Passaic County Community College
Academic Year: 2024 - 2025
Standard Syllabus

Department Chair: Merille Siegel

Course Code: **ES 101** **Course Title:** **Introduction to Engineering**

Department: CIS/Engineering **Semester Offered: Fall, Spring**

Catalog Description/Course:
This course introduces the various disciplines of engineering, with emphasis on learning concepts and practicing skills that are used in the engineering and engineering technology fields. It is designed to develop students' ability to identify and practice the different types of engineering problem solving, make effective written communications and oral presentations, and understand the professional, ethical, and social responsibilities of an engineer. Feasibility and project management concepts are also introduced.

Prerequisites: None

Credits: 2 **Lecture Hours:** 2 **Lab/Studio Hours:** 0 **Clinical/Fieldwork Hours:** 0

Required Textbook/Materials:
Passaic County Community College Custom textbook: ES 101 Introduction to Engineering, Cengage Learning.

ADDITIONAL TIME REQUIREMENTS:
Based on a 15 week semester, students are expected to dedicate at least 4 hours of time per week outside of the classroom.

Course Learning Outcomes:
Upon completion of this course, students will be able to:

- Identify the functions of the engineering and engineering technology disciplines
- Use basic engineering problem solving skills and the scientific method
- Use engineering software applications to solve engineering problems and generate technical reports

- Explain engineering management concepts such as project's objectives, project's scope, project's deliverables, value of time, conflict resolution, effective client communication, and proactive and situational management
- Make ethical choices in engineering applications and list the canons in the NSPE Code of Ethics
- Use effective communication in both speech and writing

GENERAL EDUCATION OUTCOMES: This is not a general education course.

GRADING STANDARD:

Examinations, Student Projects, Writing Assignments, Class Attendance and Participation, and other class work.

Grading for the class is based on the following point system

Exam dates are:	**% of Total**
Exam #1 - 6th Week (Selected Material)	20%
Final Exam - 15th Week (Cumulative)	30%
Student Projects:	
P#1 Excel Work Sheet	10%
P#2 Power Point Presentation	10%
Writing Assignments:	
W#1 Engineering Career Essay	10%
W#2 Ethics Case Study	10%
Other:	
Class Attendance (3pts per lecture period)	10%
Extra Work (if applicable – variable points)	

COURSE CONTENT:

(Schedule and suggested topics, readings, and assignments subject to change based on instructor and instructional resource)

Week #	Course Material - Lecture Topics, Tests, Student Projects, and Writing Assignments	Chapter in Textbook
1.	Introduction to Class Portal – Assignment Editor Part-1: Engineering Profession Concepts	1

	Introduction to the Engineering Profession Assignment Project #1: MS-Excel Project – Student Grades	
2.	Preparing for an Engineering Career Writing Assignment #1: Engineering Career Essay Sustainability – Watch "Story of Stuff"	2
3.	Introduction to Engineering Design Discussion "Story of Stuff" (Student Participation)	3
4.	Introduction to Engineering Design Engineering Communication Assignment Project #2: MS Office Power-Point	3 4
5.	Engineering Ethics – Cannons – Rules of Practice - Disasters Writing Assignment #2 Ethics Essay Review Material for Test #1	5
6.	TEST #1 Chapters 1 through 5	-
7.	Review Solutions: Test #1 Student Project #1: Student Power Point Presentations	-
8.	Student Project #1: Student Power Point Presentations Discuss Ethics Writing Assignment Introduce CAD and Computer Simulators in Engineering AutoCAD, MS Project, Electronic Circuit Simulators	-
9.	Part – II: Engineering Fundamental Concepts Fundamental Dimensions and Units	Hand-Out
10.	Length, Time, Mass, Force, Temperature	Hand-Out
11.	Length, Time, Mass, Force, Temperature	Hand-Out
12.	Electric Current	Hand-Out
13.	Energy and Power	Hand-Out
14.	Energy and Power Review Material for Final Exam (if time permits)	Hand-Out
15.	Final Exam (All Chapters) - Final Exam Week	

COLLEGE POLICIES:

For Information regarding:

- PCCC's Academic Integrity Code
- Student Conduct Code
- Student Grade Appeal Process

Please refer to the PCCC Student Handbook and PCCC Catalog

Inclement Weather:

In the event of inclement weather and the College is closed, all classes will switch to remote (Zoom) learning. The Zoom link for this course section is has been added here in this document by your instructor. Please also see BlackBoard for further instructions.

PANTHER ALERT:

The college will announce delayed openings, closings, and other emergency situations through the Panther Alert System. Students are encouraged to sign up for Panther Alert Notifications by logging into their student accounts through the PCCC website at www.pccc.edu and following Panther Alert System instructions.

Requesting Reasonable Accommodations at Passaic County Community College: Passaic County Community College Office of Accessibility Services, in accordance with Section 504 of the Rehabilitation Act of 1973, Americans with Disabilities Act (ADA) of 1990, and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008 is committed to providing reasonable accommodations to students with documented disabilities. If you have a disability and believe you need accommodations, please contact the Office of Accessibility Services (OAS) at (973) 684-6395 or email ods@pccc.edu. Students should request accommodations as early as possible, since they may take time to implement.