

NORTHWEST -SHOALS COMMUNITY COLLEGE

Drafting and Design Technology

DDT 131 Machine Drafting Basics

Instructor: Alton Rice **E-mail Address:** alton.rice@nwscce.edu

Office Hours: As Posted **NWSCC Website:** www.nwscce.edu

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Credit hours: 3 Hrs **Contact:** 5 Hrs **Lecture:** 2 Hrs **Lab:** 3 Hrs

Program/Degree: Drafting and Design Technology / Associate in Applied Science Degree

Description: This is an advanced theory course designed to introduce the student to the field of mechanical design and provide instruction in the performance of exacting machine design. The course focuses on the transition from student to practical designer by bridging the gap between fundamental drafting, manufacturing processes, mechanics, belts, chains, gear theory, and other mechanical drive processes. The analysis of the design process is stressed and made practical by application to the solution of design situations. This course in machine drafting and design provides instruction in the largest specialty area of drafting in the United States, in terms of scope and job opportunities. Emphasis will be placed on the use of product manuals, booklets, and the machinist handbook, as well as the use of other sources including the World Wide Web. These tools will be used in the selection of drive components.

Prerequisites: DDT 117, DDT 121, DDT 122, or permission of the instructor

Primary Text: Engineering Drawing and Design – Third Edition
Madsen, Folkestad, Schertz, Shumaker, Turpin, and Stark
Delmar Publishers - 2002

Reference: Machinery's Handbook
Industrial Press, Inc.

Supplies: 3 ½" 1.44mb Diskette or 100mb Zip Disk
Scientific function calculator

Course Objectives:

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

1. List the basic steps in the design process.
2. Use the Machinery's Handbook and other sources in the design process.
3. Understand the process of utilizing belts, gears, and chains.
4. Identify the various components in a mechanical drive system.
5. Document a design solution using accepted engineering format.

Teaching Strategies: The instructor will present the information through lectures, demonstrations, and assignment of drafting tasks.

Assignment Schedule

Week/ Meeting	Topic	Assignments/ Read
1	Introduction / Syllabus The Design Process	As Assigned By Instructor
2	Power transmission systems & using the Machinist handbook Use Hand-out	As Assigned By Instructor
3	Types of belt drives & belt Drive calculations Use Hand-out	Belt-Drive Problems Hand-out
4	Belt Drive calculations Use Hand-out	As Assigned By Instructor
5	Belt Drive calculations Use Hand-out Review for Belt Drive Test	Make up belt drive problems (4)
6	Belt Drive Test Types of Chain drives & design of roller chains Use Hand-out	As Assigned By Instructor
7	Roller chain calculations Use Hand-out	Chain-Drive Problems Hand-out
8	Roller chain calculations Use Hand-out	As Assigned By Instructor
9	Roller chain calculations & review for Roller-Chain Test Use Hand-out	Make up chain drive problems (4)
10	Roller Chain Test Gear Drives – Introduction & types of Gear Drives Use Hand-out	As Assigned By Instructor
11	Gear drive calculations Use Hand-out	Gear-Drive Problems Hand-out
12	Gear drive calculations Use Hand-out	As Assigned By Instructor
13	Gear drive calculations Use Hand-out	Make up gear drive problems (4)
14	Review For Gear Drive Test	
15	Gears Drive Test	

Grading Policy	Notes	Actual Score	Possible Points
Belt-Drive Problems – Hand-Out			100
Belt-Drive Problems – Made Up (5)			50
Belt-Drive Test			150
Chain-Drive Problems – Hand-Out			100
Chain-Drive Problems – Made Up (5)			50
Chain-Drive Test			150
Gear-Drive Problems – Hand-Out			100
Gear-Drive Problems – Made Up (5)			50
Gear-Drive Test			150
<i>Attendance, Attitude, and Participation</i> (This grade will be based on # of absences, your daily attitude in class, and your participation in class discussions.)			100
Total Points			1000

All grades will be available for student viewing at the end of each semester. You must use your assigned pin number to log in at the NWSCC website: www.nwsc.edu assigned

Grades will be assigned as follows:

A	=	900 to 1000 Points
B	=	800 to 899
C	=	700 to 799
D	=	600 to 699
F	=	Less Than 600

MISCELLANEOUS INFORMATION:

This syllabus is subject to amendment by the Instructor at his or her discretion. Students shall be notified of any such amendment.

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. This will establish communications with the instructor about the possibility of making up your work. Make-up test and assignments shall be given on an individual basis and only with a proper excuse. Class attendance is an important part of learning, and is required in the Drafting curriculum. **If a student is absent more than 20% of class meetings that student may receive a grade of "F" for the course.**

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. **If you refuse to do this, you will receive a "0" as the grade for that particular test or assignment.** Completing laboratory assignments is an integral part of you training. **All students must satisfactorily complete at least 75% of all daily lab assignments/graded activities to receive a passing grade in the course.** 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. **If a student does not complete "75%" of the total number of assignments, the student will receive a grade of "F" for the course.**

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 and the Department of Student Services, during the first week of class.**