

NORTH CENTRAL TEXAS COLLEGE

COURSE SYLLABUS

Course Title:	PHYS 2425 University Physics I				
Course Prefix & Number:	PHYS2425	Section Number:	340	Semester/Year:	SP 2021
Semester Credit Hours:	4	Lecture Hours:	3	Lab Hours:	3
Course Description (NCTC Catalog): <i>Fundamental principles of physics, using calculus, for science, computer science, and engineering majors; the principles and applications of classical mechanics, including harmonic motion, physical systems and thermodynamics; and emphasis on problem solving. Basic laboratory experiments supporting theoretical principles involving the principles and applications of classical mechanics, including harmonic motion and physical systems; experimental design, data collection and analysis, and preparation of laboratory reports.</i>					
Course Prerequisite(s): MATH2413 or concurrent enrollment in MATH2413					
Required or Recommended Course Materials: Physics for Scientists and Engineers 4 th Edition, Douglas C. Giancoli, See the instruction on Canvas to purchase the materials. Scientific Calculator (does not need to be a Graphing calculator)					

INSTRUCTOR INFORMATION

Name of Instructor:	Rojeen Razavi
E-mail Address:	rrazavi@nctc.edu

OFFICE HOURS: By appointment only (zoom meeting).

STUDENT LEARNING OUTCOMES (From Academic Course Guide Manual/Workforce Education Course Manual/NCTC Catalog)

<i>At the successful completion of this course the student will be able to:</i>	
	Lecture Learning Outcomes: <i>Upon successful completion of this course, students will:</i> <ol style="list-style-type: none"> 1. Determine the components of linear motion (displacement, velocity, and acceleration), and especially motion under conditions of constant acceleration. 2. Solve problems involving forces and work. 3. Apply Newton's laws to physical problems. 4. Identify the different types of energy. 5. Solve problems using principles of conservation of energy. 6. Define the principles of impulse, momentum, and collisions. 7. Use principles of impulse and momentum to solve problems. 8. Determine the location of the center of mass and center of rotation for rigid bodies in motion.

	<p>9. Discuss rotational kinematics and dynamics and the relationship between linear and rotational motion.</p> <p>10. Solve problems involving rotational and linear motion.</p> <p>11. Define equilibrium, including the different types of equilibrium.</p> <p>12. Discuss simple harmonic motion and its application to real-world problems.</p> <p>13. Solve problems involving the First and Second Laws of Thermodynamics.</p> <p><i>Lab Learning Outcomes:</i></p> <p><i>Upon successful completion of this course, students will:</i></p> <p>1. Prepare laboratory reports that clearly communicate experimental information in a logical and scientific manner.</p> <p>2. Conduct basic laboratory experiments involving classical mechanics.</p> <p>3. Relate physical observations and measurements involving classical mechanics to theoretical principles.</p> <p>4. Evaluate the accuracy of physical measurements and the potential sources of error in the measurements.</p> <p>5. Design fundamental experiments involving principles of classical mechanics.</p> <p>6. Identify appropriate sources of information for conducting laboratory experiments involving classical mechanics.</p>
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Method of Evaluation: Your assignments will count for the following percentages of your final grade.

- **Exams – 40%:** There will be 2 exams through MasteringPhysics. Exam policy will be posted as an announcement on Canvas.
- **Homework –30%:** Homework will be assigned through the MasteringPhysics. Please see the homework assignments due dates in MasteringPhysics.
- **Lab–30%**

Exams:

Midterm Exam	Chapter 1-7	March 9-10
Final Exam	Chapter 8-15	May 10-11

Laboratory Work:

Virtual labs will be posted on Canvas.

- Late work will not be accepted.
- The documents should be submitted in **one single pdf**. You can use the free apps like “Cam Scanner” to scan the documents as a single PDF document and upload it in canvas.
- Your work must be clean, neat and professional in appearance otherwise, they will not be graded.

Lab:

Due Date	Virtual Lab
Friday, Jan. 29 (11:59 PM)	Lab 1. Vector Addition
Friday, Feb. 5 (11:59 PM)	Lab 2. Measuring Acceleration due to Gravity
Friday, Feb. 19 (11:59 PM)	Lab 3. Projectile Motion
Friday, Feb. 26 (11:59 PM)	Lab 4. Second Law of Motion
Friday, March 5 (11:59 PM)	Lab 5. Centripetal Force
Friday, March 26 (11:59 PM)	Lab 6. Energy Transformations
Friday, April 2 (11:59 PM)	Lab 7. Collisions and Momentum
Friday, April 16 (11:59 PM)	Lab 8. Rotational Inertia of a Pulley
Friday, April 23 (11:59 PM)	Lab 9. Gravitation
Friday, April 30 (11:59 PM)	Lab 10. Mechanical Equivalent of Heat

Percentage of Grades

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

Class Policies

- Late work will not be accepted.
- No makeup exams will be given.
- There will be **no Extra Credit Assignments**.

Last day to withdraw from a course with a "W" is April 5.

DISABILITY SERVICES (Office for Students with Disabilities)

The Office for Students with Disabilities (OSD) provides support services for students with disabilities, students enrolled in technical areas of study, and students who are classified as special populations (i.e. single parents).

Support services for students with disabilities might include appropriate and reasonable accommodations, or they may be in the form of personal counseling, academic counseling, career counseling, etc. Furthermore, OSD Counselors work with students to encourage self-

advocacy and promote empowerment. The Counselors also provides resource information, disability-related information, and adaptive technology for students who qualify.

If you feel you have needs for services that the institution provides, please reach out to either Wayne Smith (940) 498-6207 or Yvonne Sandman (940) 668-3300. Alternative students may stop by Room 170 in Corinth or Room 111 in Gainesville.

CORE CURRICULUM FOUNDATIONAL COMPONENT AREA (For classes in the Core)

<input type="checkbox"/>	Communication	<input type="checkbox"/>	Government/Political Science
<input type="checkbox"/>	Mathematics	<input type="checkbox"/>	Social and Behavioral Sciences
X	Life and Physical Science	<input type="checkbox"/>	Component Area Option
<input type="checkbox"/>	Language, Philosophy & Culture		
<input type="checkbox"/>	Creative Arts		
<input type="checkbox"/>	American History		

REQUIRED CORE OBJECTIVES (For classes in the Core)

X	Critical Thinking	X	Teamwork
X	Communication	<input type="checkbox"/>	Personal Responsibility
X	Empirical and Quantitative	<input type="checkbox"/>	Social Responsibility

COURSE TYPE

<input type="checkbox"/>	Academic General Education Course (from ACGM but not in NCTC Core)
X	Academic NCTC Core Curriculum Course
<input type="checkbox"/>	WECM Course

STUDENT HANDBOOK

Students are expected to follow all rules and regulations found in the student handbook and published online.

ACADEMIC DISHONESTY

Scholastic dishonesty shall include, but is not limited to cheating, plagiarism, academic falsification, intellectual property dishonesty, academic dishonesty facilitation and collusion. Faculty members may document and bring charges against a student who is engaged in or is suspected to be engaged in academic dishonesty. See Student Handbook, "Student Rights & Responsibilities: Student Conduct ([FLB(LOCAL)])".

Consequences for academic dishonesty may include:

- 1) Assigning a failing grade for the assignment.
- 2) Assigning a failing grade for the class.

QUESTIONS, CONCERNS, or COMPLAINTS

Name of Chair/Coordinator:	Dr. Lisa Bellows
Office Location:	Gainesville Science Building Office 408
Telephone Number:	940-668-4252
E-mail Address:	lbellows@nctc.edu

COVID-19 Specific Syllabi Statements

Syllabi statement regarding potential Conversion of Onsite Classes to Online/Remote Format:

North Central Texas College students should be aware that in the event of a college closure due to COVID-19, onsite classes will be converted to an online/remote format. Students should plan ahead to ensure they have access to the computer equipment (either PC, MAC, or tablet), webcam, and internet connectivity to continue their classes in an online/remote format. Please read all your official North Central Texas College student emails as the transition from onsite to online/remote might require a reorganization in your personal situation. Students will be granted a 72-hour transition and grace period. Online classes will continue as scheduled without disruption. Wear a mask, stay safe, and contact your Instructor as the situation arises.

Syllabi Statement Regarding Face Coverings: Per the North Central Texas College guidance on face coverings on campus, in the instructional setting, faculty and students must wear face coverings, such as masks or face shields. Students without coverings, or those who do not comply with the rules relating to face coverings, will not be able to participate in on-campus classroom activities. To request an exception to this requirement, students should contact the NCTC HR Office of Enrollment Management (ccove@nctc.edu). Failure to comply with the face coverings requirement may result in the Instructor directing the student to leave the classroom. Any student asked to leave the classroom may be referred to the student conduct officer. These policies and procedures were updated on July 30, 2020 and are subject to change.

Students should:

- Provide notification to campus officials (via NCTC Daily Health Check protocol through Canvas) if they have tested positive for COVID-19 or have to quarantine so we can confirm reported absence with instructors, monitor, and assist the campus community.
- Notify instructors in advance of the absence.
- Connect with that class through Webex if the class session is being transmitted in a hybrid fashion.
- Keep up with and/or make up missed classwork or assignments.
- Submit assignments digitally through Canvas or other means as announced by your instructor.
- Work with their instructors to reschedule exams, labs, and other critical academic activities described in the course syllabus.
- Check Canvas and campus email daily to receive important announcements pertaining to the course.

During this period, faculty with face-to-face meetings will establish assigned seating/work stations to facilitate roll-taking, and, if necessary, contact tracing. Additionally, we ask all members of the College community to be attentive to their health, and safeguard others, by following the CDC's guideline to "stay home when you are sick." You should stay home if you

have symptoms. More information on what to do if you are sick is available at the CDC's website.

Additional NCTC information is available at <http://www.nctc.edu/coronavirus/index.html>

Syllabus Addendum -Student Services

Student Success Center

The Student Success Center is designed to help all students at NCTC develop tools to achieve their academic goals. The center links students to FREE tutoring, including a Writing Center, a Math Lab, and free online tutoring. The program helps students acclimate to college by providing free interactive online workshops. For more information, please visit your nearest Student Success Center.

Student Success offers academic coaching, tutoring, including a Writing Center, and a Math Lab to assist new students acclimate to college by providing computer lab services for prospective students. <http://www.nctc.edu/student-services/student-success/tutoring/index.html>
First generation students can also participate in TRIO which offers specialized services. <http://www.nctc.edu/student-services/trio-student-support-services.html>

Completion Center

The NCTC Completion Center is a comprehensive student engagement program that increases retention and completion rates of first-time, low income students. Services include: Success coaching to address students' academic and non-academic challenges and issues; Success Seminars, and a centralized career readiness and job placement program. <http://www.nctc.edu/student-services/completion-center/index.html>

Career Services Center

The NCTC Career Services Center is the place you can go for educational and career planning. Services include: Career/Degree Exploration, Job Search Tools and Resources, Resume and Professional Portfolio Development, Interview Skills and Preparation. Our Career Advisors partner with you in making your educational journey an efficient process towards a rewarding career. <http://www.nctc.edu/career-services/index.html>

Counseling and Advising

Support Services, Counseling and Advising staff offer a variety of services to current and prospective students, such as College 101, placement testing, academic advising and course registration, transfer assistance, and College Success seminars (Time Management, Study Skills, Test Anxiety, Choosing a Major, Learning Style Strategies, Career Exploration) and much more. <http://www.nctc.edu/counseling-advising/index.html>

Testing Service Center

The mission of NCTC Testing Services is to provide high-quality testing services that adhere to the professional standards and guidelines to meet the needs of students, faculty, and community members. <http://www.nctc.edu/testing-center/index.html>

Early Alert and CARES

The NCTC Early Alert program assists students who are at risk of failing or withdrawing from a course. Faculty and staff may refer students through the Early Alert process at any point in the semester in an effort to provide appropriate intervention and access to support services. Examples of behaviors that could prompt an Early Alert referral could be missing assignments, failing tests, excessive absences, or personal circumstances impacting academic performance. A student submitted as an Early Alert will be contacted by an [academic advisor or success coach](#) through text, phone, and/or via their NCTC e-mail address to discuss any current challenges as well as helpful resources and success strategies-we want our students to finish strong and know that education is a partnership!

The [NCTC CARES \(Campus Assessment Response Evaluation Services\) Team](#) is concerned not only about our students' academic success, but also their emotional and physical well-being. The CARES Team promotes a safe learning environment for students, faculty, and staff and is committed to taking a proactive approach in helping our students succeed by addressing the mental, emotional or psychological health and safety of the NCTC community. As a student, you have the ability to report concerning behavior which could impact your own safety or the safety of another NCTC student, such as stalking, harassment, physical or emotional abuse, violent or threatening behavior, or self-harm. Visit the NCTC CARES site to also locate campus and community resources, or email counseling@nctc.edu to get in touch with a member of the CARES Team directly. As always, if you feel there is an immediate threat to your own safety or welfare (or to another student), please call 911 immediately.

Financial Aid

Financial Aid offers financial resources for students that qualify, visit the financial aid offices for more information. <http://www.nctc.edu/financial-aid/index.html>

Student Success

At NCTC, student success is progress towards collegiate goals, reached in an affordable and timely manner, under professional guidance, empowering students to serve skillfully in their chosen role within their community

Equity

NCTC defines equity as encompassing the practice of acknowledging individual differences and systemic disparities when developing new programs and resources for our campus community, which may sometimes challenge our own beliefs and assumptions, in order to ensure balanced educational opportunities toward completion.

Affinity Groups

Staff and faculty representing the Employee Resource Groups (ERG's), along with academic advisors, counselors and success coaches, serve as mentors for NCTC's student-centered Affinity Groups.

An Affinity Group is a population of students who have specific needs, barriers or systems they are needing to navigate not only within college, but within life. Providing mentorship, support and resources for identified Affinity Groups such as Black/African American students, veterans and active military, single parents, students with disabilities, adult learners, Latinx, LGBTQ+ and students who have experienced foster care and/or homelessness, enables us to make more impactful, meaningful connections with students who are in dire need of equity and understanding.