b>Week 7 Summary Exercises Program #5</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><b>Read Irvine Chapter 8.3 (through 8.3.1)</b> <b>Read Irvine Chapter 10.2 (through 10.2.4)</b></p>
<p>#8: 08/09 – 08/16</p> <p><b>Week 8 Summary Exercises Final Exam</b></p> <p><b>Week 8 Summary Exercises</b></p>	<ul style="list-style-type: none"> <li>• How computers come together</li> <li>• Parallelism</li> <li>• Advanced architectures</li> <li>• Research topics in Computer Architectures</li> <li>• Review for final exam</li> </ul> <p style="text-align: center;"><b>Final Exam</b> <b>(Available Thursday – Sunday only)</b></p>