SOUTH PLAINS COLLEGE
MATHEMATICS, ENGINEERING & COMPUTER SCIENCE

ENGR1304-002 – Engineering Graphics

Room: TA209A, Technical Arts Building
T/R: Lecture: 8:00 AM – 8:50 AM
Lab: 9:00 AM – 10:40 AM

Contact

Instructor: Mr. Vargas
Email: evargas@southplainscollege.edu
Phone: (806) 716-4673

Office Hours

M/W: 8:00 AM – 10:45 AM
Levelland Campus, **M101**

F: 8:00 AM – 10:30 AM
Lubbock Downtown Center, **B032**

Description

Introduction to computer-aided drafting using CAD software and sketching to generate two- and three-dimensional drawings based on the conventions of engineering graphical communication; topics include spatial relationships, multi-view projections and sectioning, dimensioning, graphical presentation of data, and fundamentals of computer graphics.

Supplies

1. Pencils, erasers, and graphing paper
2. USB Flash Drive **– Required**
3. Pack of 6 different colored pens/pencils **– Required**
4. Calipers (measuring device)

Grading

A: 90-100	**Pass – Excellent Performance**
B: 80-89	**Pass – Good Performance**
C: 70-79	**Pass – Satisfactory Performance**
D: 60-69	**Depends – Less than Satisfactory**
F: 0-59	**Fail – Unsatisfactory Performance**

Weights

Daily Assignments	40%
Midterm Project	30%
Final Project	30%
Total	**100%**

Daily Assignments

Each student must complete daily assignments that utilize specific functions and topics from the course calendar either by hand or via AutoCAD.

1. Hand drawings will be drawn on graphing paper and turned into the instructor.
2. AutoCAD assignments will be drawn on the local machines, printed out, and turned in to the instructor.
3. No online submissions.
4. All assignments and instructions will be listed on Blackboard.
5. Grading will be based on neatness, presentation, and the ability to follow directions from the Rubric
6. Late submissions will be penalized or not accepted

Projects

Projects are a representation of a student's ability to apply their knowledge in hand and computer drawings. There will be an individual and group project.

1. **Midterm Project** (individual). Students are given a physical object to draft by hand and AutoCAD.
2. **Final Project** (group). Students work together to create a working assembly drawing on AutoCAD by building a model that has an engineering or architectural purpose.

More details will be given during each Project.

Class Policies and Information

Disclaimer: The instructor reserves the right to alter any class policies/dates as deemed necessary by the instructor. If there are any changes, they will be announced over Blackboard and via your SPC email.

Attendance Policy

The student is expected to **submit at least eighty percent (80%)** of the class assignments to have the best chance of success. If the student fails to meet these minimum requirements, the instructor can remove the student from the class.

Lecture and Lab Policy

The course is divided into Lecture time (**8:00 AM – 8:50 AM**) and Lab time (**9:00 AM – 11:40 AM**). During Lecture, the instructor will provide and review PowerPoint notes along with Daily Assignment demonstrations. During this time, the instructor will assist students with completing all Daily Assignments.

Lab time will be devoted to personal student learning with little instructional help. The course requires hands-on learning experience with each student completing assignments at different paces. Students are encouraged to explore functionalities related to AutoCAD and work together during this time.

Computer Class Policy

No food allowed. Drinks must have a threaded cap to be allowed and must be put away when not in use. Music devices during lab assignment times are accepted. Each workstation must be cleaned and straightened before leaving the area.

Office Hours

Office hours will be held at the listed times. Please come prepared with questions and examples of the attempted problem(s)

South Plains College Email Policy

The instructor will respond to all emails **within 36 hours** during the week day. Emails sent after 5:00 PM on Fridays may not be answered until the following Monday morning.

Drop/Withdrawal

Students should submit a Student Initiated Drop Form online to drop from the course. If the student wishes to withdraw from this or more courses, the student needs to contact the Advising Office.

Wellness Statement

If you are experiencing any of the following symptoms, please do not attend class and either seek medical attention or get tested for COVID-19.:

- Cough, shortness of breath, difficulty breathing
- Fever or chills
- Muscles or body aches
- Vomiting or diarrhea
- New loss of taste and smell

Please also notify DeEtte Edens, BSN, RN, Associate Director of Health & Wellness, at 806-716-2376 or dedens@southplainscollege.edu

ENGR1304.002 Calendar		
Week		**Lesson**
1	**Jan 16**	Drawing and Modify Commands
	Jan 18	Layer Properties
2	**Jan 23**	Creating the Title Block
	Jan 25	Creating Dimensions and Center Lines
3	**Jan 30**	Orthographic Projections: Front, Right, and Top Side Views
	Feb 1	Creating Hidden Lines
4	**Feb 6**	Isometric Projection
	Feb 8	
5	**Feb 13**	Section Views: Full, Half, and Offset Sections
	Feb 15	
6	**Feb 20**	Auxiliary Views: Partial and Full Views
	Feb 22	
7	**Feb 27**	Hand Drawings
	Feb 29	**February 29: Midterm Project Assigned**
8	**Mar 5**	**Midterm Project Due March 7 @ End of Class**
	Mar 7	
		March 11-15: Spring Break – All campuses closed.
9	**Mar 19**	Introduction to 3D Modeling – Drawing and Modify Commands
	Mar 21	Projecting Orthographic Views on the Layout View
10	**Mar 26**	Applying Center Lines and Dimensions to 3D Models
	Mar 28	
11	**Apr 2**	3D Section Views
	Apr 4	
12	**Apr 9**	Creating Assembly Drawings
	Apr 11	Creating Bill of Materials
13	**Apr 16**	**April 16: Final Project Assigned**
	Apr 18	
14	**Apr 23**	**April 25: Last day to drop Spring courses**
	Apr 25	
15	**Apr 30**	**Final Project Due May 7 @ 10:00 AM**
	May 2	
16	**May 7**	

South Plains College
Common Course Syllabus: ENGR 1304
Revised December 2022

Department: Mathematics, Engineering, and Computer Science

Discipline: Engineering

Course Number: ENGR 1304

Course Title: Engineering Graphics I

Available Formats: conventional and hybrid

Campuses: Levelland, Lubbock Center, and Dual Credit

Course Description: Introduction to computer-aided drafting using CAD software and sketching to generate two- and three-dimensional drawings based on the conventions of engineering graphical communication; topics include spatial relationships, multi-view projections and sectioning, dimensioning, graphical presentation of data, and fundamentals of computer graphics.

Prerequisite: Successful completion with a grade of 'C' or better in MATH 1314

Credit: 3 **Lecture:** 2 **Lab:** 4

Textbook:

Supplies: Please see the instructor's course information sheet for specific supplies.

This course partially satisfies a Core Curriculum Requirement: None

Core Curriculum Objectives addressed:

- **Communications skills**—to include effective written, oral and visual communication
- **Critical thinking skills**—to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- **Empirical and quantitative competency skills**—to manipulate and analyze numerical data or observable facts resulting in informed conclusions

Student Learning Outcomes: Upon completion of this course and receiving a passing grade, the student will be able to:

1. Discuss the basic steps in the design process.
2. Demonstrate proficiency in freehand sketching.
3. Demonstrated proficiency in geometric modeling and computer aided drafting and design (CADD).
4. Communicate design solutions through sketching and computer graphics software using standard graphical representation methods.
5. Solve problems using graphical geometry, projection theory, visualization methods, pictorial sketching, and geometric (solid) modeling techniques.
6. Demonstrate proper documentation and data reporting practices.
7. Complete a project involving creation of 3D rapid prototype models.
8. Function as part of a design team as a team leader and as a team member.

Student Learning Outcomes Assessment: A pre- and post-test questions will be used to determine the extent of improvement that the students have gained during the semester

Course Evaluation: There will be departmental final exam questions given by all instructors.

Attendance/Student Engagement Policy: Attendance and engagement are the most critical activities for success in this course. The instructor maintains records of the student's attendance and submission of assignments throughout the semester. The student is expected to attend at least eighty percent (80%) of the **total** class meetings **and** submit at least eighty percent (80%) of the **total** class assignments to have the best chance of success. If the student fails to meet these minimum requirements, the instructor may remove the student from the class with an X, upon their discretion, to help the student from harming their GPA. If the student can not receive an X, the instructor will assign an F.

Plagiarism violations include, but are not limited to, the following:

1. Turning in a paper that has been purchased, borrowed, or downloaded from another student, an online term paper site, or a mail order term paper mill;
2. Cutting and pasting together information from books, articles, other papers, or online sites without providing proper documentation;
3. Using direct quotations (three or more words) from a source without showing them to be direct quotations and citing them; or
4. Missing in-text citations.

Cheating violations include, but are not limited to, the following:

1. Obtaining an examination by stealing or collusion;
2. Discovering the content of an examination before it is given;
3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment;
4. Entering an office or building to obtain an unfair advantage;
5. Taking an examination for another;
6. Altering grade records;
7. Copying another's work during an examination or on a homework assignment;
8. Rewriting another student's work in Peer Editing so that the writing is no longer the original student's;
9. Taking pictures of a test, test answers, or someone else's paper.

Student Code of Conduct Policy: Any successful learning experience requires mutual respect from the student and the instructor. Neither the instructor nor the student should be subject to others' rude, disruptive, intimidating, aggressive, or demeaning behavior**.** Student conduct that disrupts the learning process or is deemed disrespectful or threatening shall not be tolerated and may lead to disciplinary action and/or removal from class.
South Plains College policies concerning diversity, disabilities, non-discrimination, Title IX Pregnancy Accommodations, and Campus Concealed Carry Statements can be found here: https://www.southplainscollege.edu/syllabusstatements/.
South Plains College policies, return to campus plan, and protocols regarding COVID-19 can be found here: https://www.southplainscollege.edu/emergency/covid19-faq.php.

SPC Bookstore Price Match Guarantee Policy: If you find a lower price on a textbook, the South Plains College bookstore will match that price. The difference will be given to the student on a bookstore gift certificate! The gift certificate can be spent on anything in the store.

If students have already purchased textbooks and then find a better price later, the South Plains College bookstore will price match through the first week of the semester. The student must have a copy of the receipt and the book has to be in stock at the competition at the time of the price match.

The South Plains College bookstore will happily price match BN.com & books on Amazon noted as *ships from and sold by Amazon.com*. Online marketplaces such as *Other Sellers* on Amazon, Amazon's Warehouse Deals, *fulfilled by* Amazon, BN.com Marketplace, and peer-to-peer pricing are not eligible. They will price match the exact textbook, in the same edition and format, including all accompanying materials, like workbooks and CDs.

A textbook is only eligible for price match if it is in stock on a competitor's website at time of the price match request. Additional membership discounts and offers cannot be applied to the student's refund.

Price matching is only available on in-store purchases. Digital books, access codes sold via publisher sites, rentals and special orders are not eligible. Only one price match per title per customer is allowed.

Note: The instructor reserves the right to modify the course syllabus and policies, as well as notify students of any changes, at any point during the semester.