

Course Title	MECH 3345 System Dynamics	Spring/2017
INSTRUCTOR:	Angel Flores-Abad, Office: Engineering Building, Room E331, Email: afloresabad@utep.edu	
ASSISTANT:	Jaime Cruz, Email: jcruz3@miners.utep.edu	
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:	<ul style="list-style-type: none"> • 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:	[1] Palm, W. J. System dynamics. McGraw-Hill Higher Education. 3 rd . Edition (Required) [2] Ogata, K. System dynamics. New Jersey: Prentice Hall.	
SOFTWARE:	Matlab, Adams, Multisim.	
GRADING:	<ul style="list-style-type: none"> • Assignments (homework, quizzes, etc.) 30% • Test 1 (Midterm 1): 20% • Test 2 (Midterm 2): 20% • Project (theoretical and report): 10% • Final Exam (Comprehensive): 20% <ul style="list-style-type: none"> ◦ Students with an average grade of 90% in the two midterm exams are exempted from taking the final. <p>ESCALE A ≥ 90 B ≥ 80 but <90 C ≥ 70 but <80 D ≥ 60 but <70 F <60</p> <ul style="list-style-type: none"> • There will not be make up exams. If you miss an exam due to a UTEP approved reason (see the catalog) I will count the next exam as two scores. • Use the following equation to calculate your final grade: $\text{Final grade} = \Sigma \text{Assignments} \times 0.3 + \Sigma \text{Exams} \times 0.6 + \text{Project} \times 0.1$ 	
Midterm exam 1:	March 8 th	
Midterm exam 2:	May 1 st	
Final Exam:	May 12 th , 10:00 AM-12 :45 PM.	
MATERIAL FOR CLASS	Laptop (required) Basic scientific calculator. Non-programmable.	
TOPICS COVERED	<ul style="list-style-type: none"> • Dynamic response and Laplace transform method • Transfer function • Rigid-body mechanical systems • Spring damper mechanical systems • State space representation • System analysis in time domain • Feed-back controllers design and analysis 	

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.