

Read Me First **An Overview of the Senior Design EXPO (SDE) for VSU Computer Engineering Seniors**

Checklist and Order of Events

1. Register for CPEG 400, Senior Seminar
2. Attend first session of CPEG 400.
3. Review web-based information on Senior Design process at CPEG 400
4. Review information on specific projects available elsewhere on this website.
5. Read, review, and understand all requirements per this web page
6. Create a team for the senior design project and submit Project Approval form with the top half completed.
7. Pick or define a senior design project.
8. Complete the Capstone Senior Design Project Approval form
9. Write a Project Proposal per guidelines on the Senior Design Studio website
10. Turn in the Approval form and Project Proposal at the **fourth** meeting of senior seminar

The URL for the SDS website is:

<http://www.engrtech.vsu.edu/fac/senior>

What?

The capstone senior design project is a two-semester design and realization experience that is to provide an opportunity for senior-level engineering students to demonstrate professional-grade engineering and design talents. The emphasis of the course is detailed engineering design. The design product might be a part, a software application, a process, an integrated circuit, a control system, or a device. Senior design projects **must** have a significant design component. Projects that culminate in strictly a white-paper treatise or research paper does not satisfy the course requirement.

Who?

All computer engineering students must complete a senior design project as part of the academic requirement of the bachelor's degree.

When?

The two senior design courses must be taken **in sequence** to satisfy the requirements. Students are **NOT** allowed to take the spring semester courses (end of projects) and then take the fall semester course the following academic year (beginning of projects). Thus, students who plan to graduate in May, August, or December of a given calendar year, must begin the two-semester senior design sequence in the fall of the preceding academic year.

Do I Need to Enroll in a Section of CPEG 400 and CPEG 408 (Senior Seminar and Senior Design)?

All engineering students are required to complete both fall and spring semesters of the Senior Design Seminar and Design with a grade of C or better. Course numbers are CPEG 400 for the fall semester and CPEG 408 for the spring semester. Each course meets for two and a half hour each week and CPEG 400 is a one academic credit course and CPEG 408 is three academic credit course.

Topics, activities and assignments in this seminar are closely coupled to senior design projects. Discussion, lectures, speakers, and other in-seminar activities are provided to directly support the requirements of the various senior design projects.

Attendance at each weekly seminar is **mandatory** for all students participating in a senior design project.

The Process

A detailed and specific process for completing the requirements of the senior design sequence has been created and documented by the faculty of the Department of Engineering & Technology programs. All information and required forms are located on the Department of Engineering & Technology Senior Design web page. Students must complete **all** requirements described in these documents.

The URL is <http://www.engrtech.vsu.edu/senior>

Program Coordinators

All senior design project teams report through one of the program-level coordinator. For the 2007-2008 academic year, the program coordinator for CPEG is Dr. Gymama Slaughter.

Faculty Advisors

A faculty advisor is **required** for each senior design project. The Chair of each department authorizes those faculty members that may fulfill the role of faculty advisor.

Some projects may originate from sources (industrial, etc.) outside the Department of Engineering & Technology. Experience has shown that without on-site advising by a Department of Engineering & Technology faculty member, accountability is lost and team performance may be compromised. Therefore, a faculty advisor is **always** required in addition to any co-advisors from industry or other outside sources. There are **NO** exceptions to this rule.

Faculty advisors establish the expectations for the results of the projects, provide guidance to the teams, determine the specific times for design work and review meetings, and provide review and grading of all documents relevant to the project.

Required Forms

The web page includes required forms for team members to utilize. These forms include

1. the Capstone Senior Design Project Approval Form,
2. the Exceptions Form
3. the Process Improvement Form and
4. the Intellectual Property Policy Form

It is the **responsibility of the design team members** to understand these forms and to complete them per the requirements and posted deadlines. Faculty advisors will require these forms to be properly completed by the team and included with each required senior design report.

Required Reports

The senior design web page links to a document, *Reporting Requirements*, that gives a detailed discussion of the reports required to complete the senior design courses. The document also describes the required elements of each of these reports. Due dates for each are clearly indicated. It is the **responsibility of the design team members** to understand the requirements of these reports and to complete all reports on time. The three **required** reports are

1. the Project Proposal,
2. the Design Report, and
3. the Final Report.

In addition, each team will present a poster during the Senior Design Expo at the conclusion of the spring semester.

Other requirements may be established by individual advisors. For example, a Critical Design Review could be assigned in addition to the three required reports.

Origination of Senior Project Ideas

Multiple sources for project ideas are available. Some are listed below. Projects that require construction of a prototype must have appropriate funding **assured** when the Project Proposal is submitted during the fourth week of the fall semester.

1. Technical elective courses (electrical and computer engineering)
2. Ideas from faculty members (who will become faculty advisors)
3. Continuation of projects started during student internships or co-op experiences
4. Industrial partners and affiliates with articulated needs
5. Student-originated ideas

The spirit is to provide an opportunity for a senior design project to originate from a host of possibilities. However, all projects must conform to all rules and regulations as set

forth on the Senior Design web page. The Exceptions Form must be completed and approved by all appropriate leaders for any deviations to the stated rules.

A Faculty Advisor is always required, regardless of original source of idea for a senior design project.

Team Size and Mix

The number of students per design team may range from two (2) to four (4).

Exceptions to this require completion of the Exceptions Form and signature approval by the Faculty Advisor and Program Coordinator.

Students are encouraged to seek out students from engineering disciplines other than their own. Students from business, marketing, art, physics, chemistry, etc., may also be added to the team. To ensure that participants from outside the Department of Engineering complete the projects, advisors are encouraged to require such students to obtain academic credit for their work through their own departments.

Project planning, work activities, and reporting require that **all** individuals on a senior design team participate in an acceptable and substantive way. Adding an art student to a senior design project that doesn't require the special talent or skill of an artist is unacceptable and is not allowed. Final approval of team member skill requirements for a given project vests with the faculty advisor.

Detailed Schedule of Classes, Meetings, and Reviews

The first few weeks of the fall semester are crucial to identifying a project, creating a team, and completing the proper documents (Project Approval Form, Exceptions Form, and Project Proposal). Failure to start each project aggressively and correctly according to the suggest timeline will lead to a poor senior design project and, ultimately, a poor grade.

It is the **responsibility of the team members** to understand the required schedule of meetings and events, to adhere to these requirements, and to fulfill the requirements of the schedule.

The senior seminar provides class time to review the overall process and to present and discuss the required forms. Topics for discussion in the senior seminar are clearly tied to certain elements of required reports. Attendance at the senior seminar is **mandatory**.

Additional required meeting times for team members will be established by the Faculty Advisor and Program Coordinator. Attendance at these meetings and review sessions is required of **all** team members.

Time Commitment Required by Senior Design Teams

Students are required to spend a minimum of six hours per week on activities related to their project. These six hours can be a combination of meetings for review and

background (as determined by the Faculty Advisor), actual work time spent by **all** team members carrying out project activities, and other in-class time scheduled by the Senior Design Program Coordinator or other faculty members.

For projects originating from technical electives, in-class time as per normal class meeting times will be required.

Grades

Students will receive separate grades for the Senior Seminar and for their projects each semester. Faculty advisors and/ or course instructors give the final grade for the senior design project. The advisors will supply the final grades for design projects along with all required documents to the Senior Design Program Coordinator. The coordinator will archive the documentation and report the final course grades to the University.

The Senior Seminar instructor will determine grades for CPEG 400 (Fall) and CPEG 408 (Spring). The grade for the Project Proposal will be recorded in the senior seminar and will count towards the final grade for CPEG 400. In addition, students will submit copies of the Design Consideration sections from the Design Report (Fall) and the Final Report (Spring) to the CPEG 400/408 instructor. These sections will count towards the final grade in CPEG 400 and CPEG 408.

Additional requirements for the Senior Seminar will be imposed by the seminar instructor and used to compute the final grade for the senior seminar. Some requirements for the weekly senior seminar may be different than those required by the Faculty Advisor or Program Coordinator for the senior design project grade.

It is the **responsibility of each team member** to understand the requirements and grade components for both the weekly senior seminar and the senior design project.