



CATALOG DESCRIPTION: This is the first semester of a two-semester applied science physics course covering Newton's laws, vectors, particle kinematics, dynamics, the gas laws, the conservation of energy, fluid mechanics, and thermodynamics.

PREREQUISITE(S): ENG 043-Critical Reading; MAT 052-Intermediate Algebra
Or appropriate placement scores

COREQUISITE(S): None

CREDITS: 4 **HOURS:** 3 hours lecture and 3 hours lab

REQUIRED TEXT(S):

CENGAGE COURSE CODE:

SUPPLEMENTAL MATERIALS:

INSTRUCTOR INFORMATION:

OFFICE HOURS:



CORE COMPETENCIES: The following core competencies are embedded in this curriculum: Communicate effectively in both speech and writing; Apply appropriate mathematical and statistical concepts and operations to interpret data to solve problems; Use scientific method of inquiry, through the acquisition of scientific knowledge; Use computer systems or other appropriate forms of technology to achieve educational and personal goals; Address an information need by locating, evaluating and effectively using information	
LEARNING ASSESSMENT	
<i>Student Learning Outcomes:</i>	<i>Suggested Means of Assessment:</i>
Review and extend mathematical concepts applicable to the solution of physics problems and apply the equations to solve problems and predict the outcomes in one and two dimensions	Exams, quizzes, homework, hands-on laboratory activities, and laboratory reports
Develop an understanding of Newton’s Three Laws of Motion and apply the laws to state and dynamic physical problems	Exams, quizzes, homework, hands-on laboratory activities, and laboratory reports
Define in terms of physics the everyday expressions of work, energy, and power and develop their interrelationships including the law of conservation of energy, gas laws, and laws of thermodynamics	Exams, quizzes, homework, hands-on laboratory activities, and laboratory reports
Apply Newton’s Law of Universal Gravitation and Kepler’s Three Laws of Planetary Motion to spherical objects, circular motion, and general orbits	Exams, quizzes, homework, hands-on laboratory activities, and laboratory reports
Describe the properties of fluids and solve problems using Archimedes Principle and the Bernoulli Equation	Exams, quizzes, homework, hands-on laboratory activities, and laboratory reports
Demonstrate effective oral and written communication skills	Homework, hands-on laboratory activities, and laboratory reports
Conduct basic research and literature searches through the use of the library, internet, and other technology resources	Homework and laboratory reports
Use the scientific method to conduct laboratory experiments, using various forms of technology	Hands-on laboratory activities and laboratory reports
GRADING SYSTEM:	C+ = 77 < 80
A = 90 < 100	C = 70 < 77
B+ = 87 < 90	D = 60 < 70
B = 80 < 87	F = Below 60



INSTRUCTIONAL SUPPORT CENTER: The Instructional Support Center (ISC), located in Room 105 across from the library, provides academic support at no cost to WCCC students and is available for courses in which they are currently enrolled. The ISC is staffed with trained professional and peer tutors who are ready to help you understand and succeed. For scheduling or further information, visit the ISC in person, online at <http://www.warren.edu/tutoring/> or by telephone at (908)835-2354.

STATEMENT AND POLICY ON CHEATING, PLAGIARISM AND ACADEMIC

DISHONESTY: Students are required to perform all the work specified by the instructor, and are responsible for the content and integrity of all academic work submitted. A violation of academic integrity will occur if a student: (1) knowingly represents work of others as one's own, (2) uses or obtains unauthorized assistance in any academic work, (3) gives fraudulent assistance to another student, or (4) furnishes false information or other misuse of college documents.

In cases of suspected violation of academic integrity, the incident is to be reported to the Office of Academics. A student found guilty of violating the rule of academic integrity by the Vice President of Academics will be considered to have failed in personal obligation to the College; such failure will be subject to disciplinary action by the College. Unless otherwise notified, the instructor will allow students who are pending disciplinary action to attend class.

REQUIRED FORMAT FOR RESEARCH PAPERS: Research papers written for any Warren County Community College class must conform to the required documentation style. Papers written for humanities (and some social science) classes will follow the most recent edition of the Modern Language Association (MLA) in-text citation and bibliographic methods. Social science and science papers will require the use of the most recent edition of the American Psychological Association (APA) in-text citation and bibliographic methods.

Please consult with your instructor regarding the correct documentation style to use in his/her class.

ATTENDANCE POLICY: Students are expected to attend all class sessions of courses in which they are enrolled and are responsible for all material presented in class and all homework assignments.

Grades are based on the quality of work completed in meeting the requirements for a particular course, as stated in the course syllabus and catalog description.

Excessive absence may be considered sufficient cause for dismissal from class by an instructor or other appropriate college staff member. Any decision to exclude a student from class or the College due to excessive absence shall be subject to review by the President in accordance with established procedures. Students who have not attended class are not entitled to a refund of tuition.



WCCC HAYTAIAN & MAIER LIBRARY: (908) 835-2336 <http://warren.libguides.com>

Library Hours

Monday-Thursday 8am-8pm

Friday 8am-3pm

Check the Academic Calendar for specific holiday dates. Exceptions may apply during breaks and summer sessions. Any changes to the Library's hours are posted on the Library's web page and near the Library doors.

- **Passwords and Log-Ins**-The Library is responsible for resetting passwords for your Network account (email, computers, Wi-Fi, library resources, and printing). This cannot be reset over the phone. Please stop by the Library for help.
- **College IDs**-College IDs are required for all students. The Library is responsible for producing all ID cards. To get an ID card you must bring to the Library a current copy of your class schedule and another form of ID. Your student ID is also your library card and is needed to check materials out of the Library. Your first ID card is free and replacement cards are issued at a cost to the student.
- **Inter-Library Loan (ILL)**-The Library participates in a nation-wide inter-library loan program which is available free to all students and faculty. You can either submit ILL requests via the Internet (form available on the Library's web page) or in person at the circulation desk.

TOPICAL OUTLINE:

Newton's First Law of Motion
Linear Motion. Newton's Second Law of Motion
Newton's Third Law of Motion
Momentum
Rotational Motion, Gravity, Projectile and Satellite Motion
The atomic nature of matter
Solids, Liquids, and Gases. Gases and Plasmas
Changes of phase. Temperature, heat, and expansion
Heat transfer and Thermodynamics
Thermodynamics
Describing motion: Kinematics in one dimension
Kinematics in two dimensions. Vector analysis
Linear Momentum and Rotational motion
Fluids and fluid dynamics



GRADING METHODS:

ITINERARY: