

**University of Massachusetts Amherst**  
**Department of Electrical and Computer Engineering**

# *SDPO3*

Ver. 2 22 Feb 03

## **ECE 416 - Senior Design Project II – Spring 2003 - 2 cr**

### **Description:**

Lab. Continuation of ECE 415. Design of small electronic system built, refined tested and demonstrated. Final prototype shown to meet initial specifications. Final design review

Credits: 2

### **Objectives:**

After successfully completing this course, a student should be able to:

1. Prototype an electronic and/or software system to meet given specifications.
2. Integrate knowledge from across the core CSE or EE curriculum.
3. Take a systems approach to problem solving.
4. Work productively in a team environment.
5. Effectively communicate technical ideas and concepts.

### **SDP Coordinators:**

C. V. Hollot, Professor and Associate Department Head  
KEB 209E, hollot@ecs.umass.edu

T. Baird Soules, Lecturer and Undergraduate Program Director  
210 Marcus Hall, soules@ecs.umass.edu

### **SDP Technician:**

Francis Caron, 9B Marcus Hall, fkcaron@ecs.umass.edu,  
Hours: 7:30 A.M. - 3:30 P.M., Mon - Fri

### **Project Management:**

In order to facilitate team organization and communication each team will have one member who is designated as the project manager. Each advisor, after having solicited private input from each team member, will assign one team member to be the project manager. It is reasonable for those students with a specific interest in this role to make that known to the advisor. The advisor will inform the SDP course coordinators and team members of his or her choice during the week of 30 Sept 02.

Responsibilities of the project manager include:

- function as liaison between the team and the advisor
- insuring that deadlines are met
- insuring that the team is prepared for the weekly advisor meetings
- responsible for assembling weekly team report
- responsible for logistics and confirmations associated with weekly team meetings, weekly advisor meetings, the PDR and the MDR. This includes room and presentation equipment reservations.

It should be noted that other team members will have areas of responsibility defined as the project moves forward. The role of project manager is clearly defined early in the process due to the general logistical nature of the role. The project manager offers general support of the design effort while the other roles will be tailored to project-specific needs.

**Organization:**

**All-course meetings:** Course meetings will be held Friday,s 3.35-4.25; location to be announced This will not be a regular meeting time, but is reserved on a need basis. Groups will be contacted by email on meetings.

**Weekly Team Meetings:**

Weekly team meetings are for the team members to meet with each other. This can be either before or after the weekly advisor meetings, but meeting the day before the advisor meeting is encouraged in order to be prepared to make best use of the time with the advisor. It is the project manager's responsibility to set up these meetings.

**Weekly Advisor Meetings:**

Each project team will have a weekly team meeting with their project advisor. The purpose of each meeting is to have each team member report on progress that has been made, barriers that have been identified and clarification of short- and long-term goals. It is the project manager's responsibility to set up these meetings with the project advisor.

**Required Text:**

The Mayfield Handbook of Technical and Scientific Writing; Leslie C. Perelman, James Paradis, Edward Barrett. (Available on ECS PCs in hypertext form.)

This is the same text that is used in ENGL 351, Technical Writing.

**Schedule, Spring 2003:**

Besides the weekly team meetings and advisor meetings, the schedule includes the following milestones:

1. **Wed 23 April 03 – Fri 25 April:** Comprehensive Design Review (CDR): Presented to SDP Review Board and Project Advisor. Includes poster. Teams describe and demonstrate projects. Board suggests grade to advisor.
2. **Friday 09 May:** Public Demo in Guinness Student Center.
3. **Wed 14 May:** Final report delivered to advisor.

**Grading:**

Team members will be graded individually by their SDP project advisors. After the Mid-course Design Review, the Design Review Board will recommend semester grades for each team member based on the report and oral presentation. The project advisors will take this feedback into account when assigning the semester grade.

The team members may receive different letter grades. Your performance on your portion of the project, contributions towards progress reports and your participation level in the weekly meetings will impact your final grade.

**Final Report Format:****Academic Dishonesty:**

Any form of academic dishonesty (see definition in the Undergraduate Rights and Responsibilities booklet) will not be tolerated. Academic dishonesty will lead to a failure

in the assignment in question, failure in the course, and/or further disciplinary action at the university level. Cases of academic dishonesty will be reported to the Department Head, the Asst. Dean and the University Academic Honesty Board.

**Relationship to Program Outcomes:**

The ECE undergraduate program as a whole has ten educational program outcomes. This course contributes towards meeting those outcomes. The table below shows how the five course objectives above relate to the program outcomes.

PROGRAM OUTCOMES	COURSE OBJECTIVES				
	1	2	3	4	5
1. Well grounded in the fundamental concepts of math, physics, chemistry, computer science, and engineering science	Y	Y	Y	N	N
2. Able to identify, formulate and solve problems in ECE	Y	Y	Y	N	N
3. Able to design and conduct experiments, and to analyze and interpret measured data	Y	Y	Y	N	N
4. Capable of designing analog and digital systems, components, and processes to meet desired needs	Y	Y	Y	N	N
5. Proficient in using modern engineering techniques and computing tools for effective engineering practice	Y	Y	Y	N	N
6. Experienced in engineering teamwork, and in solving technically diverse and multidisciplinary problems	Y	Y	Y	Y	Y
7. Able to communicate effectively orally and in writing, and through symbolic and graphical expression	Y	N	Y	N	Y
8. Aware of professional and ethical responsibilities as engineers	Y	N	N	Y	Y
9. Aware of the impact of ECE technology and decisions on society	Y	Y	Y	N	N
10. Motivated about the importance of lifelong learning, scholarship and professional development	N	N	N	N	N

Professional component: Credits of engineering science: 0; Credits of engineering design: 2  
 Prepared by: T. Baird Soules and C. V. Hollot Date: Sept. 2002