

ATGL-1360: INTRODUCTION TO ARCHITECTURAL AND SHOP DRAWINGS

Cuyahoga Community College

Viewing: ATGL-1360 : Introduction to Architectural and Shop Drawings

Board of Trustees:

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Academic Term:

Spring 2020

Subject Code

ATGL - Appld Indus Tech - Glazing

Course Number:

1360

Title:

Introduction to Architectural and Shop Drawings

Catalog Description:

Introductory course covering technical and practical fundamentals of blueprints. This course provides students with knowledge of blueprint reading and blueprint history as they relate to the glazing industry. Classroom activities include interpreting standard shop and construction drawings to establish storefront dimensions, frame types, fastener requirements and respective specifications covering doors and related hardware.

Credit Hour(s):

1

Lecture Hour(s):

1

Requisites

Prerequisite and Corequisite

Departmental approval: admission to apprenticeship program.

Outcomes

Course Outcome(s):

Discuss the history and sheet types and applications, including residential and commercial of construction drawings.

Objective(s):

1. Discuss the history and evolution of blueprints from the early twentieth century to present day.
2. List and define the terms related to blueprints and construction drawings.
3. Examine drawing sheets and identify the respective design drawing components including title block, revisions, legend, and scales.
4. Identify various symbols used in blueprint reading with respective to the glazing industry including glass types, door swings, and connectors.
5. Discuss how architectural and shop drawings are used for glazing applications.
6. Identify section views, details, elevations, and door and glass schedules and describe how they relate to each other in the construction industry.

Course Outcome(s):

Demonstrate the ability to interpret construction drawings to establish storefront dimensions, frame types, and fastener requirements and respective specifications covering doors and related hardware.

Objective(s):

1. Select the respective construction drawings used to identify storefronts and related components.
 2. List the different types of doors used in storefront construction.
 3. Determine required backset for frame location with respect to masonry, wood, and steel frame construction.
 4. Explain how established benchmarks are used to locate storefront frame heights.
 5. List the different types of glazing systems for storefronts, curtain walls, and Nano walls.
 6. Assess related specifications to determine fastener type locations with respect to glazing systems and hardware.
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Methods of Evaluation:

1. Tests
2. Quizzes
3. Participation

Course Content Outline:

1. Blueprints
 - a. History
 - i. Past
 1. Hand drawn
 2. Diazo process
 3. Black and white
 - ii. Current
 1. Digital
 2. Computer aided drawings
 3. Electronic copy
 4. Inter-active personal application device/I pad
 - b. Terminology
 - i. Specifications
 - ii. Sketch
 - iii. Floor plan
 - iv. Section drawings
 - v. Details
 - vi. Cuts
 - vii. Doors
 - viii. Glass
 - ix. Mullions
 - x. Horizontal
 - xi. Framing
 - xii. Legend
 - xiii. Scale
 - c. Drawing sheet
 - i. Design drawing area
 1. Schedules
 2. Projection
 - ii. Title block
 1. Drawing title
 2. Drawing number
 3. Location
 4. Vendor
 5. Date
 6. Architect
 - iii. Revision block
 1. Modifications
 2. Location changes
 3. Section changes
 - iv. Legend
 1. Door symbols
 2. Glass symbols

3. Mullion symbols
4. Steel clip
5. Materials
- d. Glazing symbols
 - i. Glass type
 - ii. Door type
 - iii. Access type
 1. Remote
 2. Keypad
 - iv. Door swing
 - v. Door material
 1. Wood
 2. Steel
 3. Aluminum
 4. Lucabond panel
- e. Architectural verses shop drawings
 - i. Architectural
 1. Establish backsets
 2. Window locations
 3. Framing
 4. Radii
 5. Reference point
 6. System types
 - ii. Shop
 1. Size reference
 2. Contractor generated
 3. Relative locations
 4. Trade specific
- f. Miscellaneous sheets
 - i. Section views
 1. Material sizes
 2. Rough dimensions
 3. Assembly process
 - ii. Details
 1. Larger scale
 2. Actual dimensions
 3. Fabrication methods
 4. Material types
 - iii. Elevations
 1. Front view
 2. Side view
 - iv. Schedule
 1. Door
 - a. Numbers
 - b. Location
 - c. Swing
 - d. Style
 - e. Material
 2. Hardware
 - a. Hinge
 - b. Closers
 - c. Lock sets
 - d. Handle
 - e. Panic bar
 - f. Remote entry
 - g. Maglock
 - h. Thresholds
 3. Glass

- a. Type
 - b. Color
 - c. Location
 - d. Pieces per size
2. Drawing interpretations
- a. Drawing
 - i. Architectural
 - 1. Floor plan
 - a. Frame location
 - b. Rough opening
 - c. Door swing
 - d. Door number
 - 2. Elevations
 - a. Front view
 - b. Side view
 - c. Frame face view
 - 3. Sections
 - a. Cut section
 - b. Assembly process
 - 4. Detail drawings
 - a. Dimensions
 - b. Fabrication methods
 - c. Material type
 - d. Backsets
 - e. Throat size
 - ii. Shop
 - 1. Actual dimensions
 - 2. Frame identification
 - 3. Glass type
 - a. Clear
 - b. Spandrel
 - c. Panel
 - b. Door types for Glaziers
 - i. Glass
 - ii. Narrow stile
 - iii. Wide stile
 - iv. Sliding
 - v. Offset pivot
 - vi. Automatic
 - c. Backset
 - i. Masonry
 - 1. Limited
 - 2. Brick/masonry type
 - 3. Minimum
 - ii. Wood
 - 1. Limited
 - 2. Stud width
 - iii. Steel
 - 1. Control line measurement
 - 2. Continuous frame
 - 3. Variable sizes
 - 4. Various applications
 - a. Back of column
 - b. Centerline of column
 - c. Column face
 - d. Benchmark for storefront
 - i. Elevations
 - ii. Maintaining level construction

- iii. Header height
- iv. Layout transfer
- e. Glazing systems
 - i. Storefronts
 - 1. One inch
 - 2. Quarter inch
 - 3. Flush glazes
 - 4. Center glazes
 - ii. Curtain wall
 - 1. Pressure bar
 - 2. Butt joint
 - 3. Pre-glazed
 - 4. Finish glazed
 - iii. Nano wall
 - 1. Glass thickness
 - 2. Retracting door
- f. Specifications
 - i. Fastener type
 - 1. Powder actuated
 - 2. Twist bolts
 - 3. Masonry
 - 4. Wood screws
 - 5. Pressure bar
 - 6. Self- tapping
 - ii. Fastener locations
 - 1. System type
 - 2. Architect specific
 - 3. Geography
 - 4. Engineer
 - iii. Glazing system hardware
 - 1. Hinges
 - 2. Pivots
 - 3. Handles
 - 4. Locksets
 - 5. Closers
 - 6. Magnetic lock
 - 7. Kick plate
 - 8. Drop plate
 - 9. Panic bar
 - iv. Specialty hardware
 - 1. Key pad
 - 2. Motion detector
 - 3. Remote
 - 4. Card access

Resources

Olivio, Thomas . *Basic Blueprint Reading and Sketching*. Current. Cengage Learning, 2010.

Kubba, Sam . *Construction Drawings for the Building Trade* . McGraw-Hill , 2008.

Proctor, Thomas E . *Print Reading for Residential and Commercial Construction* . 6th ed. American Technical Publishers , 2016.

Resources Other

1. www.constructionadvisorytoday.com
2. www.archdaily.com

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