

PHY 272 - GENERAL PHYSICS

Syllabus Semester: Spring 2020

Lecturer:

Prof. Gary Varner, Room WAT 214 (lab, 333 is office), Watanabe Hall,
Office hours Monday 3:30 - 4:30 pm [WAT214 – IDLab]
e-mail: varner@hawaii.edu, to arrange a meeting.

Lecture:

Class Hours: T R 10:30 -11:45 am WAT 112

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

Please always check in Laulima first before asking organizational questions.

Recitations:

Students have been assigned to different recitations, please attend
M 14:30-15:20 (Sakam B101); W 15:30-14:20 (WAT 415); R 13:30-14:20 (WAT 415)

Pre-requisite:

Physics 170, equivalent or permission from instructor

Required Text and material:

For this course we will be using Pearson's **Mastering Physics** for the 15th edition of **Young & Freedman's University Physics with Modern Physics**. The digital access for the course is being delivered through our bookstore's **Interactive Digital Access Program (IDAP)**.

The cost of your digital materials will automatically be charged to your student account at a deeply discounted price. You are responsible for paying for charges applied to your student account.

To access your course materials:

Go to www.PearsonMyLabandMastering.com

Register with our specific course ID varner59588

Use our course specific access code DSCUP-SMELL-LEARY-GUSHY-RIGOT-SPIES

An i-Clicker or REEF access is needed.

Grading:

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

Homework: 10%

i-Clicker questions: 10%

Recitation: 10%

Test: 70 % (Midterm 1 20%, Midterm 2 20%, Final Exam 30%)

The final score translates into the following final grade:

A+	95%≤score	C+	65%≤score<70%
A	90%≤score<95%	C	60%≤score<65%
A-	85%≤score<90%	C-	55%≤score<60%
B+	80%≤score<85%	D+	50%≤score<55%
B	75%≤score<80%	D	45%≤score<50%
B-	70%≤score<75%	D-	40%≤score<45%
		F	score<40%

Tests (70%):

The tests will be given in class (*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. This material is challenging for many reasons. Therefore, active participation in problem solving and further practice is essential.

iClicker Questions (10%):

Participation in class is important to understanding the content and to have a crucial guideline for your study at home.

Homework (10%):

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.

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Homework will be assigned weekly and will have to be completed and submitted before the Tuesday lecture (10am Tuesday; Monday afternoon is office hours).

Please see Laulima for the most up-to-date version of the reading, exam and lecture schedule.

Course Syllabus: Physics 272, UH Spring Semester 2020

Second Semester Physics (primarily E&M)

Instructor: Prof. Gary Varner

Class Hours: T R 10:30-11:45am; Office hours M 15:30 - 16:30pm Watanabe 214

Recitations: M 14:30-15:20 (SAKAM B101); W 15:30-16:20 (WAT 415); R 13:30-14:20 (WAT 415)

week	date	Lect #	Lecture topics	Reading	HW due
1	14-Jan	1	Coulomb's Law	21.1 - 21.3	
	16-Jan	2	The Electric Field	21.4 - 21.7	
2	21-Jan	3	Electric Flux and Gauss' Law intro	22.1 - 22.3	1
	23-Jan	4	Gauss' Law and its applications	22.3 - 22.4	
3	28-Jan	5	Gauss' Law Examples	22.4 - 22.5	2
	30-Jan	6	Electric Potential	23.1 - 23.3	
4	4-Feb	7	Calculating Electric Field from Potential	23.4 - 23.5	3
	6-Feb	8	Capacitance: series and parallel combos	24.1 - 24.3	
5	11-Feb	9	Energy storage, dielectrics	24.4 - 24.6	4
	13-Feb		Midterm #1		
6	18-Feb	10	Electric Current, Resistance	25.1 - 25.3	5
	20-Feb	11	Ohm's Law, Power and x-conductors	25.4 - 25.5	
7	25-Feb	12	Kirchoff's rules and DC-circuit analysis	26.1 - 26.3	6
	27-Feb	13	Multi-loop, RC Circuits	26.4 - 26.5	
8	3-Mar	14	Magnetic Forces and Fields	27.1 - 27.5	7
	5-Mar	15	Torques and Dipoles	27.6 - 27.9	
9	10-Mar	16	Magnetic Fields and Forces by Currents	28.1 - 28.5	8
	12-Mar	17	Ampere's Law and Magnet Types	28.6 - 28.8	
10	17-Mar		SPRING	SPRING	
	19-Mar		BREAK	BREAK	
11	24-Mar		Midterm #2		9
	26-Mar		Kuhio Day Holiday -- no lecture		
12	31-Mar	18	Faraday's and Lenz's Laws	29.1 - 29.6	
	2-Apr	19	Inductance, RL circuits	30.1 - 30.4	
13	7-Apr	20	LC, RLC Circuits	30.5 - 30.6	10
	9-Apr	21	Alternating Current	31.1 - 31.3	
14	14-Apr	22	AC sources, power, transformers	31.4 - 31.6	
	16-Apr	23	Maxwell's Equation and EM waves	32.1 - 32.3	
15	21-Apr	24	Properties of EM waves	32.4 - 32.5	11
	23-Apr	25	Nature and properties of light	33.1 - 33.3	
16	28-Apr	26	Polarization and Scattering	33.4 - 33.7	12
	30-Apr	27	Images and Mirrors	34.1 - 34.3	
17	5-May	28	Refraction and lenses, Review	34.5 - 34.8	13
	7-May		Final Exam Review		
18	14-May		9:45-11:45 WAT112 (to be confirmed)		

Reading: Expected to read the assigned text in advance

Prerequisite: Physics 170, equivalent or permission from instructor

Text: (online) Fundamentals of Physics, Halliday 11th edition

Homework: Mastering Physics (online): varner59588

Homeworks due: Tuesdays @ 10:00am (just before Tuesday lecture)

email: varner@phys.hawaii.edu

Grading: HW(10%) **In-class/iClicker Quiz (10%)** Recitation (10%)

MT1(20%) MT2(20%) Final (30%)