Syllabus

Physics 1B – Physics for Scientists and Engineers:
Oscillations, Waves, Fluids, and Electricity

Winter 2020

Instructor	Thomas Dumitrescu office: PAB 4-939 email: tdumitrescu@physics.ucla.edu
Office Hours	Wednesdays 1:00pm-2:00pm and Fridays 10:30am-11:30am in PAB 4-708 (check my office if you cannot find me there).
Course Admin	Jazmine Vega, PAB 1-707D, jazminev@physics.ucla.edu
Course Webpage	`https://ccle.ucla.edu/course/view/20W-PHYSICS1B-1`
Textbook	"University Physics" (15th edition, including "Mastering Physics") by Young and Freedman, ISBN: 9780135159705, `http://ucla.verbacompare.com/compare?catids=20W318007200` The textbook is accessed via the Mastering Physics link on CCLE.
Lecture	Tuesdays and Thursdays 2:00pm-3:50pm, PAB 1425
TA Discussions	Discussion 1A: Monday 12:00pm-12:50pm, Boelter Hall 5273 Discussion 1B: Monday 1:00pm-1:50pm, PAB 1749 Discussion 1C: Monday 2:00pm-2:50pm, Boelter Hall 5440 Discussion 1D: Wednesday 4:00pm-4:50pm, Mathematical Sciences 5117 Discussion 1E: Wednesday 5:00pm-5:50pm, Mathematical Sciences 5147 Discussion is an essential part of the course that emphasizes active problem solving. There will be TA discussions in week 1.
TAs	1A,B,C: Matteo Vicino, mvicino@ucla.edu 1D, E: Amey Gaikwad,ameypg2192@ucla.edu
TA Office Hours	TBA
Important Dates	First Class: Tuesday, January 7th 2020 Last Class: Thursday, March 12th 2020 Midterm 1: Thursday, January 30th 2020 (in class) Midterm 2: Thursday, February 27th 2020 (in class) Final: Monday, March 16th 2020 (3:00pm-6:00pm, location TBA)

Grading

12% Homework (the lowest homework score will be dropped)
3% In class questions (scored on participation, 2 absences allowed)
20% Midterm 1
20% Midterm 2
45% Final

The final grade will be approximately on a B/B- curve (depending on the absolute performance of the whole class). There are no letter grades for individual exams, homeworks etc.

The scores for homework and exams will be managed using MyUCLA.

There are no makeup exams. A midterm can only be missed with a valid medical excuse signed by an M.D. Consult the instructor immediately if you miss a midterm. By Academic Senate policy, you cannot miss the final.

The registrar has strict rules about when an "incomplete" can be given. You must arrange an "incomplete" before the beginning of week 8, having previously submitted work at the level of a passing grade.

Homework

Homework is assigned weekly from "Mastering Physics." It is due every Sunday by 11:59pm and covers the topics of the preceding week. The first homework is due on January 12th at 11:59pm.

Exams

The exams are closed book, except **one** $3'' \times 5''$ index card per midterm. In the final you can bring a total of **two** $3'' \times 5''$ index cards. Calculators are allowed, but computers, cellphones etc. are not. Please bring your UCLA ID to every exam. The exams will contain problems and concept questions similar to the ones covered in homeworks, TA discussions, and lectures.

Prerequisites

Physics 1A, Math 31B, 32A, 32B (co-requisite)

Course Outline

Week 1: Oscillations
Week 2: Mechanical Waves
Week 3: Sound Waves
Week 4: Fluids
Week 5: Electric Charge
Week 6: Coulomb's Law
Week 7: Electric Field and Gauss Law
Week 8: Electric Potential and Capacitors
Week 9: Electric Currents and Ohm's Law
Week 10: Circuits

Note: This is a rough outline and subject to change.

In Class Questions

We will be using Kudu for in-class questions. Please go to `www.kudu.com` and sign up for a new course with course ID vwqz6e (this is free). **Important: use your UCLA ID number to register for Kudu**.

Online Discussion Board

We will use the Questionsly app (accessible through CCLE). Use this app to ask questions, and to answer questions posted by your fellow students. The TAs will also be active on Questionsly to moderate your discussion, and to answer questions.

How To Do Well

Spend a substantial amount of time working through the problems in the homework and TA discussions. Also read the relevant sections and examples in the textbook, ideally before every lecture.

Do not fall behind and keep up with homework, discussions, and lectures. If you have concerns please consult the instructor or a TA.