

## FLORIDA STATE COLLEGE AT JACKSONVILLE

## COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER:	ETD 2395
COURSE TITLE:	CAD - Architectural
PREREQUISITE(S):	TAR 2120 and CGS 2470
COREQUISITE(S):	None
CREDIT HOURS:	3
CONTACT HOURS/WEEK:	5
CONTACT HOUR BREAKDOWN:	
Lecture/Discussion:	4
Laboratory:	1
Other _____:	
FACULTY WORKLOAD POINTS:	4.5
STANDARDIZED CLASS SIZE ALLOCATION:	4
CATALOG COURSE DESCRIPTION:	
	The course covers the use of AutoCAD and/or similar software for architectural design and plan preparation. Emphasis in the course is placed on developing an understanding of AutoCAD and Architectural software and applying this understanding to architectural practice. Residential as well as commercial applications are presented.
SUGGESTED TEXT(S):	<u>AutoCAD Architectural Desktop</u> ; (Latest release), Wyatt OR EQUIVALENT; ISBN: 185020100081600
IMPLEMENTATION DATE:	Fall Term, 1988 (891)
REVIEW OR MODIFICATION DATE:	Fall Term, 1997 (981) Fall Term, 2001 (20021) Fall Term, 2002 (20031) Fall Term, 2005 (20061) Fall Term, 2008 (20091) (was ETD 2538)

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
I. Introduction to Architectural Desktop	5
A. Overview and introduction	
B. Starting Architectural Desktop	
C. Creating and using a profile	
D. Viewing objects in layouts	
II. Creating floor plans	5
A. Creating walls	
B. Editing Walls	
C. Using and placing wall dimensions	
III. Wall features	5
A. Assessing wall styles	
B. Creating wall styles	
C. Creating endcaps	
D. Creating wall modifier styles	
E. Creating cleanup groups	
F. Creating additional floors	
G. Creating a foundation plan	
H. Creating a wall style	
IV. Placing doors and windows	5
A. Placing doors in walls	
B. Changing and modifying doors	
C. Creating door styles	
D. Editing door styles	
E. Placing windows in walls	
F. Creating a window style	
G. Creating openings	
H. Creating doors, windows and openings using AEC profiles	
I. Creating an AEC profile	
J. Importing door and window styles	
K. Exporting door and window styles	
V. Creating Roofs	5
A. Creating a Hip roof	
B. Creating a Gable roof	
C. Creating a Shed roof	
D. Creating a Gambrel roof	
E. Creating a Flat roof	
F. Creating a Shed roof	
G. Creating Dormers	

COURSE TOPICS (Continued)	<u>CONTACT HOURS PER TOPIC</u>
VI. Creating stairs and railings	5
A. Creating straight stairs	
B. Creating U shaped stairs	
C. Creating spiral stairs	
D. Creating Multilanding stairs	
E. Creating stair styles	
F. Importing and exporting stair styles	
G. Creating railings	
H. Placing railings on stairs	
VII. Using and creating symbols	5
A. Setting the scale for symbols and annotation	
B. Using the Design Center	
C. Inserting symbols	
D. Inserting and modifying multi-view blocks	
E. Creating a multi-view block	
F. Importing and exporting multi-view blocks	
G. Inserting multiple fixtures	
H. Creating masking blocks	
I. Changing masking blocks	
J. Attaching objects to masking blocks	
K. Creating symbols for the Design Center	
VIII. Annotating Drawings	5
A. Placing annotation on drawing	
B. Creating break marks	
C. Placing detail marks	
D. Placing elevation symbol	
E. Placing leaders in a drawing	
F. Changing the fraction format of the AEC_ARCH_I style	
G. Creating tags and schedules for objects	
H. Editing tags and schedule data	
I. Using schedule table styles	
J. Adding a schedule table	
K. Renumbering tags	
L. Updating schedules	
M. Editing cells in a schedule	
N. Creating door and window schedules	
IX. Creating elevations and sections	5
A. Creating the model for elevations and sections	
B. Creating building elevation line	
C. Creating a building elevation	
D. Creating a building section	
E. Creating 3d elevation and 2d elevation drawings	

COURSE TOPICS (Continued)	CONTACT HOURS <u>PER TOPIC</u>
X. Creating mass models	7.5
A. Creating mass models	
B. Inserting a mass element	
C. Creating mass elements	
D. Modifying mass elements	
E. Adding mass elements to a group	
F. Creating a profile	
G. Importing and exporting a profile	
H. Creating mass elements to represent building components	
I. Creating floor system with mass elements	
XI. Creating complex models	7.5
A. Creating groups for mass elements	
B. Adding mass elements to a group	
C. Building models using the explorer	
D. Creating reference mass elements	
E. Creating a floorplate slice and boundary	
F. Creating a mass group and slicing the mass model	
XII. Creating spaces and boundaries	<u>5</u>
A. Creating spaces for space planning	
B. Editing space properties	
C. Using space styles	
D. Creating a space style	
E. Modifying spaces	
F. Dividing and combining spaces	
G. Using space boundaries	
H. Using space inquiry to adjust spaces	
I. Positioning spaces to create space boundaries and walls	
J. Inserting spaces	
K. Creating space boundaries	
L. Positioning spaces to create space boundaries and walls	
XIII. Commercial structures	<u>10</u>
A. Creating structural grids	
B. Creating column grids	
C. Creating ceiling grids	
D. Using layout curves to place columns	
E. Viewing models	
F. Creating walkthrough	

PROGRAM TITLE: Architectural Design and Construction Technology

COURSE TITLE: CAD - Architectural

CIP NUMBER: 1615010100

LIST PERFORMANCE STANDARDS ADDRESSED:

NUMBER(S): TITLES(S):

- 01.0 COMMUNICATE EFFECTIVELY -- The student will be able to:
- 01.01 Identify communication channels in organizations.
  - 01.02 Develop and use effective means of communications.
  - 01.03 Develop an effective working relationship with others.
  - 01.04 Prepare business correspondence, memos, and reports.
  - 01.05 Compose clear and concise oral and written technical reports and presentations.
  - 01.06 Participate in technical discussion and meetings.
- 02.0 IDENTIFY, SELECT, APPLY, AND MAINTAIN DRAFTING AND GRAPHIC MATERIALS, AND EQUIPMENT -- The student will be able to:
- 02.02 Use architectural and engineering scales.
  - 02.03 Identify and select drawing materials.
  - 02.07 Identify and select reproduction materials.
  - 02.08 Identify, operate, and maintain reproduction equipment.
  - 02.09 Select and apply architectural and engineering curves and templates.
  - 02.16 Operate calculators.
  - 02.18 Identify and apply metric system.
- 03.0 IDENTIFY CONSTRUCTION MATERIALS AND THEIR APPLICATION -- The student will be able to:-
- 03.01 Identify formwork materials and methods.
  - 03.02 Identify concrete materials and applications.
  - 03.03 Identify reinforcing steel and applications.
  - 03.04 Identify structural steel shapes and applications.
  - 03.05 Identify waterproofing materials and vapor barriers and applications.
  - 03.06 Identify wood construction materials and applications.
  - 03.07 Identify masonry materials and applications.
  - 03.08 Identify exterior finishes and applications.
  - 03.09 Identify insulation materials and applications.
  - 03.10 Identify glass and glazing materials and applications.
  - 03.11 Identify roofing materials and applications.
  - 03.12 Identify flashings and applications.
  - 03.13 Identify adhesives and sealants and applications.
  - 03.14 Identify floor finish materials and applications.
  - 03.15 Identify wall finish materials and applications.
  - 03.16 Identify ceiling finish materials and applications.
  - 03.17 Identify plastic materials and applications.
  - 03.18 Identify miscellaneous metals and applications.
  - 03.19 Identify millwork and applications.
  - 03.20 Identify finish hardware and applications.

## LIST PERFORMANCE STANDARDS ADDRESSED: (Continued)

NUMBER(S):            TITLES(S):

- 03.21 Identify manufactured specialties and applications.
- 03.22 Identify basic electrical components.
- 03.23 Identify basic H V A C components.
- 03.24 Identify basic plumbing components.
- 03.25 Identify paving materials and applications.
- 03.26 Identify fire proofing materials and applications.
- 03.27 Identify applications of pre-engineered and prefabricated structures.

04.0 INTERPRET DRAWINGS AND DOCUMENTS -- The student will be able to:

- 04.01 Interpret technical symbols.
- 04.02 Interpret topographical drawings.
- 04.03 Interpret aerial photographs and maps.
- 04.04 Interpret site drawings.
- 04.05 Interpret architectural drawings.
- 04.06 Interpret specifications.
- 04.07 Interpret addendums.
- 04.08 Interpret notice of change and change orders.
- 04.09 Interpret shop drawings.
- 04.10 Interpret structural drawings.
- 04.11 Interpret mechanical drawings.
- 04.12 Interpret electrical drawings.
- 04.13 Interpret modular approach to buildings.
- 04.14 Identify and interpret contracts.
- 04.15 Identify and interpret liens.
- 04.16 Interpret deeds.
- 04.17 Interpret master and development plans and documents.

05.0 INTERPRET AND APPLY BASIC PRINCIPLES OF ARCHITECTURAL AND ENGINEERING DESIGN -

The student will be able to:

- 05.01 Conduct and interpret concrete slump test.
- 05.02 Take test cylinder and interpret results.
- 05.03 Interpret soil analysis reports.
- 05.04 Interpret compaction test reports.
- 05.05 Interpret theory of loads.
- 05.06 Determine effect of loads on materials.
- 05.07 Interpret principles of expansion and contraction and control
- 05.08 Interpret and apply fundamentals of site requirements.
- 05.09 Determine and apply space relationships.

06.0 INTERPRET AND APPLY CODES, REGULATIONS, AND TECHNICAL LITERATURE - The student will be able to:

- 06.01 Interpret and apply graphic and time saver standards.
- 06.02 Interpret and apply national building codes.
- 06.03 Interpret and apply C.M.H.C. residential standards.

## LIST PERFORMANCE STANDARDS ADDRESSED: (Continued)

NUMBER(S):            TITLES(S):

- 06.04 Interpret and apply national fire code.
- 06.05 Interpret and apply provincial codes and regulations.
- 06.06 Interpret and apply municipal codes and regulations.
- 06.07 Interpret zoning bylaws and regulations.
- 06.08 Interpret zoning maps.
- 06.09 Interpret trade magazines and catalogs.
- 06.10 Interpret trade manuals.
- 06.11 Interpret C.I.C.T. manual.
- 06.12 Interpret yardstick costing manual.
- 06.13 Interpret and apply C.E.T. regulations.
- 06.14 Interpret and apply construction association regulations.

07.0 PRODUCE ARCHITECTURAL WORKING DRAWINGS - The student will be able to:

- 07.01 Prepare floor plan drawings.
- 07.02 Prepare foundation plan and detail drawings.
- 07.03 Prepare elevation drawings.
- 07.04 Prepare landscape layouts.
- 07.05 Prepare schedules.
- 07.06 Prepare sections.
- 07.07 Build architectural models.
- 07.08 Prepare truss drawings.
- 07.09 Prepare stairway drawings.
- 07.10 Prepare fireplace drawings.

08.0 PRODUCE STRUCTURAL DRAWINGS IN STEEL AND CONCRETE - The student will be able to:

- 08.01 Draw beam connections.
- 08.02 Draw structural assemblies.
- 08.03 Prepare erection plans.
- 08.04 Prepare structural drawings.
- 08.05 Make take-offs from reinforced concrete engineering drawings.
- 08.06 Prepare footing and foundation drawings.
- 08.07 Prepare column detail drawings.
- 08.08 Prepare floor and roof detail drawings.
- 08.09 Prepare special structure detail drawings.
- 08.10 Prepare framed beam connection drawings.
- 08.11 Prepare stiffened seat connection drawings.
- 08.12 Prepare bolted column detail drawings.
- 08.13 Prepare gusset plate drawings.

13.0 DEMONSTRATE APPROPRIATE COMMUNICATION SKILLS - The student will be able to:

- 13.01 Write logical and understandable statements, or phrases, to accurately fill out forms/invoices commonly used in business and industry.
- 13.02 Read and understand graphs, charts, diagrams, and tables commonly used in this industry/occupation area.

## LIST PERFORMANCE STANDARDS ADDRESSED: (Continued)

NUMBER(S):

TITLES(S):

- 13.03 Read and follow written and oral instructions.
- 13.04 Answer and ask questions coherently and concisely.
- 13.05 Read critically by recognizing assumptions and implications and by evaluating ideas.
- 13.06 Demonstrate appropriate telephone/communication skills.

14.0 DEMONSTRATE APPROPRIATE MATH SKILLS - The student will be able to:

- 14.01 Solve problems for volume, weight, area, circumference and perimeter measurements for rectangles, squares, and cylinders.
- 14.02 Measure tolerance(s) on horizontal and vertical surfaces using millimeters, centimeters, feet and inches.
- 14.03 Add, subtract, multiply and divide using fractions, decimals, and whole numbers.
- 14.04 Determine the correct purchase price, to include sales tax for a materials list containing a minimum of six items.
- 14.05 Demonstrate an understanding of federal, state and local taxes and their computation.

16.0 DEMONSTRATE EMPLOYABILITY SKILLS - The student will be able to

- 16.01 Conduct a job search.
- 16.02 Secure information about a job.
- 16.03 Identify documents which may be required when applying for a job interview.
- 16.04 Complete a job application form correctly.
- 16.05 Demonstrate competence in job interview techniques.
- 16.06 Identify or demonstrate appropriate responses to criticism from employer, supervisor or other employees.
- 16.07 Identify acceptable work habits.
- 16.08 Demonstrate knowledge of how to make job changes appropriately.
- 16.08 Demonstrate knowledge of how to make job changes appropriately.



NOTE: Use either the Tab key or mouse click to move from field to field. The box will expand to accommodate your entry.

<i>Section 1</i>	
COURSE PREFIX AND NUMBER: <u>ETD 2395</u>	SEMESTER CREDIT HOURS: <u>3</u>
COURSE TITLE: <u>CAD</u>	

*Section 2*

TYPE OF COURSE: (Click on the box to check all that apply)

<input type="checkbox"/> AA Elective	<input type="checkbox"/> AS Required Professional Course	<input type="checkbox"/> College Prep
<input checked="" type="checkbox"/> AS Professional Elective	<input type="checkbox"/> AAS Required Professional Course	<input type="checkbox"/> Technical Certificate
<input type="checkbox"/> Other _____		
<input type="checkbox"/> General Education: (For General Education courses, you must also complete Section 3 and Section 7)		

*Section 3 (If applicable)*

INDICATE BELOW THE DISCIPLINE AREA FOR GENERAL EDUCATION COURSES:

<input type="checkbox"/> Communications	<input type="checkbox"/> Social & Behavioral Sciences	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Natural Sciences	<input type="checkbox"/> Humanities	

*Section 4*

INTELLECTUAL COMPETENCIES:

<input checked="" type="checkbox"/> Reading	<input checked="" type="checkbox"/> Speaking	<input checked="" type="checkbox"/> Critical Analysis	<input checked="" type="checkbox"/> Quantitative Skills	<input checked="" type="checkbox"/> Scientific Method of Inquiry
<input checked="" type="checkbox"/> Writing	<input checked="" type="checkbox"/> Listening	<input type="checkbox"/> Information Literacy	<input type="checkbox"/> Ethical Judgment	<input checked="" type="checkbox"/> Working Collaboratively

<i>Section 5</i>	
LEARNING OUTCOMES	METHOD OF ASSESSMENT
• Demonstrating correct usage of the slab and roof commands.	Drawing Project
• Demonstrating correct usage of the wall, window, and door commands.	Drawing Project
• Creating sections and elevations.	Drawing Project
• Creating accurate door and window schedules.	Drawing Project
• Using proper AEC dimensioning.	Drawing Project
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*Section 6*

Name of Person Completing This Form: Patrick Land                      Date: 09/13/05