

## FLORIDA STATE COLLEGE AT JACKSONVILLE

## COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER:	ETD 2551
COURSE TITLE:	CAD - Civil
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 deals with the use of AutoCAD, and similar software for the preparation of engineering drawings as they relate to site planning, land development, and other civil engineering drawings. Emphasis in the course is on developing an understanding of computer graphics software and applying this understanding in the preparation of engineering drawings.	
SUGGESTED TEXT(S):	<u>Harnessing AutoCAD Land Development Desktop</u> , (Latest release), Zimmerman OR EQUIVALENT
	<u>Introduction to Land Development Desktop R3</u> , By G. Coleman, ISBN 1-58503-098-8
IMPLEMENTATION DATE:	Fall Term, 1988 (891)
REVIEW/MODIFICATION DATE:	Fall Term, 1997 (981) Fall Term, 2001 (20021) Fall Term, 2002 (20031) Fall Term, 2008 (20091) (Was ETD 2548 change per SCNS

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
I. Introduction	+5
A. Hardware Configuration	
B. Software	
C. Menu Selection	
II. Land Development Desktop	+10
A. Components	
B. Features	
C. Setting preferences	
D. Setting Map preferences	
E. Using Menu Palettes	
F. Integrating CAD Overlay	
III. Compiling Cad data into a base map drawing	+10
A. Using drawing setup wizard	
B. Setting up the Desktop project workspace	
C. Managing the AEC project environment	
D. Importing Microstation files	
E. Attaching external cad drawing files	
F. Querying an attached source drawing	
G. Querying object data	
H. Saving data to drawing	
IV. Compiling image data into a base map drawing	+15
A. Opening a project based drawing	
B. Inserting aerial photographs	
C. Matching aerial images	
D. Rubber sheeting aerial image	
E. Saving image correlation data	
F. Inserting USGSS image	
G. Converting color image to binary	
H. Converting raster data to vector data	
I. Inserting soils map	
J. Querying soils data	
V. Creating legal survey plan	+10
A. Using drawing setup commands	
B. Establishing point object settings	
C. Creating Description key files	
D. Importing ASCII point file	

## COURSE TOPICS (Continued)

CONTACT HOURS  
PER TOPIC

- E. Creating point groups
- F. Drawing traverse, boundary, and special lines
- G. Labeling the boundary plan

## VI. Creating topographic plan

+10

- A. Setting up a topographic survey drawing
- B. Building terrain surface
- C. Performing vertical surface analysis
- D. Defining Surface breaklines
- E. Establishing surface boundaries
- F. Creating contours
- G. Labeling contours

## VII. Laying out subdivision roadways

+10

- A. Setting up a conceptual plan drawing
- B. Identifying existing roadway alignments
- C. Drawing horizontal alignments
- D. Generating roadway offsets
- E. Generating alignment stationing
- F. Generating an alignment stakeout report

## VIII. Laying out subdivision lots

+10

- A. Preparing parcel boundaries
- B. Defining land use parcels
- C. Sizing lots - slide bearing method
- D. Defining a roadway easement
- E. Sizing lots - radial method
- F. Solving complex parcel layout problems
- G. Defining a drainage easement
- H. Completing a conceptual plan

PROGRAM TITLE: Civil Engineering Technology

COURSE TITLE: CAD - Civil

CIP NUMBER: 0715.020101

LIST PERFORMANCE STANDARDS ADDRESSED:

NUMBER(S): TITLES(S):

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.

18.0 ESTABLISH GRADES, LOCATE PROPERTY LINES, AND UTILITIES; AND PRODUCE PLOTS AND CALCULATE CUT AND FILL BY AVERAGE-END-AREA--The student will be able to:

- 18.01 Calculate horizontal alignment for civil engineering structures.
- 18.02 Calculate vertical alignment for civil engineering structures.
- 18.03 Plot and draft maps, plats, plans and profiles, charts and graphs.
- 18.04 Calculate cuts and fills using average-end-area method.