Kentucky CTE

Advanced Manufacturing: Industrial Maintenance Technology: Industrial Maintenance Electrical Principles 470322 (2026–2027)

Practice and perform safe shop procedures at all times. 1	1 Practice and perform safe shop procedures at all times. 1
Apply the technical math required for employment opportunities in maintenance. 2	2 Apply the technical math required for employment opportunities in maintenance. 2
Perform all duties with emphasis on integrity, responsibility, quality, discipline and teamwork. 3	3 Perform all duties with emphasis on integrity, responsibility, quality, discipline and teamwork. 3
Review and apply OSHA Standards and the National Electrical Code. 4	4 Review and apply OSHA Standards and the National Electrical Code. 4
Care for, maintain, identify and use basic hand tools. 5	5 Care for, maintain, identify and use basic hand tools. 5
Solder/de-solder electrical connections. 6	6 Solder/de-solder electrical connections. 6
Se[illegible] power supplies. 7	[illegible]et up and operate power supplies. 7

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Compute, measure, and identify the conductance and resistance of conductors and insulators. 8

8 Compute, measure, and identify the conductance and resistance of conductors and insulators. 8

Measure properties of a circuit using VOM and DMM meters. 9

9 Measure properties of a circuit using VOM and DMM meters. 9

Solve electrical circuit problems using Ohm's Law. 10

10 Solve electrical circuit problems using Ohm's Law. 10

Analyze, construct and troubleshoot parallel circuits. 11

11 Analyze, construct and troubleshoot parallel circuits. 11

Analyze, construct and troubleshoot series circuits. 12

12 Analyze, construct and troubleshoot series circuits. 12

Analyze, construct and troubleshoot series-parallel circuits. 13

13 Analyze, construct and troubleshoot series-parallel circuits. 13

Determine the physical and electrical characteristics of capacitors and inductors. 14

14 Determine the physical and electrical characteristics of capacitors and inductors. 14

Analyze basic motors, generator theory and operation. 15

15 Analyze basic motors, generator theory and operation. 15

Write technical reports. 16

16 Write technical reports. 16

Use an oscilloscope to verify the properties of an AC signal. 17

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Determine physical and electrical characteristics of transformers and test procedures. 18

of transformers and test procedures. 18

Compute and measure power in AC circuits. 19

19 Compute and measure power in AC circuits. 19

Apply and demonstrate the Edison system and the three-phase system. 20

20 Apply and demonstrate the Edison system and the three-phase system. 20

Analyze and identify circuit protection. 21

21 Analyze and identify circuit protection. 21

Connect various transformer configurations. 22

22 Connect various transformer configurations. 22

Wire two- and three-way switches. 23

23 Wire two- and three-way switches. 23

Wire single phase circuit. 24

24 Wire single phase circuit. 24

Identify, install, and label circuit breakers, fuses and other overload protection in distribution panels. 25

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Identify appropriate wiring sizes and amperage ratings. 26

26 Identify appropriate wiring sizes and amperage ratings. 26

Identify and install appropriate wiring techniques. 27

27 Identify and install appropriate wiring techniques. 27

Install conductors in various forms of conduit raceways. 28

28 Install conductors in various forms of conduit raceways. 28