

Content Area: Career Readiness, Life Literacies, and Key Skills (NJSLs-CLKS 9.2, 9.3, 9.4) Grades K - 12
 Career and Technical Education: Electrical Technology
 Grades: 9-12

Grade: Dev. Date:

Marking Period	Unit Title	Recommended Instructional Days
<p style="text-align: center;">Marking Periods 1-4</p> <p>Marking Period 1: Safety Skills</p> <p>Marking Period 2: Electrical Theory</p> <p>Marking Period 3: Residential Wiring</p> <p>Marking Period 4: Commercial Wiring</p>	<p>Unit 1: Safety</p> <p>Unit 2: Electrical Theory</p> <p>Unit 3: Residential Wiring</p> <p>Unit 4: Commercial Wiring</p>	<p>MP1: 45 days, Units 1 MP 2 : 45 days, Unit 2 MP3: 45 days, Unit 3 MP 4 : 45 days, Units 4</p>
<p>CTE Disciplinary Concept:</p>		<p>Recommended Activities, Investigations, Interdisciplinary Connections, and/or Student Experiences to Explore NJSLs-CLKS within Unit</p>
<p>Core Ideas: Creativity and Innovation Collaboration with individuals with diverse experiences can aid in the problem-solving process, particularly for global issues where diverse solutions are needed.</p>	<p>Performance Expectation: TECH.9.4.12.CL1: Demonstrate the ability to reflect, analyze, and use creative skills and ideas. TECH.9.4.12.CL2: Identify career pathways that highlight personal talents, skills, and abilities.</p>	
<p>Personal Finance: Life Literacy & Key Skills Disciplinary Concept:</p>		

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<p>Core Ideas: Civic Financial Responsibility The potential for building and using personal wealth includes responsibility to the broader community and an understanding of the legal rights and responsibilities of being a good citizen</p>	<p>Performance Expectation: PFL.9.1.12.CFR.6: Identify and explain the consequences of breaking federal/ state employment laws or financial laws.</p>	<p>Essential Question/s:</p> <p>Why is it important to practice safety? What do safe practices look like in my industry? How can I keep myself and others safe? How do you ensure and promote safety in electrical work, including identifying hazards and using safety equipment? What re the fundamental operating principles of common electrical tools and systems? How do mathematical skills, including calculations for units of measurement and combined operations, apply to electrical work? In what ways can you practically apply safety protocols and trade math skills in simulated electrical scenarios? What key insights and collaborative learning experiences have contributed to your understanding of electrical safety and trade math in the course? What safety measures are essential for hazard-free electrical installations, and how can they be implemented in the electrical field? What are the key differences between direct current (DC) and alternating current (AC), and how do they impact electrical circuits? In what ways can the National Electric Code (NEC) be utilized to navigate and ensure compliance with installation requirements for various electrical devices and wiring methods? How do you apply OHM's law to analyze and calculate electrical circuits in residential wiring? Whais the significance of Kirchhoff's voltage and current laws in the context of residential electric installations? How do you effectively use the National Electric Code to ensure compliance with safety and installation standards in residential wiring? What are the roles in the National Electrical Manufacturers Association (NEMA) and Nationally Recognized Testing Laboratories (NRTL) in the electric industry? Can you demonstrate a thorough understanding of device boxes, their</p>
<p>Career Awareness, Exploration, Preparation, & Training Disciplinary Concept:</p>		
<p>Core Ideas:</p> <p>Career Awareness and Planning There are strategies to improve one's professional value and marketability.</p> <p>Career Awareness and Planning Career planning requires purposeful planning, based on research, self-knowledge, and informed choices.</p>	<p>Performance Expectation:</p> <p>WRK.9.2.12.CAP.2: Develop college and career readiness skills by participating in opportunities such as structured learning experiences, apprenticeships, and dual enrollment programs.</p> <p>WRK.9.2.12.CAP.3: Investigate how continuing education contributes to one's career and personal growth.</p> <p>WRK.9.2.12.CAP.6: Identify transferable skills in career choices and design alternative career plans based on those skills.</p>	
<p>Career Readiness Practices</p>		

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<p><input checked="" type="checkbox"/>_X_CRP1. Act as a responsible and contributing citizen and employee.</p> <p><input checked="" type="checkbox"/>_X_CRP2. Attend to financial well-being.</p> <p><input checked="" type="checkbox"/>_X_CRP3. Consider the environmental, social and economic impacts of decisions.</p> <p><input checked="" type="checkbox"/>_X_CRP4. Demonstrate creativity and innovation.</p> <p><input checked="" type="checkbox"/>_X_CRP5. Utilize critical thinking to make sense of problems and persevere in solving them.</p> <p><input checked="" type="checkbox"/>_X_CRP6. Model integrity, ethical leadership and effective management.</p> <p><input checked="" type="checkbox"/>_X_CRP7. Plan education and career paths aligned to personal goals.</p> <p><input checked="" type="checkbox"/>_X_CRP8. Use technology to enhance productivity, increase collaboration and communicate effectively.</p> <p><input checked="" type="checkbox"/>_X_CRP9. Work productively in teams while using cultural global competence.</p>	<p>types, and the NEC fill requirements for different electrical applications in residential settings?</p> <p>What role do electrical symbols play in conveying information on structure drawings in commercial wiring?</p> <p>How are factors like ampacity and conductor insulation crucial considerations in the selection of conductors for commercial dwellings, following code and industry standards?</p> <p>What considerations and calculations go into determining the required number of branch circuits for specific loads in commercial settings?</p> <p>How is the correct rating for branch-circuit protective devices calculated and determined in the context of commercial wiring?</p> <p>What are the key requirements outlined in Chapter 3 of the National Electric Code (NEC) regarding wiring methods and materials for commercial installations.</p>
<p>Social and Emotional Learning: <i>Competencies</i></p>	<p>Social and Emotional Learning: <i>Sub-Competencies</i></p>

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<ul style="list-style-type: none"> -Self- awareness -Social Awareness -Self- Management -Relationship Skills -Responsibility -Decision-Making 	<ul style="list-style-type: none"> ● Recognizing the importance of self-confidence in handling daily tasks and challenges. ● Demonstrate an awareness of the expectations for social interactions in a variety of ways. ● Demonstrate an understanding of the need for mutual respect when viewpoints differ. ● Recognize the skills needed to establish and achieve personal and educational goals. ● Utilize positive communication and social skills to interact effectively with others. ● Develop, implement, and model effective problem solving and critical thinking skills. 	<p><u>Activity Description:</u></p> <p>Students will complete a “Do Now”, Daily Current Events Discussion, complete lecture notes, learn key terminology (interactive practice), complete Summary and Review in text, and discuss issues for critical thinking and discussion. Exit ticket to ensure understanding. Other interactive activities will be used to make real-life connections to concepts. In addition, students will explore various web destinations to apply content to the real world.</p> <p>Unit1: Introduction into to Electrical Safety. Basic Operating Principles. Trade Math for Electricians. Practical Application. Interactive Learning.</p> <p>Unit 2: Understanding DC Circuits. Electrical Safety Protocols. Introduction to Alternating Current (AC). Application of Kirchhoff’s Law’s. National Electric Code.</p> <p>Unit 3: DC Theory II. Residential Electric Part I. National Electric Code Part I. Device Boxes and Fill Requirements. Switches & Receptacles. Blueprint Reading and Scale Drawings. NEC Compliance Exam. Practical Wiring Project.</p> <p>Unit 4: Interpreting Electrical Symbols Conductor Selection for Commercial Dwellings Branch Circuit Protective Device Rating General Requirements for Wiring Methods and Materials.</p>
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Assessments (Formative) <i>To show evidence of meeting the standard/s, students will successfully engage within:</i>		Assessments (Summative) <i>To show evidence of meeting the standard/s, students will successfully complete:</i>	
<u>Formative Assessments:</u> <ul style="list-style-type: none"> ● Observation ● Class Discussion ● Participation/Questioning ● Assignments ● Graphic Organizers ● Worksheets 		<u>Benchmarks:</u> <ul style="list-style-type: none"> ● Students will obtain a score of 70% or higher, students who complete the proper assigned classwork will be assigned. ● Rubric evaluations <u>Summative Assessments:</u> <ul style="list-style-type: none"> ● Unit Tests ● District Assessments <ul style="list-style-type: none"> ● Project Based ● Math Applications in Electrical Tasks. ● NEC Compliance Project. ● Circuit Analysis ● Residential Wiring Project ● Construction Drawing Analysis ● Branch Circuit Planning 	
Differentiated Student Access to Content: Teaching and Learning Resources/Materials			
Core Resources	Alternate Core Resources <i>IEP/504/At-Risk/ESL</i>	ELL Core Resources	Gifted & Talented Core Resources

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	<ul style="list-style-type: none"> ● Meet with the student’s special education or inclusion teacher prior to initial assessment to learn how to best tailor the format of any classwork, quiz or test to their individual special needs, as well as to discuss whether or not homework is appropriate. ● Provide access to an individual or classroom aide, when required by the student’s IEP or 504, to improve student focus, comprehension and time on task. ● Provide access to modified materials as needed to improve accessibility (slant boards, headphones for auditory processing disorders, gym mats for additional cushioning, active/sensory seating pads, helmets and body padding as required by physical therapist, etc.). Many can be borrowed from a student's special education classroom, or the school’s Occupational or Physical Therapists. 	<ul style="list-style-type: none"> ● Allow access to supplemental materials, including use of online bilingual dictionaries. ● Meet with an ELL trained or inclusion teacher prior to initial assessment to learn how to best tailor the format of any classwork, quiz or test to their individual needs. 	<ul style="list-style-type: none"> ● Connect students to related talent development opportunities, often offered through area colleges, with the assistance of guidance counselors.
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Supplemental Resources			
<p>Technology:</p> <ul style="list-style-type: none"> Assistive technology may be required for students with IEPs and 504s. Access to computers with screen readers, voice recognition software, and talking word processing applications may be beneficial. Some students with limited verbal abilities may require access to assistive communication devices and tablets that can be accessed through the school's speech therapist. <p>Other:</p> <ul style="list-style-type: none"> Online resources 			
Differentiated Student Access to Content: Recommended <i>Strategies & Techniques</i>			
Core Resources	Alternate Core Resources <i>IEP/504/At-Risk/ESL</i>	ELL Core Resources	Gifted & Talented Core

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<ul style="list-style-type: none"> ● Offer resources to students in a variety of ways to accommodate for multiple learning styles. ● Engage all learners through implementation of various resources including visual, audio, and tactile materials. ● Provide easy access to course resources so the student can utilize materials within the classroom or at home to reiterate content learned within the course. 	<ul style="list-style-type: none"> ● Utilize a multi-sensory (Visual, Auditory, Kinesthetic, Tactile) approach as needed during instruction to better engage all learners. ● Provide alternate presentations of skills and steps required for project completion by varying the method (repetition, simple explanations, visual step-by-step guides, additional examples, modeling, etc). ● Allow additional time to complete classwork as needed, when required according to students' IEP or 504 plan. Break assignments up into shorter tasks while repeating directions as needed. Offer additional individual instruction time as needed. 	<ul style="list-style-type: none"> ● Provide extended time to complete classwork and assessments as needed. Assignments and rubrics may need to be modified. ● Provide access to preferred seating, when requested. ● Check often for understanding, and review as needed, providing oral and visual prompts when necessary. 	<ul style="list-style-type: none"> ● Offer pre-assessments to better understand students' strengths, and create an enhanced set of introductory activities accordingly. ● Integrate active teaching and learning opportunities, including grouping gifted students together to push each other academically. ● Propose interest-based extension activities and opportunities for extra credit.
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New Jersey Legislative Statutes and Administrative Code (place an "X" before each law/statute if/when present within the curriculum map)									
X	Amistad Law: <i>N.J.S.A. 18A 52:16A-88</i>	X	Holocaust Law: <i>N.J.S.A. 18A:35-28</i>	X	LGBT and Disabilities Law: <i>N.J.S.A. 18A:35-4.35</i>	X	Diversity & Inclusion: <i>N.J.S.A. 18A:35-4.36a</i>	X	Standards in Action: <i>Climate Change</i>