Course Administration

INSTRUCTORS: Ya Wang, 153 Light Engineering, (631) 632 8322
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OFFICE HOURS: Wed (9-11am, 1 pm - 3 pm) or by appointment.

TEXT:
Linear State-Space Control Systems, Robert Williams & Douglas Lawrence, John Wiley & Sons, 2007

PREREQUISITES:
- Classical Feedback Control Background
  - The Eigenvalue Problem
  - Block diagram manipulation & analysis
  - Laplace transforms
  - Root locus analysis
  - Frequency response & transfer functions
  - Frequency domain feedback control design
- Mandatory Software:
  - Matlab R2014b or later
  - Simulink
  - Control system toolbox
  - Powerpoint, Word, Equation Editor

LECTURE HOURS: Wed (4 pm -6:50 pm)

LECTURE LOCATION: Harriman Hall 112

HOMEWORK: 4 homework assignments
Stony Brook University Graduate Honor Code strictly enforced
No graded assignments will be accepted past the due date/time;
Blackboard submissions are time/date stamped
All assignments are due by midnight of the stated due date
Electronic submissions must be in Word, PowerPoint or PDF
Handwritten documents may be scanned as a PDF; but they must be
EXCEPTIONALLY neat, legible, and <1 Mb per assignment
No hardcopy submissions to department mailbox or office will be accepted
You are encouraged to work with others on all assignments, but your submission must be the result of your own efforts.

PROJECTS: One final project will be given. A written report is required for the design project.

EXAMS: 2 Midterms (in class) 1 Final Exam All Exams are scheduled in class, unless stated otherwise NO makeup exams

GRADING: Semester letter grade is based upon your performance in the following categories, including exams, homework assignments and a design project.

Homework 20% 1 Project 20% Midterm 40% Final 20%

GRADING SCALE: NOT a curve – simple percentage of all course work, as follows:

A: >=95% A- : >=90% B+ : >=86%
B: >=82% B- : >=78% C+ : >=74%
C: >=70% C- : >=66% D+ : >=63%
D: >=60% F : <60%

Course objectives of MEC 560 course and assessment tools

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<tr>
<th>COURSE LEARNING OBJECTIVES</th>
<th>ASSESSMENT TOOLS</th>
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<tr>
<td>1. Know the principles of control theories</td>
<td>Assignments, Exams, Project</td>
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<td>2. Learned how to represent single-input-single-output (SISO) dynamic systems using state-space models</td>
<td>Assignments, Exams, Project</td>
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<td>3. Solve for Frequency Response Functions (FRF’s) of SISO dynamic systems, i.e. Impulse Responses and Harmonic Responses</td>
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<td>4. Learned how to represent multi-input-multi-output (MIMO) dynamic systems using state-space models</td>
<td>Assignments, Exams, Project</td>
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<td>5. Solve for the dynamic response of a linear dynamic system and relate the response to the state-space system description</td>
<td>Assignments, Exams, Project</td>
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6. Design linear control systems using frequency domain, state estimation, and pole placement techniques

Assignments, Exams, Project

Important calendar days for the Spring 2018 semester

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<tr>
<th>Important calendar days</th>
<th>Dates for the Spring 2018 semester</th>
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<tr>
<td>Holidays (no classes held)</td>
<td>March 14, 2018 (Spring Break)</td>
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<tr>
<td>Classes to be held</td>
<td>01/24, 01/31, 02/07, 02/14, 02/21, 02/28, 03/07,</td>
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<td>03/21, 03/28, 04/04, 04/11, 04/18, 04/25, 05/02</td>
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<td>First Day of Classes</td>
<td>Wed, Jan 24, 2018</td>
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<td>Last Day of Classes</td>
<td>Wed, May 2, 2018</td>
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<td>Reading Day</td>
<td>Wed, May 9, 2018</td>
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<td>Final Examinations</td>
<td>TBD</td>
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BLACKBOARD: All homework assignments and solutions will be posted on the Blackboard course account (http://blackboard.sunysb.edu). For problems logging in, go to the helpdesk in the Main Library SINC Site or the Union SINC Site; you can also call: 631-632-9602 or e-mail: helpme@ic.stonybrook.edu

Please make sure that your email id is a current one on the blackboard system. I suggest that you use a university email id for this class; it is free and official. I am not responsible for the emails not delivered to your commercially available email accounts.

ACADEMIC INTEGRITY: The campus policies on academic INTEGRITY are available on the Web (http://www.stonybrook.edu/commcms/advising/_faculty/AcadIntegrity.html).

Intellectual honesty is a cornerstone of all academic and scholarly work. Therefore, the faculty view any form of academic dishonesty as a very serious matter. The Academic Judiciary Committee (AJC) and the College of Engineering and Applied Sciences Committee of Academic Standing and Appeals (CEAS-CASA) are responsible for the establishment of general guidelines for dealing with academic dishonesty in the colleges and for the consideration of individual complaints. Further information regarding functions of the committees is available from the Office of Undergraduate Academic Affairs and the Undergraduate Student Office in the College of Engineering and Applied Sciences.

CRITICAL INCIDENT MANAGEMENT: Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students’ ability to learn. Faculty
in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

**SPECIAL NOTE ON ADA:** If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential. Students requiring emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services.

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