UTRGV COURSE SYLLABUS

UTRGV Course: ELEE 6399 Linear Dynamic Systems
Instructor Name: Wenjie Dong
Term: Fall 2016
Tel: 956-665 2200. Email: wenjie.dong@utrgv.edu
Times and location: TR4:30pm-5:45pm, ENGR 1.250
Office location and hours: ENGR 3.242, TR 3:00pm-4:00pm or by appointment

Textbook and/or Resource Material

Course Description and Prerequisites
State-space description of dynamic systems, analysis and design of linear systems, similarity transformation, state feedback, state observers, and matrix characterization of multivariable systems.
Prerequisites: ELEE 3321 and ELEE 4321.

Learning Objectives/Outcomes for the Course
To learn basic control concepts and basic analysis and synthesis methods for linear control systems.

Course learning outcomes are:
1. Students will be able to analyze feedback control systems by state space methods.
2. Students will be able to transform state space systems to classical forms including transfer functions.
3. Students will be able to study system stability, performance, controllability, observability.
4. Students will be able to perform feedback control system design using state variable methods including pole placement and LQR.
5. Students will be able to perform designs with various control tools using MATLAB computer simulation toolboxes.
6. Students will be able design dynamic feedback systems using state variable form including observers, output feedback and regulators.

Grading Policies
Your final grade depends on your points for the following parts: 1. Homework, 2. Attendance, 3. Middle term exams, and final project.

- **Homework:**
  1. Several homework will be assigned and their due dates will be announced in class.
  2. No make-up for homework unless it is arranged by the instructor in advance.

- **Attendance:**
  Attendance of class is required. You are required to sign the signature sheet at the beginning of each class.

- **Middle term exams:**
  1. There are several middle term exams. The date for each exam will be announced in advance.
  2. Make-up for a missed exam will not be permitted unless it has been arranged in advance.
  3. You have one week after the exam to ask for regrading. After one week, the grade is final.

- **Final project:**
  Topics and schedule for the final project will be announced in class.

Calendar of Activities
Include in this section a table or list that provides information for students regarding important dates, assignments or activities. The UTRGV academic calendar can be found at http://my.utrgv.edu at the bottom of the screen, prior to login.
Other Course Information
Topics (tentative):
1. Review of matrix algebra
2. Review of classic control theory
3. State-space representation of dynamic systems
4. Dynamics of linear systems
5. Stability
6. Controllability and observability
7. Realizations
8. State feedback control and state estimation
9. Output feedback control.

UTRGV Policy Statements

STUDENTS WITH DISABILITIES:
If you have a documented disability (physical, psychological, learning, or other disability which affects your academic performance) and would like to receive academic accommodations, please inform your instructor and contact Student Accessibility Services to schedule an appointment to initiate services. It is recommended that you schedule an appointment with Student Accessibility Services before classes start. However, accommodations can be provided at any time. Brownsville Campus: Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at accessibility@utrgv.edu. Edinburg Campus: Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at accessibility@utrgv.edu.

MANDATORY COURSE EVALUATION PERIOD:
Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (http://my.utrgv.edu); you will be contacted through email with further instructions.

ATTENDANCE:
Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV’s attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

SCHOLASTIC INTEGRITY:
As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism, and collusion; 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. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.

SEXUAL HARASSMENT, DISCRIMINATION, and VIOLENCE:
In accordance with UT System regulations, your instructor is a “responsible employee” for reporting purposes under Title IX regulations and so must report any instance, occurring during a student’s time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect in an environment free from sexual misconduct and discrimination.

COURSE DROPS:
According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the "3-peat rule" and the "6-drop" rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.