COURSE OUTLINE
Loc Nguyen, 2012

DEPARTMENT: Professional Technical Education

CURRICULUM: CAD / DESIGN Technology

COURSE TITLE: Applied Descriptive Geometry

COURSE NUMBER: TDR 126

TYPE OF COURSE: Technical Preparatory

COURSE LENGTH: 1 quarter

CREDIT HOURS: 4

LECTURE HOURS: 22

LAB HOURS: 44

CLASS SIZE: 20

PREREQUISITES: TDR 121 Drafting Technology I with GPA 2.5 or better

COURSE DESCRIPTION:

This course provides a thorough study of orthographic theory and practice as applied to graphic problem solving. It incorporates the use of principle and auxiliary projections in determining the relative positions of points, lines and planes in space. Emphasis on ***projection techniques*** manual / CAD and ***creative problem solving procedures***

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 defining 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.)

5. Technology - Select and use appropriate technological tools to create technical graphics.

6. Personal Responsibility - Take pride in own work

7. Information Literacy - Access & use information from variety of resources / data

GENERAL COURSE OBJECTIVES:
Upon completion of the course the student will be able to:

1. Explain the fundamental orientation required in orthographic projection.
2. Describe the relationship between orthographic projection and descriptive geometry
3. Define projection plane, projection line, reference line, line of sight, adjacent view, related view, elevation view, and origin.
4. Locate a point or a line in a view, given location information in two other views.
5. Describe how you will know if a line is in true length.
6. Describe the precise location of a line in space, in relationship to the principal projection planes.
7. Explain the different between primary and second auxiliary views.
8. Locate top-adjacent, front-adjacent, and side-adjacent auxiliary views using primary views.
9. Locate principal views of an object using auxiliary views.
10. Define the type of line and locate the bearing and slope of a line.
11. Construct a view that will show the clearance between two parallel lines.
12. Find the shortest distance from a given point to a line and from two skewed lines.
13. Define the type of plane and locate the bearing and slope of a plane.
14. Define and demonstrate how to find the edge view, and the true shape of a plane.
15. Determine the angle between a line and a plane, the angle between two intersecting plane

TOPICAL OUTLINE:	APPROX. HOURS
I. Course Overview	1
II. Orthographic Projection and Descriptive Geometry	5
III. Points and Lines in Space	6
IV. Intersecting Lines. Visibility of points and Lines	6
V. Auxiliary Views	12
VI. Lines Characteristics	12
VII. Planes & Plane Relationships	12
VI. Piercing Points	12
Total	66

Originated or Revised BY: L. NGUYEN
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