

JAMESTOWN COMMUNITY COLLEGE
State University of New York

INSTITUTIONAL COURSE SYLLABUS

Course Title: Technical Physics I

Course Abbreviation and Number: PHY 1250

Credit Hours: 4

Course Type: Lecture/Lab

Course Description: Students will use various laboratory experiments to learn the fundamental phenomena, principles, and laws of physics. They will study motion, Newton's Laws, torque, and the principles of work and energy using algebra and trigonometry. Students will also study applications of these concepts in various fields of manufacturing.

Prerequisite/Corequisite: MAT 1220 or MAT 1590 (or higher).

Student Learning Outcomes:

Students who demonstrate understanding can:

1. Distinguish between distance and displacement and speed and velocity.
 2. Solve systems of motion in one and two dimension with constant acceleration.
 3. Analyze systems of forces using Newton's Laws
 4. Construct free body diagrams
 5. Calculate torque
 6. Analyze equilibrium systems using Newton's Laws and principles of work and energy.
 7. Demonstrate understanding of the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement, and data collection, experimentation, evaluation of evidence, and employment of mathematical analysis.
 8. Demonstrate an understanding of how scientific data, concepts, and models are applied in one of the natural sciences.
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Topics Covered:

- Distance and Displacement
 - Speed, velocity, and acceleration
 - Projectile Motion
 - Newtons laws
 - Force Systems
 - Free Body Diagrams
 - Torque
 - Equilibrium Systems
 - Work, Energy, and Efficiency
 - Temperature and Heat
 - Laws of Thermodynamics
 - Heat Transfer
 - Fluids systems
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Information for Students

- Expectations of Students
 - [Civility Statement](#)
 - [Student Responsibility Statement](#)
 - [Academic Integrity Statement](#)

- [Accessibility Services](#)

Students who require accommodations to complete the requirements and expectations of this course because of a disability must make their accommodation requests to the Accessibility Services Coordinator.

- [Get Help: JCC & Community Resources](#)
- [Emergency Closing Procedures](#)

- Course grade is determined by the instructor based on a combination of factors, including but not limited to, homework, quizzes, exams, projects, and participation. Final course grade can be translated into a grade point value according to the following:

A=4.0	B+=3.5	B=3	C+=2.5	C=2	D+=1.5	D=1	F=0
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- Veterans and active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, VA appointments) are welcome and encouraged to communicate these to the instructor.
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Effective Date: Fall 2021