# EEL4747L - Microcomputers II (RISC) Lab

One Credit, Two hours, Engineering Topic.

**Instructor:** Rafi Ahmed.

**Textbook:** Digital Logic and Microprocessor Design with Interfacing; ISBN-13: 978-1305859456

**Specific Course Information:**

Hands-on design experience with microprocessor systems and applications using Electronic Design Automation tools.

**Specific Goals for the Course**

a. Specific outcomes of instruction

In the lab, students will implement a 32-bit MIPS-based single-cycle microprocessor in accordance with materials covered in EEL4747 lectures. Students will use Xilinx ISE and Model SIM or ISE simulator to implement their design.

b. Explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.

In this course the student will have to show

(a) an ability to apply knowledge of mathematics, science, and engineering (N/A)

(b) an ability to design and conduct experiments (simulations), as well as to analyze, interpret data (X)

(c) an ability to design a system, component, or process to meet desired needs (N/A)

(d) an ability to function in multi-disciplinary teams (N/A)

(e) an ability to identify, formulate, and solve engineering problems (homework) (X)

(f) an understanding of professional and ethical responsibility (N/A)

(g) an ability to communicate effectively (through project reports) (X)

(h) the broad education necessary to understand the impact of engineering solutions in a global and societal context (N/A)

(i) a recognition of the need, and an ability to engage in life-long learning (N/A)

(j) a knowledge of contemporary issues (X)

(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice (X)

(l) a knowledge of probability and statistics (N/A)

**Brief list of the topics to be covered**

Students will have a hands-on experience using Electronic Design Automation (EDA) tools.

**GRADING:**

| Course Requirements | Weight |
|---|---|
| Lab Reports | 10%each |
| Overall Grade | 100% |

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|---|---|---|---|---|
| A- to A: 100-90 | B- to B+: 89-80 | C- to C+: 79-70 | D- to D+: 69-60 | F: below 60 |