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University of New Orleans Syllabi

Fall 2015

ENEE 3514

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University of New Orleans

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Recommended Citation

Alsamman, A., "ENEE 3514" (2015). *University of New Orleans Syllabi.* Paper 369.
https://scholarworks.uno.edu/syllabi/369

ENEE 3514
COMPUTER ARCHITECTURE LAB
DEPARTMENT OF ELECTRICAL ENGINEERING
UNIVERSITY OF NEW ORLEANS

INSTRUCTOR	Dr. AbdulRahman Alsamman Office: EN 842, Phone: 280-7161 email: a.alsamman@uno.edu
OFFICE HOURS	M 3:30PM-5PM, T/TH 3:15PM-5PM
COURSE INFO	ENEE 3514, Computer Architecture Lab, Credit: 1 Hr. Time: M 12:50am-3:30pm. Room: EN 615/616
PREREQUISISTES	Concurrent registration in ENEE 3583.
DESCRIPTION	Laboratory experiments for an undergraduate digital and programmable logic design class. It builds on the students' basic knowledge of digital logic and then introduces modern CAD tools, logic simulation, logic synthesis using hardware description languages, design hierarchy, and current generation field programmable logic device technology in a laboratory atmosphere.
TEXTBOOK	*The Designer's Guide to VHDL,* Peter J. Ashenden (aka VHDL Cookbook, http://www.cs.adelaide.edu.au/)

TOPICS

Introduction to VHDL	Week	2
Simulation and Hardware		3
Simple State Machines Synthesis		4
Full Adder Design		5
ALU Design		6
Register Transfer Notation		7
Data-path and Control		8
Memory		9
Pipelining and Hazard Resolution		10
IO Interfacing		11
Final Project		12-14

GOALS	Knowledge of microprocessors architecture and register transfer notation. Knowledge of hardware descriptive language (HDL) Ability to use HDL to design microarchitecture, computer architecture and hardware interfaces. Simulation, testing and synthesis of hardware designs
PROGRAM OUTCOMES	Ability to design and conduct experiments, as well as to analyze and interpret data Ability to design a system, component, or process to meet desired needs Ability to identify, formulate, and solve engineering problems Understanding of professional and ethical responsibility Ability to communicate effectively Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

LABS & REPORTS	Files must be verified by the instructor prior to printing. The instructor will then signs and date the printouts. The signed printouts must be included in the lab report. Unless otherwise stated, a report must be turned-in for each lab the following week. A report should contain the following sections:

1. Cover page: Course, lab no., title, students name, and date.
2. Abstract: brief explanation of what you did and your results. Summarize introduction and conclusion.
3. Equipment: describe software and hardware used. For computer hardware state CPU, RAM and OS. For software include version number.
4. Introduction: state the problem to be solved and data that is given. Include explanation of theory. Explain the organization of the subsequent sections.
5. Methodology: how did you solve the problem. Divide your code into parts and explain each part.
6. Results: provide proof of a results and explanation.
7. Conclusion: comment of methodology and results.
8. Appendices: include signed printouts.

GRADING POLICY		
Labs	80%	
Final Project	20%	
Final Project Presentation	30% of Final Project Grade	
TOTAL	100%	

Labs will be graded on the **successful implementation** of lab, the **quality of design, and quality of lab report.** Late assignments not accepted.

GRADE ASSIGNMENT	Letter grades will be assigned according to the guidelines: A:90-100, B:80-89, C:70-79, D:60-69, F: < 60.

ACADEMIC MISCONDUCT	Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the Student Code of Conduct for further information. The Code is available online at http://www.studentaffairs.uno.edu.

Examples of collaboration that may involve academic misconduct:
Writing code for another student
Showing a student your code.
Giving a student a copy of your code.

ATTENDANCE	Attendance is required until lab assignment is completed.

LATE SUBMISSIONS	Reports must be submitted the subsequent week at 12:50pm on Mondays. Labs submitted later than 1pm will be marked as 1 day late. Without a valid excuse, each late day will result in a 10% deduction. Labs may demand different time from different students. Therefore, you should start working on the assignment as early as possible.

MAKEUP POLICY	No makeup will be given for missed labs or projects without valid excuses. The instructor will make decisions regarding the makeup in the case of valid excuse.

LAB ETIQUETTE	All foods and drinks are strictly prohibited in the Labs. Please keep noise down to a minimum.

Usage of lab equipment is strictly related to UNO courses. You are not allowed to give access of facilities to any other person but yourself. In the absence of a lab supervisor the doors must remain closed at all times. Negligent students will be liable for abuse of lab equipment even if they are indirectly involved.

DISABILITY   It is University policy to provide, on a flexible and individualized basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirements. Students with disabilities should contact the Office of Disability Services as well as their instructors to discuss their individual needs for accommodations. For more information, please go to http://www.ods.uno.edu.

CHANGES
IN COURSE
REQUIREMENTS   Since all classes do not progress at the same rate, the instructor may wish to modify the above mentioned requirements or their timing as circumstances dictate. For example, the instructor may wish to change the number and frequency of examinations, or the number and sequence of assignments. If such modification is needed, the student will be given adequate notification.