BME 450 BIOMEDICAL ENGINEERING SENIOR DESIGN 1

Syllabus for Fall 2005

Class meets Tuesdays 11:00-1:50 in room B41

This document contains only the partial class schedule, deadlines (including milestones), and grade compositions. Students should refer to additional hand-out/web material and instructor in-class instructions for additional assignments/deadlines. Deadlines may involve a presentation to the entire class, individual group presentation to course instructors. Deadlines are subject to change at the instructor’s discretion. This document also introduces class safety, cleanliness, and security rules.

ATTENDANCE: Students are expected to attend all classes – Class time is considered scheduled meeting time with the course instructor for presentation/evaluation of progress. Students should be aware that scheduled class time is not sufficient to meet the defined deadlines – BME Senior Design is not a lab class.

The Design Lab will be made available to students outside of class time only through the permission of the course instructors and the department technician (Dr. Qui, ltscltsc@hotmail.com). Only work related to Senior Design may be performed in the Senior Design Lab. Until otherwise specified, students are not allowed in the design lab without the supervision of a course instructor, the department technician, or a Senior Design Lab TA.

SAFETY: Students are required to follow all posted safety instructions. Students are not allowed to touch or operate any powered equipment (drill, table-saw, etc.) without receiving prior training/approval by the department technician. Students are required to read all posted safety information and equipment manuals prior to use. If you’re not sure, ask. Food and drink are never allowed in the design lab. Wear safety glasses at all times where required. Never leave any equipment (including soldering irons) running unattended. Use your common sense. Alert course instructors/technician of any safety problems or concerns. Alert fellow students if you are perceive any immediate safety risks. In case of emergency call x6911

CLEANLINESS: It is the responsibility of all students to ensure the lab is maintained in an orderly and clean state. All tools must be cleaned and returned to their specific storage space after use. All debris must be cleaned from the table top and floors. Students should make every effort to prevent damage to laboratory equipment, shelves, and table tops (note the black table top can scratch, use the wooden table tops when necessary. Do not use the wooden table tops for soldering). Students should help maintain lab supplies (including circuit components) in an orderly state. Student may choose to leave prototypes and a minimum amount associated supplies in an assigned storage area on a shelf in the lab; these supplies must be clearly labeled with the students names or they may be removed.

SECURITY: Under no conditions are students to remove equipment, supplies, or tools (including those incorporated into students design projects) from the design lab without
the specific permission of the course instructor or the department technician. Student teams may be assigned equipment as part of their project that may be removed from the lab or school; the team leader must sign this equipment out with the technician and is responsible to return the equipment undamaged at the end of the semester.

If students become aware of any violation of the safety/security policies or become aware of a (potential) defect with any piece of equipment (whether or not the caused the violation/defect) they are required to report this to the course instructor or the department technician. Students who do not strictly follow the above guidelines can be deregistered from the course.

**GRADING**

- **40% Mini-project**
  - 35% Final design performance (group)
  - 5% Presentation to class (individual)

- **40% Main-project**
  - 5% Problem Definition Report (group)
  - 30% Initial evaluation and selection of concepts (group)
  - 5% Presentation of concepts to class (individual)

- **10% General class attendance (including arriving on time)**
  - Performance/professionalism/contribution (individual)

- **10% Design notebook (including mini- and main-project) (individual)**

Note that 30% of your grade is individual and 70% is based on combined group performance.

**Schedule**

*Note: Students are strongly encouraged to work ahead of deadlines.*

- Sept 6th Course overview – Overview of the design process - Demonstration of breadboarding an ECG amplifier

- Sept 13th Defining the design problem - Definition of mini-project (ECG amplifier) scope and guidelines – Demonstration of circuit board printing. **Deadline: Team and Group Leader Selection for Mini-Project**

- Sept 20th Prior art – **Deadline: Basic ECG amplifier demonstration**

- Sept 27th Working in design teams – **Deadline: Read and analyze hand-out on teamwork. Deadline: Concepts for Min-project**
Oct 18th Presentation skills – Handout of Main Project Options – **Deadline:** demonstration of Mini-project proto-type.

Oct 25th No lecture. **Deadline:** Student presentation of ECG design to class. 
**Deadline:** Main project selections

Nov 1st **Deadline:** Submission of *initial timeline*

Nov 8th **Deadline:** Main-project Problem Definition Report (includes timeline)

Nov 15th

Nov 22nd **Deadline:** Main-project Development of Initial Concepts

Nov 29th

Dec 6th **Deadline:** Initial Evaluation and Selection of concepts

Dec 13th **Deadline:** Students presentation of main-project concepts to class. 
**Deadline:** Hand in design notebooks (will be returned)