**Requirements for Senior Project or Independent Project Proposals**

EE 463/4, CPE 461/2 or EE/CPE400 advised by Prof. Art MacCarley

**Length**

As appropriate for the project, but typically 2-3 pages.

**Project Description**

This is the body of the proposal. It is a narrative description of the project, based upon the expected purpose, function, objectives, or resultant prototype, as appropriate. The requirements of this section are not overly-specified because I recognize that not all senior projects are intended to result in products intended for market. Many are components of student team efforts (e.g., SAE or IEEE student competitions, SWE Team Tech, service learning projects). However, EE and CPE published guidelines require at least some hardware component of the project. Software-only projects may only be approved by authorization of the Department or Program Chair.

The Project Description ***must contain*** at least one graphic – a visual representation, block diagram, etc. which clarifies the project function or intellectual property. An example is the diagram required on the cover page of any US Patent.

The narrative must demonstrate sufficient forethought of the estimated resources and time requirements, specialized skills required, and any potential negative ramifications of the project, e.g., what will you be leaving behind after the completion of the project; how will the project effect other students, Cal Poly, or the environment? If the project is intended for social benefit, please identify the benefactor(s). If the project is intended to result if a potentially marketable product, identify the customer, and any relevant safety and sustainability issues.

While team projects are generally encouraged, if this is a team project, you must identify in the proposal your expected role in the project, and be as specific as possible at this time about ***your*** responsibilities or expected contributions. Note that in the project final report (see grading rubric), I will expect you to identify what ***you*** did as a member of the team. A report on the overall team’s results only will not be acceptable.

**Project Deliverables**

This is the final section of the proposal. It should be a brief paragraph or itemized list that must begin with the words “At the completion of this project, I will deliver the following:” I regard this section as the ***contractual agreement*** between you as the student and myself as the advisor. It establishes in the clearest terms possible at this time what I can expect of you, and what you will be graded on. It is as much for your protection as my justification for your project grade. My complete grading rubric is stated below. Please allow time for at least one iteration of this section during our discussion of your ***draft*** proposal. In my experience, students typically promised more than they can possibly deliver in the six-month senior project period with the available resources. Part of my job as your adviser is to assure that what you promise in this section is doable.

The deliverables statement may be modified ***by mutual consent*** during the course of the project, as we both gain more experience with your project, but do not expect me to agree to a reduction of the deliverables for any non-technical reasons, e.g., unexpected personal time limitations. I may agree to modifications (not a reduction in work) due to the failure of another team member to complete their work, but the burden of proof of this obstacle to your progress will be with you. Accordingly, please attempt to make your project deliverables as independent as possible from the work of other. If you have difficulty writing an independent work statement, please do your best for the draft proposal, and we will refine this during our discussion prior to finalization. If you are not certain of the project starting quarter, please identify the options so that I can assure you that I can take on the project at that time.

**Signature Lines**

We will both sign the final proposal as a contractual agreement. Please provide lines for each signature.

**My Expectations and the Basis of your Grade**

I place a high degree of emphasis on the completion of the project as specified. I have little regard for the amount of time or effort that you report you have invested in the project (projects that are 90% complete don’t make it to market and sometimes can cause major harm to society or the environment.)

I also expect absolute integrity in your claimed or assumed creative work, starting with this proposal and including all interim reports, the project final report, and the poster that I will expect you to present in the later EE Department Senior Project and Thesis Exhibition, usually near the end of the Fall or Spring quarters

* Proper attribution of all referenced information sources, and design or data sources.
* If this project is being used for academic credit in multiple courses, you must disclose this
* If this is project was previously completed or partially completed prior to this proposal, you must disclose and describe the extent of the prior work as distinguished from the proposed work.
* You must acknowledge fully the work of all others that contributed to this project, including other faculty.
* If the project idea was suggested or specified by another person or entity, including an employer, external sponsor or your project adviser, you must disclose this.

**Specific Grading Rubric**

* 40% Project Completion – did you deliver what *you* said you would deliver (not the same as team deliverables).
* 20% Quality of Results/product – within the latitude of your stated deliverables, did you go the extra mile to do create a high-quality embodiment of the hardware and/or software?
* 10% interim status reports or presentations, as appropriate for your project, but at least one per quarter.
  + Your first interim report is due by Monday of the third week of the first quarter, in which you must include a Gantt Chart for the project, and a reasonably complete list of the required resources (purchased components, subcontracted services and budget.
  + If you wish to receive a letter grade at the end of the first quarter of a two-quarter project, you must submit a written first-quarter interim report on your project progress, due at the end of the final week of instruction of the first quarter. In this case, the stated grading rubric will be modified to be applicable to work completed as of the end on the first quarter, and a physical work-in-progress demonstration will be required.
  + If you do not wish a first-quarter grade, or do not provide a first-quarter interim report, you will be assigned an RP for the first quarter, which will be replaced by the final grade at the end of the second quarter.
* Project Final Demonstration – Required demonstration for me in which I asses project completion and quality. I may ask external experts to attend. Performed during the final week of *instruction* and scheduled at least one week in advance. No demonstrations will be scheduled during or after final exam week. Grade contribution is subsumed in *Project Completion* and *Quality of Results*, as listed above.
* Final report – due the final week of instruction, conforming to EE or CPE published standards.
  + If an individual project: 30% Project final reports must conform to EE Department or CPE program report requirements listed online on the respective web sites.
  + If a team project: 15% general report on team results + 15% *individual results* section(s) that must be included in or appended to the team project report.

**How do the percentages translate to a letter grade?**

Approximate scale, since there is always quite a bit of subjectivity in the grading of projects. ***I do not use +/- grading.***

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| **Percentage** | **Letter Grade** |
| 85%-100% | A |
| 70%-84.9% | B |
| 55%-69.9% | C |
| 40%-54.9% | D |
| 25%-39.9% | F |