Tentative Course Outline:
The weekly coverage might change as it depends on the progress of the class.

Week	Content
Week 1	• Syllabus, Chapter 1: Language and Data Fundamentals • Activity: Chapter 1 Activity (Number Systems); Assignment 1 (Fundamentals)
Week 2	• Chapter 2: Processor and System Architecture • Activity: Clocks and Cycles; Assignment 2 (x86/x86-64 Architecture)
Week 3	• Chapter 3: Assembly and Syntax Fundamentals • Activity: Syntax Translation; Assignment 3 (Program 1)
Week 4	• Chapter 4: Basic Instructions • Activity: Chapter 4 Questions; Assignment 4 (Program 2)
Week 5	• Chapter 5: Intermediate Instructions • Activity: Chapter 5 Questions; Assignment 5 (Program 3)
Week 6	• Chapter 6: Functions • Activity: Linking Assembly and C++; Assignment 6 (Program 4)
Week 7	• Chapter 12: Hardware and Electrical Components • Activity: Arduinos*; Assignment 7 (Chapter 12 Questions)
Week 8	• Chapter 7: String Instructions and Structures • Midterm Exam
Break	
Week 9	• Chapter 8: Floating Point Operations • Activity: Chapter 8 Questions; Assignment 8: (Program 5)
Week 10	• Chapter 9: Inline Assembly and Macros • Activity: Chapter 9 Questions; Assignment 9 (Program 6) • Research 1 - Project (one page)
Week 11	• Chapter 11: Other Architectures • Activity: Chapter 11 Questions; Assignment 10 (CPU Architecture Report)
Week 12	• Chapter 10: Advanced Processor and System Architecture • Activity: Chapter 10 Questions; Assignment 11 (Program 7)
Week 13	• Research 2 - Project; Presentations
Week 14	• Research 2 - Project; Presentations
Week 15	• Final Exam

*Arduinos: Open source hardware microcontroller boards/kits. Requires component organization (hardware and electrical components) and programming (C/C++). See: http://www.arduino.cc

Week 1
Assignment 1: Chapter 1 Questions
Activity 1: Chapter 1 Activity

Week 2
Assignment 2: Chapter 2 Questions
Activity 2: Questions based on http://pclt.sites.yale.edu/clocks-and-cycles

Week 3
Assignment 3: Choose one of the assignments at the end of Chapter 3.

- Assignments 3.1 and 3.2 are worth 20 points.
- Assignment 3.4 is worth 20 + 2 extra credit points.
- Assignment 3.3 is reserved for the Week 3 Activity.
- ADDITIONAL REQUIREMENT: Comment every line of code to indicate what it does.

Activity 3: Assignment 3.3 Syntax Translation
The GAS version of the program is in the Assembly Code Repository and in the Chapter 3 text. Translate the AT&T GAS code into Intel syntax for MASM or NASM. Use Appendix A: Assembly Syntax Translation as a reference.

Week 4
Assignment 4: Choose one of the assignments at the end of Chapter 4.

- Assignment 4.2 is worth 10 points.
- Assignment 4.3 is worth 10 + 2 extra credit points.
- Assignment 4.1 is just for practice and should not be used for this assignment.
- ADDITIONAL REQUIREMENT: Comment every line of code to indicate what it does.

Activity 4a: Chapter 4 Questions
Activity 4b: Review Appendix C: Disassembly.
Write Program 4.4. Then, refer to Appendix B: Environment Setup to create a listing file for the program. Be prepared to show the listing file to the instructor when completed.

Week 5
Assignment 5: Choose one of the assignments at the end of Chapter 5.

- Assignments 5.1 and 5.2 are worth 20 points.
- Assignment 5.3 should not be used for this assignment.
  Alternative Assignments:
- Alternate 1 - Greatest Common Divisor is worth 20 points
- Alternate 2 - Pin is worth 20 + 2 extra credit points
- ADDITIONAL REQUIREMENT: Comment every line of code to indicate what it does.

Activity 5: Chapter 5 Questions

Week 6
Assignment 6: Choose one of the assignments at the end of Chapter 6.

- Assignment 6.1 is worth 20 points.
- Assignment 6.2 is worth 20 points. Two extra credit points are possible if you extend the assignment to interpret the eflags bits for relevant computation results (CF, OF, SF, ZF).
- Assignment 6.3 is worth 20 + 4 extra credit points. Note: An example of Bubble Sort is in Chapter 1.
- REQUIREMENT: Create a zipped folder that contains the .asm, .cpp, and .obj/.o files and upload the folder.

Activity 6: Follow the directions in Appendix E: Linking Assembly and C++ for your chosen assembler.

Week 7
Assignment 7: Chapter 12 Questions
Activity 7: Arduino Activity: experiment with Arduino boards, https://www.arduino.cc
Activity AVR: Questions based on the Atmel ATmega 16U4/32U4 micro-controllers

Week 8 - Midterm Exam

Week 9
Assignment 8: Choose one of the assignments at the end of Chapter 8.

- Assignment 8.1 is worth 20 points.
- Assignment 8.2 is worth 20 + 2 extra credit points.
- Assignment 8.3 is worth 20 + 4 extra credit points.

Activity 8: Chapter 8 Questions

Week 10
Assignment 9: Choose one of the assignments at the end of Chapter 9.

- Assignments 9.1 and 9.2 are worth 20 points.
- Assignment 9.3 is worth 20 + 2 extra credit points.

Activity 9: Chapter 9 Questions
Research 1: A one-page project proposal

Week 11
Assignment 10: Complete Assignment 11.1 from Chapter 11.
Activity 10: Chapter 11 Questions

Week 12
Assignment 11: Complete Assignment 10.1 from Chapter 10.
Activity 11: Chapter 10 Questions