

Introduction to Architecture and Construction Current Standards

Indicator# IAC 1: Explore the different career opportunities involved in the architecture and construction industries.

Level 2: Apply	IAC 1.1 Compare career possibilities in the drafting industry.
Level 2: Apply	IAC 1.2 Investigate and examine career opportunities in cabinetry industry
Level 2: Apply	IAC 1.3 Research career opportunities in the architecture and construction fields.

Indicator# IAC 2: Introduce safety concepts in the architecture and construction industries.

Level 2: Apply	IAC 2.1 Apply general shop safety principles
Level 1: Identify	IAC 2.2 Identify job site and career safety concepts
Level 1: Define	IAC 2.3 Define OSHA (Occupational Safety Health Administration) and its role in the construction industries
Level 2: Apply	IAC 2.4 Apply general hand and power tool safety procedures

Indicator# IAC 3: Apply basic math principles used in the architecture and construction industries.

Level 2: Demonstrate	IAC 3.1 Demonstrate proper use of appropriate math skills
Level 2: Demonstrate	IAC 3.2 Demonstrate proper measuring and layout skills

Indicator# IAC 4: Recognize the materials used in the architecture and construction industries.

Level 1: Identify	IAC 4.1 Identify wood species and engineered building materials.
Level 1: Recognize	IAC 4.2 Recognize proper application of fasteners, adhesives, and hardware.
Level 1: Explore	IAC 4.3 Explore new upcoming materials used in building industry.

Indicator# IAC 5: Examine Basic drafting skills used in architecture and construction.

Level 1: Recognize	IAC 5.1 Recognize basic drafting terms and abbreviations
Level 2: Differentiate	IAC 5.2 Differentiate between different drafting styles
Level 2: Demonstrate	IAC 5.3 Identify different aspects of blueprints/project plans to show a working knowledge of specifications.
Level 2: Classify	IAC 5.4 Classify the different styles of residential architectural structures.

Introduction to Architecture and Construction Proposed Standards

Indicator# IAC 1: Explore the different career opportunities involved in the architecture and construction industries.

Level 2: Apply	IAC 1.1 Compare career possibilities in the architecture industry.
Level 2: Apply	IAC 1.2 Research career opportunities in the construction industry (including civil, commercial, residential, etc.).

Indicator# IAC 2: Introduce safety concepts in the architecture and construction industries.

Level 2: Apply	IAC 2.1 Apply general shop safety principles
Level 1: Identify	IAC 2.2 Identify job site and career safety concepts
Level 1: Define	IAC 2.3 Define OSHA (Occupational Safety Health Administration) and its role in the construction industries
Level 2: Apply	IAC 2.4 Apply general hand and power tool safety procedures

Indicator# IAC 3: Apply basic math principles used in the architecture and construction industries.

Level 2: Demonstrate	IAC 3.1 Demonstrate proper use of appropriate math skills
Level 2: Demonstrate	IAC 3.2 Demonstrate proper measuring and layout skills

Indicator# IAC 4: Recognize the materials used in the architecture and construction industries.

Level 1: Identify	IAC 4.1 Identify wood species and engineered building materials.
Level 1: Recognize	IAC 4.2 Recognize proper application of fasteners, adhesives, and hardware.
Level 1: Explore	IAC 4.3 Explore new upcoming materials used in the building industry.

Indicator# IAC 5: Examine Basic drafting skills used in architecture and construction.

Level 1: Recognize	IAC 5.1 Recognize basic drafting terms and abbreviations
Level 2: Differentiate	IAC 5.2 Differentiate between different drafting styles
Level 2: Demonstrate	IAC 5.3 Identify different aspects of blueprints/project plans to show a working knowledge of specifications.
Level 2: Classify	IAC 5.4 Classify the different styles of residential architectural structures

Introduction to Architecture and Construction Current Standards

Indicator# IAC 6: Display skills needed in architecture and construction industries.

Level 2: Apply	IAC 6.1 Apply proper measuring and cutting techniques to perform job related tasks
Level 2: Display	IAC 6.2 Display a working knowledge of tools and equipment used in the industry
Level 2: Construct	IAC 6.3 Construct a project using the assigned design process
Level 2: Demonstrate	IAC 6.4 Demonstrate necessary job skills needed in architecture and construction industries

Introduction to Architecture and Construction Proposed Standards

Indicator# IAC 6: Display skills needed in architecture and construction industries.

Level 2: Apply	IAC 6.1 Apply proper measuring and cutting techniques to perform job related tasks
Level 2: Display	IAC 6.2 Display a working knowledge of tools and equipment used in the industry
Level 2: Construct	IAC 6.3 Construct a project using the assigned design process
Level 2: Demonstrate	IAC 6.4 Demonstrate necessary job skills needed in architecture and construction industries

Introduction to Drafting and Design Current Standards

Indicator # IDD 1: Examine basic drafting terminology and equipment.

One Recognize	IDD 1.1 Recognize basic drafting terms and abbreviations.
Two Differentiate	IDD 1.2 Differentiate basic drafting tools and their uses.

Indicator # IDD 2: Apply basic math skills to design work.

Two Apply	IDD 2.1 Apply algebraic and trigonometric formulas used in drafting and design.
Two Understand	IDD 2.2 Understand the various drawing scales used in drafting.

Indicator # IDD 3: Examine basic drafting fundamental and technical skills

Three Integrate	IDD 3.1 Integrate symbols, lettering and Geometric shapes used on technical drawings.
One Illustrate	IDD 3.2 Illustrate line types recommended by American National Standards Institute (ANSI).
One Define	IDD 3.3 Define dimensioning styles and techniques on metric and imperial drawings.

Indicator # IDD 4: Apply drawing techniques to produce various technical plans.

Four Create	IDD 4.1 Create orthographic projections
Four Create	IDD 4.2 Create isometric and pictorial drawings.

Indicator # IDD 5: Implement computer aided software into design work.

One Identify	IDD 5.1 Identify CAD skills and applications of technical design.
Two Apply	IDD 5.2 Apply CAD defaults and preferences to set up a drawing.
Four Generate	IDD 5.3 Generate drawings and projections using CAD software.

Drafting and Design I Proposed Standards

Indicator # DDI 1: Examine basic drafting terminology and equipment.

Level 1: Recall	DDI 1.1 Recognize basic drafting terms and abbreviations.
Level 2: Differentiate	DDI 1.2 Differentiate basic and CAD drafting tools and their uses.

Indicator # DDI 2: Apply basic math skills to design work.

Level 2: Apply	DDI 2.1 Apply algebraic and trigonometric formulas used in drafting and design.
Level 2: Understand	DDI 2.2 Understand the various drawing scales used in drafting.

Indicator # DDI 3: Examine basic drafting fundamental and technical skills

Level 3: Integrate	DDI 3.1 Integrate symbols, lettering and Geometric shapes used on technical drawings.
Level 1: Illustrate	DDI 3.2 Illustrate line types recommended by American National Standards Institute (ANSI).
Level 1: Define	DDI 3.3 Define dimensioning styles and techniques on metric and imperial drawings.

Indicator # DDI 4: Apply drawing techniques to produce various technical plans.

Level 4: Create	DDI 4.1 Create orthographic projections
Level 4: Create	DDI 4.2 Create isometric and pictorial drawings.

Indicator # DDI 5: Implement computer aided software into design work.

Level 1: Identify	DDI 5.1 Identify CAD skills and applications of technical design.
Level 2: Apply	DDI 5.2 Apply CAD defaults and preferences to set up a drawing.
Level 4: Generate	DDI 5.3 Generate drawings and projections using CAD software.

**Introduction to Drafting and Design
Current Standards**

Indicator # IDD 6: Explore career-ready practices.	
One Understand	IDD 6.1 Understand professional drafting practices in the workplace and communication skills.
Two Compare	IDD 6.2 Compare career possibilities in the drafting industry.

**Drafting and Design I
Proposed Standards**

Indicator # DDI 6: Explore career-ready practices.	
Level 1: Understand	DDI 6.1 Examine careers in architectural and mechanical drafting.
Level 2: Compare	DDI 6.2 Compare career possibilities in the drafting industry.

Architectural Drafting Current Standards

Indicator # ADD 1: Understand architectural design fundamentals and history.

Level 1: Recall	ADD 1.1 Identify architectural products and styles.
Level 2: Skill/Concept	ADD 1.2 Interpret the fundamentals of framing plans.
Level 2: Skill/Concept	ADD 1.3 Identify building codes and governing bodies.
Level 1: Recall	ADD 1.4 Identify residential building materials

Indicator # ADD 2: Understand drawing management, dimensioning, and notations.

Level 2: Skill/Concept	ADD 2.1 Examine drawing identification and management techniques used in architectural drafting.
Level 3: Strategic Thinking	ADD 2.2 Illustrate proper dimensioning and notation practices used in architectural drafting.

Indicator # ADD 3: Develop a residential plot and foundation system plan.

Level 4: Extended Thinking	ADD 3.1 Create a plot/site plan for a residence.
Level 3: Strategic Thinking	ADD 3.2 Design footings and foundation for a residence.

Indicator # ADD 4: Generate the necessary construction plans to build a residence.

Level 3: Strategic Thinking	ADD 4.1 Develop a floor plan using accepted symbols and techniques.
Level 3: Strategic Thinking	ADD 4.2 Prepare a working drawing of the residence HVAC, lights and electrical needs.
Level 3: Strategic Thinking	ADD 4.3 Design a residential roof plan.
Level 2: Skill/Concept	ADD 4.4 Understand the use of elevations in the design of a residence.
Level 3: Strategic Thinking	ADD 4.5 Draw interior and exterior stair details appropriate to those found in a residence.
Level 3: Strategic Thinking	ADD 4.6 Develop door, window, and finishing schedules.
Level 2: Skill/Concept	ADD 4.7 Understand basic estimating practices used in the construction industry.
Level 4: Extended Thinking	ADD 4.8 Generate final presentation drawings and three dimensional computer model.

Drafting and Design II-Architectural Proposed Standards

Indicator # DDII 1: Understand architectural design fundamentals and history.

Level 1: Recall	DDII 1.1 Identify architectural products and styles.
Level 2: Skill/Concept	DDII 1.2 Interpret the fundamentals of framing plans.
Level 2: Skill/Concept	DDII 1.3 Identify building codes and governing bodies.
Level 1: Recall	DDII 1.4 Identify residential building materials

Indicator # DDII 2: Understand drawing management, dimensioning, and notations.

Level 2: Skill/Concept	DDII 2.1 Examine drawing identification and management techniques used in architectural drafting.
Level 3: Strategic Thinking	DDII 2.2 Illustrate proper dimensioning and notation practices used in architectural drafting.

Indicator # DDII 3: Develop a residential plot and foundation system plan.

Level 4: Extended Thinking	DDII 3.1 Create a plot/site plan for a residence.
Level 3: Strategic Thinking	DDII 3.2 Design footings and foundation for a residence.

Indicator # DDII 4: Generate the necessary construction plans to build a residence.

Level 3: Strategic Thinking	DDII 4.1 Develop a floor plan using accepted symbols and techniques.
Level 3: Strategic Thinking	DDII 4.2 Prepare a working drawing of the residence HVAC, lights, and electrical needs.
Level 3: Strategic Thinking	DDII 4.3 Design a residential roof plan.
Level 2: Skill/Concept	DDII 4.4 Understand the use of elevations in the design of a residence.
Level 3: Strategic Thinking	DDII 4.5 Draw interior and exterior stair details appropriate to those found in a residence.
Level 3: Strategic Thinking	DDII 4.6 Develop door, window, and finishing schedules.
Level 2: Skill/Concept	DDII 4.7 Understand basic estimating practices used in the construction industry.
Level 4: Extended Thinking	DDII 4.8 Generate final presentation drawings and three-dimensional computer models.

Building Trades Current Standards

Indicator # BT 1: Understand and Apply Industry Safety Procedures

Level 2: Skill/Concept	BT1.1 Identify and demonstrate the proper industry safety standards.
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Indicator # BT 2: Utilize appropriate industry math skills and formulas

Level 2: Skill/Concept	BT2.1 Understand and demonstrate basic math skills and formulas.
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Indicator # BT 3: Identify and correctly use appropriate hand, power, and pneumatic tools

Level 2: Skill/Concept	BT3.1 Demonstrate safe and proper use of hand tools.
Level 2: Skill/Concept	BT3.2 Demonstrate safe and proper use of power tools.
Level 2: Skill/Concept	BT3.3 Demonstrate safe and proper use of pneumatic tools.

Indicator # BT 4: Understand blueprint reading and perform basic survey techniques

Level 3: Strategic Thinking	BT4.1 Demonstrate how to read blueprints.
Level 3: Strategic Thinking	BT4.2 Demonstrate basic survey techniques.

Indicator # BT 5: Apply basic organizational, spatial, structural and construction principles of carpentry

Level 3: Strategic Thinking	BT 5.1 Demonstrate the understanding of the building process by the building of a construction project.
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Indicator # BT 6: Study principles, standards and applications of plumbing

Level 1: Recall	BT6.1 Define safety procedures for plumbing
Level 2: Skill/Concept	BT6.2 Distinguish pipe sizes, fittings, adapters, and coupling.
Level 3: Strategic Thinking	BT6.3 Demonstrate the use of plumbing materials.

Indicator # BT 7: Employ basic knowledge and methods of electrical wiring

Level 1: Recall	BT7.1 Select electrical materials considering safety.
Level 2: Skill/Concept	BT7.2 Identify electrical materials.
Level 3: Strategic Thinking	BT7.3 Illustrate uses of electrical materials.

Construction Trades I Proposed Standards

Indicator # CT 1: Understand and Apply Industry Safety Procedures

Level 2: Skill/Concept	CT1.1 Identify and demonstrate the proper industry safety standards.
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Indicator # CT 2: Utilize appropriate industry math skills and formulas

Level 2: Skill/Concept	CT2.1 Understand and demonstrate basic math skills and formulas.
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Indicator # CT 3: Identify and correctly use appropriate hand, power, and pneumatic tools

Level 2: Skill/Concept	CT3.1 Demonstrate safe and proper use of hand tools.
Level 2: Skill/Concept	CT3.2 Demonstrate safe and proper use of power tools.
Level 2: Skill/Concept	CT3.3 Demonstrate safe and proper use of pneumatic tools.

Indicator # CT 4: Understand blueprint reading and perform basic survey techniques

Level 3: Strategic Thinking	CT4.1 Demonstrate how to read blueprints.
Level 3: Strategic Thinking	CT4.2 Demonstrate basic survey techniques.

Indicator # CT 5: Apply basic organizational, spatial, structural and construction principles of carpentry

Level 3: Strategic Thinking	CT 5.1 Demonstrate the understanding of the building process by the building of a construction project.
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Indicator # CT 6: Study principles, standards and applications of plumbing

Level 1: Recall	CT6.1 Define safety procedures for plumbing
Level 2: Skill/Concept	CT6.2 Distinguish pipe sizes, fittings, adapters, and coupling.
Level 3: Strategic Thinking	CT6.3 Demonstrate the use of plumbing materials.

Indicator # CT 7: Employ basic knowledge and methods of electrical wiring

Level 1: Recall	CT7.1 Select electrical materials considering safety.
Level 2: Skill/Concept	CT7.2 Identify electrical materials.
Level 3: Strategic Thinking	CT7.3 Illustrate uses of electrical materials.

**Building Trades
Current Standards**

Indicator # BT 8: Employ basic knowledge and methods of concrete technology

Level 1: Recall	BT8.1 Identify safe practice associated with concrete materials
Level 3: Strategic Thinking	BT8.2 Calculate the various required ingredients used in concrete.
Level 3: Strategic Thinking	BT8.3 Employ application of concrete in different situations.

Indicator # BT 9: Student will participate in career exploration activities

Level 3: Strategic Thinking	BT9.1 Research career opportunities in the architecture and construction fields.
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**Construction Trades I
Proposed Standards**

Indicator # CT 8: Employ basic knowledge and methods of concrete technology

Level 1: Recall	CT8.1 Identify safe practice associated with concrete materials
Level 3: Strategic Thinking	CT8.2 Calculate the various required ingredients used in concrete.
Level 4: Extended Thinking	CT8.3 Employ application of concrete in different situations.

Indicator # CT 9: Student will participate in career exploration activities

Level 3: Strategic Thinking	BT9.1 Research career opportunities in residential and commercial (including horizontal and vertical) construction.
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Residential Construction Current Standards

Indicator # RC 1: Understand and apply industry safety procedures

Level 1: Recall	RC1.1 Demonstrate proper industry safety standards.
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Indicator # RC 2: Utilize appropriate industry math skills and formulas

Level 3: Strategic Thinking	RC2.1 Understand and demonstrate basic math skills.
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Indicator # RC 3: Understand concepts of blueprint reading and perform basic survey techniques

Level 2: Skill/Concept	RC3.1 Demonstrate how to read blueprints.
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Level 3: Strategic Thinking	RC3.2 Demonstrate survey techniques and site layout.
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Indicator # RC 4: Identify and understand wood building materials, fasteners, and adhesives

Level 1: Recall	RC4.1 Understand and demonstrate the use of wood building materials.
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Level 1: Recall	RC4.2 Understand and demonstrate the use of fasteners and adhesives.
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Indicator # RC 5: Identify and correctly use appropriate hand, power and pneumatic tools

Level 2: Skill/Concept	RC5.1 Demonstrate safe and proper use of hand tools.
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Level 2: Skill/Concept	RC5.2 Demonstrate safe and proper use of power tools.
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Level 2: Skill/Concept	RC5.3 Demonstrate safe and proper use of pneumatic tools.
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Indicator # RC 6: Integrate concrete technology to achieve thorough construction background

Level 3: Strategic Thinking	RC6.1 Understand and demonstrate the uses of concrete and reinforcing materials.
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Indicator # RC 7: Understand and perform framing of flooring, wall, ceiling and roofing systems

Level 2: Skill/Concept	RC7.1 Understand and demonstrate framing of flooring systems.
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Level 3: Strategic Thinking	RC7.2 Understand and demonstrate framing of wall and ceiling systems.
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Level 3: Strategic Thinking	RC7.3 Understand and demonstrate framing of a roofing systems.
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Construction Trades II-Residential Proposed Standards

Indicator # CTIIR 1: Understand and apply industry safety procedures

Level 1: Recall	CTIIR 1.1 Demonstrate proper industry safety standards.
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Indicator # CTIIR 2: Utilize appropriate industry math skills and formulas

Level 3: Strategic Thinking	CTIIR 2.1 Understand and demonstrate basic math skills.
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Indicator # CTIIR 3: Understand concepts of blueprint reading and perform basic survey techniques

Level 2: Skill/Concept	CTIIR 3.1 Demonstrate how to read blueprints.
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Level 3: Strategic Thinking	CTIIR 3.2 Demonstrate survey techniques and site layout.
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Indicator # CTIIR 4: Identify and understand wood building materials, fasteners, and adhesives

Level 1: Recall	CTIIR 4.1 Understand and demonstrate the use of wood building materials.
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Level 1: Recall	CTIIR 4.2 Understand and demonstrate the use of fasteners and adhesives.
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Indicator # CTIIR 5: Identify and correctly use the appropriate hand, power and pneumatic tools

Level 2: Skill/Concept	CTIIR 5.1 Demonstrate safe and proper use of hand tools.
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Level 2: Skill/Concept	CTIIR 5.2 Demonstrate safe and proper use of power tools.
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Level 2: Skill/Concept	CTIIR 5.3 Demonstrate safe and proper use of pneumatic tools.
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Indicator # CTIIR 6: Integrate concrete technology to achieve thorough construction background

Level 3: Strategic Thinking	CTIIR 6.1 Understand and demonstrate the uses of concrete and reinforcing materials.
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Indicator # CTIIR 7: Understand and perform framing of flooring, wall, ceiling and roofing systems

Level 2: Skill/Concept	CTIIR 7.1 Understand and demonstrate the framing of flooring systems.
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Level 3: Strategic Thinking	CTIIR 7.2 Understand and demonstrate framing of wall and ceiling systems.
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Level 3: Strategic Thinking	CTIIR 7.3 Understand and demonstrate the framing of a roofing system.
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Residential Construction Current Standards

Indicator # RC 8: Understand and demonstrate installation of windows and exterior doors	
Level 2: Skill/Concept	RC8.1 Understand and demonstrate installation of windows.
Level 2: Skill/Concept	RC8.2 Understand and demonstrate installation of exterior doors.

Indicator # RC 9: Identify and perform different exterior finishing methods	
Level 2: Skill/Concept	RC9.1 Understand and demonstrate installation of exterior finish.

Indicator # RC 10: Identify and understand different roofing applications	
Level 2: Skill/Concept	RC10.1 Understand and demonstrate installation of roofing materials.

Indicator # RC 11: Understand the importance of, and properly install, thermal and moisture protection	
Level 2: Skill/Concept	RC11.1 Understand and demonstrate installation of thermal and moisture protection.

Indicator # RC 12: Perform drywall installation and finishing techniques	
Level 2: Skill/Concept	RC12.1 Understand and demonstrate drywall installation.
Level 2: Skill/Concept	RC12.2 Understand and demonstrate drywall finishing.

Indicator # RC 13: Understand methods and complete interior finish work	
Level 2: Skill/Concept	RC13.1 Understand and demonstrate interior finishing.

Indicator # RC 14: Understand the cabinet manufacturing process and install cabinets	
Level 2: Skill/Concept	RC14.1 Understand basic cabinet design and installation.

Construction Trades II-Residential Proposed Standards

Indicator # CTIIR 8: Understand and demonstrate installation of windows and exterior doors	
Level 2: Skill/Concept	CTIIR 8.1 Understand and demonstrate installation of windows.
Level 2: Skill/Concept	CTIIR 8.2 Understand and demonstrate installation of exterior doors.

Indicator # CTIIR 9: Identify and perform different exterior finishing methods	
Level 2: Skill/Concept	CTIIR 9.1 Understand and demonstrate installation of exterior finish.

Indicator # CTIIR 10: Identify and understand different roofing applications	
Level 2: Skill/Concept	CTIIR 10.1 Understand and demonstrate the installation of roofing materials.

Indicator # CTIIR 11: Understand the importance of, and properly install, thermal and moisture protection	
Level 2: Skill/Concept	CTIIR1 1.1 Understand and demonstrate the installation of thermal and moisture protection.

Indicator # CTIIR 12: Perform drywall installation and finishing techniques	
Level 2: Skill/Concept	CTIIR 12.1 Understand and demonstrate drywall installation.
Level 2: Skill/Concept	CTIIR 12.2 Understand and demonstrate drywall finishing.

Indicator # CTIIR 13: Understand methods and complete interior finish work	
Level 2: Skill/Concept	CTIIR 13.1 Understand and demonstrate interior finishing.

Indicator # CTIIR 14: Understand the cabinet manufacturing process and install cabinets	
Level 2: Skill/Concept	CTIIR 14.1 Understand basic cabinet design and installation.

**Residential Construction
Current Standards**

	Indicator # RC 15: Understand and demonstrate installation of stairs.
Level 2: Skill/Concept	RC15.1 Identify the various types and parts of stairs.
Level 2: Skill/Concept	RC15.2 Using appropriate math formula calculate the number and sizes of risers and treads for a stairway.
Level 2: Skill/Concept	RC15.3 Layout and cut stringers.

	Indicator # RC 16: Study the principles and standards of Basic Residential Electric and Plumbing applications
Level 2: Skill/Concept	RC16.1 Understand and demonstrate basic residential electric and plumbing applications.

	Indicator # RC 17: Student will participate in career exploration activities
Level 2: Skill/Concept	RC17.1 Research career opportunities in the Architecture and Construction fields.

**Construction Trades II-Residential
Proposed Standards**

	Indicator # CTIIR 15: Understand and demonstrate the installation of stairs.
Level 2: Skill/Concept	CTIIR 15.1 Identify the various types and parts of stairs.
Level 2: Skill/Concept	CTIIR 15.2 Using appropriate math formula calculate the number and sizes of risers and treads for a stairway.
Level 2: Skill/Concept	CTIIR 15.3 Layout and cut stringers.

	Indicator # CTIIR 16: Study the principles and standards of Basic Residential Electric and Plumbing applications
Level 2: Skill/Concept	CTIIR 16.1 Understand and demonstrate basic residential electric and plumbing applications.

	Indicator # CTIIR 17: Student will participate in career exploration activities
Level 2: Skill/Concept	CTIIR 17.1 Research career opportunities in the Architecture and Construction fields.

Cabinetry

Current Standards

Indicator # C 1: Observe and apply rules and regulations to comply with personal and shop safety.	
Two Apply	C1.1 Apply hand/power tool and lab safety standards.
One Describe	C1.2 Describe and wear appropriate personal protective equipment (PPE) when needed.
One Indicate	C1.3 Indicate a knowledge of government regulations regarding health and safety in the shop.
Indicator # C 2: Explore the different career opportunities in the industry.	
Three Investigate	2.1 Investigate and examine career opportunities in cabinetry industry
Two Demonstrate	2.2 Demonstrate an understanding of necessary job skills needed in cabinetry careers
Indicator # C 3: Apply basic math principles used in the industry.	
Two Demonstrate	3.1 Demonstrate proper use of appropriate math skills
Two Demonstrate	3.2 Demonstrate an understanding of the difference between board feet and linear feet
Two Demonstrate	3.3 Demonstrate proper measuring and layout skills
Indicator # C 4: Identify various materials and apply project planning.	
One Identify	4.1 Identify wood species and engineered materials.
Three Analyze	4.2 Analyze design elements of a project plan
Four Create/Implement	4.3 Create and implement a bill of materials and cut list from a project drawing
One Identify	4.4 Identify various types of hardware, fasteners, and adhesives used in the cabinetry industry
Indicator # C 5: Recognize various cabinetry joinery and assembly techniques.	
Two Demonstrate	5.1 Demonstrate common joinery techniques
Two Demonstrate Assemble	5.2 Demonstrate knowledge of industry concepts to assemble projects
Indicator # C 6: Recognize and apply surface preparation and finishing techniques.	
Two Apply	6.1 Apply surface preparation techniques
Two Apply	6.2 Apply finishing products

Finish Carpentry I

Proposed Standards

Indicator # FCI 1: Observe and apply rules and regulations to comply with personal and shop safety.	
Level 2: Apply	FCI 1.1 Apply hand/power tool and lab safety standards.
Level 1: Describe	FCI 1.2 Describe and wear appropriate personal protective equipment (PPE) when needed.
Level 1: Indicate	FCI 1.3 Indicate knowledge of government regulations regarding health and safety in the shop.
Indicator # FCI 2: Explore the different career opportunities in the industry.	
Level 3: Investigate	FCI 2.1 Investigate and examine career opportunities in the finish carpentry industry
Level 2: Demonstrate	FCI 2.2 Demonstrate an understanding of necessary job skills needed in finish carpentry careers
Indicator # FCI 3: Apply basic math principles used in the industry.	
Level 2: Demonstrate	FCI 3.1 Demonstrate proper use of appropriate math skills
Level 2: Demonstrate	FCI 3.2 Demonstrate an understanding of the difference between board feet and linear feet
Level 2: Demonstrate	FCI 3.3 Demonstrate proper measuring and layout skills
Indicator # FCI 4: Identify various materials and apply project planning.	
Level 1: Identify	FCI 4.1 Identify wood species and engineered materials.
Level 3: Analyze	FCI 4.2 Analyze design elements of a project plan
Level 4: Create/Implement	FCI 4.3 Create a project sketch or drawing, bill of materials and cut list
Level 1: Identify	FCI 4.4 Identify various types of hardware, fasteners, and adhesives used in the cabinetry industry
Indicator # FCI 5: Recognize various joinery and assembly techniques.	
Level 2: Demonstrate	FCI 5.1 Demonstrate common joinery techniques
Level 2: Demonstrate/ Assemble	FCI 5.2 Demonstrate knowledge of industry concepts to assemble projects
Indicator # FCI 6: Recognize and apply surface preparation and finishing techniques.	
Level 2: Apply	FCI 6.1 Apply surface preparation techniques
Level 2: Apply	FCI 6.2 Apply finishing products

Advanced Cabinetry Current Standards

Indicator # AC 1: Demonstrate proper rules and regulations to comply with personal and shop safety.	
One Apply	AC 1.1 Apply hand/power/industrial tool and lab safety practices.
Two Determine	AC 1.2 Determine and wear appropriate personal protective equipment (PPE)
One Comply	AC 1.3 Comply with government regulations regarding health and safety in the shop.
Indicator # AC 2: Evaluate the career market that surrounds the cabinetry industry.	
Three Acquire	2.1 Acquire career information and demonstrate knowledge of the career-planning process
Three Identify	2.2 Identify individual career goals in the cabinetry industry.
Three Develop	2.3 Enhance the development of employment readiness skills
Indicator # AC 3 :Utilize advanced math skills, formulas, and principles used in cabinetry.	
Two Apply	AC 3.1 Apply geometric formulas to determine areas of various structures
Two Apply	AC 3.2 Apply appropriate formulas to determine percentages/decimals
Two Apply	AC 3.3 Apply appropriate formulas to determine ratios, fractions, and proportion measures
Three Apply	AC 3.4 Apply appropriate formulas to determine measurement of dimensions, spaces, and structures
Four Develop Conceptualize	AC 3.5 Develop a model that shows the conceptual understanding of a three-dimensional form from a two-dimensional drawing
One Define	AC 3.6 Define the X,Y,Z coordinates involved in common Computer numeric control (CNC) applications

Finish Carpentry II Proposed Standards

Indicator # FCII 1: Demonstrate proper rules and regulations to comply with personal and shop safety.	
Level 1: Apply	FCII 1.1 Apply hand/power/industrial tool and lab safety practices
Level 2: Determine	FCII 1.2 Determine and wear appropriate personal protective equipment (PPE)
Level 1: Comply	FCII 1.3 Comply with government regulations regarding health and safety in the shop
Indicator # FCII 2: Evaluate the career market that surrounds the finish carpentry industry.	
Level 3: Acquire	FCII 2.1 Acquire residential, civil and commercial career information and demonstrate knowledge of the career-planning process
Level 2: Identify	FCII 2.2 Identify individual career goals in the finish carpentry industry
Level 3: Develop	FCII 2.3 Enhance the development of employment readiness skills
Indicator # FCII 3: Utilize advanced math skills, formulas, and principles used in cabinetry.	
Level 2: Apply	FCII 3.1 Apply geometric formulas to determine areas of various structures
Level 2: Apply	FCII 3.2 Apply appropriate formulas to determine percentages/decimals
Level 2: Apply	FCII 3.3 Apply appropriate formulas to determine ratios, fractions, and proportion measures
Level 2: Apply	FCII 3.4 Apply appropriate formulas to determine measurement of dimensions, spaces, and structures
Level 4: Develop/ Conceptualize	FCII 3.5 Develop a model that shows the conceptual understanding of a three-dimensional model from a two-dimensional drawing
Level 1: Define	FCII 3.6 Define the X, Y, Z coordinates involved in common Computer numeric control (CNC) applications

Advanced Cabinetry Current Standards

	Indicator # AC 4: Identify various materials and evaluate the proper application in project planning.
Three Differentiate	AC 4.1 Differentiate various cabinetry materials and their appropriate applications
Two Identify	AC 4.2 Identify the common grades of lumber and sheet goods
Two Describe	AC 4.3 Describe and identify natural defects in woods
One Utilize	AC 4.4 Utilize proper storage and handling techniques
	Indicator # AC 5: Demonstrate advanced skills and techniques used in industry.
Two Determine	AC 5.1 Determine plumb, level, and square
Two Determine	AC 5.2 Demonstrate proper techniques used in various sawing, shaping, carving, molding, and routing applications
Three Apply Fabricate	AC 5.3 Apply fabricating techniques of various cabinet parts
Three Differentiate	AC 5.4 Differentiate between different styles in cabinets, doors, and drawers
One Identify	AC 5.5 Identify and create the basic wood and mechanical joints used in cabinetry.
	Indicator # AC 6: Demonstrate the use of cabinet fasteners and hardware.
Two Determine	AC 6.1 Determine proper application and use of mechanical fasteners and adhesives
Two Analyze	AC 6.2 Analyze different hinge systems and their applications
Two Analyze	AC 6.3 Analyze various drawer glides and their appropriate applications
	Indicator # AC 7: Demonstrate proper assembly and finish preparation techniques.
Two Develop	AC 7.1 Develop logical assembly process/procedure
Two Demonstrate	AC 7.2 Demonstrate various ways to remove excess adhesive
Two Apply	AC 7.3 Apply surface preparation skills before finishing

Finish Carpentry II Proposed Standards

	Indicator # FCII 4: Identify various materials and evaluate the proper application in project planning.
Level 3: Differentiate	FCII 4.1 Differentiate various cabinetry materials and their appropriate applications
Level 2: Identify	FCII 4.2 Identify the common grades of lumber and sheet goods
Level 2: Describe	FCII 4.3 Describe and identify natural defects in woods
Level 1: Utilize	FCII 4.4 Utilize proper storage and handling techniques
Level 4: Develop	FCII 4.5 Create a project plan, bill of materials, cut list and timeline.
	Indicator # FCII 5: Demonstrate advanced skills and techniques used in industry.
Level 2: Determine	FCII 5.1 Determine plumb, level, and square
Level 2: Determine	FCII 5.2 Demonstrate proper techniques used in various sawing, shaping, carving, molding, and routing applications
Level 3: Apply Fabricate	FCII 5.3 Apply various fabricating techniques in casework and millwork
Level 3: Differentiate	FCII 5.4 Differentiate between different styles in casements
Level 1: Identify	FCII 5.5 Identify and create the basic wood and mechanical joints
	Indicator # FCII 6: Demonstrate the use of fasteners and hardware.
Level 2: Determine	FCII 6.1 Determine proper application and use of mechanical fasteners and adhesives
Level 2: Analyze	FCII 6.2 Analyze different hardware and their applications
	Indicator # FCII 7: Demonstrate proper assembly and finish preparation techniques.
Level 2: Develop	FCII 7.1 Develop logical assembly process/procedure
Level 2: Demonstrate	FCII 7.2 Demonstrate various ways to remove excess adhesive
Level 2: Apply	FCII 7.3 Apply surface preparation skills before finishing

**Advanced Cabinetry
Current Standards**

	Indicator # AC 8: Demonstrate the use of finishing materials and processes.
One Explain	AC 8.1 Explain the purpose and applications of various types of finishes and finishing processes
Three Develop	AC 8.2 Develop and follow a finishing schedule
Two Apply	AC 8.3 Utilize safe and approved methods for cleanup and disposal (OSHA, EPA, DENR)

**Finish Carpentry II
Proposed Standards**

	Indicator # FCII 8: Demonstrate the use of finishing materials and processes.
Level 1: Explain	FCII 8.1 Explain the purpose and applications of various types of finishes and finishing processes
Level 2: Apply	FCII 8.2 Utilize safe and approved methods for cleanup and disposal (OSHA, EPA, DENR)

No previous course

Construction Equipment I Proposed Standards

Indicator #CEI 1: Orientation to the Trade

Level 1: Recall	CEI 1.1 Explain the basic terminology, types, and uses of equipment
Level 1: Recall	CEI 1.2 Identify career opportunities available to construction equipment operators and explain the purpose and objectives of an apprentice training program
Level 1: Recall	CEI 1.3 Explain the responsibilities and characteristics of a good operator
Level 2: Skill/Concept	CEI 1.4 Explain the importance of construction equipment safety
Level 1: Recall	CEI 1.5 Describe preventive maintenance procedures

Indicator #CEI 2: Construction Equipment Safety

Level 1: Recall	CEI 2.1 Explain the importance of safety when working with construction equipment
Level 1: Recall	CEI 2.2 State the purpose of signs, tags, barricades, and lockout/tagout devices used on construction sites
Level 1: Recall	CEI 2.3 Describe the long- and short-term health effects, first-aid measures, handling, and storage, and/or required personal protective equipment (PPE)
Level 1: Recall	CEI 2.4 Identify safeguards used in a highway construction work zone
Level 1: Recall	CEI 2.5 State the general guidelines for a safe operation, maintenance, and transportations of construction equipment
Level 1: Recall	CEI 2.6 Explain the dangers of working around an excavation area with construction equipment
Level 1: Recall	CEI 2.7 Describe the importance of Safety Data Sheets (SDS)

Indicator # CEI 3: FORKLIFTS-Students understand and perform, where possible, lifting, transporting, and placement forklift operations with a focus on safety.

Level 1: Recall	CEI 3.1 Identify the components of forklifts
Level 1: Recall	CEI 3.2 Explain the operations of various components
Level 2: Skill/Concept	CEI 3.3 Describe preventive maintenance procedures
Level 1: Recall	CEI 3.4 Describe startup and operating procedures for forklift

No previous course

Construction Equipment I Proposed Standards

Indicator #CEI 4: ON-ROAD DUMP TRUCKS-Students understand and perform, where possible, appropriate operations using On-Road Dump Trucks.

Level 1: Recall	CEI 4.1 Identify the various types of on-road dump trucks
Level 1: Recall	CEI 4.2 Identify and describe instruments and specialized control systems in dump trucks
Level 1: Recall	CEI 4.3 List the operator inspection and maintenance requirements
Level 1: Recall	CEI 4.4 Explain safe driving practices for dump trucks
Level 2: Skill/Concept	CEI 4.5 Perform basic operations using a dump truck

Indicator #CEI 5: SKID STEER-Students understand and perform, where applicable, usage and proper functionality of skid steers.

Level 1: Recall	CEI 5.1 Identify and describe the components of a skid loader
Level 1: Recall	CEI 5.2 Describe the pre start inspection requirements for skid loader
Level 1: Recall	CEI 5.3 Describe startup, shutdown, and operations procedures for a skid loader

Indicator #CEI 6: INTERPRETING CIVIL DRAWINGS-Students read and interpret construction site drawings to perform operations.

Level 1: Recall	CEI 6.1 Describe types of drawings and prints used in equipment operations
Level 2: Skill/Concept	CEI 6.2 Read and interpret drawings
Level 1: Recall	CEI 6.3 Define common abbreviations
Level 1: Recall	CEI 6.4 Describe how as-built drawings are prepared

Indicator #CEI 7:-EQUIPMENT OPERATION-Students understand and perform, where applicable, operations on various pieces of heavy equipment to demonstrate proper startup, shut off, and maintenance procedures for each piece of machinery.

Level 1: Recall	CEI 7.1 Identify and describe the functions of various components of equipment
Level 1: Recall	CEI 7.2 Describe pre start inspection requirements for various pieces of machinery
Level 1: Recall	CEI 7.3 List task related work activities

No previous course

Construction Equipment II Proposed Standards

Indicator #CEII 1: Orientation to the Trade	
Level 1: Recall	CEII 1.1 Explain the basic terminology, types, and uses of equipment
Level 1: Recall	CEII 1.2 Identify career opportunities available to construction equipment operators and explain the purpose and objectives of an apprentice training program
Level 1: Recall	CEII 1.3 Explain the responsibilities and characteristics of a good operator
Level 2: Skill/Concept	CEII 1.4 Explain the importance of construction equipment safety
Level 1: Recall	CEII 1.5 Describe preventive maintenance procedures

Indicator #CEII 2: Construction Equipment Safety	
Level 1: Recall	CEII 2.1 Explain the importance of safety when working with construction equipment
Level 1: Recall	CEII 2.2 State the purpose of signs, tags, barricades, and lockout/tagout devices used on construction sites
Level 1: Recall	CEII 2.3 Describe the long- and short-term health effects, first-aid measures, handling, storage, and/or required personal protective equipment (PPE)
Level 1: Recall	CEII 2.4 Identify safeguards used in a highway construction work zone
Level 1: Recall	CEII 2.5 State the general guidelines for a safe operation, maintenance, and transportations of construction equipment
Level 1: Recall	CEII 2.6 Explain the dangers of working around an excavation area with construction equipment
Level 1: Recall	CEII 2.7 Describe the importance of Safety Data Sheets (SDS)

Indicator #CEII 3: FORKLIFTS-Students understand and perform, where possible, lifting, transporting, and placement operations with forklifts with an emphasis on safety.	
Level 2: Skill/Concept	CEII 3.1 Demonstrate the operations of various components
Level 1: Recall	CEII 3.2 Perform preventive maintenance procedures and explain the operations of various components

No previous course

Construction Equipment II Proposed Standards

Level 2: Skill/Concept	CEII 3.3 Demonstrate proper startup and operating procedures for forklift
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Indicator #CEII 4: ON-ROAD DUMP TRUCKS-Students understand and perform, where possible, appropriate operations using On-Road Dump Trucks.

Level 1: Recall	CEII 4.1 Review the various types of on-road dump trucks
Level 1: Recall	CEII 4.2 Review the requirements of a CDL for on road dump truck operation
Level 1: Recall	CEII 4.3 Understand the use of instruments and specialized control systems in dump trucks
Level 1: Recall	CEII 4.4 List the operator inspection and maintenance requirements
Level 2: Skill/Concept	CEII 4.5 Demonstrate safe driving practices for dump trucks
Level 2: Skill/Concept	CEII 4.6 Perform basic operations using a dump truck

Indicator #CEII 5: SKID STEER-Students understand and perform, where applicable, usage and proper functionality of skid steers.

Level 2: Skill/Concept	CEII 5.1 Operate a skid loader safely
Level 1: Recall	CEII 5.2 Demonstrate the pre start inspection requirements for skid loader
Level 2: Skill/Concept	CEII 5.3 Demonstrate startup, shutdown, and operations procedures for a skid loader

Indicator #CEII 6: EXCAVATION DIMENSIONS-Students perform calculations to carry out excavation operations.

Level 1: Recall	CEII 6.1 Explain and demonstrate the correct use of formulas for site layout
Level 1: Recall	CEII 6.2 Understand the proper sequence of operations in a formula
Level 1: Recall	CEII 6.3 Demonstrate understanding of different types of angles
Level 2: Skill/Concept	CEII 6.4 Demonstrate how to calculate/estimate area and volume

No previous course

Construction Equipment II Proposed Standards

Indicator #CEII 7: INTERPRETING CIVIL DRAWINGS- Students read and interpret construction site drawings to perform operations.

Level 2: Skill/Concept	CEII 7.1 Analyze types of drawings and prints used in equipment operations
Level 2: Skill/Concept	CEII 7.2 Demonstrate the ability to read and interpret drawings
Level 1: Recall	CEII 7.3 Define common abbreviations
Level 1: Recall	CEII 7.4 Explain the purpose of the plan specifications for projects
Level 1: Recall	CEII 7.5 Describe how as-built drawings are prepared

Indicator #CEII 8: SITE WORK-Students perform appropriate on-site heavy equipment operations including interpreting grade stakes and controlling surface and ground and surface water at a worksite.

Level 1: Recall	CEII 8.1 Explain the purpose of site safety
Level 1: Recall	CEII 8.2 Understand the different types of sites and conditions (e.g. building site, highway site, etc.) and how they differ

Indicator #CEII 9: EQUIPMENT OPERATION-Students understand and perform, where applicable, operations on various pieces of heavy equipment to demonstrate proper startup, shut off, and maintenance procedures for each piece of machinery.

Level 1: Recall	CEII 9.1 Demonstrate the functions of various components of equipment
Level 2: Skill/Concept	CEII 9.2 Demonstrate pre-start inspection requirements for various pieces of machinery
Level 2: Skill/Concept	CEII 9.3 Demonstrate task-related work activities