PHY 101 — Major Concepts of Physics I — Summer 2021

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Class Meetings: Mon-Thurs 1:00-3:45 on Zoom
Office Hours: to be determined

COURSE DESCRIPTION:
By taking PHY 101 you will learn something about how the "world" works due to a few fundamental laws. Note that the word world is in quotation marks as we will often abstract away some intricacies of the actual world and work in a simpler idealized world which is nonetheless accurate enough for most purposes. This course does not aim just at teaching the physical rules about how the world works, but also to help foster a scientific mindset and promote critical thinking skills.

TEXTBOOK:
The textbook for this course is OpenStax College Physics.
Online Textbook: https://openstax.org/details/books/college-physics.

This is a FREE online textbook. You can order a print copy if you would like. We are planning to cover the first 10 chapters this semester; mainly exploring mechanics, which is the area of physics concerned with the motions of physical objects with a focus on forces and energy.

HOMEWORK:
Homework will be given online on Kudu with a problem set every week. Homework is assigned in order to give you practice working with the material and doing problems. We encourage you to work together in groups when doing your homework problems.

You will need to make a free account to enroll in the course. Please sign up with your Syracuse email. After creating your account, press the red + to enroll in this course, then search for the course ID d5echi. After enrolling you should see a box labeled PHY 101. Click on it to enter the course page.

Website: https://www.kudu.com/?course=d5echi
Student/University ID: your SUID **Course ID:** d5echi

LABS:
There is an integrated lab component to this course, with a lab being done each week. Do not expect these labs to be directly connected to the material that is being presented in that week's lectures. The purpose of these labs is to build your scientific reasoning skills and give you experience with how physics is discovered, rather than further explore the specific topics we expect you to learn in this class.

QUIZZAMS:
There will be a short assessment given at the end of every week on the material covered in that week's lectures. THE LOWEST SCORE WILL BE DROPPED. These are meant to be somewhere between a quiz and a test in difficulty and aim to assess how well you understand the material. While these are NOT cumulative, you should expect to still use what you learn early in the class on the later as topics in physics tend to build on each other.

LECTURES & IN CLASS WORK:
This class will be taught in an active learning style as studies have shown that this is the best and most effective way to learn. This means that there will be less actual lectures and more time for you to do problems in groups with me present to help. Running the lecture portions of the class in this way allows for faster understanding of the concepts taught and encourages good problem solving skills, which will make your homework and quizzams easier.

There is a LOT of material we need to get through in a short time this semester, so I may on occasion pre-record short lectures on topics we do not have time to cover during the class period. If this happens, I expect you to watch these video lectures prior to the next meeting.

PREREQUISITES:
This class has no prerequisite courses. No prior physics knowledge is required, but knowledge of elementary algebra and trigonometry will be useful.

GRADING:
Grades will be calculated from the various class activities as follows:

Quizzams:	35%
Homework:	30%
Labs:	25%
Participation:	10%

The participation grade will come partially from how active you are during lectures and labs and partially from peer assessment from your assigned groups.

Grading Scale:		
B+ – 87-89%	B – 84-86%	B- – 80-83%
C+ – 77-79%	C – 74-76%	C- – 70-73%
D+ – 67-69%	D – 60-66%	
	F – below 60%	

UNIVERSITY ATTENDANCE POLICY:
Attendance in classes is expected in all courses at Syracuse University. Students are expected to arrive on campus in time to attend the first meeting of all classes for which they are registered. Students who do not attend classes starting with the first scheduled meeting may be academically withdrawn as not making progress toward degree by failure to attend. Instructors set course-specific policies for absences from scheduled class meetings in their syllabi.

It is a federal requirement that students who do not attend or cease to attend a class to be reported at the time of determination by the faculty. Faculty should use "ESPR" and "MSPR" in Orange Success to alert the Office of the Registrar and the Office of Financial Aid.

Students should also review the university's religious observance policy and make the required arrangements at the beginning of each semester.

SYRACUSE UNIVERSITY POLICIES:
Students should review the University's policies regarding: Diversity and Disability: https://www.syracuse.edu/life/accessibilitydiversity/; the Religious Observances Notification and Policy: http://supolicies.syr.edu/studs/religious_observance.htm; and Orange SUccess: http://orangesuccess.syr.edu/getting-started-2/.

DISABILITY RELATED ACCOMMODATIONS:
Syracuse University values diversity and inclusion; we are committed to a climate of mutual respect and full participation. My goal is to create learning environments that are useable, equitable, inclusive and welcoming. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or accurate assessment or achievement, I invite any student to meet with me to discuss additional strategies beyond accommodations that may be helpful to your success.

RELIGIOUS OBSERVATIONS NOTIFICATION AND POLICY:
SU religious observances notification and policy, found at http://hendricks.syr.edu/spirituallife/index.html, recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes for regular session classes and by the submission deadline for flexibly formatted classes.

For fall and spring semesters, an online notification process is available for students in **My Slice / StudentServices / Enrollment / MyReligiousObservances / Add a Notification**. Instructors may access a list of their students who have submitted a notification in My Slice Faculty Center.

ACADEMIC INTEGRITY POLICY:
Syracuse University's Academic Integrity Policy reflects the high value that we, as a university community, place on honesty in academic work. The policy defines our expectations for academic honesty and holds students accountable for the integrity of all work they submit. Students should understand that it is their responsibility to learn about course-specific expectations, as well as about university-wide academic integrity expectations. The policy governs appropriate citation and use of sources, the integrity of work submitted in exams and assignments, and the veracity of signatures on attendance sheets and other verification of participation in class activities. The policy also prohibits students from submitting the same work in more than one class without receiving written authorization in advance from both instructors. Under the policy, students found in violation are subject to grade sanctions determined by the course instructor and non-grade sanctions determined by the School or College where the course is offered as described in the Violation and Sanction Classification Rubric. SU students are required to read an online summary of the University's academic integrity expectations and provide an electronic signature agreeing to abide by them twice a year during pre-term check-in on MySlice. For more information about the policy, see http://academicintegrity.syr.edu.

COURSE SCHEDULE:
Below is a tentative schedule of which chapters we will cover during which week of this class.

Week 1	Chapters 1 & 2	Introduction & 1D Kinematics
Week 2	Chapters 3 & 4	2D Kinematics & Newton's Laws
Week 3	Chapters 5 & 6	Friction, etc. & Circular Motion and Gravity
Week 4	Chapter 7 & start of 8	Work and Energy & start Momentum
Week 5	Chapters 8 & 9	Momentum and Collisions & Torque
Week 6	Chapter 10	Angular Momentum