SOUTHEAST COMMUNITY COLLEGE
DIVISION OF ARTS AND SCIENCES
Science
Revision Date: 07-01-19
Syllabus Statements

I. CATALOG DESCRIPTION

Course Number:	PHYS1017
Course Title:	Technical Physics
Prerequisite(s):	MATH1050 or equivalent or higher.
Catalog Description:	Introductory algebra and trigonometry based physics with an emphasis on applied problems. Topics covered includes: properties of matter, forces, vectors, equilibrium, 1-dimensional & 2-dimensional kinematics, rotational motion, simple harmonic motion, simple machines, waves, heat & temperature.
Semester Credit Hours:	3
Class Hours:	30
Lab Hours:	30
Total Contact Hours:	60

II. COURSE OBJECTIVES: *Course will:*

A. Identify and describe basic physical principles.
B. Provide opportunities to observe and explore consequences of these principles.
C. Analyze, explain & solve physical problems in terms of these principles.
D. Provide opportunities to practice formulating logical conclusions from these rules (conceptual problem solving).
E. Provide opportunities to practice using these rules to solve problems mathematically.
F. Provide students with the physics skills necessary to be successful in solving problems which are applied to real world situations.

III. STUDENT LEARNING OUTCOMES AND GENERAL EDUCATION LEARNING OUTCOMES

A. Student Learning Outcomes**:** *Student will be able to:*
- **1** Identify and describe basic physical principles.
- **2**. Analyze and explain and solve physical problems in terms of these principles.
- **3**. Apply mathematical and scientific methods to solve problems from an array of contexts and everyday situation.
- **4.** Effectively develop strategies, algorithms, or experiments (or performing experiments) to better describe the systems or to solve the problems.

B. General Education Learning Outcomes**:**
- **1**. GELO 5: Analytical, Quantitative, & Scientific Reasoning
  - Outcome: Apply mathematical and scientific methods to solve problems from an array of contexts and everyday situations.
  - Outcome: Understand and create logical arguments supported by quantitative and scientific evidence and communicate those arguments in a variety of formats.
  - Outcome: Effectively develop strategies, algorithms, or experiments (or performing experiments) to better describe the systems or to solve the problems.
  - Outcome: Manipulate formulas, data sets, graphs, tables, etc. in a way to produce a meaningful outcome.

IV. CONTENT/TOPICAL OUTLINE (*course outline may provide more detailed information*)

A. Kinematics
B. Newton's Laws
C. Concurrent & parallel forces
D. Simple machines
E. Rotational motion
F. Matter
G. Fluids
H. Thermodynamics
I. Waves

V. INSTRUCTIONAL MATERIALS

A. Suggested Text(s):

1. Ewen, D., Schurter, N., Gunderson, Eric P**.,** *Applied Physics*, 11th edition, Prentice-Hall, 2012. ISBN-13: 978-0134159386 or ISBN-10: 0134159381, or equivalent text.

2. A copy of the suggested text is retained in the library (LRC).

VI. METHODS OF PRESENTATION/INSTRUCTION

A. Methods of presentation typically include a combination of the following:

1. Lectures
2. Small group discussions
3. Demonstrations
4. Laboratory exercises
5. Short video presentations & analysis

VII. METHODS OF EVALUATION

A. Methods of evaluation typically include a combination of the following:

1. Quizzes
2. Class participation
3. Laboratory work
4. Homework
5. Exams

B. SCC GRADING SCALE

A+	95-100	C+	75-79	F	59 or less
A	90-94	C	70-74		
B+	85-89	D+	65-69		
B	80-84	D	60-64		

VIII. SPECIFIC COURSE REQUIREMENTS

None