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

Department Chair: Merille Siegel

Course Code: ES 206 **Course Title: Engineering Mechanics I (Statics)**

Department: CIS/Engineering **Semester Offered: Fall Only**

Course Description: This course covers basic concepts of engineering mechanics, specifically statics and the equilibrium of particles and rigid bodies subject to concentrated and distributed forces, and analysis of structures, beams, and cables.

Prerequisites: *MA120 and PY120*

Credits: 3 **Lecture Hours:** 3 **Lab/Studio Hours:** 0 **Clinical/Fieldwork Hours:** 0

REQUIRED TEXTBOOK/MATERIALS:
Engineering Mechanics: Statics and Dynamics. By R.C. Hibbler. Prentice Hall

ADDITIONAL TIME AND SUPPLEMENTAL REQUIREMENTS:

Based on a 15 week semester, students are expected to spend an additional 6 hours per week of work outside of class.

Special Facilities/Equipment:

Hardware: WinTel Platform PC or lab top.
Software: Visual Studio C++ Compiler or Any C++ Windows based Compiler.
Storage Media: At least 1 GB Flash Drive for saving projects.

COURSE LEARNING OUTCOMES:
Upon completion of this course, students will be able to:

- 1. Resolve forces using parallelogram, Cartesian vector, or dot product methods
- 2. Use free-body diagrams and equations of equilibrium to solve particle equilibrium problems
- 3. Solve for a moment of a force, a moment of a couple and a simple distributed loading to a resultant force having a specific location
- 4. Use free-body diagrams and equations of equilibrium to solve rigid-body equilibrium problems
- 5. Determine the forces in the members of a truss using the method of joints and the method of sections
- 6. Show how to use the method of sections for determining the internal loading in a member
- 7. Introduce the concept of dry friction and show how to analyze equilibrium of rigid bodies subjected to this force
- 8. Discuss the concept of center of gravity, center of mass, and the centeroid and moment of inertia

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

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

WEEK	Lecture Topic	Chapters in Textbook
1	General Principles; Force Vectors	1.1 – 1.6; 2.1 – 2.4
2	Force Vectors	2.5 – 2.9
3	Equilibrium of a Particle	3.1 – 3.4
4	**Exam #1**	
5	Force System Resultants	4.1 – 4.4
6	Force System Resultants	4.5 – 4.6
7	Force System Resultants	4.7 – 4.9
8	**Exam #2**	
9	Equilibrium of a Rigid Body	5.1 – 5.4
10	Structural Analysis	6.1 – 6.3
11	Structural Analysis	6.4
12	**Exam #3**	
13	Internal Forces - Cables	7.1, 7-3, 7-4
14	Friction	8.1 – 8.2
15	**Final Exam**	

GRADING STANDARD:
Grading determinant and number of Papers & Examinations

Grading:

Grading is based on the following point system

Exam :	**%**
Exam 1	20 %
Exam 2	20 %
Exam 3	20 %
Final Exam	30 %
Tentative 2 Quizzes Scaled @ 5% each	
Lowest Quiz Score Dropped	30

1. Classroom exams will be announced in advance. No make-up exams given unless under valid emergency. Students are required to call in to inform the Professor prior to the class.
2. No eating and drinking as noted by Department policy.
3. Mobile devices turn on to vibrate or silent mode.

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 the 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 the 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.