Guidelines for the Engineering Science Program Senior Design Sequence

Engineering Science students beginning their two-term Senior Design sequence in Fall Term 2013 (2141) and thereafter must complete:

1) At least one semester of senior design offered by one of the other engineering programs in the Swanson school (for example MEMS 1043 or ECE 1896). Guidelines for these courses are available in the home department/program. The Program Director will assist ESCI students in selecting and enrolling in an appropriate external senior design class.

2) A second semester that is either the second semester of senior design in an outside program that requires a two term sequence as standard (e.g., in Bioengineering) or a separate research/design project arranged by the student with a faculty mentor and taken as ENGSCI 1801.

3) Students wishing to complete a second semester with a faculty mentor can enroll in ENGSCI 1802 and this course can be approved as a program/nano elective.

ENGSCI 1801 and 1802 are 3-credit design/research projects lasting one semester. ENGSCI 1801 and 1802 give ESCI students the opportunity to experience an open-ended project based on their interests and curricular background. Every project must have an Academic Advisor. Academic advisors can come from any department but have most commonly been members of the Electrical Engineering, Mechanical Engineering and Materials Science, or Physics Departments. The Engineering Science Program does not provide funds for costs incurred in the project.

Requirements for ENGSCI 1801 (1802)

The student must become familiar with the background and goals of the project by reading the appropriate literature and interacting with their Academic Advisor. The student must submit an Abstract (3rd week of term) and Literature Review (6th week of term) to the Academic Advisor (with electronic copies to the Program Director). The student will carry out an experimental, computational, modeling, or theoretical design/research program appropriate for the project and guided by the Academic Advisor. The student must document the accomplishments of the semester in a final written report. An electronic copy of the Final Report approved by the Academic Advisor by email must be submitted to the Program Director by the last day of classes in order for a grade to be awarded. The student must also submit an electronic copy of the Final Report to the MEMS Department Undergraduate Administrator (undrmems@pitt.edu). The Academic Advisor should determine the format of the Final Report. The Final Report can be in the form of a manuscript intended for submission to an archival journal. The student must also make a final oral presentation at the end of the semester. The Final Presentation must contain experimental/modeling design, experimental/theoretical results obtained by the student along with pertinent interpretation and conclusions. The student should prepare Powerpoint Handouts.
documenting the presentation for the Academic Advisor and Program Director. Electronic copies of the handouts should be sent to the Academic Advisor and Program Director prior to the final presentation. The audience for the final presentation should include the Academic Advisor and Program Director, but may also include other students enrolled in ENGSCI 1801/1802 and their supervisors, members of the Engineering Science Advisory Committee, and others as appropriate. The Academic Advisor will award a letter grade for the semester and inform the Program Director.