

PHYSICS 131 – Physics for Scientists & Engineers – Spring 2019

Course Information, Policies & General Guidelines

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Course ID for Mastering Physics; **SBUPHY131PASCUZZISPRING2019**

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) Sit in the FRONT of the lecture hall/classroom so your attention is better focused and pay attention.
- 4) 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) Come to the Help Room during office hours (Room A129 in the Physics building) 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.
- 8) Be assertive and caring when it comes to your own education...laying low for the first 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 up and no soap opera will be considered as a valid reason for having done so.
- 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 text used is Giancoli, *Physics for Scientists and Engineers*, 4th 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.

CLICKERS: As part of in-class participation grade, we will be using clickers which you can purchase at the campus bookstore. Set your clicker to Channel 41 and bring it every day to class as we'll do questions in class for which you can obtain credit (of course, only if you are present!). Clicker questions are typically multiple choice questions (MCQ) like exam and quiz questions and are a good way to obtain feedback regarding your understanding of a topic.

LECTURE: MWF, 9am – ~10am in the Simons Lecture Hall 103 beginning Mon 1/28/19 ending Fri 5/10/19. Lecture time encompasses the introduction of necessary physics material, concepts and demonstrations commensurate with the course, problem-solving time and other activities. **DO YOUR BEST TO BE PRESENT FOR EVERY CLASS.**

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

“Blackboard” is 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: Go to;

https://www.stonybrook.edu/commcms/registrar/calendars/academic_calendars.

Note that class calendars are posted in the “Class Calendars” folder on Blackboard

LABORATORY: As of Spring 2012, the lab courses for PHY131 and PHY132 are now separate from the main course and thus are operated by graduate student teaching assistants (TAs). Therefore, you must enroll separately in PHY133 as the lab class for PHY131, and PHY134 for the lab class for PHY132. Please contact your lab TA for details, information and grading rubrics concerning your labs.

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.

QUIZZES: Expect short quizzes will be given weekly in recitation, as per your recitation instructor's discretion and guidelines. If you miss a quiz it will most likely be counted as a zero, so please bear this in mind. 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 45

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/dss/>

PLEASE NOTE THAT, SHOULD YOU REQUIRE EXTRA TIME FOR TESTING (OR OTHER ACCOMODATIONS) DUE TO A LEGITIMATE MEDICAL DISABILITY YOU ARE REQUIRED TO SUBMIT YOUR MEDICAL DOCUMENTS TO THE SASC OFFICE WITHIN THE FIRST TWO WEEKS OF CLASSES IN THE SEMESTER. FAILURE TO REGISTER WITH THE SASC OFFICE AT THE VERY START OF THE SEMESTER WILL LIKELY PREVENT YOUR TESTING ACCOMODATIONS FROM BEING HONORED AND YOU WILL BE REQUIRED TO TAKE YOUR EXAMS IN THE LECTURE HALL WITH ALL OTHER STUDENTS FOLLOWING THE USUAL CLASS TIME CONSTRAINTS.

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.**

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>

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>

Some PHY131 FAQs:

“I want a higher grade!”

Then you must work for it. As described above, the grade you earn is the grade ***YOU* EARN**...it is not a made-up number pulled out of a hat. Physics is very challenging, and what is even more challenging is taking two physics courses over the summer, which means that you must eat, breathe, sleep and involve yourself in physics 24/7. If you are still having trouble, get a review book, do ALL the problems, get a private tutor or come for free extra help in the Help Room, A131. **Remember that AFTER the final exam, GRADES ARE NOT CHANGED TO SUIT YOUR NEEDS/WANTS/DESIRES. If you need a certain grade, EARN IT.**

“I have to attend a party and will miss a quiz. Can I make it up?”

No. There are no makeups for anything in the course unless there is a dire emergency WITH a documented letter from a family or ER physician which can be verified.

“I have to go to the beach to work on my tan and will miss a lab. Can I make it up?”

No. There are no makeups for anything in the course unless there is a dire emergency WITH a documented letter from a family or ER physician which can be verified.

“My clicker doesn’t work, it must be your fault.”

Clickers are funny and unpredictable things as they deal with a wireless system. First, check the following:

- 1) Did you register the clicker CORRECTLY through Blackboard? Note you will NOT receive credit for your clicks if they come in from an UNREGISTERED clicker as they show up with no name.
- 2) Did you set the clicker channel correctly (Ch. 41)?
- 3) Are you clicking and sending “note to teacher?” This does not count as a click.
- 4) Did you try calling the Clicker Helpline phone number given in the first class?

“My friends want to sleep and asked me to click for them. I’m sure you don’t mind.”

When a student is caught with multiple clickers, all clickers will be taken for the duration of the class, numbers recorded and all students associated with said clickers will receive a zero clicker grade for 4 weeks thereafter. All students associated with said clickers will have their names submitted to the University Academic Judiciary board and may face hearings to determine whether or not they will be expelled for cheating. All students associated with said clickers will receive a clicker grade of zero for the entire semester.

“My Exam was misgraded and I want a regrade.”

Generally, exams are NOT regraded once a student leaves the room in which the exams and quizzes are returned, for obvious reasons. Therefore, you must look your paper over VERY carefully immediately after it is returned to you and then return it to your lab or recitation instructor, WITH A VERY SPECIFIC NOTE ON THE FRONT DETAILING THE PROBLEM who will in turn submit it to your professor for a regrade. You must realize that if a paper of yours is regraded, the final score may actually turn out to be lower than the original score. **Furthermore, regrades are only considered for legitimate mathematical grading errors and are not for students who believe they “should have” a higher score.**

“Since I’m enrolled in a very competitive university and tough class, can I just cheat instead of working hard?”

Being mature young adults, this choice is in your hands to decide, however, once you are caught, you face a disciplinary hearing board which will decide whether or not to permanently expel you from the university (without tuition reimbursement) and give you an F for the course. Further, you will have to face your parents and family and explain this, and this will likely be something that will accompany you through your entire college career (if you are lucky to continue having one after being caught).

Additionally, students must realize that every motion they make on MasteringPhysics.com is tracked, and analyzed to unearth cheaters, and that students who make ghosting accounts on that website are immediately flagged by cross-referencing with the Blackboard roster for the class. Such accounts are immediately disabled for the duration of the course, whereupon disciplinary actions are taken against the student/s, as outlined above.

In short, do your own work and seek extra help when necessary.

ITEMS REGARDING MISSED ASSIGNMENTS;

EXAMS & IN-CLASS 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 4th 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 4th 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 4th 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.

PHY131 Spring 2019 – Approximate Textbook Topics Covered

INFORMATION YOU MUST KNOW

(updated 12/13/19)

What textbook material am I responsible for knowing and understanding?

- Ch. 1, **Measurements, Factor Label Method & Estimating**: Sections 1.1 – 1.7 inclusive
- Ch. 2, **Kinematics**: Sections 2.1 – 2.7 inclusive
- Ch. 3, **Kinematics in 2 or 3 Dimensions (Projectiles) & Vectors**: Sections 3.1 – 3.8 inclusive
- Ch. 4, **Dynamics; Newton's Laws**: Sections 4.1 – 4.7 inclusive
- Ch. 5, **Using Newton's Laws & Uniform Circular Motion**: Sections 5.1 – 5.4 inclusive
- 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** Ch. 16 (sections TBA)

- 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