El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA   **Engineering**

COURSE RUBRIC AND NUMBER   **ENGR 2302**

COURSE TITLE   **Mechanics II: Dynamics**

COURSE CREDIT HOURS   __3__   __2__   :   __2__
                                         Credits **Lec**   **Lab**

I.   Catalog Description

Studies principles of dynamics, including their application, work and energy, impulse, momentum, and kinetics and kinematics of particles and rigid bodies. **Prerequisite: MATH 2413. (2:2).**

II.   Course Objectives

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

A.   Solve problems involving motion of a point.
B.   Apply Newton's 2nd law in the solution of problems involving force, mass and acceleration of a point.
C.   Use the principle of work and energy in the solution of problems involving force, mass and time of a point.
D.   Use conservation of energy of a point in the solution of problems with conservative forces.
E.   Use the principle of impulse and momentum in the solution so problems involving force, velocity and time of a point.
F.   Solve problems involving motion of a grid.
G.   Solve problems involving force, mass and acceleration of a rigid body.
H.   Solving problems involving work and energy of rigid.

III. THECB Learning Outcomes (ACGM)

Upon successful completion of this course, students will:
1.   Express dynamic quantities as vectors in terms of Cartesian components, polar coordinates, and normal-tangential coordinates.
2.   Compute mass moments of inertia for systems of particles and rigid bodies.
3.   Solve kinematic problems involving rectilinear and curvilinear motion of particles.
4.   Solve kinetic problems involving a system of particles using Newton's Second Law.
5.   Apply the principles of work and energy, conservation of energy, impulse and momentum, and conservation of momentum to the solution of engineering problems involving particles and systems of particles.
6.   Solve kinematic problems involving the translation and rotation of a rigid body.
7.   Solve kinetic problems involving planar translation and rotation of rigid bodies.
8.   Apply the principles of work and energy, conservation of energy, impulse and momentum, and conservation of momentum to the solution of engineering problems involving rigid bodies in planar motion.

Revised by Discipline: Fall 2015 (next revision in 3 years)

IV.   Evaluation

Grade to depend on tests, including a comprehensive final, homework assignments, and problem solving sessions.

The assignment of letter grade is:

90 –100	=	A
80 –89	=	B
70 –79	=	C
60 –69	=	D
below 60	=	F
Incomplete	=	I
Withdrawn	=	W

V.   Disability Statement (American with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024)

VI.   6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.