

MECH 3345: System Dynamics

Textbook:	<u>System Dynamics for Engineering Students.</u> by Nicolae Lobontiu
Class/Lab Meeting:	MTWRs, TBD
Class Room:	UGLC 346
Prerequisite:	Mechanicals of Materials, Dynamics
Instructor:	Yirong Lin, Ph.D. Department of Mechanical Engineering Office: A111 E-mail: ylin3@utep.edu Office Hours: 1:30 pm to 2:30 pm MWs
Teaching Assistant:	<i>To be announced</i>

Topics covered and Schedule

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| 1. Introduction | (Week 1) |
| 2. Modeling of Rigid Body Mechanical Systems | (Week 2) |
| 3. Solution Methods for Dynamic Models | (Week 3) |
| 4. Spring and Damper Elements in Mechanical Systems | (Week 4) |
| 5. Electrical and Electromechanical Systems | (Week 5) |
| 6. Introduction to Feedback Control System | (Week 6) |
| 7. Laplace Transform | (Week 7) |
| 8. Control System Design and Root Locus Plot | (Week 8) |
| 9. Introduction to MATLAB and FEA (Option) | (TBD) |
| 10. Final exam @ August 6 th | |

Grades

Your grade for this course will be assessed based on your performance in quizzes (20 %), mid-term exams (50 %), and final departmental exam (30 %). Four quizzes will be given throughout the semester. The content of a quiz could be the materials covered in previous sessions. There will be no make-up quizzes. Four exams will be given during the semester. Make-up exams will be given only for extremely credible reasons (no flat tire, no sudden sick or family member pass away). Every student is required to take the departmental final exam at the end of the semester. However, if the average of the four mid-term exams is **more than 95%**, the student is exempt for final exam and will automatically get an “A” for this class.

Your final grade will be calculated based on the points you have accumulated as follows:

A	≥ 90	C	≥ 70 but < 80	F	< 60
B	≥ 80 but < 90	D	≥ 60 but < 70		

The instructor reserves the right to revise this grading plan. However, students will be informed of

any changes during the semester.

Allowed Calculators

The following will be the only calculators allowed in exams:

- Casio: All fx-115 models. Any Casio calculator must contain fx-115 in its model name.
- Hewlett Packard: The HP 33s and HP 35s models, but no others.
- Texas Instruments: All TI-30X and TI-36X models. Any Texas Instruments calculator must contain either TI-30X or TI-36X in its model name.

These are the same calculators that are currently being allowed in the Fundamental of Engineering (FE) and Professional Engineering (PE) exams (<http://www.ncees.org/exams/calculators/>). It is your responsibility to get acquainted with the features of the calculator you decide to use. I recommend that you use this calculator for all your work (including other courses) since this will help you learn how to use all the features of your calculator.

Homework

NO homework will be assigned.

Attendance and Tardiness

Attendance is mandatory. Absence can be checked by the instructor through quizzes, exams, roll calling, randomly picked names for problem solving in class, or other mechanisms. **You could receive an F grade if you miss more than THREE classes without the instructor's consent.** Everyone is required to attend the lab session. **Two absences from the lab will result in an F grade for the whole class.** The instructor appreciates all efforts to attend the class. There will be no penalty for being late. **However, exams and quizzes may be given at the beginning of the classes. No additional time will be allowed for late attendees.**

Study Aids

Instructor's Office Hour

During the specified office hours, you can drop by the office for any questions regarding the subjects discussed in the class without making an appointment. Of course, you are always welcomed to visit me at any other times, but I may not be available for discussion because of other commitments. Leave me a note, call for an appointment, or send me e-mail will be the most effective way to catch me for your questions. Remember, do not pile up questions and expect me to answer all your questions the day before an exam.

Policy on Cheating

Students are expected to be above reproach in all-scholastic activities. Students who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the university. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student, or the attempt to commit such acts (Regents= Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22). Scholastic dishonesty harms the individual, all students, and the integrity of the university; policies on scholastic dishonesty will be strictly enforced.

The above schedule, policies, and assignments in this course are subject to change in the event of extenuating circumstances or by mutual agreement between the instructor and the students.