

**Electrical Level 4  
2022-2023  
Course Syllabus**

**WEEKS 1 – 12**

Mike Holt’s Understanding the NEC 2020 – Volume 1 (UNEC1)  
 Mike Holt’s Understanding the NEC 2020 – Workbook (UNECWB)  
 Mike Holt’s Understanding the NEC 2020 – Volume 2 (UNEC2)  
 Mike Holt’s Electrical Exam Preparation (MHEP)  
 2020 Practical Calculations for Electricians by Ray Holder (PC)  
 Transformer Exam Calculations by Tom Henry (TEC)  
 2020 National Electric Code (NEC)  
 2020 Ugly’s Electrical References (UGLYS)

<b>WEEK</b>	<b>CONTENT</b>	<b>MATERIALS USED</b>	<b>ASSIGNMENT(S)</b> <i>Numbers listed next to assignment reflect the number of questions.</i>
	Orientation/Introduction of Program Apprenticeship Application (VDOL)	Canvas VDOL Outreach	<b>CANVAS MODULE: 21-22 APPRENTICESHIP ORIENTATION</b>
	VT Electrical Safety Rules	2020 VT Electrical Safety Rules	
	NEC Introduction & Review	NEC Article 90 UGLYS	
	Definitions Requirements for Installations	NEC (Articles 100 &110) UNEC1 PC (Unit 1)	
	Grounded Conductors	NEC (Article 200) Annex E UNEC1	<b>MHEP: CHALLENGE EXAM 1 (50)</b>
	Branch Circuits Feeders	NEC (Article 210 & 215) PC (Unit 2) UNEC1	<b>PCRH: PRACTICE CALCULATIONS EXAM 1 (25)</b>
	Branch Circuit Calculations Outside Branch Circuits & Feeders Cooking Equipment & Appliance Demand Loads	NEC (Article 220 & 225) PC (UNIT 2 & 3) UNEC1	<b>PC: PRACTICE CALCULATIONS EXAM 2 (25)</b>

	Services Overcurrent Protection / Taps Grounding & Bonding	NEC (Articles 230-250) UNEC1	<b>MHEP:</b> CHALLENGE EXAM 2 (50) <b>PC:</b> PRACTICE CALCULATIONS EXAM 3 (25)
	Wiring Methods & Materials	NEC (Article 300, Ch. 9 Tables) UNEC1	<b>MHEP:</b> CHALLENGE EXAM 3 (50)
	Conductor for General Wiring	NEC (Article 310) PC (Unit 4) UNEC1	<b>PC:</b> PRACTICE CALCULATIONS EXAM 4 (25)
	Voltage Drop Enclosures Raceway and Box Fill Chp. 9 Table Review	NEC (Articles 310-314, Ch. 9 Tables) PC (Unit 5) UNEC1	<b>MHEP:</b> CHALLENGE EXAM 4 (50)
	Cable Types: AC, FC, FCC, IGS, MC, MI, NM, NMC, TC, P, SE, USE, UF Conduit Types: IMC, RMC, FMC, LFMC, PVC, HDPE, NUCC, RTRC, LFNC Tubing Types: EMT, FMT, ENT Auxiliary Gutters   Busways   Cablebus Cellular Concrete Floor Raceways Cellular Metal Floor Raceways Metal Wireways   Nonmetallic Wireways Multioutlet Assembly   Nonmetallic Extensions Strut-Type Channel Raceway Surface Metal Raceways Surface Nonmetallic Raceways Underfloor Raceways   Cable Trays Low-Voltage Suspended Ceiling Power Distribution Systems Concealed Knob-and-Tube Wiring Messenger-Supported Wiring Open Wiring on Insulation Outdoor Overhead Conductors over 100 Volts	NEC (Articles 320-399, Annex C) PC (Unit 4) UNEC1	<b>MHEP:</b> CHALLENGE EXAM 5 (50) <b>PC:</b> PRACTICE CALCULATIONS EXAM 5 (25)
	Equipment for General Use Motors Motor Calculations	NEC (Articles 400-430, Annex A & Annex I) PC (Unit 7) UNEC1	<b>MHEP:</b> CHALLENGE EXAM 6 (50) <b>PC:</b> PRACTICE CALCULATIONS EXAM 6 (25)
	Midterm Exam Review	NEC (Articles 90-430)	REVIEW ALL PREVIOUS ASSIGNMENTS

		PC (Units 1, 2, 4, 5, 7)	
	Midterm Exam	Standardized Exam Reviewing Weeks 1-12 Material Covered	CANVAS EXAM (3.5 HOURS TO COMPLETE – 1 ATTEMPT)

**WEEKS 13-24**

Mike Holt's Understanding the NEC 2020 – Volume 1 (UNEC1)  
Mike Holt's Understanding the NEC 2020 – Workbook (UNECWB)  
Mike Holt's Understanding the NEC 2020 – Volume 2 (UNEC2)  
Mike Holt's Electrical Exam Preparation (MHEP)  
2020 Practical Calculations for Electricians by Ray Holder (PCRH)  
Transformer Exam Calculations by Tom Henry (TEC)  
2020 National Electric Code (NEC)  
2020 Ugly's Electrical References (UGLYS)

**\*\*Course curriculum subject to change without notice based on individual class needs\*\***

WEEK	CONTENT	MATERIALS USED	ASSIGNMENT(S)
	AC & Refrigeration Generators Transformers with Calculations	NEC (Articles 440, 445, 450) TEC UNEC1	<b>MHEP:</b> CHALLENGE EXAM 7 (50) <b>TEC:</b> SINGLE-PHASE EXAM 1 (6) <b>TEC:</b> THREE-PHASE EXAM 1 (6)
	Phase Converters   Capacitors Resistors & Reactors   Storage Batteries Equipment Over 1000 Volts	NEC (Articles 455-490) UNEC1	<b>MHEP:</b> CHALLENGE EXAM 8 (50)
	Motor Controls	NEC (Article 430) PC (Unit 7) UNEC1	<b>PC:</b> PRACTICE CALCULATIONS EXAM 7 (25)
	Dwelling Calculations	NEC (Article 220) PC (Unit 8) UNEC1	<b>PC:</b> PRACTICE CALCULATIONS EXAM 8 (25)
	Multifamily Calculations	NEC (Article 220) PC (Unit 9) UNEC1	<b>MHEP:</b> CHALLENGE EXAM 9 (50) <b>PC:</b> PRACTICE CALCULATIONS EXAM 9 (25)
	Commercial Calculations	NEC (Article 220) PC (Unit 10) UNEC1	<b>PC:</b> PRACTICE CALCULATIONS EXAM 10 (25)
	Hazardous Locations   Health Care Assembly Performance Areas, Carnivals, etc. Manufactured Buildings	NEC (Articles 500-590) UNEC2	<b>MHEP:</b> CHALLENGE EXAM 10 (50)

	Agricultural   Mobile Homes & Parks   Temporary		
	Special Equipment Special Conditions Communications Systems	NEC (Articles 600-695, 700-750 &770, 800)	<b>MHEP: CHALLENGE EXAM 11 (50)</b>
	Fire Alarm Systems	NEC (Article 760)	<b>MHEP: CHALLENGE EXAM 12 (50)</b>
	Practice Exam		<b>MHEP: CHALLENGE EXAM 13 (50)</b>
	Practice Exam		<b>MHEP: CHALLENGE EXAM 14 (50)</b>
	Final Exam Review	NEC (Articles 90-840, Ch. 9 Tables) PC (Units 1-10)	REVIEW ALL PREVIOUS ASSIGNMENTS
	Final Exam	Standardized Exam Reviewing Weeks 13-24 Material Covered	CANVAS EXAM (3.5 HOURS TO COMPLETE – 1 ATTEMPT)