

**Arkansas Department of Career Education  
Model Framework**

**Course Title:**            **Introductory Craft Skills**

**Career Cluster:**       **Not Applicable**

<b>Secondary – Skilled and Technical Sciences</b>	
Course Number	494480
CIP Number	46
Grade Level	9-12
Prerequisite	None
Course Type	Core
Teacher Certification	566
CTSO	SKILLS   SKILLS
Facility Requirements	<a href="http://arkansasfacilities.arkansas.gov/facilities/academic-facilities-manual">http://arkansasfacilities.arkansas.gov/facilities/academic-facilities-manual</a>
Industry Certifications	<a href="http://www.nccer.org">http://www.nccer.org</a> Certificate in Core Curriculum

**Course Description**

This instructional program prepares individuals to apply technical knowledge and skills in the building, inspecting, and maintaining of structures and related properties. Successful completion will allow student to earn NCCER credential in CORE curriculum. This may be taught as a stand-alone elective. If used as a core requirement for Construction Technology, Welding, Premechatronics or other NCCER courses the instructor needs to be NCCER certified.

**Program Purpose/Structure**

This course is based on the NCCER Core Curriculum. It is recommended that the Career Ready 101 Applied Technology curriculum be used in conjunction with the NCCER curriculum.

**Career and Technical Student Organization (CTSO)**

SkillsUSA

**Arkansas Department of Career Education  
Introductory Craft Skills Student Performance Standards**

<b>Standard 1.0 Demonstrate appropriate safety procedures in a construction lab</b>			
<b>Performance Indicator 1.1 Apply safe work practices and procedures in accordance with OSHA standards.</b>	<b>Recommended Application/Activity Reference NCCER 00101-09</b>	<b>CCSS Standards</b>	<b>CCTC Standards</b>
1.1.1 Explain the importance of a safety culture in the construction crafts and the role of OSHA on the job site.	<ul style="list-style-type: none"> <li>• Demonstrate, define, and identify the safety culture in the construction craft.</li> <li>• Students write an essay on the importance of job safety in the construction craft field, including subpart C.</li> </ul>	W11-12.3	AC3
1.1.2 Identify causes of accidents and the impact of accident costs and apply hazard recognition and risk assessment techniques.	<ul style="list-style-type: none"> <li>• Expose students to visual safety programs.</li> <li>• Have students inspect worksite/shop to find safety hazards.</li> <li>• Have students create a plan to correct the hazard</li> </ul>	R11-12.3	AC3
1.1.3 Explain fall protection, ladder, stair and scaffold procedures and requirements.	<ul style="list-style-type: none"> <li>• Engaging students with visual learning activity.</li> <li>• Set up an extension ladder properly</li> <li>• Demonstrate three-point contact on a ladder</li> <li>• Students need to erect and dismantle scaffolding</li> </ul>	R11-12.1	AC3
1.1.4 Demonstrate safe working procedures and requirements.	<ul style="list-style-type: none"> <li>• Compare struck-by hazards and caught-in-between hazards</li> <li>• Engaging students with visual learning activity</li> <li>• Students research an accident caused by struck-by or caught-in-between hazards and present to class.</li> </ul>		AC3
1.1.5 Explain safe work procedures to use around electrical hazards.	<ul style="list-style-type: none"> <li>• Define the difference between barrier and barricade</li> <li>• How to properly use lock-out, tag-out</li> </ul>		AC3
1.1.6 Demonstrate the use and care of appropriate personal protective equipment (PPE).	<ul style="list-style-type: none"> <li>• Properly don and remove PPE</li> <li>• Proper maintenance “safety goggles, hard hat, and personal fall protection”</li> </ul>	SL11-12.1b	AC3
1.1.7 Explain the importance of hazard communications (HazCom) and Safety Data Sheets (SDSs).	<ul style="list-style-type: none"> <li>• Match SDS sheets to products in the shop area</li> <li>• Write a SDS sheet for a chemical</li> </ul>	R11-12.1	AC3
1.1.8 Identify other construction	<ul style="list-style-type: none"> <li>• Have students to create and do a checklist of all hazards on the job</li> </ul>	R11-12.1	AC3

hazards on your job site, including hazardous material exposures, environmental elements, welding and cutting hazards, confined spaces, and fires.	<p>site/shop</p> <ul style="list-style-type: none"> <li>• Describe fire preventing and firefighting techniques</li> <li>• Demonstrate use of fire extinguisher</li> </ul>		
<b>Performance Indicator 1.2 Recognize hazards and follow safety procedures required for materials handling.</b>	<b>Recommended Application/Activity Reference NCCER 00109-09</b>	<b>CCSS Standards</b>	<b>CCTC Standards</b>
1.2.1 Establish a pre-task plan prior to moving a load.	<ul style="list-style-type: none"> <li>• Verify a shipment off invoice</li> <li>• Create a staging area for material</li> <li>• How to purchase material, transport it, and unload material</li> </ul>	SL11-12.1b	AC1
1.2.2 Use proper materials-handling techniques.	<ul style="list-style-type: none"> <li>• Demonstrate Proper lifting procedures</li> <li>• Proper equipment used</li> <li>• Proper storage and stacking of materials</li> </ul>		AC1

<b>Standard 2.0 Understand and utilize contextual math procedures</b>			
<b>Performance Indicator 2.1 Apply basic mathematical procedures to related tasks.</b>	<b>Recommended Application/Activity Reference NCCER 00102-09</b>	<b>CCSS Standards</b>	<b>CCTC Standards</b>
2.1.1 Add, subtract, multiply, and divide whole numbers, fractions, and decimals with and without a calculator.	<ul style="list-style-type: none"> <li>Calculate a material list for constructing a project</li> <li>Calculate a weekly payroll</li> <li>Calculate a profit/loss statement on a project</li> </ul>	R11-12.9	AC1
2.1.2 Use a standard ruler, a metric ruler, and a measuring tape to measure.	<ul style="list-style-type: none"> <li>Students measure series of objects using standard and metric measuring devices</li> <li>Have students construct a project</li> </ul>	R11-12.9	AC1
2.1.3 Convert decimals and fractions to percentages and percentages to decimals.	<ul style="list-style-type: none"> <li>Demonstrate different techniques verbally/ hands-on for conversations</li> <li>Develop a series of study problems related to industry</li> </ul>	R11-12.9	AC1
<b>Performance Indicator 2.2 Investigate the metric system and apply its use to construction tasks.</b>	<b>Recommended Application/Activity Reference NCCER 00102-09</b>	<b>CCSS Standards</b>	<b>CCTC Standards</b>
2.2.1 Explain what the metric system is and how it is important in the construction trade.	<ul style="list-style-type: none"> <li>Expose students to global construction measurement system</li> <li>Develop a series of study problems related to the global industry</li> </ul>	R11-12.9	AC1
2.2.2 Recognize and use metric units of length, weight, volume, and temperature.	<ul style="list-style-type: none"> <li>Convert standard unit measures to metric units using a standard measure tape, beaker, and scales</li> <li>Develop a series of study problems</li> </ul>	R11-12.9	AC1
<b>Performance Indicator 2.3 Apply geometry concepts to construction tasks.</b>	<b>Recommended Application/Activity Reference NCCER 00102-09</b>	<b>CCSS Standards</b>	<b>CCTC Standards</b>
2.3.1 Recognize basic shapes used in construction.	<ul style="list-style-type: none"> <li>Hands on activities either building or constructing a general structure</li> <li>Students design stairs, trusses, and rafters</li> </ul>		
2.3.2 Apply basic geometry to measure basic construction shapes.	<ul style="list-style-type: none"> <li>Hands on activities either building or constructing a general structure</li> <li>Students design stairs, trusses, and rafters</li> </ul>	R11-12.9	AC1

<b>Standard 3.0 Demonstrate safe use of industry tools</b>			
<b>Performance Indicator 3.1 Safely use and maintain common and/or specialized hand tools.</b>	<b>Recommended Application/Activity Reference NCCER 00103-09</b>	<b>CCSS Standards</b>	<b>CCTC Standards</b>
3.1.1 Recognize and identify some of the basic hand tools and their proper uses in the construction trade. Visually inspect hand tools to determine if they are safe to use. Safely use hand tools	<ul style="list-style-type: none"> <li>• Demonstrate, practice and properly use of hand tools</li> <li>• Students create a research paper and report on the history of hand tools in the industry</li> <li>• Have students inspect hand tools</li> </ul>	SL11-12.1b	AC1
3.1.2 Demonstrate safe use of hand tools.	<ul style="list-style-type: none"> <li>• Visually inspect hand tools for safety.</li> </ul>		
<b>Performance Indicator 3.2 Safely use and maintain common and/or specialized power tools.</b>	<b>Recommended Application/Activity Reference NCCER 00104-09</b>	<b>CCSS Standards</b>	<b>CCTC Standards</b>
3.2.1 Identify power tools commonly used in the construction trades.	<ul style="list-style-type: none"> <li>• Write a summary of how to use a power tool properly</li> </ul>	SL11-12.1b	AC1
3.2.2 Demonstrate proper use and maintenance of power tools.	<ul style="list-style-type: none"> <li>• Demonstrate, practice and properly use of power tools</li> <li>• Demonstrate proper use of power tools</li> <li>• Show how to store and clean power tools properly</li> </ul>		

<b>Standard 4.0 Construction drawings and uses in the industry</b>			
<b>Performance Indicator 4.1 Interpret different types of construction drawings using the terms, components, and symbols of construction drawings.</b>	<b>Recommended Application/Activity Reference NCCER 00105-09</b>	<b>CCSS Standards</b>	<b>CCTC Standards</b>
4.1.1 Recognize and appropriately use basic construction drawing terms, components, and symbols.	<ul style="list-style-type: none"> <li>• Have students draw a blue print</li> <li>• Have students write specifications</li> </ul>	W11-12.5 W11-12.6	AC6
4.1.2 Interpret different classifications of construction drawings.	<ul style="list-style-type: none"> <li>• Have students draw a blue print.</li> <li>• Have students locate detail information by using section cuts, pages, and specifications</li> </ul>	L11-12.4a	AC6
<b>Performance Indicator 4.2 Prepare construction drawings using the terms, components, symbols, and dimensions of construction drawings.</b>	<b>Recommended Application/Activity Reference NCCER 00105-09</b>	<b>CCSS Standards</b>	<b>CCTC Standards</b>
4.2.1 Interpret and use drawing dimensions.	<ul style="list-style-type: none"> <li>• Have students draw a blue print. Have students locate detail information by using section cuts, pages, and specifications</li> </ul>		
4.2.2 Draw a blue print using the symbols and components of a construction drawing.	<ul style="list-style-type: none"> <li>• Have students draw a blue print. Have students locate detail information by using section cuts, pages, and specifications</li> </ul>		

<b>Standard 5.0 Develop employability skills needed for the construction industry</b>			
<b>Performance Indicator 5.1 Develop the basic soft skills of the industry trade including reading, writing, listening, and speaking.</b>	<b>Recommended Application/Activity Reference NCCER 00107-09</b>	<b>CCSS Standards</b>	<b>CCTC Standards</b>
5.1.1 Interpret information and instructions presented in both verbal and written form.	<ul style="list-style-type: none"> <li>Professional Development Program workbook level 1.</li> <li>Instructor fill out a work related form and have students interpret</li> <li>Have students perform a giving task from oral instruction</li> </ul>	SL11-12.1	AC7
5.1.2 Communicate effectively in on-the-job situations using verbal and written skills.	<ul style="list-style-type: none"> <li>Professional Development Program workbook level 1</li> <li>Students write resumes and do mock job interviews</li> </ul>	W11-12.5 W11-12.6	AC7
5.1.3 Communicate effectively on the job using electronic communication devices.	<ul style="list-style-type: none"> <li>Students build a resume on computer and email to the instructor</li> <li>Have students create a memo and email to the instructor</li> </ul>	SL11-12.1 W11-12.6	AC7
<b>Performance Indicator 5.2 Develop the interpersonal skills that are needed to succeed in the construction industry.</b>	<b>Recommended Application/Activity Reference NCCER 00108-09</b>	<b>CCSS Standards</b>	<b>CCTC Standards</b>
5.2.1 Explain the role of an employee in the construction industry.	<ul style="list-style-type: none"> <li>Students define terms</li> <li>Students define what companies are looking for in an employee</li> </ul>	R11-12.1	AC7
5.2.2 Demonstrate critical thinking skills and the ability to solve problems using those skills.	<ul style="list-style-type: none"> <li>Professional Development Program workbook level 1.</li> <li>Create a scenario for students to solve step by step</li> </ul>	R11-12.7	AC7
5.2.3 Demonstrate knowledge of computer systems and explain common uses for computers in the construction	<ul style="list-style-type: none"> <li>Students design a project using auto cad or other drawing software</li> <li>Students design a power point</li> </ul>	R11-12.3 SL11-12.5	AC7
5.2.4 Demonstrate effective relationship skills.	<ul style="list-style-type: none"> <li>Professional Development Program workbook level 1.</li> <li>Students work in groups</li> </ul>	SL11-12.1a	AC7
5.2.5 Recognize workplace issues such as sexual harassment, stress, and substance abuse.	<ul style="list-style-type: none"> <li>Professional Development Program workbook level 1.</li> <li>Visual Aid</li> </ul>	SL11-12.3	AC7

## Common Core State Standards Grades 9-10

### ELA Language Grades 9-10

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 9–10 reading and content, choosing flexibly from a range of strategies. **L9-10.4**
  - a. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word’s position or function in a sentence) as a clue to the meaning of a word or phrase. **L9-10.4a**
  - b. Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., analyze, analysis, analytical; advocate, advocacy). **L9-10.4b**
  - c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, or its etymology. **L9-10.4c**
  - d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary). **L9-10.4d**
6. Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression. **L9-10.6**

### ELA Speaking and Listening Standards Grades 9-10

1. Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 9–10 topics, texts, and issues, building on others’ ideas and expressing their own clearly and persuasively. **SL9-10.1**
  - a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. **SL9-10.1a**
  - b. Work with peers to set rules for collegial discussions and decision-making (e.g., informal consensus, taking votes on key issues, presentation of alternate views), clear goals and deadlines, and individual roles as needed. **SL9-10.1b**
  - c. Propel conversations by posing and responding to questions that relate the current discussion to broader themes or larger ideas; actively incorporate others into the discussion; and clarify, verify, or challenge ideas and conclusions. **SL9-10.1c**
  - d. Respond thoughtfully to diverse perspectives, summarize points of agreement and disagreement, and, when warranted, qualify or justify their own views and understanding and make new connections in light of the evidence and reasoning presented. **SL9-10.1d**
2. Integrate multiple sources of information presented in diverse media or format(e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source. **SL9-10.2**

3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence. **SL9-10.3**
4. Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task. **SL9-10.4**
5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. **SL9-10.5**

### **Reading Standards for Literacy in Science and Technical Subjects Grades 9-10**

1. Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. **R9-10.1**
2. Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text. **R9-10.2**
3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text. **R9-10.3**
4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9–10 texts and topics. **R9-10.4**
5. Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy). **R9-10.5**
6. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address. **R9-10.6**
7. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words. **R9-10.7**
8. Assess the extent to which the reasoning and evidence in a text support the author's claim or a recommendation for solving a scientific or technical problem. **R9-10.8**
9. Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts. **R9-10.9**
10. By the end of grade 10, read and comprehend science/technical texts in the grades 9–10 text complexity band independently and proficiently. **R9-10.10**

### **Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects Grades 9-10**

1. Write arguments focused on discipline-specific content. **W9-10.1**
  - a. Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence. **W9-10.1a**

- b. Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience's knowledge level and concerns. **W9-10.1b**
  - c. Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. **W9-10.1c**
  - d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. **W9-10.1d**
  - e. Provide a concluding statement or section that follows from or supports the argument presented. **W9-10.1e**
2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. **W9-10.2**
- a. Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. **W9-10.2a**
  - b. Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. **W9-10.2b**
  - c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts. **W9-10.2c**
  - d. Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers. **W9-10.2d**
  - e. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. **W9-10.2e**
  - f. Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). **W9-10.2f**
3. Write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. **W9-10.3**
4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience. **W9-10.4**
5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. **W9-10.5**
6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically. **W9-10.6**
7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. **W9-10.7**

8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation. **W9-10.8**
9. Draw evidence from informational texts to support analysis, reflection, and research. **W9-10.9**
10. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. **W9-10.10**

## **Common Career and Technical Core Standards**

### ***Architecture and Construction Career Cluster***

#### **Architecture and Construction Career Cluster Standards**

1. Use vocabulary, symbols, and formulas common to architecture and construction. **AC1**
2. Use architecture and construction skills to create and manage a project. **AC2**
3. Comply with regulations and applicable codes to establish and manage a legal and safe workplace/jobsite. **AC3**
4. Evaluate the nature and scope of the Architecture and Construction Career Cluster and the role architecture and construction play in society and the economy. **AC4**
5. Describe the roles, responsibilities, and relationships found in the architecture and construction trades and professions, including labor/management relationships. **AC5**
6. Read, interpret, and use technical drawings, documents, and specifications to plan a project. **AC6**
7. Describe career opportunities and means to achieve those opportunities in each of the Architecture and Construction Career Pathways. **AC7**

#### **Construction Career Pathway (AC-CST)**

1. Describe contractual relationships between all parties involved in the building process. **AC-CST1**
2. Describe the approval procedures required for the successful completion of a construction project. **AC-CST2**
3. Implement testing and inspection procedures to ensure successful completion of the construction project. **AC-CST3**
4. Apply scheduling practices to ensure the successful completion of a construction project. **AC-CST4**
5. Apply practices and procedures required to maintain jobsite safety. **AC-CST5**
6. Manage relationships with internal and external parties to successfully complete construction projects. **AC-CST6**
7. Compare and contrast the building systems and components required for a construction project. **AC-CST7**
8. Demonstrate the construction crafts required for each phase of a construction project. **AC-CST8**
9. Safely use and maintain appropriate tools, machinery, equipment, and resources to accomplish construction project goals. **AC-CST9**

***Common Career and Technical Core Career Ready Practices (CCTC CRP)***

**Career Ready Practices**

1. Act as a responsible citizen in the workplace and the community. (CRP1)
2. Apply appropriate technical skills and academic knowledge. (CRP2)
3. Practice personal health and understand financial literacy. (CRP3)
4. Communicate clearly, effectively, and with reason. (CRP4)
5. Understand the environmental, social, and economic impacts of decisions. (CRP5)
6. Demonstrate creativity and innovation. (CRP6)
7. Employ valid and reliable research strategies. (CRP7)
8. Utilize critical thinking to make sense of problems and persevere in solving them. (CRP8)
9. Model integrity, ethical leadership, and effective management. (CRP9)
10. Develop an education and career plan aligned to personal goals. (CRP10)
11. Apply technology to enhance productivity. (CRP11)
12. Work productively in teams while integrating cultural/global competence. (CRP12)