

**Course Outline****Winter 2005**

<b>Division:</b> Business, Engineering & Information Technology	
<b>Program/Dept:</b> Architectural Engineering Drafting	
<b>Course Number:</b> TDR 161	<b>Credits:</b> 5.0 <b>Variable:</b>
<b>Course Title:</b> Applied Mechanics II	
<b>Inst. Intent:</b> 21 Vocational Preparatory	<b>CIP:</b> 15.1304
<b>Fee:</b> None <b>Type:</b>	

<b>Degree/Certificate Requirement:</b>	Yes		
<b>Name of Degree/</b>	Architectural Engineering Drafting		
<b>Certificate Requirements:</b>	Associate of Applied Science Degree		
<b>Distribution Requirement for AA/AAS:</b>	Yes		
<b>Transfer Status to 4-year institution:</b>	No		
<b>If yes, please describe:</b>			
<b>Course Length:</b>	Based on 11 wks/qtr.	<b>Class Size:</b>	24
<b>Course Contact Hours:</b>	55 hrs.		
<b>Lecture:</b>	55	<b>Lab:</b>	<b>Clinical:</b> <b>Other:</b>
<b>Prerequisite:</b>	Yes	<b>If yes, please describe:</b>	TDR 160
<b>Required Placement Tests:</b>	No	<b>If yes, please describe:</b>	
<b>Comments:</b>			

**Course Description:**

A continuation of TDR 160. Covers basic wood beam design. Includes allowable stress, loading criteria, shear and deflection. Covers basic truss analysis. Prereq: TDR 160

**Course Outcomes/Learning Objectives:**

1. To enhance the basic computational skills the student developed in prior class (TDR 160).
2. To have the student determine the adequacy of simple wood structural elements.
3. To acquaint the student with methods of basic truss analysis.

**NSCC General Education Outcomes and/or Related Instructional Outcomes (for technical courses) Met by Course: (list each outcome):**

- Outcome 2. Demonstrate the ability to use quantitative reasoning processes to understand, analyze, interpret and solve quantitative problems.
- Outcome 4. Demonstrate the ability to access, evaluate and apply information from a variety of sources and a variety of contexts.
- Outcome 10. Identify and understand fundamental concepts of the physical and life sciences and the effects that the uses of these concepts and resulting technologies have on the individual, on society and on the biosphere.

**Topical Outline and/or Major Divisions:**

- I Introduction to TDR 161**
  - A. Course content
  - B. Class procedures
  - C. Course objectives
- II. Review of Basic Principles of Applied Mechanics**
  - A. Equilibrium
  - B. Simple Beam Calculation
- III. Review of Geometric Properties**
- IV. Introduction to Wood as a Structural Material**
  - A. Material properties of wood
  - B. Common sawn lumber shapes
  - C. Simple Beam Sizing
    - 1. Flexure
    - 2. Shear
    - 3. Deflection
  - D. Simple Column Considerations
  - E. Basic Wood Connections
- V. Introduction to Basic Truss Analysis**
  - A. Review of Trigonometry
  - B. Concurrent forces and solution by joints
  - C. Coplanar forces and solution by moments
- VI. Evaluations**

**Course Requirements (Expectation of Students):**

Attendance and active participation in problem solutions.

**Methods of Assessment/Evaluation:**

Accumulated points based on homework and quizzes.

**Required Text(s) and/or Materials:**

Simplified Engineering for Builders and Architects, by Parker and Ambrose; John Wiley & Sons, Inc., Publishers; ISBN 0-471-58703-6

**Supplemental Text(s) and/or Materials:**  
A.I.S.C. Steel Manual, Uniform Building Code

**Outline Developed by:** M. Hillman/J. Wall      **Date:** 10/89

**Revised by:** James Wall      **Date:** 3/94, 2/02, 5/04