

The University of Texas at El Paso
College of
Department of
Syllabus

Course Prefix and Number: AERO 3343

Course Title: Systems Modelling and Control

Credit Hours: 3

Prerequisite Courses: MATH 2326 & MECH 2342 and MECH 2340 all with C or better.

Course Description: The course will provide the basis for system modelling in time and frequency domain with an emphasis in aerospace applications. The course will deliver concepts and the best practices for design and implementation of model-based feedback control of SISO systems. The course will include laboratories and project experiences for real-time implementation.

Learning Outcomes: Upon completion of this course, students will be able to: obtain the dynamic model of aerospace systems in time domain and frequency domain as well as to analyze the system's behavior; design, tune and analyze automatic controllers for SISO systems; and to implement control systems in a simulation environment as well as in real-time applications.

Required Materials:

-Textbook: Nise, Norman S. CONTROL SYSTEMS ENGINEERING. John Wiley & Sons, 8th Edition.

-Laptop

Course Schedule:

- Laplace Transform (depending on if differential equations will be prerequisite)
- Transfer function
- Dynamic Response
- Block diagram representation
- PID Controllers Design Time Domain
- PID Controllers Design in Frequency Domain