Course Information

Instructor:

Carlotta Berry (berry123)

Moench Hall, D-211

(812) 877-8657

Description:

3R-3L-4C   F, W, S   Pre: ECE204 and MA222

Review of matrix and differential equations. Bode plots. System classification, impulse and step response, convolution. Laplace and inverse Laplace transforms, block and signal flow diagrams. Benefits of feedback. Modeling and simulating electrical, mechanical, and thermal systems. Matlab and Simulink. Integral laboratory.

Text: There is no text book for this course but there will be a study guide and course notes placed in the book store for purchase that will be very helpful in mastering the course concepts.

What is expected of You

First and foremost, professional work is the norm in this course. All of your written work and your conduct in class are to be at the level of one who is studying a profession—the profession of engineering. This means a number of things:

1. Your work is neatly done in a professional manner, using formats specified.

2. Your work is honestly done. You are encouraged to discuss course material with classmates to help each other understand and assimilate the concepts. Nevertheless, distinguish between helping someone understand concepts and providing them with specific answers. You are expected to work individually on assignments without reference to others' work.

3. Your work is done on time. As a rule of thumb, expect to put in **eight** hours per week outside of class doing homework, reading the resources, and studying.

4. You are attentive and engaged in the lecture (i.e. not sleeping, reading the newspaper, surfing the web, doing homework for other courses, disturbing others with electronics).

Grading:

Grades will be assigned at the end of the quarter based on the grade weights and grading scale shown in the following table:

Midterms	36%	A	90 – 100
Final Exam	24%	B+	85 – 89
Homework	10%	B	80 - 84
Labs and Memos	15%	C+	75 - 79
Quizzes	10%	C	70 - 74
Lab Practical	5%	D+	65 - 69
		D	60 - 64
		F	Below 60

Independent of point totals:

- You must satisfactorily *complete* all of the lab projects in order to pass the course

- You must have a *passing* weighted exam average of greater than or equal to 60% in order to pass the course.

Homework:

The homework is intended to help you to understand the concepts presented in the course, and to provide you with practice in problem solving. Each student should complete the homework on engineering paper using problem solving format.

- **Problem sets are due each Thursday at the beginning of class before the bell rings.**
- No late homework will be accepted without prior approval
- Many of the homework assignments require MATLAB/Simulink and/or MultiSim. If you do not complete the computer simulation portion of the assignment, you will not get full credit for the submission.
- You are expected to complete your own work. You can discuss the assignment with others and help each other but the work that you submit should be your own. If you submit the same computer simulation files, neither of you will receive credit.
- Unless specifically told otherwise, you are expected to work out homework problems by hand. If you used Maple and just copied the answer onto the paper, you will not get credit. You <u>cannot</u> submit in any Maple code or plot as part of the solution to a problem. However, you can use Maple to check your answers.
- In general, I will give you answers to problems, but *I will not hand out or post solutions.* If you have questions or cannot get the correct answer, you need to come and see me. Your homework solutions will be your primary source for reviewing material before each exam, so it is very important that you do the homework.

Examinations:

In this course, examinations make up <u>**65%**</u> of the grade and warrant careful preparation. Examination questions will be based on the lecture material, homework, quizzes and laboratory

work. Midterm tests will be fifty minutes in duration during the regular class meeting time.
Midterms and final examinations will be closed book and closed notes. However, you may be
provided with a formula sheet. It is your responsibility to memorize or derive any formula
missing from this document. **You will only be allowed to use calculators on the first exam.**
*Anything covered from the beginning of the class up until the time of an exam is fair game for
the exam.*

Pre-labs:

Pre-labs are intended to help you understand the purpose and theory of the weekly laboratory
assignments. Each student should complete the pre-lab on engineering paper and **submit it in
class the day before the lab**. The pre-lab may also involve work using MATLAB, Simulink,
MultiSim or the NI myDAQ and it should be attached as well.

Lab memos:

The lab memo will be used to present the purpose, theory, procedure, results and conclusions
of the weekly laboratory assignments. Each student must submit a typewritten lab memo.

- Each student should purchase the lab kit and check out the NI myDAQ from the instrument
  room before the first lab session
- Students can work together but each person is responsible for doing and understanding the
  lab. Each week you will use MATLAB, Simulink, MultiSim and the NI myDAQ for the lab
  procedure so you should bring your laptop.
- **Lab memos should be submitted in the Angel Course drop box along with any necessary
  code by midnight on Sunday.** After midnight on Sunday, the memo is late and incurs a **20%
  penalty per day**. If it is not submitted by the beginning of the next lab session, the grade is
  a **zero**.
- The instructor must sign off on your lab before you submit your memo to insure that it was
  completed properly

Quizzes:

There will be weekly quizzes (**usually on Thursdays**) that involve answering short problems or
multiple choice questions on lecture material and homework. The purposes for these quizzes
are:
- to give me feedback on the current level of understanding of the class
- to give you feedback on your current level of understanding
- to give you practice on problems similar to the exam format
- to also take attendance

Usually before the quiz a "practice quiz" will be posted in the Angel Course folder to give you an
idea of the kinds of problems you are expected to be able to solve or questions to answer.

Attendance:

Regardless of whether formal attendance is taken, attendance at each class is expected. As a rule of thumb you should consider yourself seriously behind if you miss more than four classes in a four credit-hour course. According to our Academic Rules and Procedures, "A student whose total absences in a course, excused or unexcused, exceed two per credit is liable to fail the course." ***Eight absences in this course are grounds for failure.*** Missing an attendance check due to lateness may be counted as an absence.

Missed exams will <u>not</u> be made up. ***The final exam grade will be used to replace a missing exam grade in the case of excused absences.*** Excused absence from an examination normally requires advance approval or formal documentation of an emergency. An examination that is missed for an unexcused reason will be given a grade of <u>**zero**</u>. Students are not excused from scheduled exams for intramural athletics or fraternity events.

Academic accommodation:

Those students with documented special needs may request extra time on timed tests. Students need to contact me at least 2 business days prior to each exam to make the necessary arrangements.