

North Central Michigan College

NCMC MASTER COURSE SYLLABUS

Last Date Revised 3/5/2012

INSTRUCTIONAL AREA: Liberal Arts

DEPARTMENT: Science

ASSOCIATE DEAN: Samantha McLin

ORIGINATOR: Kurt Yuengling

DEAN OF INSTRUCTION: Christine Hammond, Ph.D.

COURSE ALPHA/NUMBER: PHY 101

COURSE TITLE: Concepts in Physics

HOURS OF INSTRUCTION:

Credit hours: 4

Lecture: 3

Lab: 2

Clinical:

Variable Hours:

Total Hours of Instruction: 5

Total Contact Hours: 88

(Total Contact Hours Formula: (lecture hours + lab hours + clinical hours) x 17.6

CATALOG DESCRIPTION: A qualitative study of select topics in physics including: mechanics, energy, electricity, optics and sound. Intended for non-science students requiring a survey of physics for general education requirements or those students pursuing certification in elementary education. Includes practical laboratory exercises.

PREREQUISITE(S): MATH 110

COREQUISITE(S):

GENERAL EDUCATION DISTRIBUTION AREA:

Communications, Writing

Natural Science Group A

Communications, Communications

Natural Science Group B

Humanities Group A

Social Science Group A

Humanities Group B

Social Science Group B

Mathematics

Non Applicable

Science

GENERAL EDUCATION OUTCOMES:

Write and Speak Effectively

Think Critically & Analytically

Write & Speak Effectively and Think Critically & Analytically

Non Applicable

COURSE OBJECTIVES AND OUTCOMES:

Upon successfully completing this course, you should be able to: (1) recognize the basic concepts and principles of mechanics, properties of matter, thermal physics, waves, sound, electricity, magnetism, light, and atomic and nuclear physics in your own experiences with the physical universe, (2) apply the basic equations, relationships, and laws of physics during the analysis and comprehension of the physical universe, and (3) effectively use selecte laboratory instruments and techniques to collect, analyze, and interpret physical data.

METHODS OF INSTRUCTION: Lecture, lab, discussion

METHODS OF EVALUATION: Lab Reports, Quizzes, Exams

REQUIRED TEXT AT TIME OF COURSE ADOPTION/REVISION:

TEXTS: Conceptual Physics, Paul Hewitt, 11th edition

OPTIONAL SUPPLEMENTARY MATERIALS:

Reasonable accommodations can be provided for students with documented disabilities. Please contact Learning Support Services for assistance: (231)348-6817.

SUGGESTED TIME ALLOWANCE AND SEQUENCE OF INSTRUCTION:

(List general content description of what is being covered each week)

(If you need more than one line for a week, hit enter at the end of row; second line will begin)

WEEK 1	Introduction and discussion of units
WEEK 2	Motion
WEEK 3	Forces and Newton's Laws
WEEK 4	Potential and Kinetic Energies
WEEK 5	Momentum and Collisions
WEEK 6	Phases of Matter
WEEK 7	Temperature and Heat
WEEK 8	Waves
WEEK 9	Sound
WEEK 10	Electrostatics
WEEK 11	AC and DC Circuits
WEEK 12	Magnetism
WEEK 13	Optics and Electromagnetic Waves
WEEK 14	Atomic Physics
WEEK 15	Nuclear Physics
WEEK 16	Einstein and the Theory of Special Relativity

APPROVED FOR ADOPTION/REVISION BY THE CRD/AP COMMITTEE ON 03/21/12