Dynamic Memory Allocation Project (Due on: Wednesday, April 1, 2015)

Instructor: Parthasarathy (Partha) Guturu
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Teaching Assistant: TBD
Class Hours: M/W 2:30 PM - 3:50 PM
Class Room: DP B-242.
Office Hours: T/Th 4:00 PM-5:00 PM. Students unable to see me during these times may request an appointment.
Prerequisites: CSCE 1020, EENG 2710

Text Book:

A power-point presentation is used to provide some information to support and supplement a student-centric problem/project-oriented learning methodology.

Attendance Policy: In view of the continuous evaluation strategy adopted by the instructor, perfect attendance is recommended for those aspiring to get good grades.

Grading Policy: Regular quizzes/class assignments and tests: 50, Project: 30 and Final Exam: 20. Grades A, B, C, D, and F will be assigned, respectively, depending upon whether the total tally will be greater than/equal to 90, 80-89, 70-79, 60-69, or less than 60, after curving.

Academic Dishonesty: Honesty is the best policy. Cheating will not be tolerated. Anyone found guilty of cheating on a test or assignment will be awarded an F grade for the course. Discussions of problems and assignment with your classmates is welcome and encouraged, however, sharing of solutions is not. If you need help, you should ask the instructor. Cheating includes, but is not limited to, all forms of plagiarism and misrepresentation. For your rights and responsibilities please refer to http://www.unt.edu/csrr

Statement regarding Disabled Students: The Faculty of Electrical Engineering including this instructor cooperates with the Office of Disability Accommodation (ODA) to make reasonable accommodations for students with certified disabilities (cf. Americans with Disabilities Act and Section 504, Rehabilitation Act). If you have not registered with ODA, we encourage you to do so immediately and present a written accommodation request along with an appropriate documentation from the Dean of Students Office http://www.unt.edu/oda/, on or before the 2nd week of class.

Final Exam Date and Time: TBD.

Course Outline and Delivery Plan
1. Introduction to Computer Organization (1 week)
2. Computer Instructions (2 weeks)
3. Arithmetic and Logic Unit (1 week)
4. Performance Analysis (1 week)
5. Data Path and Control (2 weeks)
6. Performance Enhancement with Pipelining (2 weeks)
7. Memory Hierarchy and Virtual Memory Concepts (2 weeks)
8. Storage, Networks, and other Peripherals (1 week)
9. Engineering Design with Microcomputers (2 weeks)

Note: The topics 1-7 listed above correspond to the chapters of the recommended text book. Topic 8 will be covered using specific microprocessor manuals and reference books. Class here implies a one-hour time slot. Due to the teaching method adopted, discussions, reviews, tests and projects will be integral parts of the topics 0-8 and hence all the class sessions.

Reading Requirements
The students are required to come prepared to every class with the material discussed in the previous class.

Course Learning Outcomes
Course Learning Outcomes (CLOs), that is, the areas for student learning in this course are:
[CLO-1] High-level View of Hardware and Software Components and their Organization.
[CLO-2] Computer Instruction and Low Level (assembly/machine) Programming
[CLO-3] Computer Arithmetic Processor
[CLO-4] Computer Performance Analysis
[CLO-5] Data and Control Path Design
[CLO-6] Pipeline Processor Design
[CLO-7] Memory Hierarchy and Virtual Memory Concepts
[CLO-8] Computer Peripherals
[CLO-9] Engineering Design with Microcomputers

Our EE Program Student Outcomes (SOs)
Upon completion of our BSEE program, the students will be able to:

[SO-1] Apply knowledge of mathematics, engineering and science.

[SO-2] Design and develop projects, and conduct experiments to verify and validate them, as well as analyze and interpret data.

[SO-3] Develop project-based learning skills through design and implementation of a system, component, or process that meets the needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.

[SO-4] Function on multidisciplinary teams.

[SO-5] Identify, formulate, and solve engineering problems.

[SO-6] Have an understanding of professional and ethical responsibility.

[SO-7] Communicate effectively.

[SO-8] Achieve broad education necessary to understand the impact of electrical engineering solutions in a global and societal context.

[SO-9] Understand learning processes, concepts of learning to learn, and engage in lifelong learning.
[SO-10] Achieve knowledge of contemporary issues.

[SO-11] Use techniques, skills, and computer-based tools for conducting experiments and carrying out designs.

**ABET Outcomes**

3a- ability to apply knowledge of mathematics, science, and engineering  
3b- ability to design and conduct experiments, as well as to analyze and interpret data  
3c- ability to design a system, component, or process to meet desired needs such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.  
3d- ability to function on multi-disciplinary teams  
3e-ability to identify, formulate, and solve engineering problems  
3f- understanding of professional and ethical responsibility  
3g- ability to communicate effectively  
3h- the broad education necessary to understand the impact of engineering solutions in a global and societal context  
3i- recognition of the need for, and an ability to engage in life-long learning  
3j- knowledge of contemporary issues  
3k- ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

**Relationship between Our BSEE Program Student Outcomes and Course Learning Outcomes**

The course learning outcomes map onto our program’s student outcomes and ABET outcomes as depicted in the table below:

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