FLORIDA SOUTHWESTERN STATE COLLEGE

School of Pure and Applied Sciences

Physical Science

> *The mission of Florida SouthWestern State College is to provide affordable and exceptional academic, cultural and workforce opportunities in a supportive environment that productively transforms the lives of our students and enhances the economic vitality of the communities we serve.*

Instructor Information

Instructor: Marius Coman, Ph.D.
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Course Information

Course: PHY 2053L, COLLEGE PHYSICS I LAB (COLLEGE PHYSICS I LAB)
Section Number: 921
Course Reference Number: 33060
Delivery Method: Live Online
Campus: FSW On-Line

Credit Hours: 1 Credits - 2 Lab Hours

Course Description:

This course is the first in a two-part series intended for non-physics majors, offering an algebra and trigonometry approach to topics such as kinematics, dynamics, energy, momentum, rotational motion, fluid dynamics, oscillatory motion, and waves. The course fosters analytical and critical thinking skills to promote a scientific understanding of the real world. This laboratory course accompanies PHY 2053 and is the first part of a sequence of two courses.

Course Location

This course will be delivered live online;

Live online will utilize Zoom to deliver class materials live, every Tuesday and Thursday from 2:00 pm to 4:25 pm.

Prerequisites/Co-requisites

Course Prerequisites: Demonstration of readiness for college-level computation and communication ; and (a grade of "C" or better in (MAC 1140 and MAC 1114) or MAC 1147).

Course Co-requisites: PHY 2053

Topic Outline

Topic Outline:

- **Experimental uncertainty (errors) and data analysis**
- **Measuring density**
- **Acceleration of gravity**

- **Addition and resolution of forces**
- **Atwood machine**
- **Friction**
- **Centripetal force**
- **Work and energy**
- **Projectile motion: the Ballistic Pendulum**
- **Torques, equilibrium, and center of gravity**
- **Simple harmonic motion**
- **Simple pendulum**
- **Archimedes' principle**
- **Standing waves**
- **Air column resonance**

Student Learning Outcomes

General Education Core Course State Standards

In accordance with Florida Statute 1007.25, this course satisfies the General Education core in Distribution Area Natural Science and meets the state outcomes PHY 2053L.

Student Learning Outcomes:

- **Students will solve analytical problems describing different types of motion, including translational, rotational, and simple harmonic motion using algebra and trigonometry.**
- **Students will apply Newton's laws, and conservation laws by using algebra and trigonometry 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.**

All courses at Florida SouthWestern State College contribute to the General Education Program by meeting one or more of the following General Education Competencies:

Communicate clearly in a variety of modes and media.
Research and examine academic and non-academic information, resources, and evidence.
Evaluate and utilize mathematical principles, technology, scientific and quantitative data.
Analyze and create individual and collaborative works of art, literature, and performance.
Think critically about questions to yield meaning and value.
Investigate and engage in the transdisciplinary applications of research, learning, and knowledge.
Visualize and engage the world from different historical, social, religious, and cultural approaches.
Engage meanings of active citizenship in one's community, nation, and the world.

A. General Education Competencies and Course Outcomes

1. Listed here are the course outcomes/objectives assessed in this course which play an integral part in contributing to the student's general education along with the general education competency it supports.

General Education Competency: Evaluate

Course Outcomes or Objectives Supporting the General Education Competency Selected:

- **Examine the principle of dimensional analysis and use it to derive approximate expressions of physical laws.**

- **Identify the SI system on units and analyze the differences between base and derived units.**
- **Interpret the laws of motion and apply them to solve problems in one and two dimensions.**
- **Differentiate between and among the concepts of work, power, energy, and conservation of energy; examine the applications of these concepts, and use them to interpret and explain natural phenomena.**
- **Use the concept of center of mass and use it to analyze the motion of a system of particles.**
- **Describe the law of conservation of momentum, examine its applications, and use it to interpret and explain natural phenomena.**
- **Apply the concepts of momentum and energy and explain collisions.**
- **Describe the concept of circular motion and use it to solve problems.**
- **Use the Laws of rotational kinematics to compare linear motion with rotational motion.**
- **Explain the law of gravitation as it relates to natural phenomena; combine this law with the laws of motion to explain planetary orbits.**
- **Analyze the conditions for static and rotational equilibrium and use the concept of torque to explain natural phenomena.**
- **Describe the concepts related to fluid pressure and buoyancy and use Bernoulli's equation to explain natural phenomena.**
- **Explain the properties of oscillations, waves and the Doppler effect; apply these concepts to natural phenomena.**

Academic Integrity Policy

At FSW, we believe in the power of honesty and integrity as the pillars of academic excellence. As part of our college community, it's crucial that you understand the

importance of these values in your academic journey. All work submitted by students for credit in this course is required to adhere to FSW's Academic Integrity Policy. This means academic misconduct on coursework is unacceptable, will receive a "0" grade, and may be subject to disciplinary action. FSW faculty may use tools to evaluate coursework for plagiarism and/or artificial intelligence (AI) generated content.

Academic misconduct can include, but is not limited to:

- **Copying information from published or unpublished sources (online or in print) without citing those sources.**
- **Copying someone else's work or allowing someone else to copy yours.**
- **Submitting written work generated by AI as your own without direct authorization from your professor.**
- **Submitting work for credit that has already been submitted for credit in another class, even if you wrote it.**
- **Unethical distribution or use of exam content.**

According to the Academic Policies and Procedures section of the College Catalog, "Those in charge of academic tasks have an obligation to make known the standards and expectations of acceptable academic conduct. Each student has an obligation to know and understand those standards and expectations." As such, each student should review the policies and procedures outlined in the Academic Integrity Policy and expect that any violation of these policies will be subject to disciplinary action.

Institution Policies

Programs for Students with Disabilities

Florida SouthWestern State College (FSW), in accordance with the Americans with Disabilities Act and the College's guiding principles, offers students with documented disabilities programs to equalize access to the educational process. Students needing to request an accommodation in this class due to a disability, or

if academic performance is affected by a disability should contact the Office of ADAptive Services.

Reporting Title IX Violations

In accordance with Title IX and the Violence Against Women Act (VAWA), FSW has established a set of procedures for reporting and investigating Title IX violations. Students who need to report an incident or receive support should contact the Equity Officer at equity@fsw.edu. Additional information and resources can be found on the College's website.

Financial Aid and Attendance Verification

In accordance with Federal Regulations, FSW is responsible for verifying student attendance and engagement in classes before federal financial aid funds are distributed. In order to demonstrate both your attendance and engagement in this class, you will need to complete the attendance verification assignment within the first week of class for every registered class. To complete the assignment, click on the "Attendance Verification" link on the Canvas course menu. Additional information and resources can be found on the College's Financial Aid website.

School Policies - School of Pure and Applied Sciences

Extra Credit: All extra credit opportunities offered in any School of Pure and Applied Science course must be offered equally to all students in the class, and cannot account for more than 5% of the overall course grade.

Course Assessment

This course will be assessed by a combination of class participation, graded lab activities and reports, module/unit quizzes, and/or a comprehensive final exam.

Requirements for Students

Students are expected to submit lab reports/quizzes by the due date.

Since this is a summer A/mini semester, there will be 2 experiments/ lab reports and 2 quizzes due each week.

It is your responsibility to make an effective study plan and stick to it.

Use your best learning time management strategy to manage your time in an effective manner.

The lab report is due at the end of each laboratory session, each laboratory report is completed and submitted individually.

Tutoring and Support Services

Academic Tutoring

FSW provides professional math, writing, and peer tutoring through its Tutoring Centers located inside the campus libraries and at the Hendry/Glades Center. In addition to FSW's Tutoring Center, the College also provides all students with access to online tutoring through Brainfuse, accessible through your Canvas course shell. All of these services are available to the student at no additional cost.

For additional help with this course, you should:

1. **Connect with your Professor in class, during posted office hours, through email, or Canvas Inbox.**
2. **Seek On-Campus Assistance: Each Campus, as well as the Hendry/Glades Center, has a tutoring center where students can get help with academics. Every student can use these services regardless of the location or type of**

class (on-campus, online, etc.).

3. Request a tutor from FSW's Peer Tutoring Center.
4. Log in to Brainfuse in your Canvas course navigation menu for 24/7 online tutoring services.

Care Services

Care Services provides wellness and mental health support, information, and resources for all FSW students. For more information, please visit the Care Services website.

Library Services

Located on the Charlotte, Collier, and Lee Campuses and the Hendry/Glades Center, FSW libraries offer a wide array of services, resources, instruction, and facilities to support academic research. Many services are available on-line, including access to librarians for research consultations, eReserves, and reference databases. Visit the Library Services website for additional information.

Proctoring Requirements for Testing with Honorlock

Selected exams and quizzes within this online course will require remote proctoring using a service within Canvas called **Honorlock**. Honorlock is an online proctoring service that allows you to take your exam from the comfort of your home. You DO NOT need to create an account or schedule an appointment in advance. These exams, however, require very specific camera setup requirements and exams will be reviewed by your instructor before any grades are official.

Overall Guidance on How to Take an Exam:

1. Prepare your environment to meet the requirements as detailed in the exam requirements below.
2. You will need Google Chrome and, if this is your first use of the service, to

download the Honorlock Chrome Extension. Be sure to remove other proctoring extensions such as ProctorU or Proctorio when taking an exam with Honorlock.

3. Log in to your course in Canvas using Google Chrome.
4. Navigate to the Honorlock tab in Canvas.
5. Read the instructions carefully to ensure you comply with the proctoring requirements, particularly those regarding external camera placement, and authorized materials.
6. After you agree Honorlock's Terms of Service and our Exam Taker Privacy Notice policy click the box "Get Started" to begin the Honorlock authentication process, where you will take a picture of yourself and show your ID. During the authentication steps, you may be prompted to complete a room scan. This is a test-taker authentication step in which you will be asked to perform a 360-degree scan of your environment with the computer or webcam to confirm the integrity of the testing environment.
7. After the verification process proceed to take your exam in Canvas.
8. When you are done use the "Submit" button in Canvas to end the Honorlock session.
9. Review HonorPrep Guided Tour.

Some guides for reference are Honorlock FAQs for Test Takers, Honorlock Knowledge Base, Honorlock Best Practices, Test Taker Privacy Resources, and How to Use Honorlock.

Specific Guidance on How to Take an Exam:

Online testing requirements:

1. Students must display a valid government-issued ID or an FSW Student ID card.
2. Students must have access to an external web camera. (The webcam built into your laptop computer is not acceptable). You have the option of

purchasing your own camera or borrowing one from a friend.

3. **You cannot take the practice proctored quiz or proctored exams without an external camera.**
4. **If you need a camera (or to sign out a laptop) request one here.**

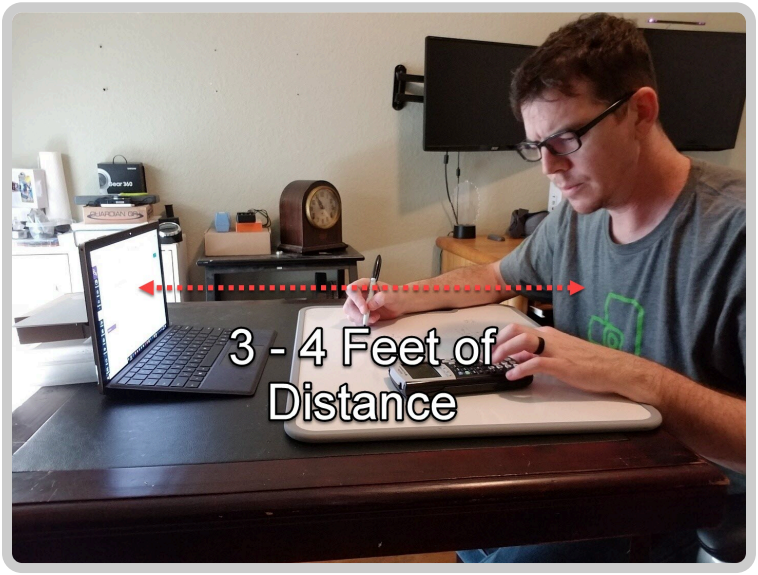
Setting up your workspace:

1. **Find yourself a desk or tabletop to set up your computer (Do not take an exam in your bed).**
2. **Your desk/tabletop must be completely cleared off.**
3. **Nothing should be within two feet of your computer except for your mouse.**
4. **Make sure you have adequate lighting; you should be easily visible (not a dark shadow).**
5. **NO cell phones, smart watches, tablets, headphones, wireless earbuds, or any other electronic device allowed (other than the computer you are using to take the exam).**
6. **NO hats, head coverings, or other items that cover your ears are allowed during exams. Anyone with hair longer than their ears must pull it back for the duration of all exams.**
7. **NO talking, music, or other background sounds. You cannot read the questions out loud during a test! Pretend you are in a room with your classmates. Music and/or TV must not be playing in the background.**

Setting up your external camera:

1. **Your face from a front view must be visible at the start of the exam for identification, after that, the camera should focus on your workspace and will capture you from the side view (see images below).**
2. **Your camera must be set up so that your FACE, HANDS, KEYBOARD, COMPUTER SCREEN, & DESKTOP SURFACE are visible throughout the entire exam.**

3. **If you can't see your face, hands, keyboard, and computer screen, then adjust your camera so that you can. To accommodate this, place your camera off to the side as if it is looking over your shoulder as you take the exam. (see photos below). Your complete working space must be visible at all times.**
4. **You will be able to see yourself in the corner of your screen on your computer.**
5. **Do not have the camera set on Zoom.**



Side view of testing area with 3-4 ft. between computer and student

Computer Requirements:

1. **First, make sure your computer is working well and the battery is fully charged or connected to power.**
2. **If you lose connection, you will not be able to re-enter the exam. Make sure you are located at a place where you have strong internet service.**
3. **Before starting your exam. Clear your cache and make sure you have enough memory for Honorlock to run.**
4. **Close down all other applications running on your computer and switch off**

all notifications such as messaging etc.

5. DO NOT hide your toolbar. It must be visible showing only CHROME as open (example in the pictures below).
6. Review [Honorlock MSRs] (Minimum System Requirements).

PC- chrome open is underlined in blue. Any other blue lines will indicate other apps are open.

Mac – Chrome open is indicated by a black dot under the icon.

Room scan checklist:

The room scan is prompted after you have been given permission to open your exam and the timer for your exam starts. When prompted to do a room scan. You will be prompted to complete a room scan at the start of each exam.

1. You must use an **external camera.**
2. Scan **slowly**, STOP, and count 5 sec when showing the FRONT SCREEN of your computer and behind your computer.
3. Scans must include all the way around the room (360 degrees). So, stop and count 5 seconds at each point.
4. The scan must include high and low areas of the room.
5. Your work area, where your computer is sitting, must show up clearly,
6. The professor MUST see everything that is on your desk.
7. If you must have a mouse pad, lift it so I can see that nothing is under it!
8. Nothing should be on your desk/tabletop except for your computer, and

any other materials authorized by your instructor.

9. It is up to you to show us there is NOTHING suspicious in your EXAM environment
10. Review Completing a Room Scan Using Honorlock.

During the Exam:

1. Do NOT scroll through the entire exam before beginning the test in case you have computer or camera issues.
2. If your external camera turns black – immediately contact Honorlock for guidance and reach out to your instructor. Do not continue to take the exam with a black camera or your score will be a zero.
3. Do NOT navigate to another tab or window in your browser. This may end your exam and you may not be able to reenter.
4. Do NOT leave the view of the webcam. This may end your exam and you may not be able to reenter.
5. The Honorlock video will flag you as suspicious for any of the following reasons:
    - If you have too much eye movement.
    - If there is any outside noise.
    - If you are typing excessively.
    - If you try to log into a different page on your screen, copy/paste,
    - If you try to change anything on your computer at any time, it will log you out of the exam.
6. Only use resources specifically authorized by your instructor for each exam. These should be clearly stated in the test instructions. If you have any questions, reach out to your instructor BEFORE you begin the exam.
7. Prior to using any calculators, if permitted, you must display the calculator to the camera, showing both the front and back of the device to verify that no unauthorized information or materials have been added.

You MUST be able to see your setup in the corner of your screen on your computer during the entire test. If you lose this camera image at any time, immediately stop and ask Honorlock for assistance.

In cases where there are concerns about potential violations of proctoring protocols, the instructor reserves the right to require an oral examination. This oral examination will cover the same content as the original assessment and will be used to verify the student's knowledge and understanding of the material.

Other Testing Location Options:

Students who do not have access to the required technology or testing environment should visit FSW Online Proctoring Information for a list of recommended locations that offer a secure and private setting to take your exam. Each FSW campus has a limited number of laptops available for checking out OR Honorlock-ready computer stations. These resources are available for students to use on a first-come, first-serve basis. Availability is not guaranteed, so plan accordingly.

Need Technical Support? Contact Honorlock 24/7 by:

- **Live Chat on the Honolock support page.**
- **With the exam in Canvas.**

You will receive a zero for the exam if any of the prohibited items are detected during the exam or the conditions detailed above or in Canvas are not met, including the external camera requirement and the camera placement.

Lab Safety and Best Practices

Students are expected to follow any and all safety guidelines or procedures as directed by their instructor. Some basic best practices that should be followed in all laboratory classes are:

1. **Closed-toe shoes should be worn at all times; but this is an online class;**

yes but you can drop the mouse, or monitor....

2. Hands should be washed before and after all lab activities.
3. Food should never be consumed in laboratory classrooms.
4. Do not attempt to clean broken glassware yourself. Please alert your professor to any cracked, or broken glass. Your instructor will dispose of these in designated containers.
5. Follow your professor's instructions on chemical or biological waste disposal to ensure correct disposal in designated containers.
6. If your instructor requires that you wear any Personal Protective Equipment (PPE – including, but not limited to, safety goggles, aprons, gloves, and face masks), please wear them as instructed to do so.

Attendance Policy

Attendance in class is your responsibility. As mentioned below a big part of your grade is derived from the lab reports.

This course/lab is designed to encourage experiential learning of the physics concepts "by doing" through hands on investigations or using interactive simulations. Reflecting upon this experience, making generalizations based on experiments enables you to tackle new situations effectively.

Grading Policy

Experiments will assess students' ability to design and conduct structured investigations.

Grading considers methodology, and interpretation of results.

Your final grade is calculated as a weighted average;

the weights for lab reports, quizzes and the exam are specified in the following table/link:

final grade is calculated as a weighted average

Final grade calculated as a weighted average	
Assessment Tool	**Weight**
Lab Reports	**70%**
Quizzes	**20%**
Exam (an experiment in itself)	**10%**

$$\text{Final Grade} = \overline{\text{Lab Reports}} \cdot \frac{50}{100} + \overline{\text{Quizzes}} \cdot 0.2 + \text{Exam} \cdot 0.1$$

$$\overline{\text{Lab Reports}} = \frac{\sum_{i=1}^{13} \text{Lab Report}_i}{13}$$

$$\overline{\text{Quizzes}} = \frac{\sum_{j=1}^{13} \text{Quiz}_j}{13}$$

$$\text{Exam} = \text{any experiment after the 4th experiment}$$

The following range will be used to determine your final course grade:

Letter grade equivalency

Grade Percent	**Letter Grade**
90-100	**A**
80-89.99	**B**
70-79.99	**C**
60-69.99	**D**

Grade Percent	Letter Grade
Below 60	F

Withdrawals: It is the student's responsibility to withdraw officially from any class that they cease to attend. Failure to do so will result in the recording of an "F" grade.

(Note: The "incomplete" grade ["I"] should be given only when unusual circumstances warrant. An "incomplete" is not a substitute for a "D," "F," or "W." Refer to the policy on "incomplete grades.)

LATE WORK POLICY:

Inclusive Access - Required Textbook Materials

Your enrollment in this course allows you to participate in the FSW/BibliU Inclusive Access program. In partnering with BibliU, FSW's new campus bookstore, you will have access to all required course materials on day one of class at prices unavailable elsewhere.

The required materials for this course are currently available in your course Canvas shell. For help accessing your course materials, visit BibliU's FSW Student Support page.

If you decide you do not want to purchase the course materials provided to you as part of this program, you can opt out of the program in your Canvas course by following the BibliU opt-out instructions. If you are a dual-enrolled student, you are automatically part of the inclusive access program and you should not opt-out.

IMPORTANT! Please note that if you opt-out, you will be responsible for obtaining the required course materials on your own.

Required Course Materials

No manual/textbook is required

Visit the FSW Bookstore to find any course materials and other resources.

Additional Required Materials for FSW Online Courses

FSW Online courses (including online, live online, blended online, and flex modalities) also require the following materials:

- **External webcam and microphone (to take proctored tests and/or final exams.)**
- **Laptop or desktop computer with an up-to-date operating system (see Semester Start-Up Check-List for details).**
- **Stable high-speed internet**

As scrap paper is not authorized during online exams, it is recommended that students consider the following if authorized for use:

- **Small, lap-sized, dry-erase board**
- **Dry erase marker(s)**

Class Schedule

Date: Experiment

Tue 12 May 2026 Experimental Uncertainty and Data Analysis and Measurement Instruments (Mass, Volume, and Density)
Thu 14 May 2026 Uniformly Accelerated Motion: free-fall
Tue 19 May 2026 The Addition and Resolution of Vectors
Thu 21 May 2026 Newton's Second Law: The Atwood Machine/Work

and Energy
Tue 26 May 2026 Conservation of Linear Momentum, Ballistic pendulum
Thu 28 May 2026 Centrifugal Force
Tue 02 Jun 2026 Torques, Equilibrium, and Center of Gravity
Thu 04 Jun 2026 Archimede's principle, buoyancy
Tue 09 Jun 2026 Simple Harmonic Motion
Thu 11 Jun 2026 Speed of sound/Standing Waves
Tue 16 Jun 2026 Exam: Period of oscillations for SHM

Canvas Schedule

Date	Assignment Name	Assignment Type	Points
5/25/26	‼ First-Week Check-in: Confirm Attendance in This Course ‼	Quiz	8

Any other information or class procedures or policies

Only those students enrolled in class, or those persons who have authorization to be in attendance for a particular class, will be permitted to attend the class.

TECHNICAL DIFFICULTIES: Students who experience technical difficulties must contact the professor immediately and attach a screenshot of the issue. If technical problems continue with students' personal computers, it is their responsibility to contact technical

support and/or use the computers available on Florida SouthWestern State College campuses to complete the assignments.

This Syllabus is subject to reasonable changes at the discretion of the professor. From time to time, this syllabus may need to be amended for pedagogical reasons, and the instructor will notify students via announcements or email of any changes, additions, and/or deletions to the syllabus.