

## **EE5349-002: Bioelectric Models**

### **Spring 2011**

**Instructor(s):** J.-C. Chiao

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**Office Hours:** Friday 2-5PM

**Section Information:** EE5349-002

**Time and Place of Class Meetings:** Fridays, 9AM-12noon

#### **Description of Course Content:**

This course provides specific knowledge about bioelectronics and models for medical micro devices and systems in medical applications. Topics include medical application strategy, applications, requirements, fabrication and design; electrical circuits and modeling; sensing, and stimulation.

#### **Student Learning Outcomes:**

Students will be able to design electrical sensors and stimulators in the end of the course.

#### **Requirements:**

Graduate students in Electrical Engineering, Mechanical Engineering, Material Science and Engineering, Aerospace Engineering, and Biomedical Engineering.

Prerequisites: Advanced MEMS or lecturer's consent

#### **Required Textbooks and Other Course Materials:**

No required textbooks. Recommended reading:

- Neurobiology, 3<sup>rd</sup>, by Gordon Shepherd, Oxford.
- Biomedical Microsystems, by Ellis Meng, CRC Press.
- Introduction to Biomedical Engineering, 2nd Ed., John Enderle, Susan Blanchard, Joseph Bronzino, Elsevier.
- Neuro-rehabilitation Device, Thompson Sarkodie-Gyan, McGraw-Hill.
- Handbook of Electrogastrography, Kenneth Koch, Robert Stern, Oxford.

#### **Descriptions of major assignments and examinations with due dates:**

Midterm report and proposal are due on April 4 2011.

Final report is due on May 11 2011.

#### **Grading Policy:**

- Midterm report and proposal 40%
- Final Exam 60%

**Attendance Policy:**

Attendance is required. Absence will require a doctor's note or a detailed written explanation.

**Drop Policy:**

Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. Contact the Financial Aid Office for more information.

**Americans with Disabilities Act:**

The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act* (ADA). All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at [www.uta.edu/disability](http://www.uta.edu/disability) or by calling the Office for Students with Disabilities at (817) 272-3364.

**Academic Integrity:**

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. According to the UT System Regents' Rule 50101, §2.2, "Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts."

**Student Support Services Available:**

The University of Texas at Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. These resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals to resources for any reason, students may contact the Maverick Resource Hotline at 817-272-6107 or visit [www.uta.edu/resources](http://www.uta.edu/resources) for more information.

**Electronic Communication Policy:**

The University of Texas at Arlington has adopted the University "MavMail" address as the sole official means of communication with students. MavMail is used to remind students of important deadlines, advertise events and activities, and permit the University to conduct official transactions exclusively by electronic means. For example, important information concerning registration, financial aid, payment of bills, and graduation are now sent to students through the MavMail system. All students are assigned a MavMail account. ***Students are responsible for checking their MavMail regularly.*** Information about activating and using MavMail is available at <http://www.uta.edu/oit/email/>. There is no additional charge to students for using this account, and it remains active even after they graduate from UT Arlington. To obtain your NetID or for logon assistance, visit <https://webapps.uta.edu/oit/selfservice/>. If you are unable to resolve your issue from the Self-Service website, contact the Helpdesk at [helpdesk@uta.edu](mailto:helpdesk@uta.edu).

### **Final Review Week:**

A period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week *unless specified in the class syllabus*. During Final Review Week, no examination will be given. In addition, any portion of the final examination during Final Review Week will be given, even per students' request. Classes are held as scheduled during this week and lectures and presentations may be given.

### **Make-up Exam Policy:**

Missed exams and quizzes will be given a makeup only for serious illness or emergency and require a doctors certificate or similar written documentation. Students requiring a makeup exam must make an appointment as soon as possible after the scheduled exam date. Emails or phone calls to the professor or to the EE Office are required.

### **Grade Grievance Policy:**

All grades or scores are final after two weeks from the day the scores are given. After the two-week period, your scores or grades will not be changed.