

Bogazici University, Department of Computer Engineering
CmpE 240: Digital Systems
Course Syllabus
Spring 2014 TTW 784, ETA A2

Instructor: Assoc. Prof. Alper Sen

Email: alper.sen@boun.edu.tr (technical/assignment questions must be directed to the class discussion group or TAs)

Office Hours: After class, ETA 25

Teaching Assistants:

Binnur Görer **Email:** binnur.gorer@boun.edu.tr **Office Hours:** TBA, ETA 31

Ergin Özkucur **Email:** nezih.ozkucur@boun.edu.tr **Office Hours:** TBA, ETA 31

Yekta Said Can

Yavuz Koroğlu

Required Textbook:

Frank Vahid, Digital Design, Wiley, 2011

Frank Vahid, Verilog for Digital Design, Wiley, 2007

Required Lab Book: CMPE 240 Lab Handbook Spring 2014, CMPE.

Supplemental Textbooks (Optional):

John F. Wakerly, Digital Design, Fourth Edition, Prentice Hall, 2006

M. Morris Mano, Digital Design, Fourth Edition, Pearson, 2007.

Course Website: <http://www.cmpe.boun.edu.tr/courses/cmpe240/spring2013/>

Course Organization:

The course is organized as a series of lectures by the instructor, problem sessions and laboratory sessions by the TAs, reading, assignments, and exams. There will be two midterms and one final exam.

Tentative Grading:

Midterm 1: 25% (TBA), Midterm 2: 25% (TBA), Final: 20% (TBA), Labs: 20%, Attendance+Quiz+HW: 10%, Total: 100%.

Right to take the final exam: Each midterm grade > 15, Lab grade average > 60, can miss at most one lab.

Class Discussion Forums: TBA You are to send all technical/HW/exam questions to the TAs and appropriate discussion forums. Only private emails to me.

Problem Sessions: TBA

Course Policies:

- **Exams:** If your work or a personal situation forces you to unexpectedly miss exams, you should expect to get a zero on those occasions. If you miss an exam because of serious injury, you are expected to provide a statement from a doctor stating that, in his/her opinion, it was

impossible for you to attend because of injury. A slip showing you visited the BU infirmary (revir) or your personal doctor is not sufficient for this. In other situations, you should contact me beforehand.

- Exams will be performed during regularly scheduled class hours. Requests for exam date change must be done at least two weeks before the exam. Otherwise, these requests will not be considered even if you have another exam on the same date.
- **Labs:** The rules for the usage of laboratory will be announced before the first experiment.
- Students are allowed to miss **only a single lab** for which they will automatically get a zero. Missing labs more than once will result in F grade in class. (No excuses will be accepted except for the vital injury of the student as stated above!).

Academic Honesty:

Cheating will not be tolerated. You must not show work to any student in the class. You must not search for solutions on the internet, copy, study, analyze or even look at any source code produced by other CMPE 240 students from this year, or from years past. We will check for cheating, and any incident will be reported to the department. Procedure for cheating behavior is given as follows:

1. Definitions:

Cheating includes, but is not limited to, the following actions:

- Copying using unauthorized materials, copying from someone else's paper, allowing others to copy from his/her own paper, or giving unauthorized assistance to others during a test or examination.
- Working with others in completing a take-home examination or assignment unless the instructor has allowed independent action or allowed any specific aid could be accepted by students.
- Submitting of material in whole or part for academic evaluation that has been prepared by another student(s), individual(s) or community agency.
- Submitting, without prior permission of the instructor, any work by a student which has at any time been submitted in identical or similar form by that student in fulfillment of any other academic requirement at any institution.
- Marking or submitting an examination or evaluation material in a manner designed to deceive the grading system.
- Obtaining in a fraudulent manner any material relating to a student's academic work (theft of examination, collusion with a university employee, etc.).
- Attempting to influence or change an academic evaluation, grade, or record by unfair means.
- Permitting another student to substitute for one's self in any academic evaluation.
- Willfully damaging the academic work or efforts of another student.
- Trying to deceive the instructor and/or assistant by any means such as denying the submission of a homework/project.

2. Actions Against

The following actions will be taken against all sides involved in cheating:

- The student will receive a zero or negative grade for the related test or evaluation. In addition, the student may receive the grade "F", or one letter less grade than the normal grade depending

on the severity of cheating as judged by the evaluator, for the related course. For example, an organized cheating action in a final exam may result in “F” grade.

- The responsible instructor will file for the disciplinary action. Students must already be aware of related clauses of [YÖK Disiplin Yönetmeliği](#).
- The student will not be issued any letter of reference by any instructor of the department.
- The student will not be accepted to any further graduate program such as the MS and PhD programs in the department.
- The student’s name, the course, the year and the semester and the specific cheating behavior will be logged in a departmental database for further reference to the student.
- Regarding students of other departments, the respective department will also be informed of the specific cheating behavior.

Course Evaluation Policy: Standard **Add/Drop Policy:** Standard

Lecture Contents and Schedule (tentative): Order and contents may change.

Topics	Reading
Introduction	Chapter 1
Combinational logic design: Number systems, codes and arithmetic. Boolean algebra and logic gates. Boolean functions, Canonical and Standard Forms. Simplification.	Chapter 2
Sequential logic design: Flip-flops, FSMs,	Chapter 3
Combinational and sequential component design: adders, shifters, comparators, multipliers, subtractors, arithmetic logic units, registers, counters, register files	Chapter 4
Register Transfer Level Design of digital circuits	Chapter 5
Optimizations and Tradeoffs	Chapter 6
Physical Implementation: FPGAs	Chapter 7

Lab Contents and Schedule: TBA