CSCI 005: Computer Architecture & Organization (*3.0 Units*)

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M: 1 pm – 3 pm

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Welcome: Welcome to CSCI 005 – Computer Architecture. This course will cover a lot of the building blocks and basics behind how computers work, starting from transistors and logic gates all the way through assembly, code interpretation, and GPU architectures.

How to Succeed: This course is a little unique compared to some of your other classes. ZyBooks is a system that contains an interactive textbook full of labs, interactive activities, and exercises. The way I structured this class is to group the subject material into two main exam groups, with homework assignments due the day before each exam. This will allow you to cover the material at your own pace and allows me the flexibility to focus on problem solving and adding onto the main topics.

Therefore, to succeed in this class, I recommend reading the material in the ZyBooks on a near daily basis, with this in mind it should only take a few minutes a day to read a few sections and do your activities. Some days will take a lot longer than others, but the material should not be taking hours a day to complete.

Text: Computer Architecture & Organization ZyBook (Instructions Below)

SLO's:

- Students will be able to apply digital logic to Boolean tables, Circuit Diagrams and K-maps.
- Students will be able to write assembly language programs to implement low level instructions.
- Students will be able to identify current microprocessor models in today's market.
- Students will be able to implement programming techniques that lead to secure programs and identify common coding errors that lead to insecure programs such as buffer and register overflows.

ZyBooks: This course will be utilizing the ZyBooks software. This is an interactive textbook designed to engage the student with the content at a deeper level than what is seen in a traditional classroom. This course will be utilizing this software for homework and labs (if time permits). I will distribute the access codes in class and walk through how to enroll into the ZyBook.

Homework: There will be two homework assignments, one assignment per exam. The homework will span each of the chapters in the exam block. The due date for these assignments will be the day before the exam, adding flexibility in how the assignment is completed. Please do not wait until the end, as there is a lot of homework; it is best to treat the assignments as a reading guide for the course.

Exams: There will be 2 exams plus a final exam. (*Note: Partial credit will be given, so you must show all work.) Exams will be taken in class.*

Project: This class will have a project due by the final. This will be discussed more on Week 4. You can form a group with up to 3 total members and must be communicated to me by the end of Week 4. Upon discussion of the project, you will be given a list of topics and guidelines.

Evaluation:	Assignments	20%	**Scale:**	90-100%	A
	Quizzes	10%		80-89%	B
	Exams	20%		70-79%	C
	Final Exam	40%		60-69%	D
	Final Project	10%		Below 59%	F

Attendance: This class is an in-person class. Although I will not be taking attendance, there will be quizzes that are used to make sure you are keeping up with the reading and assignments.

Conduct: Please refer to the Catalogue or Student Handbook for Code of Student Conduct. Cheating is a violation of the Code of Student Conduct and will not be tolerated in class; to do so may result in a grade of "F". It can lead to permanent expulsion from this college. Cheating includes allowing someone to copy from your work.
**You may not use a Calculator that has a Qwerty keypad on the exams.

Exam Blocks

Exam Name	Anticipated Exam Date	Content and Chapters Tested
Exam 1	Week 7	Combinational Logic: Chapter 2 – 3.7
Exam 2	Week 14	Advanced Combinational Logic: Chapter 3.8 – 4.15
Final Exam	Week 18	Instructions and LEGv8 Assembly Programming: Chapter 6 (6.1-6.6, 6.8, 6.11-6.15)