**COURSE OUTLINE**
Revision: Loc Nguyen - Date: February 2009

DEPARTMENT: Drafting Technology

CURRICULUM: Drafting

COURSE TITLE: Space Geometry

COURSE NUMBER: TDR 126

TYPE OF COURSE: Vocational Preparatory/

COURSE LENGTH: 1 quarter

CREDIT HOURS: 3

LECTURE HOURS: 11

LAB HOURS: 44

CLASS SIZE: 24

PREREQUISITES:

TDR 121 (Drafting Technology I) or instructor's permission

COURSE DESCRIPTION:

Basic principles of space geometry and use of direct projection techniques to resolve spatial relationships. Emphasis on projection techniques and application of principles to problem solutions.

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.

STUDENT LEARNING OUTCOMES ADDRESSED: (cont.)

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.
5. Technology - Select and use appropriate technological tools to create technical graphics.
6. Personal Responsibility - Value and take pride in one's own skill and work, and manage time to meet required schedules.
7. 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. Demonstrate effective projection techniques using basic drafting tools and media.
2. Apply the principles of third-angle projection to determine the following:
   A. The true length of a line.
   B. The true angle between two lines.
   C. The true size and shape of a plane.
   D. The true angle between two planes.
   E. The true angle between a line and a plane.
3. Using #1 and #2 above, solve a variety of spatial relationship problems.
4. Correctly use the language of projective geometry to describe and discuss spatial relationship problems and solutions.

| TOPICAL OUTLINE: | | APPROX. HOURS | TECH PREP CREDITS |
|---|---|---|---|
| I. | Introduction and review of Orthographic projection | 15.0 | 1 |
| II. | Line and plane principles | 17.5 | 1 |
| III. | Line and plane problems | 17.5 | 1 |
| IV. | Review and evaluation | ____ | 5 |
| | Total | 55.0 | |

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