Architectural Drawing and Design

8437/36 weeks
8492/18 weeks

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Acknowledgments

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Course Description

Suggested Grade Level: 10 or 11 or 12

Students learn the principles of communicating architecture designs and increase their understanding of working drawings and construction techniques learned in Technical Drawing and Design. Experiences include residential and commercial building designs, rendering, model development, and structural detail developments. Students use computer-aided drawing and design (CADD) equipment and established standards or codes to prepare models for presentation. The course is especially beneficial to future architects, interior designers, or home builders.

Task Essentials Table

- Tasks/competencies designated by plus icons (stärkt) in the left-hand column(s) are essential
- Tasks/competencies designated by empty-circle icons (leeg) are optional
- Tasks/competencies designated by minus icons (geluit) are omitted
- Tasks marked with an asterisk (*) are sensitive.

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Curriculum Framework

Exploring Architectural Design Foundations

Task Number 39

Define architectural design.

Definition

Definition may include the following: Architectural design is applying the elements and principles of design to a building’s function to make it aesthetically pleasing.

Process/Skill Questions

- What are the elements of design?
- What are the principles of design?
- What are characteristics of good design?
- What are characteristics of green design?
- What are the milestones in the history of architectural design?
- Who are some influential architects of the 20th century?
- How and why does architecture vary across the world?
- What are career qualifications for this field?
- How can an architect’s work be considered sculpture?

ITEEA National Standards

- STEL 3, 5, 8

TSA Competitive Events

- Architectural Design
- CAD Architecture

Task Number 40

Analyze architectural styles.

Definition

Analysis may examine the components of various architectural styles, including

- residential styles (e.g., Cape Cod, bungalow, colonial, contemporary, salt box, ranch, Victorian, split level)
- function (e.g., steep roofs in snowy climates, heavy masses in desert areas)
- materials (e.g., interior vs. exterior, shingle types, siding types)
- construction methods (e.g., balloon frame construction vs. platform frame construction, frost line considerations for foundations)
- styles across different regions and cultures.

Process/Skill Questions

- What are some of the influences on early American architecture?
- What are examples of different styles of architecture in the community?
- What are three characteristics of each of the architectural styles studied?
- What are some global architectural styles?
Task Number 41
Maintain a reference library of architectural data.

Definition
Maintenance should include organizing, researching, and using drawing files, spreadsheets, and other technical data.

Process/Skill Questions
- What is architectural data?
- What might be included in a reference library of architectural data?
- What are the steps for copying, moving, and deleting drawing files?
- How are file folders on a computer created and deleted?

ITEEA National Standards
- STEL 3

Task Number 42
Research existing designs.

Definition
Research existing designs for comparison of
- space use
- traffic patterns
- roof features
- exterior features.

Process/Skill Questions
- What are features of an open floor plan?
- How do traffic patterns affect design?
- What are dormers?
- What are some window types?

ITEEA National Standards
- STEL 8

TSA Competitive Events
- Architectural Design
- CAD Architecture

Task Number 43
Create a construction budget.

Definition
Creation should include the following components:
- Hard cost (e.g., time and materials including framing, roof, interior details)
- Soft cost (e.g., permits and architectural fees)
- Contingencies (e.g., design and construction)

Process/Skill Questions
- What construction methods and material use can help reduce the costs of building?
- What are the benefits of obtaining bids from several contractors?
- What materials may be needed for a building project?
- How does material vary in grade, quality, and cost?

ITEEA National Standards
- STEL 3, 8

TSA Competitive Events
- Architectural Design

Task Number 44
Calculate square footage.

Definition
Calculation should be determined by multiplying, using the U.S. Customary system of measurement, the length times the width of the living area (any area intended for occupancy).

Process/Skill Questions
- What units of measurement are used to calculate area?
- What is the purpose of determining square footage?
- What areas of the structure are not included in the square footage calculation?
- What is the difference between gross square footage and net square footage?
- What is meant by habitable place?

ITEEA National Standards
- STEL 3, 8

TSA Competitive Events
- Architectural Design
- CAD Architecture

Task Number 45
Summarize the purpose of building and zoning codes.

Definition
Summary should center around the following:
- Building codes are legal requirements designed to protect the public by providing construction guidelines for the structural, electrical, plumbing, and mechanical systems of a building.
• Zoning codes regulate the location, size, and type of a structure that can be built on a site, such as residential, commercial, or industrial
• Accessibility codes (e.g., ADA) regulate compliance with federal and state laws concerning accessibility standards.

Process/Skill Questions
• What is a zoning code?
• What is the purpose of using building and zoning codes?
• Where is building and zoning specification information found?
• Why is determining zoning information important to a designer?
• How are codes developed?

ITEEA National Standards
• Architectural Design

TSA Competitive Events
• STEL 5, 8

Task Number 46
Apply architectural principles to drawings, annotation, and dimensioning.

Definition
Application should include documenting sizes and locations for exterior and interior design, such as
• height
• width
• depth
• angles
• fillets and rounds
• datum
• surface texture
• room identification
• orientation.

Process/Skill Questions
• What is the difference between a dimension and square footage annotation?
• How are the electrical and plumbing drawings annotated?
• What basic information is given by dimensioning?
• What is a size dimension?
• What is a datum?

ITEEA National Standards
• STEL 8

TSA Competitive Events
• Architectural Design
• CAD Architecture

Task Number 47
Identify the components in a complete set of construction drawings.

Definition
Identification could include
- site plan
- foundation plan
- floor plan
- elevations
- window and door schedules
- sectional views
- structural drawings
- mechanical drawings
- plumbing drawings
- electrical drawings
- lighting plan and schedule.

Process/Skill Questions
- How do the floor plans serve as a point of reference for other drawings in a set of plans?
- What is the purpose of elevation drawings?
- Why is it necessary to distinguish between the electrical and plumbing drawings?

ITEEA National Standards
- STEL 8

TSA Competitive Events
- Architectural Design
- CAD Architecture

Task Number 48
Utilize an architectural title block.

Definition
Utilization should include
- client’s name
- designer’s name
- design scale
- date of service
- drawing title
- drawing number
- revisions.

Process/Skill Questions
- What is a title block?
- Why is the information in the title block important to the designer?
- Where is the placement of the title block located?
- What is the size of the lettering?
- What is the typical size of the title block?

TSA Competitive Events
- Architectural Design
Introducing the Design Process

Task Number 49

Define the architectural design process.

Definition

Definition should include the concept that the architectural design process is an assessment of client needs and preferences, budget cost, and design challenges that specifically entail:

- identifying the problem
- meeting the needs of clients by identifying the criteria and constraints
- generating multiple solutions (brainstorming)
- evaluating, analyzing, and selecting solution(s)
- implementing solution(s)
- reevaluating solution(s)
- refining as necessary.

Definition should include the phases:

- conceptual design (i.e., sketches, programming, defining the problem)
- schematic design
- design development
- construction drawings
- construction.

Process/Skill Questions

- Why is it important to follow an iterative design process?
- When is it important to repeat the steps of the design process?
- When is it necessary to refine the design?
- What drawings are produced at each phase in the process?

ITEEA National Standards

- STEL 7, 8

TSA Competitive Events

- Architectural Design
- CAD Architecture

Task Number 50

Apply the elements and principles of design in the architectural design process to create a solution.

Definition

Application should include combining the elements of design:

- line
- form
- space
- light
• color
• texture
• direction

with the principles of design:
• balance
• unity
• repetition
• contrast
• rhythm.

Process/Skill Questions
• What are the principles of design?
• What is meant by the phrase “form follows function”?
• What is the difference between elements and principles of design?

ITEEA National Standards
• STEL 3, 7, 8

TSA Competitive Events
• Architectural Design
• CAD Architecture

Task Number 51
Build a scaled physical presentation model.

Definition
Building should include three-dimensional (3D) representations of a complete design, made to scale, and built to be viewed from any angle or distance.

Process/Skill Questions
• What is the purpose of a model?
• To what scale are models usually built?
• What materials can be used to construct models?

ITEEA National Standards
• STEL 3, 8

TSA Competitive Events
• Architectural Design
• CAD Architecture

Task Number 52
Incorporate sustainable building strategies into architectural design.

Definition
Incorporation should include using eco-friendly design technology based on research of current sustainable options to meet goals of sustainability, such as
• building energy usage
• material usage
• low-impact site design
• healthy/well buildings
• accreditation systems (i.e., Leadership in Energy and Environmental Design [LEED], Green Globes, Certified High Performance [CHIPS])
• resilient buildings.

**Process/Skill Questions**

- What is meant by sustainable technology?
- What is meant by life cycle cost?
- What is meant by sustainability, and how does it apply to architectural design?
- What are the advantages of using sustainable technology?
- Why is it important to suggest sustainable options to a client?
- What construction materials are considered sustainable?
- How does designing a sustainable structure affect the cost of construction, operation, and maintenance, and the environment?

**ITEEA National Standards**

- STEL 3, 8

**TSA Competitive Events**

- Architectural Design
- CAD Architecture

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**Task Number 53**

**Incorporate Americans with Disabilities Act (ADA) regulations into design solutions.**

**Definition**

Incorporation should

- reference ADA regulations
- explain how they affect architectural design choices
- describe how ADA is related to universal design.

**Process/Skill Questions**

- When was the ADA established?
- How and why did ADA regulations come about?
- What are some of the design specifications for residential construction or architecture?
- What are some examples of architectural design features that help buildings meet ADA requirements?

**ITEEA National Standards**

- STEL 5, 8

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**Producing Illustrations**

**Task Number 54**

**Develop a site analysis.**
Development should involve compiling environmental information that will affect the design choices for a building and should show the exterior plans around a building, including water lines, electrical lines, solar orientation, and other contour details about the land.

Process/Skill Questions

- How do engineers contribute to the site analysis?
- How does the site analysis affect the design choices for that site?
- Why is building orientation important to design considerations?
- What design choices can reduce the effects of wind on a building?
- What elements of the structure are typically found on an exterior elevation drawing?

ITEEA National Standards

- STEL 3, 8

TSA Competitive Events

- Architectural Design
- CAD Architecture

Task Number 55

Prepare design sketches.

Definition

Preparation should result in documenting preliminary ideas and concepts for future architectural drawings.

Process/Skill Questions

- What are the different types of sketches?
- What is the importance of design sketching in architectural drawing?

ITEEA National Standards

- STEL 2, 8

TSA Competitive Events

- Architectural Design
- CAD Architecture

Task Number 56

Draw a functional floor plan.

Definition

Drawing should

- reflect an understanding of accepted principles of residential space planning
- render descriptions of components, including their materials, locations, and measurements.

Process/Skill Questions

- What are the benefits of creating a functional floor plan?
- What is meant by function?
• What are examples of floor plan symbols?
• What is a traffic pattern, and why is it an important planning consideration?
• What are open and closed floor plans?

ITEEA National Standards
• STEL 8

TSA Competitive Events
• Architectural Design
• CAD Architecture

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**Task Number 57**

**Design a functional floor plan for a residential or commercial building.**

**Definition**

Design should

• include descriptions of components contained in the design
• include their purpose, materials, measurements, and locations
• develop a building program
• draw a bubble diagram of the program
• draw traffic flow (e.g., circulation diagrams)
• finalize hardline floor plans.

**Process/Skill Questions**

• What are the essential elements of a floor plan?
• How do floor plans serve as a point of reference for other drawings in a set of plans?
• What are the necessary steps in designing a residence?
• What is the importance of setting goals and objectives for a house design?
• What role do circulation diagrams play?

ITEEA National Standards
• STEL 7, 8

TSA Competitive Events
• CAD Architecture

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**Task Number 58**

**Design a foundation plan, based on a floor plan.**

**Definition**

Design should provide a level and uniformly distributed support for the structure.

**Process/Skill Questions**

• What are examples of floor plan symbols?
• What materials are used to build a foundation?
• What are some different types of foundation systems?

ITEEA National Standards
• STEL 8
Task Number 59

Draw a reflected ceiling plan (RCP), based on a floor plan.

Definition
Drawing should provide information on the location of
- switches
- outlets
- light fixtures
- vents or grills
- sprinklers
- fire alarms
- media components
- material and finish
- height of ceiling to floor.

Process/Skill Questions
- What is the difference in an RCP and an electrical plan?
- How is an RCP read?
- How are materials shown in a reflected ceiling plan?

ITEEA National Standards
- STEL 8

Task Number 60

Create sectional views.

Definition
Creation should show internal details of an object not readily available from a single view and might include the following views:
- Building section
- Wall section
- Detail

Process/Skill Questions
- Why are sectional views necessary?
- How is depth in a section shown?
- What is a cutting-plane line?

ITEEA National Standards
- STEL 8
TSA Competitive Events
- Architectural Design
- CAD Architecture

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**Task Number 61**

**Design exterior elevations.**

**Definition**
Design should show the vertical surfaces of a structure as well as the entire front, sides, and rear views of that structure.

**Process/Skill Questions**
- What elements are shown on an exterior elevation drawing?
- How can a floor plan assist in drawing elevations?
- How can an elevation be rendered?
- How are materials shown?

**ITEEA National Standards**
- STEL 3, 8

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**Task Number 62**

**Design interior elevations.**

**Definition**
Design should
- produce drawings of such elevations as the interior wall surfaces, cabinetry, and stairs
- clarify the role of interior elevations in interior design.

**Process/Skill Questions**
- What are some elements of the structure found on an interior elevation?
- What is the reference line?
- What is the purpose of an interior elevation?
- What role does the interior design play?
- How are materials shown?

**ITEEA National Standards**
- STEL 3, 8

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**Task Number 63**
Create perspective views, including renderings.

Definition
Creation should produce a drawing that most closely resembles the way people actually see an image. Drawings should

- render a realistic texture
- establish shade and shadow patterns appropriate for the client and may also include exploded view
- investigate constructed perspective drawings
- explore how the digital model can be used to produce perspective views.

Process/Skill Questions
- What is a vanishing point?
- What are some types of perspective drawings?
- Why are renderings made?
- What are examples of media used for rendering?
- How are rendering styles applied in digital mediums?
- What is post processing a rendering?
- How do rendering software relate to video game engines?

ITEEA National Standards
- STEL 3, 8

TSA Competitive Events
- Architectural Design
- CAD Architecture

Task Number 64
Create door and window schedules.

Definition
Creation should provide information such as location, direction of swing/opening, and dimensions.

Process/Skill Questions
- What are some elements found on a door schedule?
- What kinds of information are included on door and window schedules?

ITEEA National Standards
- STEL 8

TSA Competitive Events
- Architectural Design
- CAD Architecture

Task Number 65
Create architectural design solutions using computer-aided drafting (CAD).
Definition

Creation should include

- setting drawing limits
- setting units
- using layers
- designing and using templates
- using drawing commands
- modifying commands
- using basic dimensioning.

Process/Skill Questions

- When might a designer use a template?
- What are some of the properties of a drawing layer?
- What are the advantages of using CAD over hands-on drafting?
- What are some programs available for use in CAD?

ITEEA National Standards

- STEL 8

TSA Competitive Events

- Architectural Design
- CAD Architecture

Task Number 66

Create a walk-through presentation of a section of a building.

Definition

Creation should provide views that can eliminate interference in the building process.

Process/Skill Questions

- Why is a walk-through important to the design and construction process?
- What features should a walk-through include?
- How can a walk-through be accomplished?

ITEEA National Standards

- STEL 8

TSA Competitive Events

- CAD Architecture

Preparing for Career

Task Number 67

Update a résumé in a format suitable for online posting.

Definition

Updating could include changes to the following, as applicable:
• Educational background
• Work history
• Honors and awards
• Membership in professional and/or student organizations and leadership positions held
• Participation in community activities and community service

Students should identify the reasons for keeping a résumé up-to-date even if they are not currently involved in a job search.

Process/Skill Questions
• What extracurricular and co-curricular activities reflect leadership skills that might be included in a résumé?
• Why is it important to have an electronic résumé?
• What are some advantages of having a résumé?
• What are the benefits and risks of posting one’s résumé online?
• What are the similarities and differences between the functional and chronological résumé formats?
• How does one decide the best format to use for his/her résumé?
• When might a career portfolio be needed in addition to a résumé?
• What are some common errors found in résumés?

ITEEA National Standards
• STEL 3, 8

TSA Competitive Events
• STEM Careers (Virginia only event)

Task Number 68
Complete a job application.

Definition
Completion could comprise both manual and electronic formats and should reflect attention to accuracy and completeness of all information supplied.

Process/Skill Questions
• What is the purpose of a job application? How is it different from a résumé? Why are both required by most companies?
• Why should an application be complete, accurate, and error-free?
• How should one prepare to have pertinent information available for completing a job application?
• What factors should be considered when selecting references for an application?

ITEEA National Standards
• STEL 3

TSA Competitive Events
• STEM Careers (Virginia only event)

Task Number 69
Participate in a mock interview.
Definition
Participation should include assuming a variety of roles to illustrate behaviors both desirable (e.g., maintaining eye contact, asking informed questions) and undesirable (e.g., speaking too softly, failing to answer questions completely) and also include

- preparation (e.g., bringing copies of a résumé and other relevant information to an interview)
- references (end-securing permission to use them).
- What resources are available to explore job search and interview techniques?
- How can online resources be used to prepare for an interview?

Process/Skill Questions

- What personal experiences might be communicated in an interview to demonstrate leadership ability?
- What workplace scenarios might an interviewer ask potential employees to analyze?
- How are personal questions that are not relevant to the job handled?
- What types of questions are illegal for an interviewer to ask?

ITEEA National Standards

- STEL 3

TSA Competitive Events

- STEM Careers (Virginia only event)

Task Number 70
Explain the role of professional accreditation.

Definition
Explanation should include

- the path toward licensure (i.e., education requirements, internships, professional exams)
- how professional seals are used
- how to earn trade certifications.

Process/Skill Questions

- Why is it important for licensed professionals to seal drawing designs?
- What are different roles attained in an architecture firm?
- What are the social responsibilities of an architect?

ITEEA National Standards

- STEL 5, 8

TSA Competitive Events

- STEM Careers (Virginia only event)

SOL Correlations by Task

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<tr>
<td>Research existing designs.</td>
<td>10.5, 10.8, 11.5, 11.8, 12.5, 12.8</td>
</tr>
<tr>
<td>Create a construction budget.</td>
<td>10.6, 11.6, 12.6</td>
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<tr>
<td>Calculate square footage.</td>
<td>10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>Summarize the purpose of building and zoning codes.</td>
<td>10.5, 11.5, 12.5</td>
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<tr>
<td>Apply architectural principles to drawings, annotation, and dimensioning.</td>
<td>10.5, 11.5, 12.5</td>
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<tr>
<td>Identify the components in a complete set of construction drawings.</td>
<td>10.5, 11.5, 12.5</td>
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<tr>
<td>Utilize an architectural title block.</td>
<td>10.5, 11.5, 12.5</td>
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<tr>
<td>Define the architectural design process.</td>
<td>10.3, 10.5, 11.3, 11.5, 12.3, 12.5</td>
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<tr>
<td>Apply the elements and principles of design in the architectural design process to create a solution.</td>
<td>10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>Build a scaled physical presentation model.</td>
<td>10.5, 11.5, 12.5</td>
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<tr>
<td>Incorporate sustainable building strategies into architectural design.</td>
<td>10.5, 11.5, 12.5</td>
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<tr>
<td>Incorporate Americans with Disabilities Act (ADA) regulations into design solutions.</td>
<td>10.5, 11.5, 12.5</td>
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<tr>
<td>Develop a site analysis.</td>
<td>10.1, 10.5, 11.1, 11.5, 12.1, 12.5</td>
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<tr>
<td>Prepare design sketches.</td>
<td>10.1, 10.5, 10.6, 11.1, 11.5, 11.6, 12.1, 12.5, 12.6</td>
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<tr>
<td>Draw a functional floor plan.</td>
<td>10.5, 11.5, 12.5</td>
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<tr>
<td>Design a functional floor plan for a residential or commercial building.</td>
<td>10.1, 10.5, 11.1, 11.5, 12.1, 12.5</td>
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<tr>
<td>Design a foundation plan, based on a floor plan.</td>
<td>10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>Draw a reflected ceiling plan (RCP), based on a floor plan.</td>
<td>10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>Create sectional views.</td>
<td>10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>Design exterior elevations.</td>
<td>10.5, 11.5, 12.5</td>
</tr>
<tr>
<td>Design interior elevations.</td>
<td>10.1, 10.5, 11.1, 11.5, 11.1, 12.5</td>
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<tr>
<td>Create perspective views, including renderings.</td>
<td>10.5, 11.5, 12.5</td>
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<tr>
<td>Create door and window schedules.</td>
<td>10.5, 10.6, 11.5, 11.6, 12.5, 12.6</td>
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<tr>
<td>Create architectural design solutions using computer-aided drafting (CAD).</td>
<td>10.2, 10.5, 11.2, 11.5, 12.2, 12.5</td>
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<tr>
<td>Create a walk-through presentation of a section of a building.</td>
<td>10.5, 11.5, 12.5</td>
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<tr>
<td>Update a résumé in a format suitable for online posting.</td>
<td>10.5, 10.6, 10.7, 11.5, 11.6, 11.7, 12.5, 12.6, 12.7</td>
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<tr>
<td>Complete a job application.</td>
<td>10.5, 10.6, 10.7, 11.5, 11.6, 11.7, 12.5, 12.6, 12.7</td>
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<tr>
<td>Participate in a mock interview.</td>
<td>10.1, 10.5, 11.1, 11.5, 12.1, 12.5</td>
</tr>
<tr>
<td>Explain the role of professional accreditation.</td>
<td>10.5, 11.5, 12.5</td>
</tr>
</tbody>
</table>
Appendix: Credentials, Course Sequences, and Career Cluster Information

Industry Credentials (Only apply to 36-week courses)

- Architectural Apprentice Drafter Examination
- Architectural Certified Drafter Examination
- Architectural Drafting Assessment
- Autodesk Certified Professional Examinations
- Autodesk Certified User Examinations
- College and Work Readiness Assessment (CWRA+)
- National Career Readiness Certificate Assessment
- Workplace Readiness Skills for the Commonwealth Examination

Concentration sequences: A combination of this course and those below, equivalent to two 36-week courses, is a concentration sequence. Students wishing to complete a specialization may take additional courses based on their career pathways. A program completer is a student who has met the requirements for a CTE concentration sequence and all other requirements for high school graduation or an approved alternative education program.

- Advanced Drawing and Design (8438/36 weeks)
- Construction Technology (8431/36 weeks)
- Construction Technology (8432/18 weeks)
- Digital Visualization (8459/36 weeks)
- Engineering Drawing and Design (8436/36 weeks)
- Engineering Drawing and Design (8493/18 weeks)
- Technical Drawing and Design (8434/18 weeks)
- Technical Drawing and Design (8435/36 weeks)
- Introduction to Engineering Design PLTW (8439/36 weeks)

Career Cluster: Architecture and Construction

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>Cabinetmaker</td>
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<tr>
<td></td>
<td>Carpenter</td>
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<tr>
<td></td>
<td>Construction and Building Inspector</td>
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<tr>
<td></td>
<td>Construction Manager</td>
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<tr>
<td></td>
<td>Drywall Installer</td>
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<tr>
<td></td>
<td>Electrician</td>
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<td>General Contractor</td>
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<td></td>
<td>Mason</td>
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<td>Plumber, Pipelayer</td>
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<tr>
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<td>Project Manager</td>
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<td>Roofer</td>
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<tr>
<td></td>
<td>Roofer</td>
</tr>
<tr>
<td></td>
<td>Tile Installer</td>
</tr>
<tr>
<td>Design/Pre-Construction</td>
<td>Architect</td>
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<td></td>
<td>Architectural Drafter</td>
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Career Cluster: Architecture and Construction

<table>
<thead>
<tr>
<th>Pathway</th>
<th>Occupations</th>
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<tbody>
<tr>
<td>Design/Pre-Construction</td>
<td>Building Code Inspector</td>
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<td>Civil Engineer</td>
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<td>Cost Estimator</td>
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<td></td>
<td>Electrical Engineering Technician</td>
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<tr>
<td>Maintenance and Operations</td>
<td>Interior Designer</td>
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<tr>
<td>-----------------------------</td>
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<tr>
<td></td>
<td>Landscape Architect</td>
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<tr>
<td></td>
<td>Mechanical Drafter</td>
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<tr>
<td></td>
<td>Mechanical Engineer</td>
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<td>Surveyor</td>
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<table>
<thead>
<tr>
<th>Maintenance and Operations</th>
<th>Cabinetmaker</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Carpenter</td>
</tr>
<tr>
<td></td>
<td>Construction and Building Inspector</td>
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<tr>
<td></td>
<td>Electrician</td>
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<tr>
<td></td>
<td>Mason</td>
</tr>
<tr>
<td></td>
<td>Plumber, Pipefitter</td>
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<tr>
<td></td>
<td>Restoration Technician</td>
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<tr>
<td></td>
<td>Roofer</td>
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<tr>
<td></td>
<td>Tile Installer</td>
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<table>
<thead>
<tr>
<th>Career Cluster: Arts, Audio/Video Technology and Communications</th>
<th>Pathway</th>
<th>Occupations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Audio and Video Technology and Film</td>
<td>Multimedia Artist, Animator</td>
</tr>
<tr>
<td></td>
<td>Performing Arts</td>
<td>Technical Director</td>
</tr>
<tr>
<td></td>
<td>Visual Arts</td>
<td>Interior Designer</td>
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</tbody>
</table>