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.

SOUTH PLAINS COLLEGE
MATHEMATICS, ENGINEERING & COMPUTER SCIENCE

ENGR1304 – Engineering Graphics

Section 002

Room: Technical Arts Building, TA209A
T/R: Lecture: 8:00 AM – 9:30 AM
Lab: 9:40 AM – 10:40 AM

Contact

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

Office Hours:

T/R: 11:00 AM – 2:00 PM (M101, Math Building)
F: 12:30 PM – 2:30 PM (B032 Downtown Center)

Supply List

- Pencils, erasers, graphing paper.
- Personal laptop.
- USB Flash Drive.
- *Engineering Graphics Essentials with AutoCAD 2020 Instruction* by Kirstie Plantenberg
  ISBN: 9781630572624 – Optional

Grading

Grading Scale:		Weights:	
A: 90-100	Pass	Daily Assignments	40%
B: 80-89	Pass	Project 1	30%
C: 70-79	Pass	Project 2	30%
D: 60-69	Pass	Total	100%
F: 0-59	Fail		

Daily Assignments

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

- Hand drawings will be drawn on graphing paper and turned into the instructor.
- AutoCAD assignments will be drawn on the local machines, printed out, and turned into the instructor. Please no online submissions.
- All assignments and instructions will be listed on Blackboard.
- Grading will be based on neatness, presentation, and the ability to follow directions.
- Please complete all daily assignments before the due date.

Project 1

Each student will complete a mock interview process for an entry level drafting position.

- Each student selects a unique object to draft.
- The object must be drafted by hand and AutoCAD
- Neatness and the ability to follow directions will be evaluated.
- Project 1 will be assigned during the semester.

Project 2

Students will be grouped together to develop, build, and draft a working drawing on AutoCAD

- Each student will be responsible for drafting their pieces
- Students are expected to work together to form the assembly from multiple files.
- Neatness and directions will be evaluated as well as group cooperation.
- Project 2 will be assigned at the end of the semester.

Class Policies and Information

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 – 9:30 AM) and Lab time (9:40 AM – 10:40 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. Demonstrations may be uploaded to Blackboard.

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.

COVID Syllabus Statement
If you are experiencing any of the following symptoms, please do not attend class and either seek medical attention or test 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 dedens@southplainscollege.edu or 806-716-2376. Proof of a positive test is required. A home test is sufficient but students must submit a photo of the positive result. The date of test must be written on the test result and an ID included in the photo. If tested elsewhere (clinic, pharmacy, etc.), please submit a copy of the doctor's note or email notification. Results may be emailed to DeEtte Edens, BSN, RN at dedens@southplainscollege.edu.

A student is clear to return to class without further assessment from DeEtte Edens, BSN, RN if they have completed the 5-day isolation period, symptoms have improved, and they are without fever for 24 hours without the use of fever-reducing medication. Students must communicate with DeEtte Edens, BSN, RN prior to their return date if still symptomatic at the end of the 5-day isolation.

Course Calendar

Week 1	**Jan 17th Jan 19th**	Review of Geometry and Trigonometry Drawing Commands: Creating Objects Modifying Commands: Manipulating Objects Layer Properties: Lines Types, Line Weights, Colors Drawing Objects: Hand Drawing vs Software Drawing
Week 2	**Jan 24th Jan 26th**	Creating Hidden Lines Layer and Center Lines Layer Creating a Title Block Dimensioning Objects with the Dimension Style Manager
Week 3	**Jan 31st Feb 2nd**	Drawing Orthographic Projections: Front, Right, and Top Side Views
Week 4	**Feb 7th Feb 9th**	Drawing Isometric Projections
Week 5	**Feb 14th Feb 16th**	Section Views: Half and Full Sections Creating Section Line Layer
Week 6	**Feb 21st Feb 23rd**	Auxiliary Views: Perpendicular Projections; Full and Partial Views
Week 7	**Feb 28th Mar 2nd**	**Project #1: Due Mar 9th @ End of Class**
Week 8	**Mar 7th Mar 9th**	
Mar 13th –17th		**Spring Break**
Week 9	**Mar 21st Mar 23rd**	Introduction to 3D Modeling – Drawing and Modify Commands
Week 10	**Mar 28th Mar 31st**	Layout Projections Dimensioning 3D Objects
Week 11	**Apr 4th Apr 6th**	Section Views of 3D Objects
Week 12	**Apr 11th Apr 13th**	Creating Assembly Drawings Creating Bill of Materials
Week 13	**Apr 18th Apr 20th**	**Project #2: Due May 9th @ 10:00 AM Apr 27th LAST DAY TO DROP**
Week 14	**Apr 25th Apr 27th**	
Week 15	**May 2nd May 4th**	
Week 16	**May 9th**	