

Instructor: Mike Hubka **Phone:** 331-5270 **E-Mail:** hubka@nwsc.edu
Course: DDT-261 Statics, Strengths, & Testing Materials
Credit Hours: 4 **Contact:** 5
Spring 2003

Course Description: This is an advanced theory course designed as a continuation of design process. The course also provides additional instruction in performance of exacting mechanical design. It focuses on the transition from student to practical designer by bridging the gap between fundamental drafting, manufacturing processes, mechanics, and strength of materials, as well as CAD and solid modeling. Continued analysis of the design process is stressed and made practical by application to the solution of design situations.

Program: Associate in Applied Science, Drafting and Design Technology

Prerequisites: PHY 115, or permission of the instructor.

Text: Statics and Strength of Materials 4th Edition
Bassin, Brodsky, Wolkoff

Supplies: Scientific function calculator

Course Rationale:

This advanced course that provides the student with information on the theory and general principles of engineering design. The course is a study of forces, vectors, equilibrium, rigid body, structural analysis, and properties of materials. The destructive and non- destructive testing of various materials is also introduced in this course.

Course Objectives:

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

1. Outline the systematic approach to creative mechanical design.
2. Identify and solve linear force systems.
3. Have basic understanding of the concept of moments.
4. Have basic understanding of nonconcurrent-coplanar forces in trusses.
5. To have hands on experience in real world testing of materials such as soil, concrete, wood and steel.

Semester Schedule

**NORTHWEST-SHOALS COMMUNITY COLLEGE
DRAFTING AND DESIGN TECHNOLOGY
COURSE SYLLIBUS**

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Wk	Lecture Topic	Assignments/Read	Notes
1	Course Description Problem Solving	Chapter 1	1/15/03
2	Chapter 1 – Basic terms, Vectors and Scalars Chapter 2 – Definitions, Force Systems	As Assigned	1/22/03
3	Chapter 2 – Actions and Reactions, Free body, Incline plane, Lab		1/29/03
4	Chapter 3 Moments Test on Chapter 1 & 2		2/5/03
5	Chapter 4 – Nonconcurrent-Coplaner Forces		2/12/03
6	Chapter 4 – Trusses , Method of Joints		2/19/03
7	Test on Chapter 3 & 4		2/26/03
8	The Properties of Concrete		3/05/03
9	Concrete and Aggregates Concrete Testing Methods		3/12/03
10	Slump Test, Air Content, Making and Curing		3/19/03

11	Spring Break	03/26/03
12	Test on Concrete Bridge Building Project	04/02/03
13	Soils	04/09/03
14	Soils Lab Break Concrete Cylinder	04/16/03
15	Field Trip	04/23/03
16	test bridges / Review	04/30/03
17	Final	05/07/03

Grading Policy

The student will receive a grade for work accomplished as follows:

	Points
Homework Problems	200
Tests (3) @100 points ea	300
Attitude Attendance and Participation	150
Labs	150
Final	200
Total	<u>1000 points</u>

Grade	Points
A	900-999
B	800-899
C	700-799
D	600-699
F	0-599

NOTE: Northwest-Shoals Community College's policy regarding academic honesty will be **strictly enforced!** As a common courtesy to the instructor, you should attend classes promptly at specified starting times. If you are going to be absent, for any reason, you should contact the instructor as soon as possible. Make-up test and assignments shall be given on an individual basis and only with a proper excuse. At no time may a student miss more than 20% of class meetings, doing so may result in a "F"

It is **"your"** responsibility to contact the instructor for make-up test and missed assignments. If you are absent for a test or assignment, because of a proper excuse, you must take the test or make up the assignment, at the next regularly scheduled class meeting. Completing laboratory assignments is an integral part of your training. The exact number of assignments for the course shall depend on the abilities of the entire class as a whole, and shall be determined by the end of the semester.

AMERICANS WITH DISABILITIES ACT (ADA)

It is the policy of Northwest-Shoals Community College to comply with the Americans with Disabilities Act (ADA). Any student covered under this act needing and desiring reasonable accommodations for this class should notify the instructor during the first week of class.