Course Description: Employment of modern electronic devices and circuits as applied to instrumentation and data collection associated with biomedical applications and related fields. Topics include characteristics and applications of semiconductors, small signal amplifiers, operational amplifiers, oscillators, and multivibrators to biomedical instruments; and the fundamentals of digital logic including digital logic devices and circuits in biomedical applications. The course includes an electronic laboratory component which emphasizes a hands-on active-learning environment to provide biomedical engineering students with experience in designing, assembling, testing, and employing amplifiers, filters, digital logic circuits used for collecting and analyzing data related to biomedical engineering applications.

Course Objectives: This course provides biomedical engineering students with the knowledge, understanding, and ability to apply the operational use of semiconductors, diodes, field-effect transistors, bipolar junction transistors as switches in biomedical devices and as amplifiers of biomedical signals; the use of operational amplifiers in biomedical instrumentation functions; and the use digital logic devices/circuits in biomedical engineering applications.

Course Requirements and Evaluation: Students are expected to attend and participate in all scheduled classes. Course grades will be based on several criteria including a subjective evaluation of effort, learning, understanding as well as class participation.

Email: Students are responsible for any course related information sent to their official Wright State University email account. It is strongly recommended you check your email at least twice a week as well as the course web page before every class.


Reading Assignments and Homework Problems: Homework will be assigned throughout the quarter. Students are encouraged to work collaboratively and to seek help from the instructor as needed. Reading assignments and homework problems will be used as a basis for classroom quizzes.

Recitation: A recitation instructor has been assigned to help students. Weekly formal recitation periods and open office hours are TBD. The recitation instructor should be your first contact for questions regarding lectures and homework. Please refer to the BME 3512 Recitation Guidelines for additional information.

Quizzes: Unannounced quizzes may be used at the instructor’s discretion. Quizzes normally cover the concepts previously discussed in class and/or the ideas that were emphasized in the homework/reading assignments. Makeup quizzes will not be available.

Students who are absent from class will receive zero points for that quiz.

Exercises: Additional homework problems may be assigned to reinforce classroom lectures and laboratory experiences. Exercise assignments are meant to be an individual effort which will be graded and count towards your overall grade.

Tests: Four tests (including the final exam) are scheduled. The tests will be closed-book; however, students are permitted and encouraged to use course handouts, two pages of student generated notes, and their calculators. Please refer to BME 3512 Policy Regarding Make-Up Tests and Exams for information regarding make-ups tests.

Academic Integrity: The instructor fully endorses the Wright State University policy to uphold and support standards of personal honesty and integrity for all students consistent with the goals of a community of scholars and students seeking knowledge and truth. Although collaborative learning is encouraged for studying and for solving homework problems; exercises, quizzes, and tests are to be individual effort only.

Reasonable Accommodations Policy: Any student with a disability that may prevent them from fully demonstrating their abilities should contact me personally as well as the Office of Disability Services as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate your educational opportunities.

Grading Criteria: Grades will be awarded as follows.

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<thead>
<tr>
<th>Element</th>
<th>Comments</th>
<th>Proportional Value</th>
<th>Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td>Homework</td>
<td>Assigned but not graded</td>
<td>not to exceed 8%</td>
<td>90 - 100% A</td>
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<tr>
<td>Exercises &amp; Quizzes</td>
<td>Instructor’s Discretion</td>
<td>no less than 72% (18% each)</td>
<td>80 - 89% B</td>
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<tr>
<td>Tests</td>
<td>Four</td>
<td></td>
<td>70 - 79% C</td>
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<tr>
<td>Laboratory</td>
<td>See BME 3512 Laboratory Instructions</td>
<td>20%</td>
<td>60 - 69% D</td>
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<td></td>
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<td>&lt; 60% F</td>
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BME 3512 Spring 2015 Make-Up Test & Missed Test Policy

The instructor recognizes that from time to time, students may not be available for scheduled tests. These absences, both planned and unplanned, occur for a number of reasons. In order to be fair to all students and to lessen the possibility of compromising test integrity, the following policy will apply to make-up tests.

A No Penalty Make-Up Test (Test #1, #2, #3) may be taken during normal BIE Department office hours anytime from the conclusion of the Test Review Lecture until the graded tests are returned in the next scheduled class period. For Test #4, the make-up test period will conclude as of noon on the last weekday of the semester's Final Exam Week. A make-up test may include all material covered in lectures, example problems, reading assignments, homeworks, quizzes, and course handouts, etc whether or not a specific topic was included in the Test Review Notes.

For any Missed Test not accounted for by the No Penalty Make-up Test policy listed above, a substitute test grade will be computed by applying 85% of the average test score for the other three tests except as follows:
If two tests are missed, the final overall course grade will be reduced by two letter grades.
If three tests are missed, the final overall course grade will be an "F".
If Test 4 is missed, the final overall course grade will be reduced by one letter grade.

In general, the above policy will apply to all instances of missed tests, except in very rare and special cases. If in the judgment of the instructor special circumstances apply, modifications to the above policy will be made on a case by case basis. A temporary grade of "I" will not normally be given solely for the reason of a missed test.