



UNIVERSITY OF  
CENTRAL FLORIDA

# PHY 2048 - GEN PHYS USING CALCULUS I

**Section: 0M03**

*College of Sciences*  
Department of Physics

## Course Information

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**Term:** Fall 2025

**Class Meeting Days:** TR

**Class Meeting Time:** 09:30AM - 10:15AM

**Class Meeting Location:** MSB 0260

**Modality:** M

**Credit Hours:** 3.00

## Instructor Information

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**Name:** Zhongzhou Chen

**Office Location:** PSB 153

**Email:** Zhongzhou.Chen@ucf.edu

## Combined Course Details

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This syllabus applies to PHY 2048 0031, PHY 2048 0032, PHY 2048 0033, PHY 2048 0034, PHY 2048 0035, PHY 2048 0036, PHY 2048 0037, PHY 2048 0M03.

## Course Description

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PHY 2048 COS-PHYSICS 3(3,1)General Physics Using Calculus I: PR: Earn a minimum grade of C in each of the following:MAC2311C - Calculus with Analytic Geometry I (4)

This calculus-based course serves as the first in a two-part series, covering topics like kinematics, dynamics, energy, momentum, rotational motion, fluid dynamics, oscillatory motion, and waves. Designed for science and engineering majors, the course integrates critical thinking, analytical skills, and real-world applications. Student Learning Outcomes: Students will solve analytical problems describing different types of motion, including translational, rotational, and simple harmonic motion. Students will apply Newton's laws, and conservation laws to solve analytical problems of mechanics. Students will identify and analyze relevant information presented in various formats such as graphs, tables, diagrams, and/or mathematical formulations. Students will solve real-world problems using critical thinking skills and knowledge developed from this course. Fall, Spr, Sum

## Office Hours

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To be announced during the first week of class.

## Student Learning Outcomes

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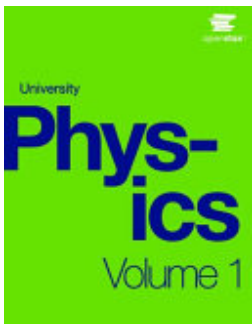
After successful completion of this course, students will be able to:

- Students will be able to effectively utilize Generative AI to learn new knowledge and new skills
- Students will be able to critically evaluate the mechanics related outcomes of Generative AI using the physics knowledge that they have learned in the class.
- Students will be capable of effective collaboration with Generative AI to solve real-world problem involving Newtonian Mechanics.
- Students will solve analytical problems describing different types of motion, including translational, rotational, and simple harmonic motion.
- Students will apply Newton's laws, and conservation laws to solve analytical problems of mechanics.
- Students will identify and analyze relevant information presented in various formats such as graphs, tables, diagrams, and/or mathematical formulations.

- Students will solve real world problems using critical thinking skills and knowledge developed from this course.

## Required Course Materials and Resources

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### **University Physics**

**ISBN:** 9781938168277

**Authors:** Samuel J. Ling, Jeff Sanny, William Moebs

**Publication Date:** 2016-08-01

**Notes:** Only online version is required

## Course Assessment and Grading Procedure

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Final Exam: 20%

Mid-term exams: 34%

Homework: 21%

Recitation attendance : 12%

Recitation activity: 3%

Weekly Learning Summary: 10%

Extra Credit: 5% (3% Treasure Trove for Early Completion, 2% Classroom presentation)

## Grading Scale

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Grading Scale

Letter Grade	Percentage
A	94-100%
A-	90-93%

Letter Grade	Percentage
B+	87-89%
B	84-86%
B-	80-83%
C+	77-79%
C	74-76%
C-	70-73%
D+	67-69%
D	64-66%
D-	61-63%
F	0-60%

## Policies for Course Grade

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### Makeup Work Policy

Homework can be completed late with a penalty of 13% per day. Which means that on the 8th day after the due date, the homework will be graded as zero.

There will be no other make-ups or late work accepted, except for on a case-by-case basis.

### Attendance

Recitation attendance is counted towards final grade. Course attendance is optional.

## Artificial Intelligence (AI) Use Policy

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- **Use of Generative Artificial Intelligence (GenAI) is governed on an assignment-by-assignment basis.** For each assignment, you must carefully review the instructions to determine whether AI-generated content is permitted. In some cases, you may be permitted or even required to use GenAI. When using GenAI, you must disclose specifically where and how it was used in the process of completing the assignment. Any attempt to represent GenAI output inappropriately as your own work will be treated as plagiarism. Ultimately, students are

responsible for the accuracy and veracity of submitted work whether AI-generated or not.

Weekly Learning Summary: Highly recommended to use GenAI to complete.

Homework: Recommended to complete by yourself, only use GenAI to help when you are unable to solve the problem correctly.

Exams: Use of GenAI is forbidden on exams.

Recitation: Determined by Recitation TA.

## **Disability Access & Accommodations**

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The University of Central Florida is committed to providing equal access to all students with disabilities (ADHD, learning disabilities, Autism, chronic medical conditions, physical disabilities, etc.). To receive consideration for reasonable disability-related course accommodations, disabled students must contact Student Accessibility Services (SAS) and complete the steps required for SAS to review accommodation requests. More information can be found on the UCF [Student Accessibility Services](#) website under the Start Here tab or by contacting SAS directly (Ferrell Commons 185; [sas@ucf.edu](mailto:sas@ucf.edu); Phone - 407-823-2371).

Approved accommodations are shared with course instructors via the SAS Course Accessibility Letter. Implementing certain accommodations may require discussion about specific considerations of the course design, course learning objectives, and the individual academic and course challenges experienced by the student. While students with disabilities or chronic health needs are also encouraged to discuss any course concerns with professors in addition to contacting SAS, professors are not required to facilitate disability-related adjustments to the course unless the professor has received a Course Accessibility Letter from SAS that outlines approved accommodations.

## **Academic Integrity**

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Students should familiarize themselves with UCF's Code of Conduct at [Student Conduct and Integrity Office](#). According to Section 1, "Academic Misconduct," students are prohibited from engaging in:

- a. Academic misconduct is defined as any submitted work or behavior that obstructs the instructor of record's ability to accurately assess the student's understanding or completion of the course

materials or degree requirements (e.g., assignment, quiz, and/or exam). Examples of academic misconduct include but are not limited to: plagiarism, unauthorized assistance to complete an academic exercise; unauthorized communication with others during an examination, course assignment, or project; falsifying or misrepresenting academic work; providing misleading information to create a personal advantage to complete course/degree requirements; or multiple submission(s) of academic work without permission of the instructor of record.

- b. Any student who knowingly helps another violate academic behavior standards is also in violation of the standards.
- c. Commercial Use of Academic Material. Selling of course material to another person and/or uploading course material to a third-party vendor without authorization or without the express written permission of the University and the instructor of record. Course materials include but are not limited to class notes, the instructor of record's slide deck, tests, quizzes, labs, instruction sheets, homework, study guides, and handouts.
- d. Soliciting assistance with academic coursework and/or degree requirements. The solicitation of assistance with an assignment, lab, quiz, test, paper, etc., without authorization of the instructor of record or designee is prohibited. This includes but is not limited to asking for answers to a quiz, trading answers, or offering to pay another to complete an assignment. It is considered Academic Misconduct to solicit assistance with academic coursework and/or degree requirements, even if the solicitation did not yield actual assistance (for example, if there was no response to the solicitation).

### **Responses to Academic Dishonesty, Plagiarism, or Cheating**

Students should also familiarize themselves with the procedures for academic misconduct in UCF's student handbook, [\*The Golden Rule\*](#). UCF faculty members have a responsibility for students' education and the value of a UCF degree, and so seek to prevent unethical behavior and respond to academic misconduct when necessary. Penalties for violating rules, policies, and instructions within this course can range from a zero on the exercise to an "F" letter grade in the course. In addition, an Academic Misconduct report could be filed with the Office of Student Conduct and Academic Integrity, which could lead to disciplinary warning, disciplinary probation, or deferred suspension or separation from the University through suspension, dismissal, or expulsion with the addition of a "Z" designation on one's transcript.

Being found in violation of academic conduct standards could result in a student having to disclose such behavior on a graduate school application, being removed from a leadership position within a student organization, the recipient of scholarships, participation in University activities such as study abroad, internships, etc.

Let's avoid all of this by demonstrating values of honesty, trust, and integrity. No grade is worth compromising your integrity and moving your moral compass. Stay true to doing the right thing: take the zero, not a shortcut.

## Title IX

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Title IX prohibits sex discrimination, including sexual misconduct, sexual violence, sexual harassment, and retaliation. If you or someone you know has been harassed or assaulted, you can find resources available to support the victim, including confidential resources and information concerning reporting options at [Let's Be Clear](#) and [UCF Cares](#).

For more information on access and community engagement, Title IX, accessibility, or UCF's complaint processes contact:

- Title IX – ONAC – [Office of Nondiscrimination & Accommodations Compliance](#) & [askanadvocate@ucf.edu](mailto:askanadvocate@ucf.edu)
- Disability Accommodation – Student Accessibility Services – [Student Accessibility Services](#) & [sas@ucf.edu](mailto:sas@ucf.edu)
- [Access and Community Engagement](#) (including the Ginsberg Center for Inclusion and Community Engagement, Military and Veteran Student Success, and HSI Initiatives)
- UCF Compliance and Ethics Office – [Compliance, Ethics, and Risk Office](#) & [complianceandethics@ucf.edu](mailto:complianceandethics@ucf.edu)
- The [Ombuds Office](#) is a safe place to discuss concerns.

## Reporting an Incident or Issue

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If you believe you have experienced discrimination by any faculty or staff member, contact the Office of Nondiscrimination & Accommodations Compliance via the [ONAC website](#) or at 407-823-1336. You can also choose to report using the UCF Integrity Line either anonymously or as yourself at 1-855-877-6049 or by using the [online form](#). UCF cares about you and takes every report seriously. For more information see the [Reporting an Incident or Issue Webpage](#).

## Deployed Active-Duty Military Students

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Students who are deployed active duty military and/or National Guard personnel and require accommodation should contact their instructors as soon as possible after the semester begins and/or after they receive notification of deployment to make related arrangements.

## Campus Safety

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At UCF Public Safety and Police, safety is the top priority. Emergencies on campus are rare, but if one should arise, it's important to be familiar with some basic safety and security concepts.

- In an emergency, always dial 911.
- Every UCF classroom has an **Emergency Procedure Guide** posted on a wall near the door, which will show you how to respond to a variety of situations. This guide can also be found online [here](#).
- In the event of an active threat, remember **AVOID, DENY, DEFEND**. Choose the best course of action and act immediately. Watch the video [here](#) to learn more.
  - **AVOID**. Pay attention to your surroundings and have an exit plan. Get as much distance and as many barriers between you and the threat as quickly as possible.
  - **DENY**. When avoiding is difficult or impossible, deny the threat access to you and your space. Lockdown by creating barriers, turning the lights off and remaining quiet and out of sight. Make sure your cell phone is silenced, but do not turn it off.
  - **DEFEND**. When you are unable to put distance between yourself and the threat, be prepared to protect yourself. Commit to your actions, be aggressive and do not fight fairly. Do whatever it takes to survive.
- For emergencies on campus, UCF will utilize the [UCF Alert](#) system. All UCF students, faculty and staff are automatically enrolled to receive these email and text alerts, however, it's a good idea to frequently ensure your [contact information is up to date](#).

## Financial Aid Accountability

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All instructors/faculty are required to document students' academic activity at the beginning of each course. In order to document that you began this course, please complete this activity by the end of the first week of classes or as soon as possible after adding the course. Failure to do so may result in a delay in the disbursement of your financial aid.

## Class Schedule

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Weekly schedule

Weeks	Content	Start Date	



1	Introduction and vector review	Aug. 18	
2	Motion in 1D	Aug 25	
3	2D Motion	Sep 1	
4	Forces	Sep 8	
5	Newton's Laws of Motion	Sep 15	
6	Circular motion and Introduction to Universal Gravity	Sep 22	Mid-term 1
7	Work, kinetic energy	Sep 29	
8	Conservation of mechanical energy	Oct. 6	
9	Linear momentum, conservation of momentum	Oct. 13	

10	Collisions and many particle system	Oct. 20	Mid-term exam 2
11	Torques and Static Equilibrium	Oct. 27	
12	Rotational Motion	Nov. 3	
13	Angular momentum	Nov. 10	
14	Simple harmonic motion	Nov. 17	Mid-term Exam 3
15	Simple harmonic motion, Waves and Oscillation	Nov. 24	Thanks-giving week
16	Final Exam period	Dec 1st	Final Exam: Dec. 4th