Navajo Technical University http://navajotech.edu
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Course Title	**:**	**Survey of Physics with LAB**
Course Code	**:**	**PHYS 1115C**
Credit Hours	**:**	**4**
Semester	**:**	**SPRING 2022**
Cap	**:**	**20**

Instructor : Dr. Abraham Meles Office# TECH 305 Email: ameles@navajotech.edu
Lab Assistant : Melvin Foster Office# TECH 325 Email: mfoster@navajotech.edu
Office Hours **:** TR 2:00 PM – 3:20 PM Instructors will be available for LIVE online email questions or zoom and/or google meet.
Class Location: Hybrid (TECH Rm 305 and Online)
Zoom Meeting link: **https://navajotech.zoom.us/j/7292904055**
Meeting Times (HYBRID) **: T R 9:30AM-10:50 AM (online using Zoom)**
F 8:00 AM-10:50 AM (face-to-face Lab at TECH Rm 305)
Online activities include zoom meeting, Google classroom, Google meet, videos, online homeworks will be uploaded on the homework webpage, lecture notes will be uploaded on Moodle, online virtual lab links and weekly tasks will be released by email.
Face-to-face activities are mainly reserved for labs, quizzes and lectures. Weekly emails will list detailed tasks of the week every Monday morning.

Final Exam: May 11, 2021. 8:00 AM – 9:50 AM

Textbooks: Physics: A Conceptual World View 7th Edition, L.D. Kirkpatrick & G.E. Francis, Brooks/Cole (Cengage Learning) ISBN: 0495391522 ➔see the picture at the right.

Homework Websites: Instruction attached **on the last page of this syllabus**. Please buy the WebAssign Access Code from NTU Bookstore.

Tools:
For the online classes to be successful, **every student is required to have a laptop**. Students who don't have laptops, the cost of the laptops will be deducted from their Pell grant and then NTU will purchase laptops for them.
Need Scientific Calculator (NOT PHONE CALCULATOR). Flash Drive is recommended.
Lab Fee: $ 125

Mission Statement

Navajo Technical University's mission is to provide University readiness programs, certificates, associate, baccalaureate, and graduate degrees. Students, faculty, and staff will provide value to the Diné community through research, community engagement, service learning, and activities designed to foster cultural and environmental preservation and sustainable economic development.

The University is committed to a high quality, student-oriented, hands-on-learning environment based on the Diné cultural principles: *Nitsáhákees, Nahátá, Íína, Siihasin.*

Course Description

Overview of the concepts and basic phenomena of physics. This course provides a largely descriptive and qualitative treatment with a minimum use of elementary mathematics to solve problems. No previous knowledge of physics is assumed. Includes laboratory.

Communication

PLEASE OBTAIN YOUR NAVAJO TECHNICAL UNIVERSITY EMAIL AT THE BEGINNING OF THIS COURSE. E-mails sent to the instructor must have the subject line of the email to read:
SPRING2022-PHYS1115C–YourLastName_FirstName

Email (Not Moodle or Web Assign) is the best mode of communication for the instructor. Please allow 12 to 48 hours for a response.

Course structure

The course will be presented via **the course website: WebAssign and Moodle**. There will be a number of assigned readings, short papers, hands-on tutorials, discussion postings, and exams. The course will generally unfold on a weekly or bi-weekly basis through a posted Assignment document that provides instructions on readings and work to be completed within the given time period. When possible, assignments will be posted in advance, but usually they will be posted on or just before the relevant Monday.

Student Learning Resources

The primary resources are the textbook and the associated reading notes. These materials are supplemented by a mixture of readings from academic journals, professional reports and authoritative websites.
Very rarely, there are tutors available for this course. In many cases, students must seek the advice of the instructor. Any questions can be submitted through email. Please use the subject line information provided in the Communications section.

Required Materials:
Here is quick list of items that would make the semester progress smoothly (not all are required);

- Personal computer
- Personal printer
- Scanner or photo device
- PDF Reader/Editor

o Adobe Acrobat (Free)
o Foxit PDF Reader (Free)

- Word processor

- ❖ Flash drive
- ❖ Cloud service

o Google Drive

Access to the internet at home would be optimal for the semester. This will require a personal computer with a web browser and a portable document file (PDF) reader installed. A personal printer would be helpful as well, but a scanner or photo device would be needed to digitize the completed documents. If the above requirements are not available, the Science and Technology building has multiple places to print and access the material. The STEM lab in Mod 10 also has computers and printers. The campus has a printing location near the Multi-Purpose room, which can print of scan. An easier way to submit documents would be to type out the items and print to a pdf.

Assignments are already uploaded on the course webpage.

Week	Chapters	Assignments Due date	Quizzes
1	A World View	At the end of the week (Sunday 11:59pm)	
2	A World View	At the end of the week (Sunday 11:59pm)	
3	Describing Motion	At the end of the week (Sunday 11:59pm)	
4	Describing Motion	At the end of the week (Sunday 11:59pm)	**Quiz 1**
5	Explaining Motion	At the end of the week (Sunday 11:59pm)	
6	Explaining Motion	At the end of the week (Sunday 11:59pm)	
7	Motions in Space	At the end of the week (Sunday 11:59pm)	
8	Gravity	At the end of the week (Sunday 11:59pm)	**Quiz 2**
9	Momentum	At the end of the week (Sunday 11:59pm)	
10	Momentum	At the end of the week (Sunday 11:59pm)	**Midterm**
11	Energy	At the end of the week (Sunday 11:59pm)	
12	Energy	At the end of the week (Sunday 11:59pm)	
13	Rotation	At the end of the week (Sunday 11:59pm)	**Quiz 3**
14	Rotation	At the end of the week (Sunday 11:59pm)	
15	Classical Relativity	At the end of the week (Sunday 11:59pm)	
16	Einstein's Relativity	At the end of the week (Sunday 11:59pm)	
17	**Finals**		**Finals**

Important Dates

Jan 25 Instruction Begins
Jan 27 Last day to add/drop without "W"
Feb 26 Graduation Petition is due
Mar 8-12 Midterm Exams
Mar 15-19 Spring Break
Apr 1 Last day to withdraw with a "W"
May 10-13 Final Exams
May 13 Grades are due to the Registrar
May 14 Graduation

COURSE OUTCOMES	COURSE MEASUREMENTS
Upon completion of this course, the student will be able to: 1. Apply concepts of classical mechanics (such as velocity, acceleration, force, inertia, momentum, torque, work, energy) to simple static and dynamic systems. 2. Apply concepts of thermodynamics (such as heat, temperature, internal energy, entropy) to simple processes. 3. Apply concepts of electricity and magnetism (such as fields, potential, charge conservation, static and dynamic induction) to simple circuits, motors, and other simple contrivances. 4. Apply simple geometric and wave optics in simple situations. 5. Test ideas using modern laboratory equipment. 6. Estimate experimental uncertainties. 7. Use computers to analyze and report laboratory results. 8. Draw appropriate conclusions from quantitative scientific observations. 9. Accurately and clearly communicate the results of scientific experiments. **Optional Student Learning Outcomes:** 1. Apply quantum theory in simple situations such as the Bohr model of the atom, dual nature of light, atomic spectra. 2. Apply simple concepts of relativity.	Complete reading assignments, homework assignments, exams, projects, and quizzes.

Grading Plan:

Tests	35%	A= 100 – 90%
Quizzes	20%	B > 90 – 80%
Homework	40%	C > 80 – 70%
Participation	5%	D > 70 – 60%
		F > 60%

Grading Policy

Each student must do his or her own homework and case studies. Discussion among students on homework and cases is encouraged for clarification of assignments, technical details of using software, and structuring major steps of solutions - especially on the course's Web site. Students must do their own work on the homework and exam. Cheating and Plagiarism are strictly forbidden. Cheating includes but is not limited to: plagiarism, submission of work that is not the student's own, submission or use of falsified data, unauthorized access to exam or assignment, use of unauthorized material during an exam, supplying or communicating unauthorized information for an assignment or exam.

Participation

Students are expected to attend and participate in all class activities- as listed above, as it is 5% of the grade. Points will be given to students who actively participate in class activities including field trips, laboratories, and ask questions of guest speakers and other presenters.

Cell phone and head phone use

Please turn cell phones off or place them on silence or vibrate mode **BEFORE** coming to class. Also, answer cell phones **OUTSIDE OF CLASS** (not in the classroom). Exercising cell phone use courtesy is appreciated by both the instructor and classmates. Headphones are to be removed before coming to class.

Attendance Policy

Students are expected to regularly attend all classes for which they are registered. A percentage of the student's grade will be based on class attendance and participation. Absence from class, regardless of the reason, does not relieve the student of his/her responsibility to complete all course work by the required deadlines. Furthermore, it is the student's responsibility to obtain notes, handouts, and any other information covered when absent from class and to arrange to make up any in-class assignments or tests if permitted by the instructor. Incomplete or missing assignments will necessarily affect the student's grades. Instructors will report excessive and/or unexplained absences to the Counseling Department for investigation and potential intervention. **Instructors may drop students from the class after three (3) absences unless prior arrangements are made with the instructor to make up work and the instructor deems any excuse acceptable.**

Study Time for Hybrid Courses

For a hybrid course of one (1) credit hour, a student is expected to spend four hours (4) per week studying the course materials.

Academic Integrity

Integrity (honesty) is expected of every student in all academic work. The guiding principle of academic integrity is that a student's submitted work must be the student's own. Students who

engage in academic dishonesty diminish their education and bring discredit to the University community. Avoid situations likely to compromise academic integrity such as: cheating, facilitating academic dishonesty, and plagiarism; modifying academic work to obtain additional credit in the same class unless approved in advance by the instructor, failure to observe rules of academic integrity established by the instructor.

Diné Philosophy of Education

The Diné Philosophy of Education (DPE) is incorporated into every class for students to become aware of and to understand the significance of the four Diné philosophical elements, including its affiliation with the four directions, four sacred mountains, the four set of thought processes and so forth: Nitsáhákees, Nahát'á, Íína and Siih Hasin which are essential and relevant to self-identity, respect and wisdom to achieve career goals successfully.

Students with Disabilities

The Navajo Technical University and the Science department are committed to serving all enrolled students in a non-discriminatory and accommodating manner. Any student who feels he/she may need an accommodation based on the impact of disability, or needs special accommodations should inform NTU in accordance with the procedures of the subsection entitled "Students with Disabilities" under Section 7: Student Support Programs, NTU Student Handbook.

Notes:
The instructor reserves the right to amend this syllabus. Any such amendments will be clearly communicated in class.

PHYS 1115C

This Quick Start Guide provides information to help you start using WebAssign online Homework.

Before you begin, make sure you have the following three things ready!!!

- ✓ **Your NTU email address**
- ✓ **For class key use** ntc XXXX XXXX
- ✓ **For access code use the code you bought from NTU bookstore**

ENROLL WITH A CLASS KEY

1 **Go to https://www.webassign.net/wa-auth/login and click Enroll with Class Key.**
2 **Enter your class key** ntc XXXX XXXX **and click Enroll.**
3 **If the correct class and section is listed, click Yes, this is my class.**
4 **Sign in or create your account.**

Then, get the access code from NTU bookstore*

5 **Verify your access code at https://webassign.net/user_support/student/cards.html**
6 **Sign in to WebAssign.**
7 **Click Enter Access Code you got from the bookstore or Purchase Access.**
8 **Enter the access code and click Redeem.**

***WebAssign gives you free access for two weeks after the start of class. To continue using WebAssign after that, either enter an access code or purchase access online. Otherwise you will not be able to access or do homeworks.**

CUSTOMER SUPPORT

ONLINE: webassign.net/manual/student_guide
CALL: 800.354.9706

MORE INFORMATION

Search the online help for answers
to most questions: webassign.net/manual/student_guide/