CMSC 313: Computer Organization and Assembly Language Syllabus (Draft)

Instructor:
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Office Hours: Mondays and Wednesdays 2:45pm-3:15pm (ITE #353)
Education: Virginia Tech (BS, MS)
Work experience: Qualcomm 20 years + Northrop Grumman (current) 5 years

Teaching Assistant:
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Grader:
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Class Hours:
Spring 2024 MW 10am-11:15am
SOND 111

Course Website:
Blackboard: CMSC313 04.1910 SP2024

Course Description:
This course introduces the student to the low-level abstraction of a computer system from a programmer's point of view, with an emphasis on low-level programming. Topics include data representation, assembly language programming, C programming, the process of compiling and linking, low-level memory management, exceptional control flow, and basic processor architecture.

Course Overview:
Computer Arithmetic
      Binary Logic
      2's Complement
      Binary Arithmetic
Digital Design
      Combinational Logic
      Sequential Logic
      Simulation
Computer Organization & Assembly Programming
      Processor Components
      Pipeline Operations
      Dependency
      Instruction Examples
      Functions
      Interrupts
      Memory
C Programming
      Compiler

Course material may be adjusted throughout the semester.

Prerequisites:
CMSC 202 (Computer Science II: OOP)
CMSC 203 (Discrete Math)
If you don't meet the prerequisites, please talk to me or the department.

Grading:
Projects: 40%
Homework: 10%
Quiz: 10%
Midterm: 20%
Final: 20%
Grading distribution is subject to change. Students will be notified of any change.

Late Submission:
Due dates/times for homework and projects will be announced with the assignments. There will be 3 days of late submissions that could be used for any type of assignment over the semester. The late days can be applied either for one assignment or split into units of 1 day late submissions for separate assignments. It might be prudent to preserve some late days for projects. If all late days are used for prior assignments, an assignment can be submitted up to 1 day late with a penalty of 25%.
Submissions will be due 11:59pm on the due date posted in schedule.

Projects Submission:
Tools necessary for projects will be available on UMBC Linux machines. If you want to use the tools on your own machine, it would be your responsibility.

Attendance:
Class attendance is optional, but is highly recommended. Graded material will be based on lectures and lecture slides. While the lecture slides will be posted online, some portion of the lectures could be presented through other methods in the class.

Textbooks (Optional):
Textbooks for additional reference:
1. Digital Logic Circuit Analysis and Design by Nelson, Nagle, Carroll and Irwin.

Academic Integrity:
Homework can be discussed with other students. However, each student needs to turn in homework independently. Projects need to be worked on independently.

UMBC Statement of Values for Academic Integrity:
"Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, *[failing grade (F) for the course,]* suspension or dismissal."

Accessibility and Disability Accommodations, Guidance and Resources:
If you have a documented disability and need to request academic accommodations in your courses, please refer to the Office of Student Disability Services (SDS) website at sds.umbc.edu for registration information and office procedures. If you will be using SDS approved accommodations in this class, please inform me to discuss implementation of the accommodations.

Sexual Assault, Sexual Harassment, and Gender Based Violence and Discrimination:

Any student who is impacted by sexual harassment, sexual assault, domestic violence, dating violence, stalking, sexual exploitation, gender discrimination, pregnancy discrimination, gender-based harassment, or related retaliation should contact the University's Title IX Coordinator to make a report and/or access support and resources. The Title IX Coordinator can be reached at titleixcoordinator@umbc.edu or 410-455-1717.

You can access support and resources even if you do not want to take any further action. You will not be forced to file a formal complaint or police report. Please be aware that the University may take action on its own if essential to protect the safety of the community.

If you are interested in making a report, please use the Online Reporting/Referral Form. Please note that, if you report anonymously, the University's ability to respond will be limited.