

## CSE 40600 – Service Learning Syllabus - Fall 2010

Course Title and Number:	Service Learning CSE (20,30,40)600	Instructor:	Paul R. Brenner brenner.6@nd.edu
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Credits: 1-2	Classes Per Week: 1	Prereqs:	Instructor Approval
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### Course Description:

The student who completes this course will have a sound introduction to the many opportunities for the application of engineering skills in the service of his/her community. Students will form a consulting firm and provide engineering services in support of local, national, and international nonprofit organizations. Example projects include, but are not limited to: technical feasibility and cost analysis of engineered projects, preliminary concept design and layout, and minor product modifications to better accommodate those with disabilities. The investigation of new projects and partnerships spanning multiple semesters is an integrated component of the firm's responsibilities. Community Based Research (CBR) and Service Learning (SL) will be integrated through the course providing opportunities for publication in a peer reviewed journal/conference.

### Goals of Course:

1. Learn operational fundamentals of an engineering firm including sales engineering, project management, design, review, revision, and practical safety/liability concerns.
2. Apply fundamental scientific and engineering principles in the design and engineering of technical products, projects, and proposals.
3. Investigate opportunities for community service through engineering, both as a student, and a practicing engineer (scientist).
4. Enact the mission statement of the University of Notre Dame by serving the less fortunate members of our community through application of our engineering talents.

### Reference Materials:

Paper: A Service Learning Program for CSE Students  
Greg Madey, Curt Freeland, and Paul Brenner  
35<sup>th</sup> ASEE/IEEE Frontiers in Education Conference, 2005

Text: Service-Learning, Engineering in Your Community  
Marybeth Lima and William Oakes  
Great Lakes Press (ISBN 1-881018-94-6)

Websites: EPICS- <http://www.nd.edu/~sero>

Evaluation Standards: Instructor Reviews (2), Peer Reviews (2), Client Feedback

*Sample Review Criterion:*

*Participation, Task Completion, Quality of Work, Teamwork, Attitude*

Expectations:

This course is an opportunity to develop your technical skills while serving those in need. Your motivation to serve and engineer should enable the significant amount of independent work required. Students will show mutual respect for each other and the instructor at all times. Disruptive, dishonest, or inappropriate behavior will not be tolerated. All absences should be discussed with the instructor ahead of time. Students are welcome and encouraged to discuss all course relevant concerns with the professor.

Approximate Schedule:

Weekly design team meetings will be held for 1 hour with the instructor. Additional working sessions will be held each week by the team leads in order to meet the project milestones. Weekly minutes will be recorded and core presentation topics will be entered into the schedule below two weeks prior to design meetings.

Week 1	Introduction	
Week 2	SERO meeting, Chapter 1	
Week 3	SERO meeting, Chapter 2, Customer Site Visit	
Week 4	SERO meeting, Chapter 3	Instructor Review
Week 5	SERO meeting, Chapter 4	
Week 6	SERO meeting, Chapter 5	
Week 7	SERO meeting, Chapter 6, Customer Site Visit	
Week 8	Midterm Project Reviews	Peer Reviews
Week 9	SERO meeting, Chapter 7	
Week 10	SERO meeting, Chapter 8	
Week 11	SERO meeting, Chapter 9, Customer Site Visit	
Week 12	SERO meeting, Chapter 10	Instructor Review
Week 13	SERO meeting, Chapter 11	
Week 14	SERO meeting, Customer Site Visit	
Week 15	Final Project Presentations	Peer Reviews

Notre Dame and CSE Policies:

This course will be taught according to all ND and CSE policies (Honor Code, Students with Disabilities, Sexual Harassment, etc...). Please contact the instructor with any questions or concerns.