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

*Weeks are shown Sunday-Sunday, Assignments are due the 2nd Sunday 11:59pm unless otherwise specified. Schedule subject to change based on material pace. New Assignments are in BLACK. Due Assignments are in RED.*

<table>
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<tr>
<th>Unit / Week</th>
<th>Topics</th>
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| #1: 09/24 – 10/01 | 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.  
Read Irvine Chapter 1  
Chapter 2.1, 2.2, 2.3  
Chapter 3.1, 3.2, 3.3 (pg 71 only), 3.4, 3.5 |
| Syllabus Quiz  
Week 1 Summary Exercises  
Program #1  
Syllabus Quiz  
Week 1 Summary Exercises |
| #2: 10/01 – 10/08 | MASM assembly language:  
- Constants, variables  
- Libraries, assembling, linking, loading  
- Addressing modes  
- Arithmetic operations  
- Conditions, decisions, repetition  
Re-read Irvine Chapter 1.3, 1.4  
Read Irvine Chapter 4.1, 4.2, 4.5 (and 6.3) |
| Week 2 Summary Exercises  
Program #2  
Quiz #1  
Week 2 Summary Exercises  
Program #1  
Quiz #1 |
| #3: 10/08 – 10/15 | MASM assembly language:  
- Modular development  
- Data validation  
- Debugging  
- Internal/external data representation  
Read Irvine Chapter 5.1, 5.2, 5.3, 5.4, 5.6, 5.7 |
| Week 3 Summary Exercises  
Week 3 Summary Exercises  
Program #2 |
| #4: 10/15 – 10/22 | Binary arithmetic  
Floating-point representation  
Parity, error detection/correction, Hamming codes  
Read Irvine Chapter 6.1, 6.2, 6.3,  
Chapter 7.3  
Chapter 12.1 |
| Week 4 Summary Exercises  
Program #3  
Week 4 Summary Exercises |
| #5: 10/22 – 10/29 | MASM procedures:  
- Calls/returns  
- Functional decomposition, parameters  
- Documentation  
- Introduction to the system stack  
Read Irvine Chapter 4.4  
Read Irvine Chapter 8.1, 8.2 |
| Week 5 Summary Exercises  
Program #4  
Quiz #2  
Week 5 Summary Exercises  
Program #3  
Quiz #2 |
| #6:  10/29 – 11/05 | **Program #4**  
|-------------------|--------------------------------------------------|
|                   | • MASM assembly language:  
|                   |   o More system stack  
|                   |   o Parameter passing  
|                   | • Review for Midterm Exam  

**Midterm Exam** 
*(Available Thursday – Sunday only)*

| #7:  11/05 – 11/12 | **Week 7 Summary Exercises**  
|--------------------|--------------------------------------------------|
| Program #5         | • MASM assembly language:  
|                    |   o More parameter passing  
|                    |   o Random numbers  
|                    |   o Arrays, array parameters  

Read Irvine Chapter 9.5

| #8:  11/12 – 11/19 | **Week 8 Summary Exercises**  
|--------------------|--------------------------------------------------|
| Program #6         | • MASM assembly language:  
|                    |   o Data-related operators  
|                    |   o Low-level I/O  
|                    | • RPN  
|                    | • IA-32 floating-point unit (FPU)  

Read Irvine Chapter 9.1, 9.2, 9.4, 9.5  
Re-read Irvine Chapter 12.1

| #9:  11/19 – 11/26 | **Week 9 Summary Exercises**  
|--------------------|--------------------------------------------------|
|                    | • Recursion  
|                    | • MASM assembly language:  
|                    |   o Macros  
|                    |   o String processing  
|                    | • Digital logic level:  
|                    |   o Gates, circuits, integrated circuits  

| #10:  11/26 – 12/03 | **Week 10 Summary Exercises**  
|---------------------|--------------------------------------------------|
| Program #6 is due    | • Parallelism  
| Quiz #4              | • Advanced architectures  
|                     | • Review for final exam  

Final Exam  
*(Available Sunday – Wednesday only)*

| #11:  12/03 – 12/06 | **Finals Week**  
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