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**Ohio Articulation Number (OAN)
Course Submission Form
2005-2006**



College/University Lorain County Community College

Course(s) Submitted(Title & Course #) General Physics I PHYC 151 E for
Ohio Articulation Number OSC014

Date April 25, 2006 Course 1 of a 1 Course OAN mapping.

Name and title of individual submitting on behalf of the college/university

Name Rosemary Schestag Title Project Manager

Address 1005 Abbe Road N, CC219
Elyria, OH 44035

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Phone 440-366-7412

Fax 440-366-4150

Credit Hours 5 qtr _____ sem X

Lecture Hours 4

Laboratory Hours 3 (if applicable)

Pre-Requisites(s) Course work (if applicable)

MTHM 121 (Technical Math I) or high school algebra and trigonometry.

Placement Score (if applicable)

(Name of test) _____

(Domain) _____ (Score) _____

Catalog/Course Description (Includes Course Title and Course #)

General Physics I PHYC 151 - Linear and rotational kinematics; Newton's laws of motion and gravitation; energy and momentum conservation; equilibrium; fluids; temperature and kinetic theory; thermodynamics. Laboratory required. (A special fee will be assessed.) *Prerequisites: MTHM 121 (Technical Math I) or high school algebra and trigonometry.*

Texts/Outside Readings/Ancillary Materials

REQUIRED TEXTBOOK(S)/MATERIAL(S):

College Physics, 5th edition, by Wilson
General Physics 151 Lab Manual, by Johnson

OTHER RESOURCES INCLUDING EQUIPMENT AND SOFTWARE:

Scientific calculators

LIBRARY AND LEARNING RESOURCES:

All students are expected to fully utilize periodical and reference literature available in the Library and/or via Library computer.

Course Objectives and/or Plan of Work

SYNOPSIS OF SUGGESTED COURSE OUTCOMES:

The student shall:

- be able to apply Newton's Laws of motion and energy considerations to everyday situations to explain motion and forces qualitatively.
- be able to solve problems involving motion under the influence of external forces.
- be able to use energy and momentum conservation principles to predict the behavior of a system.
- be able to calculate the exchange of thermal energy between parts of a system.

Description of Assessment and/or Evaluation of Student Learning

SUGGESTED INSTRUCTIONAL METHOD(S) AND TECHNIQUE(S):

Lectures and demonstrations
Problem solving
Laboratory exercises

SUGGESTED-ASSESSMENT/GRADING PROCEDURES:

Quizzes	30% of Total Grade
Tests and Final Exam	50% of Total Grade
Lab Reports*	20% of Total Grade

*The lab report grade must be at least 70% of the possible points to pass the course.

90% - 100%	A
80% - 89.99%	B
70% - 79.99%	C
60% - 69.99%	D

Master Syllabi and Working Syllabi (if both are used)

Syllabus
PHYC 151
General Physics I
Lorain County Community College
Spring 2006

Course Number: PHYC 151 E D160A
Faculty: Mr. David VanArsdale Office: PS210 366-4022
 Office: PS101D (Lab) 366-7202
 Email: dvanarsd@lorainccc.edu
 Home phone: 440-458-6016

Course Hours: Lecture: M T R F (2:00 PM- 2:50 PM) PS107
 Lab D1601: F (9:00 AM- 11:50 AM) PS101
 Lab D1602: W (2:00 PM- 4:50 PM) PS101

Text: College Physics, by Wilson & Buffa, 5th Edition, Prentice-Hall

Course Description:

Linear and rotational kinematics; Newton's laws of motion and gravitation; energy and momentum conservation; equilibrium; fluids; temperature and kinetic theory; thermodynamics. Laboratory required.

Prerequisites:

MTHM 121, or MATH 111, or Counselor approval required

Course Topics:

- Chapter 1 Measurement and Problem Solving
- Chapter 2 Kinematics: Description of Motion
- Chapter 3 Motion in Two Dimensions
- Chapter 4 Force and Motion
- Chapter 5 Work and Energy
- Chapter 6 Linear Momentum and Collisions
- Chapter 7 Circular Motion and Gravitation
- Chapter 8 Rotational Motion and Equilibrium
- Chapter 9 Solids and Fluids
- Chapter 10 Temperature and Kinetic Theory
- Chapter 11 Heat
- Chapter 12 Thermodynamics

Evaluation:

The final grade is calculated from a total percentage of points obtained from quizzes and tests (45%), lab reports and any other graded activities (30%), and final exam (25%). In addition, at least 70% of the possible lab points must be achieved in order to pass the course.

Grading Scale:	90% - 100%	A
	80% - 89.99%	B
	70% - 79.99%	C
	60% - 69.99%	D

Problem Assignments:

Problems will be assigned for each chapter. They will not be graded. However, students who make a poor effort to solve the assigned problems invariably do poorly on tests. A rigorous approach to the assigned problems is the best way to prepare for tests.

Absence/Make-up Policy:

If you know in advance that you will be absent the day a test is to be given, make alternate arrangements prior to the test date. Missed tests will be handled on a case-by-case basis. Missed quizzes cannot be made up. After an excused absence, problem assignments may be submitted at the next scheduled class.

In general, labs cannot be made up. Anticipated absences may be avoided by attending the alternate lab class on a space available basis. When final grades are calculated, the single lowest lab score will be ignored.

Late Assignments:

Lab reports will be reduced by 20% for each lab class day they are late. Assignments may be turned in during class, lab, or in PS210.

Academic Dishonesty:

Cheating on a test will result in a zero for that test.

Students will work in small groups during lab sessions to plan, gather data, and organize results. Collaboration on lab write-ups is not permitted. No original text which becomes part of a lab report is to be shared with anyone else in the class. Students who share common language on a lab report will for the first offense be warned, the next offense penalized by lab score reduction, and thereafter receive zero for lab reports which share common language.

Instructor Office Hours:

The instructor will be available for individual consultation in the lab office (PS 101D) 11:00 am - noon on MTWR, and at other times by appointment.

Tutoring:

The Individualized Learning Support Center (ILSC/Tutoring Center) located in the Learning Resources Center. Tutoring may take place in small study groups or workshops, walk-in tutoring or one-to-one (private) tutoring. Students are entitled to two free hours of tutoring each week. To make an appointment for tutoring services, call the ILSC 366-4057.

Reading Days:

Readings days are scheduled for May 9 and 10. This is an opportunity for students to ask questions to prepare for the final exam. No new material will be presented.

Special Needs:

The Office for Special Needs Services exists to serve the needs of students with disabilities – physical, learning and/or emotional. If you are a person with a disability who needs accommodations or assistance, contact the O.S.N.S. located in Room 115 in the Learning Resource Center. The coordinator is Ms. Theo Scott (X4058). To receive accommodations, one must be registered with the O.S.N.S. office, and notify the instructor during the first week of class.

Miscellaneous:

No food or beverage in lab at any time.

No use of cell phones, pagers, etc. in class or lab.

Easiest method of communication is email: dvanarsd@lorainccc.edu

Messages may be left in PS 210, or by calling the Physics Lab, 366-7202.

If special circumstances warrant, changes to this course description will be made, and students will be notified of those changes as soon as possible.

Lecture Schedule

Class	Date	Chapter	Topic
1	17-Jan T	1	Measurement, Tolerance, Unit Conversion
2	19-Jan R	2	Kinematics
3	20-Jan F	2	Kinematics
4	23-Jan M	2,3	Velocity, Acceleration
5	24-Jan T	2,3	Velocity, Acceleration
6	26-Jan R	3	Kinematic Equations, Slope/Area, Free Fall
7	27-Jan F	3	Kinematic Equations, Slope/Area, Free Fall
8	30-Jan M	3	Components of 2D Motion
9	31-Jan T	3	Vector Addition, Relative Velocity
10	2-Feb R	3	Vector Addition, Relative Velocity
11	3-Feb F	3	Trajectory
12	6-Feb M	3	Review
13	7-Feb T		Test 1 (Ch 1-3)
14	9-Feb R	4	Newton I
15	10-Feb F	4	Newton II
16	13-Feb M	4	Newton II
17	14-Feb T	4	Newton II
18	16-Feb R	4	Newton II
19	17-Feb F	4	Friction
20	20-Feb M	4	Newton II, Friction

21	21-Feb	T	4	Work, Kinetic Energy, Scalar Product of Vectors
22	23-Feb	R	5	Work, Kinetic Energy
23	24-Feb	F	5	Potential Energy
24	27-Feb	M	5	Potential Energy
25	28-Feb	T	5	Conservation of Energy
26	2-Mar	R	5,6	Conservation of Energy, Power
27	3-Mar	F	6	Newton III, Linear Momentum
28	6-Mar	M	6	Impulse, Conservation of Linear Momentum
29	7-Mar	T	6	Collisions
30	9-Mar	R	4-6	Review
31	10-Mar	F		Test 2 (Ch 4-6)
	3/12	MTRF		Spring Break
32	20-Mar	M	7	Angular Displacement, Velocity, Acceleration
33	21-Mar	T	7	Angular Displacement, Velocity, Acceleration
34	23-Mar	R	7	Universal Gravitation
35	24-Mar	F	7,8	Kepler's Laws of Planetary Motion, Rotational
36	27-Mar	M	8	Rotational Motion
37	28-Mar	T	8	Rotational Motion
38	30-Mar	R	8	Moment of Inertia, Torque, Vector Product
39	31-Mar	F	8	Rotational Dynamics
40	3-Apr	M	8	Rotational Dynamics
41	4-Apr	T	8	Rotational Work and Kin Energy
42	6-Apr	R	8	Angular Momentum
43	7-Apr	F	8	Conservation of energy, momentum, orbits
44	10-Apr	M	9	Elastic Moduli, Pressure, Pascal's Principle
45	11-Apr	T	9	Elastic Moduli, Pressure, Pascal's Principle
46	13-Apr	R	9	Bouyancy, Archimedes
47	14-Apr	F	9	Bouyancy, Archimedes
48	17-Apr	M	9	Bernoulli, Viscosity
49	18-Apr	T	9	Bernoulli, Viscosity
50	20-Apr	R	9	Review
51	21-Apr	F		Test 3 (Ch 7-9)
52	24-Apr	M	10	Temperature, Heat, Gas Laws, Thermal Expansio
53	25-Apr	T	10	Temperature, Heat, Gas Laws, Thermal Expansio
54	27-Apr	R	10	Kinetic Theory
55	28-Apr	F	11	Heat, Specific Heat, Latent Heat
56	1-May	M	11	Heat Transfer
57	2-May	T	11	Heat Transfer
58	4-May	R	12	Thermodynamics, First Law, Second Law, Entropy
59	5-May	F	12	Heat Engines and Thermal Pumps, Review
60	8-May	M	12	Test 4 (Ch 10-12)
	9-May	T		Reading Day
	11 May	-R-W		Final Exams
	17-May	W		Final Exam 1:00-2:50 PM

Lab Schedule

Week

- 1 Linearly Accelerated Motion
- 2 Lab Report Format, Technical Writing Skills, MS Excel, Tolerance
- 3 Free Fall
- 4 Vector Analysis
- 5 Projectile
- 6 Newton's Second Law
- 7 Conservation of Mechanical Energy(1)
- 8 Impulse – Momentum
- 9 Centripetal Force
- 10 Center of Mass and Torque
- 11 Density, Bouyancy
- 12 Conservation of Mechanical Energy (2)
- 13 Coefficient of Linear Expansion
- 14 Specific Heat Capacity

Problem List – College Physics (Wilson & Buffa, 5th Edition)

Chapter 1 – Measurement and Problem Solving

10, 11, 14, 17, 18, 31, 32, 34, 39, 40, 42, 46, 48, 51, 52, 54, 55, 56, 59, 63, 73, 74, 79, 85, 87, 88, 95, 101, 102

Chapter 2 – Kinematics: Description of Motion

1, 3, 4, 5, 10, 12, 14, 21, 25, 31, 32, 35, 36, 37, 38, 39, 42, 43, 48, 50, 52, 54, 57, 61, 63, 64, 66, 70, 71, 72, 73, 78, 81, 82, 83, 85, 93, 94, 98, 107, 109, 111

Chapter 3 – Motion in Two Dimensions

2, 3, 6, 8, 16, 24, 31, 34, 39, 40, 42, 45, 51, 57, 58, 60, 62, 66, 73, 74, 76, 79, 83, 86, 87, 89, 91, 101, 105, 110

Chapter 4 – Force and Motion

1, 2, 3, 4, 5, 6, 7, 8, 10, 112, 15, 17, 18, 20, 24, 26, 27, 28, 34, 35, 39, 40, 41, 42, 43, 47, 49, 54, 55, 58, 61, 65, 66, 69, 72, 76, 78, 79, 82, 87, 93, 98, 100, 101, 102, 108, 112

Chapter 5 – Work and Energy

1, 2, 5, 6, 9, 10, 11, 16, 19, 21, 24, 25, 27, 29, 38, 42, 43, 44, 47, 51, 53, 55, 66, 67, 68, 70, 72, 73, 76, 78, 80, 81, 84, 85, 86, 89, 91, 94, 95, 98

Chapter 6 – Linear Momentum and Collisions

1, 5, 6, 8, 11, 12, 13, 18, 19, 20, 21, 29, 30, 31, 35, 38, 41, 45, 48, 49, 51, 56, 57, 58, 60, 67, 69, 74, 76, 86, 88, 90, 100, 103, 104, 111

Chapter 7 – Circular Motion and Gravitation

1, 2, 3, 4, 5, 10, 11, 15, 22, 23, 26, 28, 32, 36, 40, 43, 47, 48, 49, 50, 51, 52, 53, 54, 55, 60, 62, 63, 64, 65, 67, 72, 73, 75, 78, 79, 82, 84, 85, 91, 98, 101, 103, 106, 108

Chapter 8 – Rotational Motion and Equilibrium

4, 6, 7, 8, 9, 11, 15, 21, 22, 23, 31, 32, 33, 39, 42, 47, 48, 50, 52, 57, 61, 65, 67, 79, 80, 83, 89, 93, 95, 97, 101, 102, 106, 109, 111, 116

Chapter 9 – Solids and Fluids

1, 3, 7, 8, 9, 11, 15, 21, 24, 27, 28, 30, 31, 32, 35, 40, 41, 43, 44, 48, 49, 51, 52, 53, 55, 57, 59, 60, 63, 65, 67, 70, 72, 76, 82, 85, 87, 90, 92, 94, 95, 96, 101, 103

Chapter 10 – Temperature and Kinetic Theory

3, 7, 8, 9, 10, 13, 17, 24, 26, 27, 33, 35, 38, 42, 43, 47, 48, 50, 51, 54, 60, 63, 65, 71, 73

Chapter 11 – Heat

3, 4, 5, 7, 8, 12, 28, 29, 31, 32, 35, 38, 40, 45, 46, 47, 51, 55, 59, 60, 64, 66, 67, 71, 76, 78, 81, 88

Chapter 12 – Thermodynamics

5, 7, 8, 17, 18, 23, 25, 26, 27, 29, 39, 41, 43, 45, 49

Additional Documentation

OAN	LCCC	BGSU	KSU	U, Akron	U. Toledo
OSC 014	PHYC 151	PHYS 201	PHY 13001	2820:161 & 162	PHYS 2010 OR 2070

This information is from the Equivalency Guide in CAS.

It shows how our indicated courses are accepted by BGSU, KSU, U of Akron, and U of Toledo.

Blue font indicates that the school submitted that course as indicated OAN.

COURSE DESCRIPTION WITH STUDENT OUTCOMES

LORAIN COUNTY COMMUNITY COLLEGE

DIVISION: Science and Mathematics

COURSE TITLE: General Physics I
COURSE NUMBER: PHYC 151

HOURS-CREDIT: 5

CONTACT: 7

LECT: 4

LAB: 3

REC/CLINICAL:

TOTAL COURSE ILUs: 6.55

LECTURE: 1.0

LAB: .85

REC/CLINICAL: 0

LECTURE SEATS: 48

LAB SEATS: 24

CLINICAL SEATS: 0

IS THERE A SEPARATELY SCHEDULED LAB:

Yes

IS THERE A SEPARATELY SCHEDULED CLINICAL:

No

FEES: Yes
\$45

SPECIAL FACILITIES: None

FAS ACCOUNT NO.: 1-02-02-350-450

GEN. EDUCATION REQ. CHANGES: Yes

START YEAR/SEMESTER: Fall
1998

TRANSFER MODULE REQ. CHANGES: Yes

PREREQUISITES: MTHM 121 (Technical Math I) or high school algebra and trigonometry

COREQUISITES/CONCURRENT: None

CATALOG DESCRIPTION:

Linear and rotational kinematics; Newton's laws of motion and gravitation; energy and momentum conservation; equilibrium; fluids; temperature and kinetic theory; thermodynamics. Laboratory required. (A special fee will be assessed.) *Prerequisites: MTHM 121 or high school algebra and trigonometry.*

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LIBRARY AND LEARNING RESOURCES:

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SYNOPSIS OF SUGGESTED COURSE OUTCOMES:

The student shall:

- be able to apply Newton's Laws of motion and energy considerations to everyday situations to explain motion and forces qualitatively.
- be able to solve problems involving motion under the influence of external forces.
- be able to use energy and momentum conservation principles to predict the behavior of a system.
- be able to calculate the exchange of thermal energy between parts of a system.

TOPICAL OUTLINE: (COMMON CORE TOPICS)

- Kinematics in one and two dimensions
- Dynamics; Newton's laws of motion
- Translational and rotational equilibrium
- Energy and momentum conservation
- Fluid properties
- Laws of thermodynamics

SUGGESTED INSTRUCTIONAL METHOD(S) AND TECHNIQUE(S):

Lectures and demonstrations

Problem solving

Laboratory exercises

SUGGESTED-ASSESSMENT/GRADING PROCEDURES:

Quizzes 30% of Total Grade

Tests and Final Exam 50% of Total Grade

Lab Reports* 20% of Total Grade

*The lab report grade must be at least 70% of the possible points to pass the course.

Grading Scale:	90% - 100%	A
	80% - 89.99%	B
	70% - 79.99%	C
	60% - 69.99%	D

GENERAL EDUCATION REQUIREMENT:

Meets General Education Outcomes: 1, 2, 3, 6, 7, 8 and 9. Refer to LCCC catalog for a complete description of the eleven General Education Outcomes.

TRANSFER MODULE REQUIREMENT CHANGES:

Add to Natural/Physical Sciences area of Transfer Module.

Comment:

Combines PHYS 151/152/153 in Semester Conversion.

Date Revised for Semester Conversion: November 1996

OBR Use	Action
Approved	
Additional Information Requested	
Rejected	
Date	