Course Syllabus

Catalog Number:	PHY 181	**Credit Hours:**	3
Course Name:	Integrated Physics	**Lecture Hours:**	2
Division:	Technical Education	**Lab/Shop Hours:**	3
Dept/Program:	Chemistry, Physics, & Nuclear Technology		

Course Information:

Pre-requisites: MAT 102
Co-requisites: N/A

Course Description:

This problem-based course covers electrical theory and concepts that support engineering technology principles. The course includes concepts such as thermal, fluids, and optics. Mathematics, communications, and technology are integrated throughout the course.

Course Materials:

Required Textbook: N/A
Required Material: Cengage Unlimited Access Code 1Term
Required Equipment: A scientific or graphing calculator, ruler, and a protractor
Optional Material: Inquiry into Physics, 8th Ed. Ostdiek & Bord

Course Learning Outcomes:

The learning outcomes of PHY 181 relate to the ability of students to:

1. Describe the fundamental dimensions: length, mass, and time including their units in both English and International System (SI) units
2. Identify the common International System (SI) prefixes and their equivalent powers of ten.
3. Describe the physics concepts related to the following terms including their definition and common units: motion, displacement, instantaneous speed, average speed, velocity
4. Use Newton's First Law of Motion to explain the relationship between movement and the existence of a net force.
5. Use Newton's Second Law of Motion to explain the relationship between the mass of an object, acceleration, and net force.
6. State Newton's Third Law of Motion.
7. Define what is meant by a scalar quantity and a vector quantity.
8. Define the term force to include its standard units.
9. Describe the following types of forces: tensile, compressive, shear, friction, normal
10. State two factors that affect the magnitude of the friction force.

11. Explain the concepts of gravity and weight including the relationship between mass and weight.
12. Explain the concept of momentum including how it is related to force and mass.
13. Define impulse as it relates to momentum and velocity.
14. Define the following terms, including typical units: work, energy, potential energy, kinetic energy, power
15. Describe the factors that determine the value of the following energy types, including their mathematical expression: potential energy, kinetic energy
16. State the Principle of "Conservation of Energy."

ATC Policies and Procedures:

Email Etiquette:

Email is the preferred medium of communication for any changes to the class schedule. Unless otherwise notified by your instructor, all email notifications will be sent to the student's ATC account only. Course information can be found on the BlackBoard course section. Email is a very public means of information exchange, which should be treated with respect. As such, as a student of ATC, it's expected that all students will write and respond to emails in a respectful manner.

Quality Enhancement Plan (QEP):

A QEP is part of the Southern Association of Colleges and Schools Commission on Colleges decennial reaccreditation process. The QEP describes a carefully designed course of action that addresses a well-defined and focused topic or issue related to enhancing student learning and/or student success. Aiken Technical College's QEP is RE**A**D, WRI**T**E, A**C**HIEVE! Its goals are to increase student awareness and utilization of student support services; to improve transition and success rates for students moving from transitional writing to ENG 101 and ENG 160; and to improve student reading and writing outcomes. Year 1 (2020-21) focuses on student awareness and utilization of support services, such as Academic Counseling, Tutoring, and Library Resources. Year 2 (2021-22) incorporates Open Educational Resources (OER) into transitional reading and writing and ENG 101 courses. Year 3 (2022-23) introduces a co-requisite approach to transitional writing (via ENG 012) and a focused transitional reading course (RDG 100). Please connect with the Student Success Center staff in Room 770 or the Learning Resource Center Staff in Room 1001 for details on support services offered. Note there is also a direct link to the Student Success Center Online at the top of the Blackboard main page.

Standard Attendance Policy:

It is the policy of ATC to encourage and support student academic achievement and progress by adopting an 80% minimum attendance policy for all classes.

Students with Disabilities Policy:

The college will make reasonable accommodations for persons with documented disabilities. Students should notify the Director of Counseling & Disability Services in the Student Success Center and their instructors of any special needs.

Student Support Services:

Aiken Technical College is committed to supporting the academic, career, and well-being of our students. The following services are available to all ATC students for free each semester, tutoring, coaching, career services, a state-of-the-art Library, emergency aid, and confidential counseling. Students dealing with heightened feelings of sadness, thoughts of harm, or suicide are encouraged to text "NAMI" to 741741 or call the National Suicide Prevention Lifeline at 800-273-8255.

For further information about any of the available support services, please contact the Student Success Center at success@atc.edu, call 803.508.7482, or visit the Student Success Center page in the MyATCPortal.

Academic Dishonesty Policy:

All forms of academic dishonesty including, but not limited to cheating on tests, plagiarism, collusion, and falsification of information will call for discipline.

1. Cheating on a test is defined to include the following:
    a. Copying from another student's test or answer sheet.
    b. Using materials during a test not authorized by the person giving the test (other computers, phones, smart watches, tablets, etc).
    c. Collaborating with any person during a test without permission.
    d. Knowingly obtaining, using buying, selling transporting, or soliciting in whole or in part the contents of a test prior to its administration.
    e. Bribing or coercing any other person to obtain tests or information about tests.
    f. Substituting for another student, or permitting any other person to substitute for oneself.
    g. Cooperating or aiding in any of the above.
2. Plagiarism is defined as the appropriation of any other person's work and the unacknowledged incorporation of that work in one's own work offered for credit.

Academic Integrity Pledge:

In keeping with Aiken Technical College's Honor and Student Codes, I pledge that I will neither give nor accept any unauthorized help or any of the assignments/tests in this course. I will only use instructor-authorized outside sources for completing my work. I further pledge that all such outside sources will be cited in my work. I accept full responsibility for honesty in all my work.

Student Signature:_____**Date:**_____