

**COURSE OUTLINE**  
Loc Nguyen, 2012

DEPARTMENT:	Professional Technical Education
CURRICULUM:	CAD / DESIGN Technology
COURSE TITLE:	Applied Mechanics II
COURSE NUMBER:	TDR 272
TYPE OF COURSE:	Technical Preparatory
COURSE LENGTH:	1 quarter
CREDIT HOURS:	4
LECTURE HOURS:	33
LAB HOURS:	22
CLASS SIZE:	20
PREREQUISITES:	TDR 263 Applied Mechanics I.

**COURSE DESCRIPTION:**

The principles of tension, compression, and shear stress are studied to determine the correct size for structural beams and shafts. Examination of distribution and magnitude of stress in welded, and riveted joints, torsional members, and beams

**STUDENT LEARNING OUTCOMES ADDRESSED:**

1. Critical Thinking and Problem-Solving - Analyze and apply principles of engineering mechanics.
2. Computation - Utilize college algebra and calculus to solve engineering problems.
3. Technology - Use current data/information in engineering mechanics.
4. Critical Thinking and Problem Solving - Organize and evaluate technical data, as well as select and apply appropriate spatial relationship principles to determine problem solution.

STUDENT LEARNING OUTCOMES ADDRESSED: (cont.)

5. Technology - Select and use appropriate technological tools to create technical graphics.
6. Personal Responsibility - Take pride in own work
7. Information Literacy - Access & use information from variety of resources / data

**GENERAL COURSE OBJECTIVES:**

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

1. Acquire knowledge in relations between externally applied loads and their internal effect on bodies.
2. State the definitions of normal stress, strain, Poisson's ratio, modulus of elasticity, proportional limit, elastic limit, yield point, homogeneous, and linearly elastic material.
3. Analyze a riveted or bolted joint for shear, tensile force and bearing capacity.
4. Analyze welded joints with concentric loads.
5. Write shear and bending-moment equations, and draw shear and bending-moment diagrams for beams loaded with concentrated and/or uniformly distributed loads.
6. Analyze the effect of combined loads on machine members.

**TOPICAL OUTLINE:**

	APPROX. HOURS
I. Introduction	1
II. Internal Reactions; Stress	10
III. Shear Stresses, Strain, Torsion	10
IV. Bending, Shear Diagram	10
V. Deflection of Beams	10
VI. Bolted, Riveted, and Welded Connections	<u>14</u>

Total      55

Originated or Revised BY: L. NGUYEN

DATE: Jan 10, 2010