**NOTE:** Information in this syllabus should be considered as “preliminary”. All students are responsible for changes announced in lecture and via class Email. Class Email is sent via the Brightspace Learning Management System to the Email address that you were given by the university:  
(typically FIRST.LAST@stonybrook.edu).

# Course Organization

Due to strong demand from modern students, the pure online course is now taught every summer and calendar year. This course is comprised of materials collected during a prior year’s instance of a “Simul-taught” class in which in person and online students were taking the class at the same time. The major differences are that the materials may contain out of date references (*e.g.* hearing about a snow day while taking the class in June) and references to “in person” testing methods like a paper exam. The class has exactly the same rigor as the prior class since the material is identical.

# Lecture

Lecture recordings delivered by the IVQ (In-Video Quiz) tool accessed via Brightspace. Lecture credit is earned by viewing the IVQ recordings and by answering mouse-based clicker questions.

# Recitation

Recitations are also delivered by IVQ, but do not contain any mouse-based questions.

# Physics for Scientists and Engineers: Foundations and Connections, Extended Version with Modern PhysicsRequired Material

1. Textbook:
   1. Title: Physics for Scientists and Engineers.
   2. Author: Deborah Katz
   3. You may acquire the book in any form:  
      Hardcover, Paperback, Loose leaf, or **eBook.**
   4. **The least expensive is eBook (free with WebAssign)**
      1. Because you must have WebAssign for  
         homework and exams, most students make   
         WebAssign eBook their only “book”.
      2. If you REALLY want a book made of paper,   
         however, it is not forbidden.
   5. **Be certain a paper book purchases include WebAssign!**
2. All information announced on Brightspace or sent via email.
3. An account in the WebAssign system (see below).

# Grade Determination

The grades will be calculated based upon the following percentages:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Exam 1 | Exam 2 | Final | Recitation | Homework | Lecture |
| Percentage | 15% | 15% | 30% | 10% | 15% | 15% |

Your final score based upon the weightings listed above will be compared to the following scale to determine the letter grades (*i.e.* there is not a curve in PHY131):

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | A | A- | B+ | B | B- | C+ | C | C- | D+ | D | F |
| Percentage | > 90 | 85-89 | 80-84 | 75-79 | 70-74 | 65-69 | 60-64 | 55-59 | 50-54 | 45-49 | < 45 |

# Homework

The homework is electronic and delivered through WebAssign. Rosters of the class are pre-loaded into WebAssign and students merely click on the Brightspace links to access the homework.

# Daily or Weekly Tasks

To aid in student progress, the Brightspace site contains a folder called “Daily Tasks” (summer courses) or “Weekly Tasks” (regular semester courses). Each folder contains a set of links which aid the student in making progress. These folder dates are the DUE DATES. It is highly advisable that students strive to get ahead of the due dates to allow extra study time prior to exams.

# Material & Exam Level

The material covers all the following topics

* Units and Vectors
* Kinematics
* Force
* Circular Motion
* Energy and Momentum
* Rotational Kinematics
* Rotational Energy
* Torque
* Angular Momentum
* Simple Harmonic Motion
* Waves and Music
* Fluids
* Calorimetry and Heat Transfer
* Kinetic Theory of Gases/Ideal Gas Law
* Engines, Refrigerators, and Heat Pumps

The level of the class can be judged by the following comments on the exams:

* Midterm 1 is guaranteed to include derivative calculus.
* Midterm 2 includes Moment of Inertia via integral calculus (req’d calc covered in lecture).
* The final exam will include a complete analysis of a Refrigerator, Engine or Heat Pump:
  + Determining the P,V,T at all endpoints in the P-V state diagram.
  + Determining U, Q, and W for all processes.
  + Determining Wtotal, Qhot, Qcold
  + Determining the efficiency or performance coefficient, as appropriate.

# Getting Help

## Problem Solving Videos

Problem Solving videos are available via IVQ provide 3% extra credit added to your final course score. They are divided into headings by “learning objective” and are not a perfect match to the book (they are better). Most students find that these videos are the most effective part of the class.

## Review Sessions

Professor Hemmick has developed a tradition of holding **extensive** review sessions outside of class. Recordings of these sessions are put into the Daily/Weekly Tasks folders on the day before the exam. Since there is ~8 hours of recorded material per exam, students should schedule their time carefully.

The philosophy is simple. The exams in this course are tough but fair. We work hard so that by the time you take them they will seem easy. High scores on a tough exam is the goal of the instructor and should be the same for all students.

# Exams

Exam schedules are embedded into the Daily/Weekly Tasks folder(s). Starting at the time of the pandemic and continuing while the major lecture hall at Stony Brook has been under renovation, exams have shifted to being delivered online. So, despite language to the contrary in the lecture recordings, **there are no testing centers required**. You will take exams online via browser. **Please find a way to be in a place with reliable internet access when taking an exam.**

# Student Accessibility Support Center

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, 128 ECC Building, (631) 632-6748, or at sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

# Academic Integrity

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 is 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/commcms/academic_integrity/index.html>

# 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 University Community Standards 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. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

# Additional Information

There are a few small items that are too detailed for a syllabus. The professor will develop a FAQ page to address these small issues within Brightspace.