

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: ETD 2350

COURSE TITLE: CAD - Advanced

PREREQUISITE(S): CGS 2470

COREQUISITE(S): None

CREDIT HOURS: 3

CONTACT HOURS/WEEK: 5

CONTACT HOUR BREAKDOWN:

Lecture/Discussion: 4

Laboratory: 1

Other _____:

FACULTY WORKLOAD POINTS: 4.50

STANDARDIZED CLASS SIZE
ALLOCATION: 24

CATALOG COURSE DESCRIPTION:

The course presents 3D drawings and AutoLISP concepts for increasing drawing/design productivity. The basis of AutoLISP, development of files, functions, and applications of advanced techniques are presented.

SUGGESTED TEXT(S): Harnessing AutoCAD (latest version);
Thomas A. Stellman, G.V. Krishnan, AutoDESK PRESS OR
EQUIVALENT

Advanced AutoCAD, Shumaker/Madsen

IMPLEMENTATION DATE: Fall Term, 1988 (891)

REVIEW OR MODIFICATION DATE: Fall Term, 1995 (961)
Fall Term, 1997 (981)
Fall Term, 2001 (20021)
Fall Term, 2002 (20031)

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
I. Introduction	±5
A. AutoCAD 3d	
B. Data Types and Variables	
C. Define Function (defun)	
D. Using AutoCAD Commands in AutoLISP	
II. AutoCAD 3D	±10
A. Creating solid shapes	
B. Creating composite solids	
C. Editing 3D solids	
III. AutoCAD 3D	±10
A. Mass properties of a solid	
B. Placing multiviews in paper space	
C. Generating views in viewports	
D. Generating profiles	
IV. Rendering	±10
A. Shading a model	
B. Rendering a model	
C. Materials for rendering	
D. Saving and viewing and image	
V. Customizing AutoCAD	±10
A. External commands and aliases	
B. Customizing menus	
C. Dialog control language	
D. Customizing hatch patterns	
E. Customizing text fonts	
F. Customizing linetypes	
VI. Visual Lisp	±10
A. Vlisp Fundamentals	
B. AutoLISP basics	
C. Lists	
D. List handling functions	
E. Input functions	
F. Conditional and logic functions	
G. Custom commands and functions	

COURSE TOPICS (CONTINUED)

CONTACT HOURS
PER TOPIC

VII. Programming Techniques

+10

- A. Selection Sets
- B. Program Development
- C. Problem Definition
- D. Writing the Program
- E. Debugging program

VIII. Managing Entities

+10

- A. Entity Hierarchy
- B. Select Entities
- C. Filter Option
- D. Selection Set Length
- E. Get Entity Name
- F. Get Entity List
- G. Associative
- H. Substitute, Construct, Modify
- I. Group Commands
- J. Repeat (repeat)

IX. Reviews and Examinations

+5

PROGRAM TITLE: Civil Engineering Technology

COURSE TITLE: CAD - Advanced

CIP NUMBER: 0715.020101

LIST PERFORMANCE STANDARDS ADDRESSED:

NUMBER(S): TITLES(S):

02.0 WRITE, MODIFY AND RUN BASIC PROGRAMS ON MICROCOMPUTERS -- The student will be able to:

02.02 Write, using a desk top computer loop programs for a single input and a single output.

03.0 USE THE COMPUTER AS AN AID TO DRAFTING -- The student will be able to:

03.01 Use *COGO* programs to plot surveying/engineering problems.

03.02 Use coordinate data generated from desk top and HP hand-held 41-CX computers or equal to plot topographic maps, plats, roadway alignments, parking lots, subdivisions, and other appropriate civil engineering projects.

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.