Electronic System Design

COURSE DESCRIPTION
Principles of engineering design of electronic circuits and systems; time and frequency responses; network analysis; systems specifications; evaluation, testing, and verification; use of electronic design automation tools.

COURSE OUTCOMES
At successful completion of this course the student will be able to:
- Evaluate electronic circuits and systems.
- Specify electronic circuits and systems.
- Design and verify electronic circuits and systems and use electronic automation tools.
- Build electronic circuits and systems and measure time and frequency response.
- Test electronic circuits and systems.

TEXTS (Required)


RECOMMENDED READINGS
Switching-Mode Power Supplies Spice Simulations by Christophe Basso, McGraw Hill (ON-Semiconductor)
National Semiconductor, Power Supply Website

INSTRUCTIONAL METHODS AND ACTIVITIES
Methods and activities for instruction include the following: lectures, group discussions, homework assignments/solutions, lab experiments/exercises, software simulation, and a project.

ENGINEERING LIBRARY RESOURCES
The Mary and Jeff Bell Library houses substantial engineering reference materials available for research and coursework support. Designated coursework will require access and use of these resources as a portion of the grade for assigned work.

EVALUATION AND GRADE ASSIGNMENT
Evaluation of student performance is based on homework assignments, two midterms, lab experiments/exercises, a project, and a final exam. Tests, except the final, are graded and returned within a week from the date they are taken. No makeup exams are given in this course. You may examine the final exam within four weeks after the final grades are mailed to you. The final grade is assigned as follows.
FOOD AND DRINKS
Eating and/or drinking is not permitted in the LAB.

SUPPORT SERVICES FOR STUDENTS WITH DISABILITY
Refer to the University Catalog.

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<tr>
<th></th>
<th>Percentage</th>
<th>If</th>
<th>Tentative Grade</th>
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<tbody>
<tr>
<td>Midterm 1</td>
<td>20</td>
<td>90 ≥ Total</td>
<td>A</td>
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<tr>
<td>Midterm 2</td>
<td>20</td>
<td>80 ≤ Total &lt; 90</td>
<td>B</td>
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<tr>
<td>Project</td>
<td>13</td>
<td>70 ≤ Total &lt; 80</td>
<td>C</td>
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<tr>
<td>Homework &amp; Quizzes</td>
<td>12</td>
<td>60 ≤ Total &lt; 70</td>
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<tr>
<td>Labs</td>
<td>12</td>
<td>Total &lt; 60</td>
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<tr>
<td>Semester Folder</td>
<td>3</td>
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<tr>
<td>Final exam</td>
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Note: You must average a 70 or above for labs to pass the course.

GRADE APPEALS
A student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is on the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details on the process, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, consult Texas A&M University-Corpus Christi University Procedure 13.02.99.C2.01 Student Grade Appeal Procedures (http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage (http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school or the College of Science and Engineering Dean’s Office.

DISABILITIES ACCOMODATIONS
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 call or visit Disability Services at (361) 825-5816 in Driftwood 101.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.
SAFETY
The safety of students, faculty, staff and visitors to the ET laboratories is of paramount importance to the ET programs. You must follow safety procedures and use personal protective equipment as required in each laboratory. Any student that attempts to use equipment without authorization or that violates any safety policy or regulation will be immediately removed from the laboratory.

ATTENDANCE POLICY
You must attend all classes. You are responsible for any materials covered, handed out or announcements made in your absence either excused or unexcused. Records of your attendance will be maintained. Students missing too many absences (6 or more) without the instructor's permission will be penalized up to a letter grade.

ACADEMIC HONESTY
University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) The instructor reserves the right not to grade, or grade only partially any of the submitted assignment. During an assignment you are allowed to have only what is permitted by instructor, anything else (cell, notebook, book etc) encountered in your possession will be considered cheating and a proceeding to penalized and document such an act will take place.

Classroom/professional behavior

Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

Statement of Civility (can be in place of classroom/professional behavior)
Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of gender, ethnic/racial origin, religious background, age, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.
http://falcon.tamucc.edu/~students/JAffairs/ja_hndbk_academic_info.htm

ASSIGNMENTS
Assignments are due at the beginning of class unless otherwise stated. Late assignments are not normally accepted (consideration is given to a student situation). A student will receive a zero on assignments that is turned in after the due date unless permission (by email or other means) was secured from the instructor prior to the due date. Permission will be granted only in extreme situations (i.e. death in family, accident, hospitalization, etc - with proper proof). Assignments may be turned in before the due date (they may be left in my mailbox, inbox, sent with a
classmate to class, etc.). For this class I permit late submission, but you must ask if I will accept it and give good reason for being late. *Note that hardware or software failure or machine unavailability does not merit an extension on the assignment.*

**LAB EXPERIMENTS**
The goal of the laboratory sessions is to analyze and verify the theoretical ideas learned in the classroom. Most experiments require written reports. The report is typically due one week after the experiment is performed if no due date given. Late reports are not normally accepted. Reports, however, may be turned in before the due date (they may be left in my mailbox, sent with a classmate, mailed, faxed, etc.). Students are expected to work more hours than scheduled to finish the experiments.

**LAB REPORTS**
Students must submit report a week after each experiment or before the next lab experiment is scheduled, whichever is first. Late reports are not normally accepted without a legitimate excuse once it has been graded. Guidelines for lab reports (when required) will be distributed in a separate document.

**END OF SEMESTER PROJECT**
Students, individually or in groups, must complete a final project. Project ideas and guidelines will be handed out in class.

**EMAIL ADDRESS**
When necessary I will be sending information to your e-mail address as written in your BB9 account. If you prefer you may change this to a personal e-mail address. It is your duty to update this and to check your e-mail at least once a day.

**TENTATIVE WEEKLY SCHEDULE***

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<thead>
<tr>
<th>WK</th>
<th>Week of</th>
<th>Readings</th>
<th>Topics</th>
<th>Exams</th>
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<tbody>
<tr>
<td>1</td>
<td>1/20</td>
<td>Syllabus</td>
<td>Introduction</td>
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<tr>
<td>2</td>
<td>1/27</td>
<td>**B2-Ch 9</td>
<td>MOSFET Analog/Digital Switching</td>
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<td>3</td>
<td>2/3</td>
<td>Ch 9</td>
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<tr>
<td>4</td>
<td>2/10</td>
<td>CH10</td>
<td>Amplifier Frequency Response</td>
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<td>5</td>
<td>2/17</td>
<td>CH16</td>
<td>Oscillators</td>
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<tr>
<td>6</td>
<td>2/24</td>
<td>CH17</td>
<td>Voltage Regulators</td>
<td>MID 1</td>
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<td>7</td>
<td>3/3</td>
<td>CH17</td>
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<tr>
<td>8</td>
<td>3/10</td>
<td></td>
<td>SPRING BREAK</td>
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<tr>
<td>9</td>
<td>3/17</td>
<td>**B1-CH1</td>
<td>Basic Topologies</td>
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<td><strong>Project Proposals</strong></td>
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<tr>
<td>10</td>
<td>3/24</td>
<td>CH2</td>
<td>Push-Pull Converter</td>
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<tr>
<td>11</td>
<td>3/31</td>
<td>CH3</td>
<td>Half and Full Bridge Converter</td>
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Issued 1/17/13
Date: Tuesday, May 13, Time: 11:00-1:30 pm.

Any Changes will be announced in class.
Exam 1 & 2 Dates are tentatively given within that week, not necessarily on Monday. Exact day of Exam is given one week in advance. No exam makeup is given unless for legitimate cause (a scheduled vacation is not a legitimate cause).

** B2 – Refers to Book #2 listed on required Text

NOTE1: Campus is closed for Spring Break 3/10-3/14
NOTE2: Last day to drop a class with an automatic grade of “W” is 4/11/14
NOTE3: Last day of classes is 5/6/14

Dropping a Class

I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class.