

DRAFT Sample Proposal Form

Senior Project - Turner

You must submit a proposal of this general form with these sections to Dr. Turner for approval at least one term before CSC/CPE 491 registration. The most prudent course is often to take CSC/CPE 400 for 2 units with Dr. Turner in the term prior to registration for 491 where the object is to create and perfect this Proposal.

1. **Definition of Senior Project.** What is a Senior Project? You must define this term to your satisfaction. Explain your understanding of the Senior Project requirement to me. You may use any sources you wish, please intersect with some Cal Poly definitions and check the Department's definitions. Consider that part of the task is to become relatively "expert" in some CSC/CPE topic, where you really have some knowledge and experience that shows the maturity you've reached in your coursework here at Cal Poly. Make this section concise and understandable so that a student from another major would understand what you are doing at a high level.
2. **Type of Senior Project Proposed.** Do you propose to perform an *experiment* to see if some process can be automated? Would you like to *build a software system* to solve a user's problem? Do you propose to perform a survey of University students and use science to discover a set of user requirements for some proposed *system requirements analysis* or to perform a *social analysis* of some software technology? Would you like to do a *theoretical analysis* of some specific set of requirements or social set of constraints on sets of software requirements? Would you like to write up a thorough *survey* of some special technical topic for publication? It is important to categorize your work at the outset, even if you change it later (and I am flexible regarding change.)
3. **Expected Abstract of Senior Project.** Write up one or two paragraphs of abstract to describe what you think the finished project will be about and what you expect to conclude. One paragraph should describe facts and the main issue to be addressed, another paragraph to describe your expected solution or result. In the course of your project work, you may find another result or that your original thinking was totally wrong. This is not unexpected. This section should give some early hypotheses regarding the completion of your project.
4. **Proposed Table of Contents** Give as detailed a picture of the Table of Contents as is possible at this point. The sections must include main sections: (1) Abstract; (2) Introduction where you generally describe your problem area; (2) Problem description where you carefully and in detail describe the problem you are interested in; (3) Survey of relevant work where you describe how others have looked at this problem or you describe the state of the world in your problem area; (4) your Contribution that consists of some (possibly small) variation on current

solutions, a new synthesis or combination of solutions, an analytic criticism of some known solutions, a model to test some hypothesis about the solutions (software) or a mature description of open questions in the area; (5) Evaluation of contribution where you explain how your work has meaning in some context (you need not change the world but should show some improvement or novel evaluation for some element of your solution, experiment or survey, (6) Conclusion, and Bibliography. Note that if there is *any* ethical consideration to your work, you must detail it and explain your resolution explicitly somewhere in your writeup. Review the ACM/IEEE Software Engineering Code of Ethics and in cases where humans are part of your experimentation, contact the Human Subjects Review Board (IRB) on campus.

5. **Proposed Process Model for Completion.** Here you must propose *how* you plan to carry out your project. It should include a timetable with proposed work schedule (timesheets are required: remember to expect 10 – 15 hours per week to work on the project). It must show the synchronization points for evaluation of work (by you and by me.) The process model also needs to include features such as change management and alternative considerations (such as if your original idea totally fails.)
6. **Senior Project Basic Requirements.** You can think of this proposal as an extended requirements document for your Senior Project. It should begin with a set of Professional Goals (where would you like to go with your Cal Poly degree?) Exactly what do you expect to accomplish with your Senior Project? You should include a rich set of “nonfunctional” requirements that apply to your project.
7. **Senior Project Test Plan.** You must have some idea how to tell when you are “*done*.” You must also have some way to evaluate your work and your results so that you can manage your expectations for completion and for grade evaluation. A test plan will guide such an effort: it will be based on your Senior Project requirements. The test plan should include a proposed set of acceptance tests. It should also include a way to evaluate quality attributes and the resulting grade assignments you would think would be fair.
8. **Resources** List the resources you’ll need and include everything you can imagine. Include time off from work, reduced courseloads, extra computing resources, hardware, time with Professor Turner, time with other consultants, books, papers, library time, and access to anything special you need. It is important to be explicit at this point. This section should include your bibliography so far, and note that the bibliography needs to be annotated.