UNIVERSITY OF HOUSTON
DEPARTMENT OF ELECTRICAL & COMPUTER ENGINEERING
ECE 3355 Electronics
Spring 2020

Section (Class Number): 22670
Class time and place: 5:30-7pm, TuTh, Room S 102 (Science Building, 3581 Cullen Blvd.)
Instructor: **Dr. Dave Shattuck, Office Room**: N336-D (4726 Calhoun Road)
Office Phone: (713) 743-4422 **Mobile:** (713) 498-6888
E-mail: shattuck@uh.edu
Office Hours: 3-4:30pm, Tuesdays and Thursdays, or by appointment by sending an email to the address above.

Course web site: http://courses.egr.uh.edu/ECE/ECE3355/

Prerequisites: 1. ENGI 2304 Technical Communications
2. ECE 3337 Signals and Systems Analysis I
Credit for or concurrent enrollment requisite: 1. ECE 3155 Electronics Laboratory
Waivers of these requisites are possible only through a Waiver of Prerequisites form submitted to the Electrical and Computer Engineering Department, available on the web at:
http://www.ece.uh.edu/sites/www.ece/files/forms/waiver_of_prerequisite.pdf

Text: Sedra and Smith, Microelectronic Circuits, 7th Ed., Oxford University Press, 2015, ISBN 978-0-19-933913-6.

Recommended for Supplementary Self-Study:
- *Old Exams* and other supplementary materials available on the course web sites listed above.
- Horowitz and Hill, The Art of Electronics, 2nd. Ed., Cambridge University Press, ISBN 0-521-37095-7. This is a less formal text that nicely complements our text, but we will not use it in class nor assign work from it.

Course Description:
Electronics
Cr. 3. (3-0). Prerequisites: ECE 2202 and credit for or concurrent enrollment in ECE 3337 and ECE 3155. Signal and amplifier concepts; operational amplifiers; diodes and nonlinear circuits; bipolar junction transistors; biasing, small and large signal analysis; transistor amplifiers.

Expected Course Outcomes
Students who successfully complete these courses are expected to meet the following course outcomes.

- Students will further develop their basic skills of problem solving and critical thinking by learning electronics concepts and techniques such as the plotting of Bode plots. They will apply this knowledge of mathematics, science and engineering to efficiently solve electronics problems. (ABET outcome a)
- Students will add to their knowledge-base in the fundamentals of electrical engineering, especially in the area of electronics, in part by gaining a greater understanding of key engineering concepts, such as amplifier behavior and feedback. Students will use this knowledge and understanding to solve electronics problems such as those that come up in electrical engineering. (ABET outcome e)
- Students will demonstrate an appropriate level of attention to detail and the use of clear, appropriate notation, which will facilitate their ability to communicate effectively with technical colleagues. (ABET outcome g)
- Students will develop a sense of the need to engage in life-long learning by examining the dynamic nature of modern electronics devices, and show their ability to engage in life-long learning by applying fundamental concepts to new devices. (ABET outcome i)

Academic Honesty Policy:
Students in this course are expected to follow the *Academic Honesty Policy* of the University of Houston. It is your responsibility to know and follow this policy. You **must** sign the Academic Honesty Statement on the last page of this handout, detach it, and submit it to your instructor by **Thursday, January 23, 2020**. If you fail to do this, you may be dropped from the course. See the policy on the web at http://publications.uh.edu/content.php?catoid=34&navoid=12627.

Religious Holy Days:
Students whose religious beliefs prohibit class attendance on designated dates or attendance at scheduled exams may request an excused absence. To do this, you are **strongly encouraged** to request the excused absence, in writing, by Thursday, January 30, 2020. Please submit this written request to your instructor to allow the instructor to make appropriate arrangements. For more information, see the catalog at
http://publications.uh.edu/content.php?catoid=34&navoid=12495.

Students with Disabilities:
Students with recognized disabilities will be provided reasonable accommodations, appropriate to the course, upon documentation of the disability with a Student Accommodation Form from the Center for Students with Disabilities. To receive these accommodations, you **must** request the specific accommodations, by submitting them to the instructor in writing, by Thursday, January 30, 2020. Students who fail to submit a written request will not be considered for accommodations. For more information, see the web at http://www.uh.edu/csd/.

E-mail Policy and Information:
The instructor will send some kinds of information by email, through Blackboard. You are encouraged to check your email frequently to make sure that receive these messages. Blackboard uses your UH email alias for your email address.
The Cullen College of Engineering has decided to adopt e-mail as its official channel for communication with students. The Cullen College of Engineering will use your UH e-mail alias as the primary means to contact you and keep you informed about college news. As a student at the University of Houston, you have been assigned a UH e-mail alias that points to the e-mail address you provided to the university when you applied for admissions (it is blank if you did not). E-mail messages addressed to your alias are automatically forwarded to your preferred e-mail account. For example, if you provided joecougar@aol.com to UH, any e-mail sent to your new alias will automatically be sent to joecougar@aol.com. UH will use your alias to send you important university information such as emergency closings or information from your faculty and department. Please make sure that your email alias points to an email account that you check regularly.

Attendance
Attendance at all classes is expected and required. The instructor may, if he chooses, take attendance in any class, at any time during the class. The instructor may do this as many times per class period as he chooses, without warning. The attendance grade can be included in the grade for the course. Typically, the percentage of days you attended class on time is multiplied by your homework and quiz averages.

Exams and Quizzes
There will be two examinations, given on the dates listed below. These examinations will last for 90 minutes. The final exam will last 160 minutes.

Exam 1: Saturday, February 22, 2020 at 9am
Exam 2: Saturday, April 18, 2020 at 9am

A comprehensive final exam will be given on **Wednesday, April 29, 2020 at 11am**. If you have a conflict with any exam time, you must notify your instructor in writing during the first week of classes.

Six in-class ***quizzes*** will also be given during the semester. They will typically last 20 to 30 minutes. The lowest quiz grade will be dropped from the average. The quizzes may be based on the homework problems, but will not be identical to them.

Conduct of Examinations

All examinations and quizzes are closed book and closed notes, unless otherwise announced. You may use any calculator you choose, but communications devices are not permitted. In addition, you may bring a "crib" sheet consisting of one 8 ½ x 11 in. sheet of paper, with writing on both sides. If you prefer, you may bring note cards or other writing media with a total area equivalent to two sides of an 8 ½ x 11 in. sheet of paper.

The following items are **not** permitted during the exams: laptop computers; connections to the internet of any kind; communications devices of any kind. For this course, a TI-nspire or equivalent device is considered a calculator, and is therefore permitted.

The Saturday morning exams and the final exam will be held in large rooms. The seats may be randomly assigned, and there might be people from other courses taking exams in the same room at the same time. There may be more than one version of the exam given. These regulations are designed to reduce the opportunity for unfair advantage on the exams so that each person can operate under the same or similar conditions.

Homework

Completion of homework assignments is essential to your understanding of the subject. No matter how good your instructor may be, it is impossible for him/her to convey every conceivable nuance of a given topic. Therefore, the only effective way for you to learn the material is to practice by doing problems. You should not expect to do very well in Electronics if you do not work problems. Homework is intended to help you learn, and is not a mechanism for earning class points, nor for evaluating your work. Nevertheless, there is benefit to having a regular reminder and motivation to remain up-to-date in your studies. Therefore, homework will be assigned, collected, and graded on a regular basis.

Grading Policy
Grades will be determined on the basis of performance on the regular exams and quizzes, the final exam, and laboratory work (see below), with the following approximate weights. The weights will be fixed at the end of the semester.

Exam 1:	15-25%
Exam 2:	15-25%
Final Exam:	40-50%
Homework	3-7%
Quizzes	10-15%

The following approximate grading scheme will be used to determine your grade. Note that grades will not be "curved", but instead have been previously determined by numerical average. While this scale may be modified somewhat, this listing gives a general idea of how well you are doing in the course. The final grade scale will be determined at the end of the semester.

90.00 - 100: A's
78.00 - 89.99: B's
66.00 - 77.99: C's
54.00 - 65.99: D's
Below 54.00: F

Withdrawal Policy
The withdrawal dates listed in the online Academic Calendar http://publications.uh.edu/content.php?catoid=34&navoid=12780 , will be followed strictly. Grades of Incomplete (I) will be given only when a small portion of the course has not been completed for a good reason. If the material has been completed, an "I" grade cannot be given. Detailed information about these issues is available in the *University Catalog*, at http://publications.uh.edu/content.php?catoid=34&navoid=12501.

Grade Posting
Grades will be available using Blackboard, available on the web at through AccessUH. Normally, grades are available about one week after the final exam. The instructor is not allowed to give out grades over the phone or by email.

Laboratory Information
There is a separate laboratory course, ECE 3155, which should be taken at the same time as this course, unless you have already completed it satisfactorily. It is designed to reinforce the material taught in the lecture and to teach laboratory skills, measurement techniques, and techniques in written presentation of results. This semester, that course will be taught by Dr. Wolfe.

Academic Honesty Statement

I have read the University of Houston Academic Honesty Policy available on the web at
http://publications.uh.edu/content.php?catoid=34&navoid=12627
I agree to abide by the provisions of this policy.

Name: (Please print) _____

Signature: _____

Date: _____

Please detach this page, and submit it to the instructor by Thursday, January 23, 2020. If you fail to do this, you may be dropped from the course.