COURSE SYLLABUS

Tunxis Community College

Education That Works For a Lifetime

Course Title:	Engineering Dynamics	**Date submitted:**	March 2014 (AAC: 14-27)
Department:	Business and Technology		
Curriculum:	Technology Studies/Engineering Science		

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)	EGR*212
Course Type:	L

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

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:	3
Developmental: (yes/no)	No
Contact Hours: Lecture:	3
Clinical:	0
Lab:	0
Studio	0
Other:	0
TOTAL:	3
Class Maximum:	19
Semesters Offered:	F/Sp

Prerequisites:

C- or better in Engineering Statics (EGR*211)

Corequisites:

None

Other Requirements:

None

Catalog Course Description:

Introduces students to the fundamentals of engineering dynamics, including rectilinear and curvilinear motion, translation, rotation, and plane motion; work, energy and power; and impulse and momentum. The basic principles of dynamics are applied to engineering problems. Vector methods are covered.

Topical Outline: List course content in outline format.

1. Introduction
2. Kinematics of Particles
3. Kinematics of Particles (Newton 2nd Law) Bodies
4. Kinematics of Particles (Energy and Momentum)
5. Systems of Particles
6. Kinematics of Rigid Bodies
7. Plane Motion of Rigid Bodies (Forces & Accelerations)
8. Plane Motion of Rigid Bodies (Energy & Momentum Methods)
9. Mechanical Vibrations

Outcomes: Describe measurable skills or knowledge that

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

COURSE:

students should be able to demonstrate as evidence that they have mastered the course content.	1. determine the kinematic relationships between position, velocity, and acceleration for two-dimensional motion of systems of particles and rigid bodies 2. apply Newton's equation in two dimensions to calculate the motion due to applied forces or to calculate the forces resulting from a specified motion. 3. analyze the two dimensional motion of particles and rigid bodies using conservation laws for energy, momentum, and angular momentum. 4. apply dynamics concepts to the design of simple machines and structures to accomplish a specified task
	PROGRAM: *(Numbering reflects Program Outcomes as they appear in the college catalog)* **Engineering Science Associate Degree**: 1. demonstrate an understanding of the foundational mathematical and scientific concepts appropriate to the fields of mechanical, civil, or industrial engineering **Technology Studies Associate Degree**: 1. identify and apply the design principles of engineering and technology when solving basic engineering problems
	GENERAL EDUCATION: *(Numbering reflects General Education Outcomes as they appear in the college catalog)* **7. Quantitative Reasoning -**Students will learn to recognize, understand, and use the quantitative elements they encounter in various aspects of their lives. Students will develop a habit of mind that uses quantitative skills to solve problems and make informed decisions. **Demonstrates**: Interprets numerical information and applies sufficient laws of logic and mathematics to solve problems using numbers, symbols, graphs and/or descriptions. **Does Not Demonstrate:** Misinterprets numerical information or insufficiently applies laws of logic and mathematics to solve problems using numbers, symbols, graphs and/or descriptions.
Evaluation: List how the above outcomes will be assessed.	**Assessment will be based on the following criteria:** Homework assignment Hands-on projects Quizzes and exams
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:** Computer Lab **Desired:**
Textbook(s)	Refer to current academic year printout.