



## Engineering & Design

### Polymer Materials Engineering Senior Project Description

To: Industrial Sponsor of PME Senior Project

From: Engineering and Design faculty members and Sr Project advisors:

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Re: Summary of Senior Project

Thank you for supporting the Engineering and Design programs at Western Washington University by sponsoring a Senior Project. A successful Engineering and Design program combines what is learned in the classroom and experienced in the lab with real-world manufacturing and design problems. It is crucial that we continue to offer challenging and suitable projects to our seniors to give them more experience in project management, technical writing, synthesizing many different concepts from their education, working on a team and individually, and communication with suppliers and customers. This letter is to inform you of the Senior Project process with a brief outline of the three quarters that the student will be working on your project so you know what to expect. At this time all projects start in the fall and implement in the spring.

Proposal (First two quarters) - The students will be presented with numerous projects to choose from (that vary depending on the projects offered by industry). The majority of the projects are: process design, process investigation, product design, machine design, software applications, material investigation, or tool design. Each project has a specific problem that needs to be solved and must contain a significant design component. The students will define the problem, develop specifications, investigate and present multiple solutions, select the best solution and develop an implementation plan including timeline and budget.

Implementation (Third quarter) - In this phase of the senior project, the proposal developed during the first quarter is implemented. The major indicator of the students' success is how well they met the quantified objective stated in the proposal and the quality of the deliverables to the sponsor (tooling, prototypes, data, documents, etc).

### Industrial Sponsor

There are four expectations of the industrial sponsor of a Senior Project.

1. Communicate with student. Include topics such as: ensure thorough understanding of the problem that needs to be solved, expectations of the sponsor in regard to timeline and budget, what solutions have been attempted and the results, equipment and human resources with the sponsor's facility that are available for use of the project, issues about confidentiality, discussion about the viability of solutions that the student develops, etc.
2. Finance any consumables. Any materials, cutting tools, or other supplies that are needed for the project will be provided by the sponsor directly or paid for by the sponsor. A required component of the first quarter is to develop a detailed cost analysis so the sponsor knows what the estimated total cost of implementation will be. Certain projects may require the consumable cost be paid for prior to the start of implementation.
3. Sign the contract. The student will present you with a contract that briefly outlines the problem to be solved and the expected outcome with estimated due dates. The purpose of the contract is to provide a means for the student, industrial sponsor, and faculty advisor to all have a basic understanding of the project right from the beginning.
4. Give feedback to the student and faculty advisor. An important component of maintaining a successful Senior Project is to maintain communication between the sponsor and the advisor.

There are also some activities that we recommend Industrial Sponsor get involved in.

1. Attend the oral presentations. The oral presentations of the second quarter are a summary of the entire project, focusing more on the results and analysis of the implementation phase.
2. Host an oral presentation. An additional option is to have the student perform their oral presentation to the sponsor and staff at the sponsor's facility.
3. Learn more about the Engineering Technology Department. Increased understanding of the facilities, faculty, students, and capabilities of the ET department will allow the sponsor to better evaluate internal projects for their appropriateness for future Senior Projects. Any financial or in-kind donations to the ET department or PME program are always greatly appreciated. These types of donations are necessary for us to continue.