THE PENNSYLVANIA STATE UNIVERSITY
MONT ALTO CAMPUS
Fall 2019

EDSGN 100S – Introduction to Engineering Design

Course Title: EDSGN 100S "Introduction to Engineering Design"
Section: 001
Credits: 3
Class Meeting: MWF 10:10 – 12:00, Room 1 Bookstore Building (Unless Otherwise Noted)
Text and Material: There is no textbook for this course. All necessary materials will be posted on Canvas. For the programming section we will use Matlab, and for the CAD-section we will use SolidWorks. Both of these programs are installed on all computer lab computers on campus and can also be accessed remotely via Webapps (https://webapps.psu.edu/)

Instructor: Dr. Jacob Moore, Associate Professor of Engineering
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Phone: (717) 749-6209
Office Location: 7 Bookstore Building
Office Hours: Thursday 9-11AM, Fridays 12-2, or by appointment

Course Goals:
This course is designed to serve as your introduction to a career in engineering, as well as your introduction to engineering the engineering program at PSU. The course will cover a variety of topics including engineering design, modeling, analysis, and communication through a number of hands-on learning experiences.

Course Learning Objectives:
Upon successfully completing this course students will be able to…

- Understand the various career paths available to engineers, have knowledge of common skills expected of most engineering practitioners, and have knowledge of the resources available to develop these skills at Penn State Mont Alto and through the Penn State system.
- Apply the engineering design process in a team environment to develop working designs and the accompanying design documentation.
- Create and read freehand sketches and CAD models that represent basic mechanical designs.
- Use hardware and software tools to collect and analyze experimental data, and use software tools to model basic physical systems.
- Effectively communicate technical material to both technical and non-technical audiences.
- Effectively communicate their skills and experiences to potential employers.

Course Policies:

Attendance:

- Students are expected to attend all classes except in cases of extenuating circumstances. Attendance may be recorded to report to the registrar's office; however, it will not count as part of your course grade.
- Class will begin promptly at 10:10 and students are expected to be present and ready to begin class at that time.
- Students should contact the instructor before class for any pre-scheduled absences, or in the case of an illness or another unexpected reason for absence, the student should contact the instructor as soon as possible. In general, the earlier you contact me the better.
- It is the responsibility of the student to contact the instructor in the case of any missed classes or significant tardiness to determine what activities and assignments were missed. Not all assignments may be made up in the case of non-university sanctioned excuses for absence.

Assignments and Reports:

- The assignments for this course will consist of a variety of computer files, written reports, and oral presentations. General rubrics detailing how each of these assignments will be evaluated will be provided with each assignment as it introduced to the class.
- All assignments, rubrics and dues dates will be documented on Canvas (https://lmstools.ais.psu.edu/login.html). Though assignments may be introduced in class, students are expected to consult the documentation on Canvas for more complete guidance for the assignments.
- All assignments are due at the beginning of class on the listed due date. Physical assignments may be dropped off with the instructor in class while digital materials will be collected through Canvas. Late assignments will not be accepted without prior consent of the instructor.
- Students are encouraged, and even sometimes required to work in groups, however, students are expected to complete and submit their own original work.

Lab Procedures:

- This class will involve work in both the computer lab and the engineering lab. Use of these spaces requires that you follow the rules of these spaces and guidance of the instructor. If you do not follow the rules of the spaces you may be asked to leave those spaces.
- There is no food or drink allowed in the computer lab or in the engineering lab. This is to protect both you and the equipment in these spaces.
- Upon completion of your work, you are expected to clean up your space in both the computer lab and engineering lab. Ensure that all trash is thrown away and that all equipment is stowed away properly and clean.
- To use the engineering lab, students must wear closed toe shoes and they must remove all jewelry, scarves, or other loose articles of clothing that could get tangled in the machinery. Pants or shorts knee length or longer are also recommended.
- Students must wear protective eye wear while using any equipment in the engineering lab.

- Students should not use any piece of equipment in the engineering lab unless if they have been instructed on how to use that equipment.

General Conduct:
- Students are expected to act professionally during all class related activities and meetings. Inappropriate behavior or language during any class activities will not be tolerated.

Services for Students with Disabilities

In order to receive consideration for reasonable accommodations, you must contact the Disability Coordinator, Kendra Sites, located on the first floor of the General Studies Building in the Student Success Center. She can be reached at 749-6045 or kmw24@psu.edu, Students must participate in an intake interview and provide documentation: http://equity.psu.edu/sdr/guidelines. If the documentation supports your request for reasonable accommodations, the disability services office will provide you with an accommodation letter. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. You must follow this process for every semester that you request accommodations.

Counseling and Psychological Services:

Many students at Penn State face personal challenges or have psychological needs that may interfere with their academic progress, social development, or emotional wellbeing. The university offers a variety of confidential services to help you through difficult times, including individual and group counseling, crisis intervention, consultations, online chats, and mental health screenings. These services are provided by staff who welcome all students and embrace a philosophy respectful of clients' cultural and religious backgrounds, and sensitive to differences in race, ability, gender identity and sexual orientation.

Counseling Services
209 Conklin Hall
Phone: 717-749-6094

Penn State Crisis Line (24 hours/7 days/week): 877-229-6400
Crisis Text Line (24 hours/7 days/week): Text LIONS to 741741

Academic Support Center:
The Academic Support Center provides academic and skill building support for all students. If you are having difficulty in any of your classes, or with academic skills, contact the Academic Support Center.
E-mail: ASC-Helps@psu.edu
Call: (717) 749-6046
Schedule a Tutoring Appointment: http://www.psu.mywconline.com
Stop by: 1st floor of the General Studies Building

Academic Integrity:

All students are expected to act with civility, personal integrity; respect other students' dignity, rights and property; and help create and maintain an environment in which all can succeed through the fruits of their own efforts. An environment of academic integrity is requisite to respect for self and others and a civil community.

Academic integrity includes a commitment to not engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty include cheating or copying, plagiarizing, submitting another persons' work as one's own, using Internet sources without citation, fabricating field data or citations, "ghosting" (taking or having another student take an exam), stealing examinations, tampering with the academic work of another student, facilitating other students' acts of academic dishonesty, etc.

Students charged with a breach of academic integrity will receive due process and, if the charge is found valid, academic sanctions may range, depending on the severity of the offense, from F for the assignment to F for the course.

The University's statement on academic integrity, from which the above statement is drawn, is available at https://undergrad.psu.edu/aappm/G-9-academic-integrity.html

Grading Policy:

There are no exams in this course. Your grade will depend on Homework assignments/lab reports and the Final design project. Grades will be distributed as follows:

- All Homeworks and Lab Assignments 60%
- Design Project 40%

Final letter grade will be assigned as follows:

93 - 100	A
90 – 92.99	A-
87 – 89.99	B+
83 – 86.99	B
80 – 82.99	B-
77 – 79.99	C+
70 – 76.99	C
60 – 69.99	D
below 60	F

Tentative Schedule:

Week of	Topic	Assignments Due
8/26	M- What is Engineering? and Course Introduction W- Engineering at Penn State F – Technology and Resources at Penn State	
9/2	M - **No Class, Labor Day** W – Estimation Assignment and Library Resources F – Estimation Assignment Work Day	W – 10 Years Assignment
9/9	M – Estimation Assignment Work Day W – Engineering Lab Safety Training (Engineering Lab) F – MATLAB Basics	W – Estimation Assignment Report
9/16	M – MATLAB Loops and If Statements W – MATLAB Graphing and Functions F – Matlab Project	
9/23	M – Matlab Project Work Day W – Matlab Project Work Day F – Freehand Sketching	F - Matlab Project Due
9/30	M – CAD W – CAD F – CAD	
10/7	M – The Design Process and Project Introduction W – Problem Definition F – Quincy Village Visit	
10/14	M – CAD (Visitor: Bill Kick) W – Brainstorming and Conceptual Design F – Brainstorming and Conceptual Design	M – Problem Definition Document
10/21	M – CAD W – CAD F – Design Selection	M – Brainstorming Inventory
10/28	M – Design Project Work Day W – Product Manufacturing F – Design Project Work Day	M – CAD Drawings Due
11/4	M – Digital Manufacturing Lab W – Digital Manufacturing Lab (Visitor: Troy Young) F – Digital Manufacturing Lab (Meet in Engineering Lab)	M – Design Selection and Product Plan
11/11	M – Engineering Lab Work Day W – Systems Thinking and Virtual Product Dissection (Visitor: Jeff High) F – Systems Thinking and Virtual Product Dissection	
11/18	M – Engineering Lab Work Day W – Engineering Lab Work Day F – Prototype Fair (at Quincy Village)	M - Digital Manufacturing Assignment W – Product Dissection Report F - Prototype Due
11/25	**No class, Thanksgiving Break**	
12/2	M – Data Analysis Lab W – Data Analysis Lab F - Engineering Lab Work Day	F –Data Analysis Lab
12/9	M – Engineering Ethics Discussion W – Final Design Presentations F – **No Class** (Bring Reports to my Office)	W – Design Presentation/Final Product F – Final Design Project Report
12/16	**Finals Week**	