Kentucky CTE

Engineering Technology: Alternative Energy 210243 (2026–2027)

Apply the design process involving problem identification, conceptualization, research, refinement of preliminary ideas, design analysis, development and implementation, detailed documentation of final design, optimization and final presentation. 1	1 Apply the design process involving problem identification, conceptualization, research, refinement of preliminary ideas, design analysis, development and implementation, detailed documentation of final design, optimization and final presentation. 1
Prepare labs to demonstrate an understanding of AC/DC electrical circuits. 2	2 Prepare labs to demonstrate an understanding of AC/DC electrical circuits. 2
Demonstrate knowledge of the viability of biomass and biofuel. 3	3 Demonstrate knowledge of the viability of biomass and biofuel. 3
Understand and utilize communication skills to plan for and accomplish objectives/goals. 4	4 Understand and utilize communication skills to plan for and accomplish objectives/goals. 4
Understand that chemical bonds require energy to form and release that energy when broken. 5	5 Understand that chemical bonds require energy to form and release that energy when broken. 5

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Evaluate the pros and cons of biodiesel and develop a persuasive argument for the use of biodiesel as an alternative to fossil fuels. 6	6 Evaluate the pros and cons of biodiesel and develop a persuasive argument for the use of biodiesel as an alternative to fossil fuels. 6
Identify and explore the impacts (intended and unintended) of technological advancements in Agriculture and related biotechnologies, Energy and Power, and Transportation Technologies. 7	7 Identify and explore the impacts (intended and unintended) of technological advancements in Agriculture and related biotechnologies, Energy and Power, and Transportation Technologies. 7
Explore the ecological and economic impacts of unethical decisions (case studies and scenarios of regulation violations, whistleblowing, kickbacks, pay-offs, labor disputes, illegal dumping, and straight-pipe sewage). 8	8 Explore the ecological and economic impacts of unethical decisions (case studies and scenarios of regulation violations, whistleblowing, kickbacks, pay-offs, labor disputes, illegal dumping, and straight-pipe sewage). 8
Design and fabricate evaluation tools (instruments, models, simulations, software) that assess the impact of products and systems through information collection and data synthesis. 9	9 Design and fabricate evaluation tools (instruments, models, simulations, software) that assess the impact of products and systems through information collection and data synthesis. 9
Explain the properties and atomic structure of radioactive elements. 10	10 Explain the properties and atomic structure of radioactive elements. 10
De ca rad	Describe how electricity can be generated from radioactive sources. 11

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Demonstrate an understanding of careers in Energy Generation and Transmission/Distribution. 12	**12**	**Demonstrate an understanding of careers in Energy Generation and Transmission/Distribution.** 12

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