

GENERAL PHYSICS I (419604)

COURSE: PHY 2053; *General Physics I*

CREDIT HOURS: 3

PREREQUISITE: MTB 1322 or MAC 1133

TIME: Monday and Wednesday, 2:00 to 3:20 PM

CLASSROOM: 7-273

INSTRUCTOR: David Michael Judd

OFFICE: 7-142 **PHONE:** 954-201-6707 (There is voicemail at this number!)

TEXT: *College Physics, Volume One: Classical Mechanics*

(<http://browardcentralscience.org/judd.htm>)

AUTHOR: David Michael Judd

CATALOG DESCRIPTION: A general physics course employing algebra and trigonometry to explain the quantitative aspects of mechanics, properties of matter, heat and sound.

COURSE OUTCOMES:

- 1.0 The students should be able to define and apply the units of measurement of the SI system, use dimensional analysis in problem solving, and perform basic vector operations in vector notation.
- 2.0 The students should be able to analyze and solve problems involving kinematics, dynamics, work, energy, power, conservation laws and static equilibrium.
- 3.0 The students should be able to define the motion of a particle or system of particles that is periodic.
- 4.0 The students should be able to differentiate between heat and temperature, solve basic calorimeter problems, define and apply the three laws of thermodynamics, use the concept of entropy to the solution of problems, and define and apply the concepts of thermal transport to the solution of problems.
- 5.0 The students should be able to state or define and apply the basic concepts and principles pertaining to solid and fluid properties.

Classical Mechanics

DATE **TOPIC**

The Mechanics of Slowly Moving Point Masses

Translational Kinematics Of Point Masses (Chapters One-Seven)

1/	9	The Nature of a Physical Thing	(Chapter 1)
	11	The Position of a Physical Thing	(Chapter 2)
	16	No Classes	
	18	Vectors and Vector Operations	(Chapter 3)
	23	Change in Position, Velocity and Linear Momentum	(Chapters 4, 5 & 6)
	25	Acceleration	(Chapter 7)
	30	Constant Acceleration and the Equations of Motion	(Chapter 7)
2/	1	EXAM I (Vectors and Translational Kinematics)	

Translational Dynamics Of Point Masses (Chapters Nine-Ten)

	6	Force as Interaction	(Chapter 9)
	8	The Mass Interaction (The Gravitational Force)	(Chapter 9)
	13	Surface to Surface Interactions; Elastic Spring; The Frictionless Pulley	(Chapter 9)
	15	Newton's Laws of Motion	(Chapter 10)
	20	Newton's Laws of Motion Applied	(Chapter 10)
	22	Newton's Laws of Motion Applied	(Chapter 10)
	27	Newton's Laws of Motion Applied	(Chapter 10)
	29	EXAM II (Forces and Newton's Laws of Motion)	

- 3 5 **No Classes**
 7 **No Classes**

Conservation of Linear Momentum (Chapter Eleven)

- 12 Collisions and The Conservation of Linear Momentum (Chapter 11)

The Mechanics of Slowly Moving Extended Masses

Rotational Kinematics and Rotational Dynamics (Chapters Twelve-Fifteen)

- 12 Angular Position, Angular Speed and Angular Acceleration (Chapter 12)
 14 Angular Momentum and the Moment of Inertia (Chapter 13)
 19 Torques (Chapter 14)
 21 Torques Applied (Chapter 14)
 26 Static Equilibrium Problems (Chapter 15)
 28 **EXAM III (Rotational Kinematics, Dynamics and Static Equilibrium)**

Work and Energy

The Modern Approach (Chapter Sixteen)

- 4 2 Work Defined (Chapter 16)
 4 Kinetic Energy (Chapter 16)
 9 Potential (**Positional**) Energies (Chapter 16)
 11 The Conservation of Mechanical Energy (Chapter 16)
 16 Work-Energy Problems (Chapter 16)
 18 Work-Energy Problems (Chapter 16)
 23 Work-Energy Problems (Chapter 16)
 25 Work-Energy Problems (Chapter 16)
 30 **FINAL EXAM (Work-Energy Methods) (2:30 to 4:20 PM)**

EVALUATION OF STUDENTS:

ATTENDANCE: You are expected to be in class and to be on time! While in class, I expect your **undivided attention** to the subject matter and to my scintillating lectures. I want you to feel free to ask questions about physics and know that I am not going to try and ridicule or embarrass you. I expect you to show the same respect to your classmates as you would wish others to show you. Enough said.

GRADING: Your grade will be determined by using the following:

Exam I	22.5%
Exam II	22.5%
Exam III	22.5%
Final Exam	22.5%
Assignment One	2.5%
Assignment Two	2.5%
Assignment Three	2.5%
Assignment Four	2.5%

I will provide an equation sheet for each exam. Using any other materials or your **cell phone** during the exam will result in an F. Doing the homework problems is the most important thing you can do to succeed in this class. Having said that, I will assume that you have done the homework and give you a score of one hundred for each assignment component of your grade. There will be **no make-up exams except under the most dire of circumstances! I expect to be notified when you can not make it for an exam! You can leave messages on my voicemail. Should I grant a make-up, you must make it up within one week of the original scheduled date.**

Your final grade for this course will **not** be posted nor will I give it to you over the phone. You may, however, always feel free to discuss your grades with me **in person**.

GRADING SCALE:

90-100	A
80-89	B
70-79	C
60-69	D
59-0	F

OFFICE HOURS:

My tentative office schedule is given below. I am also happy to schedule appointments if needed. **If you are having difficulty solving physics problems, you do not need to hire a tutor, you need to see me!**

Time	Monday	Tuesday	Wednesday	Thursday	Friday
8 : 00		Office	Office	Office	B
8 : 30		Office	Office	Office	Y
9 : 00		PHY2053L	PHY2053L	Office	
9 : 30		PHY2053L	PHY2053L	Office	A
10 : 00		PHY2053L	PHY2053L	PHY2054	P
10 : 30		PHY2053L	PHY2053L	PHY2054	P
11 : 00	PHY2053	PHY2054	PHY2053	PHY2054	O
11 : 30	PHY2053	PHY2054	PHY2053	PHY2054	I
12 : 00	PHY2053	PHY2054	PHY2053	PHY2054	N
12 : 30	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	T
1 : 00	Office	PHY2053L			M
1 : 30	Office	PHY2053L			E
2 : 00	PHY2053	PHY2053L	PHY2053	PHY2054L	N
2 : 30	PHY2053	PHY2053L	PHY2053	PHY2054L	T
3 : 00	PHY2053	Office	PHY2053	PHY2054L	
3 : 30	PHY2054	Office	Office	PHY2054L	O
4 : 00	PHY2054				N
4 : 30	PHY2054				L
5 : 00	PHY2054				Y
5 : 30	PHY2054				
6 : 00	PHY2054				
6 : 30					
7 : 00					