

Professor: Greg Watkins, Ph.D., PE

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Course Description: Implementation of the capstone design project from MECH/MECA 440A including fabrication, testing, and evaluation of a working prototype. Impact of engineering solutions in global, economic, environmental and societal contexts. Ethical and professional responsibilities in engineering including continuing self-education and career development. Must be taken the semester immediately following MECH/MECA 440A.

Prerequisites: MECH 440AW. Recommended: MECA 380, MECH 308, MECH 338.

MECH 440B:

MECA 440AW and EECE 315. Recommended: MECA 380.

Course Objectives:

1. Learning and practicing prototyping of engineering designs
2. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
3. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments
4. An understanding of the impact of engineering solutions in global, economic, environmental, and societal contexts

Class Meetings: Section 01 – Lecture – Tuesday 5:00 to 6:50 – Langdon 300
Section 02 – Supplement – Tuesday 7:00 to 8:50 – Langdon 300

Blackboard Learn: This course will make use of the Blackboard Learn course management system. All PowerPoint lectures, handouts, homework solutions, grades, announcements, etc. will be available on the course Blackboard page.

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/its.

Office Hours: Tuesday 2:00 to 4:00 PM
Thursday 2:00 to 4:00 PM

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 <i>Kindergarten Points</i> 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.
Senior Exit Survey:	Graduating seniors (defined as students enrolled in MECH/MECA 440B) are required to complete an exit survey. Data from the survey are used in program improvement plans and are an integral part of our accreditation process. To encourage participation, students must complete the survey in order to receive a grade in 440B. Students that have not completed the survey by the deadline will receive an “I” (incomplete) for 440B and will not graduate.
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 .
Covid:	The CSU requires students to be fully vaccinated and boosted against COVID-19 by February 28, 2022, unless you have an approved exemption. Currently, Chico State is requiring everyone on campus to wear an approved face covering in all indoor campus spaces. Accordingly, all students are required to wear an appropriate face mask covering the nose and mouth in order to participate in this course. Policies and requirements regarding COVID-19 are subject to change pursuant to campus, local, state and/or federal guidelines. Please note that dishonesty relating to the vaccination policy and/or your failure to comply with any other COVID-19 related safety policy or mandate, including the face covering requirement, may result in disciplinary action against you through the office of Student Conduct, Rights and Responsibilities, which can include suspension or expulsion from the California State University system. Individuals unable to wear a face covering due to a medical condition should contact the Accessibility Resource Center by phone at (530) 898-5959 or by email at arcdept@csuchico.edu .

Grading:	Topic	%	T/I	Comment
	Individual Test Procedure Assignment	10%	I	Content, organization, style, and format
	Testing	10%	T	Overall success of testing, data collection, reporting, etc...
	Final Project Presentation	15%	I	Content, organization, and presentation technique
	Poster	5%	T	Appearance, clarity, completeness, etc...
	Final Design Report	20%	T	Content, organization, style, and format
	Contribution to Project	20%	I	Peer review & logbooks; evaluated by faculty advisor
	Overall Project Quality	20%	T	Quality of solution relative to difficulty of project; evaluated by faculty advisor.

Note: If warranted, the course instructor, with input from the faculty advisor, may issue a failing grade regardless of a student’s computed final average.

Grade Scale: All grades are assigned in this class as grade points:
 A = 4 / B = 3 / C = 2 / D = 1 / F = 0

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

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