ECE 3793
Signals and Systems
Spring 2017

TIME: MWF 12:30 – 1:20 PM

PLACE: Dale Hall 122

INSTRUCTOR:

Dr. J. P. Havlicek
DEH 333
Office Hours: MW 3:30 – 4:30 and by appointment
E-mail: `joebob@ou.edu`

ASSISTANT:

Mu Yang
Office: DEH 525
Office Hours: W 11:00 – 12:00 and by appointment
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MATLAB ASSISTANT:

Wanghao Fei
DEH 525
Office Hours: M 2:00 – 4:00, W 11:00 – 1:00, and by appointment
E-mail: `whfei@ou.edu`

TEXT & REFERENCES:

1. A. V. Oppenheim and A. S. Willsky with S. H. Nawab, *Signals & Systems,* 2nd ed., Prentice-Hall, Upper Saddle River, NJ, 1997.
2. Matlab use is required for this course. The following toolboxes are also required: Symbolic Math, Signal Processing, DSP, Control Systems. You can download a license key and instructions for installing Matlab from the OU IT Store at `https://itstore.ou.edu/` Alternatively, you can purchase the Matlab and Simulink Student Suite for $99: `http://www.mathworks.com/academia/student_version/` Matlab is also available on the College of Engineering Virtual Lab (see handout on the course web site).

COURSE WEB PAGE: `http://coecs.ou.edu/Joseph.P.Havlicek/ece3793/`

CANVAS: `http://canvas.ou.edu`

You will submit your Matlab homework projects electronically on Canvas. Announcements will be posted to the course Canvas page. Important information will also be distributed by Canvas notifications. *Make sure to configure your Canvas notifications!*

PREREQUISITES:

ECE 2713, ECE 2723, MATH 3113, MATH 3333 (co-req).

REASONABLE ACCOMMODATION POLICY:

The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Students with disabilities who require accommodations in this course are requested to speak with the instructor as early in the semester as possible. Students with disabilities must be registered with the Disability Resource Center prior to receiving accommodations in this course. The Disability Resource Center is located in Goddard Health Center, Suite 166, (405) 325-3852 (Tel) or (405) 325-4173 (TDD only). The Disability Resource Center web site is located at `http://www.ou.edu/drc/home.html`

RELIGIOUS HOLIDAYS:

It is the policy of the University to excuse absences of students that result from religious observances and to provide without penalty for the rescheduling of examinations and additional required classwork that may fall on religious holidays. It is the responsibility of the **student** to make alternate arrangements with the instructor *at least one week prior to the actual date of the religious holiday.*

UNIVERSITY POLICY ON ACADEMIC HONESTY:

`http://integrity.ou.edu`

This page outlines the University's expectations of academic honesty, defines misconduct, provides examples of prohibited conduct, and explains the sanctions available for those found guilty of misconduct. Additional information about the meaning of *academic misconduct* in this course is provided later in this syllabus.

The UOSA Statement of Academic Integrity will be used in this course.

COURSE DESCRIPTION:

This course will provide an introduction to the fundamental techniques of analyzing and designing linear time-invariant systems, including elementary topics in control and communications, as well as analog and digital signal processing.

HOW TO SUCCEED IN THIS CLASS:

It is CRITICAL that you pace yourself and KEEP UP. Don't put off assignments until the night before they are due. Instead, start each assignment early enough that you can ask questions during office hours if you run into trouble or have questions. This will save you LOTS of time. If you start an assignment the night before it is due and you run into trouble, then you will have to stay up all night trying to figure out the answers to your questions. If you start early, then you can stop when you have problems and ask questions during office hours. This approach will minimize the total number of hours you spend on each assignment.

Try to LEARN DURING CLASS by participating in the lectures, both intellectually and vocally. Try to use your time outside of class to DRILL by working exercises. The homework assignments will be based primarily on the LECTURES. The tests and exam will be based primarily on the HOMEWORK.

If you keep up, then you should be able to understand the lectures and LEARN DURING CLASS. If you don't understand something in a lecture, then you should raise your hand and ASK QUESTIONS such as "I don't understand what you just said. It confuses me because..." DO NOT BE ASHAMED OR EMBARRASSED to ask questions!

HOMEWORK:

Homework will be assigned during class. You are encouraged to work together on homework, but **DO NOT COPY!** Each problem solution that you turn in must be your own;

- **if** you copy another person's solution and turn it in as your own, **then** *you are guilty of academic misconduct.*
- **If** you copy an old homework solution without working the problem yourself and turn it in, **then** *you are guilty of academic misconduct.*
- **If** you copy an answer from the back of the book and turn it in without your own **COMPLETE SOLUTION**, **then** *you are guilty of academic misconduct.*

The lowest one-fourth of your homework grades will be dropped. *Late homework will not be accepted.* Homework solutions will be posted on the course web page.

Working the homework problems on time will help YOU to do well on the tests and exam.

MATLAB PROJECTS:

There will be special homework projects that will require the use of MATLAB. These will be graded separately from the regular homework.

NOTE: none of your Matlab project grades will be dropped.

The standards of academic honesty articulated above for homework apply to Matlab projects as well. In addition:

1. All computer codes and results that you turn in as solutions must be your own original work, except as noted in (4) below.
2. **If** you obtain code from another person in an electronic format and incorporate it into the solution that you turn in, **then** *you are guilty of academic misconduct.*
3. **If** you obtain code from another person in electronic or hardcopy format, type some or all of it in yourself, and then include this as part of the solution that you turn in, **then** *you are guilty of academic misconduct.*
4. In certain cases, it may be acceptable to incorporate existing public domain and/or library computer algorithms and codes into a solution that you submit. In such cases, however, you must always obtain prior authorization from the instructor and you must always document the source of any algorithms and/or code that are not your own original work.

LATE HOMEWORK POLICY:

"Paper and pencil" homework assignments will be due at the start of class on the published due date. Matlab homework assignments will be submitted electronically on Canvas and will generally be due at midnight on the published due date. *Late homework will not be accepted.*

There are two reasons for this policy. First, accepting a late homework assignment from one student is unfair to other students who may have stayed up all night to get the assignment done and may also have sacrificed grades in other classes to get it done. Second, it would be detrimental to the overall learning outcomes of the class to delay the posting of homework solutions in order to accommodate late assignments.

If you cannot attend class on the day that a "paper and pencil" homework assignment is due, then you can either:

- ask a friend to turn in your paper for you (preferred), or
- email a PDF or JPG copy of your assignment to the TA(s) and 'cc the instructor. **Please note that this emailed copy of your assignment will not be graded!** It is simply to document the fact that your assignment was done on time. It is then **your** responsibility to deliver a paper copy of your assignment to the TA(s) within 24 hours.

TESTS & EXAM:

There will be two tests and a cumulative final exam. Calculators will NOT be allowed on the tests and final exam.

The two tests will be given in the evening (outside of the regularly scheduled class meeting time). This helps you because you will have extra time to work the test if you need it – up to three hours total. More than 15 years of experience has shown that this policy **improves** student test scores, learning, outcomes, and satisfaction. The date and time of each test will be chosen by the class to not conflict with tests, exams, and major projects in other courses. Should you have a legitimate conflict with the chosen test time, see the instructor as soon as possible so that an alternate time can be arranged.

In case a consensus can not be reached concerning an acceptable date and time for a test, then that test will be held during the regularly scheduled class meeting time.

The official date and time for each test will be announced in class at least one week in advance.

The tests and the exam are CLOSED BOOK and CLOSED NOTES. Formula sheets will be provided with each test and exam. These formula sheets are available on the course web page under "handouts."

Makeup tests will not be given. If you miss a test and your absence is NOT officially excused, then you will receive a zero grade for that test. If you miss a test and your absence IS officially excused, then your final exam grade will be used in place of the missed test grade.

GRADING:

Your final average will be calculated as shown in the table below.

What	Value
Homework, best three-fourths	10%
Matlab homework projects	10%
Test One	25%
Test Two	25%
Final Exam	30%

These numerical grades will be converted into letter grades using a curve that will be determined by the instructor. The same curve will be applied to everyone in the class. The curve will never hurt you relative to the standard ten-point grading scale.

TOPICS:

1. Time Domain Description of Signals and Systems
2. Linear Time Invariant Systems and Convolution
3. Frequency Domain Description of Continuous-Time Signals and Systems
4. Frequency Domain Description of Discrete-Time Signals and Systems
5. Sampling and Discrete Implementation of Continuous Systems
6. Introduction to Communication Systems
7. Introduction to Control Systems

GOOD LUCK!

REMEMBER TO PACE YOURSELF & KEEP UP!

REMEMBER TO LEARN DURING CLASS!

ASK QUESTIONS WHEN YOU DON'T UNDERSTAND!

USE OUTSIDE-CLASS TIME TO DRILL!