

Course Name: Electrical Level I

Contact Hours: 144

Number of Sessions: 48

Number of Hrs./Session: 3

Mode of Instruction: Classroom or Online

Course Description:

Course is designed using the Mike Holt Electrical Apprentice Curriculum.

- Text: -OSHA Construction Safety Training Handbook, 6th Edition J.J. Keller & Associates, ISBN 978-1-60287-891-4, 2010  
(only included for in-person students, **online students must purchase the OSHA book**)  
-Mike Holt's Basic Electrical Theory, 3rd Edition Mike Holt Enterprises ISBN 978-1-932685-39-8, 2011  
-Digital Multimeter Principles, 4th Edition American Technical Publishers, ISBN 978-0-8269-1506-1, 2010  
-2020 Electrical Apprenticeship Program vii www.MikeHolt.com | 888.NEC.CODE Year 1 Outline Based on the 2017 NEC® ELECTRICAL APPRENTICESHIP SUPPLEMENT YEAR 1 Extracted from Mike Holt's Ultimate Training Library Mike Holt's Apprenticeship Supplement Year 1 Mike Holt Enterprises ISBN 978-0-9975452-6-5, 2017  
-National Electrical Code, 2020 Edition National Fire Protection Association, ISBN -978-1455922970  
(**This is purchased by student/sponsor for student.**)

Course Outline:

Introduction | Orientation | Tools

Year 1

- |                                                       |                                           |
|-------------------------------------------------------|-------------------------------------------|
| 1. 1 DC Fundamentals                                  |                                           |
| 2. 2 OSHA Safety Electrical Safety & PPE              | 15 DC Fundamentals Uses Electromagnetism  |
| 3. 3 OSHA Construction Safety Falls/Ladders/Scaffolds | 16 DC Fundamentals The Electrical Circuit |
| 4. 4 DC Fundamentals Matter                           | 17 DC Fundamentals Math                   |
| 5. 5 DC Fundamentals Electron Theory                  | 18 DC Fundamentals Electrical Formulas    |
| 6. 6 DC Fundamentals Magnetism                        | 19 DC Fundamentals Series Circuits        |
| 7. 7 DC Fundamentals Electricity                      | 20 DC Fundamentals Parallel Circuits      |

8. 8 Digital Multimeter Principles

9. Chapters 1 through 4

21 DC Fundamentals Series-Parallel Circuits

10. 9 Digital Multimeter Principles Chapters 5 through 9

22 DC Fundamentals Multiwire Circuits

11. 10 Digital Multimeter Principles Chapter 10

23 Lab 3-Way/4-Way Switching

12. 11 Digital Multimeter Principles Review and Test

24 Flex DaySchool/Instructor Choice

13. 12 Quarter 1 Review

25 Quarter 2 Review

14. 13 Quarter 1 Exam

26 Quarter 2 Exam

### **WINTER BREAK (DECEMBER/72 HOURS)**

27 AC Fundamentals The Electrical System

40 Intro to the NEC/How to Use the NEC (Video)

28 AC Fundamentals Protection Devices

41 Apprenticeship Supplement Articles 90 and 100

29 AC Fundamentals Alternating Current

42 Apprenticeship Supplement Article 110

30 AC Fundamentals Capacitance

43 AC/DC Fundamentals Review

31 AC Fundamentals Inductance

44 Apprenticeship Supplement Grounding and Bonding

32 AC Fundamentals Power Factor & Efficiency

45 Apprenticeship Supplement Grounding & Bonding

33 AC Fundamentals Motors

46 Apprenticeship Supplement Grounding & Bonding

34 AC Fundamentals Generators

47 Quarter 4 Review

35 AC Fundamentals Transformers

48 Year 1 Final Exam

36 Lab Box Fill

37 Lab Box Fill

38 Quarter 3 Review

39 Quarter 3 Exam