Walters State Community College Course Syllabus

Course Information

Course Number and Name: PHYS 2110 Calculus-Based Physics I
Section ID: 80887.202380
Semester and Year: Fall 2023
Credit Hours: 4
Start Date: August 21, 2023
End Date: December 08, 2023
Course Format: CON - Conventional Methodology
Catalog Course Description: First semester of a calculus-based introductory physics course for those in engineering, mathematics, chemistry or physics programs. This course makes extensive use of the tools of algebra, trigonometry and calculus. Topics include the scientific process (mathematical models, inductive/deductive reasoning), basic mechanics (kinematics and Newton's Laws), thermodynamics (calorimetry, black-body radiation, and the first law of thermodynamics), and conservation laws (momentum and mechanical energy) Prerequisite(s): MATH 1910. Corequisite(s): PHYS 2111. **F. (T)** 3 hours lecture .

General Education Course Designation: General Education Course
Meeting Details: MW; 09:35AM - 11:00AM; NSCI 103
Course Drop Deadline: October 27, 2023

Instructor Information

Name: Katherine Stone
Office Location: NSCI 123
Office Hours: Posted in eLearn and outside office door
Office Phone: 423-585-6862
Email: Katherine.Stone@ws.edu
Supervisor Name: Matthew Smith
Supervisor Phone: 423-585-6881

Required Textbook(s) and Materials

MasteringPhysics
Additional Information
Student will perform homework utilizing the Pearson product. Students must register: https://mlm.pearson.com/northamerica/masteringphysics/ while course specific information will be provided in lecture.

Student Learning Outcomes/Objectives

- Mathematical Literacy (Significant figures, vectors, mathematical models, Experimental error)
    - Identify the various mathematical models used in Physics, correctly applying algebraic/calculus/vector techniques as needed
    - Correctly use significant figures and statistical error

- Equilibrium (Translational and Rotational Equilibrium, Calorimetry, 1st & 2nd Laws of Thermodynamics)
    - Identify and describe the interactions of forces on matter
    - identify and state the conditions of mechanical equilibrium and apply them to systems
    - perform basic calorimetry calculations
    - Use the Ideal Gas Law in a variety of scenarios

- Newton's Ideas in Action (Calculus-level kinematics, basic statics and mechanics)
    - Apply mathematical models to predict the outcomes of a variety of kinematics scenarios.
    - Use the concept of force to make static and kinematics predictions of various scenarios.

- Conservation Laws (Momentum, mechanical energy, impulse, work)
    - Apply the concepts of conservation of momentum and conservation of energy to solve a variety of scenarios.

- Use the concepts of “impulse” and “work” to link force to momentum and energy, respectively.
- Determine the efficiency of a heat engine and compare it with the ideal level (Carnot).

Instructional Approach and Methods

This course will utilize a lot of cutting edge teaching methods. One technique we will utilize is the expectation that you are to have done the readings assignments for the upcoming meeting so that we spend our time together clarifying details. These readings will provide the bulk of the content delivery for this course. Then when we meet, the instructor will review the material and have activities to reinforce what you have learned.

Lectures: Course will be broken down into 4 modules with each focusing on the 4 student learning outcomes. Lectures will cover the concepts and mathematical relations used to understand the physical principles. Lectures are interactive to engage student engagement via use of PearDeck presentations.

SoftChalk Lessons: These are lessons that you will complete online prior to class.

Homework and Assignments: Assigned homework on the publisher on-line homework site and additional assignments that reinforce the material.

Labs: Hands on application of physics principles. Before coming to Lab students will engage with simple pre-lab assignments so they are familiar with the principle to be examined in the lab.

Exams: Covers conceptual and definitive aspects of material covered in lectures, assignments, homework and labs.

Final Comprehensive exam: Exam broadly covers all topics in the course.

Assessment, Evaluation and Testing Procedures

Indicator	%	Details
SoftChalk Lessons	15	These are lessons* that you will complete online, preferably prior to class.
Homework and Assignments	20	Homework* will be completed on your Homework account. Additional Assignments may be performed utilizing Teams or eLearn

Indicator	%	Details
Lab Work	15	Some of the labs* will have assignments turned in as follow up work. Missed Labs cannot be made-up, it is the students' responsibility to complete the work as scheduled.
Tests	30	Covers conceptual and definitive aspects of recent material. Tests are not cumulative. All tests must be taken to pass the course. **Missed** tests** are handled on a case-by-case basis. Students should provide notice at least 48 hours in advance; generally, tests will be made-up within a week of the original test date. Tests are proctored on-ground.
Final Exam	20	Comprehensive exam broadly covering all topics of course content. In the case of **rescheduling** the exam date/time, advanced (two weeks) consultation with the department chair and the division dean will be required. Final Exam is a proctored exam on-ground.

*Late assignments are not accepted after 5 days and each day late results in -10% reduction in grade.

**Excused absences include documented illness, unexpected family situations or emergencies, and student representation of WSCC at various activities

Grading Scale

Grade	Scale
A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	0-59%

Assignments

SoftChalk Lessons: These are lessons that you will complete online prior to class.

Homework and Assignments: Assigned homework on the publisher on-line homework site while additional assignments that reinforce the material. Some assignments may be performed in class, while most will be required out of class.

Labs: Hands on application of physics principles. Students will use the designate lab time to gather data and perform certain tasks. Completed lab reports will be submitted within a week's time.

Exams: Covers conceptual and definitive aspects of material covered in lectures, assignments, homework and labs. Exams will be proctored during the lecture time.

Final Comprehensive exam: Exam broadly covers all topics in the course. The Final Comprehensive exam will be proctored during the designated Walters State Final exam schedule.

Additional Course Requirements/Details/Information

Students should be advised that this is a very time-intensive course. (**An investment of twelve hours per week is typical.**) Individuals unprepared or unwilling to devote the amount of time required should consider taking this course at another point.

Students should note that both PHYS 2110 and PHYS 2111 must be taken congruently as the grade achieved in the Lab (PHYS 2111, 0 credit hour course) is incorporated into the course grade for the Lecture (PHYS 2110, 4 credit hour course).

Academic Honesty

Faculty expect all students to refrain from acts of academic misconduct including but not limited to:

1. Plagiarism - refers to using another person's ideas or writing without giving proper credit to the original source. Indulging in this type of conduct will subject the student to disciplinary sanctions, which may be imposed through the regular institutional procedures of Walters State Community College as outlined in the Student Handbook. Plagiarism will result in a grade of "0" for the paper/exam/presentation. Student Conduct and Disciplinary Sanctions contained in the college Catalog/Student Handbook apply (see policy 04:18:02 Disciplinary Sanctions). Plagiarism includes, but is not limited to the following:
    a. Using cut/paste tool from original document with no references given.
    b. Copying another student's work and submitting it as one's own.
    c. Forging or otherwise altering signatures.
    d. Giving or falsifying academic documents or materials.

2. Cheating - construed as attempting to deceive or mislead which includes, but is not limited to the following:
    a. Utilizing old tests, projects, notes or written papers.
    b. Providing unauthorized information to a fellow student about exam content.
    c. Receiving unauthorized aid from any source with quizzes, examinations, or other assignments.
    d. Seeking information in an unacceptable manner during/preceding an exam or other assigned work (cheat sheet, verbal exchange, looking at another person's paper or electronic device, utilizing headphones, using textbook when the test/quiz is not an open book test/quiz, using textbook test bank etc.).
    e. Consulting with a classmate or others when taking a computerized test.
    f. Disregarding other specific policies and procedures outlined for a particular class.
    g. Utilizing unapproved technology/electronic equipment during testing (i.e.: mobile devices such as cell phones, smart devices, or tablets, etc.).
    h. Using the same Internet Protocol network address (IP address) as another student for testing without approval from the course faculty.
3. The use of any generative artificial intelligence (AI) tool, such as OpenAI's ChatGPT, Google's Bard, or any other pre-trained language model (commonly referred to as "chatbot"), must be cited for any assignment where it has been used and may not be used unless specifically allowed by your instructor. Please see your instructor or the course policies within the syllabus if you have questions.

Student Resources

TUTORING SERVICES

Students in need of tutoring assistance are encouraged to contact the Office of Student Tutoring located as follows:

- Morristown Campus - Student Services Building Room L107 - (423) 585-6920
- Niswonger Campus - GRNV 226 - (423) 798-7982
- Sevierville Campus - MMH Room 210 - (865) 286-2787
- Claiborne Campus - Room 123A - (423) 851-4761

Specific tutoring assistance in mathematics and writing is available in-person and online as follows:

- Morristown Campus - English Learning Lab - HUM 120 - (423) 585-6970

Walters State English Learning Lab (opens in new window)
ws.edu/academics/humanities/writing-lab

- Morristown Campus - Mathematics Lab - MBSS 222 - (423) 585-6872

Walters State Mathematics Learning Lab (opens in new window)
ws.edu/academics/mathematics/learning-lab

TECHNOLOGY SUPPORT

Students who need assistance with computing and technology issues should contact the IET Helpdesk by phone at Morristown: (423) 318-2742; Niswonger: (423) 798-8186; or Sevierville: (865) 286-2789 or on-line access.

Walters State Helpdesk (opens in new window)
helpdesk.ws.edu

STUDENTS WITH DISABILITIES SUPPORT SERVICES

Students with disabilities must register with Student Support Services each semester in the Student Services Building, Room U134 (phone (423) 585-6892) if they need any special facilities, services, or consideration.

Walters State Student Support Services (opens in new window)
ws.edu/student-services/disability/

SUICIDE PREVENTION STATEMENT

Walters State is committed to and cares about all students. Support services are available for any person at Walters State who is experiencing feelings of being overwhelmed, hopelessness, depression, thinking about dying by suicide, or is otherwise in need of assistance. For immediate help, contact the National Suicide Prevention Lifeline by calling or texting 9-8-8 or the Trevor Lifeline at 1-866-488-7386. Veterans may also contact the Veterans Crisis Line at 1-800-273-8255 (press 1) or Text 838255.

Walters State has a relationship in place with the following community agencies to provide services (may include crisis referral services, prevention screenings, etc.):

- Cherokee Health Systems 423-586-5032
- Frontier Health 423-467-3600

College Policies

STUDENTS HANDBOOK AS OFFICIAL GOVERNING DOCUMENT

This class is governed by the policies and procedures stated in the current Walters State Community College Student Handbook. All students attending Walters State Community College, regardless of the time, location, or format of the class, must abide by the rules and regulations outlined in the current Walters State Catalog/Student Handbook and the current Walters State Timetable of Classes.

Walters State Catalog (opens in new window)
catalog.ws.edu/

Walters State Timetable of Classes (opens in new window)
ws.edu/admissions/registration/

PURPOSE, LIMITATIONS AND MODIFICATION OF SYLLABUS

This syllabus sets forth the expectations for the course content, work, and grading as well as expectations for student performance and conduct. The syllabus does not constitute a contract between the student and the instructor or the College. The information contained here is subject to change at any time. The instructor reserves the right to modify this syllabus at any time with written notification to the students. Though changes are possible, it is expected that the course will be conducted as described in this syllabus for the semester/year specified in the Course Information section of the syllabus. This syllabus is only valid for the semester/year specified and course requirements are not guaranteed for future semesters.

COURSE GROUND RULES

- Students must attend the first day of on-ground class or contact the instructor prior to the first class. Failure to do this may result in being dropped from the class. Excessive absences may substantially lower the course grade.
- Regular class attendance is a student's obligation for any course regardless of format. (See the Walters State Catalog/Student Handbook). If a student misses class, it is his or her responsibility to contact the instructor regarding missed assignments and/or activities and to be prepared for the next class assignment.
- Students enrolled in web courses must follow the course attendance policy defined for online attendance during the first week of class and throughout the term. Failure to do this may result in being dropped from the class during week one OR may result in the accrual of absences which may negatively impact the student's grade in the course.
- Students who have not paid fees on time and/or are not correctly registered for this class and whose names do not appear on official class rolls generated by the Walters State student information system (MyWS) will not be allowed to remain in class or receive credit for this course.

- Electronic devices must not disrupt the instructional process or college-sponsored academic activity. Use of electronic devices is prohibited unless use of the device is relevant to the activity and use is sanctioned by the faculty member in charge. Electronic devices that are not relevant to the activity or sanctioned by the faculty member in charge should be set so that they will not produce an audible sound during classroom instruction or other college-sponsored academic activity.

FINANCIAL AID

Students receiving any type of financial aid or scholarship should contact the Financial Aid Office before making any changes to their schedule. Schedule changes without prior approval may result in loss of award for the current term and future terms.

All forms of student Financial Aid may be jeopardized or lost due to the lack of Satisfactory Academic Progress in one or multiple courses. Lack of Satisfactory Academic Progress may negatively impact a student's degree/certificate completion pace and further jeopardize Financial Aid eligibility.

CANCELLATION OF CLASSES AND ACADEMIC CONTINUITY

For information related to the cancellation of classes due to inclement weather or other events, please check the Senators Emergency Text system or the college's Web site at:

Walters State Homepage (opens in new window)
ws.edu/home/

Walters State Facebook page (opens in new window)
https://www.facebook.com/WaltersState/

Walters State Twitter page (opens in new window)
https://twitter.com/waltersstate

or call the college's student information line, 1-800-225-4770, option 1; the Sevier County Campus, (865) 774-5800, option 7; the Niswonger Campus (423) 798-7940, option 7; or the Claiborne County Campus, 423-636-6200, option 7. Also, please monitor local TV and radio stations for further announcements.

When an event or disaster interrupts the scheduled operations of the college and the ability to proceed with the academic course activities as planned, the college and your instructor may alter the course plan outlined in the syllabus. Should an event occur, students should refer to their course e-Learn pages and/or class materials previously delivered to receive guidance from their instructor. Students should continue to monitor the official college channels of communication listed in the above paragraph. If you would like to sign up for the Senators Emergency Text system, please go to the following Web site:

Senator Emergency Text System (opens in new window)
ws.edu/set/

Dual Enrollment students attending on a high school campus should refer to the high school inclement weather cancellations.

LEARNING MANAGEMENT SYSTEM

Brightspace (commonly known as eLearn or D2L) is the college's Learning Management System (LMS).

Brightspace is committed to accessibility by "deliver[ing] a learning experience that meets the needs of all people, regardless of age or ability." Brightspace Accessibility Standard (opens in new window)

Brightspace is also committed to guarding student data and privacy. Brightspace Privacy Policy (opens in new window)