### Course Title: MECH 3345 System Dynamics  
#### Fall/2017

**INSTRUCTOR:** Angel Flores-Abad, Office: Engineering Building, Room E331, Email: afloresabad@utep.edu

**ASSISTANT:** TR, 1:00 – 2:00 PM. 3D printing Lab.

**OFFICE HOURS:** Tuesday and Thursday at 11:00 am.

**LECTURE**  
MW 10:30 am - 11:50 am, Undergraduate Learning Center 346.

**PREREQUISIT** Electromechanical systems and Dynamics

**COURSE DESCRIPTION:** The course educates students in system modelling, time-domain performance analysis, frequency-domain analysis and control systems design.

**COURSE OBJECTIVES:**
- Students will use mathematical tools and physical laws to represent mechanical and electromechanical systems.
- Students will use computer tools to validate and analyze dynamical systems.

**TEXTBOOKS:**

**SOFTWARE:** Matlab.  
Register at iClicker Reef: https://app.reef-education.com/#/login  
Course ID: MECH 3345 FALL 2017

**GRADING:**
- Assignments (homework, quizzes, etc.): 300
- Midterms (three, one is dropped. Only two count): 400 (200 each)
- Project (simulation and/or experimental): 100
- Final Exam (Comprehensive): 200

**Total points 1000**

- Students with a total of 360 points or more in the two midterm exams are exempted from taking the final.

**ESCALE**

- A ≥ 900  
- B ≥ 800 but <900  
- C ≥ 700 but <800  
- D ≥ 600 but <700  
- F <600

**There will not be make up exams. If you miss an exam due to a UTEP approved reason (see the catalog) that will be your exam to drop.**

**Midterm exam 1:** September 27

**Midterm exam 2:** October 23

**Midterm exam 3:** November 20

**Final Exam:** Dec 15, 10:00 AM-12:45 PM.

**MATERIAL FOR CLASS**  
Laptop and Basic scientific calculator (Non-programmable)

**TOPICS COVERED**
- Dynamic response and Laplace transform method  
- Transfer function  
- Rigid-body mechanical systems  
- Spring damper mechanical systems  
- Electrical Systems  
- Electromechanical systems  
- State space representation  
- System analysis in time domain

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