COURSE OUTLINE

Revision: Loc Nguyen - Date: February 2009

DEPARTMENT:	Engineering & Engineering Technology
CURRICULUM:	Computer Aided Drafting & Design
COURSE TITLE:	CAD Mechanical
COURSE NUMBER:	TDR 179
TYPE OF COURSE:	Vocational Preparatory/
COURSE LENGTH:	1 quarter
CREDIT HOURS:	4
LECTURE HOURS:	22
LAB HOURS:	44
CLASS SIZE:	24
PREREQUISITES:	TDR 123 (Drafting Technology II) and TDR 131 or instructor's permission

COURSE DESCRIPTION:

Application of standard drafting practices to produce Mechanical parts, Detail and Assembly production drawings.

STUDENT LEARNING OUTCOMES ADDRESSED:

1. Communication - Read and translate technical data relative to geometric spatial relationships into a graphical form easily understood by others with similar technical understanding.
2. Computation - Use basic mathematical operations as required to define geometrical spatial relationships.
3. Human Relations - Use social interactive skills to enhance learning through informal tutoring activities.
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.)

4. Technology - Select and use appropriate technological tools to create technical graphics.
5. Personal Responsibility - Value and take pride in one's own skill and work, and manage time to meet required schedules.
6. Information Literacy - Access, evaluate and apply information from technical texts.

PROGRAM OUTCOMES ADDRESSED

1 Ability to apply knowledge of mathematics and scientific principles to technical engineering/drafting problems.
2 Ability to analyze and interpret data.
3 Ability to think critically in evaluating information, solving problems, and making decisions.
4 Ability to function on diverse, multi-disciplinary teams.
5 Ability to access and evaluate information from a variety of sources, including the Internet.
6 Understand professional and ethical responsibility.
7 Ability to communicate effectively with written, oral, and visual means.
8 Recognize the need for and ability to engage in life-long learning.
9 Ability to use modern technical engineering techniques, skills, and technology, including computing tools necessary for technical engineering/drafting practice.

GENERAL COURSE OBJECTIVES:

At the end of the course the student will:

1. Describe the usual format for working drawings.
2. Identify the purpose(s), content, and usual location on working drawings for the following:
   A. Title block
   B. Parts list
   C. Revision block
   D. General notes
   E. Usage block
3. Apply standard drafting practices to produce working detail drawings, and assembly/installation drawings.
4. Define the characteristic of a spur gear, worm gear, and bevel gear.
5. Calculate the gear ratio and rpm of two mating gears, given the pitch diameters, and draw a spur gear
6. Identify welding symbols used in steel fabrication.

TOPICAL OUTLINE:		APPROX. HOURS
I.	Working drawing assembly/installation	24
II.	Working drawing detail	18
III.	Gearing and Cams	18
IV.	Welding Symbols	6
	Total	66

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