ENGR 1302.001 & 1302.021 – Spring 2024
Foundations of Engineering II
Department of Physics, Engineering and Astronomy, Stephen F. Austin State University

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Office Hours: MWF: 10-11 AM; M: 4-5 PM; R: 4-5 PM; or by appointment
Class Meetings: MW 2:00 PM – 3:40 PM, Room 108 Cole STEM Building
Course Home Page: https://D2L.sfasu.edu

Course Description
Continuation of ENGR 1301. Topics include spreadsheet software, advanced graphing skills, mathematical functions, mathematical models, statistics, mathematical computation software and programming. (3 semester hours; 2 hours lecture and 2 hours lab per week)

Non-Course Prerequisite(s): Math SAT score of at least 500 or math ACT score of 21 or departmental permission

Text and Materials
The text for this course is Thinking Like an Engineer, by Stephan, Bowman, Park, Sill, Ohland, Pearson (3rd Edition). The readings indicated in the Course Outline correspond to chapters from this text and should be read prior to discussion of the material in class. Homework and handouts will be provided throughout the semester.

Grading Policy
Each major exam will be graded on a 100-point scale. The course grade will be computed as shown below.

Course Average = (0.60E + 0.05H + 0.20T + 0.15A)

where E = Exam Average
H = Average of Homework
T = Average of Team Projects
A = Average of In-Class- Activities

Letter grades are based on the ranges below.

A 90.0 - 100  B 80.0 - 89.9  C 70.0 - 79.9  D 60.0 - 69.9  F < 60.0

Attendance Policy
Attendance will be taken at the beginning of class electronically, on paper, or visually. If you have 3 unexcused absences then your final grade will be reduced one letter grade. If you have 4, or more, unexcused absences, you will receive an “F” in the course. A written and signed notice is required for an excused absence within three class days of the absence. To make sure that you are going to arrive to class on time you can set your watch here: http://www.time.gov. Being late in excess of 15 minutes is considered an absence.

Students who miss class without approval of their instructor will receive a grade of zero on the missed assignment. Authorized absences must be approved by your instructor in advance of the absence, unless you have an emergency or illness. Make-up work must be completed outside of normal class hours within one week following an excused absence. It is your responsibility to see your instructor and make arrangements for make-up work if you have an excused absence.
Course Requirements
On average, for ENGR 1302, students should spend 6 hours, or more, per week working outside of class. This time should be spent reading the textbook, working on homework, working on class projects, or studying.

Exams
There will be four major exams, each covering a limited amount of lecture and text material. The final exam will not be comprehensive. The dates of these exams are listed in the course outline attached to this page. Students will have one week after each exam to review the exams and discuss the grades. No make-up exams will be given except in the case of an excused absence. An official written notice is required for an excused absence within three days of the exam. Any makeup exam must be taken within one week of the missed exam.

Homework Assignments
All homework assignments are due on date and time indicated on each assignment unless otherwise stated. All homework will be turned in for evaluation periodically during the semester. No late homework will be accepted unless you have an excused absence. Failure to submit 3, or more, homework assignments to D2L will result in an “F” in the course.

Team Grades
The TEAM must ensure that all members of the team contribute to and understand the contents of team submissions. All team members who participate in an assignment will receive equal credit for that team submission. A grade of zero will be assigned to any member not signing a team submission. Team grades may include team efforts.

In Class Assignments
All in class assignments must be completed by the end of the class period. It is the discretion of the individual instructor to grant additional time if deemed necessary.

Email Communication
All official course communication will be made using your SFA email account. You must use your SFA email account for all communications. You will be notified via your SFA email account about grades and attendance. You can look up your SFA email account or setup email forwarding using this link: http://www.sfasu.edu/mysfa/o365/forwarding-email/

It is important to practice good email communications in college courses. Use "Engineering" as part of the subject of your email messages. Use complete sentences and capitalization when appropriate. The body of your email messages should begin with your instructor's name and end with your name.

Extra Credit
Extra credit may be offered throughout the semester. The maximum extra credit any student can receive for ENGR 1302 during the semester is 20 pts.

Classroom Policies
For the benefit of your fellow students and your instructor, you are expected to practice common courtesy with regard to all course interactions. For example:

- Be considerate toward your classmates and instructor and arrive to class on time.
- Do not leave class early and do not rustle papers in preparation to leave before class is dismissed.
- Avoid classroom distractions. Be attentive in class: stay awake, do not read newspapers, etc.
- If you are late to class or must leave early please inform your instructor in advance (enter or leave quietly, don’t walk across the front of the classroom (use the side aisles) and don’t walk in front of the projector).
- Cell phones, pagers and other communication devices must be turned off during class.
Play well with others. Be kind and respectful to your fellow students and your teachers.
Use of cell phones in class or causing other classroom distractions can count as one unexcused absence.

Academic Integrity (4.1)
The Code of Student Conduct and Academic Integrity outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.

Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially. For additional information, go to https://www.sfasu.edu/docs/hops/04-106.pdf.

Withheld Grades Semester Grades Policy (5.5)
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the coursework because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course to compute the grade point average. For additional information, go to https://www.sfasu.edu/docs/hops/02-206.pdf.

Students with Disabilities
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.
Student Wellness and Well-Being
SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc.

If you are experiencing concerns, seeking help, SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

On-campus Resources:
The Dean of Students Office (Rusk Building, 3rd floor lobby)
sfasu.edu/deanofstudents
936.468.7249
dos@sfasu.edu

SFA Human Services Counseling Clinic Human Services, Room 202
sfasu.edu/humanservices/clinics-labs/counseling-clinic
936.468.1041

The Health and Wellness Hub “The Hub”
Location: corner of E. College and Raguet St.

To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:

- Health Services
- Counseling Services
- Student Outreach and Support
  - Food Pantry
  - Wellness Coaching
  - Alcohol and Other Drug Education

sfasu.edu/thehub
936.468.4008
thehub@sfasu.edu

Crisis Resources:

- Burke 24-hour crisis line: 1.800.392.8343
- National Suicide Crisis Prevention: 9-8-8
- Suicide Prevention Lifeline: 1.800.273.TALK (8255)
- joCrisis Text Line: Text HELLO to 741-741
Program Learning Outcomes (PLO)
Graduates of the program will:
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

Student Learning Outcomes (SLO)
By the end of the course, a successful student will be able to:
1. Demonstrate an ability to use graphical techniques to create plots, sketch functions, and determine graphical solutions.(PLO-1)
2. Given a graph, determine the type of trendline shown and interpret the physical parameters of the experimental system.(PLO-6)
3. Use Microsoft Excel to model experimental data.(PLO-1)
4. Apply basic concepts of statistics to experimental data.(PLO-1)
5. Define the scope of a problem and create a written or graphical algorithm to solve the problem.(PLO-1)
6. Demonstrate the ability to perform basic matric operations.(PLO-1)
7. Write MATLAB programs and/or functions to solve engineering problems.(PLO-1)
8. Write input and output statements to interact with MATLAB.(PLO-1)
9. Demonstrate the ability to use conditional statements to automate decision making.(PLO-1)
10. Demonstrate the ability to use looping structures to eliminate large blocks of repetitive code.(PLO-1)

General Education Core Curriculum Objectives/Outcomes (EEO)
This course is not included in the general education core curriculum. Therefore, please see the learning outcomes above rather than any Exemplary Educational Objectives (EEOs).
### EXAM 1
- Chapter 16: MATLAB Variables/Data
- Chapter 17: Programs and Functions
- Chapter 18: Input/Output in MATLAB

### EXAM 2
- Chapter 11: Graphical Solutions
- Chapter 12: Models and Systems

### EXAM 3
- Chapter 13: Mathematical Models
- Chapter 14: Statistics
- Chapter 15: Algorithms

### EXAM 4
- Chapter 19: Logic and Conditionals
- Chapter 20: Looping Structures