



**The University of North Carolina Wilmington**  
**ELECTRONICS SPECIALIST**  
**COMPETENCY PROFILE**

**Description of Work:** Positions in this class perform skilled work in the maintenance and repair of electronics devices, instruments, equipment and/or systems. Work may involve design and construction or modification of electronic devices. Employees operate standard and/or specialized testing equipment while troubleshooting electronic devices and systems. Some positions may be assigned to a specific system while others may work with multiple systems. Examples of equipment/systems maintained by Electronics Specialists include power switchgear and panel-boards with amp meters, power meters and frequency meters, environmental control system, ocean research and monitoring system, fire alarm system, HVAC system, and campus card systems. This may require knowledge of NFPA or other life safety systems codes and standards. Most work is performed independently with little supervision. Guidelines/documentation may be more readily available for lower level positions. Work requires knowledge of electronic principles, mathematical principles and fundamental of physics as applied to electronics.

<b>ROLE DESCRIPTIONS BY COMPETENCY LEVEL</b>		
<b>CONTRIBUTING</b>	<b>JOURNEY</b>	<b>ADVANCED</b>
Employees at this level generally perform preventive maintenance and repair of standard electronic devices or an electronic system with available documentation. May include troubleshooting, analyses, calibrations, and modifications to a variety of devices using standard test equipment. Employees maintain records of routine maintenance and repairs. Non-repetitive work will typically require supervisor involvement in order to ensure the work is performed safely and successfully.	Employees at this level perform maintenance and repair of electronic devices, electronic subsystems and systems where troubleshooting is complicated due to several interconnected devices. Documentation on systems may be fragmented or not available. Employees may modify existing circuitry to improve performance or to provide for special functions. May be involved in development of instrumentation to monitor systems, construct equipment, or verify	Employees at this level are responsible for calibration, maintenance and repairs of complex systems or highly specialized equipment such as radiation protection instruments or ocean research and monitoring program systems. They may design and construct specialized one-of-a-kind devices, using standard circuitry to perform special functions. Work is often novel/innovative/unprecedented

	<p>that systems are installed/upgraded and operating as required. Employees retain maintenance and repair records along with documentation on design and modification plans. Employees may be called upon to review and comment on engineering, design, and construction documents, develop punch lists, and compile and administer preventive and corrective maintenance policies and procedures. Employees participate in the procurement process and monitor maintenance contractor performance. Employees may mentor or serve as technical resource to lower level technicians.</p>	<p>and may require specialized knowledge of the field of endeavor beyond electronics work. May confer with staff in other trades areas or at engineering levels. Employees maintain records of maintenance and repair work, and may report routinely on maintenance within unit. Maintains documentation on design and modification plans. Maintains inventories and purchases electronics supplies. May serve as lead worker and/or technical resource for unit.</p>
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<b>Competency</b>	<b>Definition</b>
<b>Knowledge - Technical</b>	Possession of a designated level of technical skill or knowledge in a specific technical area(s) and the ability to keep up with current developments and trends in areas of expertise. May be acquired through academic, apprenticeship or on-the-job training or a combination of these.
<b>Problem Solving</b>	Ability to identify problems, determine possible solutions, and actively work to resolve the issues
<b>Safety &amp; Health Compliance</b>	Ability to demonstrate an understanding of applicable policies and procedures. Ability to maintain conditions that ensure a healthy and safe working environment.

<b>Competency</b>	<b>Contributing</b>	<b>Journey</b>	<b>Advanced</b>
<b>Knowledge – Technical</b>	Performs a limited variety of recurring and related tasks/functions using basic knowledge of electronic principles and use of standard tools and test equipment. Ability to read and understand schematic and wiring diagrams and maintenance manuals. Ability to systematically troubleshoot standard electronic devices or systems.	Performs a variety of recurring and non-recurring tasks/functions using a working knowledge of electronic principles and use of non-standard tools and specialized test equipment. Ability to modify standard circuitry to improve its performance or to perform special effects. Ability to troubleshoot non-standard electronic devices or devices for which documentation is incomplete or not available. Represents the organization in modification and capital project engineering, design, and construction.	Routinely and consistently performs diverse and complex tasks using considerable knowledge of electronic principles. Tasks require in-depth analysis. May modify and/or design electronic circuits or hardware to complete assignment. Ability to develop innovative electronics troubleshooting and testing procedures. Ability to read and comprehend periodicals on electronics advances and apply new theories and components to design projects. Provides consultation services to clients regarding equipment purchases.
<b>Problem Solving</b>	Identifies and resolves standard/routine problems with electronic devices, equipment, systems through routine inspection and preventive maintenance/testing, after system/equipment failure, or when updating equipment with new technologies. Operates standard test equipment to troubleshoot and	Identifies and may resolve or make recommendations for non-standard/more complex problems with electronic devices, electronic subsystems and systems through inspection and maintenance, or after system/equipment installation/failure. Troubleshoots and evaluates	Anticipates and proactively pursues maintenance issues. Confers with supervisor or client to determine purpose of requested device and operating parameters before designing and constructing device or before diagramming and designing circuits to perform unique, unusual functions.

	repair electronic devices or systems that are well documented with wiring and schematic diagrams and factory maintenance manuals. Resolves problems with hardware and software.	options; chooses appropriate action by considering potential outcomes. Operates specialized test equipment to troubleshoot and repair non-standard electronic devices and systems. Researches electronic literature to modify, build, or interface electronic devices.	Identifies problems with complex systems or electronic instrumentation through preventive and corrective maintenance, with design and implementation/ installation of instruments or through cooperative work with personnel of other programs. Determines circuit configuration and function of complex electronics systems in absence of documentation.
	<b>Contributing</b>	<b>Journey</b>	<b>Advanced</b>
<b>Safety and Health Compliance</b>	Performs tasks and duties safely to avoid danger to self and others. Follows applicable regulations, codes, policies and procedures. Identifies and informs supervisor of potential safety problems. Warns others of potential hazards. Uses appropriate protective equipment following established protocols. Incorporates accident prevention and corrective measures in work related activities. Follows appropriate post-emergency procedures.	Anticipates, identifies, and resolve potential safety problems and unsafe work practices in assigned area. Demonstrates to employees and others, safe ways to perform job tasks or the use of equipment. Informs supervisor of unusual safety concerns and makes recommendations for resolution using applicable codes and regulations. Determines appropriate protective equipment based on established standards. Regularly assesses site and shop operations for safety.	Regularly assesses safety conditions; identifies, communicates, and implements accident prevention and corrective measures in work related activities. Applies applicable regulations, codes to enhance work unit processes and procedures. May train others in proper and safe use of equipment. Anticipates departmental safety issues and takes proactive steps to maximize safe operations and measure the effectiveness of action.

		May interact with vendors and contractors to verify proper installation and operation to ensure safety of faculty and general public.	
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**SPECIAL NOTE**

This is a generalized representation of positions in this class and is not intended to reflect essential functions per ADA. Examples of competencies are typical of the majority of positions, but may not be applicable to all positions. Degrees must be received from appropriately accredited institutions.