

PHYS 20 Course Outline as of Fall 2009**CATALOG INFORMATION**

Dept and Nbr: PHYS 20 Title: GENERAL PHYSICS PART I
 Full Title: General Physics Lecture Part I
 Last Reviewed: 4/22/2019

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	17.5	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable

Grading: Grade or P/NP

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly: PHYS 2A

Catalog Description:

Translational and rotational motion, statics, conservation of momentum and energy, oscillations, mechanical waves and sound, fluid mechanics, heat and thermodynamics.

Prerequisites/Corequisites:

Completion of MATH 27 or higher (V2) OR Course Completion of MATH 25 and MATH 58

Recommended Preparation:

Course Completion or Concurrent Enrollment in PHYS 1 or Completion of high school physics

Limits on Enrollment:**Schedule of Classes Information:**

Description: Laws of motion, energy, momentum, thermodynamics, sound and waves. (Grade or P/NP)

Prerequisites/Corequisites: Completion of MATH 27 or higher (V2) OR Course Completion of MATH 25 and MATH 58

Recommended: Course Completion or Concurrent Enrollment in PHYS 1 or Completion of high school physics

Limits on Enrollment:

Transfer Credit: CSU;UC.

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area		Effective:	Inactive:	
	C	Natural Sciences	Fall 1981		
CSU GE:	Transfer Area		Effective:	Inactive:	
	B1	Physical Science	Fall 1981		
IGETC:	Transfer Area		Effective:	Inactive:	
	5A	Physical Sciences	Fall 1981		
CSU Transfer:	Transferable	Effective:	Fall 1981	Inactive:	Fall 2021
UC Transfer:	Transferable	Effective:	Fall 1981	Inactive:	Fall 2021

CID:		
CID Descriptor:PHYS 100S	Algebra/Trigonometry-Based Physics: AB	
SRJC Equivalent Course(s):	PHYS20 AND PHYS20L AND PHYS21 AND PHYS21L OR PHYS20A AND PHYS20B	
CID Descriptor:PHYS 105	Algebra/Trigonometry-Based Physics A	
SRJC Equivalent Course(s):	PHYS20 AND PHYS20L OR PHYS20A	

Certificate/Major Applicable:

Major Applicable Course

COURSE CONTENT

Outcomes and Objectives:

Upon completion of the course, the student will be able to:

1. Convert to and from various units.
2. Perform algebraic operations with vectors.
3. Analyze motion in one and two dimensions including falling objects.
4. State Newton's laws of motion and solve motion problems related to these laws, including force and friction.
5. State various forms of energy and use the conservation of energy principle to solve motion problems.
6. Define momentum and use conservation of momentum principle to solve problems related to elastic and inelastic collisions.
7. Describe rotational dynamics and static equilibrium.
8. Define physical properties of solids and fluids, pressure and buoyant force.
9. Explain laws of thermodynamics and the physics of heat, temperature and thermal energy.
10. Describe concepts of waves, vibration and oscillation, and discuss their applications in the analysis of pendulum, sound and interference.

Topics and Scope:

1. Measurement and vectors
2. Uniformly accelerated motion
3. Newton's Laws of motion

4. Work and energy
5. Momentum
6. Torque and static equilibrium
7. Rotational motion
8. Fluid mechanics
9. Wave motion and sound
10. Vibratory motion
11. Temperature and the gas laws
12. Thermal energy, thermal expansion, heat transfer
13. Thermodynamics

Assignment:

1. No less than twelve sets of homework problems
2. Zero to fifteen quizzes
3. No less than three mid-term exams
4. Final exam
5. Reading 20-40 pages per week

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.

Writing
0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems

Problem solving
15 - 35%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None

Skill Demonstrations
0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice, quizzes, physics problems to solve

Exams
65 - 85%

Other: Includes any assessment tools that do not logically fit into the above categories.

None

Other Category
0 - 0%

Representative Textbooks and Materials:

Essentials of College Physics by Serway/Vuille, Thomson-Brooks/Cole, 2007

Physics by Cutnell and Johnson, 7th edition, Wiley, 2007