

Professor: Corey Cole

Contact: O'Connell 415 / 530-898-5097 / ccole6@csuchico.edu

Course Description: Design methods applied to mechanical / mechatronic systems in group design projects. Project definition, planning, and management. Design for manufacture, engineering standards, cost considerations, budgets, and teamwork. Oral and written presentation of design results. The initial stage of the capstone design project is to be continued in MECH / MECA 440B. This is an approved Graduation Writing Assessment Requirement course; a grade of C- or better certifies writing proficiency for majors.

Prerequisites MECH 440A: GE Oral Communication (A1) requirement; GE Written Communication (A2) requirement; MECH 200; MECH 340 with a grade of C- or higher. Recommended: MECA 380, MECH 308, MECH 338.

Prerequisites MECA 440A: GE Oral Communication (A1) requirement; GE Written Communication (A2) requirement; EECE 315 (may be taken concurrently); EECE 344; MECH 200; MECH 340 with a grade of C- or higher. Recommended: MECA 380.

Course Objectives:

1. Learn and practice design methods applicable to mechanical / mechatronic systems as members of multidisciplinary teams
2. Acquire a skillset progressing from problem definition to conceptual design to detailed design
3. Exercise project planning, budgeting, and cost management
4. An ability to communicate effectively with a range of audiences
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Class Meetings: Section 01 – Lecture – T & TH – 11:00 to 11:50 – Langdon 300  
Section 02 – Supervision – TH – 5:00 to 7:50 – Langdon 300

Lecture: The lecture sessions will be used to present material related to the design process. Topics include an overview of the design process, customer requirements, specifications, conceptual design, project planning, cost estimating, budgets, documentation, etc.

- Supervision:** The supervision section is utilized for sponsor presentation night and for the three required student presentations (Project Proposal, Preliminary Design Review, and Final Design Review). The remaining Thursday night class meetings may be utilized for additional topics such as motor sizing, inventive design, CNC workshops, etc.
- Canvas** This class will make use of the Canvas course management system. Primary content will include lectures, handouts, and an on-line gradebook. Other content, such as non-urgent announcements, may be posted as needed throughout the term.
- Email:** In the event I need to contact members of the class or make urgent announcements regarding presentations, class cancellations, etc., it will be done via your WildcatMail email account. I do not plan to use this method of communication frequently, but I do expect that information sent this way will be received. University policy requires students to monitor their WildcatMail accounts. If you have another preferred email provider, you may set up automatic forwarding of your WildcatMail to that address. Details are available at [www.csuchico.edu/itss](http://www.csuchico.edu/itss).
- Academic Integrity:** Academic integrity is taken seriously at the University, in this College, and Department, and by your professor. Violations will be referred to student judicial affairs and can result in penalties ranging from failure of the course to long term suspension from the university.
- Contribution:** All project work in this class is team based, but students will receive individual grades for “Contribution to the Project.” The grade is determined by the faculty advisor and is based on peer evaluations, advisor meetings, general observations, and the content of the student’s design log book.
- Kindergarten Points:** Professionalism and organizational behavior are topics that are intertwined throughout this course. As senior students, professional behavior, similar to that expected in the workplace, is expected here. That includes following instructions, submitting documents on time, in the correct format, and to the correct place. It also includes attending, and being on time for, all class meetings, events, and presentations. Failure to exhibit professional behavior will result in the assignment of *Kindergarten Points* which correspond to a deduction in the student’s course contribution grade. These points are so named because everything you need to know to avoid them, you learned in Kindergarten.

Americans with Disabilities Act: If you need course adaptations or accommodations because of a disability or chronic illness, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Please also contact Accessibility Resource Center (ARC) as they are the designated department responsible for approving and coordinating reasonable accommodations and services for students with disabilities. ARC will help you understand your rights and responsibilities under the Americans with Disabilities Act and provide you further assistance with requesting and arranging accommodations. ARC is located at Student Services Center 170 and may be reached at 530-898-5959 or arcdept@csuchico.edu.

Grade Scheme:

A	A-	B+	B	B-	C+	C	C-	D+	D	F
>= 3.70	3.69 to 3.50	3.49 to 3.20	3.19 to 2.80	2.79 to 2.50	2.49 to 2.20	2.19 to 1.80	1.79 to 1.50	1.49 to 1.20	1.19 to 0.50	< 0.49

Kindergarten Points: Each Kindergarten point assigned corresponds to a 1/50 grade point deduction in a student’s contribution grade.

Milestones:	Thursday 8/31	Sponsor Presentations
	Tuesday 9/5	Projects and teams assigned
	Thursday 9/21	Project Proposal Presentations
	Thursday 10/19	Preliminary Design Review Presentations
	Thursday 12/7	Final Design Review Presentations
	Thursday 12/14	Final Design Reports Due