

STATE OF WYOMING
ARCHITECTURE AND CONSTRUCTION CLUSTER AND
ARCHITECTURAL DRAFTING PATHWAY COMPETENCIES

ARCHITECTURE AND CONSTRUCTION CLUSTER

Cluster Level Core Competencies & Objectives

COMPETENCY

AC1 The student will understand and apply Occupational Safety and Health Standards (OSHA)

OBJECTIVES

- AC1-1 Demonstrate knowledge of and apply safety concepts related to the safe use of hand-tools, power/pneumatic tools, clothing and hair
 - Examples: carrying tools properly, use of safety guard, inspection of tools, changing blades and bits
- AC1-2 Demonstrate knowledge of and employ proper maintenance, set-up and inspection procedures for tools
 - Examples: lubrication, cords, hoses, connections, placing of switch, safety guards
- AC1-3 Demonstrate knowledge of the use and purpose of personal protective equipment (PPE)
 - Examples: respirators, safety glass, steel toed shoes, fall protection, hard-hats, hearing, etc.
- AC1-4 Demonstrate familiarity with emergency situations and procedures, including: use and location of first aid supplies, fire extinguishers, eye washers, understanding of blood pathogens, and evacuation procedures
- AC1-5 Follow safe procedures when handling materials
 - Examples: Proper lifting and carrying, material stacking and storage

COMPETENCY

AC2 The student will be able to demonstrate knowledge of applied mathematics

OBJECTIVES

- AC2-1 Perform basic arithmetic functions with real numbers
- AC2-2 Convert fractions/decimals
- AC2-3 Convert metric/inch measurement
- AC2-4 Perform basic trigonometric and geometric functions, solving for unknown angles and sides
- AC2-5 Demonstrate measurement skills
- AC2-6 Calculation: add, subtract, multiply and divide with fractions

COMPETENCY

AC3 The student will demonstrate knowledge of the different career paths and opportunities within a pathway

- Example: Layout and assemble a floor deck using dimensional lumber

Example: Technical Drafting – Student demonstrates an awareness of possible careers related to Technical Drafting and an awareness of the academic preparation needed to qualify for those possible careers

Architecture and Construction Cluster
ARCHITECTURAL DRAFTING PATHWAY

Pathway Core Competencies & Objectives

COMPETENCY

ACAD1 The student will demonstrate knowledge of architectural drawing standards

OBJECTIVES

- ACAD1-1 Demonstrate knowledge of appropriate Uniform Drawing Standards (UDS)
- Example 1: Use appropriate line types (center, hidden, phantom, object)
 - Example 2: Dimension using appropriate styles and standards (correct placement of measurement/dimensions)

COMPETENCY

ACAD2 The student will apply architectural room planning (sleeping, living and service areas)

OBJECTIVES

- ACAD2-1 List of family needs that should be considered when planning a dwelling
- ACAD2-2 Demonstrate knowledge of factors to be considered (family budget, family activities, family size, and design)
- ACAD2-3 Demonstrate knowledge of the appropriate size for a component of a dwelling based on building code and family size: bedroom, bathroom, living room, garage, closet space
- ACAD2-4 Demonstrate knowledge of good traffic flow

COMPETENCY

ACAD3 The student will design a residential floor plan

OBJECTIVES

- ACAD3-1 Design and draw (to scale) a residential floor plan using the accepted symbols and techniques
- ACAD3-2 Dimension the floor plan in a clear and precise manner, complying with arch standards. (put measurements in the right places and the right form, appropriate to foundation plan vs. floor plan)
- ACAD3-3 List the information to be included on a typical floor plan
- ACAD3-4 Develop or complete a door and window schedule (list of sizes, opening, door types, window specs, mfg numbers, quantity)
- ACAD3-5 Draw and label roof/floor framing for a floor plan
- ACAD3-6 The student will demonstrate knowledge of nominal size of materials

COMPETENCY

ACAD4 The student will analyze, calculate and design footings and foundations

OBJECTIVES

- ACAD4-1 Analyze the typical floor plan to determine the appropriate foundation, given footing size and foundation thickness
- ACAD4-2 Develop foundation plan showing placement of columns and floor framing

COMPETENCY

ACAD5 The student will lay out interior and exterior elevations

OBJECTIVES

- ACAD5-1 List the features that should be included on an exterior elevation
- ACAD5-2 Identify the dimensions commonly shown on elevations
- ACAD5-3 Illustrate symbols that are often found on elevations
- ACAD5-4 Draw a typical exterior elevation
- ACAD5-5 Calculate appropriate roof pitch/slope for a residence

COMPETENCY

ACAD6 The student will demonstrate knowledge of wall construction

OBJECTIVES

- ACAD6-1 Label/name components of a typical frame wall
- ACAD6-2 Identify methods of frame wall construction (balloon framing, platform framing)
- ACAD6-3 Draw typical wall section and full cross-sections
- ACAD6-4 Demonstrate awareness of alternative wall construction (masonry, rammed earth, etc.)

COMPETENCY

ACAD7 The student will lay out stair details

OBJECTIVES

- ACAD7-1 Calculate appropriate rise and run (risers and tread), given set parameters
- ACAD7-2 Draw and dimension interior stairs

The following are competencies that are NOT OFFERED STATEWIDE. Accordingly, these core competencies apply only to those programs that cover these topics.

COMPETENCY

ACAD8 The student will lay out electrical plans

OBJECTIVES

- ACAD8-1 Draw electrical plans for all floors to comply with national electrical code
- ACAD8-2 Identify appropriate uses of GFCI (ground fault circuit interrupter)
- ACAD8-3 Identify appropriate spacing for wall outlets
- ACAD8-4 Identify appropriate placement for wall switches and fixtures (e.g. not behind a door, outlet by each entryway, switches at each end of stairs)
- ACAD8-5 Identify appropriate placement of service entrance
- ACAD8-6 Demonstrate knowledge of low-voltage devices and installation: doorbells, garage door switches, detectors (smoke, co2)

COMPETENCY

ACAD9 The student will lay out site plans

COMPETENCY

ACAD10 The student will lay out presentation drawings