

Technical Design 290 Syllabus**Instructor: Ron Raty**

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[Email works best]

Office hours:

Monday thru Thursday, 11:00-12:30

[Best to make an appointment]

Course Description:

The Capstone course allows students to integrate knowledge from previous classes and demonstrate this in a collaborative, team based, multi-discipline project, in which they design and document a product, and test the design through manufacturing (or another appropriate process) and a final project report.

Students will be involved in the design of a product from concept to final documentation and manufacturing, and will have an opportunity to use the skills learned in other classes, and experience the entire process. Students and faculty will meet on a weekly basis to report and review the progress of their efforts, and to coordinate data and scheduling. At the end of the quarter, each student will provide a report describing the project, including their meeting notes, the role they played, and a description of what they learned and their observations that they can apply to their future careers in the technical trades.

Prerequisite:

Technical Design 217 Advanced Autocad or any 3D modeling CAD program,

Engl 235 Technical Writing

OLRM 220 or 225

Required Text and Materials:

The text for this course is:

No text**Course Requirements:**

This class is envisioned as a two phase process, although due to time constraints, that is sometimes difficult to achieve. To some extent, it will depend on student skills and intent.

Phase 1 - PROJECT DESIGN-the concept

Students will join a design team and select a product to design and document. The team will ideally be a combination of Technical Design students and Manufacturing students. Students will meet and decide what each will do, what each will achieve, individual responsibilities and leadership roles should be defined by the students. The Technical Design students will collaborate on the design, and document that design as for manufacturing of a prototype, relying on the knowledge of their Manufacturing team mates who will be over seeing the design to make sure it can actually be built. If a team has no preference regarding a project, faculty can assign them to an existing project.

Phase 2 - PRODUCT MANUFACTURING-the concept

This is the second phase of the manufacturing process. The design documents created in the previous phase will be interpreted by the Manufacturing students who will use them to actually manufacture the prototype. Technical Design students will observe the manufacturing process and will document any design changes required and answer questions about the intent of the documents. As with the Project Design, the team will meet weekly with faculty to review progress.

PROJECT DESIGN – your involvement

How you will be involved in the project is entirely up to you. Early on, you should define how you are going to contribute to the project and what you will contribute to the process. This is information you will need for your final report. It is the responsibility of the student to get involved. Employers like employees that define their own tasks and take responsibility for their goals, here is your chance to demonstrate that. Put those skills from your OLRM class to work. Get involved, don't sit back and wait to be told what to do. Unlike other classes, you are not being given an assignment. You are creating your assignment and coordinating that with the rest of the team.

FINAL REPORT

Students will each generate a final report to document their experience. The report will include, as a minimum, the following:

- A description of the desired product as initially envisioned. What were the design goals for the team, and your personal goals. 10%
- A description of the final product as it was produced, and how it evolved during the design and manufacturing process. 10%
- An evaluation of the manufactured product, did it meet all the design goals, and if not, why not. This would apply to the team goals as well as your own participation goals. 20%
- Weekly meeting minutes. What was discussed. What was decided. 20 %
- A description of how you were involved and how you contributed to the project. How did you initially envision your involvement, and how did that actually play out. Why? 10 %
- An evaluation of your own performance, what did you learn, what would you do differently next time. 10 %
- An evaluation of your team mates and how they performed. 10 %
- Report format and organization (remember technical writing?) 10%
- Any other pertinent information – extra points.

Please note, your grade is not based on the success of your product, but rather on the process used to create the product, and what you learned along the way. If something goes horribly wrong, it won't affect your grade if you can say why it went wrong and what to do in the future to avoid the wrongness.

Final Grade

Your final course grade will be based on a percentage system:

Project Design participation	50%	
Product Manufacturing participation/observation	10%	60% total participation
Final Report	40%	

The final grade recorded with the registrar is based on the percentage of available points you manage to earn during the course compared to the total possible. The total possible may vary depending on the progress of the quarter, but it is always 100%.

90%	4.0
80%	3.0+
70%	2.0+
60%	1.0+
57%	0.7+

Any percentage less than 57% is inadequate to receive class credit, and a grade of 0.0 will be recorded.

Withdrawal:

If you decide that you must withdraw from this class, you must do so in conformance with Olympic College policy. A discontinuance of attendance without an Official Withdrawal Form or prior arrangement with the Instructor is an automatic 0.0 (F) for the class. This is school policy and governs all classes conducted at Olympic College.

About the Instructor and this class

Ron Raty is a licensed architect with over 25 years of experience in architectural design and project management. He does not think of himself as a professional teacher. Because of this, his classes are managed in a manner similar to a design studio in a company, students should think of themselves as employees. They should arrive at work on time, they should complete their work in a timely manner, they should dress appropriately and act professionally, they should show respect for their fellow employees and their employer. As in the work place, failure to do these things can have consequences.

American Disabilities Act Statement

Any student who feels he/she may need an accommodation based on the impact of a disability should contact the office of Access Services. Access Services will inform the instructor of any special accommodations required.

Humanities and Student Services Building, Room 204

Phone: 360-475-7540 or 1-800-259-6718 ext. 7540

Fax: 360-475-7436

E-mail: AccessServices@olympic.edu

A drafting station at home:

If you would like to work on your drawings at home, you will need a computer powerful enough to run the Autocad software. Recommended computer specifications are available from the Autodesk website. You can also download student versions of the software for free from Autodesk to install on your home computer or a laptop computer. Refer to the Professor Online website for more information.

A word about equipment:

The computer lab has 20 CAD stations in it. In addition, there are CAD stations in the Science and Technology computer lab for your use when this CAD lab is not available. Do not modify classroom computers. Downloading data from the internet is prohibited without instructor permission. If repairs are needed to your computer, please notify the instructor. Do not attempt to repair the computer yourself. For those that prefer to use their lap top in class (it is configured and familiar, certainly an advantage), tables are available for your use.

Food and Drink:

In accordance with school policy, food and drinks are not allowed in the drafting room. During lab time, students may come and go as necessary to refresh themselves. Restrooms are down the hall towards the Welding lab.