

# PHY131-Studio Fall 2022 – Textbook Topics Covered

## INFORMATION YOU MUST KNOW

*What textbook material am I responsible for knowing and understanding?*  
*(Please note this is an approximate listing...some items may change as our class develops)*

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- Ch. 1, **Measurements & Estimating**: Sections 1.1 – 1.7 inclusive
- Ch. 2, **Kinematics**: Sections 2.1 – 2.7 inclusive
- Ch. 3, **Vectors & Projectiles**: Sections 3.1 – 3.8 inclusive
- Ch. 4, **Dynamics; Newton's Laws**: Sections 4.1 – 4.7 inclusive (except inclined plane)
- Ch. 5, **Using Newton's Laws & Uniform Circular Motion**: Sections 5.1 – 5.4 inclusive (except banked roadways)
- Ch. 5, **Drag Forces & Air Resistance** Section 5.6
- Ch. 6, **Law of Universal Gravitation** Sections 6.1, 6.3, 6.4 (very minor amount)
- Ch. 7, **Work & Energy** Sections 7.1 – 7.4 inclusive
- Ch. 8, **Energy Conservation & Power** Sections 8.1 – 8.6, 8.8 inclusive
- Ch. 9, **Momentum, Impulse & Momentum Conservation** Sections 9.1 – 9.7 inclusive
- Ch. 10, **Angular Motion & Torque** Sections 10.1 – 10.9 inclusive
- Ch. 11, **Angular Momentum** Sections 11.1 – 11.3, 11.6 inclusive
- Ch. 12, **Torque and Equilibrium** Sections 12.1 – 12.2 inclusive
- Ch. 13, **Fluids** Sections 13.1 – 13.9 inclusive
- Ch. 14, **Simple Harmonic Motion & Oscillations** Sections 14.1 – 14.5 inclusive
- Ch. 15, **Waves I** Sections 15.1, 15.2, 15.4, 15.6, 15.7, 15.8, 15.9
- Ch. 16, **Waves II** Omit

- Ch. 17, **Temperature, Expansion, Gas Law**: Sections 17.1, 17.2, 17.3, 17.4, 17.6, 17.7, 17.8, 17.9 inclusive
- Ch. 18, **Kinetic Theory of Gases**: Sections 18.1, 18.2 inclusive
- Ch. 19, **First Law of Thermo**: Sections 19.1, 19.2, 19.3, 19.6, 19.7, 19.8, 19.9 inclusive
- Ch. 20, **Second Law of Thermo**: Sections 20.1, 20.2, 20.3, 20.4 inclusive

# **PHYSICS 131 - Physics for Scientists & Engineers - Studio – Fall 2022**

**This Syllabus Applies to an In-Person Class Only**

## **Course Information, Policies & General Guidelines**

**INSTRUCTOR:** Professor Edward Pascuzzi

Office: A139A (Help Room hours are as posted/announced)

Office phone; 631-632-4014

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**GOALS:** To ensure that you become adept, confident and highly skilled at problem-solving and learn basic scientific physics at the introductory level.

**NATURE OF THE COURSE MATERIAL:** PHY131 encompasses the principles of first semester freshman physics with as many real-world applications as possible. The material is heavily laden with challenging concepts, algebra and trigonometry, and some very basic calculus. You should be aware that, upon enrolling into an intensive and fast paced introductory course such as this, there is a serious level of commitment and investment of time required of you should you wish to be successful and earn a good grade.

**HOW TO EARN A HIGH GRADE:** As with any other college course, you can always do quite a bit to improve your grades, just like doing nothing will hurt your grade. These include;

- 1) Take notes on the required chapter readings and be sure to highlight key items such as laws or important equations that are always true (and not just specific for one question). Read the chapter sections very carefully to be sure you understand it. If you don't, ask for help. You should also work every worked example in the chapter readings to be sure you know/understand how to apply the particular concept at hand.
- 2) Don't memorize every equation in the book...this is counterproductive. Instead, focus on laws and rules that are always true, rather than trying to "find" an equation that looks like it works. Remember that there is a big difference between laws which are always true and formulae which are specific for a certain question.
- 3) If applicable, sit in the FRONT of the classroom so your attention is better focused and pay attention.
- 4) If applicable, leave your cell phone and your laptop OFF; you DO NOT need them during class.
- 5) Get the **Schaum's Outline book for College Physics** and do all the worked problems until you understand the angle/approach for each one. Then, do the problems again.
- 6) Take your education and work seriously and ask questions if you have to...the worst questions are the ones which are never asked.
- 7) **If applicable**, come to the appropriate Help Room during office hours and ask for help. Everyone needs help with physics...you are not the first one. You will be glad that you did, and you will feel more confident after, and will be happy to finally understand something that has bugged you for weeks. Or, you can email me; edward.pascuzzi@stonybrook.edu
- 8) Be assertive and caring when it comes to your own education...laying low for the first  $\frac{2}{3}$  of the semester and then trying to raise your grade by two letters at the last minute doesn't work. Hard and consistent good *will* work.
- 9) There is no such thing as an extra credit project to take the place of not working hard all semester. Don't even ask.
- 10) Don't miss exams or quizzes...you will not be permitted to make them without a valid medical document.

- 11) Form a regular study group (not a gossip group that wastes time) and sit down and brainstorm about how to solve problems you might be stuck with.
- 12) Do your own work, and keep it to yourself. You are only hurting yourself by not doing so.

**TEXTBOOK AND REQUIRED MATERIALS:** The recommended text we use is Giancoli, *Physics for Scientists and Engineers*, 4<sup>th</sup> edition (Pearson Prentice Hall), and is available with the Student Access Code to facilitate logging on to MasteringPhysics.com to complete homework assignments. If you choose not to purchase the text, you will still be responsible for purchasing the Student Access Code for access to MasteringPhysics.com to complete online homework assignments. You should also be able to obtain a looseleaf version of the text, or softcover. Also note that other types of introductory physics textbooks are posted legally free for student use at [www.openstax.org](http://www.openstax.org).

**CLASS TIME:** MWF, 10:30am – 12:20pm (Friday is **usually**, but not always, our lab day) beginning Mon 8/22/22. Lecture time encompasses the introduction of necessary physics material, concepts and demonstrations commensurate with the course, student-centered problem-solving time and other activities. On Fridays, we usually do labs (in the same classroom). **DO YOUR BEST TO BE PRESENT FOR EVERY CLASS.**

**IN-CLASS POLLING QUESTIONS:** During our in-person course, we incorporate in-class multiple choice questions which you answer using a clicker, which are thus called “clicker questions.” For Zoomed classes, these are essentially “polling” questions. This insures that you are learning the material and are actually present during class time. Therefore, you must have a clicker set to Channel 41 in order to receive in-class participation credit. During class, you are expected to use only your own clicker to answer questions.

**BLACKBOARD:** Most of the course administration will be done via Blackboard.

“Blackboard” is [blackboard.stonybrook.edu](http://blackboard.stonybrook.edu) and nearly all of the administration of the course will be done through Blackboard, so you must be sure that your correct email address is listed there. During the course, announcements will be posted and sent via email to you concerning updates, changes, etc., and you will also have access to many other items such as supplementary problems for practice to prepare for quizzes and exams. Note that in order to keep up to date with course postings on Blackboard, you must a) have a valid and real email address posted there with your course registration and b) you must READ your email daily.

**SBU CALENDARS:** Note that class calendars, as well as the current SBU semester calendar, are posted in the “Class Calendars” folder on Blackboard

**LABORATORY:** In the Studio class, we have labs typically on Fridays (but not always), as shown in our course calendars on Blackboard. We will be doing ten labs with associated lab reports all of which will be described to you by your graduate student TA who will be in touch with you before our first lab. Labs begin the second week of class.

**HOMEWORK:** The importance of learning and understanding physics lies predominantly with becoming adept at problem-solving, a necessity we will cover constantly during every class. To better facilitate both the administration and grading of your homework problems, the Physics Department has invoked online homeworks through MasteringPhysics.com, for which you must purchase an access code (provide your access code to create an account and then access course homework using the code given at the top of this document). The responsibility is yours when it comes to working out homework problems in order to best understand the applications of the laws and concepts involved. Therefore, there will be numerous homework problems assigned during each class which will be graded during the following class during recitation. If you find that you are having any difficulty, please do not hesitate to come for extra help. Since the semester is only about six weeks, it is imperative that you stay on top of your own work. Assignment due dates will be clearly shown on MasteringPhysics.com and it will be up to you to check for the next assignments as the course moves along.

**BE SURE THAT WHEN YOU OPEN YOUR MASTERINGPHYSICS.COM ACCOUNT, YOU USE YOUR NAME AS IT EXACTLY APPEARS ON BLACKBOARD. FURTHERMORE, REALIZE THAT THE CREATION OF FAKE HOMEWORK ACCOUNTS MAY CAUSE YOU TO FACE THE ACADEMIC JUDICIARY COMMITTEE FOR POSSIBLE EXPULSION FROM THE UNIVERSITY.**

**QUIZZES:** During the semester, we give occasional quizzes which are either clicker quizzes (all MCQ) or paper quizzes (MCQ only or a mix of MCQ and FRQ) which is part of the recitation requirement. Further information regarding this will be disseminated as the semester gets underway.

**EXAMS:** There will be two (2) scheduled exams during the semester and one final exam whose dates are shown in the course calendars on Blackboard. Exams may be held either at night or in lecture class...information regarding this will be given in class as exam dates get closer.

**COURSE POLICIES & GRADING:** Your course grade will be based on the following assignments with the percentages shown (**PLEASE NOTE THESE ARE APPROXIMATE AND MAY CHANGE**);

Clicker Questions – 15%

Online homework problems – 15%

Midterm Exams – 25%

Recitation Grade (i.e. quizzes) – 20%

Final Exam – 25%

The **approximate grading schema** (“curve”) for letter grades in PHY131 is as shown below. Note there are no curves on exams, however the grading scheme below incorporates a “curve” based on years of teaching and the fact that averages on exams typically fall in the mid to upper 60% range.

	A	A-	B+	B	B-	C+	C	C-	D+	D	F
Percentage	85-100	81-84	78-80	72-77	69-71	66-68	58-65	54-57	50-53	46-49	below 46

**Student Accessibility Support Center (formerly DSS; DISABILITY SUPPORT SERVICES):**

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact the Student Accessibility Support Center (formerly DSS in the Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations, if any, are necessary and appropriate. All information and documentation is confidential. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and SASC. For procedures and information go to the following website: <https://www.stonybrook.edu/sasc//>

**ACADEMIC INTEGRITY STATEMENT:**

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at <http://www.stonybrook.edu/uaa/academicjudiciary/> **NOTE THAT STUDENTS WHO ARE DISCOVERED TO BE CREATING GHOSTING ACCOUNTS ON MASTERINGPHYSICS.COM OR WHO HAVE CHANGED WRITTEN EXAM ANSWERS FOLLOWING THE GRADING OF AN EXAM WILL HAVE THEIR NAMES SUBMITTED TO THE ACADEMIC JUDICIARY COMMITTEE AND MAY FACE POSSIBLE EXPULSION FROM THE UNIVERSITY. FURTHERMORE, STUDENTS WHO ARE FOUND TO BE CARRYING MULTIPLE CLICKERS DURING CLASS TIME WILL ALSO FACE THE ACADEMIC JUDICIARY COMMITTEE FOR CHEATING.**

Also, please realize that the front page of your exams during this session will contain the following important academic integrity statement which you are required to sign at the completion of your exam.

**ACADEMIC INTEGRITY STATEMENT YOU MUST SIGN;**

**Academic integrity is expected of all students at all times, whether in the presence or absence of members of the faculty. Understanding this, I declare that I have not and shall not give, use, or receive unauthorized aid in completing this examination. I am aware that any suspected instance of academic dishonesty will be reported to the Academic Judiciary office and that I would be subjected to the maximum possible penalty permitted under University guidelines in said situation.**

**My Signature;** \_\_\_\_\_

## **CRITICAL INCIDENT MANAGEMENT:**

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.

## **ELECTRONIC COMMUNICATION**

Email to your University email account is an important way of communicating with you for this course and should be checked multiple times per day. For most students the email address is

'firstname.lastname@stonybrook.edu'

and the account can be accessed here;

[\*\*http://www.stonybrook.edu/mycloud\*\*](http://www.stonybrook.edu/mycloud)

\*It is your responsibility to read your email received at this account.\*

For instructions about how to verify your University email or to execute other activities via email, please head here;

[\*\*https://it.stonybrook.edu/services/google-apps/mail\*\*](https://it.stonybrook.edu/services/google-apps/mail)

# ITEMS REGARDING MISSED ASSIGNMENTS;

## IN-CLASS EXAMS & QUIZZES;

Missed exams and in-class quizzes count as a grade of **ZERO** unless there is a **VALID DOCTOR'S LETTER ATTESTING TO EMERGENCY MEDICAL TREATMENT AT THE TIME/DATE OF THE ASSIGNMENT IN QUESTION.** A "letter" is just that, a letter on medical stationary, not a prescription note pad page. All medical contact information must accompany this letter for verification purposes. **Examples of medical emergencies are NOT;** "I overslept" "I hate a fight with my girlfriend" "I have to play in a soccer game" "My family is going on vacation and they want me to come along" "My mom was abducted by aliens on the day of the exam." Said medical document must be presented within a timely fashion following the exam/quiz (i.e. within a two days). In short, you are not in 4<sup>th</sup> grade any longer!

Any other situation aside from the above mentioned medical scenario will be discussed and considered privately on a case-by-case basis.

## WEBSITE HOMEWORK ASSIGNMENTS;

Missed homeworks on MasteringPhysics.com count as a grade of **ZERO** and are **NOT RESET** unless there is a **VALID DOCTOR'S LETTER ATTESTING TO EMERGENCY MEDICAL TREATMENT AT THE TIME/DUE DATE OF THE ASSIGNMENT IN QUESTION.** A "letter" is just that, a letter on medical stationary, not a prescription note pad page. All medical contact information must accompany this letter for verification purposes. **Examples of medical emergencies are NOT;** "I didn't know we had a homework due" "I overslept" "I hate a fight with my girlfriend" "I have to play in a soccer game" "My family is going on vacation and they want me to come along" "My mom was abducted by aliens on the day the homework was due" "My internet connection was not working on the day the homework was due." Said medical document must be presented within a timely fashion following the exam/quiz (i.e. within a two days). In short, you are not in 4<sup>th</sup> grade any longer!

Any other situation aside from the above mentioned medical scenario will be discussed and considered privately on a case-by-case basis.

## IN-CLASS CLICKER QUESTIONS;

In-class clicker questions are designed to mark both your attendance and your ability to immediately learn daily in-class material. If you are absent from class and/or you decided to register late for the class, clicker questions can not be made up as it is unfair to students who are present and are earning credit for their presence. Thus, missed in-class clicker questions count as a grade of **ZERO** unless there is a **VALID DOCTOR'S LETTER ATTESTING TO EMERGENCY MEDICAL TREATMENT AT THE TIME/DUE DATE OF THE ASSIGNMENT IN QUESTION.** A "letter" is just that, a letter on medical stationary, not a prescription note pad page. All medical contact information must accompany this letter for verification purposes. **Examples of medical emergencies are NOT;** "I didn't know we had to get a clicker" "I overslept and missed class" "I hate a fight with my girlfriend" "I have to play in a soccer game" "My family is going on vacation and they want me to come along" "My mom was abducted by aliens." Said medical document must be presented within a timely fashion following the date in question (i.e. within a two days). In short, you are not in 4<sup>th</sup> grade any longer!

Any other situation aside from the above mentioned medical scenario will be discussed and considered privately on a case-by-case basis.