

**Fond du Lac Tribal and Community College
COURSE OUTLINE FORM**

Updated 9/23/14

Please return this form to the college vice president of academic affairs and the chairperson of the Academic Affairs and Standards Council (AASC)

1. Prepared by: _____

2. Date submitted: _____

3. Date approved: _____ Date revised 10/14/14

4. Department/discipline: Physics

5. Department(s) endorsement(s): _____

(Signatures of the person(s) providing the endorsement are required.)

6. Course Title: Introduction to Physics I & II

Abbreviated course title (25 characters or less): _____

7. Course Designator: PHYS 8. Course Level: 1001/1002 9. 2XXX

10. Number of Credits: Lecture 3 Lab 1

11. Control Number (on site) 70/24 Control Number (online) _____

12. Catalog/Course description:

An algebra-based general physics course designed for pre-professional and non-engineering majors. Concepts in mechanics, electricity, magnetism, heat, light, sound, and modern physics will be explored through extensive laboratory activities. (Prerequisite: High School Higher Algebra or consent of Instructor) (Meets MnTC goal area 3).

13. Course prerequisite(s) or co-requisite(s): Accuplacer scores/ Other courses

Prerequisite(s): High School Higher Algebra or consent of Instructor

Co-requisite:

14. **Course Materials** (Recommended course materials and resources. List all that apply, e.g. textbooks, workbooks, study guides, lab manuals, videos, guest lecturers).

Text determined on a yearly basis depending on availability and content.

Three-Ring Binder, Metric Ruler, Colored Pencils, and Calculator with trig functions.

Handouts, Overheads, Slides, and Videos.

15. **Course Content** (Provide an outline of major topics covered in course)

Physics I:

- Fundamentals of Matter, Energy, Space, and Time
- Describing and Analyzing Motion
- Force, Work, and Motion
- Equilibrium
- Circular Motion
- Momentum

- Rotational Motion
- Mechanical Properties of Matter
- Harmonic Motion
- Fluids
- Waves

Physics II:

- Thermal Properties of Matter
- Thermodynamics
- Electricity
- Electric Fields
- Electric Current
- Magnetic Fields
- Electromagnetism
- Capacitance and Inductance
- Light
- Lenses and Optics
- Particles and Waves
- Relativity
- The Atom

16. Learning Goals, Outcomes, and Assessment

At FDLTCC we have 4 Competencies Across the Curriculum (CAC) areas. They are as follows:

- A. Information Literacy (the ability to use print and/or non-print tools effectively for the discovery, acquisition, and evaluation of information)
- B. Ability to Communicate (the ability to listen, read, comprehend, and/or deliver information in a variety of formats.)
- C. Problem Solving (the ability to conceptualize, apply, analyze, synthesize, and/or evaluate information to formulate and solve problems.)
- D. Culture (knowledge of Anishinaabe traditions and culture, knowledge of one's own traditions and culture, knowledge of others' traditions and cultures, culture of work, culture of academic disciplines and/or respect for global diversity.)

Course learning outcomes will fulfill the identified competencies.

Course Learning Outcomes for **PHYS 1001 Introduction to Physics I:**

Upon completion of this course, students will be able to:

1. Calculate, using problem solving format, the relationship between force, mass, and acceleration. (B, C)
2. Perform an experiment demonstrating projectile motion. (C)
3. Conduct internet research, and present in written report form, an assigned physics topic. (A, B)
4. Graph data results from a physics experiment. (B, C)

Course learning outcomes will fulfill the identified competencies.

Course Learning Outcomes for **PHYS 1002 Introduction to Physics II:**

Upon completion of this course, students will be able to:

1. Calculate, using problem solving format, the relationship between resistance, voltage, and current in an electric circuit. (B, C)
2. Perform an experiment demonstrating Ohm's Law. (C)
3. Conduct internet research, and present in written report form, an assigned physics topic. (A, B)
4. Graph data results from a physics experiment. (B, C)

17. **Minnesota Transfer Curriculum (MnTC):** If this course fulfills an MnTC goal area, state the goal area and list the goals and outcomes below:

See www.mntransfer.org

Goal Area(s): 3

Goal and Outcomes:

Goal 3: Natural Sciences