North Central
Michigan College

NCMC MASTER COURSE SYLLABUS FOR YEARS 2001-2003

DIVISION/AREA: Sciences, Health and Human Services DEPARTMENT: Science

DIVISION DIRECTOR: Polly Flippo, MSN,RN ORIGINATOR: Brian Peterson

DEAN OF INSTRUCTION: Timothy Dykstra, PhD

TOTAL HOURS OF INSTRUCTION: LECTURE: 3 LAB: 2 TOTAL CONTACT HOURS: 88

COURSE NUMBER: PHY 211 CREDIT HOURS: 4(3-2)

COURSE TITLE: General College Physics II

TRANSFERABLE **YES:** NO: TO: Most

PREREQUISITE(S)/COREQUISITE(S)/ADVISORY:
PHY 210 with a grade of C or better

CATALOG DESCRIPTION:

A continuation of PHY 210. Topics include the principles and practical applications of wave motion, electricity, magnetism, light, optics, and modern physics.

GENERAL EDUCATION OUTCOMES:
The purpose of General Education requirements in our degree programs is to enable students to develop their ability to reason, to communicate effectively in both oral and written form, and to acquire sufficient knowledge of their heritage to participate fully in society and the world.

COURSE OBJECTIVES & OUTCOMES:
Upon successfully completing this course, you should be able to: (1) *recognize* the basic concepts and principles of wave motion, electricity, magnetism, light, optics, and modern physics in your own experiences with the physical universe, (2) *apply* the basic concepts and principles of wave motion, electricity, magnetism, light, optics, and modern physics to your area of academic interest, (3) use appropriate quantitative techniques to analyze and comprehend the physical universe, (4) apply critical thinking and problem-solving skills to the analysis and comprehension of the physical universe, and (5) effectively use selected laboratory instruments and techniques to collect, analyze, and interpret physical data.

METHODS OF INSTRUCTION: Lecture, Lab, discussion

METHODS OF EVALUATION: Homework, lab reports, quizzes, exams

REQUIRED TEXTS:

Physics, v. 2, 5th ed., by John Cutnell & Ken Johnson
Student Solutions Manual, 5th ed., by John Cutnell & Ken Johnson

Reasonable accommodations may be provided for students with documented physical, sensory, cognitive, systemic, and/or psychiatric disabilities. Please contact the Education Opportunity Program (EOP) at (231) 348-6687 to arrange services for this course.

TIME ALLOWANCE AND SEQUENCE OF INSTRUCTION:
This course is scheduled to include the following general topics:

A. Wave Motion

1. Sound (Ch. 16)
2. Interference phenomena (Ch. 17)

B. Electricity and Magnetism

1. Electric fields (Ch. 18)
2. Electric potential (Ch. 19)
3. Electric circuits: DC (Ch. 20)
4. Magnetic fields (Ch. 21)
5. Electromagnetic induction (Ch. 22)
6. Electric circuits: AC (Ch. 23)

C. Light and Optics

1. Electromagnetic waves (Ch. 24)
2. Light reflection and mirrors (Ch. 25)
3. Light refraction and lenses (Ch. 26)
4. Interference phenomena (Ch. 27)

D. Modern Physics

Particles and waves (Ch. 29)

APPROVED FOR ADOPTION BY THE CRD/AP COMMITTEE ON _____