

# PHY 272 - GENERAL PHYSICS

## Syllabus Semester: Spring 2019

### 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](mailto: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 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 14:30-15:20 (WAT 114); W 15:30-14:20 (WAT 415); R 13:30-14:20 (PSB 317)

### Pre-requisite:

Physics 170, equivalent or permission from instructor

### Required Text and material:

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

Access the text from WileyPlus: <http://www.wileyplus.com/class/678002>

Course Material this semester is WileyPLUS for Fundamentals of Physics, Halliday 11<sup>th</sup> edition. WileyPLUS includes the full online eBook, study resources, and homework for this course. You can access this course immediately. You do not need to purchase anything from the bookstore or this website to gain access. A \$49.00 charge, however, will be placed on your MyUH account. You will be notified via email, prior to the start of the semester, regarding the charge and how to opt-out. Do not opt out -- if you do you will be removed from the WileyPLUS course and be prompted to pay full price \$140.00 to regain access. For more information on the IDAP program: <http://www.bookstore.hawaii.edu/manoa/SiteText.aspx?id=21588>  
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 % (Diag MT 5% Midterm 1 15%, Midterm 2 20%, Final Exam 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: Diagnostic midterm 5%, midterm 1 15%, 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.

**<http://www.wileyplus.com/class/678002>**

**Homework will be assigned weekly and will have to be completed and submitted before the first recitation session (Monday @ noon).**

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

week	date	Lect #	Lecture topics	Reading	HW due
1	8-Jan	1	Coulomb's Law	21.1 - 21.3	
	10-Jan	2	The Electric Field	22.1 - 22.4	
2	15-Jan	3	Electric field in different geometries	22.5 - 22.7	1
	17-Jan	4	Gauss' Law and its applications	23.1 - 23.3	
3	<b>22-Jan</b>	5	<b>Gauss' Law Ex., Diagnostic Midterm</b>	23.4 - 23.6	2
	24-Jan	6	Electric Potential	24.1 - 24.5	
4	29-Jan	7	Calculating Electric Field from Potential	24.6 - 24.8	3
	31-Jan	8	Capacitance: series and parallel combos	25.1 - 25.3	
5	5-Feb	9	Energy storage, dielectrics	25.4 - 25.6	4
	<b>7-Feb</b>		<b>Midterm #1</b>		
6	12-Feb	10	Electric Current, Resistance	26.1 - 26.3	
	14-Feb	11	Ohm's Law, Power and x-conductors	26.4 - 26.5	
7	19-Feb	12	Kirchoff's rules and DC-circuit analysis	27.1 - 27.2	5
	21-Feb	13	Multi-loop, RC Circuits	27.2 - 27.3	
8	26-Feb	14	Magnetic Forces and Fields	28.1 - 28.5	6
	28-Feb	15	Torques and Dipoles	28.6 - 28.8	
9	5-Mar	16	Magnetic Fields and Forces by Currents	29.1 - 29.2	7
	7-Mar	17	Ampere's Law and Magnet Types	29.3 - 29.5	
10	12-Mar	18	Faraday's and Lenz's Laws	30.1 - 30.5	8
	14-Mar		<b>Midterm #2</b>		
11	19-Mar		SPRING	SPRING	
	21-Mar		BREAK	BREAK	
12	26-Mar		Kuhio Day Holiday -- no lecture		
	28-Mar	19	RL, RLC circuits	30.6 - 30.9	
13	2-Apr	20	AC sources and circuits	31.1 - 31.2	9
	4-Apr	21	RL, RLC circuits	31.3 - 31.4	
14	9-Apr	22	AC sources, power, transformers	31.5 - 31.6	10
	11-Apr	23	Maxwell's Equation	32.1 - 32.3	
15	16-Apr	24	Magnetism	32.4 - 32.8	11
	18-Apr	25	Electromagnetic Waves	33.1 - 33.3	
16	23-Apr	26	Reflection and Refraction of light	33.4 - 33.7	12
	25-Apr	27	Images and Mirrors	34.1 - 34.2	
17	30-Apr	28	Refraction and lenses, Review	34.3 - 34.5	13
	2-May		study period (no class)		
18	<b>9-May</b>		<b>9:45-11:45</b> WAT112 (to be confirmed)		