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

*NOTE: Weeks are shown Sunday through Sunday. Assignments are due the 2nd Sunday, unless otherwise noted.  
*NOTE: Subject to change based on material pace  

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

<table>
<thead>
<tr>
<th>Unit / Week</th>
<th>Topics</th>
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</table>
| #1: 06/21 – 06/28 | • Introductions  
• Programming languages  
• Virtual machines  
• Computer architectures, processor types, metrics  
• Machine instructions, instruction execution cycle  
• CISC, x86 architectures, Intel IA-32 architecture  
• Introduction to MASM assembly language. |
| Syllabus Quiz |  |
| Week 1 Summary Exercises |  |
| Program #1 |  |
| Syllabus Quiz |  |
| Week 1 Summary Exercises |  |
| #2: 06/28 – 07/05 | • MASM assembly language:  
  o Constants, variables  
  o Libraries, assembling, linking, loading  
  o Addressing modes  
  o Arithmetic operations  
  o Conditions, decisions, repetition  
  o Modular development  
  o Data validation & Debugging  
• Internal/external data representation |
| Week 2 Summary Exercises |  |
| Program #2 |  |
| Quiz #1 |  |
| Week 2 Summary Exercises |  |
| Program #1 |  |
| Quiz #1 |  |
| #3: 07/05 – 07/12 | • Binary arithmetic  
• Floating-point representation  
• Parity  
• Error detection/correction,  
• Hamming codes |
| Week 3 Summary Exercises |  |
| Week 3 Summary Exercises |  |
| Program #2 |  |
| #4: 07/12 – 07/19 | • MASM procedures:  
  o Calls/returns  
  o Functional decomposition, parameters  
  o Documentation  
  • The System Stack & passing parameters |
| Week 4 Summary Exercises |  |
| Program #3 |  |
| Midterm Exam |  |
| Week 4 Summary Exercises |  |

**Midterm Exam**  
*(Available Saturday – Monday only)*  

Read Irvine Chapter 6.1, 6.2  
Chapter 7.3,  
Chapter 12.1  

Re-read Irvine Chapter 1.3, 1.4  
Read Irvine Chapter 4.1, 4.2, 4.5 (and 6.2)  
Chapter 5 (Section 5.5 is optional)
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| #5: 07/19 – 07/26 | • MASM assembly language:
|                  | o Detailed parameter passing
|                  | o More on the system stack
|                  | o Random numbers
|                  | o Arrays
|                  | o Array parameters

| #6: 07/26 – 08/02 | • MASM assembly language:
|                  | o Data-related operators
|                  | o *n*-Dimensional arrays and string processing
|                  | o Low-level I/O
|                  | • RPN
|                  | • IA-32 floating-point unit (FPU)

**Read** Irvine Chapter 9.1, 9.2, 9.4, 9.5

**Read** Irvine Chapter 12.2

| #7: 08/02 – 08/09 | • Recursion
|                  | • MASM assembly language:
|                  | o Macros
|                  | o String processing
|                  | • Digital logic level:
|                  | o Gates, circuits, integrated circuits

**Read** Irvine Chapter 8.3 (through 8.3.1)

**Read** Irvine Chapter 10.2 (through 10.2.4)

| #8: 08/09 – 08/16 | • How computers come together
|                  | • Parallelism
|                  | • Advanced architectures
|                  | • Research topics in Computer Architectures
|                  | • Review for final exam

**Final Exam**

*(Available Thursday – Sunday only)*