

## 2024 - 2025 4th Year Syllabus and Schedule

Test Date:	8/28/2024	Transformers			Level	III	Test Grade:
Syllabus	Title	Book Name	Chapter	Lesson/Lab #	Date	Due Date	
1	Electrical Safety	Transformers Textbook	3	Lesson 1	8/19/2024	8/21/2024	
2	Special Transformers	Transformers Textbook	10	Lesson 2	8/19/2024	8/21/2024	
3	Special Connections	Transformers Textbook	11	Lesson 3	8/21/2024	8/26/2024	
4	Selection and Installation	Transformers Textbook	12	Lesson 4	8/21/2024	8/26/2024	
5	Maintenance and Troubleshooting	Transformers Textbook	13	Lesson 5	8/26/2024	8/28/2024	

Test Date:	10/7/2024	Motor Control			Level	I	Test Grade:
Syllabus	Title	Book Name	Chapter	Lesson/Lab #	Date	Due Date	
<b>Labor Day</b>							<b>9/2/2024</b>
6	Introduction to Magnetic Motor Control	Fundamentals of Motor Control	1	Lesson 1	9/4/2024	9/9/2024	
7	Manual Pilot Devices	Fundamentals of Motor Control	2	Lesson 2	9/9/2024	9/11/2024	
8	Automatic Pilot Devices	Fundamentals of Motor Control	3	Lesson 3	9/11/2024	9/16/2024	
9	Magnetic Control Relays	Fundamentals of Motor Control	4	Lesson 4	9/16/2024	9/18/2024	
10	Control Transformers	Fundamentals of Motor Control	5	Lesson 5	9/18/2024	9/23/2024	
11	Magnetic Contactors	Fundamentals of Motor Control	6	Lesson 6	9/23/2024	9/25/2024	
12	Basic Motor Starters	Fundamentals of Motor Control	6 & 8	Lesson 7	9/25/2024	9/30/2024	
13	Basic Timers	Fundamentals of Motor Control	7	Lesson 8	9/30/2024	10/2/2024	
14	Control Diagrams and Drawings	Fundamentals of Motor Control	8	Lesson 9	10/2/2024	10/7/2024	

Test Date:	11/11/2024	Motor Control			Level	II	Test Grade:
Syllabus	Title	Book Name	Chapter	Lesson/Lab #	Date	Due Date	
15	Basic Electronics for Motor Control Devices	Fundamentals of Motor Control	9	Lesson 1	10/9/2024	10/14/2024	
16	More Electronics for Motor Control Devices	Fundamentals of Motor Control	9	Lesson 2	10/14/2024	10/16/2024	
17	Solid-State Motor Control Pilot Devices	Fundamentals of Motor Control	10	Lesson 3	10/16/2024	10/21/2024	
18	Solid-State Relays	Fundamentals of Motor Control	11	Lesson 4	10/21/2024	10/23/2024	
19	Motor Control Centers	Fundamentals of Motor Control	12	Lesson 5	10/23/2024	10/28/2024	
20	Special Purpose Starters	Fundamentals of Motor Control	12	Lesson 6	10/28/2024	10/30/2024	
21	Electronic Programmable Timers	Fundamentals of Motor Control	13	Lesson 7	10/30/2024	11/4/2024	
22	Special Control Components	Fundamentals of Motor Control	14	Lesson 8	11/4/2024	11/6/2024	
23	AC Motor Speed Control	Fundamentals of Motor Control	15	Lesson 9	11/6/2024	11/11/2024	

Test Date:	12/2/2024	Torque			Level	I	Test Grade:
Syllabus	Title	Book Name	Chapter	Lesson/Lab #	Date	Due Date	
24	Torque Theory	Torque (J242)	CW	Lesson 1	11/27/2024	12/2/2024	
25	Threaded Fasteners Basics	Torque (J242)	CW	Lesson 2	11/27/2024	12/2/2024	
26	Introduction to Torque Applications	Torque (J242)	CW	Lesson 3	11/27/2024	12/2/2024	
27	Torque Products	Torque (J242)	CW	Lesson 4	11/27/2024	12/2/2024	
28	Real World Electrical Torque Applications	Torque (J242)	CW	Lesson 5	11/27/2024	12/2/2024	

**\*\* Gray Area - Complete during Thanksgiving Break**

Test Date	12/2/2024	Orientation			Level	III	Test Grade
Syllabus	Title	Book Name	Chapter	Lesson/Lab #	Date	Due Date	
29	The National Electrical Benefit Fund (NEBF)	Orientation	CW	Lesson 1	11/27/2024	12/2/2024	
30	After Apprenticeship	Orientation	CW	Lesson 2	11/27/2024	12/2/2024	
31	Soon to be an Instructor	Orientation	CW	Lesson 3	11/27/2024	12/2/2024	
32	Your National Program	Orientation	CW	Lesson 4	11/27/2024	12/2/2024	
33	Keys to Success-Motivation and Leadership	Orientation	CW	Lesson 5	11/27/2024	12/2/2024	
34	The National Labor Relations Board	Orientation	CW	Lesson 6	11/27/2024	12/2/2024	
35	The Economics of Unemployment	Orientation	CW	Lesson 7	11/27/2024	12/2/2024	
36	The Realities of Construction	Orientation	CW	Lesson 8	11/27/2024	12/2/2024	

**\*\* Gray Area - Complete during Thanksgiving Break**

Test Date:	12/18/2024	Motor Control			Level	III	Test Grade:
Syllabus	Title	Book Name	Chapter	Lesson/Lab #	Date	Due Date	
37	DC Motor Control	Fundamentals of Motor Control	16	Lesson 1	11/13/2024	11/18/2024	
38	Understanding Analog Signals	Fundamentals of Motor Control	17	Lesson 2	11/18/2024	11/20/2024	
39	Analog Pilot Devices	Fundamentals of Motor Control	18	Lesson 3	11/20/2024	11/25/2024	
40	Working With Solid-State Devices in Motor Control	Fundamentals of Motor Control	19	Lesson 4	11/25/2024	11/27/2024	
41	Variable Frequency Drives	Fundamentals of Motor Control	20	Lesson 5	11/25/2024	11/27/2024	
<b>Thanksgiving (Complete Torque Lessons 1 - 5 and Orientation Lessons 1 - 8)</b>							<b>11/27/2024</b>
42	Programmable Logic Controllers	Fundamentals of Motor Control	21	Lesson 6	12/4/2024	12/9/2024	
43	Controlling Synchronous, Stepper, and Servo Motors	Fundamentals of Motor Control	22	Lesson 7	12/9/2024	12/11/2024	
44	Networked Motor Control	Fundamentals of Motor Control	23	Lesson 8	12/11/2024	12/16/2024	
45	Troubleshooting Electrical Systems	Fundamentals of Motor Control	24	Lesson 9	12/16/2024	12/18/2024	

Test Date:	1/6/2025	Structured Cabling			Level	I	Test Grade:
Syllabus	Title	Book Name		Lesson/Lab #	Date	Due Date	
46	The Need for Structured Cabling Systems	Structured Cabling (S581)		Lesson 1	12/19/2024	1/6/2025	
47	Introduction to Structured Cabling Standards and Codes	Structured Cabling (S581)		Lesson 2	12/19/2024	1/6/2025	
48	Structured Cabling Standards	Structured Cabling (S581)		Lesson 3	12/19/2024	1/6/2025	
49	Cables and Connectors	Structured Cabling (S581)		Lesson 4	12/19/2024	1/6/2025	
50	Structured Cabling System Performance	Structured Cabling (S581)		Lesson 5	12/19/2024	1/6/2025	
51	Unshielded Twisted Pair Connecting Hardware	Structured Cabling (S581)		Lesson 6	12/19/2024	1/6/2025	
52	Telecommunications Pathways and Spaces	Structured Cabling (S581)		Lesson 7	12/19/2024	1/6/2025	
53	Telecommunications Cabling Administration	Structured Cabling (S581)		Lesson 8	12/19/2024	1/6/2025	
54	Telecommunications Grounding and Bonding	Structured Cabling (S581)		Lesson 9	12/19/2024	1/6/2025	
55	Configuring Structured Cabling Systems	Structured Cabling (S581)		Lesson 10	12/19/2024	1/6/2025	
56	Residential Cabling Systems	Structured Cabling (S581)		Lesson 11	12/19/2024	1/6/2025	
57	Certifying the UTP Cabling System	Structured Cabling (S581)		Lesson 12	12/19/2024	1/6/2025	

**\*\* Complete During Winter Break**

Test Date:	1/6/2025	Code, Standards, and Practices 5			Level	I	Test Grade:
Syllabus	Title	Book Name		Lesson/Lab #	Date	Due Date	
58	Installing Electrical Services	National Electric Code 2020		Lesson 1	12/19/2024	1/6/2025	
59	Swimming Pools, Fountains, and Similar Instal	National Electric Code 2020		Lesson 2	12/19/2024	1/6/2025	
60	Understanding Emergency and Standby System	National Electric Code 2020		Lesson 3	12/19/2024	1/6/2025	
61	Over 1000 volt installations	National Electric Code 2020		Lesson 4	12/19/2024	1/6/2025	
62	Remote-Control, Signaling, and Power-Limited Circuits	National Electric Code 2020		Lesson 5	12/19/2024	1/6/2025	
63	2017 NEC Changes - Part 1	National Electric Code 2020		Lesson 6	12/19/2024	1/6/2025	
64	2017 NEC Changes - Part 2	National Electric Code 2020		Lesson 7	12/19/2024	1/6/2025	

**\*\* Complete During Winter Break**

Test Date:	3/26/2025	PLC			Level	I	Test Grade:
Syllabus	Title	Book Name	Chapter	Lesson/Lab #	Date	Due Date	
65	PLC and Electrical Safety	PLC's (S631)	1	Lesson 1	1/8/2025	1/13/2025	
66	PLC Electrical Principles, Ratings, and Circuit Calculations	PLC's (S631)	2	Lesson 2	1/13/2025	1/15/2025	
67	PLC Programming Symbols, Diagrams, and Logic Functions	PLC's (S631)	3	Lesson 3	1/15/2025	1/20/2025	
68	PLC Hardware, Memory, and Operating Cycle	PLC's (S631)	4	Lesson 4	1/20/2025	1/22/2025	
69	PLC Systems, Circuits, and Interface Devices	PLC's (S631)	5	Lesson 5	1/22/2025	1/27/2025	
70	PLC Programming Diagrams, Addresses, and Bit Instructions	PLC's (S631)	6	Lesson 6	2/10/2025	2/10/2025	
71	PLC Programming Timer and Counter Instructions PLC's	PLC's (S631)	7	Lesson 7	2/10/2025	2/12/2025	
72	PLC analog Device Installation, Programming, and Troubleshooting	PLC's (S631)	8	Lesson 8	2/12/2025	2/12/2025	
73	PLC Installations and Startup	PLC's (S631)	9	Lesson 9	2/12/2025	3/10/2025	
<b>AOTY</b>							
<b>Break (3/3/25 - 3/7/25)</b>							
74	Troubleshooting Methods and Test Instrument Operation	PLC's (S631)	10	Lesson 10	3/10/2025	3/17/2025	
75	Testing and Troubleshooting Electrical Devices and PLC Hardware	PLC's (S631)	11	Lesson 11	3/17/2025	3/19/2025	
76	Troubleshooting with PLC Software	PLC's (S631)	12	Lesson 12	3/19/2025	3/24/2025	
77	PLC System Maintenance	PLC's (S631)	13	Lesson 13	3/24/2025	3/26/2025	

Test Date:	4/30/2025	Power Quality			Level	I	Test Grade:
Syllabus	Title	Book Name	Chapter	Lesson/Lab #	Date	Due Date	
78	Why care about power quality?	Power Quality	1	Lesson 1	3/31/2025	4/2/2025	
79	The basics of power quality	Power Quality	2	Lesson 2	4/2/2025	4/7/2025	
80	Safety	Power Quality	3	Lesson 3	4/7/2025	4/9/2025	
81	Using the right tool	Power Quality	4	Lesson 4	4/9/2025	4/14/2025	
82	Monitor setup	Power Quality	5	Lesson 5	4/14/2025	4/16/2025	
83	Data collection and analysis	Power Quality	6	Lesson 6	4/16/2025	4/21/2025	
84	Practical examples	Power Quality	7	Lesson 7	4/21/2025	4/23/2025	
85	Rule of thumb	Power Quality	9	Lesson 8	4/23/2025	4/28/2025	
86	Mitigation equipment	Power Quality	10	Lesson 9	4/28/2025	4/30/2025	

Test Date:	6/4/2025	Building Automation			Level	III	Test Grade:
Syllabus Number	Title	Book Name	Chapter	Lesson/Lab #	Date	Due Date	
87	Introduction to Building Automation	Building Automation	1	Lesson 1	5/5/2025	5/12/2025	
88	Electrical Systems	Building Automation	2	Lesson 2	5/12/2025	5/14/2025	
89	Lighting Sources and Controls	Building Automation	3	Lesson 3	5/14/2025	5/19/2025	
90	Lighting Systems Control Devices	Building Automation	3	Lesson 4	5/19/2025	5/21/2025	
91	HVAC Systems	Building Automation	4	Lesson 5	5/21/2025	5/28/2025	
<b>Memorial Day</b>							
92	Hvac Systems Applications	Building Automation	5	Lesson 6	5/28/2025	6/2/2025	
93	Automated Building Operation and Applications	Building Automation	12	Lesson 7	6/2/2025	6/4/2025	