

## MAE 435

### Project Design and Management II SPRING 2024

#### Professor Contact Information

Name and Office	Dr. Bawab (Kaufman 241L)
Office Hours	Monday 1:00-3:00pm, or By appointment
Email Addresses	<a href="mailto:sbawab@odu.edu">sbawab@odu.edu</a> ,

#### Contact Policy

You may call or e-mail me at any time. You can schedule an appointment if office hours are not convenient.

#### TA's Contact Information

Name	Kathleen Mahler, Theo Osuniga
Office Hours	By email or appointment
Office	KH 127
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#### Optional Text Book

The Mechanical Design Process by D. Ullman (Optional)

#### Course Description

Course Number	MAE 435
Pre- or Co-requisites	Prerequisite: MAE 433 & MAE 434W
Lecture Hours	M, W 3:00-4:15PM
Location	KH 225
Credits	3
Official Description	Conceptual design ideas are expanded into detailed design ideas. Product realization is applied to complete hardware. Course covers Gantt charts, preliminary design, evaluation and trading matrices, detailed design and analysis, engineering standards, oral and technical reporting including cost analysis. Ethics and patent issues are also included

#### Course Objectives

1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
3. An ability to communicate effectively with a range of audiences.
4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
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 develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

# Instructional Approach

## CLASS ATTENDANCE

Class meetings will begin on the scheduled class date. The instructor and/or teaching assistant (TA) will be available to pass on information relative to the class as a whole. Important announcements will be posted online to the ME435 website. You should check it daily. Both the advisors and teaching assistants will be available for consultations on projects, as required. For proper communication within groups to occur, it is imperative that attendance requirements are met and minutes are taken at all meetings.

## GRADING Criteria

2% of total grade will be deducted for each missing class. A class is considered "missing" if there was no strong evidence for extraordinary reason to not attend. Medical reasons with proper documents or my pre-approval will not penalize your attendance. An incomplete grade will be given if a student has more than 5 absences.

• <b>Group Status Reports, Web Page, Communication File</b>	11%
• <b>Oral Communication</b>	
○ Midterm Presentation	10%
○ Final Presentation	10%
• <b>Written Communication</b>	
○ Midterm Report	5%
○ Final Report	15%
• <b>Project Achievements</b>	
○ Group achievement	20%
○ Individual achievement	15%
• <b>Input from faculty advisor</b>	10%
• <b>CATME</b>	2%
• <b>Personal Reflection</b>	2%

Each week, an individual contribution report will be entered into blackboard. This, combined with input from group members (thought evaluations given in CATME.org), the TAs and faculty advisors, the individual contribution to the group work will be determined for each grading area.

# Requirements for Projects

## GROUP STATUS REPORTS

Status reports are formed of two parts: written and oral. These reports are due from each group according to the class schedule. It is the manager's responsibility to collect and summarize the work that each member has done during the previous two weeks. For example, the manager may require that each of the project members submit a half page written summary of the status of his or her work. The project manager, or whoever is delegated to do so, summarizes these papers into one typed status report, accompanied with an updated Gantt chart. The oral report is typically about 5 minutes and involves at least one member from each group to present to the class using a PowerPoint format.

## MANAGEMENT AND ORGANIZATION

The organization of this class is as follows: Dr. Bawab will be the primary instructor for the group projects assisted by Kathleen Mahler TA, who is the principle facilitator between the faculty advisors and the design teams and Theo Osuniga TA, who will be the primary facilitator with course logistics. The instructor's job is to organize the projects and evaluate the performance of the groups. A faculty advisor heads each design group. The faculty advisor acts as the technical monitor guiding the group members. **10% of your grade**

**will be based on the evaluation of your faculty advisor.** Each group will have a student manager who is the main organizer and leader of the project. The student manager is to be selected by the course instructor after consultation with the group members.

### **PROJECT MANAGER RESPONSIBILITIES**

Each project manager is required to conduct weekly status meetings with his or her group, as well as regular meetings with the project's faculty advisor. Each group must submit an organizational chart and a milestone chart for the project. The organizational chart must state who the project manager is and each member's duties. These elements are due no later than the second week of the semester. The project manager will be required to delegate duties to the rest of the project members. For instance, each final report will include an introduction to the project design goals. Someone will have to write the introduction even though they worked in a completely different area during the semester. The project manager must make these assignments. The manager must also determine the format of the project's mid-term presentation. Project managers will be the communications link between the instructor, the TA, and the rest of the group. This is in reference to technical matters only. Finally, the project managers will become the prime motivators for the group.

### **MID-TERM PRESENTATIONS**

Each team will be given approximately 10-15 minutes to present an oral status review of their respective projects. The exact details of the presentation will be left up to the project managers. At the time of the oral presentation, each group will be required to submit a written report of the status of their projects. The written and oral reports are expected to be given the same effort and professionalism as would be given on the job. Class attendance is mandatory for all students of ALL presentation days.

### **FINAL PRESENTATIONS**

Each project will be given approximately 15 minutes to present their group work, note that every student must participate, giving a presentation detailing some aspect of the work that has been accomplished during the semester. Grades are given to the group as a whole; thus it is important that everyone is well prepared for their part of their group's presentation. The presentation dates and times will be announced later; however, attendance on all days will be mandatory.

### **SYMPOSIUM**

All projects must submit posters and a demonstration model of their project if applicable. The model can range from actual hardware through scale models. Demonstration devices are key elements of a successful design.

### **COMMUNICATIONS REPORTING AND WEB SITE**

Each project will maintain a communication file. This file contains messages to other groups, the instructor, and any other technical contacts such as AMF Bowling engineers. In addition, minutes taken during meetings are stored in this file. Log all phone conversations and computer communications that are related. All memos will be kept in this file as well. This file will be interactively posted on your group's web site. Your team will also maintain a Gantt chart, which will be updated weekly on your web site.

### **MINUTES**

Minutes are to be recorded by each group during the occurrence of any meetings. These minutes include attendees, time and date of meeting, and major item discussed.

### **INTERGRATION**

It is highly encouraged that team members in this class include students from other ranks such as freshmen, sophomores, and juniors.

### **HARDWARE**

All hardware and tools procured by the department or college funds must be returned to the department or college for future student use.

## **Course Disclaimer**

Every attempt is made to provide a syllabus that is complete and that provides an accurate overview of the course. However, circumstances and events may make it necessary for the instructor to modify the syllabus during the semester. This may depend, in part, on the progress, needs, and experiences of the students.

## **Class Policies (University Policies and Specific Class Policies)**

The following standards are intended to define acceptable classroom behavior that preserves academic integrity and ensures that students have optimum environmental conditions for effective learning.

1. Students must turn off cell phones and pagers during class or have them set to vibrate mode.
2. Classes are expected to begin on time, and students will respect the time boundaries established by the professor. If classroom doors are locked, students may not knock or seek entrance in other ways.
3. Students should notify instructors in advance when a class will be missed. In the event of an emergency that causes a class to be missed, instructors must be notified as soon as possible.
4. Students must not engage in extraneous conversations during classes. Such acts are considered to be violations of the Code of Student Conduct.
5. Students will activate their Old Dominion email accounts and check them before each class. If the student chooses to have his/her messages forwarded to another account, it is the student's responsibility to take the necessary steps to have them forwarded.
6. Consumption of food and drink during class is prohibited, except when the professor has specifically approved of such acts.
7. Offensive language, gestures and the like are disrespectful and disruptive to the teaching-learning process. [[http://studentservices.odu.edu/osja/ccp\\_pamphlet.pdf](http://studentservices.odu.edu/osja/ccp_pamphlet.pdf)]

## **Honor Pledge**

*"I pledge to support the honor system of Old Dominion University. I will refrain from any form of academic dishonesty or deception, such as cheating or plagiarism. I am aware that as a member of the academic community, it is my responsibility to turn in all suspected violators of the honor system. I will report to Honor Council hearings if summoned."* By attending Old Dominion University you have accepted the responsibility to abide by this code. This is an institutional policy approved by the Board of Visitors.

## **Withdrawal**

A syllabus constitutes an agreement between the student and the course instructor about course requirements. Participation in this course indicates your acceptance of its teaching focus, requirements, and policies. Please review the syllabus and the course requirements as soon as possible. If you believe that the nature of this course does not meet your interests, needs or expectations, if you are not prepared for the amount of work involved - or if you anticipate that the class meetings, assignment deadlines or abiding by the course policies will constitute an unacceptable hardship for you - you should drop the class by the drop/add deadline, which is located in the ODU Schedule of Classes. For more information, please visit the Office of the University Registrar.