

# **Department of Electrical and Computer Engineering**

## **University of Minnesota**

### **EE 4951 - Senior Design Projects**

#### **Guidelines for Corporate Sponsorship**

The Electrical and Computer Engineering (ECE) department at the University of Minnesota is very interested in working with companies to provide real-world corporate-sponsored senior design experiences for our students. If your company is interested in exploring this opportunity, these guidelines will provide you with some information on the background, expectations, and procedures for such projects.

1. To get started, first contact the EE 4951 Senior Design course coordinator for the coming semester to discuss your proposed project. If you do not know whom this person is, please contact Prof. William Robbins, ECE Associate Head, for this information (robbins@umn.edu, 612-626-6722). Information to discuss with the course coordinator includes:
  - a) Type and scope of project.
  - b) Appropriateness as a senior design project. Keep in mind that your project should be suitable for a team of 5-6 engineers and should allow for development of well defined requirements/specs that can be verified in a demo at the end of the semester. The best projects have multiple paths for solution/implementation and are within the experience of a student trained in our electrical engineering and computer engineering programs (and for multidisciplinary teams, students from other engineering programs). It should not be a research project, but should provide the students with a solid design experience. While the students should not be expected to spend an unreasonable amount of time learning something entirely new if they are to successfully complete the project, the projects are expected to expand their knowledge base, including the acquisition of reasonable additional background material.
  - c) Desirability for an interdisciplinary project team that includes members from several areas. It is possible, and in many cases desirable, to have projects that require the expertise of members from outside ECE. We work with other engineering programs at the UofMN to provide such multidisciplinary design team experiences.

- d) Expectations with respect to student effort. This is a 14-15 week, 4-credit course, so the standard expectation would be for about 12-16 hours of commitment per student per week, including about 2 hours of class time per week and preparation of reports, presentations, etc. Team size is typically 5-6 students, depending on the project.
  - e) Any issues with respect to proprietary information, intellectual property, export controls, and foreign nationals. In general, any student in the class must be able to participate in the project and all meetings, tours, etc. connected with the project, irrespective of nationality. All team work-product must be available for public access. But products or work that are not directly the work of the student teams, but only associated with their work, may be kept confidential to the company as required.
  - f) Possibility of funds to help defray costs for the project. Typically, we request that companies consider covering the cost of materials and supplies needed by the students in implementing their project.
2. Provide a short one to two page description of your proposed senior design projects to the course coordinator. The course coordinator will let you know the date by which your description will be needed. The audience for your project description is the students in the course who will make their choice among the projects available for the semester based on your written description and a short 5-minute presentation you will be giving the first week of class. So, put on your marketing hat and make your project sound exciting!

We suggest that you include a brief background statement in your description to provide some context, as well as a clear discussion of the project goals, known user specifications, etc. At the top of your description, please include:

- 1. Project Title
- 2. Your name
- 3. Your contact information

3. A faculty member in the ECE Department will be selected to act as the on-site project mentor to the team of students assigned to the project. He or she will serve as the on-the-ground person monitoring and assisting the students as needed, so that the you or your company's representative(s) does not need to handle the details. If you are already in contact with a faculty member in the ECE Department who you would like to fill this role, please let the course coordinator know and we will contact that faculty member to see if they are available.

4. Involvement from the company side can be as much or as little as desired. For example, the design teams typically meet with their faculty mentor once a week, and the company representative(s) can attend these meetings or not, as they wish or as need dictates. The only critical events at which attendance of the company representative(s) is requested, if possible, are:
  - a) For a brief 5-minute presentation of the project to the class the first week of the semester. The course coordinator will send out an e-mail requesting sign-up for presentation time slots shortly before the start of the semester.
  - b) To attend and help evaluate your team's Mid-Project Design Review Presentation. This will be a 25-30 minute presentation scheduled around the seventh week of the semester.
  - c) To attend and help evaluate your team's Product Launch Presentation. This will be a 30-45 minute presentation scheduled the last week of classes.
  - d) To attend and help evaluate your team's Poster Presentation/Product Demonstration at our Senior Design Show. This is scheduled for the last week of classes.

We look forward to working with you on developing and implementing a corporate sponsored senior design project. Please contact the EE 4951 Senior Design Coordinator if you have further questions.