SOUTH FLORIDA STATE COLLEGE
Division of Arts and Sciences
COURSE SYLLABUS

Spring Term 2023

PHY 2048C General Physics with Calculus I (5 credit hours)

Welcome – Welcome to PHY2048, General Physics with Calculus I. I look forward to working with you this semester and hope that you will enjoy the class and take advantage of the resources within this course. Please feel free to contact me via email or phone if you have any questions. You will find the materials and assignments for this course listed on Brightspace under "Content." Other important course information will be listed there as well.

Catalog Description: The first part of a two-term introductory calculus-based physics course designed primarily for science and engineering majors. Using an inquiry-based approach, the course is taught in an integrated lecture and laboratory style with accompanying web-based applications. Topics covered include classical mechanics, including: kinematics, motion, and both linear and angular momentum. **Pre/Corequisite: MAC 2311. Corequisite: PHY 2048L.**

Course Specific Outcomes: Upon successful completion of this course, students will be able to:

Understand scientific units and problem solving related to physics.

1. Understand and apply calculus operations to concepts of kinematics.
2. Understand and apply calculus operations of force and motion.
3. Understand and apply calculus operations to concepts of work and energy.
4. Understand and apply calculus operations to concepts of momentum and collision.
5. Understand and apply calculus operations to concepts of circular and rotational motion, gravitation and equilibrium.
6. Understand concepts of vibrations, waves and sound.
7. Demonstrate knowledge and understanding of physics laboratory techniques and procedures.
8. Demonstrate knowledge and understanding of the integration of theoretical and experimental physics.
9. Demonstrate an ability to organize and interpret scientific data.

Prerequisites: Satisfactory completion or current enrollment in MAC 2311

Required Course Materials:

□ Physics for Scientists and Engineers with Modern Physics 9th ed, Brooks/Cole, Serway, Jewett
□ WebAssign access
□ Scientific calculator

- □ Reliable computer
- □ Stable internet connection
- □ Printer

Instructional Methods:

This course will be offered in hybrid format. The textbook is available at the college bookstore, or you may purchase it online. You will be required to access the course's Brightspace website regularly for online discussions, notes, and to take both quizzes and exams. All lab activities, homeworks, tests and quizzes will be administered online. There are face-to-face class meetings for lecture discussions and problem solving according to the Course Schedule.

Course Resources:

Besides the required textbook, all additional study materials, helpful links, assignments, and activities for every week of the class are available on the **Brightspace course page**. All work that is scheduled for every week of the course on the Brightspace course page, must be submitted by the due dates indicated in the course schedule. The introductory post is required in the first week or you will be counted as a "no show" and will be unenrolled from the course, which may impact your financial aid or student status. Prompt submission of assignments and quizzes also constitute attendance in the course. The Course Schedule provides due dates for all course materials.

In addition to the required textbook, you will need the WebAssign **access** to complete the Homeworks starting from the beginning of the semester.

Course Requirements: Assessments (Exams/Quizzes/Assignments):

INTERNET: You must have access to the Internet to complete the requirements of this course and access the online textbook. You will be expected to access the class Brightspace website weekly to obtain assignments, take quizzes, access course material, and take exams.

You should be proficient in using a computer. Brightspace online learning environment will be used for the course. You should have readily accessible and reliable access to the Internet **(you only have one attempt for every assignment in this course)**. For **successful** completion of this course, it is imperative to refer to the **Course Schedule and Assignment Checklist**, at the end of the **Course Syllabus,** log into Brightspace every day, check your college email and Brightspace course email regularly, refer to your course announcement on Brightspace, and communicate with the instructor periodically via email or forum. You must read all assigned chapters in your textbook; submit the discussions posts and peer replies, quizzes, and exams on time. You must view the weekly folders on Brightspace, which include links to PowerPoint presentations, discussion boards, quizzes, exams, and additional readings. **NO LATE WORK IS ACCEPTED IN THIS COURSE.**

Online WebAssign Homework:

There will be an on-line homework assignment (WebAssign, www.webassign.net) for each of the 5 Units, which correspond to 5 in class Unit Exams. Each assignment will contain about 20 questions and if you miss an assignment you will receive a zero for that assignment. Regardless of the number of points per chapter, each chapter has the same weight. The homework grade will be the average of all the WebAssign assignments scores based on %. **Homeworks are usually due by 11:59 PM on the day of the corresponding Unit Exam**.

On our WebAssign course page, besides the actual **Assignments** (Homeworks), please also check the **Resources**, for practice quizzes and exams from the previous years (with the answers!), and also for a huge number of study materials for each topic of this course.
Please remember that the Online Homework contributes 25% to the total final grade in the course.

Online Discussions:
There will be one or two online discussions every week on the Brightspace course page, based on the material covered in current chapter. You will have to post your detailed solutions to the discussion questions in your initial post. All solution steps and all calculations must be shown clearly, in a neat and readable way. If the sketch is necessary to explain the calculation steps, it needs to be there. In brief, your solution to each discussion question must look so, that everyone who looks at it could follow, and clearly see how you have got your answer. After posting all your answers in initial post, you need to reply to at least one classmate. In your peer reply, you have to provide a substantial and specific feedback on your classmate solutions.
Please note: only the answers and solutions posted in your initial post will count towards the grade. Also, just the answer, without the detailed solution shown will not earn any points. No make up for missed discussion deadlines will be provided.
Please remember that the Discussions contribute 15% to the total final grade in the course.
The way I will be grading your discussion posts and responses: Discussion grading will be primarily based on your participation and efforts, and only secondarily – on the actual correctness of your answers. In other words, if you give correct answers and provide a firm reasoning, I'll give you a whole credit. But, if you give a wrong answer, or have no idea how to figure it out at this point, but at least I see that you are trying to figure it out, discussing it with your peers, and working on it, then I'll give you some reasonable partial credit for that. Please see the Discussion Grading Rubric in the Start Here module for more details.

Quizzes:
The online quizzes on the Brightspace course page will consist of about 10 multiple choice questions, based on previously covered material up to and may also include the quiz day reading assignment. You will need to submit the quizzes by the corresponding deadlines. No make up for missed quiz deadlines will be provided. Please remember that the Quizzes contribute 10% to the total final grade in the course.

Unit Exams:
The online Unit Exams will consist of about 10 multiple choice questions, based on previously covered material, as shown in Tentative Course Schedule below. You will need to submit the exams by the corresponding deadlines. No make up for missed exam deadlines will be provided. Please remember that the Unit Exams contribute 10% to the total final grade in the course.

Labs:
The integrated laboratory with this course is designed to provide "hands on" exploration experience of physical principles. In the process, you will become acquainted with some of the laboratory equipment and procedures (in virtual format). The theory behind physical principles will be developed through experimental measurements, working with the online simulations, and peer learning. Laboratory safety standards must be observed at all times when the experiment will require from you some physical measurements. You will be provided with an instructions and related reference materials in each lab

module. Those usually will include a brief reference on the corresponding topic, example application, experimental set-up demonstration (with the photos of the set-up, or via virtual simulation), and the experimental data collection and treatment description. After that you will perform an experiment, collect the data, complete the calculations, plot the graphs (if applicable) as instructed, and fill out the Lab Report sheet. Sometimes you will be given laboratory application problems to complete, in addition to the experiment. These problems allow you to apply what you have learned in the laboratory to a real problem.

If you complete the experiment, calculations, and the rest of the tasks, and submit the Lab Report and all the rest of the data as directed, in a clear, neat, and readable format, and by the specified deadline (see the Course Schedule), you will get maximum credit for that lab. **No late labs will be accepted.**

Please remember that the labs contribute 15% to the total final grade in the course.

Final Comprehensive Exam:

The **online** Final Exam will consist of about 15 multiple choice questions, and will be comprehensive (i.e. will cover all the chapters we discussed throughout the semester). Final exam is mandatory, i.e. you have to take it in order to complete this course with a D or higher. Please remember that the Final Exam contributes 25% to the total final grade in the course.

Grading:

Grading Evaluation/Criteria

Grading percentages for different assignments or exams may vary somewhat for each faculty teaching the course.

Grade percentage:

average % from Discussions	**15%**
average % from Quizzes	**10%**
average % from Unit Exams 1-5	**10%**
average % from Labs	**15%**
average % from WebAssign Homework	**25%**
Final Exam %	**25%**

Grading Scale:

$\geq 90\%$	A
$80 - 89$	B
$70 - 79$	C
$60 - 69$	D
$< 60\%$	F