Class:
100% Online; All class materials are posted on Canvas

Instructor:
Dr. John Heathcote
Office:
FEM-1B (in the math study center)
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Virtual Office Hours:
M   11:00 am-12:50 pm
W   9:00-9:50 am
ThF   11:00-11:50 am
These are my official office hours, but you can find me at many other times!
Send me an email or a Canvas message to set up a Zoom meeting!

During virtual office hours, I will be monitoring my Canvas messages closely. Send me a message and I will quickly answer your question or we can set up an instant Zoom meeting.

Course Communication Policy:
My instructions to you each week will be posted in a weekly module. Be sure to read through all instructions posted in the module so that you fully understand what you need to complete each week. (Do not simply look at assignments posted in your course calendar. You will miss some important instructions if you do that.)

I will send Canvas messages regularly to keep you updated on the progression of the class and any important announcements. You will need to read these to stay informed about the class.
I will be available for virtual office hours as shown above. During these times, you can expect a quick response from a Canvas message or we can set up a Zoom meeting.

Another important method of communication will be the feedback that I provide when I grade your assignments. Whenever you have a new grade posted, read any comments that I have posted regarding your work. This feedback will be very important for you to know what you have done well and what needs improvement.

Please contact me with any questions or concerns you have about this class. Contact me through a Canvas message. I will reply within 24 hours on weekdays. I may be able to respond on weekends as well, but it is not guaranteed. (If I do not respond within 24 hours, please resend your message.)

I also encourage you to communicate with your classmates. There is a student Question and Answer discussion board that is open for any questions you want to discuss with your classmates.

Welcome to Engineering Graphics!

I would like to welcome you to ENGR 2, in which you will learn to use the tools of computer-aided drafting (CAD) and solid modeling in order to describe designs of parts and assemblies. This is a fun class from which you will emerge with very marketable skills!

I look forward to working with you in learning this material. If you stay on top of completing your assigned drawings, you will enjoy yourself and learn quite a bit!

Prerequisite: Math 4A
Advisories: English 125 and 126

Required Text: Introduction to Solid Modeling using SolidWorks 2020, William Howard and Joseph Musto, McGraw Hill.

Software that will be used in this course:
AutoCAD is a free download for students, available at
https://www.autodesk.com/education/edu-software/overview?sorting=featured&page=1
(Downloads are available for both Windows and Mac.)

SolidWorks is also a free download. Unfortunately, it is only available for Windows computers.

(There are ways of running Windows programs on a Mac. However, these are rather involved. You can search for some ideas if you want to try this. Otherwise, I would recommend working with the college's IT department to check out a laptop. To create an appointment call the college at (559) 638-0300 Monday - Friday 8:00am-5:00pm and have your college ID number ready.)

 To download the SolidWorks software:
Go to: www.solidworks.com/SDK

When asked if you have a Serial Number, select "No". Then, enter **9SDK2019** when asked on the form for a SDK-ID.

Catalog Description: This course covers the principles of engineering drawings in visually communicating engineering designs and an introduction to computer-aided design (CAD). Topics include the development of visualization skills, orthographic projections, mechanical dimensioning and tolerancing practices, and the engineering design process. Assignments develop sketching and 2-D and 3-D CAD skills. The use of CAD software is an integral part of the course.

Grading: Lab Assignments: 60%
                      Skills Quizzes: 20%
                      Assessments/ Projects: 20%

Grading Scale: A: 90-100%
                      B: 80-89%
                      C: 70-79%
                      D: 60-69%
                      F: <60%

Lab Assignments: Each week, students must perform drawing activities to learn and practice concepts and techniques in engineering graphics. These drawings will be submitted each week on Canvas and reviewed by the instructor. Assignments should be turned in on time in order to get full credit.

Lab Grades and Corrections: Every lab drawing/activity will be graded based upon accuracy and meeting the deadline. After submitting your file, it will be graded and comments will be returned to you. You then have the opportunity to make corrections to your work in order to improve your grade. As long as you submit a fair first attempt before the deadline, you can reach full credit after making corrections. **However, if you do not turn in your file on-time, you will not be able to receive full credit on the assignment.** Corrections are due two weeks after the original due date of each lab.

Skills Quizzes: Four skills quizzes will be given during the term. For these, you will answer questions and create drawing files in timed Canvas quizzes. These will involve computer skills and understanding of engineering graphics concepts.

Assessments and Projects: Assessments and projects will be similar to lab assignments except that corrections will not be allowed. The drawings must be performed accurately the first time that they are submitted. These assignments will be either review assignments to test understanding of previous content or applied projects to test students' ability to apply these ideas to practical work.

Final Project: Your final project will be a SolidWorks assembly of your own choice. This will be presented to the class during Finals Week.

Cheating and Plagiarism: <u>All work is to be done by each individual student</u>. Any act involving submission of work that is not your own (this could involve copying files from another student or any other act of deception) will result in penalties to all students involved. These penalties may include a failing grade on that assignment, failing grade for the course, and/or referral to the Dean of Students.

This is especially true in an online course. Please do not fall to the temptation of trying to cheat the system and submit someone else's work as your own.

Likewise, if another student asks you for help on a lab assignment, you can give them assistance. However, do not send them your drawing file. If the other student submits your file, you will also be in trouble.

You will be asked to agree to an honor statement stating that you are submitting your own work. Please consider your own personal code of ethics when approaching this class.

Accommodations for Students with Disabilities:
If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

Attendance: Class attendance will be recorded by your completion of weekly modules. If you do not complete the work for two modules, you may be dropped. Course withdrawals, however, are ultimately the responsibility of the student.

Add Date: Friday, January 29   Last day to add a course
Drop Date: Friday, March 12   Last day to drop this course
Holidays: Monday, January 18   Martin Luther King Jr. Day
                  Friday, February 12-Monday, February 15   Presidents' Day Holidays
                  Monday-Friday, March 29 – April 2   Spring Break

COURSE OUTCOMES:

Upon completion of this course, students will be able to:

A. graphically represent three-dimensional objects using accepted engineering practices.

B. communicate graphically using computer tools and freehand sketching.

C. design a solution to an engineering problem, using CAD and solid modeling software.

COURSE OBJECTIVES:

In the process of completing this course, students will:

A. use computer-drawing software to geometrically construct two-dimensional shapes.

B. use computer-drawing software to construct multi-view orthographic projections of three-
    dimensional objects.

C. create auxiliary and sectional views of objects.

D. use proper dimensioning and tolerance techniques to fully define an object.

E. demonstrate proficiency at freehand technical sketching.

F. use solid modeling software to represent a three-dimensional object.

G. design solutions to engineering challenges by use of engineering drawings.

H. apply the principles of orthographic projection, isometrics, and descriptive geometry to the solution of engineering problems.

Course Schedule (Subject to change):

Week #:	Topics:
1	Introduction to SolidWorks
2	SolidWorks Part modeling
3	Additional Part Modeling Techniques
4	Additional Part Modeling Techniques; Quiz #1 / Project #1
5	2D CAD Constructions, Architects' scales
6	More 2D Constructions, Engineers', Metric scales
7	Multi-view Drawings
8	3-D pictorials and Visualization skills
9	More Multi-view Drawings and Review
10	Quiz #2 / Project #2
11	SW Drawings and Section Views
12	Auxiliary Views
13	Tolerances / Clearance and Interference Fits
14	Quiz #3, SW Assemblies
15	Subassemblies, gear assemblies
16	Advanced Assemblies, Assembly Drawings
17	Project Work / Quiz #4
18	Project Presentations