



Broward Community College

Course Outline

STATUS: A

COMMON COURSE NUMBER: BCT 2787C

COURSE TITLE: Mechanical, Electrical, and Plumbing [MEP] Drawing

CREDIT HOURS: 3

CONTACT HOURS BREAKDOWN:

Lecture/Discussion	<u> 32 </u>
Lab	<u> 32 </u>
Other	<u> </u>
Contact Hours/Week	<u> 4 </u>

CATALOG COURSE DESCRIPTION:

The focus of this course will be on the development of advanced drafting techniques while gaining an understanding of more complex construction procedures for commercial and institutional buildings as it relates to mechanical, electrical, and plumbing. Advanced ArchiCAD AutoCad &/or MicroStation techniques will be used extensively as tools for preparing drawings.

Prerequisite:

Corequisite:

UNIT TITLES:

1. Advanced Topics in ArchiCad AutoCad and/or MicroStation
2. Construction Documents
3. Working Drawings and Symbols
4. Advanced Dimensioning Techniques
5. Organization of a Set of Working Drawings
6. Applying Archicad and/or AutoCad to Mechanical, Electrical, and Plumbing in Building Construction plans
7. Advanced Drawing Techniques

I. Course Overview:

Upon successful completion of this course, the students should be able to use advanced features in Archicad AutoCad MicroStation and read and draw commercial and institutional building construction documents as it relates to mechanical, electrical, and plumbing plans.

II. Units:

Unit 1. 1. Advanced Topics in ArchiCad AutoCad MicroStation

General Outcome:

1.0 The students should be able to use the advanced features in ArchiCAD AutoCad MicroStation to develop 3D drawings.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 1.1 Use the pline command with all its symbols.
- 1.2 Use the pedit command with all the submenus.
- 1.3 Use the attribute command.
- 1.4 Draw isometrics.
- 1.5 Use the 3-D view commands.
- 1.6 Draw wire frames.

Unit 2. 2. Construction Documents

General Outcome:

2.0 The students should be able to read and organize construction documents for commercial and institutional building in mechanical, electrical, and plumbing plans.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

2.1 Organize commercial and institutional building drawings by sequence of construction.

2.2 Organize commercial and institutional building drawings by discipline.

2.3 Read commercial and institutional mechanical, electrical, and plumbing building drawings.

Unit 3. 3. Working Drawings and Symbols

General Outcome:

- 3.0 The students should be able to draw and use working drawings and symbols in commercial and institutional building projects as it relates to mechanical, electrical, and plumbing plans.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 3.1 Draw and use linetypes used in commercial and institutional buildings.
- 3.2 Draw and use material symbols used in commercial and institutional buildings.
- 3.3 Draw and use object symbols used in commercial and institutional buildings.
- 3.4 Draw and use reference symbols used in commercial and institutional buildings.
- 3.5 Draw and use miscellaneous symbols used in commercial and institutional building drawings.

Unit 4. 4. Advanced Dimensioning Techniques

General Outcome:

4.0 The students should be able to dimension and annotate mechanical, electrical, and plumbing plans, elevations, sections and details for commercial and institutional building drawings.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 4.1 Dimension and annotate mechanical, electrical, and plumbing plans for commercial and institutional buildings.
- 4.2 Dimension and annotate mechanical, electrical, and plumbing drawings and sections for commercial and institutional buildings.
- 4.3 Dimension and annotate elevations for mechanical, electrical, and plumbing drawings in commercial and institutional buildings.
- 4.4 Dimension and annotate details for mechanical, electrical, and plumbing drawings in commercial and institutional buildings.

Unit 5. 5. Organization of a Set of Working Drawings

General Outcome:

5.0 The students should be able to organize working construction documents into a natural order that follows the specialty divisions as it relates to mechanical, electrical, and plumbing.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 5.1 Organize the electrical division of the construction documents.
- 5.2 Organize the plumbing division of the construction documents.
- 5.3 Organize the mechanical division of the construction documents.

Unit 6. 6. Applying Archicad and/or AutoCad to Mechanical, Electrical, and Plumbing in Building Construction plans

General Outcome:

6.0 The students should be able to use all the commands required to draw a set of construction documents for commercial and institutional buildings as it relates to mechanical, electrical, and plumbing.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

6.1 Draw construction document plan views using Archicad and/or AutoCad for commercial and institutional buildings.

6.2 Draw construction document section views using Archicad and/or AutoCad for commercial and institutional buildings.

6.3 Draw construction document elevation views using Archicad and/or AutoCad for commercial and institutional buildings.

6.4 Draw construction document details using Archicad and/or AutoCad for commercial and institutional buildings.

Unit 7. 7 **Advanced Drawing Techniques**

General Outcome:

7.0 The students should be able to use advanced techniques in Archicad and/or AutoCad to draw construction documents.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 7.1 Organize the projects in the computer.
- 7.2 Organize the different layers in the files.
- 7.3 Create different fonts in the Archicad and/or AutoCad drawings.
- 7.4 Create special linetypes in the Archicad and/or AutoCad files.
- 7.5 Create slide files within the Archicad and/or AutoCad files.