

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER:	ETD 1100
COURSE TITLE:	Engineering Drawing
PREREQUISITE(S):	None
COREQUISITE(S):	None
CREDIT HOURS:	3
CONTACT HOURS/WEEK:	5
CONTACT HOUR BREAKDOWN:	
Lecture/Discussion:	2.5
Laboratory:	2.5
Other _____:	
FACULTY WORKLOAD POINTS:	3.75
STANDARDIZED CLASS SIZE ALLOCATION:	25

CATALOG COURSE DESCRIPTION:

This survey course consists of the principles and practices involved in making and reading engineering drawings with emphasis on lettering, industrial symbolism, orthographic projection and multiview representation. This course also includes instruction and practice in descriptive geometry.

SUGGESTED TEXT(S):	<u>Graphics Technology</u> , James H. Earle, Addison Wesley, 1995 ISBN: 0-201-51650-0
IMPLEMENTATION DATE:	June 11, 1984
REVIEW OR MODIFICATION DATE:	Fall Term, 1994 (951) Fall Term, 1996 (971) Fall Term, 2002 (20031) Fall Term, 2008 (20091) - Outline Review 2007

COURSE TOPICS

Rationale: This course covers the fundamentals necessary for the development of a set of working drawings for various types of basic machine parts. Pictorial representation is also included for visualization development.

Intent: The intent is to have students prepare clear, complete and accurate working plans and detail drawings from rough of detailed sketches or notes for engineering or manufacturing purposes, according to the specified dimensions.

COURSE TOPICS	<u>CONTACT HOURS PER TOPIC</u>
I. Introduction and Concept of Engineering Drawing	2
A. The Graphic Language	
B. Drafting Standards	
C. Technical Developments	
II. Tools and Techniques of Drafting	3
III. Geometric Figures and Construction	5
A. Regular Polygons	
B. Construction Techniques and Methods	
IV. Lettering	3
A. Gothic Lettering	
B. Freestyle Lettering	
V. Multi-view Drawings	20
A. Orthographic Projection	(5)
B. Centering Technique	(5)
C. One/Six View Layout	(5)
D. Line Weight, Quality and Technique	(5)
VI. Dimensioning	7
A. Aligned System	
B. Unidirectional System	
C. Datum System	
D. Decimal System	

COURSE TOPICS (CONTINUED)	CONTACT HOURS <u>PER TOPIC</u>
VII. Pictorial Drawings	20
A. Axonometric Projections (7)	
B. Oblique Projections (7)	
C. Perspective Projections (6)	
VIII. Descriptive Geometry	15

PROGRAM TITLE: Civil Engineering Technology

COURSE TITLE: Engineering Drawing

CIP NUMBER: 0715.020101

LIST PERFORMANCE STANDARDS ADDRESSED:

NUMBER(S): TITLES(S):

04.0 USE INSTRUMENTS TO CONSTRUCT ENGINEERING, MECHANICAL, AND GEOMETRICAL TYPE DRAWINGS -- The student will be able to:

- 04.01 Use Leroy lettering set and reservoir technical pens to draft on various media topographic maps, plats, subdivisions, plans and profiles, and other appropriate civil engineering projects.
- 04.02 Use a Polar planometer to determine areas for plats, drainage computations, and land planning.
- 04.03 Use curve sets to draw plans and profiles.
- 04.04 Use curve templates to draw plans and profiles.
- 04.05 Demonstrate correct use of appropriate drafting instruments in given situations.

05.0 SKETCH, LETTER, AND GENERATE LINEWORK TO DESCRIBE VARIOUS OBJECTS -- The student will be able to:

- 05.01 Prepare sketches and descriptions of real property.
- 05.02 Use topographic map symbols including linework to enhance topographic maps.
- 05.03 Use proper line symbols and notes from road design standards to prepare plans and profiles.

06.0 READ AND PRODUCE DRAWINGS (ORTHOGRAPHIC) INVOLVING ORTHOGRAPHIC PROJECTION, SECTIONS, PICTORIAL, AND AUXILIARY VIEWS -- The student will be able to:

- 06.01 Produce orthographic projections.
- 06.02 Produce typical road cross section drawings.
- 06.03 Produce auxiliary view drawings of utility conflicts.

13.0 PRODUCE DRAWINGS INVOLVING STANDARD EQUIPMENT AND COMPUTERS -- The student will be able to:

- 13.01 Draw a plat.
- 13.02 Draw an inlet structure.
- 13.03 Draw a record subdivision.
- 13.04 Draw a stress-strain diagram.
- 13.05 Draw a pump/lift station.

LIST PERFORMANCE STANDARDS ADDRESSED: (CONTINUED)

NUMBER(S): TITLES(S):

14.0 SOLVE ENGINEERING GRAPHICS PROBLEMS USING STANDARD TECHNIQUES AND REFERENCE MATERIALS -- The student will be able to:

- 14.01 Use Location Survey Manual and other Florida DOT manuals.
- 14.02 Use typical design standards.
- 14.03 Use Public Works Manuals.
- 14.04 Use TR-55 Urban hydrology for small watersheds.
- 14.05 Use manual of standard practice for detailing reinforced concrete structure (ACI 315-74) and others.
- 14.06 Use county soil survey by soil conservation service - USDA.
- 14.07 Prepare a topographic map of a subdivision with standard soil types.
- 14.08 Using TR-55 and the prepared soils type map, compute peak run off.
- 14.09 Use Route Location and Design, (Thomas F. Hickerson - McGraw-Hill).
- 14.10 Use clay pipe engineering manual (NCPI quality - Research, Washington, D.C. 1982).
- 14.11 Use Highway Engineering, (John Wiley & Sons) Clarkson H. Oglesby - latest edition.