North Central State College

MASTER SYLLABUS	2025-2026

A. Academic Division: Engineering Technology, Business & Criminal Justice Division

B. Discipline: Physics

C. Course Number and Title: PHYS1010 Introductory Physics

D. Assistant Dean: Brooke Miller, M.B.A.

E. Credit Hours: 3
Lecture: 2 hours
Laboratory: 3 hours

F. Prerequisites: MATH0084 (minimum grade of C- required)

G. Last Course/Curriculum Revision Date: Fall 2025 Origin date: 05/11/2011

H. Textbook(s) Title:

Conceptual Physics with Modified Mastering Physics Access Card
- Author(s): Hewitt
- Copyright Year: 2022
- Edition: 13th
- ISBN: 9780135745847

I. Workbook(s) and/or Lab Manual: See above

J. Course Description: This course will provide students with a general understanding, knowledge, and awareness of the physical world around them. Topics will introduce the concepts of mechanical, electrical and atomic physics with discussions, lectures, and laboratory experiences related to the principles of mechanics, heat, light, sound, electricity, magnetism, and atomic structure. This course meets the requirements for OTM in Natural Sciences TMNS.

K. College-Wide Learning Outcomes:

College-Wide Learning Outcome	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Calculate one or two missing variables, given a problem in one dimension (involving time, position, velocity, and acceleration) of a single object.	Class discussions, homework, labs, quizzes, and exams during the weeks 1-16
2. Use Newton's laws of motion to identify the reaction force, to solve a given problem involving the force interaction of two objects.	Class discussions, homework, labs, quizzes, and exams during the weeks 1-16
3. Use Newton's laws of motion to calculate the missing variables, including force, given a problem involving one mass, with a constant acceleration.	Class discussions, homework, labs, quizzes, and exams during the weeks 3-16
4. Use conservation of energy to solve a problem involving one object with kinetic energy and gravitational potential energy for one unknown variable.	Class discussions, homework, labs, quizzes, and exams during the weeks 4-16
5. Use the law rotational equilibrium to solve a problem involving one rigid body and up to three forces for one unknown variable.	Class discussions, homework, labs, quizzes, and exams during the weeks 5-16
6. Be able to describe the proton, neutron, and electron including where they are located in the atom, and use the definitions of isotope, atomic number, and atomic mass to calculate the number of protons, neutrons, and electrons in an atom.	Class discussions, homework, labs, quizzes, and exams during the weeks 6-16
7. Solve for the indicated variable in problems involving Archimedes' principle.	Class discussions, homework, labs, quizzes, and exams during the weeks 7-16
8. Solve for the pressure, volume, temperature, mass of gas, or amount of gas in ideal gas law problems.	Class discussions, homework, labs, quizzes, and exams during the weeks 8-16
9. Calculate the final temperature of a mixture of two equal size samples of one substance at two temperatures.	Class discussions, homework, labs, quizzes, and exams during the weeks 9-16
10. Solve for one of the variables in a specific heat problem for a single substance.	Class discussions, homework, labs, quizzes, and exams during the weeks 9-16
11. Solve for one of the variables in a thermal expansion problem for a single substance.	Class discussions, homework, labs, quizzes, and exams during the weeks 9-16
12. Solve for the heat necessary to produce one to two phase changes for a single substance.	Class discussions, homework, labs, quizzes, and exams during the weeks 10-16
13. Calculate the period or frequency given the other for a vibrating object or wave.	Class discussions, homework, labs, quizzes, and exams during the weeks 11-16
14. Calculate the frequency, wavelength, or velocity given the others for a wave.	Class discussions, homework, labs, quizzes, and exams during the weeks 11-16
15. Calculate the frequency of the beats produced by two given frequencies of sound.	Class discussions, homework, labs, quizzes, and exams during the weeks 12-16
16. Solve an electrostatics problem using Coulomb's Law.	Class discussions, homework, labs, quizzes, and exams during the weeks 13-16
17. Solve for the equivalent resistance for up to three resistors in a series or parallel electric current.	Class discussions, homework, labs, quizzes, and exams during the weeks 14-16
18. Determine the direction of the magnetic field around a current carrying wire.	Class discussions, homework, labs, quizzes, and exams during the weeks 15-16
19. Solve for the direction of the force on a moving charge in a magnetic field.	Class discussions, homework, labs, quizzes, and exams during the weeks 15-16

M. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior

90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
83–86	B	3.00	Above Average
80–82	B-	2.67	Above Average
77–79	C+	2.33	Average
73–76	C	2.00	Average
70-72	C-	1.67	Below Average
67–69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

N. College Procedures/Policies:

North Central State College believes that every student is a valued and equal member of the community.* Every student brings different experiences to the College, and all are important in enriching academic life and developing greater understanding and appreciation of one another. Therefore, NC State College creates an inclusive culture in which students feel comfortable sharing their experiences. Discrimination and prejudice have no place on the campus, and the College takes any complaint in this regard seriously. Students encountering aspects of the instruction that result in barriers to their sense of being included and respected should contact the instructor, assistant dean, or dean without fear of reprisal.

* *Inclusive of race, color, religion, gender, gender identity or expression, national origin (ancestry), military status (past, present or future), disability, age (40 years or older), status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent, genetic information, or sexual orientation*

Important information regarding College Procedures and Policies can be found on the syllabus supplement located at https://ncstatecollege.edu/documents/President/PoliciesProcedures/PolicyManual/Final%20PDFs/14-081b.pdf

North Central State College
SYLLABUS ADDENDUM

Academic Division:	EBC	**Discipline:**	Physics
Course Coordinator:	Wesley L. Adams		
Course Number:	PHYS 1010-920	**Course Title:**	Conceptual Physics
Semester / Session:	Spring 2026 / 16 week	**Start / End Date:**	01/12/2026 thru 05/08/2026

Instructor Information

Name:	Wesley L. Adams	**Credentials:**	MS Physics - East Texas A&M University
Phone Number:	419-755-4861	**E-Mail Address:**	wadams@ncstatecollege.edu
Office Location:	Kehoe 134	**Office Hours:**	Mon 02 – 03 pm & Thu 09 – 12 pm

I. Topical Timeline / Course Calendar (Subject to Change):

Weeks	Topics	Assignment	Due Date
1 01/12	Ch 01 About Science Ch 02 Newton's First Law of Motion - Inertia	Getting to know you Quiz Week 1 Quiz	01/17
2 01/19	Ch 03 Linear Motion Ch 04 Newton's Second Law of Motion		
3 01/26	Ch 05 Newton's Third Law of Motion	HW Ch 1 -5 Lab – Measurements and Units Exam 1 (Ch 1 – 4) Final Presentation Groups Formed	01/31
4 02/02	Ch 06 Momentum Ch 07 Energy		
5 02/09	Ch 08 Rotational Motion Ch 09 Gravity		
6 02/16	Ch 10 Projectile and Satellite Motion	HW Ch 6 – 10 Lab Energy Park Lab Projectile Motion Exam 2 (6 – 10)	02/21
7 02/23	Ch 11 The Atomic Nature of Matter Ch 12 Solid		
8 03/02	Ch 13 Liquid Ch 14 Gases	HW Ch 11 - 14 Lab Build an Atom Lab Fluid Pressure Exam 3 (Ch 11 – 14)	03/07
-B- 03/09	Fall Break	Fall Break	Fall Break
09 03/16	Ch 15 Temperature, Heat, and Expansion Ch 16 Heat Transfer		
10 03/23	Ch 17 Change of Phase Ch 18 Thermodynamics	HW Ch 15 – 18 Lab Thermal Energy Exam 4 (Ch 15 – 18)	03/28
11 03/30	Ch 19 Vibrations and Waves Ch 20 Sound		
12 04/06	Ch 21 Musical Sounds	HW Ch 19 – 21 Lab Waves Exam 5 (Ch 19 – 21)	04/04

Weeks	Topics	Assignment	Due Date
13 04/12	Ch 22 Electrostatics Ch 23 Electric Current		
14 04/17	Ch 24 Magnetism Ch 25 Electromagnetic Induction		
15 04/24		HW Ch 22 – 25 Lab Coulomb's Law Exam 6 (Ch 22 – 25)	05/01
16 05/04		Presentation Participation Final Presentations	05/08

II. Grading and Testing Guidelines:

Final Grade Calculation

Activity	Qty	Points	Percentage
HW Assignments	29	444	30%
Lab Assignments	6	60	15%
Exams	6	600	40%
Final Presentation	3	150	15%
		1254	100%

Assessment of your learning will come in two primary ways. First, you will be graded on your application of physics concepts in solving conceptual and mathematical problems. This grade will come from quizzes, homework assignments, and exams. Secondly, assessment will be done in class through questions you will answer and demonstrations you will work together to explain. The student is responsible for his or her active learning in the course.

Grade weights: **Assignments 30%, Labs 15%, Exams 40%, and Final Presentation 15%**

Homework Assignments: Assignments are required to be done online at www.masteringphysics.com by the due date given. To register, **first log into the class NCSC Canvas** site and select the MyLab and Mastering tab. From there you can use the number from your textbook or buy one there. After registering, you must join the class by using the class code **adams10353**. Assignments submitted after the due date will be marked down 3% for each day after the due date, down to receiving 50% credit. These assignments require time and are not conducive to procrastination. Note that the assignments are due when the unit is over, or the same day as the unit exam. Some time may be given at the beginning of class for homework related questions.

Lab: Part of the class will include semi-weekly labs that will relate to the lecture part of the week. Labs will be online through canvas. Most use simulations from University of Colorado Boulder's PhET project.

Final Presentation: In place of the Final Exam, we will be giving group presentations. You and your group will choose a topic from the textbook or another topic related to physics that you have discussed and approved with me. The presentations will be no longer than 30 mins and will be you and your group telling us what you have learned from your independent study of your chosen topic.

III. Examination Policy:

Exams: There will be six exams and **NO FINAL**. All exams will be given on canvas, the exams will be available at the start of the semester, but must be completed before the assigned due date. Each exam will have a time limit of about an hour. You may use the textbook during the exams however you are not allowed to work with other classmates. If you are unable to complete or unable to take the exam before the due date you must notify the instructor **prior to the test day** or you may receive a late penalty. All tests will have multiple choice questions and problem-solving short response questions,

IV. Class Attendance and Homework Make-Up Policy:

This course is an asynchronous online course, as such attendance is not a part of the course. There is a week 1 quiz asking question about the canvas page and syllabus

V. Classroom Expectations:

Mastering Physics Suggestions:

- Read the submission instructions carefully. Many problems specifically state how the answer is to be submitted.
- Carefully watch your significant figures (most problems require about 3 significant figures). If you use the incorrect number of significant figures, your answer can be marked wrong.
- Use the hints! You are NOT penalized for reading the hints. (You are penalized if you incorrectly answer a question within the hints).
- Do the problems on paper and save them for later. You will probably want to refer to them later.
- Each numerical answer asks for specific units. Be sure you pay close attention to these.
- Ask questions! Don't keep submitting answers over and over and over again, only to get them wrong. Ask for help!
- Use the numerical values given in the problem. Most problems randomize the numbers, so you and your classmates will have different numbers.