

PHY 272 - GENERAL PHYSICS

Syllabus Semester: Spring 2018

This syllabus intends to provide major guidelines of the course.

Lecturer:

Prof. Veronica Bindi, Room WAT 432, Physics Building,
Office hours Thursday 10:30 - 11:30 am
e-mail: bindi@hawaii.edu, to arrange a meeting.

Lecture:

Class Hours: T R 9:00-10:15 am WAT 112 Physics Department

All the material presented in class will be posted on Lulima. Most of the material will be available within a few hours after the lecture. In Lulima will be also available announcements and important dates.

Please always check in Lulima first before asking organizational questions.

Recitations:

Students have been assigned to different recitations, please attend
M 1:30-2:20 (PSB 317); M 2:30-3:20 (WAT 113); T 1:30-2:20 (PSB 317)

Pre-requisite:

Physics 170, equivalent or permission from instructor

Required Text and material:

Textbooks: OpenStax University Physics Volume 2, Volume 3.

Download the texts from OpenStax: <https://openstax.org/details/college-physics>

Homework on WebAssign: <https://www.webassign.com/>

WebAssign class key to enroll: hawaii 4055 0366

i-click is needed.

Grading:

The overall course grade will be determined on the basis of the following distribution:

Homework: 10%

i-clicker quiz: 10%

Recitation: 10%

Test: 70 % (midterm 1 20%, midterm 2 20%, final 30%)

The final score translates into the following final grade:

A+	$95\% \leq \text{score}$	C+	$65\% \leq \text{score} < 70\%$
A	$90\% \leq \text{score} < 95\%$	C	$60\% \leq \text{score} < 65\%$
A-	$85\% \leq \text{score} < 90\%$	C-	$55\% \leq \text{score} < 60\%$
B+	$80\% \leq \text{score} < 85\%$	D+	$50\% \leq \text{score} < 55\%$
B	$75\% \leq \text{score} < 80\%$	D	$45\% \leq \text{score} < 50\%$
B-	$70\% \leq \text{score} < 75\%$	D-	$40\% \leq \text{score} < 45\%$
		F	$\text{score} < 40\%$

Tests (70%):

The tests will be given in class usually on Thursday (*grading: midterm 1 20%, midterm 2 20%, final 30%*). There will be no make-up tests.

During the test students can bring:

- **one page (double side) with formulas, equations, physical constant and conversion factors.**
- **only pocket calculators are allowed, no laptop, no mobile phone, no books or notes.**

Recitation (10 %):

Recitations are an essential part of the course where the major concepts of the course are reviewed through concept rich problems. You will test your ability in understanding concept rich problems and be able to work as a part of a team.

Homework + i-clicker quiz (10% + 10%):

Participation in class is important to understand the content and to have a crucial guideline for your study at home. From time to time you will be asked to answer to some questions using the i-click (10% of the grade).

Homework is an essential part of the course (10% of the grade). The assigned homework problems are intended to test your understanding of course material. In the same way you must practice to become proficient at a sport or musical instrument, you must work problems in order to master basic physics. It is very important that you work out the solutions to each problem, and understand clearly the correct method of solution. It will be difficult to obtain a good grade in this course without making a conscientious effort to do all of the homework assignments.

Homework WebAssign class key to enroll: hawaii 4055 0366

Homework will be assigned weekly and will have to be completed and submitted before Monday at noon.

Schedule of the course:

Please note that it is only a tentative schedule and that date and contents might change along the semester.

Course Schedule: Physics 272, UH Spring Semester 2018					
Instructor: Prof. Veronica Bindi					
Class Hours: T R 9:00-10:15am (WAT 112); Office hours R 10:30 - 11:30am WAT 432					
Recitations: M 1:30-2:20 (PSB 317); M 2:30-3:20 (WAT 113); T 1:30-2:20 (PSB 317)					
week	date	Lect #	Lecture topics	Reading	HW due
1	9-Jan	1	Electric Forces and Fields	5.1 - 5.4	
	11-Jan	2	Coulomb's Law	5.5 - 5.7	
2	16-Jan	3	Concepts of Electric field and flux	6.1 - 6.2	1
	18-Jan	4	Gauss' Law and its applications	6.3 - 6.4	
3	23-Jan	5	Electric Potential and Potential Energy	7.1 - 7.3	2
	25-Jan	6	Determining Field from Potential	7.4 - 7.6	
4	30-Jan	7	Capacitance: series and parallel combos	8.1 - 8.3	3
	1-Feb	8	Energy storage, dielectric-filled	8.4 - 8.5	
5	6-Feb	9	Electrostatics Summary	Review	4
	8-Feb		Midterm #1		
6	13-Feb	10	Electric Current, Resistance, Ohm's Law	9.1 - 9.4	
	15-Feb	11	Electric Power and Superconductors	9.5 - 9.6	
7	20-Feb	12	Kirchoff's rules and DC-circuit analysis	10.1 - 10.3	5
	22-Feb	13	Electrical Meas., RC Circuits	10.4 - 10.6	
8	27-Feb	14	Magnetic Forces and Fields	11.1 - 11.4	6
	1-Mar	15	Hall effect, Applications	11.5 - 11.7	
9	6-Mar	16	Biot-Savart Law	12.1 - 12.4	7
	8-Mar	17	Ampere's Law	12.5 - 12.7	
10	13-Mar	18	Faraday's and Lenz's Laws	13.1 - 13.3	8
	15-Mar	19	Induced Electric Field	13.4 - 13.7	
11	20-Mar	20	Mutual Inductance, B field energy	14.1 - 14.3	9
	22-Mar		Midterm #2		
12	27-Mar		SPRING	SPRING	
	29-Mar		BREAK	BREAK	
13	3-Apr	21	RL, RLC circuits	14.4 - 14.6	10
	5-Apr	22	AC sources and circuits	15.1 - 15.3	
14	10-Apr	23	AC Power, transformers	15.4 - 15.6	11
	12-Apr	24	Maxwell's Equation and EM waves	16.1 - 16.2	
15	17-Apr	25	EM Radiation, Pressure, Spectrum	16.3 - 16.5	12
	19-Apr	26	Reflection and Refraction of light	v3 1.1-1.4	
16	24-Apr	27	Dispersion and Polarization	v3 1.5-1.7	13
	26-Apr	28	Geometric optics image formation	v3 2.1-2.4	
17	1-May	29	Imaging the very large and very small	v3 2.5-2.8	14
	3-May		study period (no class)		
18	10-May	9:45-11:45	WAT112 (to be confirmed)		