

Standard  Institutionally Developed College: N/A

EDGE Compatible: No

**Pre-requisites**

ENGL 1101 - Composition and Rhetoric ( 201003 )
MATH 1112 - College Trigonometry ( 201003 )
MATH 1113 - Precalculus ( 201003 )

**Co-requisites**

PHYS 1111 - Introductory Physics I ( 201003 )
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**Course Description**

Selected laboratory exercises paralleling the topics in PHYS 1111. The laboratory exercises for this course include units of measurement, Newton's laws, work energy and power, momentum and collisions, one- and two-dimensional motion, circular motion and law of gravity, rotational dynamics and static equilibrium, elasticity theory, harmonic motion, theory of heat and heat transfer, thermodynamics, wave motion, and sound.

**Course Length**

	Minutes	Contact Unit
Lecture:	0	
Lab 2:	0	
Lab 3:	2250	
Practicum/Internship:	0	
Clinical:	0	
Total:	2250	1

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Semester Credit Hours: 1

**Competencies**

Order	Description	Lecture	Lab2	Lab3	Practicum/Internship	Clinical	Total Minutes	Semester Credit Hrs
1	Laboratory Safety	0	0	60	0	0	60	0
2	Units and Measurements	0	0	175	0	0	175	0
3	Newton's Law and Static Equilibrium	0	0	300	0	0	300	0
4	Work, Energy, and Power	0	0	200	0	0	200	0
5	Momentum and Collisions	0	0	250	0	0	250	0

Order	Description	Lecture	Lab2	Lab3	Practicum/ Internship	Clinical	Total Minutes	Semester Credit Hrs
6	One- and Two-Dimensional Motion	0	0	300	0	0	300	0
7	Elasticity Theory and Harmonic Motion	0	0	325	0	0	325	0
8	Thermodynamics and Heat Transfer	0	0	340	0	0	340	0
9	Mechanical Waves	0	0	300	0	0	300	0
<b>Totals for Course PHYS 1111L - Introductory Physics Lab I ( version 201203 ):</b>		<b>0</b>	<b>0</b>	<b>2250</b>	<b>0</b>	<b>0</b>	<b>2250</b>	<b>1</b>

## Learning Outcomes

### Laboratory Safety

Order	Description	Learning Domain	Level of Learning
1	Discuss and apply laboratory exercises encompassing the appropriate practice of laboratory precautions and laboratory safety.	Cognitive	Comprehension

### Units and Measurements

Order	Description	Learning Domain	Level of Learning
1	Perform and apply laboratory exercises encompassing units and measurements.	Cognitive	Synthesis

### Newton's Law and Static Equilibrium

Order	Description	Learning Domain	Level of Learning
1	Perform and apply laboratory exercises encompassing Newton's law and static equilibrium.	Cognitive	Synthesis

### Work, Energy, and Power

Order	Description	Learning Domain	Level of Learning
1	Perform and apply laboratory exercises encompassing work, energy, and power.	Cognitive	Synthesis

### Momentum and Collisions

Order	Description	Learning Domain	Level of Learning
1	Perform and apply laboratory exercises encompassing momentum and collisions.	Cognitive	Synthesis

### One- and Two-Dimensional Motion

Order	Description	Learning Domain	Level of Learning
1	Perform and apply laboratory exercises encompassing one- and two-dimensional motion.	Cognitive	Synthesis

### Elasticity Theory and Harmonic Motion

Order	Description	Learning Domain	Level of Learning
1	Perform and apply laboratory exercises encompassing elasticity theory and harmonic motion.	Cognitive	Synthesis

## Thermodynamics and Heat Transfer

Order	Description	Learning Domain	Level of Learning
1	Perform and apply laboratory exercises encompassing thermodynamics and heat transfer.	Cognitive	Synthesis

## Mechanical Waves

Order	Description	Learning Domain	Level of Learning
1	Perform and apply laboratory exercises encompassing mechanical waves.	Cognitive	Synthesis

## References

Order	Reference Type	Description
1	Book with Author(s) Listed	Giambattista, A. & et al.. (2010). College physics with an integrated approach to forces and kinematics. (3rd). New York, NY: McGraw Hill.
2	Book with Author(s) Listed	Christian, W. & Belloni, M.. (2004). Physlet physics-interactive illustrations, explorations, and problems for introductory physics. (1st). Upper Saddle River, NJ: Pearson Prentice Hall.
3	Book with Author(s) Listed	Cutnell, J. & Johnson, K.. (2006). Physics. (7th). New York, NY: John Wiley & Sons.
4	Book with Author(s) Listed	Giancoli, D.. (2004). Physics, principles and applications. (6th). Upper Saddle River, NJ: Pearson Prentice Hall.
5	Book with Author(s) Listed	O'Kuma, T. & et al.. (2004). Ranking task exercises in physics. (student). Upper Saddle River, NJ: Pearson Prentice Hall.
6	Book with Author(s) Listed	Serway, R., Faughn, J. & Vuille, C.. (2009). College physics. (8th). Belmont, CA: Brooks/Cole.
7	Book with Author(s) Listed	Wilson, J. & et al.. (2009). College physics with mastering physics. (7th). ? : Pearson / Addison Wesley.
8	Professional Web Site	North Carolina State University: Advanced Instructional Systems, Inc. (1997-on going). WebAssign: A web-based assessment system providing homework and test delivery, collection, grading, and recording services. Retrieved ?, from <a href="http://webassign.net">http://webassign.net</a>