

# CS 271 Computer Architecture and Assembly Language

## Course Calendar\* Fall 2019

\*Weeks are shown Sunday-Sunday, Assignments are due the 2<sup>nd</sup> 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
<b>#1: 09/29 – 10/06</b>  <b>Syllabus Quiz</b> <b>Week 1 Summary Exercises</b> <b>Program #1</b>  <b>Syllabus Quiz</b> <b>Week 1 Summary Exercises</b>	<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>
<b>#2: 10/06 – 10/13</b> <b>Week 2 Summary Exercises</b> <b>Program #2</b> <b>Quiz #1</b>  <b>Week 2 Summary Exercises</b> <b>Program #1</b> <b>Quiz #1</b>	<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>
<b>#3: 10/13 – 10/20</b>  <b>Week 3 Summary Exercises</b>  <b>Week 3 Summary Exercises</b> <b>Program #2</b>	<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>
<b>#4: 10/20 – 10/27</b>  <b>Week 4 Summary Exercises</b> <b>Program #3</b>  <b>Week 4 Summary Exercises</b>	<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>  Chapter 7.3  Chapter 12.1</p>
<b>#5: 10/27 – 11/03</b>  <b>Week 5 Summary Exercises</b> <b>Program #4</b> <b>Quiz #2</b>  <b>Week 5 Summary Exercises</b> <b>Program #3</b> <b>Quiz #2</b>	<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>• Introduction to the system stack</li> </ul> <p><b>Read Irvine Chapter 4.4</b>  <b>Read Irvine Chapter 8.1, 8.2</b></p>

# CS 271 Computer Architecture and Assembly Language

## Course Calendar\* Fall 2019

<p>#6: 11/03 – 11/10</p> <p><b>Program #4</b></p>	<ul style="list-style-type: none"> <li>• MASM assembly language: <ul style="list-style-type: none"> <li>◦ More system stack</li> <li>◦ Parameter passing</li> </ul> </li> <li>• Review for Midterm Exam</li> </ul> <p style="text-align: center;"><b>Midterm Exam</b> <b>(Available Thursday – Sunday only)</b></p>
<p>#7: 11/10 – 11/17</p> <p><b>Week 7 Summary Exercises</b> <b>Program #5</b></p> <p><b>Week 7 Summary Exercises</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: 11/17 – 11/24</p> <p><b>Week 8 Summary Exercises</b> <b>Program #6</b> <b>Quiz #3</b></p> <p><b>Week 8 Summary Exercises</b> <b>Program #5</b> <b>Quiz #3</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: 11/24 – 12/01</p> <p><b>Week 9 Summary Exercises</b></p> <p><b>Week 9 Summary Exercises</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: 12/01 – 12/08</p> <p><b>Week 10 Summary Exercises</b> <b>Quiz #4</b></p> <p><b>Week 10 Summary Exercises</b> <b>Program #6 is due</b> <b>Quiz #4</b></p>	<ul style="list-style-type: none"> <li>• Parallelism</li> <li>• Advanced architectures</li> <li>• Review for final exam</li> </ul>
<p>#11: 12/08 – 12/15</p> <p><b>Finals Week</b></p>	<p style="text-align: center;"><b>Final Exam</b> <b>(Available Sunday – Wednesday only)</b></p>