



**BUILDING MAINTENANCE  
TECHNOLOGY  
BUILDING MAINTENANCE  
TECHNICIAN - ELECTRICAL  
SKILLS STANDARDS  
OD43704**

## ***COMPETENCY-BASED EDUCATION: OKLAHOMA'S RECIPE FOR SUCCESS***

### ***BY THE INDUSTRY FOR THE INDUSTRY***

Oklahoma's *CareerTech* system of competency-based education uses industry professionals and certification standards to identify the knowledge and abilities needed to master an occupation. This industry input provides the foundation for development of instructional materials that help prepare the comprehensively trained, highly skilled employees demanded by our workplace partners.

### ***TOOLS FOR SUCCESS***

*CareerTech* relies on three basic instructional components to deliver competency-based instruction: skills standards, curriculum materials, and competency assessments.

**Skills standards** provide the foundation for competency-based instruction in Oklahoma's *CareerTech* system. The skills standards outline the knowledge, skills, and abilities needed to perform related jobs within an industry. Skills standards are aligned with national skills standards; therefore, a student trained to the skills standards possesses technical skills that make him/her employable in both state and national job markets.

**Curriculum materials** contain information and activities that teach students the knowledge and skills outlined in the skills standards. In addition to complementing classroom instruction, curriculum resources provide supplemental activities to enhance learning and provide hands-on training experiences.

**Competency Assessments** test the student over material outlined in the skills standards and taught using the curriculum materials. When used with classroom performance evaluations, written competency assessments provide a means of measuring occupational readiness.

Although each of these components satisfy a unique purpose in competency-based education, they work together to reinforce the skills and abilities students need to gain employment and succeed on the job.

### ***MEASURING SUCCESS***

Written competency assessments are used to evaluate student performance. Results reports communicate competency assessment scores to students and provide a breakdown of assessment results by duty area. The results breakdown shows how well the student has mastered skills needed to perform major job functions and identifies areas of job responsibility that may require additional instruction and/or training.

Group analysis of student results also provides feedback to instructors seeking to improve the effectiveness of career and technology training. Performance patterns in individual duties indicate opportunities to evaluate training methods and customize instruction.

### ***TRUE TO OUR PURPOSE***

"Helping Oklahomans succeed in the workplace" defines the mission of Oklahoma *CareerTech* and its competency-based system of instruction. Skills standards, curriculum, and assessments that identify and reinforce industry expectations provide accountability for programs and assure *CareerTech*'s continued role in preparing skilled workers for a global job market

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**BUILDING MAINTENANCE TECHNOLOGY  
 BUILDING MAINTENANCE TECHNICIAN – ELECTRICAL  
 SKILLS STANDARDS  
 Desired Skill Level Ratings**

- Duty A: Test/Troubleshoot Electrical Systems
- Duty B: Replace/Repair Components
- Duty C: Electrical Tools and Use
- Duty D: Schedule Maintenance and Repair Functions
- Duty ES: Employability Skills

**Desired Skill Level:** The level of training necessary for the student to be employable in the occupation specified:

- 4 – Skilled                      Can perform the task independently with no additional training
- 3 – Moderately Skilled      Has performed the task independently during training program; limited additional training may be required
- 2 – Limited Exposure        Has practiced task during training program; additional training is required to develop the skills
- 1 – No Exposure              No experience or knowledge in this area
- \* - Not Rated                 Tasks included for the benefit of the student's development only

**\*DSL = Desired Skill Level**

**DUTY A: Test/Troubleshoot Electrical Systems**

CODE	TASK	DSL
A.01	Measure voltage/VOM usage	4
A.02	Measure amperage/AMP probe use	3
A.03	Test components for shorts/opens/proper functions	3
A.04	Replace wiring, switches, receptacles, breakers, and fuses (same type/size)	3
A.05	Replace protective covers	3
A.06	Identify wire sizes	3
A.07	Identify conduit types	3

**DUTY B: Replace/Repair Components**

CODE	TASK	DSL
B.01	Replace faulty electrical cords and plugs	4
B.02	Lubricate/clean/replace electric motors	3
B.03	Read and interpret wiring diagrams	3
B.04	Clean and replace filters, AC/heater filter	3

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**DUTY C: Electrical Tools and Use**

CODE	TASK	DSL
C.01	Select common tools and use	3
C.02	Select special tools and use	4
C.03	Maintain tools	3

**DUTY D: Schedule Maintenance and Repair Functions**

CODE	TASK	DSL
D.01	Order materials needed for a job	3
D.02	Schedule labor needed for job	3
D.03	Prepare preventive maintenance schedules	2
D.04	Record preventive maintenance activities	3
D.05	Check performance of corrective maintenance/repair on machinery	3

**DUTY E: Employability Skills**

CODE	TASK	DSL
ES.01	Demonstrate personal characteristics desired by employers <ul style="list-style-type: none"> <li>• Neat appearance</li> <li>• Honest/ethical</li> <li>• High self-esteem</li> <li>• Flexible</li> <li>• Goal oriented</li> <li>• Commitment</li> <li>• Cooperative</li> <li>• Initiative</li> <li>• Responsible</li> <li>• Positive attitude</li> <li>• Good communication skills</li> <li>• Self management</li> <li>• Good attendance</li> <li>• Drug free/alcohol free</li> </ul>	*
ES.02	Demonstrate effective interpersonal skills	*
ES.03	Demonstrate a positive attitude	*
ES.04	Demonstrate customer service skills	*
ES.05	Demonstrate personal resource skills	*
ES.06	Utilize proper telephone techniques	*
ES.07	Use job-related terminology, symbols, and abbreviations	*
ES.08	Interpret and follow oral and written directions	*
ES.09	Recognize the importance of team work and participate as a team member	*
ES.10	Use critical thinking skills in workplace situations	*

ES.11	Demonstrate negotiation skills	*
ES.12	Demonstrate leadership skills	*
ES.13	Understand organization structure and employee roles	*
ES.14	Understand cultural diversity in the workplace	*
ES.15	Explore opportunities for advanced training	*
ES.16	Participate in computer literacy training, when applicable	*
ES.17	Perform self-evaluation to establish/modify career goals	*
ES.18	Identify employment opportunities	*
ES.19	Identify levels of training recommended for related careers	*
ES.20	Understand salary, wages, and benefits packages	*
ES.21	Complete an employment application	*
ES.22	Prepare a resume	*
ES.23	Complete an employment interview	*
ES.24	Complete a W-4 Form	*
	<b>Apply Safety Procedures</b>	
ES.25	Explain the purpose for safety policies	*
ES.26	Discuss the role of OSHA and EPA <ul style="list-style-type: none"> <li>• Locate information in MSDS</li> </ul>	*
ES.27	Participate in OSHA training, if possible <ul style="list-style-type: none"> <li>• Lock Out/Tag Out</li> <li>• HAZCOM <ul style="list-style-type: none"> <li>• MSDS</li> </ul> </li> <li>• Blood Born Pathogens</li> </ul>	*
ES.28	Explain the proper steps in reporting an accident or emergency	*
ES.29	Explain the hazards associated with specific types of equipment and tools	*
ES.30	Perform machine operator safety checks of equipment and accessories, when necessary	*
ES.31	Practice tool safety	*
ES.32	Describe the types of fire hazards found in the workplace	*
ES.33	Discuss electrical hazards	*
ES.34	Demonstrate safe use of personal protective equipment	*
ES.35	Demonstrate safe material handling techniques <ul style="list-style-type: none"> <li>• Lifting</li> <li>• Transporting</li> <li>• Storing</li> </ul>	*
ES.36	Understand established first aid procedures	*
ES.37	Practice good housekeeping	*
ES.38	Comply with company safety policies	*
	<b>Apply Basic Academic Skills</b>	
ES.39	Apply mathematical operations involving whole numbers, fractions, decimals, percentages, mathematical word problems, ratios, etc., when necessary	*

	<ul style="list-style-type: none"> <li>• Addition</li> <li>• Subtraction</li> <li>• Multiplication</li> <li>• Division</li> </ul>	
ES.40	Apply advanced mathematical operations, when necessary <ul style="list-style-type: none"> <li>• Algebra</li> <li>• Geometry</li> <li>• Trigonometry</li> <li>• Calculus</li> <li>• Statistical methods</li> </ul>	*
ES.41	Apply scientific principles, when necessary <ul style="list-style-type: none"> <li>• Physics</li> <li>• Chemistry</li> </ul>	*
ES.42	Interpret charts, table, and graphs	*
	<b>Practice Quality Assurance and Problem Solving Skills</b>	
ES.43	Understand the principles of quality assurance	*
ES.44	Participate in the implementation of quality assurance programs <ul style="list-style-type: none"> <li>• Material and Labor Utilization</li> </ul>	*
ES.45	Identify the effects of continuous quality improvement	*
ES.46	Utilize problem solving and critical thinking techniques to identify and solve problems <ul style="list-style-type: none"> <li>• Brainstorming</li> </ul>	*
ES.47	Discuss data collection techniques for the quality assurance and problem solving process	*
ES.48	Identify opportunities for applying problem solving skills	*
	<b>Utilize Measurement Tools and Techniques</b>	
ES.49	Identify types of measuring instruments	*
ES.50	Use appropriate measurement instrument for a measurement task	*
ES.51	Read measuring instruments	*
ES.52	Identify the appropriate formula and units for a measurement task	*
ES.53	Differentiate between English and Metric measurement systems, when necessary	*
ES.54	Communicate measurements using proper symbols or words	*