

Standard  Institutionally Developed College: N/A

EDGE Compatible: No

**Pre-requisites**

ENGL 1101 - Composition and Rhetoric ( 201003 )
MATH 1101 - Mathematical Modeling ( 201003 )
MATH 1111 - College Algebra ( 201003 )

**Co-requisites**

PHYS 1110 - Conceptual Physics ( 201003 )
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**Course Description**

Selected laboratory exercises paralleling the topics in PHYS 1110. The laboratory exercises for this course include systems of units and systems of measurement, vector algebra, Newtonian mechanics, fluids and thermodynamics, heat, light, and optics, mechanical waves, electricity and magnetism, and modern physics.

**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	100	0	0	100	0
3	Vector Algebra	0	0	250	0	0	250	0
4	Newtonian Mechanics	0	0	550	0	0	550	0
5	Fluids, Thermodynamics, and Heat	0	0	440	0	0	440	0
6	Light and Optics	0	0	300	0	0	300	0

Order	Description	Lecture	Lab2	Lab3	Practicum/ Internship	Clinical	Total Minutes	Semester Credit Hrs
7	Mechanical Waves	0	0	150	0	0	150	0
8	Electricity and Magnetism	0	0	250	0	0	250	0
9	Modern Physics	0	0	150	0	0	150	0
<b>Totals for Course PHYS 1110L - 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 systems of measurements.	Cognitive	Synthesis

### Vector Algebra

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

### Newtonian Mechanics

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

### Fluids, Thermodynamics, and Heat

Order	Description	Learning Domain	Level of Learning
1	Perform and apply laboratory exercises encompassing fluids, hermodynamics, and heat.	Cognitive	Synthesis

### Light and Optics

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

### Mechanical Waves

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

### Electricity and Magnetism

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

#### Modern Physics

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

#### References

Order	Reference Type	Description
1	Book with Author(s) Listed	Griffith, W. & Brosing, J.. (2008). The physics of everyday phenomena. (6th). New York, NY: McGraw Hill.
2	Book with Author(s) Listed	Hewitt, P.. (2010). Conceptual physics. (11th). New York, NY: Addison Wesley.
3	Book with Author(s) Listed	Serway, R., Faughn, J. & Vuille, C.. (2009). College physics. (8th). Belmont, CA: Brooks/Cole.
4	Book with Author(s) Listed	Touger, J.. (2006). Introductory physics, building understanding: Version 1.1. (?). New York, NY: John Wiley & Sons.
5	Book with Author(s) Listed	Ewen, D., Schurter, N. & Gunderson, P.. (2009). Applied physics. (9th). Upper Saddle River, NJ: Pearson Prentice Hall.
6	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 11/15/2009, from <a href="http://webassign.net">http://webassign.net</a>