Gordon State College
University System of Georgia

Department of Applied Sciences

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Spring 2023

ENGR 1100-A
Introduction to Engineering

Instructor: Dr. M. ZABDAWI
Email: mzabdawi@gordonstate.edu
Office Location: IC 234 & Online in D2L
Office Hours in D2L: M,W 1:00PM-2:00PM
T,R 12:00PM-1:00PM, 2:30PM-4:30PM
Class Location: Online in D2L
Class Times: T,R 1:00PM-2:15PM

TEXT (S) AND OTHER RESOURCES

Textbooks: Do not buy the textbook. Buy the access code either from the bookstore or from Cengage website directly. Check your campus email for instructions.

Class Key: **gdn 6227 3178**

CATALOG DESCRIPTION:

ENGR 1100: Introduction to Engineering
Prerequisite: Completion of or concurrent enrollment in MATH 1113. Credit Hours: (3-0-3)

A course that will provide students with an overview of various engineering disciplines to help them make well informed career choices in the profession. Main topics include the nature of the field and career opportunities in civil, chemical, electrical, industrial, mechanical, and other major engineering disciplines. The course will also emphasize the tools of technical communication including: recording, analyzing and presenting data, dimensional analysis, S1 conversion, curve fitting/regression analysis. Statistical tools for quality control, material balance, energy resources, and engineering economics will also be explored. Team work for a project may be required for course completion.

CONCEPTUAL FRAMEWORK:

Department of Applied Sciences Vision

Provide a supportive and empowering environment where students can prepare for their future careers and a lifetime of learning.

Department of Applied Sciences Mission

To foster student access and achievement through innovative teaching, engaged learning, and supportive pedagogy.

Instructor Teaching Philosophy

The course will be conducted asynchronously online. We will be using WebAssign for Quizzes and testing including the FE. But, we will also use D2L for tele-conferencing Lectures, discussion and office hours. Check your campus email for instructions on how to log in on D2L and how to join the live sessions. Some if not most of the Quizzes will be done in WebAssign during lectures to better explain and illustrate the ideas. **Remember Engineering is not a spectators sport, and your Quizzes are meant to be the training ground where you learn how to bridge the gap between your thoughts and the tips of your fingers.**

STUDENT LEARNING OUTCOMES:

Upon completion of the course, student should:

1. **Student can describe the engineering profession.**
   - 1.1. Student can describe what engineering is and what engineers do.
   - 1.2. Student can describe the basic differences between engineering specializations.
   - 1.3. Student can describe how to become an engineer.
   - 1.4. Student can describe the basic legal and ethical considerations of engineering.
2. **Student can describe the engineering design process.**
   - 2.1. Student can describe the basic steps used in engineering design.
   - 2.2. Student can describe engineering design.
3. **Student can describe the mathematical and scientific principles of engineering.**
   - 3.1. Student can describe what basic areas of mathematics are used in engineering.
   - 3.2. Student can describe what basic concepts of physics apply to engineering.
4. **Student can describe the visual, written, and teamwork requirements associated with engineering product realization.**
   - 4.1. Student can describe how engineers use oral, written, and graphical communication.
   - 4.2. Student works on a team project and can describe the importance of communication, scheduling, and attainment of project goals.

To see how these course outcomes correlate to student outcomes, see section **ABET Reference.**

REQUIREMENTS:

The course is conducted asynchronously online, which means attendance is not required because all lectures will be recorded in D2L. Students should listen to the recoded lectures in D2L at their own convenience. Students should have an access to the Internet, and should have a laptop or computer with webcam because the **Midterm Exam will be proctored online.** If a webcam is not available on student's computer, then student should have a cell phone with a working camera.

20% penalty applies for late submission of Quizzes and Exams. Students who do not take the FE will get an automatic WF for the course. Students are responsible for studying two hours outside of class for every hour in class. Studying includes activities beyond what is immediately due. For example, solving extra problems, working in a study group to teach material, going to see a tutor, writing chapter summaries, recopying notes, and creating flash cards are all common methods students use to master course material.

lt is expected that you are aware of and understand that you are bound by the principles of honesty and integrity as outlined in the current Gordon State College catalog. Please review this information. Be aware that it is also college policy that you may be withdrawn from a course for excessive absences.

The last date to withdraw from class without receiving a WF is ***Thursday, March 16th 2023***. Please note that it is the college's policy that students must withdraw from class by ***5:00PM Thursdy, 3/16/23*** in order to receive a grade of W. After ***3/16/23***, if a student requests a W – that student must petition to be withdrawn from the class and fill out the necessary petition paperwork.

ASSESSMENT

Quizzes Avg. = 45% of grade, Term project = 10% of grade, Midterm = 20% of grade, FE = 25% of grade. Term Project is due last week of the course.

A = 90.0% -100%
B = 80.0% -89.4%
C = 70.0% - 79.4%
D = 60.0% - 69.4%
F = 59.4% and below

ACADEMIC INTEGRITY

Academic Integrity:

Ref.: Student Code of Conduct – Academic Catalog.
Ref.: Georgia Code of Ethics for Educators

Title IX

Gordon State College is committed to providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic violence, dating violence and stalking. If you (or someone you know) has experienced or experiences any of these incidents, know that you are not alone. All faculty members at Gordon State College are mandated reporters. Any student reporting any type of sexual harassment, sexual assault, dating violence, domestic violence or stalking must be made aware that any report made to a faculty member under the provisions of Title IX will be reported to the Title IX Coordinator or a Title IX Deputy Coordinator. If you wish to speak with someone confidentially, you must contact the Counseling and Accessibility Services office, Room 212, Student Life Center. The licensed counselors in the Counseling Office are able to provide confidential support. Gordon State College does not discriminate against any student on the basis of pregnancy, parenting or related conditions. Students seeking accommodations on the basis of pregnancy, parenting or related conditions should contact Counseling and Accessibility Services regarding the process of documenting pregnancy related issues and being approved for accommodations, including pregnancy related absences as defined under Title IX.

ADA and 504

If you have a documented disability as described by the Americans with Disabilities Act (ADA) and the Rehabilitation Act of 1973, Section 504, you may be eligible to receive accommodations to assist in programmatic and/or physical accessibility. The Counseling and Accessibility Services office located in the Student Center, Room 212 can assist you in formulating a reasonable accommodation plan and in providing support in developing appropriate accommodations to ensure equal access to all GSC programs and facilities. Course requirements will not be waived, but accommodations may assist you in meeting the requirements. For documentation requirements and for additional information, contact Counseling and Accessibility Services at 678-359-5585.

House Bill 280

For information regarding House Bill 280, see the University System of Georgia at the following link: http://www.usg.edu/hb280

Religious Holidays

Gordon State College acknowledges that the academic calendar can sometimes conflict with major holidays from among our diverse religious traditions. If a student must miss class due to the observance of a religious holiday, that absence may be excused. To be excused, the student must inform his/her instructors before the absence and make alternate arrangements for any work due at the time of the absence. An excused absence for the observance of a religious holiday does not excuse student from responsibility for required course work.

COVID

For more information related to COVID-19, visit https://www.gordonstate.edu/corona-virus/index.html.

ENGR 1100-A
Spring Semester 2023
Course Outline

Quizzes are assigned and graded electronically in WebAssign.

Chapter	Title
Chapter 1	Introduction to the Engineering Profession
Chapter 2	Selected Topics on Engineering Career
Chapter 3	Selected Topics on Engineering Design
Chapter 4	Selected Topics on Engineering Communication
Chapter 5	Selected Topics on Engineering Ethics
Chapter 6	Fundamental Dimensions & Systems of Units
Chapter 7	Length and Length-Related Variables in Engineering
Chapter 8	Time and Time-Related Variables in Engineering
Midterm Exam 20%	**Midterm Exam 20%**
Chapter 9	Mass and Mass-Related Variables in Engineering
Chapter 10	Force & Force Related Variables in Engineering
Chapter 11	Temperature and Temperature-Related Variables in Engineering
Chapter 12	Electric Current and Related Variables in Engineering
Chapter 13	Energy and Power
Term Project is due	Term Project is due
Final Exam 25%	**Final Exam 25%**

FE will be available in WebAssign on Friday May 12th at 12:00AM and is due by midnight. You have 120 minute to do it and only one attempt.

ABET Reference

This is how this course's outcomes correlate with Accreditation Board for Engineering and Technology **(ABET)** student outcomes. Criteria for Accrediting Engineering Programs, 2018–2019; General Criteria for Baccalaureate Level Programs; General Criterion 3.

Student Outcomes:

The program must have documented student outcomes that prepare graduates to attain the program educational objectives. Student outcomes are outcomes (a) through (k) plus any additional outcomes that may be articulated by the program.

a) An ability to apply knowledge of mathematics, science, and engineering.
b) An ability to design and conduct experiments, as well as to analyze and interpret data.
c) An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
d) An ability to function on multidisciplinary teams.
e) An ability to identify, formulate, and solve engineering problems.
f) An understanding of professional and ethical responsibility.
g) An ability to communicate effectively.
h) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
i) A recognition of the need for, and an ability to engage in life-long learning.
j) A knowledge of contemporary issues.
k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

Introduction to Engineering: ENGR 1100											
	Engineering Student Outcomes										
ABET Student Outcomes	**a**	**b**	**c**	**d**	**e**	**f**	**g**	**h**	**i**	**j**	**k**
Course Outcome 1.1					x						
Course Outcome 1.2					x						
Course Outcome 1.3								**x**	x		
Course Outcome 1.4			x			x		x			
Course Outcome 2.1			x		x						x
Course Outcome 2.2			x		x		x				x
Course Outcome 3.1	x										
Course Outcome 3.2	x										
Course Outcome 4.1							x				x
Course Outcome 4.2	x	x	x	x	x	x	x	x		x	x