

NJATC

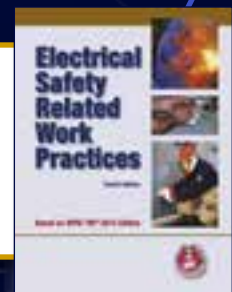
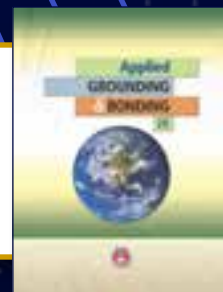
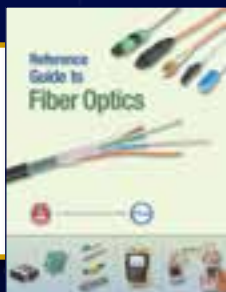
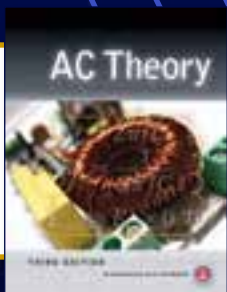
Training Essentials

WALL LEGEND

=====	12" SPLIT FACE CMU
=====	12" SMOOTH FACE CMU
=====	8" SPLIT FACE CMU
=====	8" SMOOTH FACE CMU
=====	2 3/4" W.D. STAIR W/ WOOD FINISHING
=====	8" GLASS CMU
=====	CAST-IN-PLACE CONCR. WALLS

NOTE: REFER TO STRUCTURAL SHEET SA FOR WALL DETAILS

ETCH CONTROL ROOM





Ordering Information

The *National Electrical Code (NEC)* is **NEVER** part of a kit. Code books must be ordered separately.

Ordering Procedures

No Telephone Orders – An *electrical training ALLIANCE* order form **MUST** be completed for every order and sent to the *electrical training ALLIANCE* via mail, fax, or internet. Fax 888.652.5007

You Will Be Billed For Duplicate Orders – Be careful not to send the same order twice (i.e. fax and mail), as the *electrical training ALLIANCE* will assume they are separate orders. In the event that this does occur, the *electrical training ALLIANCE* will credit the duplicate invoice, **ONLY AFTER ALL THE DUPLICATE MERCHANDISE HAS BEEN RETURNED UNDAMAGED**. You will be responsible for all shipping charges for the returned merchandise.

Next Day Air Orders – Orders received **AFTER 2:00PM EST** will be processed the next business day.

Receiving Shipments

You Have 30 Days To Report Missing Or Damaged Merchandise – The *electrical training ALLIANCE* will not replace any item after 30 days from the date of the shipment. After 30 days, you have purchased the missing merchandise.

Check All Shipments – Always count the number of cartons you receive and only sign for what you count. The *electrical training ALLIANCE* cannot replace materials contained in a carton you signed for but did not receive. We track every carton sent on each order.

Use The Enclosed Packing List – Every shipment includes a packing list of all the items shipped and any items that are on backorder. Contact our office immediately if there are any discrepancies between the packing list and the actual shipment.



Items with this treatment added to its image are online courses or available online.

Return Privileges

Do Not Over-Order – The *electrical training ALLIANCE* will not accept returns of unused merchandise for refunds.

Damaged Or Defective Merchandise – Damaged or defective merchandise will be replaced immediately only if the *electrical training ALLIANCE* is notified within 30 days of the shipment. Upon receiving damaged, defective merchandise, or materials that you did not order, notify the *electrical training ALLIANCE* as soon as possible. The *electrical training ALLIANCE* will immediately replace any damaged or defective merchandise, as well as supply you with an AUTHORIZED RETURN LABEL from UPS to return the damaged or defective items.

Absolutely No Returns For A Refund

The *electrical training ALLIANCE* will replace damaged or defective material but there will be NO MONETARY REFUNDS!

Order Forms

- Fill out all information on the *electrical training ALLIANCE* Order Form
- Please be thorough and review your order form before submitting
- Remit payment for all merchandise ordered to:

electrical training ALLIANCE
Attn: Accounts Receivable
5001 Howerton Way, Suite N
Bowie, MD 20715

***electrical training ALLIANCE* Customer Service**

Phone 888.652.4007
Fax 888.652.5007

TABLE OF CONTENTS

SUITES & KITS

Inside Blended Learning	2	Outside Line Construction Kits	12
Inside Printed Workbook Kits	5	Residential Kits	15
Inside Blended Learning Continued	7	Substation Kits	18
Installer/Technician Kits	9	Traffic Signal Kits	21

TOPICS

AC Theory	26	Health Care	48
Blueprints	28	Instrumentation	49
Building Automation: CDA	29	Introduction to Network Technologies	51
Building Automation: SI	30	Job Information	50
CCTV	31	Journeyman Electrician's Exam Workbook	33
Codeology	34	Klein Virtual Boot Camp	41
Code Calculations	35	Lighting Essentials	52
Code and Practices	36	Lightning Protection	53
Conduit Bending and Fabrication	38	Lutron Lighting Controls CET	53
DC Theory	39	Math	54
Digital Electronics	40	Motor Control	55
Distributed Generation	40	Motors	56
Effective Cover-Up CET	59	Motors & Transformers	58
Electric Motor Drive CET	57	<i>NEC 2014</i>	33
Electrical Industry Applications Manual	41	NECA Electrical Project Supervision Textbook (EPS)	43
Electrical Industry Awareness	41	<i>NFPA 70E</i>	42
Electrical Industry Boot Camp	41	<i>NFPA 72, 2013</i>	45
Electrical Safety-Related Work Practices	42	Nurse Call Systems	58
Electrical Systems 2014 <i>NEC</i>	33	Outside	60
Fiber Optics	44	Outside Transformer Trainer CET	59
Field Testing	44	Orientation	63
Fire Alarm	45	OSHA	62
Firestopping Applications	46	Paging Systems	64
Grounding	47	Personal Protective Grounding	65
Hazardous Locations	47		

TOPICS CONTINUED

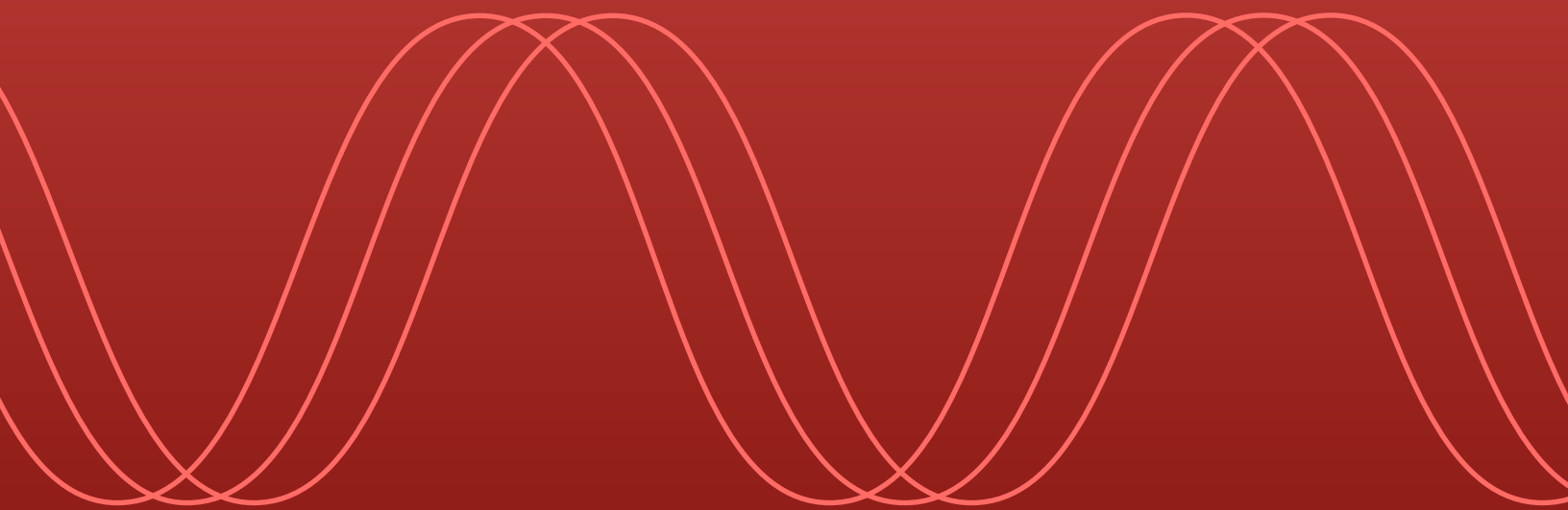
Personal Protective Grounding CET	59	Security	76
Photovoltaic Systems	65	Semiconductor	78
Power Quality	66	Significant Changes to the <i>NEC 2014</i>	32
Programmable Logic Controllers	67	Significant Changes to the <i>70E, 2015</i>	32
Radio Frequency	69	Sound Reinforcement	79
Residential Advanced Technology	70	Structured Cabling	80
Residential Audio & Visual	70	Substation	81
Residential Cabling	71	Success in the Workplace CET	84
Residential Fire Alarm & Carbon Monoxide Systems	46	Telephony	86
Residential Fire Alarm & Security Systems	46	Test Instruments	87
Residential Planning & Design	28	Torque	88
Residential Systems, Automating & Integrating	71	Traffic Signal	89
Residential Wiring Practices	72	Training Director Materials	93
Rigging	74	Transformers	94
Salisbury Rubber Goods CET	59	Ugly's Electrical Reference, 2014 Ed.	32
		Wind Turbine	95

RESOURCES

Course Presentation Software	98	Ace That Test	99
On the Job Training, Supervising, Evaluating, and Certifying	99	Instructor Training DVD Set	100
Interview Techniques	99	Safety Supplementals	100
Instrumentation Trainer Support Program	99	Recruitment DVDs	100
Meeting the Needs of the Electrical Industry Training and Workforce Developments	99	Success in the Workplace DVDs	101
		Documents	103

TRAINERS

Conduit	108	Instrumentation	110
Fire Alarm	109	Programmable Logic Controller	111



Suites & Kits

The image features a minimalist design. On the left, a vertical red line and a horizontal red line intersect to form a crosshair. The text 'Suites & Kits' is positioned to the right of the vertical line. The right side of the image is dominated by a solid red vertical bar. At the bottom of this bar, there are three overlapping, curved red lines that resemble a stylized wave or a series of arches.

1ST
YEARINSIDE
BLENDED
LEARNING

All Blended Learning purchases are made in the LMS Admin Site
lmsadmin.njatc.org

Course	Session	Student	Course	Session	Student
1st Year Syllabus	\$ 2.00	\$ 2.00	DC Theory, Level I <i>featuring Labs and the Electrical Theory Simulator (ETS)</i>	\$ 42.00	\$ 52.00
Code and Practices 1, Level I <i>based on 2014 NEC</i>	\$ 31.00	\$ 26.01	The fundamentals of electricity and DC circuits are presented and built upon with in-depth coverage of Ohm's Law and its relation to voltage, current, resistance, and power.		
The lessons provide an introduction to the <i>NEC</i> and the basics for interpreting the language of the <i>NEC</i> in order to correctly apply its requirements. This course will assist Electrical Workers in becoming more knowledgeable and productive.			Job Information 1, Level I <i>based on 2014 NEC</i>	\$ 31.00	\$ 32.23
Conduit Fabrication, Level I	\$ 31.00	\$ 17.70	Learn about the basic tools of the trade and workplaces of an Electrical Worker. This course covers topics such as proper care and use of ladders, fastening devices, alignment and measurement, building wire construction and fire stopping.		
This course is designed to instruct an Electrical Worker in the basic concepts of conduit bending.			Orientation, Level I	\$ 31.00	\$ 15.61
Conduit Fabrication, Level II	\$ 31.00	\$ 17.70	This is a complete overview of the Apprenticeship program from the history of the IBEW and structure of NECA to the goals and responsibilities of the Electrical Worker.		
Level II builds off of the Level I course and covers advanced techniques in conduit bending as well as mechanical and hydraulic benders.					

Blended
Learning
1st Year
Textbook
Suite

The Textbook Suite is purchased through the bookstore.

Item Title	Item Number	Price
Applications Manual	J300.K	\$ 40.58
Building a Foundation in Mathematics Textbook	S665	\$ 64.00
Conduit Bending and Fabrication Textbook	S495	\$ 60.00
Conduit Fabrication Lab Manual	J204L	\$ 19.38
DC Theory Textbook	S640	\$ 59.00
Electrical Systems 2014 <i>NEC</i>	S770	\$ 58.00
Test Instruments	S471	\$ 53.00
Ugly's Book	S754	\$ 11.00
TI-30X IIS Solar Calculator	S159	\$ 16.83
1st Year Textbook Suite	BL-A1M-SUITE16	\$ 385.71

If additional Math study is needed, see Page 54.

POWERPOINTS ARE INCLUDED WITH COURSES (WHERE AVAILABLE)

2ND YEAR

INSIDE BLENDED LEARNING

Course	Session	Student	Course	Session	Student
2nd Year Syllabus	\$ 2.00	\$ 2.00	Codeology, Level I <i>based on 2014 NEC</i>	\$ 31.00	\$ 28.56
AC Systems, Level I <i>featuring the Electrical Theory Simulator (ETS)</i>	\$ 31.00	\$ 14.28	Through repetition and thorough understanding of the "Build - "Plan" - "Use" concepts, the learner will gain confidence in using the 2014 <i>NEC</i> .		
The learner will compare direct and alternating currents, learn about test instruments, and be introduced to generators.			Electrical Safety-Related Work Practices, Level I <i>based on the 2015 70E</i>	\$ 31.00	\$ 49.98
AC Theory, Level I <i>featuring the Electrical Theory Simulator (ETS)</i>	\$ 42.00	\$ 52.00	Electrical Safety-Related Work Practices, Level I is designed to walk the learner through the basics of Electrical Safety-Related Work Practices. The course is intended to help the learner better understand electrical hazards, lockout and tagout, and the definition of an electrically safe work condition.		
This course builds upon the fundamentals learned in DC Theory, Level II, introducing alternating circuits and the basics of AC Theory.			Orientation, Level II	\$ 31.00	\$ 14.28
Blueprints, Level I	\$ 31.00	\$ 22.00	This course expands on topics associated with the Apprenticeship Program that were covered in Orientation Level I.		
The learner will be introduced to the fundamentals of understanding and drawing blueprints, as well as, the skills required for reading and analyzing residential blueprints.			Transformers, Level I <i>featuring the Transformer Simulator</i>	\$ 76.00	\$ 65.00
Code and Practices 2, Level I <i>based on 2014 NEC</i>	\$ 31.00	\$ 22.89	The fundamentals of transformers are introduced. The learner will be introduced to the basics of transformers and understand overcurrent protection.		
The learner is taken through the process of understanding the principles of the 2014 <i>NEC</i> and applying its requirements directly to the job.					

All Blended Learning purchases are made in the LMS Admin Site lmsadmin.njatc.org

Item Title	Item Number	Price
AC Theory Textbook	S641	\$ 59.00
Applied Codeology	S01714	\$ 45.90
Blueprint Reading for Electricians Textbook	S648	\$ 46.92
Code Calculations	S00814	\$ 40.80
Electrical Safety-Related Work Practices	S744	\$ 52.00
Residential Blueprint	S135	\$ 8.32
Transformer Principles and Applications	S476	\$ 60.00
2nd Year Textbook Suite	BL-A2-SUITE16	\$ 304.62

Blended Learning 2nd Year Textbook Suite

The Textbook Suite is purchased through the bookstore.

The Instructor Guide Kit Complete includes all textbooks in the Student Kit Complete in addition to the items in the table below.

Applications Manual	J300.K	\$ 40.58
Electrical Systems 2014 <i>NEC</i>	S770	\$ 58.00
2nd Year Instructor Suite	BL-A2-SUITE16-I	\$ 403.20

POWERPOINTS ARE INCLUDED WITH COURSES (WHERE AVAILABLE)

3RD YEAR

INSIDE BLENDED LEARNING

All Blended Learning purchases are made in the LMS Admin Site lmsadmin.njatc.org

Course	Session	Student	Course	Session	Student
3rd Year Syllabus	\$ 2.00	\$ 2.00	Fire Alarm Systems, Level I <i>based on the 2014 NEC</i>	\$ 31.00	\$ 23.93
AC Theory, Level II	\$ 42.00	\$ 52.00	The Fire Alarm Systems, Level I course introduces the Electrical Worker to basic systems and the codes and standards that are associated with fire alarm systems.		
Blueprints, Level II	\$ 31.00	\$ 31.00	Grounding and Bonding, Level I <i>based on the 2014 NEC</i>	\$ 35.00	\$ 25.00
Code and Practices 3, Level 1 <i>based on the 2014 NEC</i>	\$ 31.00	\$ 26.01	This series of lessons will introduce the student to the fundamental concepts of grounding and bonding. Level I covers circuit basics and overcurrent protection, Code arrangement, grounding electrodes, requirements for services and grounded conductors, and grounding electrode conductors.		
Electrical Safety-Related Work Practices, Level II <i>based on the 2015 70E</i>	\$ 31.00	\$ 49.98	Rigging, Hoisting, and Signaling, Level I	\$ 31.00	\$ 25.00
This course is designed to teach the learner the important concepts of power factor and power factor correction. The course also provides an introduction to generators and introduces the learner to 3-phase systems.			This course begins with an introduction to hoisting safety, crane types and operation, lift planning, signaling, and load weight and balance calculations. The discussion then moves to fiber ropes and knots, slings and sling hitches, synthetic slings, chains and chain slings, and wire rope and wire rope slings. The course concludes with a discussion on rigging hardware, rigging equipment maintenance, hoists, and block and tackle.		
This course starts with a review of basic fundamentals of blueprints and how they are drawn, which is immediately followed with analyzing and laying out circuits.					
This course will introduce the fundamental concepts of overcurrent protection, the most common types of overcurrent protective devices (OCPDs), operation and sizing, conductor tap rules, and ground fault protection of equipment.					
This course is intended to help the learner better understand when energized work is justified and the requirements for the selection and use of personal and protective equipment.					

Blended Learning 3rd Year Textbook Suite

The Textbook Suite is purchased through the bookstore.

Item Title	Item Number	Price
Applied Grounding and Bonding Textbook	S36814	\$ 55.00
Commercial Blueprints	S136.H	\$ 17.69
Fire Alarm Systems Textbook	S746	\$ 57.00
Rigging, Hoisting, and Signal Practices Textbook	S661	\$ 48.96
3rd Year Textbook Suite	BL-A3-SUITE16	\$ 160.96

The Instructor Guide Kit Complete includes all textbooks in the Student Kit Complete in addition to the items in the table below.

AC Theory Textbook	S641	\$ 59.00
Blueprint Reading for Electricians Textbook	S648	\$ 46.92
Electrical Safety-Related Work Practices	S744	\$ 52.00
Test Instruments	S471	\$ 53.00
Test Instruments Application Manual	J285AM	\$ 37.45
3rd Year Instructor Suite	BL-A3-SUITE16-I	\$ 409.33

POWERPOINTS ARE INCLUDED WITH COURSES (WHERE AVAILABLE) **Reminder:** Order Advanced Courses

Student Workbook Kit

Item Title	Item Number	Price
Core Curriculum Syllabus - 4th Year	J208A4CC.P	\$ 4.50
Code and Practices-4 and 5 SW	J236SW.J	\$ 27.03
Motor Control SW	J209SW.H	\$ 27.05
Motors SW	J206SW.I	\$ 22.89
4th Year Core Curriculum SW Kit 16	A4CCSWK16	\$ 81.50

Instructor Guide Kit

Item Title	Item Number	Price
Core Curriculum Syllabus - 4th Year	J208A4CC.P	\$ 4.50
Code and Practices-4 and 5 IG	J236IG.J	\$ 37.45
Motor Control IG	J209IG .H	\$ 33.66
Motors IG	J206IG.I	\$ 33.96
Blueprints IG	J244IG.I	\$ 37.45
Code Calculations IG	J227IG.J	\$ 35.37
Grounding and Bonding IG	J210IG.J	\$ 41.62
Test Instruments Application Manual	J285AM	\$ 37.45
Test Instruments IG	J285IG.H	\$ 33.29
4th Year Core Curriculum IG Kit 16	A4CCIGK16	\$ 256.00

Items in shaded box signify material that is used this year but was purchased by the student in a previous year.

Student & Instructor Guide Kit Complete

Item Title	Item Number	Price
Industrial Blueprints	S137	\$ 12.48
Motor Control Textbook	S547	\$ 62.00
Motors Textbook	S649	\$ 67.00
4th Year Core Curriculum SW Kit Complete 16	A4CCSWKC16	\$ 222.50

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.

The Instructor Guide Kit Complete includes all textbooks in the Student Kit Complete in addition to the items in the table below.

Item Title	Item Number	Price
Blueprint Reading for Electricians Textbook	S648	\$ 46.92
Code Calculations Textbook	S00814	\$ 40.80
Applied Grounding and Bonding Textbook	S36814	\$ 55.00
Test Instruments Textbook	S471	\$ 53.00
Electrical Systems 2014 NEC	S770	\$ 58.00
4th Year Core Curriculum IG Kit Complete 16	A4CCIGK16	\$ 650.00
4th Year Core Curriculum Instructor Upgrade Kit	A4CCIGUKC16	\$ 80.67

Note: Items in bold are included in the Instructor Upgrade Kit

5TH
YEARINSIDE PRINTED
WORKBOOK KITS

Student Workbook Kit

Items in shaded box signify material that is used this year but was purchased by the student in a previous year.

Item Title	Item Number	Price
Core Curriculum Syllabus-5th Year	J208A5CC.P	\$ 4.50
Rigging SW	J241SW.J	\$ 23.35
Torque SW	J242SW.J	\$ 22.89
5th Year Core Curriculum SW Kit 16	A5CCSWK16	\$ 50.50

Instructor Guide Kit

Item Title	Item Number	Price
Core Curriculum Syllabus-5th Year	J208A5CC.P	\$ 4.50
Rigging IG	J241IG.J	\$ 33.29
Torque IG	J242IG.J	\$ 33.29
Code and Practices-4 and 5 IG	J236IG.J	\$ 37.45
Code Calculations IG	J227IG.I	\$ 35.37
Motor Control IG	J209IG.H	\$ 37.45
Orientation IG	J200IG.I	\$ 50.98
5th Year Core Curriculum IG Kit 16	A5CCIGK16	\$ 208.00

Student & Instructor Guide Kit Complete

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.

Item Title	Item Number	Price
Rigging, Hoisting, and Signaling Principles Textbook	S661	\$ 48.96
Significant Changes to the <i>NEC 2014</i>	S753	\$ 45.90
5th Year Core Curr SW Kit Complete 16	A5CCSWKC16	\$ 145.00

The Instructor Guide Kit Complete includes all textbooks in the Student Kit Complete in addition to the items in the table below.

Item Title	Item Number	Price
Code Calculations Textbook	S00811	\$ 39.78
Motor Control Textbook	S547	\$ 62.00
5th Year Core Curr IG Kit Complete 16	A5CCIGKC16	\$ 400.00
5th Year Course Presentation	ACP5K15	\$ 91.00

4TH YEAR

INSIDE BLENDED LEARNING

Course	Session	Student	Course	Session	Student
4th Year Syllabus	\$ 4.50	\$ 4.50	Motor Control, Level I	\$ 31.00	\$ 11.00
Blueprints, Level III	\$ 31.00	\$ 31.00	Motor Control, Level I explains manually, mechanically, and automatically operated control devices. Both NEMA and IEC contactors and magnetic motor starters are addressed with emphasis on types, functions, and applications. The course concludes with the development and purpose of schematic, wiring, logic, and ladder diagrams, including details on standard drawing techniques for generating and interpretation of ladder diagrams.		
Code Calculations, Level I based on the 2014 NEC	\$ 31.00	\$ 11.00	Motors, Level I	\$ 31.00	\$ 11.50
The Code Calculations Based on the 2014 <i>NEC</i> , Level I course focuses on comprehensive training for solving <i>Code</i> -related mathematical issues. This course covers lessons related to special occupancies, electrical equipment, special equipment, introduction to cable tray systems, installing surface metallic raceways, cable tray fills, ampacity of conductors in cable trays, and electric welders.			The Motors Level I course introduces the learner to theory concepts such as magnetism and induction. After the theory concepts have been mastered, the learner is introduced to motor nameplates, AC alternators, three-phase motors, squirrel-cage motors, wound-rotor motors, and single-phase motors. The course then introduces motor protection, DC motors and generators, starting, and finally <i>NEC</i> requirements and calculations needed for motor installations.		
Grounding and Bonding Level II based on the 2014 NEC	\$ 35.00	\$ 25.00			
Grounding and Bonding Level II concludes with the study of requirements and concepts related to grounding and bonding for communication systems and equipment, GFCI and GFPE, medium- and high-voltage systems, and grounding systems and earth ground test instruments.					

All Blended Learning purchases are made in the LMS Admin Site lmsadmin.njatc.org

Item Title	Item Number	Price
Industrial Blueprints	S137	\$ 12.48
Motor Control Textbook	S547	\$ 62.00
Motors Textbook	S649	\$ 67.00
4th Year Textbook Suite	BL-A4-SUITE16	\$ 129.00

The Instructor Guide Kit Complete includes all textbooks in the Student Kit Complete in addition to the items in the table below.

Applied Grounding and Bonding Textbook	S36814	\$ 55.00
Blueprint Reading for Electricians Textbook	S648	\$ 46.92
Code Calculations	S00814	\$ 40.80
Electrical Systems 2014 <i>NEC</i>	S770	\$ 58.00
Test Instruments	S471	\$ 53.00
Test Instruments Application Manual	J285AM	\$ 37.45
4th Year Instructor Suite	BL-A4-SUITE16-I	\$ 420.17

Blended Learning 4th Year Textbook Suite

The Textbook Suite is purchased through the bookstore.

Reminder: Order Advanced Courses **POWERPOINTS ARE INCLUDED WITH COURSES (WHERE AVAILABLE)**

5TH
YEARINSIDE
BLENDED
LEARNING

All Blended Learning purchases are made in the LMS Admin Site
lmsadmin.njatc.org

Course	Session	Student	Course	Session	Student
5th Year Syllabus	\$ 4.50	\$ 4.50	Torque, Level I	\$ 31.00	\$ 24.00
Code and Practices 4, Level I <i>based on the 2014 NEC</i>	\$ 31.00	\$ 14.00	This course introduces why torque is important in the electrical industry by explaining torque theory, specific definitions, torque conversion, friction, phases of fastening, and factors that affect torque. The Electrical Worker will be introduced to the basic principles of fasteners, which include markings, class/grade, bolt tension and strength, nut strength and compression, the use of washers, and thread identification and pitch.		
This course introduces a number of requirements related to service equipment, swimming pools, fountains, and similar installations. Then, it covers emergency and standby system installation requirements, over 600- and over 1000-volt requirements. The final series of lessons examines changes between editions of the NEC and concludes with preparation to take NEC competency examinations.			Motor Control, Level II	\$ 31.00	\$ 11.00
Code Calculations, Level II <i>based on the 2014 NEC</i>	\$ 31.00	\$ 11.00	Motor Control, Level II, explains solid state input and output devices. Unique motor control devices, including special purpose motor starters, programmable timers, and function specific control components, are presented. The function and operation of AC and DC motor speed control devices are also explained		
The Code Calculations Based on the 2014 NEC, Level II course focuses on comprehensive training for solving Code-related mathematical issues. This course covers lessons related to determining conductor ampacity, finalizing ampacity calculations, performing box size and fill calculations, calculating raceway fill, introduction to electrical load calculations, range and appliance calculations.			Rigging, Hoisting, and Signaling, Level I	\$ 31.00	\$ 25.00
Orientation, Level III	\$ 31.00	\$ 15.61	The course begins with an introduction to hoisting safety, crane types and operation, lift planning, signaling, and load weight and balance calculations. The discussion then moves to fiber ropes and knots, slings and sling hitches, synthetic slings, chains and chain slings, and wire rope and wire rope slings. The course concludes with a discussion on rigging hardware, rigging equipment maintenance, hoists, and block and tackle.		
This course prepares the Electrical Worker for life after the apprenticeship. Topics include NEBF, After Apprenticeship, Soon to be a Journey-Level Worker, Success, Motivation and Leadership, NLRB, Unemployment, and The Realities of Construction.					

Blended
Learning
5th Year
Textbook
Suite

The Textbook Suite is purchased through the bookstore.

Item Title	Item Number	Price
Significant Changes to the <i>NEC 2014</i>	S753	\$ 45.90
Rigging, Hoisting, and Signal Practices Textbook	S661	\$ 48.96
5th Year Textbook Suite	BL-A5-SUITE16	\$ 94.86

The Instructor Guide Kit Complete includes all textbooks in the Student Kit Complete in addition to the items in the table below.

Item Title	Item Number	Price
Code Calculations Textbook	S00811	\$ 39.78
Electrical Systems 2014 <i>NEC</i>	S770	\$ 58.00
Motor Control Textbook	S547	\$ 62.00
5th Year Instructor Suite	BL-A5-SUITE16-I	\$ 254.64

POWERPOINTS ARE INCLUDED WITH COURSES (WHERE AVAILABLE) **Reminder:** Order Advanced Courses

1ST YEAR

INSTALLER/ TECHNICIAN KITS

Student Workbook Kit

Item Title	Item Number	Price
Installer/Tech 1st Year Syllabus	J208T1.P	\$ 4.50
Blueprint SW	J244SW.I	\$ 23.93
Code and Practices-1 SW	J231SW.J	\$ 28.09
DC Theory SW	J202SW.I	\$ 38.76
Fiber Optics SW	J277SW	\$ 22.89
Installer/Tech Job Information - 1 SW	J251SW	\$ 50.98
Orientation SW	J200SW.I	\$ 40.58
Structured Cabling SW	J271SW.I	\$ 24.97
Test Instruments SW	J285SW.H	\$ 22.89
Installer/Tech 1st Yr SW Kit	T1SWK16	\$ 172.38

Instructor Guide Kit

Item Title	Item Number	Price
Installer/Tech 1st Year Syllabus	J208T1.P	\$ 4.50
Blueprint IG	J244IG.I	\$ 37.45
Code and Practices-1 IG	J231IG.J	\$ 35.37
DC Theory IG	J202IG.I	\$ 58.26
Fiber Optics IG	J277IG	\$ 33.29
Installer/Tech Job Information - 1 IG	J251IG	\$ 61.38
Orientation IG	J200IG.I	\$ 50.98
Structured Cabling IG	J271IG.I	\$ 35.37
Test Instruments IG	J285IG.H	\$ 33.29
Installer/Tech 1st Yr IG Kit	T1IGK16	\$ 236.64

Student Workbook & Instructor Guide Kit Complete

Item Title	Item Number	Price
Blueprint Reading for Electricians	S648	\$ 46.92
DC Theory	S640	\$ 59.00
Electrical Systems 2014 <i>NEC</i>	S770	\$ 58.00
Reference Guide to Fiber Optics	S480	\$ 59.00
Field Testing of High Performance Premise Cable	S306	\$ 13.53
Structured Cabling	S581	\$ 42.84
Test Instruments	S471	\$ 53.00
Installer/Tech 1st Yr SW Kit Complete	T1SWKC16	\$ 493.64
Installer/Tech 1st Yr IG Kit Complete	T1IGKC16	\$ 561.00
Installer/Tech Course Presentation	TCP1K15	\$ 91.00

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.

Item Title	Item Number	Price
Building a Foundation in Mathematics SW	J201SW.H	\$ 22.89
Building a Foundation in Mathematics Textbook	S665	\$ 64.00
Building A Foundation in Mathematics Proficiency Evaluation	J201T	\$ 3.64
TI-30X IIS Solar Calculator	S159	\$ 16.83
Installer/Tech 1st Yr SW Kit Complete with Math	T1SWKCM16	\$ 579.00

Item Title	Item Number	Price
Building a Foundation in Mathematics IG	J201IG.H	\$ 41.62
Building a Foundation in Mathematics Textbook	S665	\$ 64.00
TI-30X IIS Solar Calculator	S159	\$ 16.83
Installer/Tech 1st Yr IG Kit Complete with Math	T1IGKCM16	\$ 682.00

Student Workbook & Instructor Guide Kit Complete (with Math)

2ND
YEARINSTALLER/
TECHNICIAN
KITS

Student Workbook Kit

Items in shaded box signify material that is used this year but was purchased by the student in a previous year.

Item Title	Item Number	Price
Installer/Tech 2nd Year Syllabus	J208T2.N	\$ 4.50
AC Theory SW	J203SW.H	\$ 3.06
Fire Alarm SW	J211SW.J	\$ 26.01
Grounding SW	J210SW.J	\$ 31.21
Installer/Tech Code-2 SW	J266SW.J	\$ 19.77
Power Quality SW	J228SW.I	\$ 23.93
Local Area Networks SW	J265SW	\$ 23.93
Paging & Voice Evacuation SW	J263SW	\$ 39.13
Security Systems SW	J264SW.I	\$ 22.89
Telephony SW	J262SW	\$ 26.01
Installer/Tech 2nd Yr Student Workbook Kit	T2SWK16	\$ 162.18

Instructor Guide Kit

Item Title	Item Number	Price
Installer/Tech 2nd Year Syllabus	J208T2.N	\$ 4.50
AC Theory IG	J203IG.H	\$ 54.10
Fire Alarm IG	J211IG.J	\$ 36.41
Grounding IG	J210IG.J	\$ 41.62
Installer/Tech Code-2 IG	J266IG.J	\$ 30.17
Power Quality IG	J228IG.I	\$ 34.33
Local Area Networks IG	J265IG	\$ 34.33
Paging & Voice Evacuation IG	J263IG	\$ 49.54
Security Systems IG	J264IG.I	\$ 33.29
Telephony IG	J262IG	\$ 36.41
Orientation IG	J200IG.I	\$ 50.98
Test Instruments IG	J285IG.H	\$ 33.29
Installer/Tech 2nd Yr Instructor Guide Kit	T2IGK16	\$ 262.14

Student Workbook & Instructor Guide Kit Complete

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.

Item Title	Item Number	Price
AC Theory	S541	\$ 58.00
Applied Grounding and Bonding	S36814	\$ 55.00
Fire Alarm Systems	S746	\$ 57.00
GE/Sentrol Reference Guide	S312-06	\$ 49.98
Harris Handbook on Basic Telephony	S281	\$ 15.61
Introduction To Network Technology	S482	\$ 53.00
Power Quality Analysis Text	S569	\$ 41.82
Security, ID Systems and Locks	S305	\$ 47.94
Electrical Systems 2014 <i>NEC</i>	S770	\$ 58.00
Test Instruments	S471	\$ 53.00
Installer/Tech 2nd Yr SW Kit Complete	T2SWKC16	\$ 531.42
Installer/Tech 2nd Yr IG Kit Complete	T2IGKC16	\$ 621.18
Installer/Tech Course Presentation	TCP2K14	\$ 91.00

Student Workbook Kit

Item Title	Item Number	Price
Installer/Tech 3rd Year Syllabus	J208T3.M	\$ 4.50
Building Automation: CDA SW	J238SW.H	\$ 22.89
I/T CCTV SW	J268SW	\$ 22.89
Nurse Call Systems SW	J267SW	\$ 41.62
Residential Advanced Tech SW	J275SW	\$ 38.49
RF Communications SW	J274SW	\$ 18.73
Semiconductor SW	J215SW.H	\$ 29.13
Sound Reinforcement Systems SW	J269SW	\$ 19.77
Installer/Tech 3rd Yr SW Kit	T3SWK16	\$ 148.41

Instructor Guide Kit

Item Title	Item Number	Price
Installer/Tech 3rd Year Syllabus	J208T3.M	\$ 4.50
Building Automation: CDA IG	J238IG.H	\$ 33.29
I/T CCTV IG	J268IG	\$ 35.37
Nurse Call Systems IG	J267IG	\$ 52.02
Residential Advanced Tech IG	J275IG	\$ 48.90
RF Communications IG	J274IG	\$ 29.13
Semiconductor IG	J215IG.H	\$ 49.54
Sound Reinforcement Systems IG	J269IG	\$ 30.17
DC Theory IG	J202IG.I	\$ 58.26
Orientation IG	J200IG.H	\$ 49.98
Installer/Tech 3rd Yr IG Kit	T3IGK16	\$ 264.18

Items in shaded box signify material that is used this year but was purchased by the student in a previous year.

Student Workbook & Instructor Guide Kit Complete

Item Title	Item Number	Price
Building Automation: Control Devices and Applications	S518	\$ 61.00
CCTV Surveillance Video Practice & Technology	S404	\$ 66.00
Residential Audio & Video Systems	S484	\$ 42.84
Automating and Integrating Residential Systems	S486	\$ 32.64
Residential Cabling Tech	S485	\$ 42.84
Principles of RF Communications	S487	\$ 47.94
Semiconductor	S542	\$ 59.00
Sound Reinforcement Handbook	S479	\$ 39.78
DC Theory	S640	\$ 59.00
Installer/Tech 3rd Yr SW Kit Complete	T3SWKC16	\$ 501.33
Installer/Tech 3rd Yr IG Kit Complete	T3IGKC16	\$ 637.50
Installer/Tech Course Presentation	TCP3K15	\$ 91.00

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.

1ST YEAR

OUTSIDE LINE CONSTRUCTION

Blended Learning Suite

Item Title	Item Number	Price
Building a Foundation in Mathematics	S665	\$ 64.00
DC Theory	S640	\$ 59.00
The Guidebook for Linemen & Cablemen	S566	\$ 66.00
The Lineworker's Rigging Handbook	S467	\$ 52.00
Underground Distribution	S468	\$ 79.00
NJATC's Safety Handbook	S184	\$ 21.42
TI-30X IIS Solar Calculator	S159	\$ 16.83
1st Year Lineman Test	OAT-1	\$ 7.28
1st Year Lineman Answer Key	OATAK-1	\$ 17.69
1st Year Lineman SW Kit Complete	OA1SLKC	\$ 472.22
1st Year Lineman IG Kit Complete	OA1SLIGKC	\$ 503.55



ONLINE SOLUTION

Pricing

OA1SLK \$ 135.25

OA1SLIGK \$ 180.60

Blended Learning Suite

Item Title	Item Number	Price
AC Theory	S641	\$ 59.00
Distribution Volume I: Transformer Theory for Line People	S036	\$ 18.73
Traffic Control Flagger's Certification Handbook	S348	\$ 9.18
Terminations & Splices Theory-Practice	S094	\$ 12.48
Test Instruments Textbook	S471	\$ 53.00
Transformation for Lineworkers	S458	\$ 52.00
Online Access to Transformer Simulator	OATS1	\$ 89.47
Building a Foundation in Mathematics	S665	\$ 64.00
The Guidebook for Linemen and Cablemen	S566	\$ 66.00
The Lineworker's Rigging Handbook	S467	\$ 52.00
Underground Distribution	S468	\$ 79.00
NJATC's Safety Handbook	S184	\$ 21.42
2nd Year Lineman Test	OAT-2	\$ 7.28
2nd Year Lineman Answer Key	OATAK-2	\$ 17.69
2nd Year Lineman SW Kit Complete	OA2SLKC	\$ 404.09
2nd Year Lineman IG Kit Complete	OA2SLIGKC	\$ 727.45

ONLINE SOLUTION

Pricing

OA2SLK

\$ 227.85

OA2SLIGK

\$ 280.91



3RD
YEAROUTSIDE LINE
CONSTRUCTION

Blended Learning Suite

Item Title	Item Number	Price
Distribution Volume II: Capacitors, Regulators, Circuit Protection	S037	\$ 18.73
Hot Sticks: A Manual on High Voltage Line Maintenance	S035	\$ 23.46
Live Line Work Practices	S459	\$ 79.00
Personal Protective Grounding for Worker Safety	S462	\$ 42.84
Substation Construction Guidelines	S496	\$ 51.00
Online Access to Transformer Simulator	OATS2	\$ 45.26
AC Theory	S641	\$ 59.00
Distribution Volume I: Transformer Theory for Line People	S036	\$ 18.73
The Guidebook for Linemen and Cablemen	S566	\$ 66.00
Transformation for Lineworkers	S458	\$ 52.00
3rd Year Lineman Test	OAT-3	\$ 7.28
3rd Year Lineman Answer Key	OATAK-3	\$ 17.69
3rd Year Lineman SW Kit Complete	OA3SLKC	\$ 392.22
3rd Year Lineman IG Kit Complete	OA3SLIGKC	\$ 585.76

**ONLINE SOLUTION**

Pricing

OA3SLK \$ 183.63

OA3SLIGK \$ 236.69

Student Workbook & Instructor Guide Kit

Item Title	Item Number	Price	Item Title	Item Number	Price
Residential Syllabus 1st Year	J208R1.O	\$ 4.50	Residential Syllabus 1st Year	J208R1.O	\$ 4.50
Blueprint SW	J244SW.I	\$ 23.93	Blueprint IG	J244IG.I	\$ 37.45
Code and Practices-1 SW	J231SW.J	\$ 28.09	Code and Practices - 1 IG	J231IG.J	\$ 35.37
DC Theory SW	J202SW.I	\$ 38.76	DC Theory IG	J202IG.I	\$ 58.26
Inside Job Information - 1 SW	J221SW.I	\$ 42.66	Inside Job Information - 1 IG	J221IG.I	\$ 61.38
Orientation SW	J200SW.I	\$ 40.58	Orientation IG	J200IG.I	\$ 50.98
Residential 1st Yr Student Workbook Kit	R1SWK16	\$ 141.00	Residential 1st Yr Instructor Guide Kit	R1IGK16	\$ 192.50

Student Workbook & Instructor Guide Kit Complete

Item Title	Item Number	Price
Blueprint Reading for Electricians	S648	\$ 46.92
Building a Foundation in Mathematics	S665	\$ 64.00
DC Theory	S640	\$ 59.00
Electrical Systems 2014 <i>NEC</i>	S770	\$ 58.00
Residential Blueprint Set	S135	\$ 8.32
TI-30X IIS Solar Calculator	S159	\$ 16.83
Residential 1st Yr SW Kit Complete	R1SWKC16	\$ 373.50
Residential 1st Yr IG Kit Complete	R1IGKC16	\$ 428.50
Residential Course Presentation	RCP1K15	\$ 91.00

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.

Item Title	Item Number	Price	Item Title	Item Number	Price
Building a Foundation in Mathematics SW	J201SW.H	\$ 22.89	Building a Foundation in Mathematics IG	J201IG.H	\$ 41.62
Building a Foundation in Mathematics Proficiency Evaluation	J201T	\$ 3.64	1st Year Residential IG Kit Complete with Math	R1IGKCM16	\$ 467.50
1st Year Residential SW Kit Complete with Math	R1SWKCM16	\$ 400.00			

**1ST YEAR
RESIDENTIAL
Student Workbook
& Instructor Guide
Kits Complete
(with Math) 2016**

2ND
YEARRESIDENTIAL
KITS

Student Workbook & Instructor Guide Kit

Item Title	Item Number	Price	Item Title	Item Number	Price
Residential Syllabus 2nd Year	J208R2.N	\$ 4.50	Residential Syllabus 2nd Year	J208R2.N	\$ 4.50
AC Theory SW	J203SW.H	\$ 3.06	AC Theory IG	J203IG.H	\$ 54.10
Codeology SW	J207SW.J	\$ 25.99	Codeology IG	J207IG.J	\$ 34.68
Conduit Fabrication SW	J204SW.G	\$ 27.05	Conduit Fabrication IG	J204IG.G	\$ 37.45
Residential Motors & Transformers SW	J291SW	\$ 19.77	Residential Motors & Transformers IG	J291IG	\$ 30.17
Residential Wiring Practices SW	J292SW.J	\$ 24.97	Residential Wiring Practices IG	J292IG.J	\$ 35.37
Residential Code - 2 SW	J293SW.J	\$ 29.13	Residential Code - 2 IG	J293IG.J	\$ 39.54
Residential Job Information - 2 SW	J255SW	\$ 24.97	Residential Job Information - 2 IG	J255IG	\$ 35.37
Residential 2nd Yr SW Kit	R2SWK16	\$ 139.50	Blueprint IG	J244IG.I	\$ 37.45
			DC Theory IG	J202IG.I	\$ 58.26
			Inside Job Information - 1 IG	J221IG.I	\$ 61.38
			Orientation IG	J200IG.I	\$ 50.98
			Residential 2nd Yr IG Kit	R2IGK16	\$ 291.50

Student Workbook & Instructor Guide Kit Complete

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.

Item Title	Item Number	Price
AC Theory	S541	\$ 58.00
Applied Codeology Text	S01714	\$ 45.90
Conduit Bending and Fabrication	S495	\$ 60.00
Commercial Blueprint Set	S136.H	\$ 17.69
Electrical Wiring Residential	S03914	\$ 77.00
Transformers & Motors	S018	\$ 33.66
Blueprint Reading for Electricians	S648	\$ 46.92
Building a Foundation in Mathematics	S665	\$ 64.00
DC Theory	S640	\$ 59.00
Electrical Systems 2014 <i>NEC</i>	S770	\$ 58.00
Residential 2nd Yr SW Kit Complete	R2SWKC16	\$ 401.00
Residential 2nd Yr IG Kit Complete	R2IGKC16	\$ 718.00
Residential Course Presentation	RCP2K15	\$ 91.00

Student Workbook & Instructor Guide Kit

Item Title	Item Number	Price	Item Title	Item Number	Price
Residential Syllabus 3rd Year	J208R3.M	\$ 4.50	Residential Syllabus 3rd Year	J208R3.M	\$ 4.50
Inside Job Information-4 SW	J224SW	\$ 37.45	Inside Job Information-4 IG	J224IG	\$ 47.86
Photovoltaic Systems SW	J230SW.J	\$ 24.97	Photovoltaic Systems IG	J230IG.J	\$ 35.37
Residential Advanced Tech SW	J275SW	\$ 38.49	Residential Advanced Tech IG	J275IG	\$ 48.90
Residential Fire Alarm & Security System SW	J296SW	\$ 22.89	Residential Fire Alarm & Security System IG	J296IG	\$ 33.29
Residential Plan & Design SW	J294SW	\$ 18.73	Residential Plan & Design IG	J294IG	\$ 29.13
Telephone and Security Basics SW	J226SW.H	\$ 20.81	Telephone and Security Basics IG	J226IG	\$ 32.25
Residential 3rd Yr SW Kit	R3SWK16	\$ 138.50	Orientation IG	J200IG.H	\$ 49.98
			Residential Motors & Transformers IG	J291IG	\$ 30.17
			Residential Wiring Practices IG	J292IG.J	\$ 35.37
			Residential Code - 2 IG	J293IG.J	\$ 39.54
			Residential Job Information - 2 IG	J255IG	\$ 35.37
			Residential 3rd Yr IG Kit	R3IGK16	\$ 292.00

Student Workbook & Instructor Guide Kit Complete

Item Title	Item Number	Price
Automating and Integrating Residential Systems	S486	\$ 32.64
Harris Handbook on Basic Telephony	S281	\$ 15.61
Photovoltaic Systems	S674	\$ 68.00
Residential Security, Surveillance, and Access Systems	S483	\$ 40.80
Residential Audio & Video Systems	S484	\$ 42.84
Residential Cabling Technologies	S485	\$ 42.84
Residential Fire Alarm and Carbon Monoxide Systems	S488	\$ 42.84
Electrical Wiring Residential	S03914	\$ 77.00
Electrical Systems 2014 NEC	S770	\$ 58.00
Transformers & Motors	S018	\$ 33.66
Residential 3rd Yr SW Kit Complete	R3SWKC16	\$ 402.50
Residential 3rd Yr IG Kit Complete	R3IGKC16	\$ 685.00
Residential Course Presentation	RCP3K14	\$ 91.00

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.

1ST
YEARSUBSTATION
KITS

Student Workbook & Instructor Guide Kit

Item Title	Item Number	Price	Item Title	Item Number	Price
Substation Technician SW 1-1	JSS1-1SW.I	\$ 60.34	Substation Technician IG 1-1	JSS1-1IG.I	\$ 70.75
Substation Technician SW 1-2	JSS1-2SW.I	\$ 43.70	Substation Technician IG 1-2	JSS1-2IG.I	\$ 54.10
DC Theory SW	J202SW.I	\$ 38.76	DC Theory IG	J202IG.I	\$ 58.26
Substation Technician SW 1-4	JSS1-4SW.I	\$ 45.78	Substation Technician IG 1-4	JSS1-4IG.I	\$ 56.18
Substation Technician SW 1-5	JSS1-5SW.I	\$ 44.74	Substation Technician IG 1-5	JSS1-5IG.I	\$ 55.14
Substation Technician SW 1-6	JSS1-6SW.I	\$ 44.74	Substation Technician IG 1-6	JSS1-6IG.I	\$ 55.14
Substation Technician Test	JSS1T	\$ 13.53	Substation Technician Answer Key	JSS1TAK	\$ 18.73
1st Year Substation SW Kit	JSS1SWK	\$ 236.17	1st Year Substation IG Kit	JSS1IGK	\$ 311.08

Student Workbook & Instructor Guide Kit Complete

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.

Item Title	Item Number	Price
Building a Foundation in Mathematics	S665	\$ 64.00
DC Theory	S640	\$ 59.00
The Guidebook for Linemen and Cablemen	S466	\$ 56.00
NJATC's Safety Handbook	S184	\$ 21.42
Personal Protective Grounding for Worker Safety	S462	\$ 42.84
Substation Construction Guidelines	S496	\$ 51.00
Terminations & Splices Theory-Practice	S094	\$ 12.48
The Lineworker's Rigging Handbook	S467	\$ 52.00
Underground Distribution	S468	\$ 79.00
TI-30X IIS Solar Calculator	S159	\$ 16.83
1st Year Substation SW Kit Complete	JSS1SWKC	\$ 624.02
1st Year Substation IG Kit Complete	JSS1IGKC	\$ 699.94

Student Workbook & Instructor Guide Kit

Item Title	Item Number	Price	Item Title	Item Number	Price
Substation Technician SW 2-1 - 2-3	JSS2-1SW.I	\$ 59.30	Substation Technician IG 2-1 - 2-3	JSS2-1IG.I	\$ 69.71
Substation Technician SW 2-4 - 2-6	JSS2-2SW.I	\$ 65.55	Substation Technician IG 2-4- 2-6	JSS2-2IG.I	\$ 75.95
Substation Technician Test	JSS2T	\$ 13.53	Substation Technician Answer Key	JSS2TAK	\$ 18.73
2nd Year Substation SW Kit	JSS2SWK	\$ 127.97	DC Theory IG	J202IG.I	\$ 58.26
			2nd Year Substation IG Kit	JSS2IGK	\$ 192.47

Student Workbook & Instructor Guide Kit Complete

Item Title	Item Number	Price
AC Theory	S641	\$ 59.00
Distribution Volume One Transformer Theory for Line People	S036	\$ 18.73
Test Instruments	S471	\$ 53.00
Transformation for Lineworkers	S458	\$ 52.00
Building a Foundation in Mathematics	S665	\$ 64.00
DC Theory	S640	\$ 59.00
The Guidebook for Linemen and Cablemen	S466	\$ 56.00
2nd Year Substation SW Kit Complete	JSS2SWKC	\$ 296.64
2nd Year Substation IG Kit Complete	JSS2IGKC	\$ 511.08

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.

3RD
YEARSUBSTATION
KITS

Student Workbook & Instructor Guide Kit

Item Title	Item Number	Price	Item Title	Item Number	Price
Substation Technician SW 3-1 – 3-3	JSS3-1SW.I	\$ 64.50	Substation Technician IG 3-1 – 3-3	JSS3-1IG.I	\$ 74.91
Substation Technician SW 3-4 – 3-6	JSS3-2SW.I	\$ 64.50	Substation Technician IG 3-4 – 3-6	JSS3-2IG.I	\$ 74.91
Substation Technician Test	JSS3T	\$ 13.80	Substation Technician Answer Key	JSS3TAK	\$ 18.73
Fiber Optics SW	J277SW	\$ 22.89	Fiber Optics IG	J277IG	\$ 33.29
3rd Year Substation SW Kit	JSS3SWK	\$ 145.66	3rd Year Substation IG Kit	JSS3IGK	\$ 176.87

Student Workbook & Instructor Guide Kit Complete

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.

Item Title	Item Number	Price
Reference Guide to Fiber Optics Textbook	S480	\$ 59.00
Substation Operation and Maintenance	S601	\$ 111.00
The Guidebook for Linemen and Cablemen	S466	\$ 56.00
NJATC Safety Handbook	S184	\$ 21.42
Substation Construction Guidelines	S496	\$ 51.00
Terminations & Splices Theory-Practices	S094	\$ 12.48
Underground Distribution	S468	\$ 79.00
3rd Year Substation SW Kit Complete	JSS3SWKC	\$ 310.90
3rd Year Substation IG Kit Complete	JSS3IGKC	\$ 525.71

1ST YEAR

TRAFFIC SIGNAL KITS

Student Workbook & Instructor Guide Kit

Item Title	Item Number	Price	Item Title	Item Number	Price
Traffic Signal Technician SW 1-1	TS1-1SW	\$ 56.18	Traffic Signal Technician IG 1-1	TS1-1IG	\$ 66.59
Traffic Signal Technician SW 1-2	TS1-2SW	\$ 34.33	Traffic Signal Technician IG 1-2	TS1-2IG	\$ 44.74
Traffic Signal Technician SW 1-3	TS1-3SW	\$ 27.05	Traffic Signal Technician IG 1-3	TS1-3IG	\$ 37.45
Traffic Signal Technician SW 1-4	TS1-4SW	\$ 33.29	Traffic Signal Technician IG 1-4	TS1-4IG	\$ 43.70
Traffic Signal Technician SW 1-5	TS1-5SW	\$ 61.18	Traffic Signal Technician IG 1-5	TS1-5IG	\$ 71.38
Traffic Signal Technician SW 1-6	TS1-6SW	\$ 44.74	Traffic Signal Technician IG 1-6	TS1-6IG	\$ 55.06
Traffic Signal Technician Test	TS1T06	\$ 14.57	Traffic Signal Technician Answer Key	TS1TAK06	\$ 19.77
1st Year Traffic Signal SW Kit	TS1SWK	\$ 240.21	1st Year Traffic Signal IG Kit	TS1IGK	\$ 314.16

Student Workbook & Instructor Guide Kit Complete

Item Title	Item Number	Price
Building a Foundation in Mathematics	S665	\$ 64.00
Conduit Bending and Fabrication	S377	\$ 18.21
DC Theory	S640	\$ 59.00
Electrical Systems 2014 <i>NEC</i>	S770	\$ 58.00
Traffic Control Flagger's Certification Handbook	S348	\$ 9.18
The Guidebook for Linemen and Cablemen	S466	\$ 56.00
NJATC's Safety Handbook	S184	\$ 21.42
The Lineworker's Rigging Handbook	S467	\$ 52.00
TI-30X IIS Solar Calculator	S159	\$ 16.83
1st Year Traffic Signal SW Kit Complete	TS1SWKC	\$ 538.41
1st Year Traffic Signal IG Kit Complete	TS1IGKC	\$ 605.88

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.

2ND
YEAR**TRAFFIC
SIGNAL
KITS****Student Workbook & Instructor Guide Kit**

Item Title	Item Number	Price	Item Title	Item Number	Price
Traffic Signal Technician SW 2-1	TS2-1SW	\$ 34.33	Traffic Signal Technician IG 2-1	TS2-1IG	\$ 44.74
Codeology SW	J207SW.J	\$ 25.99	Codeology IG	J207IG.J	\$ 34.68
Traffic Signal Technician SW 2-3	TS2-3SW	\$ 35.36	Traffic Signal Technician IG 2-3	TS2-3IG	\$ 45.78
Plans Set Booklet	TS2-3P	\$ 14.57	Plans Set Booklet	TS2-3P	\$ 14.57
Traffic Signal Technician SW 2-4	TS2-4SW	\$ 34.33	Traffic Signal Technician IG 2-4	TS2-4IG	\$ 44.74
Traffic Signal Technician SW 2-5	TS2-5SW	\$ 37.45	Traffic Signal Technician IG 2-5	TS2-5IG	\$ 47.86
Traffic Signal Technician SW 2-6	TS2-6SW	\$ 61.18	Traffic Signal Technician IG 2-6	TS2-6IG	\$ 71.38
Traffic Signal Technician Test	TS2T	\$ 14.57	Traffic Signal Technician Answer Key	TS2TAK	\$ 19.77
2nd Year Traffic Signal SW Kit	TS2SWK	\$ 241.23	2nd Year Traffic Signal IG Kit	TS2IGK	\$ 308.81

Student Workbook & Instructor Guide Kit Complete

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.

Item Title	Item Number	Price
AC Theory	S641	\$ 59.00
Applied Codeology Text	S01714	\$ 45.90
Personal Protective Grounding for Worker Safety	S462	\$ 42.84
Test Instruments Textbook	S471	\$ 53.00
Transformer Principles & Applications	S476	\$ 60.00
Building a Foundation in Mathematics	S665	\$ 64.00
DC Theory	S640	\$ 59.00
The Guidebook for Linemen and Cablemen	S466	\$ 56.00
NJATC's Safety Handbook	S184	\$ 21.42
2nd Year Traffic Signal SW Kit Complete	TS2SWKC	\$ 514.90
2nd Year Traffic Signal IG Kit Complete	TS2IGKC	\$ 702.53

Student Workbook & Instructor Guide Kit

Item Title	Item Number	Price	Item Title	Item Number	Price
Traffic Signal Technician SW 3-1	TS3-1SW	\$ 55.06	Traffic Signal Technician IG 3-1	TS3-1IG	\$ 65.26
Traffic Signal Technician SW 3-2	TS3-2SW	\$ 33.29	Traffic Signal Technician IG 3-2	TS3-2IG	\$ 43.70
Traffic Signal Technician SW 3-3/3-4	TS3-3SW	\$ 65.26	Traffic Signal Technician IG 3-3/3-4	TS3-3IG	\$ 75.46
Fiber Optic SW	J277SW	\$ 22.89	Fiber Optic IG	J277IG	\$ 33.29
I/T CCTV SW	J268SW	\$ 22.89	I/T CCTV IG	J268IG	\$ 35.37
Traffic Signal Technician SW 3-6	TS3-6SW	\$ 43.70	Traffic Signal Technician IG 3-6	TS3-6IG	\$ 54.04
Traffic Signal Technician Test	TS3T	\$ 14.57	Traffic Signal Technician Answer Key	TS3TAK	\$ 19.77
3rd Year Traffic Signal SW Kit	TS3SWK	\$ 241.23	3rd Year Traffic Signal IG Kit	TS3IGK	\$ 319.26

Student Workbook & Instructor Guide Kit Complete

Item Title	Item Number	Price
Advance Ballasts Pocket Guide	J258.H	\$ 7.28
CCTV Surveillance Video Practices	S404	\$ 66.00
Reference Guide to Fiber Optics Textbook	S480	\$ 59.00
W4IKS (Wapiti) Manual	S478	\$ 35.70
AC Theory	S641	\$ 59.00
3rd Year Traffic Signal SW Kit Complete	TS3SWKC	\$ 394.23
3rd Year Traffic Signal IG Kit Complete	TS3IGKC	\$ 520.20

The kit complete includes all of the contents of either the Student Workbook kit or Instructor Guide kit plus these items.



Topics



AC THEORY



AC Theory Textbook

S641 \$ 59.00

This book begins where the *DC Theory* textbook leaves off. Beginning with an introduction to the elements of producing alternating current (AC), including magnetism, conductors, relative motion, and sine wave measurements, this book adds the concepts of resistive, inductive, and capacitive effects as they interact in series, parallel, and combination circuits. These

interactions in basic to complex AC circuits are taught using basic algebra, trigonometry, and vector math. The book takes an uncomplicated approach to explaining advanced AC topics such as filters, resonance, and power factor and the basic applications of AC theory including AC generators, motors, and transformers.



AC Systems, Level 1 featuring the Electrical Theory Simulator

Session: \$ 31.00 **Student:** \$ 14.28

Prerequisite(s): None

AC Systems marks the beginning of study in AC Theory. Lessons covered in this course include a review of DC theory, the use of trigonometry and vector math in circuit analysis, comparing direct current to alternating current, circuit calculations for basic systems, AC resistive

circuits, and understanding the basic characteristics of AC circuits. This course also offers a number of lab exercises, each designed to complement the lessons by reinforcement through actual hands-on learning. **PPTs included.**



AC Theory, Level I featuring the Electrical Theory Simulator

Session: \$ 42.00 **Student:** \$ 52.00

Prerequisite(s): DC Theory, Level I and AC Systems, Level I

After the fundamentals of AC Theory are mastered, the learner will begin AC Theory Level I. This course is designed to teach the learner important AC Theory concepts such as inductance and how it affects a circuit, inductors that are in series and/or parallel, inductive reactance, capacitance and capacitive reactance, series

and parallel RL and RC circuits, RLC circuits, LC and RLC circuits. This course also offers a number of lab exercises, each designed to complement the lessons by reinforcement through actual hands-on learning. **PPTs included.**



AC Theory, Level II featuring the Electrical Theory Simulator

Session: \$ 42.00 **Student:** \$ 52.00

Prerequisite(s): AC Theory, Level I

This course is designed to teach the learner the important concepts of power factor and power factor correction. The course also provides an introduction to generators, understanding how DC generators work, the design and function of AC generators, and finally

introduces the learner to 3-phase systems. This course also offers a number of lab exercises, each designed to complement the lessons by reinforcement through actual hands-on learning. **PPTs included.**

AC Theory, Level III featuring the Electrical Theory Simulator

Session: \$ 42.00 **Student:** \$ 52.00

Prerequisite(s): AC Theory, Level II

This course is designed to teach the learner the important concepts of series resonance, parallel resonance, series parallel resonant circuit comparisons, filters, and electronic circuit test instrument. This course

also offers a number of lab exercises, each designed to complement the lessons by reinforcement through actual hands-on learning. **PPTs included.**



AC Theory Lab Manual

J203LIG.J \$ 76.30 **J203LSW.J** \$ 66.30

Lab assignments throughout the AC Theory courses are intended to be used as lab experiments to support the theory studied in the accompanying lessons. The lab assignments can be completed using the Electronic Theory Simulator (ETS) within the LMS. The ETS is

a highly interactive simulator that allows the learner to build the circuit, easily re-arrange, add, or remove components, take measurements, and switch between schematic or field view. The ETS also allows the learner to save the work and come back to it at a later date.



BLUEPRINTS



Blueprint Reading for Electricians Textbook

S648 \$ 46.92

The principles of *Blueprint Reading* are critical to the success of a project. This textbook will help the student understand what materials are necessary and learn

where they are to be installed prior to the start of a job. In addition to electrical prints, this book covers all parts of a construction project.



Blueprints, Level I

Session: \$ 31.00 **Student:** \$ 22.00

Prerequisite(s): Code and Practices 1, Level 1

The learner will be introduced to the fundamentals of understanding and drawing blueprints as well as the skills required for reading and analyzing residential blueprints. **Online Blueprint Reader and PPTs included.**



Blueprints, Level II

Session: \$ 31.00 **Student:** \$ 31.00

Prerequisite(s): Blueprints, Level I

The Blueprints Level II course expands on the concepts learned in Level I. The course starts with a review of basic fundamentals of blueprints and how they are drawn, which is immediately followed with analyzing and laying out circuits. The learner is also introduced

to job cost and how to perform a takeoff, blueprint specifications, schedules and component location, and blueprint systems integration. **Online Blueprint Reader and PPTs included.**



Blueprints, Level III

Session: \$ 31.00 **Student:** \$ 31.00

Prerequisite(s): Blueprints, Level II

The Blueprints Level III course expands on the concepts learned in Level I and Level II. The course starts with a review and comparison between residential, commercial, and industrial specifications followed by

a lesson specific to industrial specifications, and finally three lessons on how to read and interpret industrial blueprints. **Online Blueprint Reader and PPTs included.**

PRINTS

These blueprints will provide a hands-on approach to learning.

Residential Blueprints	S135	\$ 8.32
Commercial Blueprints	S136.H	\$ 17.69
Industrial Blueprints	S137	\$ 12.48



Residential Planning and Design Workbook

J294IG \$ 29.13 **J294SW** \$ 18.73

This workbook uses all the prior knowledge accumulated from previous courses and puts it into practice. There are seven design projects in this workbook, each building upon the other to design the electrical layout of a residential dwelling unit that contains information on every appliance, device, and conductor used in the unit. The first project will begin with a layout of the general purpose receptacles, exterior receptacles, kitchen, and bathroom. Next, the student will determine and lay out the lighting requirements and branch-circuit requirements. Following that will be the telephone

system(s), basement lighting and receptacles, and specifications about the outlying structure's sub panel and feeder requirements. In the fourth project, the student will calculate the specification requirements for the air conditioning and heating systems. The project will also involve the installation of a personal computer in the residence. The last few projects will cover the design for the fire protection, home security and video monitoring system(s), home theater systems, and estimated project costs for the job.

BUILDING AUTOMATION: CDA

Building Automation: Control Devices and Applications Textbook

S518 \$ 61.00

This textbook covers operation, signaling, and functions of the common sensors, actuators, and other control devices used in building automation systems for commercial buildings. Each system is explained to provide clarity on the function and application of each

device. The student will be introduced to the common applications of these control devices, including the integration of multiple building systems into a sophisticated building automation system.



CET: Building Automation 1

Session: \$ 30.00 **Student:** \$ 79.00

Building Automation 1 is a comprehensive foundation for the integration of commercial building systems for automated operation, including HVAC, lighting, and security systems. This course focuses on the devices

that monitor and control the building systems and on the common applications that use these devices to achieve automation goals.



Building Automation 1: Control Devices and Applications, Level I w/ Textbook

Session: \$ 31.00 **Student:** \$ 72.75

Prerequisite(s): None

Building Automation 1: Control Devices and Applications Level I explains how building systems, such as HVAC, lighting, and electrical systems, can communicate information through a network of intelligent control devices. Emphasis is placed on these control devices and how they work together in common automation scenarios. Topics covered include the operation, signal

types, and functions of the sensors, actuators, and other control equipment used in automated systems in commercial buildings. The course is organized by building system, and the operation of each system is explained to clarify the function and application of each control device. **PPTs included.**



Building Automation 1: Control Devices and Applications, Level II

Session: \$ 31.00 **Student:** \$ 11.75

Prerequisite(s): Building Automation 1, Level I

Building Automation 1: Control Devices and Applications Level II explains how building systems, such as HVAC, plumbing, fire protection, access control, and security systems, can communicate information through a network of intelligent control devices. Emphasis is placed on these control devices and how they work together in common automation scenarios. Topics

covered include the operation, signal types, and functions of the sensors, actuators, and other control equipment used in automated systems in commercial buildings. The course is organized by building system, and the operation of each system is explained to clarify the function and application of each control device. **PPTs included.**



Building Automation: Control Devices and Applications Workbook

J238IG.H \$ 33.29 **J238SW.H** \$ 22.89

This workbook introduces the student to the devices that are used to achieve a desired outcome. This outcome could be temperature, humidity, a desired light level, an occupancy signal or any of a number of others.

This workbook concentrates on the devices which affect a desired outcome and does not attempt to explain the signals or logic which cause the outcome.



Building Automation: Control Devices and Applications Applications Manual

J238AMIG.H \$ 43.70 **J238AMSW.H** \$ 33.29

This applications manual takes a very detailed look at real world applications of each system. This exploration of each system includes mounting requirements, potential pitfalls, physics of the measured variable and wiring requirements including diagrams and points lists.



Building Automation Kit Complete plus Applications Manual

J238IGKCM.H \$ 137.99

S518 Building Automation: CDA Textbook | J238 Building Automation: CDA Workbook
J238AM Building Automation: CDA Applications Manual

BUILDING AUTOMATION: SI



Building Automation: System Integration with Open Protocols Textbook **S519 \$ 61.00**

This textbook builds on the foundation of laid by *Building Automation: Control Devices and Applications* to provide the information necessary to control devices that communicate over a network using open protocols. The

textbook focuses on the two leading open protocols, LonWorks® and BACnet®. The textbook is very scenario and application driven to enhance the ability of the student to comprehend the concepts presented.



CET: Building Automation 2

Session: \$ 30.00 **Student:** \$ 79.00

Building Automation 2 builds on a foundation of individual building system controls to describe the integration of these functions into a cohesive building automation system with an open protocol. This course introduces intelligent control devices that can

communicate over a common network. The overall theme of the lessons is interoperability, which is the ability of devices in different systems and from different manufacturers to work together.



Building Automation 2: System Integration with Open Protocols, Level I B w/ Textbook

Session: \$ 31.00 **Student:** \$ 72.75

Prerequisite(s): Building Automation 1, Level I

Building Automation 2: System Integration with Open Protocols, Level IB introduces concepts of automated electronic controls and network communication and then details the BACNet for wired networks. The protocol

system is thoroughly described with information about installation, configuration, operation, maintenance, and troubleshooting.



Building Automation 2: System Integration with Open Protocols, Level I L w/ Textbook

Session: \$ 31.00 **Student:** \$ 72.75

Prerequisite(s): Building Automation 1, Level I

Building Automation 2: System Integration with Open Protocols, Level IL introduces concepts of automated electronic controls and network communication and then details the LonWorks for wired networks. The protocol

system is thoroughly described with information about installation, configuration, operation, maintenance, and troubleshooting.



Building Automation 2: System Integration with Open Protocols, Level II

Session: \$ 31.00 **Student:** \$ 11.75

Prerequisite(s): Building Automation 2, Level IL or Level IB

The capstone Building Automation course is a series of examples that illustrate the design, installation, and configuration of each protocol in various scenarios. The

final chapter discusses the future of building automation, including trends in the industry, networking, protocols, and control strategies.



Building Automation: System Integration with Open Protocols Workbook

J239IG.I \$ 32.65 J239SW.I \$ 22.89

This workbook allows the student to apply their knowledge of Open Protocols and how they are implemented. The local training program has the option to teach the lessons on LonWorks®, BACnet® or both.

In addition to the protocol specific lessons this workbook also contains lessons on the Control Concepts, Interoperability, and Communications Fundamentals.

CCTV

CCTV Surveillance Video Practice & Technology

S404 \$ 66.00

This book attempts to inform managers, security and safety dealers, and installers about CCTV so that they can make intelligent decisions about when and how to use CCTV, and how it integrates into the overall security

system. From a practical viewpoint, the book explains how to design a system, specify functions and features, and choose hardware.



Installer/Technician CCTV Workbook

J268IG \$ 35.37

J268SW \$ 22.89

This workbook is designed to be used in conjunction with the *CCTV Surveillance Video Practices and Technology* textbook. The events of September 11, 2001 have dramatized the importance of reliable communications and remote visualization of images via remote video cameras. Video is the critical link in the overall security of a facility but organizations must develop a complete security plan rather than adopt piecemeal protection measures. The lessons in this

workbook are designed to optimize understanding of all video technology aspects – from light sources to video monitors and recorders. The book will introduce video security systems and technology and advance to remote monitoring and video communication control. There are also additional advanced lessons that discuss video image splitting, reversal and annotation, covert video surveillance and rapid deployment, integration, and testing.



CCTV Surveillance Kit Complete

J268IGKC \$ 101.67

J268SWKC \$ 91.42

S404 CCTV Surveillance Video Practice & Technology Textbook | J268 Installer/Technician CCTV Workbook

CCTV Surveillance CD

J268CD \$ 66.00

CCTV Surveillance Kit Complete plus CD

J268IGKCCD \$ 138.09

S404 CCTV Surveillance Video Practice & Technology Textbook | J268 Installer/Technician CCTV Workbook
J268CD CCTV Surveillance CD

CODE-RELATED MATERIALS



Significant Changes to the NEC - 2014

S753 \$ 45.90

The *National Electrical Code (NEC)* is the most widely recognized and accepted electrical standard in the world. Every three years the *NEC* is updated to reflect the newest installation practices utilized by the electrical industry. *Significant Changes to the NEC 2014 Edition* is an invaluable resource for electricians, electrical contractors, electrical inspectors, and electrical engineers, focusing on the most important changes that occurred between the 2011 and 2014 *NEC*. To

assist and enhance understanding of each revision, the text is arranged to follow the general layout of the *NEC* and each change is accompanied by a helpful image or illustration. In addition, background information and a discussion on the significance of the change accompany each of the revisions. The comprehensive coverage offered in this book enables readers to gain a solid understanding and application of the requirements contained in the 2014 *NEC*.



Significant Changes to the NEC CD ROM

S753CD \$ 86.00

Every illustration in the *Significant Changes to the NEC* textbook is contained in the presentation.



Ugly's Electrical References, 2014 Edition

S754 \$ 11.00

Ugly's Electrical References, 2014 Edition is designed to be used as an on-the-job reference. Used worldwide by electricians, engineers, contractors, designers, maintenance workers, instructors, and the military; Ugly's contains the most commonly required electrical information in an easy-to-read and easy-to-access

format. Ugly's presents a succinct portrait of the most pertinent information all electricians need at their fingertips, including: mathematical formulas, *National Electrical Code* tables, wiring configurations, conduit bending, voltage drops, and life-saving first aid procedures.



Significant Changes to 70E, 2015

S745 \$ 19.89

This text is written to provide employers and employees who implement *NFPA 70E* with an insight and understanding of the most significant changes that appear in the new 2015 standard. *NFPA 70E* requires retraining in safety-related work practices and applicable

changes in this standard at intervals not to exceed three years. This text is intended for use by the employer to comply with this retraining requirement. This text comprehensively addresses the retraining requirement for applicable changes in this standard.



Significant Changes to 70E - 2015 CD ROM

S745CD \$ 30.55

Electrical Systems 14 NEC

Electrical Systems 14 NEC Answer Key

S770 \$ 58.00

S770AK \$ 9.18

This text is a comprehensive reference and instructional tool for those who use the *National Electrical Code*. New in the 2014 *NEC* are Technical Vignettes providing insight from industry organizations and leading manufacturers, QR Codes offering instant access to websites and interactive load calculations forms using smartphone technology. Full-color illustrations

demonstrate and explain how to apply the *NEC* and photographs depict products and applications commonly found in the field. Review Questions and Trade Test verify comprehension of the content covered and Calculation forms organize and simplify load determination for one-family and multifamily dwellings.



Journeyman Electrician's Exam Workbook

Journeyman Electrician's Exam Workbook Answer Key

J021SW14 \$ 36.41

J021AK14 \$ 9.36

Journeyman Electrician's Exam Workbook is designed to help applicants prepare for the Journeyman electrician's examination. This extremely practical workbook offers an overview of the exam and practical examples involving formulas, *NEC*-related problems, and definitions. It contains over 800 review and sample licensing exam

questions and problems. Review question answers with *NEC* references and solutions as applicable are included in the workbook. The answer key contains answers and *NEC* references for all sample licensing exam questions.



2014 NEC

S750 \$ 75.00

Be prepared to comply in the new era for electrical safety. The *NEC* establishes requirements for electrical wiring and equipment in virtually all buildings. The world's most important document is revised based on new technology and industry needs. Users will

see greater consistency in grounding and bonding terminology, shading behind revised text to see what is new at a glance, and identifiers at the top of each page in the *NEC* for speedier referencing.

S751 2014 *NEC* Looseleaf \$ 84.50

S755 2014 *NEC* Tabs \$ 9.75



2014 NEC Handbook

S752 \$ 140.50

The most valuable reference for *NEC* users provides the technical support required to comply efficiently, avoid violations, and keep electrical installations on track with the 2014 *National Electrical Code*.



CODEOLOGY



Applied Codeology

S01714 \$ 45.90

Many new users of the *National Electrical Code (NEC)* are unfamiliar with and overwhelmed by the structure and the massive amount of information contained within it. However, the *NEC* has a logic that has been in place for many years. After the Electrical Worker has gained fundamental understanding of this structure through the study and application of *Codeology* the *NEC* becomes much easier to navigate.

The *Applied Codeology* textbook is an invaluable

resource for new learners being introduced to the layout of the *NEC*, those that have been using the *NEC* but are preparing for a *Code* exam, and anyone looking to improve their skills to efficiently locate *NEC* requirements. *Applied Codeology* is not necessarily about applying the requirements within the *NEC*, but instead about learning and applying an efficient method to categorize and locate requirements in the *NEC*. The textbook is structured around the “General,” “Plan,” “Build,” and “Use” concepts of the 2014 *NEC*.



Codeology, Level I, Based on the 2014 *NEC*

Session: \$ 31.00 **Student:** \$ 28.56

Prerequisite(s): Code and Practices 1, Level I

Through repetition and thorough understanding of the “Build” - “Plan” - “Use” concepts, the learner will gain confidence in using the 2014 *NEC*. PPTs included.

CODE CALCULATIONS

Code Calculations Textbook

S00814 \$ 40.80

Updated to reflect the 2014 edition of the *NEC*, the full color, 2-column textbook from the NJATC prepares students for math-related tasks associated with the electrical construction industry. Hundreds of illustrated examples and real world installations form the

underpinning of this significant eleven chapter book of calculations related to the *National Electrical Code*. This NJATC textbook continues its history of providing a well rounded foundation in *Code*-related math examples.



Code Calculations, Level I, Based on the 2014 NEC

Session: \$ 31.00 **Student:** \$ 11.00

Prerequisite(s): Code and Practices 3, Level 1

The Code Calculations Based on the 2014 *NEC*, Level I course focuses on comprehensive training for solving *Code*-related mathematical issues. This course covers lessons related to special occupancies, electrical

equipment, special equipment, introduction to cable tray systems, installing surface metallic raceways, cable tray fills, ampacity of conductors in cable trays, and electric welders. **PPTs included.**



Code Calculations, Level II, Based on the 2014 NEC

Session: \$ 31.00 **Student:** \$ 11.00

Prerequisite(s): Code and Practices 3, Level I; Code Calculations, Level I

The Code Calculations Based on the 2014 *NEC*, Level II course focuses on comprehensive training for solving *Code*-related mathematical issues. This course covers lessons related to determining conductor ampacity, finalizing ampacity calculations, performing box size and fill calculations, calculating raceway fill,

introduction to electrical load calculations, range and appliance calculations, calculating the parameters of multifamily dwelling loads in accordance with the *NEC*, and calculating the parameters of commercial loads in accordance with the *NEC*. **PPTs included.**



Code Calculations, Level III, Based on the 2014 NEC

Session: \$ 31.00 **Student:** \$ 11.00

Prerequisite(s): Code Calculations, Level II

The Code Calculations Based on the 2014 *NEC*, Level III course focuses on comprehensive training for solving *Code*-related mathematical issues. This course covers

lessons related to calculating voltage drop in feeders and branch and calculating the parameters of residential loads in accordance with the *NEC*. **PPTs included.**



Code Calculations Workbook

J227IG.J \$ 35.37 **J227SW.J** \$ 25.99

The Code Calculations Workbook is a companion product for the new 2014 Code Calculations textbook. Filled with examples and student information sheets, this workbook provides the student with the necessary study material to fully understand and successfully apply

the rules and methods taught in Code Calculations textbook. Using this workbook, the student is guided through twenty-one objectively based lesson plans, using hundreds of math-based examples.



CODE AND PRACTICES



Code and Practices 1, Level I, Based on the 2014 NEC

Session: \$ 31.00 **Student:** \$ 26.01

Prerequisite(s): None

The lessons provide an introduction to the *NEC* and the basics for interpreting the language of the *NEC* in order to correctly apply its requirements. This course will assist Electrical Workers in becoming more knowledgeable and productive.



Code and Practices 2, Level I, Based on the 2014 NEC

Session: \$ 31.00 **Student:** \$ 22.89

Prerequisite(s): Code and Practices 1, Level I

The learner is taken through the process of understanding the principles of the 2014 *NEC* and applying its requirements directly to the job.



Code and Practices 3, Level I, Based on the 2014 NEC

Session: \$ 31.00 **Student:** \$ 26.01

Prerequisite(s): Code and Practices 2, Level I

The principle purpose of overcurrent protective devices (OCPDs) is to protect circuits and equipment from the effects of harmful overcurrents. This series of lessons will introduce the fundamental concepts of overcurrent protection, the most common types of OCPDs (fuses

and circuit breakers) and their characteristics, operation and sizing, conductor tap rules, calculation of fault currents, and ground fault protection of equipment. **PPTs included.**



Code and Practices 4, Level I, Based on the 2014 NEC

Session: \$ 31.00 **Student:** \$ 14.00

Prerequisite(s) Code and Practices 3, Level I

This series of lessons will explore a unique combination of topics. First, the learner will be introduced to a number of requirements related to service equipment, swimming pools, fountains, and similar installations. Next, the learner will develop an understanding of emergency and standby system installation requirements, over

600- and over 1000-volt requirements, and those for remote-control, signaling and power-limited circuits. The final series of lessons examines changes that took place between editions of the *NEC* and concludes with preparation to take *NEC* competency examinations.



Code and Practices 5, Level I, Based on the 2014 NEC

Session: \$ 31.00 **Student:** \$ 14.00

Prerequisite(s): Code and Practices 4, Level I

This series of lessons will explore a unique combination of topics. First, several wiring methods and support for wiring methods will be explored through a look at installation and *Code* requirements related to wire

mesh basket tray, surface nonmetallic raceways, infloor installations, and multioutlet assemblies. This series of lessons will then conclude with a look at *NEC* requirements for Solar PV systems.



Code and Practices 6, Level I, Based on the 2014 NEC

Session: \$ 31.00 **Student:** \$ 26.00

Prerequisite(s): Code and Practices 3, Level I

The improper selection and application of overcurrent protection can create electrical problems such as prolonged power outage, fire hazard, shock hazard, arc flash, arc blast, and equipment damage. A properly designed, installed and maintained electrical system

provides the benefit to customers and worker safety. Exploration of overcurrent protective devices and their application will continue with a series of lessons covering topics such as OCPD application requirements and considerations for various electrical equipment.

Code and Practices 4 and 5 Workbook

J236IG.J \$ 37.45 **J236SW.J** \$ 27.03

This workbook covers topics deemed to be best suited to be covered in years 4 and 5. Year 4 coverage features a look at a number of requirements from Chapters 4, 5, and 6 of the *NEC*, cable tray installations and requirements, as well as detailed lessons on surface raceways, infloor installations, and multioutlet

assemblies. Year 5 lessons include coverage of a wide variety of *NEC* topics including practice exams, the latest changes to the *NEC*, over 1000-volt installations, an advanced lesson on services, and an overview of Articles 680, 700, 701, 702, and 725.



Installer/Technician Code - 2 Workbook

J266IG.J \$ 30.17 **J266SW.J** \$ 19.77

This workbook is designed to systematically teach a practical application of the 2014 *National Electrical Code* to everyday job tasks..



Residential Code - 2 Workbook

J293IG.J \$ 39.54 **J293SW.J** \$ 29.13

This workbook will rely heavily on the 2014 *National Electrical Code* (S750) and the *Electrical Systems Text* (S770). This workbook will explain the *NEC* requirements

for various tasks that an Electrical Worker will perform on a day-to-day basis and it will provide practical application.



CONDUIT BENDING AND FABRICATION



Conduit Bending and Fabrication Textbook

S495 \$ 60.00

This textbook provides a comprehensive overview of conduit bending procedures and methods. Detailed illustrations, step-by-step procedures, and standard applications are used throughout the book. Context includes complete coverage of all aspects of hand

bending tools, conduit layout, mechanical benders, conduit threading tools and procedures and advanced bending techniques. A Quick Reference Guide is packaged with this textbook.



CET: Conduit Bending and Fabrication

Session: \$ 30.00 Student: \$ 79.00

The *Conduit Bending and Fabrication* course provides a comprehensive overview of conduit bending and fabrication procedures and methods. Topics include hand bending tools, conduit layout, kicks, offsets,

saddles, advanced bending techniques, mechanical & electrical benders, hydraulic benders, threading, conduit types, and underground conduit installations.



Conduit Fabrication, Level I

Session: \$ 31.00 Student: \$ 17.70

Prerequisite(s): None

This course is designed to instruct an Electrical Worker in the basic concepts of conduit bending. PPTs included.



Conduit Fabrication, Level II

Session: \$ 31.00 Student: \$ 17.70

Prerequisite(s): Conduit Fabrication, Level I

Level II builds off of the Level I course and covers advanced techniques in conduit bending as well as mechanical and hydraulic benders



Conduit Bending and Fabrication Lab Manual

J204L \$ 19.38

The lab manual provides real world applications of common bending scenarios. Although the "Conduit Fabrication Mobile Workstation" is not necessary to

complete this lab manual, all of the labs are written so that they can be installed on the mobile trainer.

Conduit Fabrication Mobile Workstation - See Page 108 for more information.

DC THEORY

DC Theory Textbook

S640 \$ 59.00

Readers are introduced to the fundamentals of electricity and DC circuits. In-depth coverage of Ohm's Law and its relation to voltage, current, resistance, and power is presented. Later chapters examine DC parallel circuits, DC combination circuits, magnetism and generators, and DC analysis tools that Electrical Workers will find

invaluable in analyzing and understanding more complex circuits likely to be encountered on the job. Although based on DC circuits, the information supplied in this book will apply to alternating-current (AC) circuits as well.



DC Theory, Level I featuring the Electrical Theory Simulator and Labs

Session: \$ 42.00 **Student:** \$ 52.00

Prerequisite(s): None

The fundamentals of electricity and DC circuits are presented and built upon with in-depth coverage of Ohm's Law and its relation to voltage, current, resistance, and power. **PPTs included.**



DC Theory, Level II featuring the Electrical Theory Simulator and Labs

Session: \$ 42.00 **Student:** \$ 52.00

Prerequisite(s): DC Theory, Level I

This course will expand on the theories taught through DC Theory Level I. Topics include Kirchhoff's laws, Thevenin's and Norton's theorems, Principles of Magnetism and Electromagnetism, and DC Generators

and Motors. The course concludes with a lesson that uses DC Theory to solve real world problems. **PPTs included.**



DIGITAL ELECTRONICS



Digital Electronics, Level I

Session: \$ 31.00 **Student:** \$ 41.00

Prerequisite(s): DC Theory, Level I

This course will introduce the fundamental concepts of digital electronic theory. The first lesson gives an introduction to digital electronics, directly followed with lessons that introduce AND Logic, OR Logic, Buffers and Inverters, NAND and NOR Logic, XOR and XNOR

Logic, and finishing up with Digital Switching Circuits - Debouncing. Many of the lessons contained in this course are reinforced with hands-on lab assignments that complement the lesson material.



Digital Electronics Workbook

J240IG.I \$ 50.98 **J240SW.I** \$ 40.58

Every Electrical Worker at some point in time will encounter the need to have fundamental knowledge about the operation of a digital circuit. This could be while working with an automation circuit, process control equipment, or any number of other types of equipment. This fundamental knowledge will aid in both the installation of equipment and troubleshooting the equipment and will also likely reduce the amount of time it will take to complete the job. This workbook will

introduce the fundamental concepts of digital electronic theory. The first lesson gives an introduction to digital electronics, directly followed with lessons that will introduce AND Logic, Or Logic, Buffers and Inverters, NAND and NOR Logic, XOR and XNOR Logic, and finishing up with Digital Switching Circuits Debouncing. In addition, each of the lessons is reinforced with hands-on lab assignments that complement the lesson material.

DISTRIBUTED GENERATION



Distributed Generation, Level I

Session: \$ 31.00 **Student:** \$ 41.00

Prerequisite(s): AC Theory, Level II

The Distributed Generation Level I course will introduce and guide the learner through various forms of alternative power sources that may be used for critical loads within a specific environment. The course starts by covering information technology sites and critical loads. After information technology concepts are understood,

the learner will be introduced to uninterruptible power supplies, infrastructure components, critical UPS system design considerations, installation, and critical systems service. In addition to UPS systems, the learner will be introduced to fuel cell basics, fuel cell applications, and fuel cell installation.



Distributed Generation Workbook

J229IG.I \$ 34.33 **J229SW.I** \$ 23.46

The Distributive Generation lessons included within this workbook guide the student through various forms of alternative power supplies that may be a source for critical loads within a specific environment. As a result, different industries explore the possibilities of utilizing

alternates methods of generated power and resulting power quality issues have to be understood. Distributed generation technologies are a fairly new power source application that may be used for critical load backup power and stand alone power production applications.

ELECTRICAL INDUSTRY

Electrical Industry Applications Manual

J300.K \$ 40.58

The electrical industry has become increasingly competitive in the past several years. This has increased the need to provide an apprentice workforce that is trained and proficient at performing common electrical installation tasks early on in the apprentice's career. To meet this important need the NJATC has developed the *Electrical Industry Applications Manual*. These applications are intended to fill two needs; First, new apprentices will have the opportunity to learn

basic performance based skills in a lab environment as opposed to the pressures doing so on the job. Secondly, these new training modules will offer hands-on training which in many cases could not be provided in the traditional curriculum delivery method. These applications are not intended to teach theory but could be implemented as an introduction to a theory lesson or discussion.



Electrical Industry Applications Manual PowerPoint® CD

J300CD.K \$ 84.27

The Electrical Industry Applications Manual power point has been developed as an aid to the instructor while teaching the material. This CD contains the PowerPoint presentations for each chapter in the textbook.



Electrical Industry Awareness

J301IG.I \$ 44.74

J301SW.I \$ 34.33

The *Electrical Industry Awareness* workbook is intended to be the companion of the *Electrical Industry Boot Camp* workbook. Whereas the *Electrical Industry Boot Camp* workbook provides the essential basic knowledge of electrical materials and tools before the assignment to a contractor for the first time—the Industry Awareness workbook provides the new worker with the knowledge of how to be successful in the workplace. So many times it is thought that knowledge of the electrical trade is all that is needed to be successful in the electrical

industry. But, that is only half of the equation; the worker must also understand what the owner expects while on the jobsite. How to conduct work in a business and professional manner is equally as important as having the electrical knowledge. This workbook includes topics such as: Absenteeism, Productivity, Personal Appearance, Ethical Behavior, Sexual Harassment, Hazards of Drug Abuse, and the IBEW Code of Excellence Program.



Electrical Industry Boot Camp

J398IG.I \$ 52.02

J398SW.I \$ 41.62

The Electrical Industry Boot Camp workbook is an excellent way to prepare a new Inside Apprentice with basic electrical knowledge for their first assignment with an electrical contractor. The workbook contains over 200 pages of information, lessons, and exercises to prepare a new worker for productivity on an electrical job site. It is designed as a 40-hour course that allows the apprentice to become familiar with the basic tools and

materials of the electrical trade. Some of the topics in the Electrical Industry Boot Camp workbook include: hand tools, power tools, boxes & fittings, an electrical systems overview, conductor insulation, wiring devices, how to read a folding ruler, and basic conduit bending. In addition, it outlines safety topics that every worker must know before entering the workplace.



Klein Virtual Boot Camp

Session: \$ 30.00

Student: \$ 39.78

Lessons currently available cover installing a receptacle, installing a switch, identification and proper use of hand tools, materials, and personal protective equipment,

and description, identification of power tools and their use. Awareness of all safety practices is included in all modules.



ELECTRICAL SAFETY-RELATED WORK PRACTICES



Electrical Safety-Related Work Practices Textbook

S744 \$ 52.00

This textbook has been developed in an effort to enable those in the electrical industry to better understand electrical hazards, lockout/tagout and an electrically safe work condition, when energized work is justified, the

requirements for the selection and use of personal and other protective equipment for justified energized work, and how *NFPA 70E* can be a means to comply with OSHA's requirements for electrical work.



CET: Electrical Safety-Related Work Practices, featuring the Westex Electrical Safety Simulator, Based on the 2015 70E w/ Textbook

Session: \$ 30.00 Student: \$ 100.00

The simulations contained in the ESS-LV are interactive enhancements to the *Electrical Safety-Related Work Practices Textbook*, based on the 2015 *NFPA 70E*.



Electrical Safety-Related Work Practices, Level I, Based on the 2015 70E

Session: \$ 31.00 Student: \$ 49.98

Prerequisite(s): None

Electrical Safety-Related Work Practices, Level I is designed to walk the learner through the basics of Electrical Safety-Related Work Practices. Utilizing a series of questions based on the learning objectives of

each lesson, the course is intended to help the learner better understand electrical hazards, lockout and tagout, and the definition of an electrically safe work condition. PPTs included.



Electrical Safety-Related Work Practices, Level II, Based on the 2015 70E

Session: \$ 31.00 Student: \$ 49.98

Prerequisite(s): Electrical Safety-Related Work Practices, Level I

Electrical Safety-Related Work Practices, Level II is designed to walk the learner through the basics of Electrical Safety-Related Work Practices. Utilizing a series of questions based on the learning objectives of

each lesson, the course is intended to help the learner better understand when energized work is justified and the requirements for the selection and use of personal and other protective equipment. PPTs included.



Electrical Safety-Related Work Practices, Level III, Based on the 2015 70E

Session: \$ 31.00 Student: \$ 49.98

Prerequisite(s): Electrical Safety Related Work Practices, Level II

Electrical Safety-Related Work Practices, Level III is designed to walk the learner through the basics of Electrical Safety-Related Work Practices. Utilizing a series of questions based on the learning objectives of

each lesson, the course is intended to help the learner better understand how *NFPA 70E* can be a means to comply with OSHA's requirements for electrical work. PPTs included.



Electrical Safety Simulator: Low Voltage (ESS-LV)

Session: \$ 30.00 Student: \$ 100.00

The simulator is designed to teach the core electrical safety concepts of *NFPA 70E 2015*. *The Westex by Milliken Electrical Safety Sim* leverages the power of game-based learning to engage learners in the material,

motivating them to complete a series of lessons followed by task-based scenarios that challenge the learner to demonstrate their mastery of the content in a real-world context. The 2009 version is still available.



NFPA 70E

S35915 \$ 60.00 Standard

NECA ELECTRICAL PROJECT SUPERVISION TEXTBOOK (EPS)

Electrical Project Supervision Program Level 1

NEPS01 \$ 45.90

This course is an introduction to the skills a field supervisor needs to be successful. Topics include: cost realities, team building fundamentals, communicating with the crew, jobsite documentation, EEO laws, safety

fundamentals, contract fundamentals, tool and material management, understanding the estimate, scheduling fundamentals, bar charts, and understanding human nature and the basic elements of motivation.



Electrical Project Supervision Program Level 2

This course builds on the previous level to further identify the skills a field supervisor needs to be successful. Topics include: profit realities, team building across discipline, the art of listening, customer relations, project documentation, preventing harassment in the workplace,

safety fundamentals, contracts, first run studies, procurement, hazard communications, tool and material management, managing costs, and understanding network schedules.

Electrical Project Supervision Program Level 3

This course builds on the previous level to further identify the skills a field supervisor needs to be successful. Topics include: business realities, building the project team, networking, negotiating, external communication, evaluating performance, discipline, discharge, using the contract to run the job, keeping the jobsite safe, planning construction operations, jobsite material

management, revenue and cash flow, and resource loading and leveling.

These courses are designed for 21 hours of instructional time. The three levels of EPS are progressive. Instructors are required to take the train-the-trainer course from *NECA*.

FIBER OPTICS



Fiber Optic Textbook

S480 \$ 59.00

The Fiber Optic Association (FOA) has partnered with the NJATC to create a new textbook on fiber optics. Fiber optics are used throughout the electrical industries for communications systems, electrical controls, sensing devices, lighting and numerous other applications. Prior to working with fiber optics it is critical to understand its basic methods of operation and the terms associated with fiber optic systems. This new NJATC/FOA textbook

will not only provide an overview of fiber optics, but begin to familiarize the student with the standards and practices surrounding fiber optics systems. Besides understanding the manufactures specifications, fiber optic installers must be in compliance with the *National Electrical Code* requirements. The textbook is supported by the FOA's online resources and labs.



Fiber Optics, Level I w/ Textbook

Session: \$ 31.00 **Student:** \$ 82.00

Prerequisite(s): Structured Cabling, Level I

This course is to be used in concert with the FOA online resources which will help the student to attain their CFOT® certification. Based on the FOA Reference Guide to Fiber Optics, the new version of the Reference Guide to Fiber Optics has been enhanced to better reflect the

need for fiber optic training required by our JATCs and AJATCs. Completion of the course will give the student a comprehensive knowledge of optical fiber, connecting hardware, testing and fiber optic network design.



Fiber Optic Workbook

J277IG \$ 33.29 **J277SW** \$ 22.89

The workbook supports the NJATC/FOA Fiber Optic textbook by guiding students through a comprehensive study of fiber optic systems and how to install them. There are 10 lessons included in the workbook. The first lesson starts with an understanding of what fiber optic is and how it is used. The following lessons builds upon those fundamentals and introduces the student to several types of connectors and splices that a technician should be familiar with for installing and servicing fiber

optic systems. This is followed by fiber optic testing procedures. Subsequently, the workbook will help to develop "best practice" procedures for applying the safety rules for handling fiber optic materials, as well as having a strong knowledge of the proper installation practices. The workbook concludes by explaining fiber optic network design and preparing the learner for installing fiber optic networks.

FIELD TESTING



Field Testing of High Performance Premises Cabling

S306 \$ 13.53

This handbook is intended for those who work with high speed cabling, both twisted pair and optical fiber. It provides an up-to-date review of cabling alternatives, physical layer measurements, cabling standards, troubleshooting practices, and certification techniques.

FIRE ALARM

Fire Alarm Textbook

S746 \$ 57.00

The study of fire alarm systems begins by studying the importance of fire alarm systems and then works to develop an understanding of the state of the art technology available today. Topics covered also include basic requirements such as fire protection system types,

power supplies, monitoring for integrity, and wiring. Each chapter also contains the basic operating principles of devices or equipment. Understanding how equipment works will reinforce code intent and help the student develop better installation techniques.



Fire Alarm Systems, Level I, Based on the 2014 NEC

Session: \$ 31.00 **Student:** \$ 23.93

Prerequisite(s): DC Theory, Level I; Job Information, Level I

The Fire Alarm Systems, Level I course begins by introducing the Electrical Worker to basic systems and the codes and standards that are associated with fire alarm systems. The course then explores initiating devices and notification appliances. Once

the Electrical Worker has gained an understanding of the basic components of a fire alarm system, he or she is introduced to common installation, startup, and checkout procedures. **PPTs included.**



Fire Alarm Systems, Level II, Based on the 2014 NEC

Session: \$ 31.00 **Student:** \$ 23.93

Prerequisite(s): Fire Alarm Systems, Level I

The Fire Alarm Systems, Level II course goes beyond the fundamental lessons to cover advanced detection issues, residential systems, supervising stations,

inspection, testing, and maintenance. The course is rounded out with an assortment of valuable maintenance and troubleshooting information. **PPTs included.**



Fire Alarm Lab Manual

J211ILK \$ 82.46 **J211SLK** \$ 53.03

The Fire Alarm Lab Manual contains specific information needed for the installation, troubleshooting, and maintenance of fire alarm systems. This manual

provides practical information throughout the material to prepare the Electrical Worker for real world fire alarm installations.



NFPA 72, 2013

Codebook S42013 \$ 84.00

Handbook S42013HB \$ 135.00



Trainer - See Page 109 for more information.

FIRE ALARM



CET: Firestopping Applications

Session: \$ 30.00 **Student:** \$ 10.00

When fires occur in buildings that are occupied, the occupants are without question in danger of losing their lives. History can certainly demonstrate the dangers that are involved when flames, smoke, and toxic fumes spread throughout the building. Lessons learned from tragic events of the past have improved the chances of survival for occupants of a building when a fire occurs.

Easy to recognize are the noticeable fire prevention and notification systems within a building, but there are also systems that aren't so noticeable, such as firestopping of penetrated walls and floors. Firestopping is intended to stop or limit the spread of flames, smoke, and toxic fumes during a fire, which in turn allows safe evacuation of occupants in the building.



Residential Fire Alarm and Carbon Monoxide Systems

S488 \$ 42.84

Both Residential Fire Alarm Systems and stand-alone Smoke Detection or Fire Warning equipment is designed and installed to protect people and property. Because these systems involve life safety, fire alarm systems must be treated much differently than other home systems, such as Heating, Ventilation, and Air

Conditioning (HVAC) or burglar alarm systems. The primary objectives of this text is to provide a working knowledge of fire alarm systems, carbon monoxide detection, and the associated installation requirements. With this knowledge, the student will be well prepared to provide high quality installations.



Residential Fire Alarm and Security Systems Workbook

J296IG \$ 33.29 **J296SW** \$ 22.89

This workbook contains a series of lessons covering the installation of fire alarm and carbon monoxide detection equipment in residential installations. While many of the concepts appear to be the same for all fire alarm installations, these lessons have been developed to provide dwelling-specific instructions for the installer. The first lesson provides an introduction to fire alarm systems. Subsequently, the workbook introduces

household fire warning equipment and systems, along with carbon monoxide warning equipment. The workbook also explores security system basics and technologies. Several advanced lessons toward the end of the workbook discuss CCTV fundamentals, access control basics, and access control methods used in the residential market.

Residential Fire Alarm and Carbon Monoxide Systems Kit Complete

J296IGKC \$ 76.13 **J296SWKC** \$ 65.88

S488 Residential Fire Alarm Textbook | J296 Residential Fire Alarm and Security Systems Workbook

Residential Fire Alarm and Carbon Monoxide Systems CD

S488CD \$ 42.84

This CD provides a chapter-by-chapter PowerPoint Presentation for each of the topics covered in the student workbook and the text.

Residential Fire Alarm and Carbon Monoxide Systems Kit Complete plus CD

J296IGKCCD \$ 118.97

S488 Residential Fire Alarm Textbook | J296 Residential Fire Alarm and Security Systems Workbook
S488CD Residential Fire Alarm and Carbon Monoxide Systems CD

GROUNDING

Applied Grounding and Bonding Textbook

S36814 \$ 55.00

The textbook is uniquely designed to follow the installation the way a contractor and Electrical Worker would install the grounding and bonding system in actual practice. Topics covered include “traditional” topics such as service, feeder, and branch circuit

grounding and bonding, as well as more specialized topics such as grounding and bonding in health care facilities, hazardous locations, and lightning protection to name a few.



Grounding and Bonding, Level I, Based on the 2014 NEC

Session: \$ 35.00 **Student:** \$ 25.00

Prerequisite(s): AC Theory, Level II

This series of lessons will introduce the student to the fundamental concepts of grounding and bonding. Level I starts with lessons on circuit basics and overcurrent protection, *Code* arrangement, grounding electrodes, requirements for services and grounded conductors, and

grounding electrode conductors. The course concludes with lessons on bonding requirements, equipment grounding conductors, grounding electrical equipment, and isolated grounding circuits and receptacles. **PPTs included.**



Grounding and Bonding, Level II, Based on the 2014 NEC

Session: \$ 35.00 **Student:** \$ 25.00

Prerequisite(s): Grounding and Bonding, Level I

This series of lessons will build upon the fundamental concepts of grounding and bonding studied in Grounding and Bonding, Level I. This expanded look will start by exploring grounding at separate buildings and structures, the grounding of electrical systems, grounding for separately derived systems, and special

occupancies and equipment. Level II concludes with the study of requirements and concepts related to grounding and bonding for communications systems, GFCI and GFPE, medium- and high-voltage systems, and grounding systems and earth ground test instruments. **PPTs included.**



Grounding and Bonding Workbook

J210IG.J \$ 41.62 **J210SW.J** \$ 31.21

This workbook on grounding begins with basic grounding and bonding fundamentals then moves to AC systems, service equipment, and main bonding jumpers. The grounding electrode system and the grounding electrode conductor are subsequently discussed,

along with the bonding and grounding of enclosures and equipment. Lessons on ground fault protection of equipment and special location requirements for grounding and bonding bring the reader up to speed with the latest related *NEC* requirements.



HAZARDOUS LOCATIONS

Hazardous Locations, Level I

Session: \$ 31.00 **Student:** \$ 26.52

Prerequisites: Code and Practices 3, Level I

This course covers the various Areas, Protection Techniques, Equipment Used and Wiring Requirements of Hazardous Locations. Students will learn the foundation to working in Hazardous Locations. **PPTs included.**



HEALTH CARE



Health Care Systems Textbook

S698 \$ 39.78

The 2014 edition of Health Care Systems is a substantial change from the previous edition. This 3rd edition textbook contains 10 chapters, 9 of which focus directly on Article 517 of the 2014 *NEC*. Chapter 10, Working in an Operational Facility is a exciting new chapter that introduces safety and planning concepts within an operational health care facility. This specialized *Code*-based textbook expects students to be well rounded in

NEC Chapters one through four before studying Health Care Systems. The NJATC's Health Care Systems textbook is a valuable component for those involved with installing health care facility electrical systems gain an understanding of a number of the concepts and applicable requirements related to health care facilities contained in the *NEC*.



Health Care Systems, Level I, Based on the 2014 *NEC* w/ Textbook

Session: \$ 31.00 **Student:** \$ 52.00

Prerequisite(s): Code and Practices 3, Level I

The foundation of health care studies begins with a thorough review of the 2014 *National Electrical Code* fundamentals including definitions and in-depth review of grounding and bonding. In addition, the student will

seriously consider many other fundamental electrically-related health care standards in use for the construction and maintenance of present day health care facilities. **PPTs included.**



Health Care Systems, Level II, Based on the 2014 *NEC*

Session: \$ 31.00 **Student:** \$ 12.00

Prerequisite(s): Health Care Systems, Level I

Health Care Systems, Level II expands on the topics covered in Health Care Systems, Level I. This course also covers anesthetizing locations, diagnostic imaging

equipment installations, isolated power systems, pools and tubs for therapeutic use, and working in operational facilities. **PPTs included.**



Health Care Workbook

J260IG.J \$ 33.29 **J260SW.J** \$ 22.89

This 3rd edition workbook is a companion to the 2014 Health Care Systems textbook and well suited as a resource for both apprenticeship and Journeyman training. The student will begin almost directly in Article 517, so a prerequisite of 2014 *NEC* Chapters one through

four studies is mandatory. The student workbook will serve as an excellent tool to aid instructors in delivering training and measuring student understanding of a topic that continues to grow in importance as more and more health care facilities are installed and maintained.

INSTRUMENTATION

Fundamentals of Instrumentation Textbook

S500 \$ 44.88

This text emphasizes a solid foundation of classroom theory supported by on-the-job hands-on experience. Concepts are explained from their theoretical roots to

their application principles, with reminders about safety and technology.



Instrumentation Introduction - Module 1 (CET)

Session: \$ 30.00 **Student:** \$ 49.00

Prerequisite(s): None

This course serves as an introduction to basic instrumentation topics such as math, science, electrical theory, meters and measurements, vocabulary, and process and instrumentation diagram interpretation.



CET: Fluke Instrumentation Academy

Session: \$ 30.00 **Student:** \$ 95.88

Welcome to the Fluke Instrumentation Academy. The exercises in this Academy will require calibration procedures upon multiple devices. Reference text is provided inside the exercise to indicate the next steps

required to complete the exercise, but will not provide information that indicates correct actions. The reference text and student course material contain the necessary information to complete this lab.



CET: Milwaukee Test and Measurement Academy

Session: \$ 30.00 **Student:** \$ 56.00

The *Milwaukee Test and Measurement Academy* is a first of its kind game style set of learning modules. These learning modules provide a “virtual hands-on” training environment. This academy allows the learner to interact in a series of scenarios in a first-person environment. The scenario-based work orders present the learner with

a problem to resolve. Through the resolution of these problems, the learner will gain a greater understanding of the instruments used in test and measurements and a finer understanding of electrical installations.



Instrumentation Workbook

J297IG.I \$ 37.45 **J297SW.I** \$ 2.04

The lessons begin with an introduction to the basics of instrumentation, such as pressure, flow, level, and temperature. Both bench calibration of analog instruments and communicating with and configuring digital or “smart” instruments are covered in great detail. It finishes with fundamentals of automated

process control, control valves and control valve maintenance, analytical instrumentation, and instrument installation and tubing. This course provides the necessary curriculum to obtain the IBEW/UA Instrument Certifications, Part A and Part B.



Instrumentation Kit Complete

J297IGKC.I \$ 82.33 **J297SWKC.I** \$ 68.96

S500 Fundamentals of Instrumentation Textbook | J297 Instrumentation Workbook

Fundamentals of Instrumentation PowerPoint CD

S500CD \$ 87.00

Instrumentation Lab Manual

J297LMIG \$ 46.82 **J297LM** \$ 33.29

*If your JATC has an Instrumentation trainer, this Lab Manual will supplement your training.

Instrumentation Kit Complete plus Lab Manual

J297IGKCLM.I \$ 128.13 **J297SWKCLM.I** \$ 102.25

S500 Fundamentals of Instrumentation | J297 Instrumentation Workbook | J297LM Instrumentation Lab Manual

Trainer - See Page 110 for more information.

JOB INFORMATION



Job Information I, Level I, Based on the 2014 NEC

Session: \$ 31.00 **Student:** \$ 32.23

Prerequisite(s): None

Students will learn the basic tools of the trade and about workplaces of an Electrical Worker. The course covers topics such as proper care and use of ladders

and use of fastening devices. It also covers alignment and measurement, building wire construction, and firestopping.



Installer/Technician Job Information - 1 Workbook

J251IG \$ 61.38 **J251SW** \$ 50.98

This workbook begins by identifying some of the basic tools of the trade, both hand tools and those relating to telecommunications and then provides instructions on how to properly care for and use them. The workbook spends several lessons on the reality of electrical shock and other safety precautions essential for any job site. The next few lessons cover some necessary

math skills dealing with the metric system and working with exponentials. The next lessons are dedicated to familiarizing the student with the *International Building Code* and the *National Electrical Code*. The workbook concludes by introducing telecommunications grounding and bonding requirements, and acquaints the student with basic field testing for premises cabling.



Residential Job Information - 2 Workbook

J255IG \$ 35.37 **J255SW** \$ 24.97

The first lesson deals with effective communication. Following that is a lesson that explains labor management relations from crew level to the Council on Industrial Relations. The workbook also examines the of testing branch circuits used to verify that the circuits will perform as required by the *NEC*. In addition, the student will expand his/her knowledge of the wiring methods

that are used to cover the installation of wires and cables in different types of raceways. The second half of the workbook begins to address thermostats, telephone technologies, and remote control wiring. In addition, it will also explore fiber optics and the fundamentals surrounding local area networks.

LAN

Introduction to Networking Technologies

S482 \$ 53.00

We live in a visual age—an age of HDTV, DVDs, and SXVGA computer displays. Most of what we learn comes from our visual senses. Yet we live in an age of unseeable abstractions. Networking depends on abstract concepts such as protocols, communications standards, data packets, authentication mechanisms, and virtual connections—things we cannot see and can scarcely visualize. We can see a router but we cannot see it routing IP packets across the Internet. We can see

a cable, but we cannot see the protocols and standards that go into making cable data packets from one place to another. This textbook is designed to bridge the gap between these two totally different worlds. It attempts to convert complex networking concepts into illustrations that allow you to visualize the abstract. Within this text you will not find a lot of “how-to” instructions, but rather a description of the abstract concepts that are central to your ability to understand how networks operate.



Installer/Technician Local Area Networks Workbook

J265IG \$ 34.33

J265SW \$ 23.93

This workbook is designed to be used in conjunction with the textbook *Introduction to Networking Technologies*. It systematically introduces the student to networking definitions and basics, and builds upon those principles. Beginning lessons include network definitions, Ethernet basics, the OSI model, and the networked PC. The workbook also examines the need for keeping systems secure by describing types of malware and the best ways to prevent becoming a

victim of a malware. It includes a discussion about the two most common and popular types of networks used today. Network operating systems are explored, as is their relationship with the OSI model in accomplishing their tasks. Subsequent lessons will discuss Windows and the OSI Model, 10Base2, 10Base5 Ethernet technology, and troubleshooting these systems. These and other topics are covered in this workbook.



Local Area Networks Kit Complete

J265IGKC \$ 87.37

J265SWKC \$ 77.12

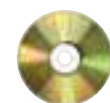
S482 Introduction of Networking Technologies Textbook | J265 Installer/Technician Local Area Networks Workbook

Introduction to Networking Technologies CD

S482CD \$ 42.84

Based on the Heathkit *Introduction to Networking Technology* Textbook, this CD provides a chapter-by-chapter PowerPoint Presentation for each of the topics covered in the text. Working to help the students understand the details of networking technology, this is a guide through the basic concepts required to properly

install and maintain these systems. This PowerPoint CD is ideally suited to allow the instructor to teach the concepts before assigning the material to the students. This will enhance the learning experience as the students complete each lesson.



Local Area Networks Kit Complete plus CD

J265IGKCCD \$ 130.21

S482 Introduction of Networking Technologies Textbook | J265 Installer/Technician Local Area Networks Workbook
S482CD Introduction to Networking Technologies CD

LIGHTING ESSENTIALS



Lighting Design Basics

S599 \$ 53.00

Providing the fundamental information students need to succeed in understanding lighting concepts and design in a concise, highly visual format, the *Second Edition of Lighting Design Basics* presents realistic goals that can be used as a guide to create simple yet impressive lighting designs when collaborating with

end-users, or their interior designers and/or architects, on lighting projects. The textbook offers straightforward coverage of lighting concepts and techniques and contains design scenarios for more than twenty different types of spaces.



Advance Ballast Pocket Guide

J258.H \$ 7.28



Lighting Essentials, Level I w/ Textbook

Session: \$ 31.00 **Student:** \$ 71.00

Prerequisite(s): 4,000 Hours of OJT

Lighting Essentials, Level I explains the nature of light and the practical application of lighting design. The nature of light, lighting and lighting systems, considered the bread and butter work of an electrician, is rapidly changing. To remain current in what lighting is and what the future holds, Electrical Workers need to understand the nature of light, what needs to be lit, and how to deliver an energy-efficient lighting system. No longer can the Electrical Worker assume that lighting is just the installation of luminaires and branch circuits. Energy

codes and the desire to create a more sustainable lifestyle have altered the lighting landscape. This course covers lamp styles and qualities, such as operating temperature range, lamp life, lumen maintenance, directionality, starting time, and life cycle costs. The course also contains state-of-the-art training materials regarding solid state ballasts and LED lighting systems and controls. **The Lighting Essentials Reference Material is included with this course.**



Lighting Essentials, Level II

Session: \$ 31.00 **Student:** \$ 18.00

Prerequisite(s): Lighting Essentials, Level I

Lighting Essentials, Level II delves deeper into the basic design element for the most common occupancies. This helps the electrical contractor and/or Electrical Worker understand how to fulfill the lighting requirement of the

customer in a design/build situation. It also allows the electrical contractor and Electrical Worker to carry on an intelligent conversation with the customer's architect or lighting designer.



Lighting Essentials Workbook

J259IG.J \$ 56.18 **J259SW.J** \$ 31.21

The Lighting Essentials Workbook guides the student through a comprehensive study of lighting. The cost of energy has forced Electrical Workers to re-examine the process of installing lamps, luminaires, and controls. Because about 47% of all electrical work is contracted on a Design/Build basis, workers and their employers must have a greater understanding of their customer's lighting needs. This is especially true if the customer

is expecting an energy-efficient lighting solution. This course explains the nature of light and the practical application of lighting design. It also covers lamp styles and qualities, such as operating temperature range, lamp life, lumen maintenance, directionality, starting time, and life cycle costs. The workbook also contains state-of-the-art training materials regarding solid state ballasts and LED lighting systems and controls.

LIGHTING ESSENTIALS

Lighting Essentials Kit Complete

J259IGKC.J \$ 109.22 **J259SWKC.J** \$ 84.25

S599 Lighting Design Basics Textbook | J259 Lighting Essentials Workbook | J258.H Advance Ballast Pocket Guide

CET: Lutron Lighting Controls Academy

Session: \$ 30.00 **Student:** \$ 25.50



LIGHTNING PROTECTION

Lightning Protection, Level I

Session: \$ 31.00 **Student:** \$ 23.00

Prerequisite(s): Grounding and Bonding, Level I

A lightning protection system is essential in order to provide complete protection for the structure and its contents. This course will provide two integral parts to the understanding of lightning protection systems. Part 1 will describe the basic terminology and components

of lightning protection systems. In Part 2, the student will study essential methods for the correct installation of such a system, including design and layout requirements.



Lightning Protection Workbook

J276IG.J \$ 33.29 **J276SW.J** \$ 22.89

This workbook introduces lightning protection. A lightning protection system is essential in order to provide complete protection for the structure and its contents. This workbook will provide two integral parts to the understanding of lightning protection

systems. Part 1 will describe the basic terminology and components of lightning protection systems. In Part 2 the student will study essential methods for the correct installation of such a system, including design and layout requirements.





Building a Foundation in Mathematics Textbook

S665 \$ 64.00

This all encompassing textbook provides a review of necessary mathematical skills for persons working in various trades and is crucial to the electrical trade. Topics include operations with whole numbers, integers, fractions, decimals, and ratios, with step-by step examples and exercises for each procedure. More advanced topics include exponents, logarithms, and

trigonometry. The essentials of algebra, including solving equations and inequalities are covered, along with vectors and the basics of geometry. Final chapters in the text deal with binary, octal, and hexadecimal numbers and their applications, along with an introduction to Boolean algebra.



Building a Foundation in Mathematics, Level I w/ Textbook

Session: \$ 30.00 Student: \$ 99.00

Prerequisite(s): None

Many skills are required to successfully complete the electrical apprenticeship program and be able to function as a competent Journeyman. One such skill is the ability to apply standard mathematics in the classroom as well as on the job. The Building a Foundation in Mathematics, Level I course provides

a review of necessary mathematical skills which are crucial to anyone working in the electrical trade. Topics include operations with whole numbers, integers, fractions, decimals, ratios, exponents, and units and measurements.



Building a Foundation in Mathematics, Level II w/ SW (w/o IG)

Session:\$ 30.00 Student:\$ 44.00

Prerequisite(s): Building a Foundation in Mathematics, Level I

The lessons throughout Building a Foundation in Mathematics, Level II will be much more demanding than the previous level and will require extensive use of the basic skills covered in the Level I course. A solid math foundation will create a base on which to build the understanding and knowledge necessary to be a confident Journeyman. This course offers more

advanced topics including logarithms, trigonometry, vectors, and the basics of geometry. Final lessons in the course deal with binary, octal, and hexadecimal numbers and their applications, along with an introduction to Boolean algebra. **The Building a Foundation in Mathematics Workbook Level II is included with this course.**

MOTOR CONTROL

Fundamentals of Motor Control Textbook

S547 \$ 62.00

Fundamentals of Motor Control Textbook has been developed to take the learner from the basics of motor control to advanced motor control topics through the use of three unique perspectives. This is accomplished with a book, which is divided into three sections. These sections progressively take the learner from basic concepts in “Section 1. Magnetic Motor Control”, through more advanced concepts in “Section

2. Electronic Motor Control”, and finally cumulates in “Section 3. Advanced Motor Control.” This reference provides a systematic pathway approach to the field of motor control, building on basic concepts, and moving through advanced concepts, to develop a clear and concise understanding of the equipment, the theory and the methods required to successfully perform motor control installation, maintenance, and troubleshooting.



Motor Control, Level I

Session: \$ 31.00 **Student:** \$ 11.00

Prerequisite(s): Motors, Level I

Motor Control, Level I explains manually, mechanically, and automatically operated control devices. Both NEMA and IEC contactors and magnetic motor starters are addressed with emphasis on types, functions, and applications. The course concludes with the

development and purpose of schematic, wiring, logic, and ladder diagrams, including details on standard drawing techniques for generating and interpretation of ladder diagrams.



Motor Control, Level II

Session: \$ 31.00 **Student:** \$ 11.00

Prerequisite(s): Motor Control, Level I

Motor Control, Level II, explains solid state input and output devices. Unique motor control devices, including special purpose motor starters, programmable timers, and function specific control components, are

presented. The function and operation of AC and DC motor speed control devices are explained, including troubleshooting techniques and a variety of applications.



Motor Control, Level III

Session: \$ 31.00 **Student:** \$ 11.00

Prerequisite(s): Motor Control, Level II

Motor Control, Level III covers analog signal types and analog devices used in motor controls. Advanced topics such as variable speed drives, programmable logic controllers, and networks are presented. The course

concludes with detailed methods for system-wide troubleshooting of motor control systems using real-world applications.



Motor Control Workbook

J209IG.H \$ 37.45 **J209SW.H** \$ 27.05

The motor control workbook is designed around the Fundamentals of Motor Control text, and has been developed to provide an easy-to-follow understandable approach to learning motor control. Each lesson in this workbook progresses slowly through the fundamental concepts of motor control and builds on the prior lesson to enable the apprentice to correctly and efficiently

troubleshoot motor control issues. Beginning with a brief history of motor control and the organizations, that set the standards for motor control equipment, the lessons continue to immediately explore manual pilot devices, automatic devices, motor starters and control relays. Each new lesson builds on those fundamentals to provide a complete and thorough look at motor control.



Motor Control Kit Complete

J209IGKC.H \$ 99.67 **J209SWKC.H** \$ 89.42

S547 Fundamentals of Motor Control Textbook | J209 Motor Control Workbook

MOTORS



Motors Textbook

S649 \$ 67.00

The 2nd Edition NJATC Motors Text contains 19 chapters geared toward the theory, design, and installation of motors used in commercial and industrial locations. It covers DC, AC, single-phase, and 3-phase motors. It also includes topics such as bearings, braking, starting, motor alignments, adjustable speed drives, and

drive systems. Special consideration is given to the need for increasing the skills of Journeyman electricians and for the introduction of these topics into the apprentice training programs. The basic concepts, theories, and mathematical relationships are explained using many illustrations and examples.



CET: Motors with Textbook

Session: \$ 30.00 **Student:** \$ 84.00

The *Motors* course begins with a thorough discussion of magnets, magnetism, and electromagnetism, and how they apply to motor operation. The course includes the latest information on the operation of many types of

motors, reading and understanding motor nameplates, braking and starting, adjustable-speed drives, bearings, drive systems and clutches, and motor alignment.



Motors, Level I

Session: \$ 31.00 **Student:** \$ 11.50

Prerequisite(s): AC Theory, Level I; Code and Practices 3, Level I

The Motors Level I course introduces the learner to theory concepts such as magnetism and induction. After the theory concepts have been mastered, the learner is introduced to motor nameplates, AC alternators, three-phase motors, squirrel-cage motors, wound-rotor

motors, and single-phase motors. The course then introduces motor protection, DC motors and generators, starting, and finally *NEC* requirements and calculations needed for motor installations. **PPTs included.**



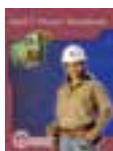
Motors, Level II

Session: \$ 31.00 **Student:** \$ 11.50

Prerequisite(s): Motors, Level I

The Motors Level II course introduces the learner to topics such as braking, multi-speed motors, adjustable speed drives, bearings, drive systems and clutches,

and finally motor alignment. The student will also learn how to troubleshoot motors and decide the appropriate course of action for repair. **PPTs included.**



Motors Workbook

J206IG.I \$ 33.96 **J206SW.I** \$ 22.89

The Motors Workbook covers the basic concepts and formulas that apply to electromagnetism and induction of motors. It explores various motors such as polyphase, wound-rotor, synchronous, and single-phase. Other topics include the starting and braking of motors and the principles of electronic variable-speed. The speed control section introduces electronic DC

and AC variable-speed drives as well as eddy-current and magnetic clutches. The student will learn how to troubleshoot motors and decide an appropriate course of action for repair. Many of the illustrations of the NJATC Motors textbook have been utilized as graphics in the workbook.

Motors Kit Complete

J206IGKC.I \$ 100.61 **J206SWKC.I** \$ 90.36

S649 Motors Textbook | J206 Motors Workbook

CET: Electric Motor Drive w/ Textbook**Session:** \$ 30.00**Student:** \$ 95.36

This course is designed to teach electric motor and electric motor drive operation, installation, and troubleshooting principles. The course begins with an introduction to electric motor drives, motor drive safety, and electric motor power requirements and control methods. After the introductory principles are covered,

discussion moves to motor drive components, operation fundamentals, installation procedures, and motor drive programming. The course concludes with an in-depth discussion on motor drive start-up procedures, troubleshooting (including required test tools), motor drive selection, and motor drive retrofit procedures.



MOTORS & TRANSFORMERS



Transformers & Motors

S018 \$ 33.66

This book was written to assist in the practical training of students of electrical applications. Special consideration has been given to the need for increasing the skills of Journeymen electricians and for the introduction of

these topics into training programs. The basic concepts and theories are described and simple mathematical relationships are explained, using easy-to-follow examples.



Residential Motors & Transformers Workbook

J291IG \$ 30.17 J291SW \$ 19.77

If there is one main reason why AC current is used so often today, as compared to DC current, it is because AC voltage allows the use of transformers to distribute the voltages over wide areas and voltage ranges. This power is transferred into practical use through transformers. This workbook is divided into two sections, discussing transformers in the first section, and introducing motors in the second. The student will begin by learning the principles of single-phase transformers. Building upon those principles,

the workbook explores 3-phase transformers and compares them to single-phase. Bringing all of these principles together is a comprehensive lab assignment using a theory demonstration unit. The second part of the workbook provides an introduction to motors and identifies the different parts of the motor and the purpose of those parts. Later lessons discuss motor installations, understanding motor control drawings, and basic two-wire motor control circuits.

Residential Motors & Transformers Kit Complete

J291IGKC \$ 63.83 J291SWKC \$ 53.58

S018 Transformers & Motors Textbook | J291 Residential Motors & Transformers Workbook

NURSE CALL SYSTEMS



Installer/Technician Nurse Call Systems Workbook

J267IG \$ 52.02 J267SW \$ 41.62

Today's healthcare market offers many types of Nurse Call Systems that vary in their capabilities. The basic intent of all Nurse Call Systems is to provide patients and residents with the ability to notify staff if assistance is needed without the patients or residents having to leave their bed, room, or dwelling. This can be accomplished by simply providing a pull cord or push button next

to the bed that notifies the staff. There are several organizations that provide direction and guidelines for the hospital segment of the Healthcare Marketplace. This workbook will explore the fundamentals of Nurse Call Systems and their components. It will also discuss how to plan for and install the wiring for an EZ Care Nurse Call System.



Installer/Technician Nurse Call Systems CD

J267CD \$ 36.41

Based on the NJATC's *Nurse Call Systems* workbook, this CD provides a PowerPoint Presentation for each of the topics covered in the student workbook. Working to help the students understand the details of nurse call systems, this is a guide through the basic concepts required to properly install and maintain these

systems. This PowerPoint CD is ideally suited to allow the instructors to teach the concepts before assigning the material to their students, which will enhance the learning experience as the students complete each lesson.

OUTSIDE CET COURSES

Effective Cover-Up

Session: \$ 30.00 **Student:** \$ 40.00

The NJATC's Effective Cover-Up video is an interactive program that introduces the student to the proper installation techniques of applying insulated protective equipment (IPG) to overhead lines. This course will walk the student through the different types of cover-

up materials being used today, along with the proper installation techniques. The student will have the opportunity to demonstrate the knowledge he or she has gained with several interactive exercises and a short quiz at the end of the program.



Outside Transformer Trainer

Session: \$ 30.00 **Student:** \$ 99.00

Simulator training saves lives and equipment. The NJATC has incorporated a transformer simulator into its Journeyman online course collection. This simulator is a fully interactive training tool that simulates transformer hookups as close to real life as possible, in a setting both safe to student and equipment. The simulator is capable of simulating various job duty scenarios and any transformer connection imaginable. The simulator is capable of displaying both schematic and field views for wiring connections.

Meters are included as part of the software to check voltages, both high and low, for every connection made. If correct procedures and protocols are not followed, or if the transformer is wired improperly, the system reacts as a regular transformer would and a simulated explosion and fire are shown. This is truly a state-of-the-art training tool that will help increase the student's retention of the material learned, reliability, comprehension, and on-the-job accuracy.



Personal Protective Grounding

Session: \$ 30.00 **Student:** \$ 40.00

Personal protective grounding is a subject area that all Electrical Workers need to know. The more knowledge the worker has, the better probability that he or she will be able to assess the situation and proceed in the safest manner possible.

This is the first video lesson on this important safety topic. This video explains the different levels of electric shocks, and how they affect the body. Animated videos are used to help the viewer understand the severity of

an electric shock. Equipotential zones and the use of jumpers are explained. The shortcomings of using bracket grounding are discussed and diagramed. Jumper grounding assemblies are described, and their proper use is also explained.

The information in this video is a great refresher for most Electrical Workers and a good beginning to the training of apprentices in the hazards of electrocution.



Salisbury Rubber Goods Academy

Session: \$ 30.00 **Student:** \$ 40.80

The Rubber Goods Academy is a set of learning modules to instruct and emphasize the importance of properly handling PPE. The learner will gain a greater understanding of the relationship between voltage ranges and rubber goods.





The Guidebook for Linemen and Cablemen

S566 \$ 66.00

The 2nd Edition of *The Guidebook for Linemen and Cablemen* is the most up-to-date reference source for linemen, substation technicians, and anyone interested in the electric transmission and distribution industry. This book features full color text design in a completely redesigned format. It includes practical coverage of the equipment and situations that a lineman is exposed to on a daily basis. The need for safety and training is

highlighted throughout the book, emphasizing safety and efficiency by taking a risk management approach which focuses on minimizing the risk of field injuries and meeting important safety regulations. This new edition also features a glossary with many “need to know” terms. An appendix has been added to provide easy reference for essential charts, tables and formulas.

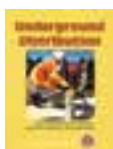


The Lineworker's Rigging Handbook

S467 \$ 52.00

Proper rigging reduces the risk of personal injury and prevents damage to equipment. Used correctly, rigging can make the most strenuous lifting tasks relatively easy. And because strains to the body might not show up as an injury right away, correct rigging practices can pay off in better health in the years to come. *The Lineworker's Rigging Handbook* explains the practical skills needed to make rigging tasks safer and simpler. It covers the best ways to lift transformers, splice ropes, raise conductors,

erect poles, choose fittings, terminate guys, and hoist heavy equipment. There is probably more information here than is needed immediately. The first step is to skim through the entire book to become familiar with its content and organization. As different situations arise, you will find yourself returning to these pages again and again. Over time, you will acquire many practical skills that will help in your work almost every day on the job.



Underground Distribution

S468 \$ 79.00

For years, the most popular way to deliver electricity was through overhead wires. Construction practices for overhead service is well understood, and this type of service is easier to operate and maintain because equipment is out in the open. Recently, however, more installations have gone underground. Customers prefer underground utilities because electric wires are ugly and underground service is more reliable because there is no

risk of lines going down in storms or poles being hit by motorists. This book covers field-proven practices for pulling cables, splicing cables, terminating cables, fusing lines, grounding equipment, and switching circuits. It explains the special job skills lineworkers and cable splicers need to safely install and maintain underground distribution systems.



Hot Sticks

S035 \$ 23.46

This informational text will take readers through the history and development, manufacturing and care of hot line tools, training of hot stick crews, the working loads and hot line tools.



Distribution Volume I

S036 \$ 18.73

This continuing education text is for all people associated with electrical distribution systems. Students will learn how an apparatus works, how it is connected, and why these connections are made.



Distribution Volume II

S037 \$ 18.73

The purpose of this book is for the continuing education of all people associated with electrical distribution systems and to show how and why the electrical apparatus is installed and its influence on the distribution system.

Terminations & Splices Theory - Practice

S094 \$ 12.48

This handbook is to assist the user of electric cables, splices, and terminations, and as a reference to those engaged in the planning, installation and maintenance of electrical cable systems.



Flagger's Certification Handbook

S348 \$ 9.18

This handbook is used for training the flagger to work safely and protect the safety of others. The contents of this handbook combined with instructor training, will provide the information and procedures necessary to enhance the safety of both workers and drivers while in typical street and highway construction repair projects.



NJATC's Safety Handbook

S184 \$ 21.42

This is a reference text to be used during training sessions and as a field reference to look up answers to safety and health facts as questions arise.



Transformation for Lineworkers

S458 \$ 52.00

This comprehensive training manual covers everything a lineman needs to know about transformers: basic AC circuit concepts, transformer connections, single- and 3-phase transformer installations, load checks, fusing, grounding, and troubleshooting. The material is organized into 20 chapters. Each chapter covers one specific topic, with a self-test and answers. Any individual seeking to advance his/her understanding of transformers will find this book to be a valuable reference.



Live Line Work Practices

S459 \$ 79.00

Live Line Work Practices shows how to handle energized circuits so you can work quickly and safely, without interrupting the service to customers. This complete reference delivers loads of practical, field-tested information. This book describes work practices for transmission (69 kV and above) and distribution (60 kV and below). Coverage is slanted towards transmission with approximately 60% of the pages on transmission, and 40% on distribution. Over 440 informative illustrations, step-by-step procedures, quick-access tables, and examples.



Substation Construction Guidelines

S496 \$ 51.00

The textbook delivers field-proven guidance on how to build a substation and how to expand an existing facility. This information is presented as a series of steps involved in the construction process. This incremental approach makes it easy to thoroughly learn each step in the process before moving forward.



Substation Operation and Maintenance

S601 \$ 111.00

This is a comprehensive reference on how to operate and maintain all the essential components of substations: power transformers, circuit breakers, capacitors, reactors, regulators, protective relays, control systems, and batteries.





NJATC's OSHA Construction 10-Hour Book Vol. 1

J050.I \$ 40.58

The NJATC's Course on OSHA Outreach Training - Volume 1 utilizes over 270 images to illustrate covered topics and is well suited for incorporation into OSHA construction industry 10-hour classes to generate discussion and enhance learning by walking students through course material in the effort to have them identify, avoid, control and prevent hazards on a construction site. The course book was developed around OSHA's latest Construction Industry Outreach Training Program guidelines. These guidelines advise

that the 10-hour course is: (1) intended to provide entry level construction workers information about their rights, employer responsibilities, and how to file a complaint as well as how to identify, abate, avoid and prevent job related hazards on a construction site. (2) The training is to cover a variety of construction safety and health hazards which a worker may encounter at a construction site. (3) Training should emphasize hazard identification, avoidance, control and prevention, not OSHA standards.



NJATC's OSHA Construction 10-Hour Vol. 1 Power Point CD

J050CD.I \$ 46.82



NJATC's OSHA Construction 20-Hour Book Vol. 2

J051 \$ 21.85

NJATC's OSHA Construction Course Book - Volume 2 is designed as a companion product to compliment NJATC's Construction Course Book - Volume 1. Volume 1 was primarily developed to support OSHA 10-hour courses for Construction. Volumes 1 and 2 together provide the content and flexibility required to round out and support

both OSHA 10- or 30-hour Construction courses. Like Volume 1, Volume 2 is an image rich publication designed to enhance learning by walking the learner through the content with excellent visual tie in to the subject matter.



NJATC's OSHA's Construction 20-Hour Vol. 2 Power Point CD

J051CD \$ 46.82

OSHA 10/30 Kit

J052K \$ 62.42

J050.I OSHA Construction 10-Hour Book Vol. 1 | J051 OSHA Construction 20-Hour Book Vol. 2

OSHA 10/30 Kit with Standards

J052KC \$ 85.88

J050.I OSHA Construction 10-Hour Book Vol. 1 | J051 OSHA Construction 20-Hour Book Vol. 2
S125 29 CFR 1926 standards

OSHA 10/30 CD Kit

J052CDK \$ 23.46

J050CD.I OSHA Construction 10-Hour Vol. 1 Power Point CD
J051CD OSHA Construction 20-Hour Vol. 2 Power Point CD

OSHA 10/30 Kit with CDs and Standards

J052KCCD \$ 179.52

J050.I OSHA Construction 10-Hour Book Vol. 1 | J051 OSHA Construction 20-Hour Book Vol. 2
S125 29 CFR 1926 standards | J050CD.I OSHA Construction 10-Hour Vol. 1 Power Point CD
J051CD OSHA Construction 20-Hour Vol. 2 Power Point CD

OSHA Standards for the Construction Industry

S125 \$ 23.46

ORIENTATION

Orientation, Level I

Session: \$ 31.00 **Student:** \$ 15.61

Prerequisite(s): None

This course will give an overview of the Apprenticeship program from the history of the IBEW and structure of NECA to the goals and responsibilities of the Electrical Worker.



Orientation, Level II

Session: \$ 31.00 **Student:** \$ 14.28

Prerequisite(s): Orientation, Level I

This course expands on topics associated with the Apprenticeship Program that were covered in Orientation, Level I. The course starts out with the important topic of Avoiding the Hazards of Drug Abuse and then begins to cover topics associated with being an IBEW Member. It covers organizational topics such

as Becoming Familiar with the IBEW Constitution, Understanding Local Union By-Laws, and Parliamentary Procedure and How it Works. Finally, Understanding American Labor History is a valuable attribute in establishing Pride in Your Industry.



Orientation, Level III

Session: \$ 31.00 **Student:** \$ 15.61

Prerequisite(s): Orientation, Level II

This course prepares the Electrical Worker for life after the apprenticeship. Topics include NEBF, After Apprenticeship, Soon to be a Journey-Level

Worker, Success, Motivation and Leadership, NLRB, Unemployment, and The Realities of Construction.



PAGING SYSTEMS



Installer/Technician Paging Systems Workbook

J263IG \$ 49.54

J263SW \$ 39.13

Paging systems, background music, and PA systems are evident almost everywhere. This workbook is intended to provide a basic understanding of these systems, their fundamental components, and how these systems work, and then it explores some of the specific applications of the systems. It begins with lessons on understanding the components associated with distributed sound systems/paging systems and their functions. Next, it explains the differences between a constant voltage system and a self-amplified system. Single-zone and multi-zone

paging systems will also be examined. One of the prime considerations in any sound system design is an efficient power transfer between the amplifier and the associated speakers. There is a lesson designed to explain the two power transfer methods, their advantages and disadvantages. Other topics discussed in this workbook are designing and layouts, sound masking systems, and a concluding lesson devoted to applying the information learned to a practical design.



Installer/Technician Paging Systems CD

J263CD \$ 36.41

Based on the NJATC's Paging and Voice Evacuation Systems workbook, this CD provides a lesson-by-lesson PowerPoint Presentation for each of the topics covered in the student workbook and the text. Working to help the students understand the details of paging and voice evacuation, this is a guide through the basic

concepts required to properly install and maintain these systems. This PowerPoint CD is ideally suited to allow the instructors to teach the concepts before assigning the material to their students, which will enhance the learning experience as the students complete each lesson.

PERSONAL PROTECTIVE GROUNDING

NJATC Guide to Personal Protective Grounding

S462 \$ 42.84

Few other subjects provoke a stronger response from an experienced line worker than to inquire as to the preferred method of providing personal protective grounding. Grounding for safety is a key ingredient of keeping these workers safe during work on deenergized lines. Historically, there have been a number of attempts to establish a "best practice" for personal protective grounding. Workers need to understand what the

historical approaches have been and why many of these approaches are often inadequate. This course text is designed both as an introduction to new workers and as a refresher for experienced workers. It includes the basics to maintain a worksite in as safe a manner as possible and will help the understanding of grounding for safety, especially in those unusual situations where routine methods previously defined do not apply.

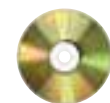


NJATC Guide to Personal Protective Grounding PowerPoint®

S462CD \$ 41.82

Grounding for safety is a key part of keeping a line worker safe during work on de-energized lines. Few other subjects provoke a stronger response from an experienced Electrical Worker than to inquire as to the preferred methods of providing personal protective

grounding. This PowerPoint CD features the photos and sketches from the NJATC's Guide to Personal Protective Grounding for Worker Safety Textbook. It give instructors the ability to easily cover the important concepts included in this important course.



PHOTOVOLTAIC SYSTEMS

Photovoltaic Systems Textbook

S674 \$ 68.00

This textbook covers the principles of photovoltaics and how to effectively incorporate PV systems into stand-alone or interconnected electrical systems. The student will learn system advantages and disadvantages, site

evaluation, component operation, system design and sizing, and installation requirements and recommended practices.



CET: Photovoltaic Systems with Textbook

Student: \$ 30.00

Student: \$ 88.00

The *Photovoltaic Systems* course is a guide to design, installation, and evaluation of residential and commercial photovoltaic (PV) systems. This course covers the

principles of PV and how to effectively incorporate PV systems into stand-alone or interconnected electrical systems.



Photovoltaic Systems Workbook

J230IG.J \$ 35.37

J230SW.J \$ 24.97

The NJATC Photovoltaic Systems Workbook is a comprehensive resource and study guide associated with the NJATC Photovoltaic Systems textbook. This workbook contains 19 lessons, covering all aspects of PV system installations. Each lesson contains 24-30

questions on a range of subjects, including principles of solar radiation, site surveys and planning, components and systems, electrical and mechanical integration, permitting and utility interconnection, and operations and maintenance.



Photovoltaics Kit Complete

J230IGKC.J \$ 103.71

J230SWKC.J \$ 93.46

POWER QUALITY



Power Quality Analysis

S569 \$ 41.82

This textbook will help a student grasp the intentions and applications of Power Quality Surveys and Monitoring systems. The text begins by introducing the affects through economic factors into the “why” behind a power quality survey and mitigation. Various methods are presented with measurement applications such that

a reader accurately grasps the art of performing a Power Quality Analysis upon a facility electrical distribution system. Mitigating techniques, test measurement connections, sine wave analysis and more are all covered thoroughly in this text.



Power Quality, Level I w/ Textbook

Session: \$ 31.00 **Student:** \$ 66.00

Prerequisite(s): AC Theory, Level II; DC Theory, Level II

With more and more industries relying on technology for their operations, maintaining sufficient and appropriate power to support these machines and computers is critical. Understanding and being able to troubleshoot power quality issues including harmonics and other power quality issues is an invaluable asset the Electrical

Worker must possess. The lessons in this course are designed to instruct the learner on the financial concerns which drive a need for power quality, power distribution systems, and related measurement and monitoring techniques required for an accurate assessment of a facility's power quality needs.



Power Quality Workbook

J228IG.I \$ 34.33 **J228SW.I** \$ 23.93

With more and more industries relying on technology for their operations, maintaining sufficient and appropriate power to support these machines and computers is critical. Understanding and being able to troubleshoot power quality issues including harmonics and other power quality issues is an invaluable asset the Electrical Worker must possess. The lessons in this workbook are designed to instruct the student on the

financial concerns which drive a need for power quality, power distribution systems and related measurement and monitoring techniques required for an accurate assessment of a facilities power quality needs. Power quality terminology, costs, concepts and defining the power quality issues that directly affect digital equipment and traditional electrical loads are the objectives outlined within the course material.

Power Quality Kit Complete

J228IGKC.I \$ 76.15 **J228SWKC.I** \$ 65.90

S569 Power Quality Analysis Textbook | J228 Power Quality Workbook

PROGRAMMABLE LOGIC CONTROLLERS

Programmable Logic Controllers Textbook

S597 \$ 66.00

The 2nd Edition PLC textbook has been rewritten to allow JATCs and learners flexibility in their study of programmable logic controllers. The textbook contains four different sections, each with a different focus. The first section covers the physical installation of PLC systems. Subsequent sections describe

general programming terms for PLCs, Address-Based Programming, and focus on Tag-Based Programming. Various examples are included throughout the text to allow the learner to compare system concepts, an address-based programming solution, and a tag-based programming solution.



Programmable Logic Controllers, Level I w/ Textbook

Session: \$ 31.00 **Student:** \$ 80.00

Prerequisite(s): Motor Control, Level I

This course is a beginning level course for the study of programmable controllers and focuses on the Rockwell Automation (Allen-Bradley) PLC Systems. This course begins with basic PLC hardware requirements and the installation of PLC equipment including pilot devices,

loads and analog devices typically used with PLC systems. The course then focuses on basic concepts and instruction types used with programmable controllers such as input and output types and internal functions such as timers, counters, and sequencers.



Programmable Logic Controllers, Level II A

Session: \$ 31.00 **Student:** \$ 14.00

Prerequisite(s): Programmable Logic Controllers, Level I

The Programmable Logic Controllers, Level II A Course introduces programming for address-based programmable logic controller systems. The course is based on Rockwell Automation's RSLogix 500 Software, which is used to program both the SLC500 and the

MicroLogix series of programmable controller systems. The course begins with ladder logic programming for contacts and coils, and then proceeds through timers, counters, and other advanced programming instructions.



PROGRAMMABLE LOGIC CONTROLLERS



Programmable Logic Controllers, Level II T

Session: \$ 31.00 **Student:** \$ 14.00

Prerequisite(s): Programmable Logic Controllers, Level I

The Programmable Logic Controllers Level II T Course introduces programming for tag-based programmable logic controller systems. The course is based on Rockwell Automation's ControlLogix 5000 Software, which is used to program both ControlLogix and CompactLogix series of programmable controller systems. The course begins with ladder logic

programming for contacts and coils, and then proceeds through timers, counters, and other advanced programming instructions. The course is designed to teach the learner how tag-based systems utilize memory, and how programming instructions can be used to develop complex programmable controller programs in ladder logic based control systems.



Programmable Logic Controllers Workbook

J237IG.J \$ 38.49 **J237SW.J** \$ 28.09

The new programmable logic controller's student workbook begins by examining the system components in a SLC 500 modular PLC system and the AB SLC 500 family PLCs. Then, the lessons explore the programmable controller fundamentals and system installation as well as programming software. The software used with each of the lab exercises is the

RSLogix software. Once the apprentice has been introduced to the software, he or she slowly learns, over three lessons how to perform advanced ladder programming and data manipulation instructions. Concluding the instruction on PLCs are lessons on timers and counters, as well as shift registers and sequencers.

Programmable Logic Controllers Kit Complete

J237IGKC.J \$ 104.79 **J237SWKC.J** \$ 94.54

S597 Programmable Logic Controllers Textbook | J237 Programmable Logic Controllers Workbook

Programmable Controller Trainers - See Page 111 for more information.

RADIO FREQUENCY

Principles of RF Communications

S487 \$ 47.94

In today's world of communications, there is a continual need for knowledgeable, skilled individuals to design, maintain, and service the various communication systems, both now and in the future. New forms of communication equipment are being developed every day, meaning that workers must be able to understand and work with these new "technologies" as they appear. This book will provide Students with a solid foundation

in the fundamental concepts or principles of how communication equipment works. The first part of the book will introduce them to the important properties of electrical signals as they apply to communication. The middle portions will show how waveforms are shaped by combinations of different signal frequencies, or harmonics. Finally, they will be ready to explore the concepts of wireless transmission.



Installer/Technician RF Communications Workbook

J274IG \$ 29.13

J274SW \$ 18.73

In their simplest form, telephones are electrical machines. They create electrical signals from acoustic (sound) waves, they transmit and receive the signals, and they convert the electrical signals back to sound waves. To fully understand telephones and telecommunications systems, it is necessary to master electrical fundamentals – especially those that relate to signals. Even the most advanced electronic systems

will be easier to understand with a solid knowledge of signal fundamentals. This workbook, used in conjunction with the *Principles of RF Communications* textbook, will provide a solid foundation in RF communications. The ten lessons in this workbook cover topics such as logarithmic power ratios, power/frequency applications, and antennas.



RF Communications Kit Complete

J274IGKC \$ 77.07

J274SWKC \$ 66.82

S487 Principles of RF Communications Textbook | J274 Installer/Technician RF Communications Workbook

Principles of RF Communications CD

S487CD \$ 42.84

Based on the *Principles of RF Communications* textbook. This CD provides a chapter-by-chapter PowerPoint Presentation for each of the topics covered in the text material. Working to help the students understand the details of RF communications systems, this is a guide through the basic concepts required

to properly install and maintain these systems. This PowerPoint CD is ideally suited to allow the instructor to teach the concepts before assigning the material to the students, which will enhance the learning experience as the students complete each lesson.

RF Communications Kit Complete plus CD

J274IGKCCD \$ 119.91

S487 Principles of RF Communications Textbook | J274 Installer/Technician RF Communications Workbook S487CD Principles of RF Communications CD

RESIDENTIAL ADVANCED TECHNOLOGY



Residential Advanced Technology Workbook

J275IG \$ 48.90 **J275SW** \$ 38.49

The average home today is far more technologically sophisticated than the home of just a few years ago. The Residential Advanced Technology workbook presents a series of lessons that prepare the residential wireman to understand this technological sophistication. Included are lessons that familiarize the residential wireman with

cabling infrastructures, wireless control technologies, telecommunications and networking fundamentals, audio/video fundamentals, home theater basics, lighting, HVAC and automation controls, interfacing and integration.



Residential Advanced Technology CD

J275CD \$ 36.41

Based on the NJATC's Residential Advanced Technology Workbook, this CD provides a lesson-by-lesson PowerPoint presentation for each of the topics covered in lessons 18, 19, and 26 through 29 of the student workbook (the other 23 lessons in the workbook are supported by the CDs that accompany the three Heathkit textbooks that the workbook references). Working to help the student understand the details

of residential advanced technology systems, this is a guide through the basic concepts required to properly install and maintain these systems. This PowerPoint CD is ideally suited to allow the instructor to teach the concepts before assigning the material to the students, which will enhance the learning experience as the students complete each lesson.

RESIDENTIAL AUDIO & VISUAL



Residential Audio & Video Systems

S484 \$ 42.84

Of all the subsystems in a home, it is possible that no single one has changed more in the last 50 years than the entertainment system. Today we regularly use audio and video devices and sources that could not have been imagined in the 1950s, or even the early 1980s, for that matter. The audio and video systems of today can be very complicated to install and configure properly, and then the room acoustics must be dealt with. Fortunately, the technologies that support these entertainment systems are not difficult to learn if taken one step at a

time. The students are probably familiar with many of them already, and if they have ever been in one of the major home electronic stores they have seen much of this equipment. But just in case they have not had a chance to explore the equipment themselves, this book is their chance. As they work through this workbook, students will examine the technologies and see how they fit together in home theaters and distributed audio and video systems.



Residential Audio & Video Systems CD

S484CD \$ 42.84

Based on the Heathkit *Residential Audio and Video Textbook*, and the *Residential Advanced Technology* workbook, this CD provides a chapter-by-chapter/lesson-by-lesson PowerPoint Presentation for each of the topics covered in the student workbook and the text. Working to help the students understand the details of residential audio and video systems, this is a

guide through the basic concepts required to properly install and maintain these systems. This PowerPoint CD is ideally suited to allow the instructor to teach the concepts before assigning the material to the students, which will enhance the learning experience as the students complete each lesson.

RESIDENTIAL CABLING

Residential Cabling Technologies

S485 \$ 42.84

The last decade has seen an explosion in the number of systems and products that automate and control the lighting, sound, environment, and other functions in our homes. In addition, many families now have more than one computer in the home and some homes contain several computers and computer related devices. This makes home networks more useful, powerful, and complicated than ever before. The home network

primarily allows us to share a single Internet connection among all the computers as well as allow the sharing of devices such as printers and file servers. Network, or structured, cabling is the infrastructure that makes the operation of all of these networked systems possible. *Residential Cabling Technologies* establishes a solid foundation for all home technology integrators.



Residential Cabling Technologies CD

S485CD \$ 42.84

Based on the Heathkit *Residential Cabling Technologies* textbook, this CD provides a chapter-by-chapter PowerPoint Presentation for each of the topics covered in the text material. Working to help the students understand the details of residential cabling systems, this is a guide through the basic concepts required

to properly install and maintain these systems. This PowerPoint CD is ideally suited to allow the instructor to teach the concepts before assigning the material to the students, which will enhance the learning experience as the students complete each lesson.



RESIDENTIAL SYSTEMS, AUTOMATING & INTEGRATING

Automating & Integrating Residential Systems

S486 \$ 32.64

There are several independent systems that control, monitor, or provide entertainment to various parts of the home. Each of these systems helps to automate a group of tasks in the home. However, a group of independent systems is not the goal of the home technology integrator. Rather, the goal is to interconnect all of these independent subsystems into a single master system. This is all made possible by using a device that has the ability to make decisions based on events as they occur

in the subsystems, and to program those systems to act in a coordinated, logical, and useful fashion. This book will describe a few of the subsystems that make up the automated home and will explore some of the advanced control technologies that allow these subsystems, like lighting control systems, heating and air conditioning systems control, water systems control, and motorized devices such as windows, cabinets, skylights, and doors, to operate in the home as a unified system.



Automating & Integrating Residential Systems CD

S486CD \$ 42.84

Based on the Heathkit *Automating and Integrating Residential Systems* textbook, this CD provides a chapter-by-chapter PowerPoint Presentation for each of the topics covered in the text material. Working to help the students understand the details of automating and integrating residential systems, this is a guide through

the basic concepts required to properly install and maintain these systems. This PowerPoint CD is ideally suited to allow the instructor to teach the concepts before assigning the material to the students, which will enhance the learning experience as the students complete each lesson.



RESIDENTIAL WIRING PRACTICES



Electrical Wiring Residential

S03914 \$ 77.00

The most comprehensive book of its kind on the market, *Electrical Wiring Residential* walks readers room by room through the proper wiring of a typical new residence and features a complete set of full size plans and specifications that shows how *Code* requirements

are applied throughout actual installations. This book explains and follows *NEC* requirements, using the metric system and it presents a number of the electrical formulas that electricians need to know to be successful and competent on-the-job.



Residential Wiring Practices Workbook

J292IG.J \$ 35.37 **J292SW.J** \$ 24.97

This workbook is designed to be used in conjunction with the *Electrical Wiring Residential* textbook. An Electrical Worker is expected to perform tasks in a timely and efficient manner. In order to do so, one very important task is understanding some basic skills in electrical safety, blueprints, and specifications. The first few lessons are geared toward introducing these topics, along with an introduction to lighting and small appliance circuits. The student will be learning general

and device wiring methods and how to safely install and ground them. Since safety is the first priority in an installation, the workbook will discuss specialty circuit interrupters such as ground-fault circuit interrupters. Subsequent lessons will explore lighting branch circuits for bathrooms, hallways, garages, and workshops. The second half of the workbook will examine various special-purpose outlets for water pumps, kitchens, and HVAC appliances.

Residential Wiring Practices Kit Complete

J292IGKC.J \$ 112.89 **J292SWKC.J** \$ 102.64

S03908 Electrical Wiring Residential Textbook | J292 Residential Wiring Practices Workbook



Electrical Wiring Residential CD

S039CD14 \$ 222.00

This CD provides a chapter-by-chapter progression through the material in the textbook in the way that an apprentice would be taught house wiring in the field. Starting off with some basic knowledge and instruction about basic electrical hardware and systems, the

apprentice is then given instructions on application and installation details on a room-by-room basis. Chapters of special emphasis for systems such as service entrances, swimming pools, heating systems, and others are also covered.

Electrical Wiring Residential Instructor's Guide

S039IG14 \$ 39.78

This is a printed version of the Instructor's Guide that is included on the e.Resource to Accompany *Electrical Wiring Residential*, 15th Edition. The Instructor's Guide contains the answers to the review questions at the end of each of the 32 chapters in the *Electrical Wiring*

Residential textbook. It also contains a comprehensive, 211 question, review and instructor's answer sheet that tests the students' comprehension of all the concepts of residential wiring that are covered in the textbook.



Electrical Wiring Residential Lab Manual

S039LM14 \$ 30.60

As a complement to the *Electrical Wiring Residential* textbook or as a stand-alone resource, this lab manual provides students with a realistic, hands-on experience, enabling them to develop their skills and knowledge in understanding, installing, and testing common residential installations such as three- and four-way switched lighting circuits, ground-fault circuit interrupter circuits, split duplex-receptacle circuits, service and panel installations, and home security and fire alarm systems wiring. Students are required to analyze each lab assignment carefully in order to design their own

floor plan and electrical connection diagrams, just as a Residential Wireman is often required to do in the real world. Through the repetition of key tasks, the use of this lab manual allows students to progress through this critically challenging phase of the electrical wiring learning curve in a safe, supervised, controlled laboratory manner. A self-assessment has been built into each lab, requiring apprentices to utilize the drawings they have created to wire their lab booths and validate their work through operation of the circuits.



RIGGING



Rigging, Hoisting, and Signal Practices

S661 \$ 48.96

Rigging, Hoisting, and Signaling Practices is an introduction to the equipment, calculations, and procedures required for the safe handling and transportation of materials by hoists or cranes. This textbook is relevant for all personnel involved in lifting operations and can be used as part of a training program for certification preparation. Topics include industry standards and certifications, crane types and dynamics, signaling procedures, lift planning, weight and balance,

sling loads, rigging components, equipment handling, hoists, and lifting procedures. Readers learn how to calculate a load's weight and center of gravity (CG) and how these determine the sling loads on the rigging. Content also includes the effect of rigging arrangements and mechanical advantage on sling and line loads. Safety practices are discussed throughout. Multimedia features include animation and videos of crane motions and signaling practices for self-study.



Rigging, Hoisting, and Signaling, Level I

Session: \$ 31.00 **Student:** \$ 25.00

Prerequisite(s): None

This course is designed to teach the physical principles, safety considerations, and common practices involved in hoisting loads. The course begins with an introduction to hoisting safety, crane types and operation, lift planning, signaling, and load weight and balance calculations. The discussion then moves to fiber ropes and knots, slings

and sling hitches, synthetic slings, chains and chain slings, and wire rope and wire rope slings. The course concludes with a discussion on rigging hardware, rigging equipment maintenance, hoists, and block and tackle. **PPTs included.**



Rigging and Lifting Workbook

J241IG.J \$ 33.29 **J241SW.J** \$ 23.35

This workbook centers on the knowledge, skills, and abilities needed by Electrical Workers engaged in the rigging and signaling tasks. The workbook highlights the application of the theories presented in the textbook. The student will be able to apply these principles in a

wide range of applications which result in their ability to adapt to the varying conditions found on a modern jobsite. As always, the primary goal of this training material is on the safe execution of the task.

Rigging and Lifting Principles Kit Complete

S661IK \$ 82.64 **S661K** \$ 74.04

S661 Rigging and Lifting Principles Textbook | J241 Rigging and Lifting Workbook | Rigging and Lifting Test or Answer Key / Rigging and Lifting Certificate

Rigging and Lifting Test

S661T \$ 1.02

Rigging and Lifting Test Answer Key

S661TAK \$ 1.02



Rigging Course and Rigging and Lifting Principles Certificate

S560561C \$ 1.25

Becoming A Qualified Rigger Textbook**S560** \$ 45.90

Becoming a Qualified Rigger is a textbook for classroom training by utilities and contractors. It is best used by field workers with prior training in rigging who need a refresher course to become OSHA qualified. Included is material beyond the bare minimum requirements to prepare workers for a variety of rigging conditions and situations encountered in the field.

**Becoming A Qualified Rigger Textbook plus Certificate****S560K** \$ 46.92**Becoming A Qualified Rigger CD****S560CD** \$ 87.00

This CD provides a chapter-by-chapter PowerPoint Presentation for each of the topics covered in the text.

**Becoming A Qualified Rigger Kit Complete****S560IK** \$ 132.00

S560K Becoming A Qualified Rigger Textbook | S560CD Becoming A Qualified Rigger CD

SECURITY



Security Access Control & Surveillance

S483 \$ 40.80

Contemporary homes have evolved into complex, integrated systems. These homes use modern electronics to monitor entrances and exits, and to detect visitors and intruders. The homeowner can choose among several technologies and systems that detect visitors and allow or deny access to selected areas.

The availability of broadband networking also allows the resident to watch the home from any location in the world where an Internet connection exists. The detection of a visitor within a secured area can initiate video recording, notification routines, and locking or unlocking of selected areas.



Security Access Control & Surveillance CD

S483CD \$ 42.84

This CD provides a chapter-by-chapter PowerPoint Presentation for each of the topics covered in the student workbook and the text. Working to help the students understand the details of residential security, access control, and surveillance systems, this is a guide through the basic concepts required to properly

install and maintain these systems. This PowerPoint CD is ideally suited to allow the instructor to teach the concepts before assigning the material to the students, which will enhance the learning experience as the students complete each lesson.



Security, ID Systems and Locks

S305 \$ 47.94

Electronic Access Controls (EAC) are utilized to keep intruders out and monitor secured facilities. The book is filled with information, ideas, facts, and history, including graphics, to aid in a better understanding of this subject.



GE NetworX/SENTROL Reference Guide

S312-06 \$ 49.98

This text will take the student through an understanding of the installation and the correct positioning of a security control system. The student will learn about wiring, zoning, troubleshooting, infrared, and closed circuit television.



Security Systems Workbook

J264IG.I \$ 33.29

J264SW.I \$ 22.89

In years past, security systems were very expensive and, for the most part, installed only in places such as banks, jewelry stores, large industrial facilities, and very expensive homes. With advances in technology bringing the price of security systems down, along with general changes in lifestyles, security systems are more popular than ever before. This workbook begins with an introduction to security systems, identifying the terms and definitions associated

with those systems. The workbook also explores the various components of these systems. Students will gain an understanding of the magnetic contacts and their specific applications. In addition, motion sensors, glass break sensors, control panels, keypads, and modules are discussed. The second part of the workbook introduces the students to access control systems and their components and applications.

Security Systems Kit Complete**J264IGKC.I** \$ 131.21 **J264SWKC.I** \$ 120.96

S305 Security, ID Systems and Locks Textbook | S312-06 GE NetworX/SENTROL Textbook
J264 Security Systems Workbook

Installer/Technician Security Systems CD**J264CD** \$ 41.62

This CD provides a lesson-by-lesson PowerPoint Presentation for each of the topics covered in the student workbook and text. Working to help the students understand the details of residential and commercial security systems as well as commercial electronic access control systems, this is a guide through the basic

concepts required to properly install and maintain these systems. This PowerPoint CD is ideally suited to allow the instructor to teach the concepts before assigning the material to the students, which will enhance the learning experience as the students complete each lesson.

Security Systems Kit Complete plus CD**J264IGKCCD.I** \$ 172.83

S305 Security, ID Systems and Locks Textbook | S312-06 GE NetworX/SENTROL Textbook
J264 Security Systems Workbook | J264CD Installer/Technician Security Systems CD

SEMICONDUCTOR



Semiconductor Textbook

S542 \$ 59.00

This book serves as an introduction to the wide world of electronics for the electrical profession. It provides the necessary background required to understand the concepts and theory associated with semiconductors, an essential component in the proper installation and maintenance of electrical systems. Readers are

given the essential building blocks that will lead to a complete understanding of all aspects of semiconductor electronics, from the bipolar junction transistor and electronic amplifier to fiber optics and optical transfer data, to communication systems such as radio and television and more.



Semiconductor, Level I w/ Textbook

Session: \$ 31.00 **Student:** \$ 73.75

Prerequisite(s): DC Theory, Level I

This course serves as an introduction to the wide world of electronics for the electrical profession. It provides the necessary background required to understand the concepts and theory associated with semiconductors, an essential component in the proper installation and maintenance of electrical systems. Learners are

given the essential building blocks that will lead to a complete understanding of all aspects of semiconductor electronics. Many of the lessons contained in this course are reinforced with hands-on lab assignments that complement the lesson material.



Semiconductor, Level II

Session: \$ 31.00 **Student:** \$ 14.75

Prerequisite(s): Semiconductors, Level I

This course expands on the concepts learned in the Level I course. The student will be introduced to JFETs, MOSFETs, and other transistor types, fundamental concepts of amplifiers, differential amplifiers and operational amplifiers, oscillators, electronic control

devices and circuits, and finally integrated circuits. Many of the lessons contained in this course are reinforced with hands-on lab assignments that complement the lesson material.



Semiconductor Workbook

J215IG.H \$ 49.54 **J215SW.H** \$ 29.13

This workbook spends a great deal of time with hands-on lab exercises utilizing the Theory Demonstrator and a digital multimeter which is designed to thoroughly

familiarize the student with the necessary skills to understand how many semiconductor devices function.

Semiconductor Kit Complete

J215IGKC.H \$ 98.70 **J215SWKC.H** \$ 88.44

S542 Semiconductor Textbook | J215 Semiconductor Workbook

SOUND REINFORCEMENT

Sound Reinforcement Handbook

S479 \$ 39.78

In today's technologically sophisticated world, audio systems of various types are a part of almost everyone's daily life. Nearly every home has a stereo or a simple radio. Most businesses use some type of intercom/paging system. Some auto sound systems are more sophisticated than many home stereos. This handbook deals with a specific class of audio systems that is properly referred to as a reinforcement system. For the purposes of this handbook, the term sound system

is used exclusively to refer to reinforcement systems. Sound reinforcement systems are not generally as simple as home stereos. Although they operate on the same principles, they require a higher level of understanding from their users. This handbook is an introduction to those principles. Its purpose is to give the student the understanding necessary to design and operate moderate-scale reinforcement systems.



Installer/Technician Sound Reinforcement Systems Workbook

J269IG \$ 30.17

J269SW \$ 19.77

An audio signal is an electrical representation of a sound in the form of fluctuating voltage or current. To help better understand the concept, this workbook will look at the fundamental characteristics of this signal and show how it relates to frequency. The workbook is designed to be used in conjunction with the Sound Reinforcement Handbook. It begins by defining what a sound is and how sound is measured using dynamic range. It also explores the impact that the environment

has on sound systems, both indoors and outdoors. The student will learn how to understand and interpret specification which provides insight into the quality of design and construction. The workbook also discusses microphones, loudspeakers, and mixers. Subsequent lessons will amplify the student's understanding of sound system interconnection, test equipment, and electronics. The student will also explore the data structure of MIDI and sound synchronization.



Sound Reinforcement Kit Complete

J269IGKC \$ 69.95

J269SWKC \$ 59.70

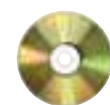
S479 Sound Reinforcement Handbook | J269 Installer/Technician Sound Reinforcement Systems Workbook

Sound Reinforcement Handbook CD

S479CD \$ 41.82

Based on the Sound Reinforcement Handbook Textbook, this CD provides a lesson-by-lesson PowerPoint Presentation for each of the topics covered in the text. Working to help the students understand the details of sound systems, this is a guide through the basic

concepts required to properly install and maintain these systems. This PowerPoint CD is ideally suited to allow the instructor to teach the concepts before assigning the material to the students, which will enhance the learning experience as the students complete each lesson.



Sound Reinforcement Kit Complete plus CD

J269IGKCCD \$ 111.77

S479 Sound Reinforcement Handbook

J269 Installer/Technician Sound Reinforcement Systems Workbook

S479CD Sound Reinforcement Handbook CD

STRUCTURED CABLING



Structured Cabling Textbook

S581 \$ 42.84

This textbook is the primary reference for lessons on structured cabling and unshielded twisted pair cable. The textbook includes nine chapters followed by hands-on exercises that reinforce the concepts in each of the

chapters. Important topics discussed in the textbook include the need for structured cabling, structured cabling systems overview, cables and connectors, structured cabling standards, and applications.



Structured Cabling Workbook

J271IG.I \$ 35.37

J271SW.I \$ 24.97

The Structured Cabling workbook immediately introduces the apprentice to premises cabling, the related safety codes, and the TIA/EIA standards and codes. With these fundamentals in place, the workbook further explains the need for structured cabling systems through exploring the system overview. Subsequently, the apprentice begins to study in more detail the unshielded twisted pair cables, connecting hardware, pathways, and spaces. After learning about telecommunications cabling administration, and grounding and bonding, the apprentice will begin configuring structured cabling systems and their applications. The remaining lessons delve into fiber optics, advantages, and characteristics, as well as understanding fiber optic connections and installations.

Structured Cabling Kit Complete

J271IGKC.I \$ 78.21

J271SWKC.I \$ 67.96

S581 Structured Cabling Textbook | J271 Structured Cabling Workbook

SUBSTATION

Substation Technician Workbook 1-1

JSS1-1IG.I \$ 70.75 **JSS1-1SW.I** \$ 60.34

This workbook begins with a lesson that instructs the student on how to study the course and gives helpful pointers on negotiating the course materials. The next three lessons present the advantages of an IBEW/NECA apprenticeship and the responsibilities of the apprentice. Other lessons give the student a thorough understanding

of the history of the IBEW and NECA. This workbook also covers subjects that every apprentice should be familiar with, such as avoiding the hazards of drug use, sexual harassment, absenteeism, and how to achieve a sense of professional personal conduct.



Substation Technician Workbook 1-2

JSS1-2IG.I \$ 54.10 **JSS1-2SW.I** \$ 43.70

The first seven lessons in this workbook expose the student to everyday mathematical equations, with each lesson building upon the last. The first seven lessons take the student from basic math with whole numbers to working with powers of 10 and metric prefixes. The next lesson picks up on some of the metric concepts that have been introduced and expands on them to include the metric system of measurement. The next

two lessons use the concepts learned in the previous eight lessons and present how to calculate the area and volume of a circle. The remaining four lessons introduce basic electrical concepts every substation technician must know. The lessons introduce current, voltage, and resistance in a circuit, and Ohm's Law. The workbook ends with a lesson that answers the question: what is electricity?



Substation Technician Workbook 1-3

Workbook 1-3 is the DC Theory workbook used in the Inside electrical apprenticeship program.



Substation Technician Workbook 1-4

JSS1-4IG.I \$ 56.18 **JSS1-4SW.I** \$ 45.78

To be successful in this industry, a substation technician must be knowledgeable about the trade, highly skilled in the mechanics, and aware of the importance of safety on the job. This book introduces OSHA, the reasons for its formation and its regulations. Several lessons in this workbook deal specifically with situations substation

technicians will be dealing with, such as structure rescue and fall protection. The workbook also includes lessons on grounding in substations and how to establish a protective grounding scheme in a substation and concludes with a lesson on the hazards of working outdoors.



Substation Technician Workbook 1-5

JSS1-5IG.I \$ 55.14 **JSS1-5SW.I** \$ 44.74

Because every Electrical Worker needs a basic knowledge of the tools of the trade, this workbook presents lessons on a wide variety of subjects. It begins with two lessons on identifying basic tools and the use and care of hand tools. This workbook explores the use and operation of blocks, slings, and chokers, as well as various rigging tools and equipment. Another lesson

explains the properties of ropes and how to use and care for them. This workbook discusses ladder safety topics including proper use, selection, and care. The workbook also introduces rigging tools and hardware, digger derricks, and the use of load charts associated with digger derricks. It concludes with a lesson on hand signals that are common to the electrical industry.



SUBSTATION



Substation Technician Workbook 1-6

JSS1-6IG.I \$ 55.14 **JSS1-6SW.I** \$ 44.74

This workbook begins the set of workbooks that has been specifically developed for the substation technician. The first two lessons are an overview of the electric system in general and are an introduction to the various types of substations a technician may encounter. The next five lessons present the ground work which goes into building a substation. They cover building substation foundations, excavating trenches, building duct banks, and proper methods of backfilling and

compacting a trench. Three lessons in this workbook discuss the various cable types used in substations, how to safely pull cable, and how to install cable in vaults and manholes. This workbook concludes with two lessons on the substation ground grid. One lesson deals with ground grid construction and the other deals with the exothermic welding process used to join ground grid conductors together.



Substation Technician Workbook 2-1 - 2-3

JSS2-1IG.I \$ 69.71 **JSS2-1SW.I** \$ 59.30

Section 2-1 contains a blocked series of seven lessons which introduce the student to blueprints and specifications. Electrical drawings and diagrams, along with civil drawings are also reviewed. Other lessons in this group discuss what blueprint symbols mean and how drawings are scaled and dimensioned. This workbook also contains a lesson dealing with substation steel erection and a lesson that introduces measuring and leveling devices. The workbook concludes with a lesson on right triangles and another on measuring and drawing angles.

that expands on boom capacities and load charts which leads into two lessons on steel superstructure assembly and erection. The last four lessons in this workbook deal with installing insulators, bus/jumper types, and wire bus types.

Section 2-2 deals with the groundwork needed when constructing a substation, from site layout and preparation to building an oil spill prevention containment system as required by the EPA. The next two lessons expand on previous lessons dealing with ground grids, equipment grounding, and the types of ground connectors available to the substation technician. The next eight lessons begin with a lesson

Section 2-3 consists of eleven lessons that cover equipment specific to substations. The first two lessons are an overview of substation equipment and are designed to help the student identify the various types of equipment he will encounter. Each of the following nine lessons in this workbook concentrates on specific pieces of substation equipment beginning with the power transformer and ending with lightning arrestors. The nine lessons explain the function of each piece of equipment and point out the hazards associated with them. Besides the equipment mentioned, this workbook covers capacitors, reactors, rectifiers, voltage regulators, and switches.



Substation Technician Workbook 2-4 - 2-6

JSS2-2IG.I \$ 75.95 **JSS2-2SW.I** \$ 65.55

Section 2-4 starts out with a lesson that reviews the applications of DC theory and is followed by four lessons dealing with voltage, current, power and resistance in combination circuits. Lesson 2-4-6 compares DC to AC and serves as an introduction to the following three lessons which deal with generators and the fundamentals of AC. Workbook 2-4 concludes with a lesson on inductance and another lesson on the causes and effects of voltage drop.

transformers, their construction and characteristics, and how transformers operate. Single-phase connections are also reviewed. The lessons dealing with the installation of transformers help the students understand some of the pit-falls they may face when working with single-phase transformers. This workbook concludes with two lessons on the use of test instruments.

Section 2-5 begins with a general safety awareness lesson which is followed by a lesson on substation applications of lock-out/tag-out. The next ten lessons are a blocked series of lessons covering single-phase transformers. The lessons cover an introduction to

Section 2-6 starts with a review from previously studied material with a lesson on how to conduct transformer load checks. Three-phase connections and voltages are covered in the next two lessons with the lessons on single-phase transformers wrap-up with a lesson on Ferroresonance and a lesson on the specific hazards a substation technician may encounter when

working with transformers. The next four lessons in this workbook include topics on step and touch potentials, equipotential zone grounding, and how to test ground (earth) resistance. This workbook concludes with two

Substation Technician Workbook 3-1 - 3-3

JSS3-1IG.I \$ 74.91 **JSS3-1SW.I** \$ 64.50

Power transmission construction is one of the fastest growing electrical industries. Key components of power transmission are substations and switchyards. The substation technician has to be highly trained in electrical construction and also be a productive leader.

There are many facets to substation construction that must be mastered. Safety is primary in both de-energized and energized situations. One of the significant dangers is the arc flash. These lessons discuss guidelines to prevent arc flashes, utilization of rubber protective devices, and general safety in the substation and the

Substation Technician Workbook 3-4 - 3-6

JSS3-2IG.I \$ 74.91 **JSS3-2SW.I** \$ 64.50

There is much to understand about power transformer operations in substations. In these lessons, transformers principles, inspection/testing, tap changers, and oil quality are discussed in great detail. Along with these components, there are many tests to understand, such as insulation power factor testing, resistance testing, temperature indicator testing, and pressure relay testing. Also various methods of insulation, including SF6 Gas and its proper handling, are discussed.

Other major components of substations are discussed in these lessons. Circuit breakers perform an important role to prevent the enormous available power from destroying equipment, along with protecting human life. Various operational, maintenance, and inspection/testing requirements of circuit breakers are covered. Also time-travel characteristics of circuit breakers are explored in respect to proper selective coordination. The lessons also discuss the roles of capacitors, reactors,

lessons that discuss subjects that substation technicians will be dealing with on a regular basis: power factor, and power harmonics.

switchyards. Grounding of all components, including vehicles, is also covered. In addition, power quality and distribution circuits are explained.

Finally, these lessons cover cable splicing and the components of safety, materials/tools, cable preparation, terminations, elbows, grounding, and all phases of testing. An introduction to fiber optics signaling is covered where cables, joints, and installation practices are discussed. Fiber optic cables are quickly becoming the primary communication path of control and data throughout the entire transmission network.

voltage regulators, and simple components such as raptor protection (animal control). Bus configurations, connections, welding, and infrared thermography are included.

The final sets of lessons focus on substation controls and the monitoring of all systems and components. Controls devices include protective relays and transmission system controllers. These systems communicate through powerline carriers utilizing System Control and Data Acquisition (SCADA) equipment. The monitoring of substation components are not only for healthy conditions, but for short circuit analysis and distribution line faults. These systems must have constant power to operate at all times; therefore, substation batteries and UPS are covered—and their maintenance and testing requirements. The final lessons discuss the procedures of commissioning and energizing a substation.



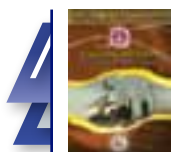
SUCCESS IN THE WORKPLACE



Something's Fishy: Absenteeism

Session: \$ 30.00 **Student:** \$ 24.48

The first DVD in the series addresses the topic of absenteeism on the job how it jeopardizes our relationship with our customers, the on-time completion of the project, and future employment opportunities for all IBEW members.

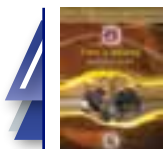


Crossing the Line: Professional Personal Conduct

Session: \$ 30.00 **Student:** \$ 24.48

The second DVD in the series combines two very important topics, professional personal behavior and safety, in a real-world workplace scenario. The goal of this program is to improve contractor and customer relations, be encouraging positive attitudes and professional work-site behaviors. Participants

completing this training program should be able to describe the connection between appropriate public job-site behavior and professionalism, as well as identify every worker's responsibility for safety and safe work practices.

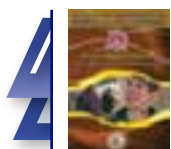


Time is Money: Productivity

Session: \$ 30.00 **Student:** \$ 24.48

The third DVD in the *Success in the Workplace* series addresses the critical issue of productivity. In today's highly competitive marketplace, there is no margin for mediocre performance or the old "make it last" attitude. Our mission is to meet the customer's needs by outperforming our competition with knowledge, skill, and ability. As highly skilled Electrical Workers, we are trained

to complete our installations in an efficient, workmanlike manner. We should take pride in bringing each and every job in on time and under budget. We need to send the message to our customers that, bottom line it truly does pay to hire the IBEW/NECA team for all electrical installation needs.

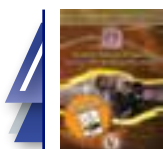


First Impressions: The Power of Personal Appearance

Session: \$ 30.00 **Student:** \$ 24.48

The fourth DVD in the series takes a hard look at personal appearance on the job site. In today's marketplace, a customer's decision to employ or re-hire IBEW members can be driven by first impressions of an individual member's outward appearance. Unfortunately, books are judged by their covers in the real world. This program focuses on the importance of every member presenting a professional image, every day, on every job. On any given day, you never know who is observing you and how important your "impression" can be to the future employment of IBEW members and NECA contractors. The simple reality is this: at certain times we must set aside our personal desire to openly express our

own "individuality" for the greater good of all members of the IBEW and NECA. Without question, our skills and training are far superior to our non-union counterparts. But that is not enough in the eyes of the customer. We all must constantly strive to present a superior, professional image at all times. The customer needs to feel good about his or her decision to employ our members on a project. When he or she see Electrical Workers who act like professional, dress like professionals, and show real pride in their work as well as themselves, they know they made the right decision. First impressions are so important, and you never get second chance to make a good one!



Every Hour Counts: Productivity Increases Employment

Session: \$ 30.00 **Student:** \$ 24.48

The fifth DVD in the *Success in the Workplace* series focuses on every worker's commitment on the job to make "Every Hour Count." By showing up on time and working to our full potential each day, we ensure that the work we perform is recognized as a "Value-add" over our non-union competition. Our efforts to restore our customer's faith in the organized electrical construction

industry are attributed in large part to a personal commitment to make Every Hour Count. The scenario in this program shows that had a small adjustment been made to labor costs during the bidding process, the contractor's bid could have gone in favor of the union and created employment for IBEW members.

Fiscally Fit?: The Challenges of the Marketplace

Session: \$ 30.00 **Student:** \$ 24.48

The sixth DVD in the *Success in the Workplace* series addresses the misconception that if you go into the electrical contracting business you will automatically be successful, and that contractors are constantly reaping extravagant profits at the expense of the labor of IBEW members. This program features the story of a contractor who loses an important union bid which

adds to his growing cash flow problems. The contractor is a hard-working owner who faces all the pressures of running a business while supporting his family and his “extended family” of Electrical Workers. This program serves to illustrate all the time and effort required to submit a bid, the outcome of which is never certain, in competition with non-union contractors.



Glass Houses: Ethical Behavior

Session: \$ 30.00 **Student:** \$ 24.48

The seventh DVD in the *Success in the Workplace* series focuses on “time theft” on the job site. The scenario in this program depicts an Electrical Worker asking one of his colleagues to cover for him while he leaves the job

site to take care of some personal business. Time theft is a serious abuse of our profession on many levels; it goes against our work ethic, our morals, and the trust our customers and our employers place in us.



Press One for Service: Meeting the Customer's Needs

Session: \$ 30.00 **Student:** \$ 24.48

The eighth and final program in the *Success in the Workplace* series focuses on the importance of delivering excellent customer service in order to gain new customers and retain customer loyalty. During the appraisal and bid process, price is not always the only determining factor in deciding whom the job is awarded. Customers often choose new contractors based on their overall impression of how qualified the company is

and how competent and professional their workers are. Were the customer's phone calls returned in a timely manner? Were contractor representatives punctual for appointments? Did the Electrical Workers dress and act professionally, leaving the customer with peace-of-mind and a confident impression that “There guys really know what they are doing!” Providing excellent customer service is a practice that can only pay positive dividends.



TELEPHONY



Harris Handbook

S281 \$ 15.61

As the primary reference for the NJATC telephone lessons, this textbook gives the apprentice a broad overview of telephone systems, including telephone networks, customer equipment, the switching (central) office, and the structure and use of telephone numbers. Included is a section on private branch exchanges, the

flexible, switchable telephone systems found in most businesses and many larger homes. Also discussed are some of the newer broad-band signaling technologies, including integrated services digital networks (ISDN) and digital subscriber lines (DSL), that allow the simultaneous distribution of both voice and high-speed data.



Installer/Technician Telephony Workbook

J262IG \$ 36.41 **J262SW** \$ 26.01

The telephone, born in America over one hundred years ago, has become the magic link by which a person can communicate with people across a street, across a city, or across a continent. It accepts the sounds of the human voice, transforms them into signals that cannot be seen or heard and speeds them along the wires or through space to another telephone. Over the years, technology has advanced this primary means of communicating. This workbook begins with an explanation of a basic understanding of the telephone

system and its circuitry and then explores the various types of signals used to transmit data. Since Electronic Key Systems (EKS) are used in many of today's small businesses, an installer and technician should recognize the origin of these systems. Students will identify the transition from individual telephones to electromechanical key systems to the application of electronic key systems. These systems have combined new technologies for call processing and features that are still in use today.

Installer/Technician Telephony Kit Complete

J262IGKC \$ 52.02 **J262SWKC** \$ 41.77

S281 Harris Handbook | J262 Installer/Technician Telephony Workbook



Installer/Technician Telephony CD

J262CD \$ 15.61

Based on the NJATC's *Telephony* workbook and the Harris *Telephony* textbook, this CD provides a lesson-by-lesson PowerPoint Presentation for each of the topics covered in the student workbook and the text. Working to help the students understand the details of telephony systems, this is a guide through the basic

concepts required to properly install and maintain these systems. This PowerPoint CD is ideally suited to allow the instructors to teach the concepts before assigning the material to their students. This will enhance the learning experience as the students complete each lesson.

Installer/Technician Telephony Kit Complete plus CD

J262IGKCCD \$ 93.64

S281 Harris Handbook | J262 Installer/Technician Telephony Workbook | J262CD Installer/Technician Telephony CD

TEST INSTRUMENTS

Test Instruments Textbook

S471 \$ 53.00

Test Instruments begins with an introduction to safety and test instruments, and then focuses on test instruments used for specific applications found in the industry. Common electrical measurements are

introduced with an overview of the measurement principles and test instrument procedures required. Required safety practices and common industrial applications are emphasized throughout the book.



CET: Test Instruments with Textbook

Session: \$ 30.00 **Student:** \$ 71.00

The Test Instruments course begins by introducing safety requirements for using test instruments. The course proceeds into the specific applications for industry standard test instruments. An overview of

measurement principles and test instrument procedures are covered along with an explanation of personal protective equipment as specified in NFPA 70E.



Test Instruments, Level I

Session: \$ 31.00 **Student:** \$ 24.00

Prerequisite(s): AC Systems, Level I

The course is designed to instruct why special test instruments are needed and how to select, understand, and safely operate them. Knowledge of Voice-Data-Video (VDV), power quality, high voltage and insulation,

instrumentation and process control, and special maintenance test instruments prepares the learner to work on all kinds of electrical installations.



Test Instruments Workbook

J285IG.H \$ 33.29 **J285SW.H** \$ 22.89

Test Instruments workbook begins with an introduction to test instruments and their general use in their specific applications in the industry. It begins its in depth study with the voice-data-video (VDV) and power quality test instruments. Next, it explores electronic circuit test

instruments, grounding systems, and earth ground test instruments. Safety practices and common industrial applications are emphasized throughout the book, especially as it relates to high voltage and insulation test instruments.



Test Instruments Kit Complete

J285IGKC.H \$ 86.33 **J285SWKC.H** \$ 76.08

S471 Test Instruments Textbook | J285 Test Instruments Workbook

Test Instruments Application Manual

J285AM \$ 53.00

The Applications Manual consists of review questions and application. The review questions test the comprehension of important concepts from the textbook that form the basis for the applications. The applications focus on the use of test instruments typically found in industry. These applications

build on the textbook by addressing technical and regulatory information and procedures for performing calculations and troubleshooting. The manual introduces situations in which test instruments must be used and stresses testing procedures, reading prediction, and troubleshooting analysis.

Test Instruments Kit Complete plus Application Manual

J285IGKCAM.H \$ 136.27 **J285SWKCAM.H** \$ 113.54

S471 Test Instruments Textbook / J285 Test Instruments Workbook

J285AM Test Instruments Application Manual / J285AMIG Test Instruments Application Manual Instructor Guide

TORQUE



Torque, Level I

Session: \$ 31.00

Student: \$ 24.00

Prerequisite(s): None

This course introduces why torque is important in the electrical industry by explaining torque theory, specific definitions, torque conversion, friction, phases of fastening, and factors that affect torque. The Electrical Worker will be introduced to the basic principles of fasteners, which include markings, class/ grade, bolt

tension and strength, nut strength and compression, the use of washers, and thread identification and pitch. The course will also cover types of torque wrenches and screwdrivers, and the required procedures for torque application to electrical equipment such as breakers, lugs, and receptacles.



Torque Workbook

J242IG.J \$ 33.29

J242SW.J \$ 22.89

This workbook includes information pages that provide the needed reference material for the lessons. Section I introduces why torque is important in the electrical industry by explaining torque theory, specific definitions, torque conversion, friction, phases of fastening, and factors that affect torque. Section II describes the basic principles of fasteners which include markings,

class/ grade, bolt tension and strength, nut strength and compression, why washers are used, and thread identification and pitch. Section III covers types of torque wrenches and screwdrivers, and the required procedures for torque application to electrical equipment such as breakers, lugs, and receptacles.

TRAFFIC SIGNAL

Traffic Signal Technician Workbook 1-1

TS1-1IG \$ 66.59 **TS1-1SW** \$ 56.18

The first workbook in the Traffic Signal Technician Apprenticeship curriculum contains twelve lessons designed to familiarize the apprentice with some basic yet essential knowledge of the electrical industry. Workbook 1-1 begins by explaining the responsibilities of an apprenticeship, along with the responsibilities and

role of the IBEW and *NECA*. The student must learn the importance of safety on the job and Workbook 1-1 begins with an introduction to OSHA and electrical safety awareness lessons. The book also explores the various tools of the trade, what they are used for, and how to use and take care of them.



Traffic Signal Technician Workbook 1-2

TS1-2IG \$ 44.74 **TS1-2SW** \$ 34.33

Workbook 1-2 is designed to introduce the student to general safety work practices and how to set up and work in a traffic work zone. The safety lesson topics in this workbook include working around powered equipment, the use of personal protective equipment, and working in and setting up a traffic work zone. There

are also two introductory lessons on conduit bending, explaining how to manufacture 90 degree bends, offsets, and kicks. The final four lessons of this workbook cover flagging, signs, and barricades, which when completed, prepares the student to take the IMSA Work Zone Safety certification examination.



Traffic Signal Technician Workbook 1-3

TS1-3IG \$ 37.45 **TS1-3SW** \$ 27.05

Workbook 1-3 is a mixture of orientation, safety, *National Electrical Code*, and job information lessons. The twelve lessons of this workbook begin with several lessons reviewing the IBEW Constitution, and local union by-laws. Good housekeeping and the proper care and use of ladders comprise two of the informational lessons. The student is introduced to the *National Electrical Code*

with three lessons beginning, with an Introduction to the *NEC*, followed by a lesson on Article 110 and a lesson interpreting the language of the *NEC*- Article 100. The final lessons of this workbook focus on building wire construction and insulation properties, and how wire is sized.



Traffic Signal Technician Workbook 1-4

TS1-4IG \$ 43.70 **TS1-4SW** \$ 33.29

This workbook is comprised of twelve lessons of which are job information lessons. Hoisting loads properly and working in baskets, aerial lifts, and platforms are at the beginning of this “how to” series of lessons. The workbook also explores the use and operation of

blocks, slings, and chokers, as well as various rigging tools and rigging equipment. Identifying commonly used electrical products is reviewed along with two lessons on underground installations – conduit and trenching operations and the installation of caissons.



Traffic Signal Technician Workbook 1-5

TS1-5IG \$ 71.38 **TS1-5SW** \$ 61.18

Workbook 1-5 is a mixture of job information and theory lessons. The job information lessons begin by introducing the student to traffic signal cabinets and equipment and phasing and traffic flow, along with an introductory basic signal blueprint reading lesson. Surveying, elevations, and grades with an introduction to measuring and leveling devices complete the “how

to” lessons. The next lessons, which are probably the most important in the study of electrical theory, will show how Ohm’s Law defines the relationship among the three basic electrical units. Building upon those fundamentals, the student will learn how to solve for power calculations.



TRAFFIC SIGNAL



Traffic Signal Technician Workbook 1-6

TS1-6IG \$ 55.06 **TS1-6SW** \$ 44.74

As in the previous workbook, the twelve lessons in workbook 1-6 are comprised of a mixture of job information and theory lessons. The theory lessons deal specifically with series circuits and how resistance, current, voltage, and power react in a series circuit. The effect that resistance has on current and voltage in a series circuit is also studied. The final six lessons

have the student review the Manual on Uniform Traffic Control Devices (MUTCD). The MUTCD is recognized as the standard to build when local or state specifications are not available. At the completion of workbook 1-6, the student, with a short review, is ready to take the IMSA Traffic Signal Level I certification examination.



Traffic Signal Technician Workbook 2-1

TS2-1IG \$ 44.74 **TS2-1SW** \$ 34.33

The second year workbook 2-1 consists of eleven lessons, with the first three lessons covering in detail important orientation information: the benefits of a national program, American labor history, and the National Electrical Benefit Fund (NEBF). Workbook 2-1 continues where Workbook 1-6 left off by discussing

parallel circuits and the mathematics associated with them. This series of lessons begin an in-depth study of electrical theory by examining parallel circuits. The student will explore voltage functions in a DC parallel circuit, how current reacts in a DC parallel circuit, and how to calculate the power.



Traffic Signal Technician Workbook 2-2

Workbook 2-2 is the Codeology workbook used in the inside electrical apprenticeship program.



Traffic Signal Technician Workbook 2-3

TS2-3IG \$ 45.78 **TS2-3SW** \$ 35.36

This workbook begins with four job information/safety lessons on underground construction: Excavation and Shoring, OSHA Standards for Excavation, Underground Conduit Installation, and Bending PVC Conduit. The next five lessons address an important topic for all Electrical

Workers – personal protective grounding. Lesson topics include Body Currents, Step and Touch Potential, and Induced Voltage and Multiple Grounds. Also in Workbook 2-3 are three lessons covering spans and mast arms, job layout, and intersection wiring.



TS2-3P \$ 14.57

This print set is used with the Traffic Signal 2-3 workbook and is needed to complete the lessons.



Traffic Signal Technician Workbook 2-4

TS2-4IG \$ 44.74 **TS2-4SW** \$ 34.33

Workbook 2-4 consists of twelve lessons addressing basic volume and area calculations, DC combination circuits, and three introductory test instrument lessons. The first three lessons of the workbook teach the student how to calculate the area and volume of a circle along with basic information on concrete fundamentals. The next five lessons will provide the student with an

understanding of resistance in DC combination circuits, how current reacts in a DC combination circuit, how voltage functions, and how to calculate power in a DC combination circuit. Introduction to Test Instruments, General Use of Test Instruments, and Troubleshooting with test instruments completes the lessons studied in workbook 2-4

TRAFFIC SIGNAL

Traffic Signal Technician Workbook 2-5

TS2-5IG \$ 47.86 **TS2-5SW** \$ 37.45

Workbook 2-5 has twelve lessons with ten lessons focusing on DC and AC theory. This workbook begins with the review of DC Theory, which includes the study of magnetism principles. AC theory, more specifically the study of AC generators, resistive and reactance circuits along with learning to make basic circuit calculations

are introduced to the student. The students will learn about the components of an AC circuit and will see how inductance and capacitance affect how an AC circuit operates. The last two lessons are a study of transformer operation principles and transformer connections.



Traffic Signal Technician Workbook 2-6

TS2-6IG \$ 71.38 **TS2-6SW** \$ 61.18

The last workbook of the second year has eleven lessons which mainly concentrate on traffic signal cabinets and equipment. The first two lessons are an overview of basic electrical safety practices and “real world” transformer connections. The students are then introduced to a basic electronics lesson, which will help prepare them for the upcoming lessons on traffic signal cabinets. The next five lessons cover traffic

signal cabinets and equipment, vehicle detection – intrusive devices, and traffic signal preemption. Finally, the students are given information on traffic signal print reading for both NEMA TS-1 and TS-2, type 170 configurations. At the completion of the second year curriculum the students are ready, with a short review, to take the IMSA Traffic Signal Level II National Certification Examination.



Traffic Signal Technician Workbook 3-1

TS3-1IG \$ 65.26 **TS3-1SW** \$ 55.06

Workbook 3-1 focuses on AC Theory and the basic characteristics of AC circuits. Both series and parallel inductive and capacitive circuits are studied. Two lessons describe the effects of power factor on a circuit

and how to make corrections to the power factor of an AC circuit. There are also two safety lessons making the students aware of overhead hazards and some risks involved in working with electricity.



Traffic Signal Technician Workbook 3-2

TS3-2IG \$ 43.70 **TS3-2SW** \$ 33.29

This workbook has several orientation lessons dealing with the realities of working in the construction industry and also the economics of becoming unemployed. The importance of productivity on the job is also reviewed.

Seven of the eleven lessons are job orientation lessons focusing on traffic signal cabinet configurations, controller configurations, and detection and preemption menus. Vehicle detection devices are also discussed.



Traffic Signal Technician Workbook 3-3 / 3-4

TS3-3IG \$ 75.46 **TS3-3SW** \$ 65.26

This workbook combines eleven lessons for Workbook 3-3 and five lessons for Workbook 3-4. Workbook 3-3 lessons focus in two different areas: traffic signal time coordination and lighting. Lessons on time space diagrams and coordination menus are covered. Street lighting and the science of lighting, including the

“ABC’s” of high intensity discharge (HID) lighting, round out Workbook 3-3’s lessons. Workbook 3-4 introduces the student to alternative energy sources, uninterrupted power supply systems, and two different fiber optic systems.



TRAFFIC SIGNAL



Fiber Optic Workbook

The Fiber Optic workbook is a continuation of Workbook 3-4. This workbook identifies the requirements of the *NEC* and how they apply for fiber optic installations. These lessons build upon the fundamental skills that a technician needs for installing and servicing fiber optic

systems. These lessons will help develop “best practice” procedures for applying the safety rules when handling fiber optic materials, along with educating the student about proper installation practices.



Traffic Signal Technician Workbook 3-5

Workbook 3-5 is the Installer/Technician CCTV (J268) workbook used in the inside electrical apprenticeship program.



Traffic Signal Technician Workbook 3-6

TS3-6IG \$ 54.04 TS3-6SW \$ 43.70

This is the last workbook of the three-year traffic signal technician apprenticeship course. Workbook 3-6 draws upon the knowledge the student has gained in all the previous lessons to answer questions involving different troubleshooting scenarios. There are 22 lessons in this workbook. Nineteen lessons are devoted to troubleshooting traffic signal systems. Information sheets accompanying these lessons have flow charts to

help the student systematically evaluate and determine the proper procedure to fix a problem. Troubleshooting scenarios include dark intersections, multiple variations of flashing intersections, and improper cycling of intersections. Workbook 3-6 will help measure the knowledge the student has gained in this program, and will be a valuable reference the student can use for years to come.

TRAINING DIRECTOR MATERIALS

Operations Manual for Training Directors & JATC Members

TDOM001-14 \$ 205.02

A must have for all new Training Directors, Assistants, and JATC Committee Members as well as seasoned Training Directors and Committee Members. The Operations Manual contains common procedures and processes concerning the day to day activities of JATCs. Topics include Apprenticeship and Training Standards, Preparing for Trust Committee Meetings, Trust Fund Agreement, Written Policy Statement, Financial Management, Record Keeping, Insurance

Coverage, Basic Laws and Policies, Apprenticeship Selection Procedures, Affirmative Action Plan & Sexual Harassment, Related Instruction, and new Apprentice Orientation. A Resource Guide on CD is also provided that gives in-depth information to complement the Operations Manual. A *NECA* Director stated "This should be standard issue for all *NECA* Director's, I refer to my copy constantly."



The Americans With Disabilities Act Manual for Apprenticeship Programs

TDADA \$ 205.02

This manual was created by the NJATC in an effort to summarize the myriad of information available concerning the Americans with Disabilities Act (ADA), enacted by Congress in 1990 and revised in 2009. This new resource provides examples and illustrations that

clearly address the most common ADA issues JATCs are confronted with. Applicable Policy verbiage and Forms are also included in the Manual. Unquestionably, this is a **MUST HAVE** resource guide for every JATC.



Training Director Kit

TDK01 \$ 343.74

TDOM001-14 Operations Manual for Training Directors & JATC Members

TDADA The American With Disabilities Act Manual for Apprenticeship Programs

TRANSFORMERS



Transformer Principles and Applications Textbook

S476 \$ 60.00

This text provides a comprehensive overview of transformer operation, maintenance, installation, and troubleshooting, beginning with a thorough discussion of magnets, magnetism, electromagnetism, and how these apply to transformer operation. Subsequent chapters include the latest information on how transformers are

used to reduce harmful effects of harmonics, and how reactors and isolation transformers are used to improve the power quality available to electronic equipment. Installation, maintenance, and troubleshooting of transformers are discussed in detail.



CET Course: Transformer Principles and Applications with Textbook

Session: \$ 30.00 Student: \$ 83.00

The *Transformer: Principles and Applications* course provides a comprehensive overview of transformer operation, maintenance, installation, and troubleshooting. Additional topics include

effects of harmonics, power quality using reactors and transformers, autotransformers, buck-boost transformers, and other special transformers.



CET: Inside Transformer Simulator

Session: \$ 75.00 Student: \$ 86.00

This simulator is a fully interactive training tool that simulates transformer connections in a lifelike setting which is safe for student and the equipment. The simulator is capable of simulating almost any transformer connection imaginable. The simulator is capable of displaying both schematic and field views for each connection configuration.



Transformers, Level I featuring the Transformer Simulator, Level I

Session: \$ 76.00 Student: \$ 65.00

Prerequisite(s): AC Theory, Level I; Code and Practices 2, Level I

This course is designed to teach the fundamentals of transformers and the different types of transformer connections. The course covers important topics such as the Principles of Magnetism and Electromagnetism and Transformer Operating Principles. After the basics are covered, the students begin the study of Transformer

Connections. The students can use the Transformer Simulator to practice making real transformer connections that were covered in the lesson and associated labs. The transformer simulator provides a safe environment for the students to practice making the connections. PPTs included.



Transformers, Level II featuring the Transformer Simulator, Based on the 2014 NEC

Session: \$ 76.00 Student: \$ 35.00

Prerequisite(s): Transformers, Level I; Code Calculations, Level II

This course is designed to expand on the knowledge gained from the Level I course. A study in Reactors and Isolation Transformers comes before digging into Auto Transformers and Buck-Boost Transformers. The students can then use the Transformer Simulator to practice making real transformer connections that

were covered in the lesson and associated labs. The transformer simulator provides a safe environment for the students to practice making the connections. Finally, this course covers Transformer Overcurrent Protection and Transformer Overcurrent Protection with Associated Tap Rules. PPTs included.



Transformers, Level III featuring the Transformer Simulator

Session: \$ 76.00 Student: \$ 12.00

Prerequisite(s): Transformers, Level I

This course begins with a brief overview of Electrical Safety and then covers Special Transformers and Special Connections. It concludes with lessons on Selection and Installation and Maintenance and Troubleshooting.

WIND TURBINE

Wind Turbine Orientation

J299IG.I \$ 56.18 **J299SW.I** \$ 30.17

The Wind Turbine Orientation course is for Journeymen wiremen who wish to enter the field of wind turbine construction. A detailed set of learning objectives are presented to address those areas that have been identified as necessary for Journeymen working within wind farms. This course introduces or refreshes study

material for those areas where a Journeyman may desire to improve his or her understanding.

Wind Turbine Orientation is not designed to replace any existing areas of study but to refresh, recall, and enhance existing Journeyman skills.



Terminations & Splices Theory - Practice

S094 \$ 12.48

This handbook is to assist the user of electric cables, splices, and terminations, and as a reference to those engaged in the planning, installation and maintenance of electrical cable systems.



Cables and Wiring

S143 \$ 91.80

This concise, easy-to-use book is a single-source guide to electrical cables. Written in two parts, Cables and Wiring, 2E begins with chapters that illustrate acceptable methods for installing, splicing, and terminating power cables. The second part of Cables and Wiring is a complete reference to over 30 types of Underwriters Laboratories® and *National Electrical Code*® listed cable and wire. It includes information on available sizes, ampacities, temperature ranges, allowable installations, receiving and handling, and termination methods. Features: -updated to include the many new cable

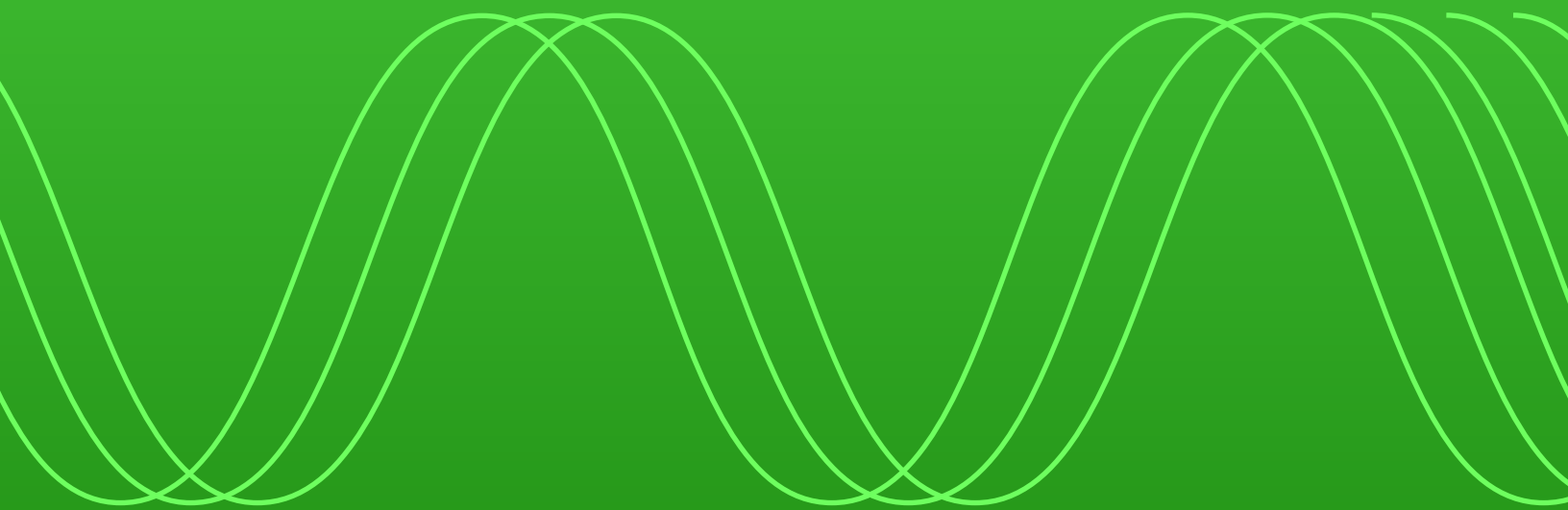
types-both copper and fiber optic-used for voice and data communication -includes expanded information in many areas, updated for the 1999 *National Electrical Code*® -provides information unavailable in any other single location for easy reference -comprehensive and practical coverage provides quick access to information on power cable and wire construction, splicing, termination, testing, and applications -a "must-have" reference for journeyman electricians, contractors, inspectors, and designers.



Wind Turbine Orientation Kit Complete

J299IGKC.I \$ 160.47 **J299SWKC.I** \$ 134.61

J299 Wind Turbine Orientation Workbook / Instructor Guide | S094 Terminations and Splices
S143 Cables and Wiring





Resources



COURSE PRESENTATION SOFTWARE

Available for
the Inside,
Residential and
Telecommunications
Programs



Course Presentation CD-ROM

The Course Presentation (CP) Software is a Windows based visual presentation program which provides a question-by-question review of the lessons in the program that it supports (Inside, Residential, or Telecommunications). Each year in each program is distributed separately and has been redesigned to run seamlessly on Windows Vista.

How much valuable classroom time do instructors spend drawing electrical diagrams or providing step-by-step solutions to lesson questions?

The CP Software allows the instructor to display the answers to the workbook lessons using a projector. This more efficient use of time allows the instructor to discuss the problems instead of merely re-drawing them on the board. The questions and answers appear on the screen sequentially; therefore, it runs like a PowerPoint Presentation with features tailored for the Electrical Apprenticeship classroom. Like many similar programs, the CP program also responds to a remote control mouse, so the instructor can move about the room while covering the lesson material.

Among the useful features of the CP software is its ability to run PowerPoint from within its framework. This allows the instructor to go between the lesson questions and a personally created PowerPoint presentation. The top menu also allows the instructor the ability to launch any other program that he/she may desire. Examples of other useful programs which can be launched include: AutoCad, Constructor, or MultiSim. (Note: In order to have this functionality, the workstation has to have these other programs loaded.)

Another useful feature is the ability for instructors to add their own comments on any screen. This comment file which is preloaded by the instructor can aid in discussion by adding additional points to discuss or to provide a reminder to utilize a PowerPoint file. The instructor is notified when a comment is present by a flashing icon that appears when that screen is active.

Due to the significant amount of curriculum improvements each year, the cost of the CP program annual renewal is affordable to the JATC.

INSIDE

ACP4K15	4th yr	\$ 91.00
ACP5K15	5th yr	\$ 91.00

RESIDENTIAL

RCP1K15	1st yr	\$ 91.00
RCP2K15	2nd yr	\$ 91.00
RCP3K14	3rd yr	\$ 91.00

INSTALLER/ TECHNICIAN

TCP1K15	1st yr	\$ 91.00
TCP2K14	2nd yr	\$ 91.00
TCP3K15	3rd yr	\$ 91.00

Test Generator CD-ROM

The *electrical training ALLIANCE* Test Generator is an on-line test generator that allows the user to create all tests required for the *electrical training ALLIANCE* curriculum. It is packed full of features such as scrambled tests and multiple choice tests that are printed from the computer as a PDF file. The one-year

subscription is revised so that all tests are current. The initial purchase includes a CD-ROM for security access. The subscription is renewable each year from within the program--the user does not have to re-order the Test Generator through the electrical training ALLIANCE warehouse.

Inside	\$ 200.00 per year
Residential	\$ 100.00 per year
Installer/Technician	\$ 100.00 per year

On the Job Training, Supervising, Evaluating, and Certifying

DVD001 \$ 195.00

On the job training is such an important part of the apprenticeship experience, and this invaluable program will help the viewer gain a broader appreciation for the value of properly trained Electrical Workers. Proper training is what allows for the development of a competent craftsman. Quality training does make a difference.

This multimedia resource will guide one through the process of teaching, managing, evaluating, and certifying an apprentice's job skills. While the program is designed for individual use, it can

also be used by Instructors to complement their teaching in a classroom setting. Signatory contractors, IBEW Local Unions, and NECA Chapters will certainly find multiple uses for this exciting new program as well. It is sincerely hoped that this DVD/CD ROM will provide the Industry with a very use full communication tool. It will go a long way towards reminding everyone from time to time to revisit and acknowledge the critical role that proper instruction, supervision and evaluation plays in building quality, competent, proud electrical craft workers.



Interview Techniques

DVD002 \$ 195.00

Interview Techniques provides 90 minutes of easy-to-navigate, self-paced multi-media instruction using compelling video scenarios, self-evaluation questions, and tips from committee members. The program shows what to do – and what not to do – to select the best applicant and avoid common legal problems. Interview Techniques also addresses the many subtleties that help to get the best performance out of both the interview committee and the job applicant. The program is available in both DVD and CD-ROM format, and can be used individually or in a group discussion setting by interview committee members.

The applicant interview process – from either side of the

table – can be filled with procedural pitfalls; from insufficient introductions to inappropriate follow-up questions, the potential for mistakes is high. The consequences of poor interview techniques, include the loss of qualified applicants and the legal challenges from rejected interviews can be an even greater hazard. To address this, NJATC, IBEW, and NECA have set out to establish a standardized applicant selection process to eliminate unfair, illegal, or inconsistent interviewing methods. Geared toward JATC members involved in the apprenticeship selection process, Interview Techniques teaches the finer point of interview preparation, structure, and questioning.



Instrumentation Trainer Support Program

J297CD \$ 504.90

The Instrumentation Trainer Support Program is designed to assist in hands-on applications. This DVD provides a visual method for instructors to perform lab functions through virtual display. The program provides exact replicas of the Instrument

Trainer to visually cover lab assignments, devices, and operation of the trainer. Use this CD to cover the lab exercises with the class prior to beginning the exercise.



Meeting the Needs of the Electrical Industry Training and Workforce Development DVD

DVD025 \$ 30.00

This DVD will give you an inside look into some of the hottest markets emerging in the electrical industry today. With the click of a button, you will discover endless opportunities available in Solar, Safety, Residential, Certification, Instrumentation, Line Construction, Building Automation, and Telecommunications.

Explore these and see first-hand how the NJATC prepares and trains thousands of men and women every day to deliver the best, most knowledgeable Electrical Workers to North America's jobsites.



Ace That Test

Session: \$ 30.00

Student: \$ 49.98

The aim of the Ace That Test program is to help students improve their test taking skills. This is accomplished by practicing many types of short tests on how to get the best test score on an exam. The course helps students become successful test

takers and ensure that what they really know is reflected in their test scores. The Ace That Test program aims to help students do well on important tests and certification exams.



INSTRUCTOR TRAINING SET OF 8 DVDS

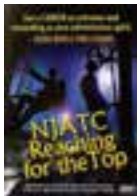
	Item Number	Price
Qualifications/Selections of Instructors	DVD070	\$ 30.60
Establishing a Learning Environment	DVD071	\$ 30.60
Effective Instructional Methods	DVD072	\$ 30.60
Effective Use of Audio Visual Aids	DVD073	\$ 30.60
Getting Ready to Teach	DVD074	\$ 30.60
Evaluating Performance of Apprentices	DVD075	\$ 30.60
Instructor Evaluation	DVD076	\$ 30.60
Common Errors in Teaching	DVD077	\$ 30.60
Instructor Training Kit	DVD070K	\$ 204.00

SAFETY SUPPLEMENTALS

	Item Number	Price
Once the Arc Begins	DVD162	\$ 30.60

RECRUITMENT DVDS

	Item Number	Price
More Than You Ever Imagined (National Training Institute Promotional DVD)	DVD026	\$ 25.50
NJATC Recruitment DVD (Inside, Residential, Installer Technician and Outside Lineman)	S430	\$ 45.90



NJATC Reaching for the Top
(Outside Electrical Lineman
Recruitment)
DVD210 \$ 25.50



**Put Your Mind to Rest You
Have Hired the Best**
DVD211 \$ 25.50

An Eight
Volume Series
of Informational
Programs from
the NJATC

SUCCESS IN THE WORKPLACE

Entire series now available on the
NJATC Blended Learning System.

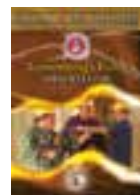
The *Success in the Workplace* series explores critical conduct issues through interactive video scenarios. Each program in the series highlights the attitudes that lead to a successful career in the electrical industry. Case study videos illustrate how work ethic and pride in one's craft count as much as job skills when it comes to satisfying the customer. Equally important, the programs examine the key interpersonal issues that factor into professional image and performance. The Success in the Workplace series is designed for group-paced classroom instruction.

Any 4 or
more DVDs
\$175.00 each

Any 8 or
more DVDs
\$150.00 each

Something's Fishy: Absenteeism DVD003 \$ 195.00

The first DVD in the series addresses the topic of absenteeism on the job how it jeopardizes our relationship with our customers, the on-time completion of the project, and future employment opportunities for all IBEW members.



Crossing the Line: Professional Personal Conduct DVD004 \$ 195.00

The second DVD in the series combines two very important topics, professional personal behavior and safety, in a real-world workplace scenario. The goal of this program is to improve contractor and customer relations, be encouraging positive attitudes and professional work-site behaviors. Participants

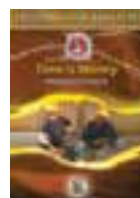
completing this training program should be able to describe the connection between appropriate public job-site behavior and professionalism, as well as identify every worker's responsibility for safety and safe work practices.



Time is Money: Productivity DVD005 \$ 195.00

The third DVD in the *Success in the Workplace* series addresses the critical issue of productivity. In today's highly competitive marketplace, there is no margin for mediocre performance or the old "make it last" attitude. Our mission is to meet the customer's needs by outperforming our competition with knowledge, skill, and ability. As highly skilled Electrical Workers, we are trained to

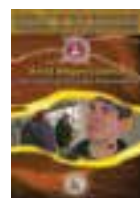
complete our installations in an efficient, workmanlike manner. We should take pride in bringing each and every job in on time and under budget. We need to send the message to our customers that, bottom line it truly does pay to hire the IBEW/NECA team for all electrical installation needs.



First Impressions: The Power of Personal Appearance DVD006 \$ 195.00

The fourth DVD in the series takes a hard look at personal appearance on the job site. In today's marketplace, a customer's decision to employ or re-hire IBEW members can be driven by first impressions of an individual member's outward appearance. Unfortunately, books are judged by their covers in the real world. This program focuses on the importance of every member presenting a professional image, every day, on every job. On any given day, you never know who is observing you and how important your "impression" can be to the future employment of IBEW members and NECA contractors. The simple reality is this: at certain times we must set aside our personal desire to

openly express our own "individuality" for the greater good of all members of the IBEW and NECA. Without question, our skills and training are far superior to our non-union counterparts. But that is not enough in the eyes of the customer. We all must constantly strive to present a superior, professional image at all times. The customer needs to feel good about his or her decision to employ our members on a project. When he or she see Electrical Workers who act like professional, dress like professionals, and show real pride in their work as well as themselves, they know they made the right decision. First impressions are so important, and you never get second chance to make a good one!



SUCCESS IN THE WORKPLACE

Entire series now available on the NJATC Blended Learning System.

An Eight
Volume Series
of Informational
Programs from
the NJATC



Every Hour Counts: Productivity Increases Employment DVD007 \$ 195.00

The fifth DVD in the *Success in the Workplace* series focuses on every worker's commitment on the job to make "Every Hour Count." By showing up on time and working to our full potential each day, we ensure that the work we perform is recognized as a "Value-add" over our non-union competition. Our efforts to restore our customer's faith in the organized electrical construc-

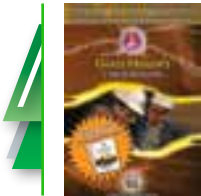
tion industry are attributed in large part to a personal commitment to make Every Hour Count. The scenario in this program shows that had a small adjustment been made to labor costs during the bidding process, the contractor's bid could have gone in favor of the union and created employment for IBEW members.



Fiscally Fit?: The Challenges of the Marketplace DVD008 \$ 195.00

The sixth DVD in the *Success in the Workplace* series addresses the misconception that if you go into the electrical contracting business you will automatically be successful, and that contractors are constantly reaping extravagant profits at the expense of the labor of IBEW members. This program features the story of a contractor who loses an important union bid which adds to his

growing cash flow problems. The contractor is a hard-working owner who faces all the pressures of running a business while supporting his family and his "extended family" of Electrical Workers. This program serves to illustrate all the time and effort required to submit a bid, the outcome of which is never certain, in competition with non-union contractors.



Glass Houses: Ethical Behavior DVD009 \$ 195.00

The seventh DVD in the *Success in the Workplace* series focuses on "time theft" on the job site. The scenario in this program depicts an Electrical Worker asking one of his colleagues to cover for him while he leaves the job site to take

care of some personal business. Time theft is a serious abuse of our profession on many levels; it goes against our work ethic, our morals, and the trust our customers and our employers place in us.



Press One for Service: Meeting the Customer's Needs DVD010 \$ 195.00

The eighth and final program in the *Success in the Workplace* series focuses on the importance of delivering excellent customer service in order to gain new customers and retain customer loyalty. During the appraisal and bid process, price is not always the only determining factor in deciding whom the job is awarded. Customers often choose new contractors based on their overall impression of how qualified the company is and how competent

and professional their workers are. Were the customer's phone calls returned in a timely manner? Were contractor representatives punctual for appointments? Did the Electrical Workers dress and act professionally, leaving the customer with peace-of-mind and a confident impression that "These guys really know what they are doing!" Providing excellent customer service is a practice that can only pay positive dividends.

DOCUMENTS

DOCUMENTS

	Item Number	Price
Applications (100) & EEOC Forms (100) – Scannable	S258K	\$ 19.77
Record Book	S071	\$ 19.77
OJT Assignment Forms (100)	S225K	\$ 19.77
Aplying and Qualifying for Apprenticeship	S155	\$ 0.57
Sexual Harassment Policy Statement	S074	\$ 1.83
Training Director Job Analysis	S219	\$ 41.82

INSIDE DOCUMENTS

	Item Number	Price
Inside Standards	S220	\$ 21.85
Inside Selection Procedure	S221	\$ 11.44
Inside Affirmative Action Plan	S222	\$ 5.72
Inside Trust Document	S058	\$ 1.83
Inside Trust Document 501(c)3	S058C3	\$ 1.83
Job Descriptions and Knowledge, Skills, and Abilities	S171	\$ 13.53
Policy for Collection of Delinquent Inside Contributions	S022	\$ 3.39
Inside Work Report Evaluation Form (100) – Scannable	S256K	\$ 26.01
Interview Pamphlet (Pack of 100)	S319K	\$ 32.64

INSTALLER/TECHNICIAN DOCUMENTS

	Item Number	Price
Telecommunication Standards	S226	\$ 21.85
Telecommunication Selection Procedure	S227	\$ 10.92
Telecommunication Affirmative Action Plan	S228	\$ 5.72
Telecommunication Work Report Evaluation Form (100) (Scannable)	S259K	\$ 26.01

OUTSIDE DOCUMENTS

	Item Number	Price
Outside Area Training Agreement	S075	\$ 1.79
Outside Standards	S253	\$ 21.85
Outside Selection Procedure	S254	\$ 11.44
Outside Affirmative Action Plan	S255	\$ 5.72
Outside Trust Document	S062	\$ 1.83
Policy for Collection of Delinquent Outside Contributions	S021	\$ 3.39

DOCUMENTS

RESIDENTIAL DOCUMENTS

	Item Number	Price
Residential Standards	S250	\$ 21.85
Residential Selection Procedure	S251	\$ 10.92
Residential Affirmative Action Plan	S252	\$ 5.72
Residential Work Report Evaluation Form (100) (Scannable)	S260K	\$ 26.01

RECRUITMENT/PROMOTIONAL AND OTHER MATERIALS

	Item Number	Price
Applicant Interview Rating Form Kit	ARFK96	\$ 29.58
Klein 18-Piece Tool Kit	KLE39076	\$ 264.18
Proficiency Exam (Pack of 10)	P156K	\$ 33.29
Proficiency Exam Administrator's Manual	P156M	\$ 11.96
Performance Evaluation Level 1-5	PEVALIK	\$ 25.00
(Bundle) Performance Evaluation Level 1-5 (25 pack)	PEVALIK(Bundle)	\$ 416.16
Performance Evaluation Level 6	PEVALK	\$ 13.00
Performance Evaluation Kit Complete	PEVALKC	\$ 26.01
Job Teaching Skills Card (Pack of 100)	S013K	\$ 14.57
Ohm's Law Medallions	S052	\$ 6.76
Brochure – Inside Apprenticeship	P500	\$ 0.62
Brochure – Inside Apprenticeship (pack of 100)	P500K	\$ 35.37
Brochure – Outside Lineman Apprenticeship	P501	\$ 0.62
Brochure – Outside Lineman Apprenticeship (pack of 100)	P501K	\$ 35.37
Brochure – Residential Apprenticeship	P502	\$ 0.62
Brochure – Residential Apprenticeship (pack of 100)	P502K	\$ 35.37
Brochure – Telecommunications (Installer/Technician) Apprenticeship	P503	\$ 0.62
Brochure – Telecommunications (Installer/Technician) Apprenticeship (pack of 100)	P503K	\$ 35.37
Military Recruitment Brochure	S342	\$ 0.51
Recruitment Card (Pack of 100)	S401K	\$ 16.65
Recruitment Card Holder	S401H	\$ 4.43
Recruitment CD-ROM	S341	\$ 11.22
Recruitment DVD	S430	\$ 45.90
Blended Learning Student Notebook	N001	\$ 7.09

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Trainers



CONDUIT



Conduit Fabrication Mobile Workstation

This trainer will aid the student in using the knowledge gained through this course. The student is required to apply his/her skills to create the bends necessary to complete the projects that are detailed in the lab manual. Complete construction drawings are available for download on

www.electricaltrainingalliance.org in the Presentation area of the membership pages. In addition, materials to build a basic mobile workstation are available at a reduced cost through Allied Tube and Conduit while supplies last. Contact Tom Young at Allied Tube and Conduit (800.882.5543 x7936).

FIRE ALARM

The NJATC Fire Alarm Lab Manual

J211ILK \$ 82.46

J211SL \$ 43.70

To help JATCs teach all of the processes that will go into making a Fire Alarm Installation successful, the NJATC has developed the NJATC Fire Alarm Lab Manual. This lab manual helps take the students through the step-by-step processes needed to install the Fire Alarm System on the NJATC Fire Alarm Trainer, making the transition from those tasks utilized on the trainer easily transition to real-world installations.

The NEW NJATC kits are all based on Fire-Lite's new addressable Fire Alarm Control Panel, the MS- 9200UDLS providing a solid foundation on which JATCs can build or construct a real-life addressable Fire Alarm System. While there is an assortment of Fire-Alarm manufacturers in the commercial Fire Alarm equipment arena, the Fire-Lite System being utilized will help the students understand the fundamentals of installing, programming and troubleshooting their own Fire Alarm system. The same basic concepts learned while working on this equipment is

easily transferred to any of the manufacturers in the Fire Alarm marketplace. It is always important to remember that by gaining an understanding of the key elements and concepts associated with the installation, how a specific manufacturer performs that same function is less critical in the learning process. Fire-Lite, a division on Honeywell has worked hand-in-hand with the NJATC to provide the most comprehensive Fire Alarm Training Package available to our JATCs. Not only does the equipment provide the correct cross-section of installation possibilities, the folks at Fire-Lite have sharpened their pencils to allow us to bring this kit to all JATCs at an extremely affordable price.

The Fire Alarm Kits provide an assortment of components typically found in most commercial fire alarm system installations. Utilizing these components, JATCs can customize and modify the installations to address specific needs within their local areas.



The Hardware: NJATC Fire Alarm Control Panel D090K

Call the NJATC for pricing.

Using the Fire Alarm Equipment listed to the right, JATCs can build a working Fire Alarm System on a cart or plywood backboard that they supply and have spare parts for those items such as the smoke detectors or relay modules that can wear out with repeated use. JATCs will need to provide miscellaneous hardware such as the 4" square boxes and wall cases that are required for mounting some of the devices, the 2C-18 unshielded fire alarm cable, 2C-14 unshielded fire alarm cable, a PS 2 keyboard (available locally) for programming and any tools and test equipment that is necessary such as screwdrivers, strippers, needle nose pliers and a Multimeter for troubleshooting.

Description	Part Number	Quantity
Addressable FA Control Unit w/ DACT	MS-9200UDLS	1
80 Character Remote Annunciator	LCD-80F	1
Intel. Addressable Ionization Smoke Detector	CP355	2
Addressable Thermal Detector	H355	2
Multi Sensor Intel. Smoke Detector	SD355	5
Addressable Manual Pull Station	BG-12LX	3
Single Monitor Module	MMF-300	4
Dual Monitor Module	MDF-300	2
Mini Monitor Module	MMF-301	3
Addressable Relay Module	CRF-300	5
Intel. Low Flow Photo Duct Detector	D355PL	1
Remote Test Switch	RTS151	1
Conventional Heat w/ ROR 134	5601P	1
Waterflow Switch	WFD20	1
OS&Y Valve Supervisory Switch	OSY2	1
SpectrAlert Advanced Chime Strobe	CHSR	3
Conventional Pull Station	BG-12	1
Sealed Lead-Acid Battery 12V,7Ah (5 pack)	BAT-1270-BP	1

Fire Alarm D090KC Fire-Lite® Fire Alarm Trainer with cart

Call the NJATC for pricing.

The D090KC provides much more versatility to the classroom. Included in the D090KC are two of the D090K equipment kits listed above and a double-sided, portable roll-in trainer cart that has all of the required boxes installed, grounded and inter-connected. Also included is a power cord that brings power to both of the Fire Alarm Control Cabinets. Utilizing this cart in the classroom, JATCs can set up two students on each side of the trainer and each will be performing a standalone installation, isolated from the other side of the trainer. The picture above shows one of the

sides of the trainer as it would arrive from the fabricator and the various field devices that will be used to fabricate the working Fire Alarm System. The beauty of this trainer is that programs that have limited space can roll this trainer in and out of the classroom as needed. Again, the only required additional purchases would be the PS 2 keyboard, some installation hand-tools, 2C-18 unshielded fire alarm cable, **2C-14 unshielded fire alarm cable**, and a Multimeter for troubleshooting.



INSTRUMENTATION



Instrumentation Trainer D027AK | Call the NJATC for pricing.

The NJATC's hands-on Instrumentation Trainer includes live processes and actual instruments. The instrumentation trainer provides a physical hands-on method of instruction. Our industry is already aware of the benefits of providing a method of instruction for which the student can "see" the topic of study. This trainer was designed for our industry by a member of our industry.

The instrumentation and process control demonstrator allows a detailed study of various instrumentation and control methods that can be studied individually or as a system. Various instruments are used for measurement and while each device is used in a loop configuration, the arrangement allows flexibility for various methods of control.

Flow, temperature, level, and pressure measurements are available for a detailed study and the demonstrator has ready "space" for additional instrument mounting and connection to the process loops and monitoring device. The fundamentals of instrumentation can be studied with a visual reference to increase the understanding of how instrumentation and controls perform.

The following instruments are some of those provided on the demonstrator, and are referred to throughout the course.

Flow transmitter F-1001-T uses the differential pressure method to extract a flow rate using an integral orifice plate to provide the restriction over which the differential pressure is measured. This instrument is the most common flow measurement device in industry today and its arrangement allows for an orifice plate to be inserted into the orifice body, measurement tubing arrangements to be routed, calculations for transmitter range, transmitter mounting, wiring connections and terminations, and calibration.

Flow transmitter F-1002-T is a true mag (magnetic) flow meter in the sense that it uses conductivity to measure the flow rate of a liquid. This device is probably one of the most common "Mag Flow" meters in industry and its related wiring terminations and mounting can be studied in depth. This is a "smart" instrument that will allow communications with a communicator or allow communications by a self contained keypad.

Level transmitter L-1003-T is a differential pressure transmitter used to record level. This arrangement for level detection is one of the most common methods used to extract level. The principle of a liquid's weight can be studied along with its specific gravity. The fundamentals of pressure measurement can be observed and it can be shown how this concept is used to extract a precise level.

Temperature transmitter T-1004-T is a temperature transmitter that is used to record the temperature, of a liquid in the storage tank. This device, by using a RTD (Resistance Temperature Detector), extracts a resistance measurement of a RTD inserted into

a well submerged in the liquid. The principles of temperature and its effects on a process can be studied within a working environment.

The previously listed devices require knowledge of the fundamentals of flow, level, temperature and pressure. For each device its related mounting, tubing, wiring, terminations, and calibration are all present and must be accurately installed to achieve a "working" process. The demonstrator provides a readily available means to demonstrate each characteristic of the fundamentals of measurement and control.

Additional components which control live processes on the NJATC Trainer include: Flow control valve F-1001-V, used for flow control that has a set point entered in the control program but uses data sent to the controller by a 4-20mA signal provided by flow transmitter F-1001-T; Level control valve L-1003-V, used for level control which has a set point entered in the control program, but uses data sent to the controller by a 4-20mA signal provided by level transmitter L- 1003-T. In addition, three interposing relays are used to drive the temperature element, auto reset solenoid, and pump start/stop power. Interlock Defeats (Bypasses: HS1001-S, HS1003-S, HS1004-S) are used to "defeat" any signal that is received by the controller which is interpreted to indicate a shutdown condition. The controller used for the demonstrator is an Allen Bradley 503 with the APS (Advanced Programming Software). This controller provides all of the programming and communications necessary for process control. This also allows for future control consoles to be interfaced to the unit for further study. A PC (personal computer) is used as the interface between the PLC and the user, although this communication device will only be used to "download" the control program for beginning study. Various system status alarms or indicators are present on the front of the panel. Four LCD displays are located on the front of the panel to visually indicate a 4-20mA signal transmitted to the controller. Three push buttons are mounted on the front panel for a manual interface to reset or halt the process. The appropriate drawings must be referenced to determine if switch settings are normally open or normally closed.

The trainer is not limited to today's methods of instrumentation. As new devices enter the market place related drawing packages may be ordered so that the demonstrator can be equipped with additional control instruments. The flexibility of the NJATC's Instrumentation Trainer ensures that it will not become outdated.

PROGRAMMABLE LOGIC CONTROLLER

ControlLogix Trainer D270K

Call the NJATC for pricing.

This trainer is in a suitcase type enclosure, and utilizes the RSLogix5000 software and the producer/consumer tag based programming architecture. This trainer can be used for all types of programming and includes the following components:

- 1 - 7-slot I/O chassis
- 1 - 1756 system power supply
- 1 - ControlLogix L61 processor module
- 1 - DC input module
- 1 - DC output module
- 1 - Analog input module
- 1 - Analog output module
- 1 - Ethernet communications module
- 12 - Illuminated push buttons
- 4 - Selector switches
- 2 - Potentiometers (analog inputs)
- 2 - Analog voltmeters (analog outputs)

SLC (Small Logix Controller) Trainer D271K

Upgraded from the previous SLC trainer, this product can be used for most lab exercises. This suitcased trainer includes an SLC5/05 processor that allows Ethernet communication and programming, as well as serial cable programming. The trainer utilizes the RSLogix500 software found in the software "Toolkit" and as a stand alone programming package and uses the chassis/slot/bit-address based on programming architecture. The trainer only works with ladder diagram programming labs, and includes the following components:

- 1 - 7-slot chassis
- 1 - 1796 system power supply
- 1 - Potentiometer (analog input)
- 1 - Analog meter (analog output)
- 1 - SLC5/05 processor module
- 1 - DC input module
- 1 - DC output module
- 1 - Combination (2-in, 2-out) analog I/O module
- 2 - Push buttons
- 2 - Selector switches
- 4 - Photoelectric sensors
- 8 - Pilot lights

MicroLogix Trainer D272K

The MicroLogix trainer is for basic lab exercises. This MicroLogix PLC has no enclosure or input/output components. In order to utilize this trainer, the JATC must properly mount the system, provide 120 VAC power, and provide a minimum of eight input devices (push buttons or selector switches), eight output devices (pilot lamps), a voltage source (0-10 VDC) for the analog input, and an analog meter (0-10 VDC) for the analog output. These additional components are NOT available from the NJATC, but wiring details are in the NJATC's Lab Manual. The trainer is packaged with an Ethernet adapter to allow programming over an Ethernet network and includes the following components:

- 1 - 1761-LWAWA-5A MicroLogix controller (twelve – 120 VAC inputs, eight – relay outputs, four analog inputs (two-10 VDC and two 4-20 mA DC), and one analog output (0-10 VDC)
- 1 - 1761-CBL-AM00 (Ser-C) cable
- 1 - 1761-NET-ENI Ethernet network adapter

Variable Frequency Drive Trainer D274K

The VFD operates on a 120 or 240 VAC (single phase), and drives an .5 HP, 240 VAC (3-phase) motor. The VFD may be wired conventionally, or controlled by a PLC and configured over an Ethernet network using the software found in the software "Toolkit". This trainer includes:

- 1 - 22B-V2P3N104 PowerFlex 40 VFD
- 1 - 22-COMM-E-FRN 1.xxx Ethernet r
- 1 - 22B-CCx Ethernet cover for VFD

D270K ControlLogix Trainer

D271K SLC Trainer

D274K Variable Frequency Drive Trainer

D277 ControlLogix 500 Standard CD-ROM

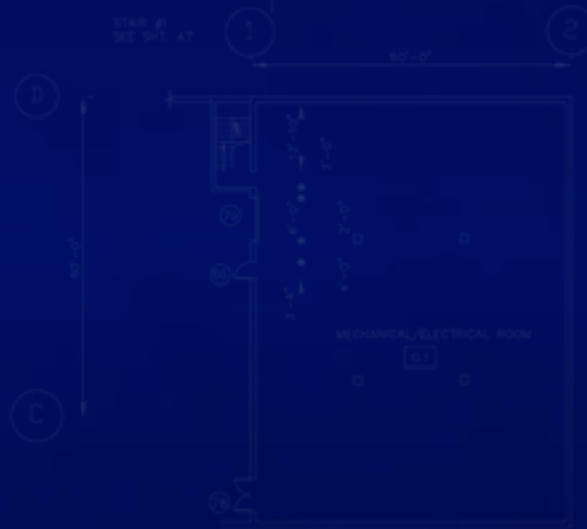
D278 ControlLogix 5000 Standard ENG



electrical training ALLIANCE
5001 Howerton Way, Suite N
Bowie, MD 20715

MEZZANINE FLOOR PLAN

SCALE: 1/8" = 1'-0"



MECHANICAL/ELECTRICAL ROOM



National
Training
Institute

July 30 - August 5, 2016

University of Michigan
in Ann Arbor

nti.njatc.org