

CS 490-101: Senior Project I (CRN: 2108)
Marshall University
Fall 2007

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1 Course description

This is the first of a two-course sequence senior capstone project. The course focuses on the application of technical and professional skills in solving a real-world problem in a team environment. It also discusses professional code of conduct, societal issues, and transition from student to industry professional.

2 Course schedule

This course meets on Wednesday, 5.00 PM - 7.30 PM in GH 206A.

3 Instructor information

- This course is team taught by Prof. Fuller and Dr. Gudivada.
- Prof. J. Fuller, Gullickson Hall Room 205B, Phone: 304-696-6204, Email: fullerj@marshall.edu
Office hours: 12.00 - 12.45 PM MWF, 8.30 - 11.30 AM TuTh, and 10.00 - 11.30 AM Friday.
- Dr. V.N. Gudivada, Gullickson Hall Room 205A, Phone: 304-696-5452, Email: gudivada@marshall.edu.
Office hours: 12.00 Noon - 2.00 PM on MWF and 4.00 PM - 5.00 PM on MW. Other times by appointment.

4 Course topics at a glance

- a. Analysis and Design of Large-scale Systems.
- b. Team Building, Nurturing, and Group Dynamics.
- c. Professional Communication.
- d. Ethics, Social, and Environmental Responsibility.
- e. Copyright Laws, Patents, Privacy Issues.
- f. Freedom of Speech in the Cyberspace.
- g. Entrepreneurial Skills.

- h. Life-long Learning.
- i. Industry Careers.

5 Course objectives

- a. Provide hands-on experience in project planning and management.
- b. Analyze requirements, perform design, and construct large-scale software-intensive systems.
- c. Apply effective teamwork strategies for successful completion of large-scale projects.
- d. Apply ethics, social, and environmental awareness to software-intensive system projects.
- e. Explore copyright and patent laws, privacy issues, freedom of speech in cyberspace, and entrepreneurship in the context of computing as an engineering profession.
- f. Discuss the need for life-long learning and instill a desire for keeping abreast with rapidly changing computing profession.
- g. Help enhance oral and written communications skills.
- h. Discuss career choices and professional opportunities.

Central to these courses is the experience of working in teams in solving a real-world software-intensive problems. More specifically,

- a. Students will select an industry-contributed software project and form teams of size four to six based on their selected project.
- b. Student teams will follow a formal development process (e.g., Unified Process) to complete their project.
- c. Students will elicit requirements, analyze, and specify them.
- d. Students will design and evaluate a solution to the problem.
- e. Students will produce a written final report, poster, and press release describing their project. A final oral presentation and demonstration is given to peers and industry sponsors (if applicable).

6 Student learning outcomes

A high course grade in CS 490: Senior Project I requires that the student demonstrate most or all of the following:

- a. **Gained** valuable practical experience in developing a software-intensive system for a real-world application.
- b. **Demonstrated** ability in project planning and project management.
- c. **Demonstrated** ability in dealing with incomplete and often ill-stated system requirements.
- d. **Demonstrated** ability in dealing with clients and project sponsors in a professional manner covering demeanor, presentation style, and work ethic.
- e. **Demonstrated** ability in analyzing and designing a system by making judicious engineering tradeoffs.
- f. **Understands** the implications of ethical, social, and environmental issues that computing professionals face at work.
- g. **Understands** the implications of intellectual property disclosure, copyright violation, patent infringement, software piracy, cyber security, freedom of speech and censorship in the cyberspace to the computing professionals.
- h. **Understands** the need for keeping abreast with the rapidly advancing computing profession, and is **aware** of the means for this task.
- i. **Recognized** areas that need improvement in professional communication, and developed a plan for addressing them.
- j. **Acquired** knowledge of potential career choices and professional opportunities.

7 Instruments for Measuring Student Learning Outcomes

Part of the course assessment related to assigning grades to students is based on the following instruments:

- a. Evaluation of several written reports including problem statement; requirements specification; preliminary and detailed design using UML. Some of these materials are peer evaluated in addition to the instructor.

- b. Evaluation of final presentation slides, project poster, and project press release. Evaluated by both the instructor and peers.
- c. Evaluation of the formal oral presentation to the project sponsor or peers. This part is evaluated by the instructor as well as sponsor/peers.
- d. One midterm exam to assess understanding of non-technical knowledge of the course: Ethics, Social, and Environmental Responsibility; Copyright Laws, Patents, Privacy Issues; Freedom of Speech in the Cyberspace; and Entrepreneurial Skills.

8 Instructional materials

Course notes and other handouts will be available on WebCT Vista. URLs for additional resources will also be listed on the Vista.

9 Course assessment and grading criteria

The course assessment is based on the following components:

- Written assignments: 70%
- Oral presentations: 30%

10 Assignment of letter grade

<i>Score</i>	<i>Letter Grade</i>	<i>Remarks</i>
≥ 90	A	Achievement of distinction
$\geq 80 \ \& \ < 90$	B	Competent and professional work
$\geq 70 \ \& \ < 80$	C	Below average performance
$\geq 60 \ \& \ < 70$	D	Patently substandard work
< 60	F	Unsatisfactory work

Note that A grades are awarded only to those students who have demonstrated distinctive performance in the course.

11 WebCT Vista

It is important to visit WebCT Vista for up-to-date information about the course. It hosts all the course materials including assignments, handouts, lecture notes, and reading materials. Also, you will use the Vista for submitting your team project.