FLORIDA POLYTECHNIC UNIVERSITY

EGN 1008 – Engineering Explorations

Spring 2026

Course Information

- **Course Number and Title**: EGN 1008 – Engineering Explorations
- **Credit Hours:** 3 Credit Hours
- **Academic Term:** Spring 2026

Instructor Information

- **Instructor:** Dr. Guven Kiymaz
- **Office Location:** GWEC 1021
- **Office Hours**: In-person or by appointment
- **Email address**: gkiymaz@floridapoly.edu

Course Delivery and Course Description

- **Delivery Mode**: In-Person
- **Official Catalog Course Description**: This hands-on course introduces students to the foundational principles of engineering through interdisciplinary challenges and problem-solving activities. Students will explore key topics from mechanical, electrical, civil, industrial, computer, environmental, and cybersecurity engineering. Alongside engineering fundamentals, students will develop essential technical skills such as data analysis and problem-solving using Excel, report formatting with LaTeX, and professional communication techniques. By integrating Excel into engineering problem-solving, the course emphasizes practical applications and builds computational confidence. This course aims to inspire creativity, foster collaboration, and develop the problem-solving mindset necessary for success in engineering.
    - **Course Pre-Requisites**: None
    - **Communication/Computation Skills Requirement (6A-10.030)**: No
- **Required Texts and Materials:**
    - **Textbook:** Exploring Engineering (6th), Robert Balmer & William Keat
        - ISBN: 9780443135415
    - **Other Materials:** Canvas, Computer or Tablet, Microsoft Teams, Scientific or Engineering Calculator, Florida Poly Email Address
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    - **Note:** Only calculator models approved for use on the Fundamentals of Engineering (FE) Exam will be allowed in this course.
        - **Casio:** All fx-115 and fx-991 models
        - **Hewlett Packard:** The HP 33s and HP 35s models, but no others
        - **Texas Instruments:** All TI-30X and TI-36X models

Course Objectives and Outcomes

- **Course Objectives**: The primary objective of Engineering Explorations is to introduce students to the various fields of engineering while building foundational problem-solving skills. In this course, students will engage with foundational engineering principles, apply what they learn to introductory problems, develop professional communication skills, and cultivate an understanding of engineering ethics. Interactive lectures, hands-on activities, and reflective assignments will instill students with confidence as they advance

into their respective self-selected engineering disciplines. Specifically, students will build proficiency in using Microsoft tools, working with LaTex, and referencing professional licensure materials to support their future academic and professional success. By the end of the course, students will be able to approach open-ended problems with confidence, communicate technical ideas effectively, and demonstrate a broader awareness of the various paths within the engineering profession.

Course Learning Outcomes:

By the end of this course, student will be able to…

CLO 1. Identify the major branches of engineering and describe their core focus areas and real-world applications.

CLO 2. Apply foundational problem-solving techniques to analyze and address introductory engineering challenges.

CLO 3. Demonstrate proficiency in using Microsoft, Word, Excel, and PowerPoint for engineering data analysis and technical communication.

CLO 4. Reflect on personal growth and interests in engineering to make informed decisions about a future discipline or career path.

CLO 5. Evaluate ethical and professional responsibilities within engineering contexts using established ethical frameworks.

CLO 6. Interpret professional engineering licensure and career development resources (e.g., FE exam, NSPE, ASCE, IEEE).

Alignment with Program Outcomes:

Course Learning Outcome	Learning Level (Bloom's/ABET Assessment Example)	Program Learning Outcome (ABET 1-7)
Identify the major branches of engineering and describe their core focus areas and real-world applications.	**Knowledge:** Ability to recall previously learned material. **Application:** Ability to use learned material in new situations. **ABET Assessment:** Homework, in-class evaluations, and group activities.	An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science, and math. (ABET 1)
Apply foundational problem-solving techniques to analyze and address introductory engineering challenges.	**Knowledge:** Ability to recall previously learned material. **Application:** Ability to use learned material in new situations. **ABET Assessment:** Homework, in-class evaluations, and group activities.	An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science, and math. (ABET 1)
Demonstrate proficiency in using Microsoft, Word, Excel, and PowerPoint for engineering data analysis and technical communication.	**Knowledge:** Ability to recall previously learned material. **Application:** Ability to use learned material in new situations. **ABET Assessment:** Homework, in-class evaluations, and group activities.	An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science, and math. (ABET 1)
Reflect on personal growth and interests in engineering to make informed decisions about a future discipline or career path.	**Synthesis:** Combination of prior knowledge for new applications. **Application:** Synthesize knowledge on assessments to solve complex problems **ABET Assessment:** in-class evaluations, Exams.	An ability to acquire and apply new knowledge as needed, using appropriate learning strategies. (ABET 7)

Evaluate ethical and professional responsibilities within engineering contexts using established ethical frameworks.	**Knowledge:** Ability to recall previously learned material. **Application:** Ability to use learned material in new situations. **ABET Assessment:** Homework, in-class evaluations, and group activities.	An ability to identify, formulate and solve complex engineering problems by applying principles of engineering, science, and math. (ABET 1)
Interpret professional engineering licensure and career development resources (e.g., FE exam, NSPE, ASCE, IEEE).	**Analysis:** Decomposing material into constituent parts so they can be examined and understood. **Application:** Standardize format for all work and assessments. **ABET Assessment:** Homework, in-class evaluations, and group activities.	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. (ABET 4)

COURSE POLICIES

Attendance

Students are expected "to attend all of their scheduled University classes and to satisfy all academic objectives as defined by the instructor" (University Policy, FPU-5.0010AP). It is the student's responsibility to give the instructor notice prior to any anticipated absence and within a reasonable period after an unanticipated absence, ordinarily by the next scheduled class meeting.

Participation

Students are expected to participate in the classroom experience. The use of earbuds/headphones during class is specifically not allowed and students who engage in this behavior may be asked to leave the class for the day (noting exceptions for authorized accommodations). In addition, students who routinely do not bring materials to class that are required for participation, will not be given credit for class attendance, and if this becomes a pattern of behavior, may be asked to leave the class for the day. Persistent problems with participation may result in a code of conduct referral.

Email Policy

Emails must be sent from your Florida Poly email account to the Florida Poly email address of the instructor (gkiymaz@floridapoly.edu). **The instructor will NOT respond to messages sent through Canvas.** Please allow up to 36 hours on weekdays for a response, after which a student may send a follow-up email. Emails must be composed in a professional manner with a greeting, signature, and in an organized fashion. Start the subject line with "[EXPLORATIONS – F25]" for a quicker response time.

Assignment/Evaluation Methods

The instructor reserves the right to adjust grading at the end of the semester. The following list provides more detail about assignments for the course:

Attendance: Your attendance and participation during lectures are worth 5% of the grade. To get the most out of your course this semester, it is critical that you are present for all lectures.

Homework Sets: There will be a total of (tentative) 10 homework sets, worth 15% of your grade. Hand-written homework solutions must be submitted electronically through Canvas as a single PDF. Students' hand-written work must follow a strict format similar to the Phoenix Format, be legible, and all figures should be drawn with a straight edge, otherwise they will not be graded. Each homework set will be due about 1 week from when the homework set was assigned.

Concept Evaluations: There will be a total of (tentative) 10 concept evaluations, worth 15% of your grade. These evaluations are tentatively planned to be given at the start of the first lecture each week and will cover fundamental topics from the previous few lectures.

Exam 1, 2, & 3: Exam 1 and Exam 2 will each be worth 20% of your grade, and exam 3 will be worth 25% of your grade for a total of 65%. The first exam will cover topics from chapter 12 through chapter 13 of the textbook. The second exam will cover chapter 14 through chapter 16. The third exam will cover topics from chapter 17 through

chapter 19. On Exam 3, the instructor may add material from chapters 12 through 16 if necessary for assessment. All exams will be closed-notes and closed-book. Exam dates in the course schedule are tentative.

Bonus Assignments: There may be additional opportunities throughout the semester by completing supplementary activities assigned by the instructor. These will be available at the instructor's discretion. Individual requests for additional assignments to improve a students' overall grade in the course will not be granted.

Grading Scale

Grading Scale (%)	
93-100	A
90-92	A-
86-89	B+
83-85	B
80-82	B-
76-79	C+
70-75	C
60-69	D
0-59	F

Grade Breakdown	
Attendance	5%
Homework Sets	15%
Concept Evaluations	15%
Exam 1	20%
Exam 2	20%
Exam 3	25%
Total	100 %

Note: Grades for each assignment will be posted to Canvas and students should make sure they are recorded correctly. However, there is no guarantee that the percentages or projected grades provided through Canvas are correct. The instructor will calculate final percentages and will determine final grades regardless of Canvas calculations.

Re-Grade Requests

A re-grade request can be made by a student that feels an exam was graded incorrectly. To complete the request, a student must submit a written explanation for why they believe an exam should be re-graded (1/2 to 1 page written). The request must be made no later than 1 week after receiving a grade for the exam. A re-grade request consists of the instructor re-grading the ENTIRE exam.

Late Work/Make-up work

Late work will not be accepted in this course (in accordance with the attendance policy). No make-up options will be provided for in-class evaluations. Make-up opportunities will only be granted for exams in exceptional circumstances and at the discretion of the professor. Students are expected to reach out to the instructor well in advance of an exam or provide a valid justification if doing so ahead of time is not possible.

Academic Support Resources

- **Library**: Students can access the Florida Polytechnic University Library through the University website and Canvas, on and off campus. Students may direct questions to library@floridapoly.edu.
- **Peer Learning Strategists (PLS)**: Are specially trained student leaders who help their peers strategize approaches to course content and work through solution methods. PLS work in collaboration with the courses they support so the content and methods are aligned with your instructors' expectations. Students can meet with a PLS in The Learning Center, which is located on the first floor of the Innovation, Science and Technology (IST) building in room 1019.
- **Academic Success Coaches**: All students at Florida Poly are assigned an Academic Success Coach. Your Academic Success Coach can assist you with academic success strategies. Please visit the Student Success Center on the second floor of the IST building to meet with an Academic Success Coach.
- **Writing Center**: Located on the second floor of the IST (2059/2061), the Writing Center helps students to develop their writing and presentation skills. Consultations are available in person and virtually. For more detail, visit https://floridapoly.edu/writingcenter.

UNIVERSITY POLICIES

Reasonable Accommodations

The University is committed to ensuring equal access to all educational opportunities. The University, through the Office of Disability Services (ODS), facilitates reasonable accommodations for students with disabilities and documented eligibility. It is the student's responsibility to self-identify as a student with disabilities and register with ODS to request accommodations.

If you have already registered with ODS, please ensure that you have requested an accommodation letter for this course through the ODS student portal and communicate with your instructor about your approved accommodations as soon as possible. Arrangements for testing accommodations must be made in advance. Accommodations are not retroactive.
If you are not registered with ODS but believe you have a temporary health condition or permanent disability requiring an accommodation, please contact ODS as soon as possible.

The Office of Disability Services (ODS):
DisabilityServices@floridapoly.edu
(863) 874-8770
The Access Point
ODS website: www.floridapoly.edy/disability

Accommodations for Religious Observances, Practices and Beliefs

The University will reasonably accommodate the religious observances, practices, and beliefs of individuals in regard to admissions, class attendance, and the scheduling of examinations and work assignments. (See University Policy.)

Title IX

Florida Polytechnic University is committed to ensuring a safe, productive learning environment on our campus that prohibits sex discrimination and sexual misconduct, including sexual harassment, sexual assault, dating violence, domestic violence and stalking. Resources are available if you or someone you know needs assistance. You may speak to your professor, but your professors have an obligation to report the incident to the Title IX Coordinator. Please know, however, that your information will be kept private to the greatest extent possible. You will not be required to share your experience. If you want to speak to someone who is permitted to keep your disclosure confidential, please seek assistance from the Florida Polytechnic University Ombuds Office, BayCare's Student Assistance Program, 1-800-878-5470 and locally within the community at Peace River Center, 863-413-2707 (24-hour hotline) or 863-413-2708 to schedule an appointment. The Title IX Coordinator is available for any questions to discussion resources and options available.

Academic Integrity

The faculty and administration take academic integrity very seriously. Violations of academic integrity regulation include actions such as cheating, plagiarism, use of unauthorized resources (including but not limited to use of Artificial Intelligence tools), illegal use of intellectual property, and inappropriately aiding other students. Such actions undermine the central mission of the university and negatively impact the value of your Florida Poly degree. Suspected violations will be fully investigated, possibly resulting in an academic integrity hearing and sanctions against the accused student if found in violation. Sanctions range from receiving a zero on the exam or assignment, to expulsion from the university. Repeat offenders are subject to more severe sanctions and penalties.

Recording Lectures

Students may, without prior notice, record video or audio of a class lecture for a class in which the student is enrolled for their own personal educational use. Recordings may not be used as a substitute for class participation or class attendance. Recordings may not be published or shared in any way, either intentionally or accidently, without the written consent of the faculty member. Failure to adhere to these requirements is a violation of state law (subject to civil penalty) and the student code of conduct (subject to disciplinary action).

*Recording class activities other than class lectures, including but not limited to lab sessions, student presentations (whether individually or part of a group), class discussion (except when incidental to and incorporated within a class lecture), and invited guest speakers is **prohibited**.*

Tentative Course Schedule

Week	Topic	Assigned
1	Course Introduction	
	What is Engineering?	"Get to Know" Assignment
2	Civil Engineering Overview	
	Civil Engineering Activity	Civil Engineering Homework
3	Environmental Engineering Overview	
	Environmental Engineering Application	Environmental Engineering Homework
4	Mechanical Engineering Overview	
	Mechanical Engineering Application	Mechanical Engineering Homework
5	Industrial Engineering Overview	
	Industrial Engineering Application	Industrial Engineering Homework
6	Electrical Engineering Overview	
	Electrical Engineering Application	Electrical Engineering Homework
7	Computer Engineering Introduction	
	Computer Engineering Application	Computer Engineering Homework
8	Cybersecurity Engineering Overview	
	Cybersecurity Engineering Application	Cybersecurity Engineering Homework
9	Other Engineering Disciplines	
	Cross-Disciplinary Concepts	Engineering Reflection Report
10	Engineering Ethics Overview	
	Engineering Ethics Case Studies	Engineering Ethics Homework
11	Professional Licensure & Standards	Issue & Creed
	Microsoft Word	
12	Microsoft Excel	
	Microsoft PowerPoint	ASSIGN, Cybertruck in your field
13		
	Introduction to LaTex	LaTex Assignment (Resumes)
14	Professional Communication	
	Project Presentations	
15	Project Presentations	

Important Dates: https://floridapoly.edu/academics/academic-calendar/assets/fall2025printcalendar.pdf