GENERAL INFORMATION
(This draft will be finalized by the end of second week of classes)

General Description (3 credits):
Mathematical modeling, analysis, measurement and control of dynamic systems; extensions of modeling techniques of MEEN 363 to other types of dynamic systems; introduction to feedback control, time and frequency domain analysis of control systems, stability, PID control, root locus; design and implementation of computer-based controllers in the lab.

Prerequisites:
ENGR 215, MEEN 260, MEEN 363

Course Content:
Engineering Science – 2/3 or 2 hours
Engineering Design – 1/3 or 1 hour

Instructors:
Dr. John Haglund
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Dept. of Mechanical Engineering
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Dr. Won-jong Kim
Associate Professor
Dept. of Mechanical Engineering
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Dr. Prabhakar R. Pagilla
Professor
Dept. of Mechanical Engineering
529 Mechanical Engr. Office Bldg.
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Meeting Times and Place:

Lectures:
Sections 501 – 504, 509 (Instructor: Dr. P.R. Pagilla)
Monday & Wednesday 10:20 AM - 11:10 AM
ENPH 202
Sections 505, 506, 508, 512 (Instructor: Dr. J. Haglund)
Tuesday & Thursday 8:00 AM - 8:50 AM
HELD 107

Sections 510, 511, 513 (Instructor: Dr. W.-J. Kim)
Monday & Wednesday 10:20 AM - 11:10 AM
ARCC 207

Laboratories:

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<tr>
<th>Section</th>
<th>(TA: TBD)</th>
<th>Monday 1:50 PM - 4:40 PM</th>
<th>ENPH 302</th>
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<tr>
<td>Section 501</td>
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<td>Section 503</td>
<td>(TA: TBD)</td>
<td>Tuesday 2:20 PM - 5:10 PM</td>
<td>ENPH 302</td>
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<tr>
<td>Section 505</td>
<td>(TA: TBD)</td>
<td>Thursday 11:10 AM - 2:00 PM</td>
<td>ENPH 302</td>
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<td>Section 508</td>
<td>(TA: TBD)</td>
<td>Thursday 2:20 PM - 5:10 PM</td>
<td>ENPH 302</td>
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<tr>
<td>Section 510</td>
<td>(TA: TBD)</td>
<td>Tuesday 11:10 AM - 2:00 PM</td>
<td>ENPH 302</td>
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<tr>
<td>Section 512</td>
<td>(TA: TBD)</td>
<td>Friday 11:30 AM - 2:20 PM</td>
<td>ENPH 302</td>
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<tr>
<th>Section</th>
<th>(TA: TBD)</th>
<th>Tuesday 8:00 AM - 10:50 AM</th>
<th>ENPH 302</th>
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<td>Section 502</td>
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<td>Section 504</td>
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<td>Wednesday 1:50 PM - 4:40 PM</td>
<td>ENPH 302</td>
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<td>Section 506</td>
<td>(TA: TBD)</td>
<td>Wednesday 8:00 AM - 10:50 AM</td>
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<td>Section 509</td>
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<td>Friday 8:00 AM - 10:50 AM</td>
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<td>Section 511</td>
<td>(TA: TBD)</td>
<td>Thursday 8:00 AM - 10:50 AM</td>
<td>ENPH 302</td>
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<tr>
<td>Section 513</td>
<td>(TA: TBD)</td>
<td>Friday 2:30 PM - 5:20 PM</td>
<td>ENPH 302</td>
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Office Hours:

Dr. Haglund – TBD  
Dr. Kim – MF 12:30 PM – 1:45 PM  
Dr. Pagilla – MW 1:45 PM - 3:00 PM

TAs: TBD

All TA office hours will be held at the MEEN 364 lab (ENPH 302). All instructor office hours will be held at their offices. Additional help is available by scheduling an appointment with instructors or with any of the lab and lecture TAs. The easiest way to reach the instructors or TAs is via e-mail.
Textbook:

The course textbooks:

- R. C. Dorf and R. H. Bishop, Modern Control Systems, 13th Edition, Pearson, 2016. Dr. Pagilla’s sections will use this as the main textbook.

Additionally, some material regarding modeling of dynamic systems will be presented from


On-line Course Material:

All other course material such as class notes and homework problems, and homework solutions will be posted on eCampus.

Use of Computer Software:

This course will introduce you to and make extensive use of two software tools: (1) MATLAB/SIMULINK and (2) LabVIEW. The former will be extensively used for solving the homework problems and for performing all of the control-related labs. The latter will be used in all of the measurement-related labs.

IMPORTANT NOTE: The software tools you will be introduced to in this course are intended to help you solve the various numerical problems you encounter in this course. Such problems would otherwise require extensive number crunching. Even though one could perform symbolic calculations with some of these tools, we highly recommend against it. You could use the symbolic calculators of MATLAB to check some of the mathematics you perform by hand. However, we expect you to know how to do mathematical simplifications by hand and you will have to show your skills in the tests.

Student Evaluation:

Student grades will be computed as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Homework</td>
<td>15 %</td>
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<tr>
<td>Exam I</td>
<td>15 %</td>
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<tr>
<td>Exam II</td>
<td>15 %</td>
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<tr>
<td>Final Exam - Comprehensive</td>
<td>25 %</td>
</tr>
<tr>
<td>Laboratory Reports - Group</td>
<td>20 %</td>
</tr>
<tr>
<td>Pre-Lab Reports (3%), Lab Quizzes (5%), &amp; Lab Safety (2%) - Individual</td>
<td>10 %</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100 %</strong></td>
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Grading Policy:

A: 90 - 100
B: 80 - 89
C: 70 - 79
D: 60 - 69
F: less than 60

Midterm Exams:

There will be two in-class midterm exams as per the following schedule for each instructor:

- Dr. Haglund (Sections 505, 506, 508, 512)
  - Exam 1: February 29, 2018, 8:00 AM – 8:50 AM
  - Exam 2: April 5, 2018, 8:20 AM – 11:10 AM
- Dr. Kim (Sections 510, 511, 513)
  - Exam 1: February 28, 2018, 10:20 AM – 11:10 AM
  - Exam 2: April 4, 2018, 10:20 AM – 11:10 AM
- Dr. Pagilla (Sections 501-504, 509)
  - Exam 1: February 28, 2018, 10:20 AM – 11:10 AM
  - Exam 2: April 4, 2018, 10:20 AM – 11:10 AM

The exams will include problems and perhaps short answer/multiple choice questions. Exams will be based on individual work and they will be closed book and closed notes. Information you might need from certain tables in the textbook will be made available to you.

CALCULATORS WILL NOT BE ALLOWED IN THE COMMON EXAMS AND THE FINAL.

Absences:

Work missed due to absences will only be excused for University-approved activities in accordance with TEXAS A&M UNIVERSITY STUDENT RULES (see http://student-rules.tamu.edu/rule07). Specific arrangements for make-up work in such instances will be handled on a case-by-case basis. In accordance with recent changes to Rule 7, please be aware that in this class any “injury or illness that is too severe or contagious for the student to attend class” will require “a medical confirmation note from his or her medical provider” even if the absence is for less than 3 days (see 7.1.6.2 injury or illness less than three days).

Policy on Make-up Exams:

Make-up exams will be given only for those with University-excused absences from the regular exams. Contact the instructor as soon as you are aware of the absence so that a make-up exam can be scheduled BEFORE the actual exam takes place. Make-up exams will be scheduled by the instructor.

Final Exam:

The final will be comprehensive and will be given as per the spring 2018 final exam schedule as follows:

- Sections 501 – 504, 509 – 511, 513, Monday, May 7, 2018; 8:00 AM - 10:00 AM
Homework Assignments:

Homework will be posted on the eCampus course web page and will be due at the beginning of the class on the due date. No late homework will be accepted. All written work must be clear and professionally done with the necessary steps leading to the solution clearly marked. Homework solutions will be made available on the course web site. Only a few of the homework problems will be selected randomly for grading for full credit. Therefore, it is imperative that the students attempt and turn-in their solutions to all problems.

Homework is intended to show your individual work. Each student is required to turn-in his or her solutions to the homework assignments. However, you are allowed to form groups or join each other on discussions regarding the problems. Please, read the section on plagiarism below.

Pre-lab Assignments, Lab Quizzes and Laboratory Reports:

Pre-lab assignments will be due at the beginning of the lab sessions. These are not group assignments; each of you must turn in a pre-lab assignment for grading.

Attendance in the labs is mandatory. All students repeating MEEN 364 must repeat the laboratory component. You are strongly advised to come to the labs fully prepared, by reading the relevant material given to you in the lab description and by reviewing the relevant material from the lectures. Lab reports will be the results of your group’s effort. One lab report should be turned in per group.

More details regarding pre-labs, lab quizzes and lab reports will be given to you by your lab instructor.

Lab Safety Acknowledgment (LSA):

As each student enrolled in a qualifying laboratory course at TAMU is required to sign an LSA form, each student should log onto HOWDY, select “My Record” tab, then go to the “Registration” section. From the, the student selects “Lab Safety Acknowledgment” and the proper term. This will result in a list of the laboratory safety forms for the classes in which he/she is registered that require a form. The student should read the form and click to acknowledge.

Also refer to the document titled, Laboratory Safety: Basic Student Guideline. You are asked to sign and return the safety contract to your TA by the first lab.

Use of e-mail:

You are required to check your TAMU e-mail regularly (at least daily) and be aware of the announcements that appear on the class web site. Your email on eCampus course website will be used by the instructors and teaching assistants.

Peer Evaluations:

You might be asked to provide peer evaluation of each lab group member at the end of the semester. Each group member might be asked to evaluate the contribution of every other group member. These evaluations might be considered in determining the numerical score each group
member will receive for the lab reports, and whether such score should deviate from the score given to the group.

Policy on Grading Complaints:

If you feel a mistake was made in grading any material involving (1) points not added or not recorded properly, (2) points taken-off for an answer that is not 100% correct, or (3) for giving partial credit, please, first talk to person doing the grading within a week after the graded paper was distributed. If you are not satisfied with the resolution of the matter then talk to me. Please, make your complaint to me in writing and via e-mail. Please, be specific about your complaints.

Absences:

Work missed due to absences will only be excused for University-approved activities in accordance with TEXAS A&M UNIVERSITY STUDENT RULES (see http://student-rules.tamu.edu/rule7.htm). Specific arrangements for make-up work in such instances will be handled on a case-by-case basis. In accordance with recent changes to Rule 7, please be aware that in this class any “injury or illness that is too severe or contagious for the student to attend class” will require “a medical confirmation note from his or her medical provider” even if the absence is for less than 3 days (see 7.1.6.2 injury or illness less than three days).

Academic Integrity:

Aggie Honor Code: “An Aggie does not lie, cheat, or steal, or tolerate those who do.”

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor System. For additional information please visit: aggiehonor.tamu.edu.

On all course work, assignments, and examinations at Texas A&M University, the following Honor Pledge shall be preprinted and signed by the student:

"On my honor, as an Aggie, I have neither given nor received unauthorized aid on this academic work."

________________________
Signature of Student
ADA Statement:

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Serviced building at the Student Services at White Creek complex on west campus or call 845-1637. For additional information visit http://disability.tamu.edu.