Course Title: Introductory Physics
Semester Course Prefix and Number: PHYS 1551
Old Quarter Course Prefix and Number: NA
Number of Credits: 4
Semester(s) Offered: (Must be approved by AASC or SGC)
Class Size: 48/lecture
Number of Lecture Credits: 3
Number of Lab Credits: 1
Number of Lab Hours: 2
Number of Studio/Demonstration/Internship Credits:

Course Purpose Code:
0 – Developmental Courses
1 – Non-transferable, General Education
2 – Technical course related to career programs
3 – College course which has the primary goal of applying certain concepts (e.g. vocal ensemble)
4 – Other college course not considered a part of general education (MNTC) (e.g. computer science, health, physical education)
5 – Course which is intended to fulfill the Minnesota Transfer Curriculum (MNTC) requirements or intended for transfer.
9 – Continuing Education/Customized Training specialized credit course (not occurring in 0-5)

Catalog Description:
This course covers the basic principles of physics from a conceptual and practical viewpoint with a minimal amount of math. Topics generally include mechanics, waves and sound, fluids, thermodynamics, electricity, magnetism, and light. It is designed for students in general education and those who are preparing to take the College Physics sequence or the Engineering Physics sequence.

Prerequisites and/or recommended entry skills/knowledge:
Course Prerequisite(s): None
Reading Prerequisite: None
Composition Prerequisite: None
Mathematics Prerequisite: Higher Algebra

Career Programs and Transfer Majors Accessing this Course:
Industrial Technology-Mining Emphasis
EIAT

Minnesota Transfer Curriculum Goal(s) partially met by this course if applicable:
(Notes: No more than two goals may be met by any one course. Curriculum Committee review and the Chief Academic Officer’s approval are required.)
0. None
1. Communications
2. Critical Thinking
3. X Natural Sciences
4. Mathematical/Logical Reasoning
5. History and the Social and Behavioral Sciences
6. The Humanities and Fine Arts
7. Human Diversity
8. Global Perspectives
9. Ethical and Civic Responsibility
10. People and the Environment
Learning Outcomes: (including any relevant competencies listed in the Minnesota Transfer Curriculum)

Upon completion of this course, the student will be able to:

- demonstrate an understanding of scientific theories by solving problems and applying them to practical applications
- formulate and test hypotheses in a laboratory setting
- communicate laboratory findings, both orally and in writing
- critically analyze and solve problems with multiple steps
- develop their troubleshooting, analytical, and reasoning skills
- explain the world around him or her

Student Assessment Methods:
Homework, quizzes, examinations, performance on laboratory exercises, performance on written laboratory reports, in-class presentations, in-class participation, individual problem solving performance and their performance on peer-group problem solving exercises.

Use of Instructional Technology: (includes software, interactive video and other instructional technologies):
Laboratory experimental equipment, some use of PC-based laboratory exercises and simulations, the use of the Internet for information.

Outline or Statement of Major Course Content:

- One and Two-dimensional Motion
- Newton’s Laws of Motion
- Mechanical Energy
- Linear Momentum and Collisions
- Rotational Kinematics and Dynamics
- Waves and Sound
- Fluid Mechanics
- Thermodynamics
- Electrostatics and Current
- Magnetism
- Electromagnetic Radiation
- Geometrical Optics

Additional Special Information: (special fees, directives on hazardous materials, etc.)

Transfer Information: (Please list colleges/majors that accept this course in transfer.) Minnesota State University-Mankato (PHYS 101), UMD (PHYS 1011), College of St. Scholastica (PSC 1201/PSC 1501)

Approvals:

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Distribution: Original – Administrative Office
Copies: Curriculum Committee Chair, AASC Chair, Transfer Specialist, Originating Faculty Member, Scheduler, Records, Student Services, Learning Center, Library
Revised: October 2006