COURSE SYLLABUS

Tunxis Community College

Education That Works For a Lifetime

Course Title:	Introductory Physics	**Date submitted:**	November (AAC:17-61)
Department:	Mathematics and Science		
Curriculum:	Physics		

Course Descriptors:
Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.

Course Code: (eg. ACC 101)	PHY*110
Course Type:	X

A: Clinical B: Lab D: Distance Learning
I: Individual/Independent L: Lecture N: M: Seminar Internship
P: Practicum U: Studio
X: Combined Lecture/Lab Y: Combined Lecture/ Clinical/Lab Z: Combined Lecture/Studio

Elective Type:	G/LAS/S

AH: Art History E: English FA: Fine Arts FL: Foreign Language
G: General HI: History HU: Humanities LAS: Liberal Arts & Sciences M: Math S: Science SS: Social Science

Credit Hours:	4
Developmental: (yes/no)	No
Contact Hours: Lecture:	3
Clinical:	0
Lab:	3
Studio	0
Other:	0
TOTAL:	6
Class Maximum:	20
Semesters Offered:	F/Sp/Su

Prerequisites:

C- or better in Prealgebra & Elementary Algebra (MAT*085) or Introductory Algebra (MAT*094) or Elementary Algebra Foundations (MAT*095), OR placement into any credit-level mathematics course.

Corequisites:

None

Other Requirements:

Scientific calculator, technology skills

Catalog Course Description:

Introductory physics course for the non-science major. The basic concepts of Newtonian motion, energy, temperature and heat, waves and sound, electricity and magnetism, optics, atomic and nuclear physics and relativity are discussed.

Topical Outline:
List course content in outline format.

Lecture:

1. History of physical studies
2. Motion and Newton's Laws
3. Matter: phases, physical principles of liquids and gases
4. Energy, temperature and heat
5. Waves: sound and electromagnetism
6. Optics
7. Atomic and nuclear physics
8. Relativity and elementary particles

	Laboratory: 1. Measurement and uncertainty 2. Free fall acceleration 3. Vector addition 4. Simple harmonic motion 5. Ballistic pendulum 6. Coefficient of friction 7. Density and archimedes principle 8. Coefficient of linear expansion 9. Speed of sound 10. DC circuits and Ohms Law 11. Voltages in circuits 12. Resistance 13. Currents in circuits
Outcomes: Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.	Upon successful completion of this course, the student will be able to do the following: 1. demonstrate an understanding of the historical development of physics and astronomy from Hellenic teaching to modern physics 2. explain Newton's Laws of Motion 3. explain the general principles of energy, work, power, temperature and heat 4. discuss physical principles of liquid and gaseous states of matter 5. describe waves, sound and electromagnetism 6. explain the relationship between electricity and magnetism 7. diagram the fundamentals of optics 8. distinguish between nuclear and atomic physics 9. explain how relativity and fundamental particles are fundamental to modern physics
	PROGRAM: *(Numbering reflects Program Outcomes as they appear in the college catalog)* N/A
	COMPETENCY FULFILLED: Scientific Knowledge & Understanding (SCKX) OR Scientific Reasoning (SCRX)
Evaluation: List how the above outcomes will be assessed.	**Assessment will be based on some or all of the following criteria:** Written quizzes Examinations Brief papers on selected topics Laboratory reports
Instructional Resources: List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.	**Required:** Physics laboratory, requisite apparatus, scientific calculator **Desired:**
Textbook(s)	Ostdiek, *Inquiry Into Physics*, 6th ed.; Cengage Learning Laboratory Manual (Compiled by E. W. Cook)