

<b>Course Name:</b> Intro to Construction Electricity	<b>District Name:</b> Anchorage School District
Adapted from: _____	Developed by: Sonny Young
Date: October 2006	

<b>EED USE ONLY</b>	Date:
Approval Status:	

<p>▪ <b>Career Cluster:</b> Construction</p> <p>▪ <b>Is this the Completer Course?</b> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> ---&gt; <b>Next Course In Sequence:</b> Construction Electricity ASD # 843000</p> <p>▪ <b>High School Credit =</b> <input type="text" value="0.5"/> ▪ <b>This course will be offered:</b> <input checked="" type="checkbox"/> every year? <b>OR</b> <input type="checkbox"/> every other year?</p> <p>▪ <b>Eligibility for Nationally Recognized Skill Certificate(s)/State License?</b> <input checked="" type="checkbox"/> No OR <input type="checkbox"/> Yes</p> <p>If Yes, identify Certificate(s) or License:</p> <p>▪ <b>Tech Prep:</b> <input checked="" type="checkbox"/> No OR <input type="checkbox"/> Yes</p> <p>If Yes, (1) List Postsecondary Institution:  (2) Name of Course: _____</p> <p>▪ <b>Is this course brokered through another institution or agency?</b> <input checked="" type="checkbox"/> No OR <input type="checkbox"/> Yes</p> <p>If Yes, list institution/agency: _____</p> <p><b>Course #: 810200</b></p>	<p>▪ <b>Prerequisite Course(s):</b> None – Working knowledge of Algebra is helpful</p> <p>Number of postsecondary credits <input type="text"/></p>
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▪ **Course Description** (a brief narrative description – perhaps from the school's registration materials):

▪ **Content Headings/Topics:**

- NCCER Core Curriculum for Construction
- Intro to construction math
- Intro to hand tools
- Intro to power tools
- Intro Wiring residential home

**Source of Occupational Skills Standards**

Source/Organization/Agency	Acronym	Website or Location of Information	Section, Chapters referenced in Performance Standards etc.	Date of Edition or Version
National Center for Construction Education & Research	NCCER	<a href="http://www.NCCER.org">http://www.NCCER.org</a>		
National Electrical Code	NEC	<a href="http://www.electric-find.com/code.htm">http://www.electric-find.com/code.htm</a>		
National Electrical Manufactureers Association	NEMA	<a href="http://www.nema.org/">http://www.nema.org/</a>		
National Fire Protection Association	NFPA			
Occupational Safety & Health Asministration	ASHA	<a href="http://www.osha.gov/">http://www.osha.gov/</a>		

<p align="center"><b>Performance Standards (Learner Outcomes)</b></p>	<p align="center"><b>Occupational Skills Standards</b></p>	<p align="center"><b>Alaska Reading, Writing, Math, Performance Standards</b></p>	<p align="center"><b>Alaska Cultural Standards</b></p>	<p align="center"><b>Alaska Employability Standards</b></p>	<p align="center"><b>All Aspects of Industry</b></p>	<p align="center"><b>Assessment</b></p>
<p><b>NCCER Core Curriculum for Construction</b></p>	<p>Skills USA NCCER</p>					<p>Pre/Post</p>
<p><b>Basic Safety</b></p>	<p>NCCER</p>		<p>C3</p>	<p>A1-6 B1-6</p>	<p>IWE3,6</p>	<p>Review Questions Test NCCER</p>
<p>Identify the responsibilities and personal characteristics of a professional craftsperson.</p>		<p>EB1</p>		<p>B1-6</p>	<p>IWE6</p>	
<p>Explain the role that safety plays in the construction crafts</p>		<p>EB3</p>		<p>A6</p>	<p>IWE3</p>	
<p>Describe what job-site safety means</p>		<p>EB3</p>		<p>A6,7</p>	<p>IWE3</p>	
<p>Explain the appropriate safety precautions around common job-site hazards</p>		<p>EB3</p>		<p>A6</p>	<p>IWE3</p>	
<p>Demonstrate the use and care of appropriate personal protective equipment</p>					<p>IWE3</p>	<p>Demo</p>
<p>Follow safe procedures for lifting heavy objects</p>				<p>A6</p>	<p>IWE3</p>	<p>Demo</p>
<p>Describe safe behavior on and around ladders and scaffolds</p>						
<p>Explain the importance of the HazCom (Hazard Communication Standard) requirements and MSDs (Material Safety Data Sheets)</p>	<p>OSHA</p>	<p>ED2</p>			<p>IWE3,6,8</p>	
<p>Describe fire preventive and fire-fighting techniques</p>					<p>IWE3</p>	
<p>Define safe work procedures around electrical hazards</p>				<p>A6</p>	<p>IWE3</p>	
<p><b>Introduction to Construction Math</b></p>	<p>NCCER</p>				<p>IWE5</p>	<p>Review Questions Test NCCER</p>

Add, subtract, multiply, and divide whole numbers, with and without a calculator		MA1				
Use a standard ruler and a metric ruler to measure		MA2				
Add, subtract, multiply, and divide fractions.		MA3				
Add, subtract, multiply, and divide decimals, with and without a calculator.		MA3				
Convert decimals to percents and percents to fractions.		MA3				
Convert fractions to decimals and decimals to fractions.		MA3				
Explain what the metric system is and how it is important in the construction trade.		MC1				
Recognize and use metric units of length, weight, volume, and temperature.		MA2				
Recognize some of the basic shapes used in the construction industry and apply basic geometry to measure them.		MA5				
<b>Introduction to Hand Tools</b>	NCCER				IWE3	Review Questions Test NCCER
Recognize and identify some of the basic hand tools used in the construction trade.		EB3		A6	IWE3	
Use these tools safely.				A6	IWE3	Demo
Describe the basic procedures for taking care of these tools.				A6	IWE3	
<b>Introduction to Power Tools</b>	NCCER				IWE3,6	Review Questions Test NCCER
Identify commonly used power tools of the construction trade.		EB3			IWE3,6,7	
Use power tools safely.					IWE3	Demo
Explain how to maintain power tools properly.					IWE3,7	
<b>Electrical Safety</b>				A1,6		Pre/Post
Explain the purpose of OSHA and how it promotes job site safety	NCCER OSHA	R4.2		A6	IWE 3,6,8	
Identify electrical hazards and how to avoid or minimize them in the workplace	NCCER			A6	IWE 3	

Explain safety issues concerning lockout/tagout procedures, personal protection using assured grounding and isolation programs, confined space entry, respiratory protection, and fall protection	NCCER	R4.2			IWE 3,8	
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<b>Wiring Residential</b>	NCCER					
Describe how to determine electrical wire service requirements for dwellings					IWE 3,7	
Explain grounding requirements for residential service		R4.2				
Calculate and select service methods for various types of residences		MA2				
Explain the role of the NEC in residential wiring		ME1		A1-7	IWE 3,7	
Compute branch circuit loads and explain their installation requirements		MA2				
Explain the purpose of GFCI's and tell where they must be installed		ME1		A6		
Explain how wiring devices are selected and installed		ME1				
Describe the installation and control of lighting fixtures		ME1			IWE 3,7	

<b>Electrical Theory One</b>	NCCER					
Recognize what atoms are and how they are constructed		MA2				
Define voltage and identify ways in which it can be produced		MA2		A6	IWE 3	
Explain the difference between conductors and insulators		MA2 ME1		A6	IWE 3	
Define the units of measurement used in measuring the properties of electricity		MA2		A6		
Explain the relationship between voltage, current, and resistance		MA2				
Using the formula for Ohm's Law, calculate an unknown value		MA@				
Using the power formula, calculate the amount of power used by a circuit		MA2 MC1				

**NCCER** National Center for Construction Education and Research  
PO Box 141104  
Gainesville, FL 32614-1104  
<http://www.NCCER.org>

**NEC** National Electric Code  
<http://www.electric-find.com/code.htm>

**NEMA** National Electrical Manufacturers Association  
<http://www.nema.org/>

***OSHA*** *Occupational Safety and Health Administration*  
<http://www.osha.gov/>

**State Standards:**

Content Standards for Alaska Students  
Performance Standards for Alaska Students  
Employability Standards for Alaska Students  
Cultural Standards for Alaska Students  
<http://www.eed.state.ak.us/standards/pdf/standards.pdf>

**IWE** The Institute for Workforce Education  
[http://www.asdk12.org/depts/career\\_technology/perfstandards/aspindustry.doc](http://www.asdk12.org/depts/career_technology/perfstandards/aspindustry.doc)  
To address the Perkins Vocational and Technology Education Act of 1990  
To address the School.to.Work (STW) Opportunities Act of 1994