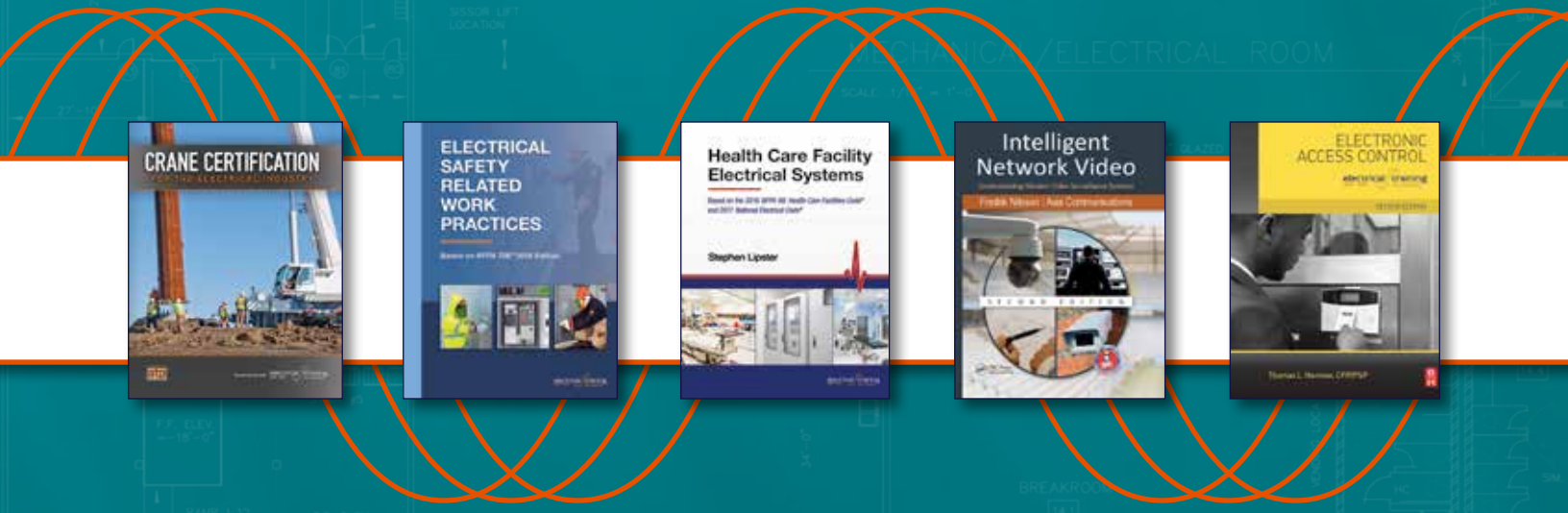
electrical training ALLIANCE

2018 Training Essentials



electrical training ALLIANCE
IBEW - NECA

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.

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.

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

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

*The *electrical training ALLIANCE* works diligently to provide the highest quality, most up-to-date curriculum. As a result, during an *NEC* cycle year, we strive to adjust all of our materials to reflect the latest edition of the *Code*. We strategically "roll-out" the new curriculum based on our understanding of the material the student purchased in the prior year(s). For example, a 4th year student who has a purchased 2014 Code Calculations textbook is not expected to buy a 2017 Code Calculations textbook. To assist the Instructor, a supplement will be provided to address the area(s) of change in the *Code*. The supplement can be found in the Resources area of the *electrical training ALLIANCE* Blended Learning system.

Each LMS Kit page will contain the following language: *Courses and/or books outlined on this page are based on the student's previous purchases. Each training center may adjust based on local training needs.

electrical training ALLIANCE Customer Service

Phone 888.652.4007
Fax 888.652.5007

CURRICULUM UPDATES

Some topics below are still in development but as they are nearing delivery they are displayed here for reference of the courses and references you will find in the 2018 catalog. Please take a few minutes to read about the extensive list of curriculum updates planned for you in 2018.

NJATC BLENDED LEARNING

NEW

New Courses	Courses in Development
Code Calculations, Complete	Anti-Harassment, Level I
Conduit Fabrication, Level I – 2nd Ed.	Audio/Video Systems, Level I
Conduit Fabrication, Level II – 2nd Ed.	Crane Certification Prep Course for the Electrical Industry – 2nd Ed.
Installer/Tech Power Quality, Level I	Electrical Safety-Related Work Practices, Level I, Based on the 2018 70E
Intelligent Network Video, Level I	Electrical Safety-Related Work Practices, Level II, Based on the 2018 70E
Intelligent Network Video, Level II	Electronic Access Control, Level I
Intelligent Network Video, Level III	Electronic Access Control, Level II
Intrusion Detection, Level I – 2nd Ed.	Electronic Access Control, Level III
Lynda.com Access Essential Training	Health Care Facility Electrical Systems, Level I, Based on the NFPA 99 and 2017 NEC
Outside 2nd Year, Levels I through VI	Health Care Facility Electrical Systems, Level II, Based on the NFPA 99 and 2017 NEC
Voice-Data-Video: Applications and Installation, Level I	Human Performance, Level I
	Journeyman Electrician's Exam Preparation, Based on the 2017 NEC
	Outside 3rd Year, Levels I through VI
	Practicing Leadership: Foreman Development Series
	Residential Automation Systems, Level I
	Residential Cabling, Level I
	Residential Code 2, Level I, Based on the 2017 NEC
	Residential Job Information 2, Level I
	Residential Wiring Practices, Level I, Based on the 2017 NEC
	Sound Reinforcement Systems, Level I
	Sound Reinforcement Systems, Level II
	Substation 2nd Year, Levels I through VI
	Substation 3rd Year, Levels I through VI
	Test Instruments and Applications, Level I

Textbooks

Several new books are available now or will be available soon.

Crane Certification	Intelligent Network Video
Electrical Safety-Related Work Practices	Master Electrician's Exam Workbook
Electronic Access Control	Test Instruments and Applications w/ Applications
Fire Alarm Lab Manual	Voice-Data-Video: Applications and Installations
Health Care Facility Electrical Systems	

PROGRAM UPDATES

Inside Program Updates

The LMS Syllabi for the Inside program now lists not only Core courses but also recommended Advanced courses. In some years, courses are moved in order to consolidate when the subject matter is presented.
The specifics are outlined below.

Inside 1st Year

- **Job Information 1, Level II** – This course was renamed from Job Information 2, Level I. The course is the same; only the name changed.
- **Conduit Fabrication – 2nd Ed.** – The Conduit Fabrication courses were revised to move the lesson on "Hand Bending Three- & Four-Bend Saddles" into Level I. The lesson on Conduit Threading Techniques was moved to Level II. All lesson content is the same. Conduit Fabrication, Level I – 2nd Ed. is in 1st Year, and moving forward, Level II will be taught in 2nd Year.

Core Credits	Course	Item Code
3	**Conduit Fabrication, Level I - 1st Ed.**	**J204LM.G1**
Lesson 1	How to Work with Fractions	
Lesson 2	Using Basic Trigonometric Functions	
Lesson 3	Introduction to Conduit Bending	
Lesson 4	Conduit Types	
Lesson 5	**Conduit Threading Techniques**	
Lesson 6	Hand Fabrication of 90° Stubs	
Lesson 7	Hand Fabrication of Back-to-Back Bends	
Lesson 8	Hand Bending Offsets and Kicks	

Core Credits	Course	Item Code
3	**Conduit Fabrication, Level I - 2nd Ed.**	**J204LM.H1**
Lesson 1	How to Work with Fractions	
Lesson 2	Using Basic Trigonometric Functions	
Lesson 3	Introduction to Conduit Bending	
Lesson 4	Conduit Types	
Lesson 5	Hand Fabrication of 90° Stubs	
Lesson 6	Hand Fabrication of Back-to-Back Bends	
Lesson 7	Hand Bending Offsets and Kicks	
Lesson 8	**Hand Bending Three- & Four-Bend Saddles**	

Core Credits	Course	Item Code
4	**Conduit Fabrication, Level II - 1st Ed.**	**J204LM.G2**
Lesson 1	**Hand Bending Three- & Four-Bend Saddles**	
Lesson 2	Push-Through Bending: 90° Bends	
Lesson 3	Bending Kicks, Offsets and Saddles Using the Push-Through Method	
Lesson 4	Segmented Bends	

Core Credits	Course	Item Code
4	**Conduit Fabrication, Level II - 2nd Ed.**	**J204LM.H2**
Lesson 1	**Conduit Threading Techniques**	
Lesson 2	Push-Through Bending: 90° Bends	
Lesson 3	Bending Kicks, Offsets and Saddles Using the Push-Through Method	
Lesson 4	Segmented Bends	

- **Blueprints, Level I** – This course was moved to 1st Year starting in 2018. Students who started prior to 2018 will continue to take Blueprints I through III in years 2 through 4.
- Recommended Applications are listed in the Inside Syllabus and in the CLCS 2018-2019 Catalog View (Snapshot).

Inside 2nd Year

- **AC Theory, Level III** – 3rd Ed. was moved to 2nd Year starting in 2018 to consolidate the teaching of AC Theory content. Students who are in 3rd Year for 2018 will still take AC Theory, Level III – 3rd Ed in 3rd Year.
- Recommended Applications are listed in the Inside Syllabus and in the CLCS 2018-2019 Catalog View (Snapshot).

PROGRAM UPDATES

Inside 3rd Year

- Grounding and Bonding, Level II was moved to 3rd Year starting in 2018 to consolidate the teaching of Grounding and Bonding content. Students who are in 4th Year for 2018 will still take Grounding and Bonding II in 4th Year.

Inside 4th Year

- Motor Control, Level II and Level III were moved to 4th Year starting in 2018 to consolidate the teaching of Motor Control content. Students who are in 5th Year for 2018 will still take Motor Control II and III in 5th Year.

Inside 5th Year

- Photovoltaics is currently still in printed workbook format.

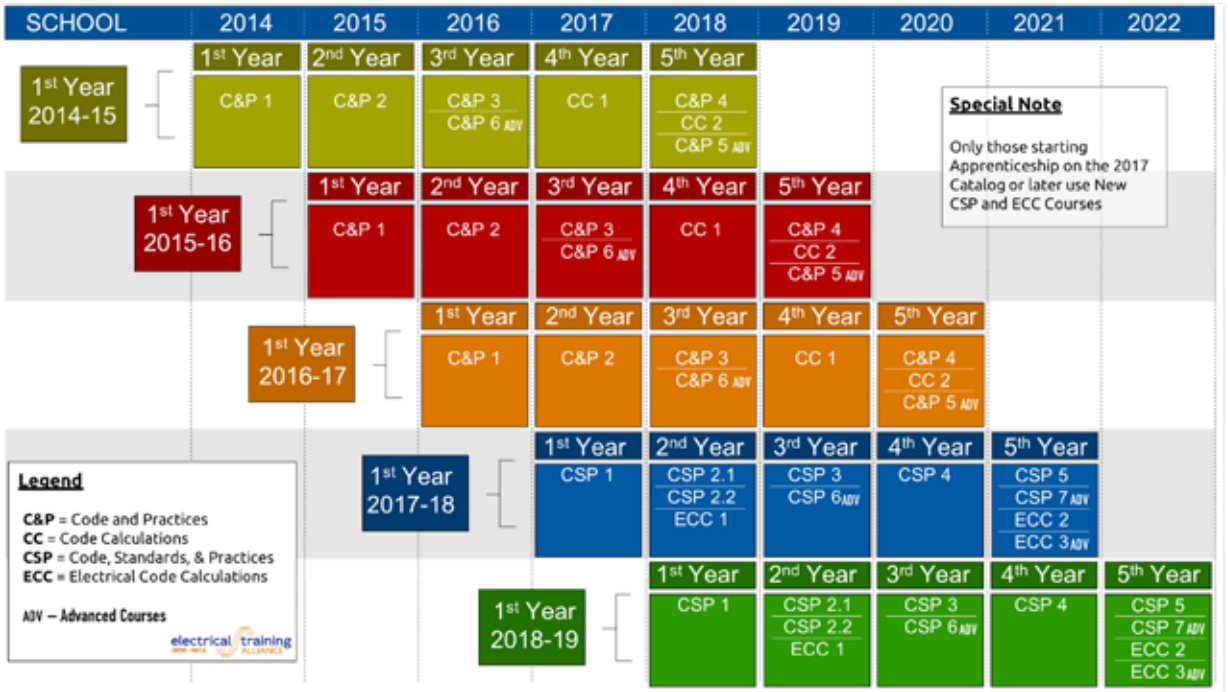
Code and Practices and Code Calculations Restructuring

The rollout for the use of the new titles continues this year (2018) with the 2nd year class, which will be taking Code, Standards, and Practices 2, Levels I and II and Electrical Code Calculations, Level I.
As this group that started 1st year in 2017 progresses through the apprenticeship, additional levels will be added for enrollment.

Please note:

- The addition of the term Standards more closely aligns the content with what is covered and needed.
- Future courses seen by these apprentices will include a change in the Code Calculations titles to Electrical Code Calculations.

For 2018, all 3rd through 5th year apprentices will continue to use the Code and Practices and Code Calculation titles for their Code curriculum.



PROGRAM UPDATES

Code Calculations, Complete

The Code Calculations, Complete, Based on the 2017 *NEC* course places all topics covered by the Code Calculations Textbook (S00817) in one place. The course is focused on a complete comprehensive training for solving ***Code***-related mathematical issues.

The course is identified for use outside the apprenticeship. Apprentices will cover these lessons according to the Core and Advanced credited curriculum utilizing other courses. Common uses of this course are for Journey-level, CW/CE, or the like.

Proficiency Exams

The Electrical Trades Proficiency Evaluation Assessment Examination has been updated to the 2017 ***NEC***. In addition, the updated examination includes updated color images for tool identification, and the examination is now printed in color. The Answer Key and Score Analysis have also been updated.

Installer/Tech Program Updates 

Installer/Tech 2nd Year Updates

- Installer/Tech Power Quality, Level I replaces the Power Quality course.
- Intrusion Detection, Level I – 2nd Ed. The reference textbook is no longer a required purchase. Required material has been placed within this new course.
- Electronic Access Control Levels I and II replace Access Control, Level I.

Installer/Tech 3rd Year Updates

The Installer/Tech 3rd year curriculum courses are coming soon to the LMS. The 1st and 2nd year curriculum is already available. Curriculum for the 3rd year is currently available or coming soon. The lessons from the Residential Advanced Technologies printed workbook are split into several courses:

- Residential Cabling, Level I
- Audio/Video Systems, Level I
- Residential Automations Systems, Level I

Outside Program Updates 

The following programs were added to the LMS or are coming soon.

- Outside 2nd Year – online now
- Outside 3rd Year – coming Fall

Residential Program Updates 

The Residential program 2nd Year curriculum will be coming to the LMS this fall. The Residential Job Information, Residential Wiring Practices, and Residential Code 2 courses are coming soon.

- Job Information 1, Level II (prev. Job Info 2) – This course was renamed from Job Information 2, Level I. The course is the same; only the name changed.

Substation Program Updates 

The following programs were added to the LMS or are coming soon.

- Substation 2nd Year – coming Summer
- Substation 3rd Year – coming Winter

PROGRAM UPDATES

Updates Across All Programs

Lighting Essentials Reference Material

The Lighting Essentials Reference Material is now provided within the 2nd Ed. LMS courses.

Lynda.com Courses

These Lynda.com courses are available across all programs and administration positions.

Lynda.com Access Essential Training	Lynda.com Graphic Design Essential Training
Lynda.com Adobe Acrobat Essential Training	Lynda.com Keynote Essential Training
Lynda.com Adobe Illustrator Essential Training	Lynda.com Outlook Essential Training
Lynda.com Adobe InDesign Essential Training	Lynda.com PowerPoint Essential Training
Lynda.com Adobe Photoshop Essential Training	Lynda.com Prezi Essential Training
Lynda.com Excel Essential Training	Lynda.com Windows Essential Training
Lynda.com FileMaker Pro Essential Training	Lynda.com Word Essential Training
Lynda.com Google Suite Essential Training	

CLCS Improvements

Coming soon to the Course Level and Credit Summary (CLCS) tool are some updates to make identifying a specific group of students' curriculum as it relates to their progression from new apprentice to Journey-level worker. These tools will best be utilized when understanding two terms that have been used sparingly in the past, but may not have been clearly defined. Those two terms are Roadmap view and Catalog view (sometimes called Snapshot).

- Roadmap View: When using the CLCS in this way, the courses are laid out in a progression from beginning to end across the years of apprenticeship for the program. Prerequisites are marked with a red box when a prerequisite was missed. For example, if AC Theory is placed in a year prior to DC theory, a red box will appear. The summary section along the right side of the course listing identifies credits where programs use them, and totals are listed to identify when minimums have been met.

- Catalog View: The terms Catalog view or Snapshot view can be used interchangeably. The Catalogs have always shown courses in a manner that relates each year unto itself. Sometimes the same course shows up in multiple years because there was a change in curriculum delivery from one year to the next. Sometimes, a 2nd year group will be on one *NEC*® version, and another year group will be on a previous *NEC* version due to having purchased a textbook reference in a prior year.

There will be more on this in a future Newsletter as these details are finalized within the tool.

ACE College Credit

The curriculum underwent a review in 2017/2018 and the final results will be in a future Newsletter. The updated ACE College Credit Application is included in the back of the catalog.

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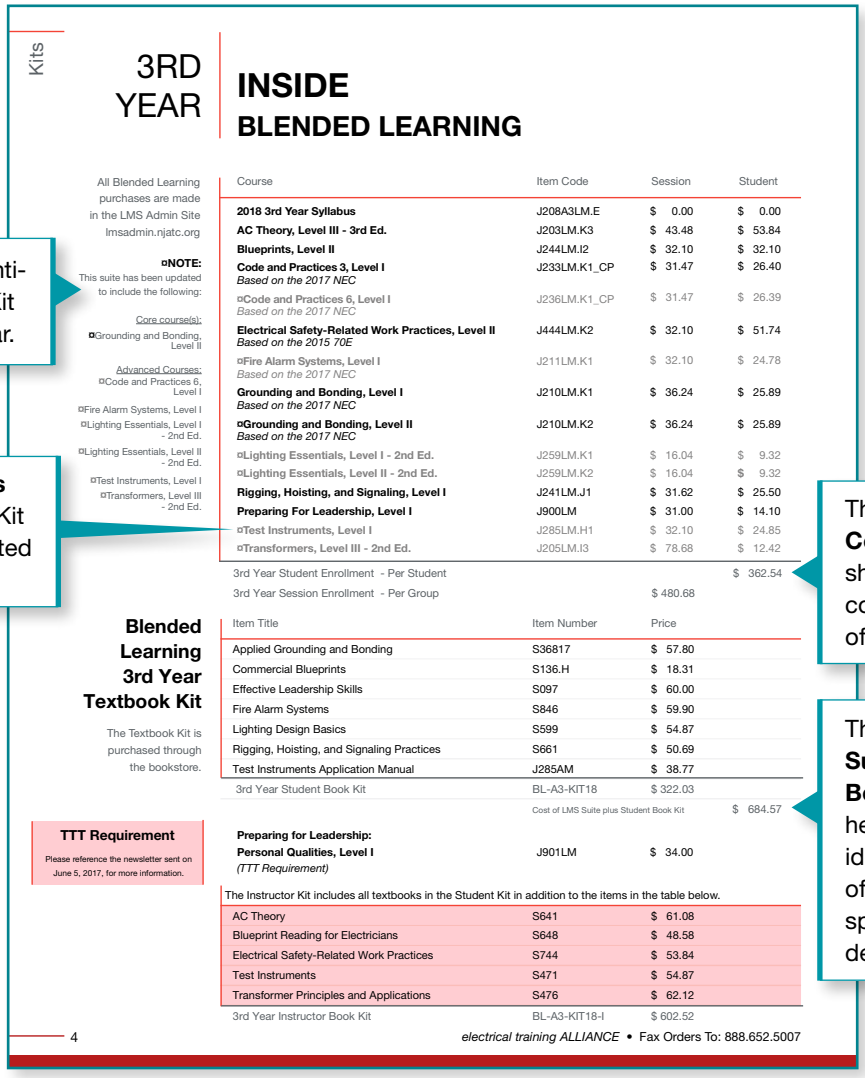
FEATURES



Kits

3RD YEAR

INSIDE
BLENDED LEARNING

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

¤**NOTE:**
This suite has been updated to include the following:

Core course(s):
¤Grounding and Bonding, Level II

Advanced Courses:
¤Code and Practices 6, Level I
¤Fire Alarm Systems, Level I
¤Lighting Essentials, Level I - 2nd Ed.
¤Lighting Essentials, Level II - 2nd Ed.
¤Test Instruments, Level I
¤Transformers, Level III - 2nd Ed.

Course	Item Code	Session	Student
2018 3rd Year Syllabus	J208A3LM.E	$ 0.00	$ 0.00
AC Theory, Level III - 3rd Ed.	J203LM.K3	$ 43.48	$ 53.84
Blueprints, Level II	J244LM.I2	$ 32.10	$ 32.10
Code and Practices 3, Level I *Based on the 2017 NEC*	J233LM.K1_CP	$ 31.47	$ 26.40
¤**Code and Practices 6, Level I** *Based on the 2017 NEC*	J236LM.K1_CP	$ 31.47	$ 26.39
Electrical Safety-Related Work Practices, Level II *Based on the 2015 70E*	J444LM.K2	$ 32.10	$ 51.74
¤**Fire Alarm Systems, Level I** *Based on the 2017 NEC*	J211LM.K1	$ 32.10	$ 24.78
Grounding and Bonding, Level I *Based on the 2017 NEC*	J210LM.K1	$ 36.24	$ 25.89
¤**Grounding and Bonding, Level II** *Based on the 2017 NEC*	J210LM.K2	$ 36.24	$ 25.89
¤**Lighting Essentials, Level I - 2nd Ed.**	J259LM.K1	$ 16.04	$ 9.32
¤**Lighting Essentials, Level II - 2nd Ed.**	J259LM.K2	$ 16.04	$ 9.32
Rigging, Hoisting, and Signaling, Level I	J241LM.J1	$ 31.62	$ 25.50
Preparing For Leadership, Level I	J900LM	$ 31.00	$ 14.10
¤**Test Instruments, Level I**	J285LM.H1	$ 32.10	$ 24.85
¤**Transformers, Level III - 2nd Ed.**	J205LM.I3	$ 78.68	$ 12.42
3rd Year Student Enrollment - Per Student			$ 362.54
3rd Year Session Enrollment - Per Group		$ 480.68	

Blended Learning 3rd Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price
Applied Grounding and Bonding	S36817	$ 57.80
Commercial Blueprints	S136.H	$ 18.31
Effective Leadership Skills	S097	$ 60.00
Fire Alarm Systems	S846	$ 59.90
Lighting Design Basics	S599	$ 54.87
Rigging, Hoisting, and Signaling Practices	S661	$ 50.69
Test Instruments Application Manual	J285AM	$ 38.77
3rd Year Student Book Kit	BL-A3-KIT18	$ 322.03
	Cost of LMS Suite plus Student Book Kit	$ 684.57

TTT Requirement
Please reference the newsletter sent on June 5, 2017, for more information.

Preparing for Leadership: Personal Qualities, Level I *(TTT Requirement)*	J901LM	$ 34.00

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

AC Theory	S641	$ 61.08
Blueprint Reading for Electricians	S648	$ 48.58
Electrical Safety-Related Work Practices	S744	$ 53.84
Test Instruments	S471	$ 54.87
Transformer Principles and Applications	S476	$ 62.12
3rd Year Instructor Book Kit	BL-A3-KIT18-I	$ 602.52

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¤ **Notes Section** identifies changes to this Kit from the previous year.

¤ **Advanced courses** are now listed in the Kit pages and are indicated by the color gray.

The **Sum of LMS Course Enrollments** shows the total LMS course enrollment fees of the courses listed.

The **Cost of LMS Suite plus Student Book Kit** is simply a helpful number to identify the basic cost of curriculum for a specific group of students in this year.

FEATURES

Topics

SECURITY

Security Access Control & Surveillance
S483 $ 42.24

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 $ 44.35

Electronic Access Control Textbook
S104 $ 67.00

Electronic Access Control, Second Edition is an introduction to interfacing systems from various Electronic Access Control (EAC) manufacturers, video, intercom and related systems into one unified system. It describes how to provide integration while also allowing building security managers to protect, control, and manage their own users' card data. Readers will be better able to manage their systems to protect the privacy of their cardholders' private information, simultaneously providing much improved control over the security of their buildings. This book details advanced card data management and advanced system access level management and offers the complete picture on EAC for readers at any level of expertise.

Electronic Access Control, Level I
J147LM.A1 **Session:** $ 15.00 **Student:** $ 15.00
Prerequisite(s): None

This course introduces the fundamentals of access control. The course topics include an overview of access control, security and access concepts, how electronic access control systems work, access control credentials and credential readers, types of access-controlled portals, electrified locks, and magnetic locks.

Electronic Access Control, Level II
J147LM.A2 **Session:** $ 15.00 **Student:** $ 15.00
Prerequisite(s): Electronic Access Control, Level I

This course introduces how locking devices impact life safety and the Americans with Disabilities Act (ADA). Course topics include life safety and exit devices, door types and door frames, doors and fire ratings, free egress electrified locks, electrified deadbolt locks, and portal control devices and applications. The course also covers access control panels and networks, cabling considerations, security system integration, and alarm system devices.

Electronic Access Control, Level III
J147LM.A3 **Session:** $ 15.00 **Student:** $ 12.00
Prerequisite(s): Electronic Access Control, Level II

This course introduces technician level and design topics. The course starts by introducing selection of the right lockset for a door, access control system servers and workstations, merging physical security with access control security, securing the system, design of the system, and installation, commissioning and testing.

Intrusion Detection, Level I - 2nd Ed.
J146LM.A1 **Session:** $ 31.47 **Student:** $ 57.23
Prerequisite(s): DC Theory, Level I or DC Theory, Level IV, 2nd Ed.

This course will introduce fundamental concepts for intrusion detection. Topics presented include terminology, magnetic contacts, motion sensors, glass break detectors, codes and standards associated with intrusion detection, and basic design of the system.

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Item Codes are now included with all Blended Learning Courses.

Prerequisites are listed for Blended Learning Courses.

Updated Blended Learning Courses may have an **Edition** indicated.

New or Updated Materials are highlighted with a "NEW" icon.

TABLE OF CONTENTS

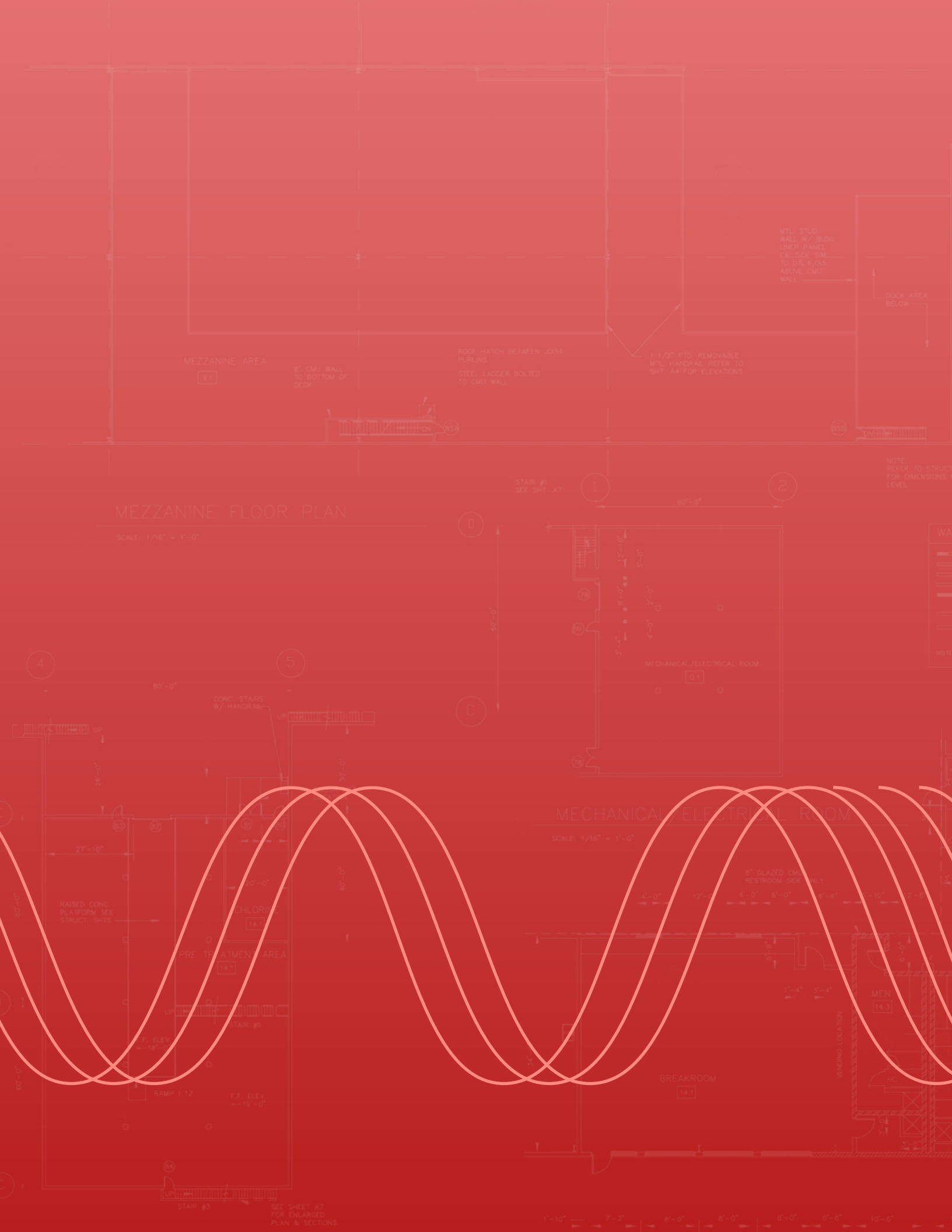
KITS

TOPICS

TOPICS CONTINUED

RESOURCES

TRAINERS


MEZZANINE FLOOR PLAN
MECHANICAL/ELECTRICAL ROOM
BREAKROOM

Kits

1ST YEAR

INSIDE
BLENDED LEARNING

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

¤NOTE:
This suite has been updated to include the following:

Core course(s):
¤Blueprints, Level I
¤Conduit Fabrication, Level I - 2nd Ed.
¤Job Information 1, Level II, (prev. Job Info 2)

Advanced Course(s):
¤DC Theory, Level V - 2nd Ed.

Course	Item Code	Session	Student
2018 1st Year Syllabus	J208A1LM.E	$ 0.00	$ 0.00
¤Blueprints, Level I	J244LM.I1	$ 32.10	$ 22.78
Code, Standards, and Practices 1, Level I *Based on the 2017 NEC*	J231LM.K1	$ 31.47	$ 26.40
¤Conduit Fabrication, Level I - 2nd Ed.	J204LM.H1	$ 32.74	$ 18.70
DC Theory, Level I - 2nd Ed.	J202LM.K1	$ 10.87	$ 13.46
DC Theory, Level II - 2nd Ed.	J202LM.K2	$ 10.87	$ 13.46
DC Theory, Level III - 2nd Ed.	J202LM.K3	$ 10.87	$ 13.46
DC Theory, Level IV - 2nd Ed.	J202LM.K4	$ 10.87	$ 13.46
¤DC Theory, Level V - 2nd Ed.	J202LM.K5	$ 43.48	$ 53.84
Job Information 1, Level I *Based on the 2017 NEC*	J221LM.M1	$ 16.04	$ 16.69
¤Job Information 1, Level II (prev. Job Info 2) *Based on the 2017 NEC*	J221LM.M2	$ 16.04	$ 16.69
Orientation, Level I	J200LM.I1	$ 32.10	$ 16.16
Applications Manual Your JATC will choose four applications to be presented to students during the first year.			
1st Year Student Enrollment - Per Student			$ 225.10
1st Year Session Enrollment - Per Group		$ 247.45	

Blended Learning 1st Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price
Applications Manual	J300.K	$ 42.01
Blueprint Reading for Electricians	S648	$ 48.58
Conduit Bending and Fabrication	S495	$ 62.12
Conduit Fabrication Lab Manual	J204L	$ 22.18
DC Theory	S640	$ 61.08
Electrical Systems 2017 *NEC*	S970	$ 60.05
Residential Blueprints	S135	$ 8.61
Test Instruments	S571	$ 59.00
Ugly's Book	S954	$ 13.77
1st Year Book Kit	BL-A1-KIT18	$ 368.79
	Cost of LMS Suite plus Student Book Kit	$ 593.89
Building a Foundation in Mathematics	S665	$ 66.26
TI-30X IIS Solar Calculator	S159	$ 17.08
1st Year Instructor Book Kit w/ Math and Calculator	BL-A1M-KIT18	$ 452.13

If additional Math study is needed, see Page 60.

2ND YEAR

INSIDE
BLENDED LEARNING

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

¤NOTE:
This suite has been updated to include the following:

Core course(s):

¤AC Theory, Level III - 3rd Ed.

¤Code, Standards, and Practices 2, Level I

¤Code, Standards, and Practices 2, Level II

¤Electrical Code Calculations, Level I

¤Electrical Safety-Related Work Practices, Level I

Course	Item Code	Session	Student
2018 2nd Year Syllabus	J208A2LM.E	$ 0.00	$ 0.00
AC Systems, Level I - 3rd Ed.	J103LM.K1	$ 32.10	$ 14.78
AC Theory, Level I - 3rd Ed.	J203LM.K1	$ 21.75	$ 26.92
AC Theory, Level II - 3rd Ed.	J203LM.K2	$ 21.75	$ 26.92
¤AC Theory, Level III - 3rd Ed.	J203LM.K3	$ 43.48	$ 53.84
Blueprints, Level I	J244LM.I1	$ 32.10	$ 22.78
¤Code, Standards, and Practices 2, Level I *Based on the 2017 NEC*	J232LM.K1	$ 15.73	$ 11.62
¤Code, Standards, and Practices 2, Level II *Based on the 2017 NEC*	J232LM.K2	$ 15.73	$ 11.62
Codeology, Level I *Based on the 2017 NEC*	J207LM.K1	$ 32.10	$ 29.57
¤Electrical Code Calculations, Level I *Based on the 2017 NEC*	J227LM.K1	$ 31.47	$ 11.17
¤Electrical Safety-Related Work Practices, Level I *Based on the 2018 70E*	J444LM.L1	$ 32.10	$ 51.74
Orientation, Level II	J200LM.I2	$ 32.10	$ 14.78
Transformers, Level I - 2nd Ed.	J205LM.I1	$ 78.68	$ 67.30
Applications Manual Your JATC will choose four applications to be presented to students during the second year.			
2nd Year Student Enrollment - Per Student			$ 343.04
2nd Year Session Enrollment - Per Group		$ 389.09	

Blended Learning 2nd Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price
AC Theory	S641	$ 61.08
Applied Codeology	S01717	$ 48.23
Blueprint Reading for Electricians	S648	$ 48.58
Code Calculations	S00817	$ 42.87
Electrical Safety-Related Work Practices	S844	$ 52.78
Residential Blueprints	S135	$ 8.61
Test Instruments Application Manual	J285AM	$ 38.77
Transformer Principles and Applications	S476	$ 62.12
2nd Year Student Book Kit	BL-A2-KIT18	$ 353.45
	Cost of LMS Suite plus Student Book Kit	$ 697.47

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

Applications Manual	J300.K	$ 42.01
Electrical Systems 2017 *NEC*	S970	$ 60.05
Test Instruments	S471	$ 54.87
2nd Year Instructor Book Kit	BL-A2-KIT18-I	$ 511.36

3RD YEAR

INSIDE
BLENDED LEARNING

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

¤NOTE:
This suite has been updated to include the following:

Core course(s):
¤Grounding and Bonding, Level II

Advanced Courses:
¤Code and Practices 6, Level I
¤Fire Alarm Systems, Level I
¤Lighting Essentials, Level I - 2nd Ed.
¤Lighting Essentials, Level II - 2nd Ed.
¤Test Instruments, Level I
¤Transformers, Level III - 2nd Ed.

Course	Item Code	Session	Student
2018 3rd Year Syllabus	J208A3LM.E	$ 0.00	$ 0.00
AC Theory, Level III - 3rd Ed.	J203LM.K3	$ 43.48	$ 53.84
Blueprints, Level II	J244LM.I2	$ 32.10	$ 32.10
Code and Practices 3, Level I *Based on the 2017 NEC*	J233LM.K1_CP	$ 31.47	$ 26.40
¤Code and Practices 6, Level I *Based on the 2017 NEC*	J236LM.K1_CP	$ 31.47	$ 26.39
Electrical Safety-Related Work Practices, Level II *Based on the 2015 70E*	J444LM.K2	$ 32.10	$ 51.74
¤Fire Alarm Systems, Level I *Based on the 2017 NEC*	J211LM.K1	$ 32.10	$ 24.78
Grounding and Bonding, Level I *Based on the 2017 NEC*	J210LM.K1	$ 36.24	$ 25.89
¤Grounding and Bonding, Level II *Based on the 2017 NEC*	J210LM.K2	$ 36.24	$ 25.89
¤Lighting Essentials, Level I - 2nd Ed.	J259LM.K1	$ 16.04	$ 9.32
¤Lighting Essentials, Level II - 2nd Ed.	J259LM.K2	$ 16.04	$ 9.32
Rigging, Hoisting, and Signaling, Level I	J241LM.J1	$ 31.62	$ 25.50
Preparing For Leadership, Level I	J900LM	$ 31.00	$ 14.10
¤Test Instruments, Level I	J285LM.H1	$ 32.10	$ 24.85
¤Transformers, Level III - 2nd Ed.	J205LM.I3	$ 78.68	$ 12.42
3rd Year Student Enrollment - Per Student			$ 362.54
3rd Year Session Enrollment - Per Group		$ 480.68	

Blended Learning 3rd Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price
Applied Grounding and Bonding	S36817	$ 57.80
Commercial Blueprints	S136.H	$ 18.31
Effective Leadership Skills	S097	$ 60.00
Fire Alarm Systems	S846	$ 59.90
Lighting Design Basics	S599	$ 54.87
Rigging, Hoisting, and Signaling Practices	S661	$ 50.69
Test Instruments Application Manual	J285AM	$ 38.77
3rd Year Student Book Kit	BL-A3-KIT18	$ 322.03
	Cost of LMS Suite plus Student Book Kit	$ 684.57

TTT Requirement

Please reference the newsletter sent on June 5, 2017, for more information.

Preparing for Leadership: Personal Qualities, Level I *(TTT Requirement)*	J901LM	$ 34.00

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

AC Theory	S641	$ 61.08
Blueprint Reading for Electricians	S648	$ 48.58
Electrical Safety-Related Work Practices	S744	$ 53.84
Test Instruments	S471	$ 54.87
Transformer Principles and Applications	S476	$ 62.12
3rd Year Instructor Book Kit	BL-A3-KIT18-I	$ 602.52

4TH YEAR

INSIDE
BLENDED LEARNING

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

¤NOTE:
This suite has been updated to include the following:

Core course(s):
¤Motor Control, Level II

Advanced Courses:
¤Digital Electronics, Level I
¤Hazardous Locations, Level I
¤Health Care Facility Electrical Systems, Level I
¤Lightning Protection, Level I
¤Motor Control, Level III
¤Motors, Level III - 2nd Ed.
¤Programmable Logic Controllers, Level I

Course	Item Code	Session	Student
2018 4th Year Syllabus	J208A4LM.E	$ 0.00	$ 0.00
Blueprints, Level III	J244LM.I3	$ 32.10	$ 32.10
Code Calculations, Level I *Based on the 2014 NEC*	J227LM.J1	$ 31.47	$ 11.17
¤Digital Electronics, Level I	J240LM.I1	$ 32.10	$ 42.45
Grounding and Bonding, Level II *Based on the 2017 NEC*	J210LM.K2	$ 36.24	$ 25.89
¤Hazardous Locations, Level I *Based on the 2017 NEC*	J257LM.J1	$ 32.10	$ 27.46
¤Health Care Facility Electrical Systems, Level I *Based on the 2017 NEC*	J260LM.K1	$ 31.62	$ 12.24
¤Lightning Protection, Level I	J276LM.J1	$ 31.62	$ 23.46
Motor Control, Level I	J209LM.H1	$ 31.62	$ 11.22
¤Motor Control, Level II	J209LM.H2	$ 31.62	$ 11.22
¤Motor Control, Level III	J209LM.H3	$ 31.62	$ 11.22
Motors, Level I - 2nd Ed.	J206LM.J1	$ 16.04	$ 5.96
Motors, Level II - 2nd Ed. *Based on the 2014 NEC*	J206LM.J2_14	$ 16.04	$ 5.96
¤Motors, Level III - 2nd Ed.	J206LM.J3	$ 32.10	$ 11.90
¤Programmable Logic Controllers, Level I	J237LM.J1	$ 31.62	$ 14.28
4th Year Student Enrollment - Per Student			$ 246.53
4th Year Session Enrollment - Per Group		$ 417.91	

Blended Learning 4th Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price
Health Care Facility Electrical Systems	S798	$ 40.38
Industrial Blueprints	S137	$ 12.92
Motor Control	S547	$ 64.19
Motors	S649	$ 69.37
Programmable Logic Controllers	S597	$ 68.33
4th Year Student Book Kit	BL-A4-KIT18	$ 242.27
	Cost of LMS Suite plus Student Book Kit	$ 488.80

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

Applied Grounding and Bonding	S36817	$ 57.80
Blueprint Reading for Electricians	S648	$ 48.58
Code Calculations	S00814	$ 42.24
Electrical Systems 2017 *NEC*	S970	$ 60.05
Test Instruments	S471	$ 54.87
Test Instruments Application Manual	J285AM	$ 38.77
4th Year Instructor Book Kit	BL-A4-KIT18-I	$ 544.58

5TH YEAR

INSIDE BLENDED LEARNING

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

¤NOTE:
This suite has been updated to include the following:

Advanced Courses:
- ¤Building Automation 1, Level I
- ¤Building Automation 2, Level I B
- ¤Distributed Generation, Level I
- ¤Instrumentation Introduction - Module 1
- ¤Instrumentation Introduction - Module 2: Basics
- ¤Intrusion Detection, Level I
- ¤Motor Control, Level III
- ¤Photovoltaics, Level I
- ¤Power Quality, Level I
- ¤Structured Cabling, Level I

Course	Item Code	Session	Student
2018 5th Year Syllabus	J208A5LM.E	$ 0.00	$ 0.00
¤Building Automation 1, Level I	J238LM.H1	$ 32.10	$ 12.17
¤Building Automation 2, Level I B	J239LM.I1B	$ 32.10	$ 12.17
Code and Practices 4, Level I *Based on the 2014 NEC*	J234LM.J1	$ 31.47	$ 14.21
Code Calculations, Level II *Based on the 2014 NEC*	J227LM.J2	$ 31.47	$ 11.17
¤Distributed Generation, Level I	J229LM.I1	$ 31.62	$ 41.82
¤Instrumentation Introduction - Module 1	J126LM	$ 30.60	$ 49.98
¤Instrumentation Introduction - Module 2: Basics	J134LM	$ 30.60	$ 49.98
¤Intrusion Detection, Level I - 2nd Ed.	J146LM.A1	$ 31.47	$ 57.23
Motor Control, Level II	J209LM.H2	$ 31.62	$ 11.22
¤Motor Control, Level III	J209LM.H3	$ 31.62	$ 11.22
Orientation, Level III	J200LM.I3	$ 32.10	$ 16.16
¤Power Quality, Level I	J228LM.I1	$ 31.62	$ 24.48
¤Structured Cabling, Level I	J271LM.I1	$ 31.62	$ 25.50
Torque, Level I	J242LM.1	$ 31.62	$ 24.48
Transformers, Level II - 2nd Ed. *Based on the 2014 NEC*	J205LM.I2	$ 78.68	$ 36.24
5th Year Student Enrollment - Per Student			$ 398.03
5th Year Session Enrollment - Per Group		$ 520.31	

Blended Learning 5th Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price
Applied Science of Instrumentation	S600	$ 56.10
Building Automation: Control Devices	S518	$ 63.15
Building Automation: System Integration	S519	$ 63.15
¤Photovoltaics, Student Workbook	J230SW.J	$ 25.85
Photovoltaic Systems, 3rd Ed.	S674	$ 70.40
Power Quality	S569	$ 43.30
Significant Changes to the *NEC 2017*	S953	$ 48.56
Structured Cabling	S581	$ 44.35
5th Year Student Book Kit	BL-A5-KIT18	$ 414.86
	Cost of LMS Suite plus Student Book Kit	$ 812.89

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

Code Calculations	S00814	$ 42.24
Motor Control Textbook	S547	$ 64.19
¤Photovoltaics, Instructor Guide	J230IG.J	$ 36.62
Transformer Principles and Applications	S476	$ 62.12
5th Year Instructor Book Kit	BL-A5-KIT18-I	$ 620.03

1ST YEAR

INSTALLER/TECHNICIAN BLENDED LEARNING

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

Course	Item Code	Session	Student
2018 1st Year Syllabus	J208T1LM.C	$ 0.00	$ 0.00
Blueprints, Level I	J244LM.I1	$ 32.10	$ 22.78
Code, Standards, and Practices 1, Level I *Based on the 2017 NEC*	J231LM.K1	$ 31.47	$ 26.40
DC Theory, Level I - 2nd Ed.	J202LM.K1	$ 10.87	$ 13.46
DC Theory, Level II - 2nd Ed.	J202LM.K2	$ 10.87	$ 13.46
DC Theory, Level III - 2nd Ed.	J202LM.K3	$ 10.87	$ 13.46
DC Theory, Level IV - 2nd Ed.	J202LM.K4	$ 10.87	$ 13.46
Fiber Optics, Level I	J277LM	$ 31.62	$ 23.46
I/T Job Information 1, Level I - 2nd Ed.	T251LM.L1	$ 15.50	$ 14.00
I/T Job Information 1, Level II - 2nd Ed.	T251LM.L2	$ 15.50	$ 14.00
I/T Job Information 2, Level I - 2nd Ed.	T252LM.L1	$ 15.50	$ 14.00
I/T Job Information 2, Level II - 2nd Ed.	T252LM.L2	$ 15.50	$ 14.00
Orientation, Level I	J200LM.I1	$ 32.10	$ 16.16
Structured Cabling, Level I	J271LM.I1	$ 31.62	$ 25.50
1st Year Student Enrollment - Per Student			$ 224.14
1st Year Session Enrollment - Per Group		$ 264.39	

Blended Learning 1st Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price	
Blueprint Reading for Electricians	S648	$ 48.58	
DC Theory	S640	$ 61.08	
Electrical Systems 2017 *NEC*	S970	$ 60.05	
Reference Guide to Fiber Optics	S480	$ 61.08	
Residential Blueprints	S135	$ 8.61	
Structured Cabling	S581	$ 44.35	
Test Instruments	S571	$ 59.00	
1st Year Book Kit	BL-T1-KIT18	$ 334.14	
	Cost of LMS Suite plus Student Book Kit		$ 558.28
Building a Foundation in Mathematics	S665	$ 66.26	
TI-30X IIS Solar Calculator	S159	$ 17.08	
1st Year Instructor Book Kit w/ Math and Calculator	BL-T1M-KIT18	$ 417.48	

If additional Math study is needed, see Page 60.

2ND YEAR INSTALLER/TECHNICIAN BLENDED LEARNING

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

¤NOTE:
This suite has been updated to include the following:

¤Electronic Access Control, Level I
¤Electronic Access Control, Level II
¤I/T Power Quality, Level I
¤Intrusion Detection, Level I

Course	Item Code	Session	Student
2018 2nd Year Syllabus	J208T2LM.C	$ 0.00	$ 0.00
AC Systems, Level I - 3rd Ed.	J103LM.K1	$ 32.10	$ 14.78
AC Theory, Level I - 3rd Ed.	J203LM.K1	$ 21.75	$ 26.92
¤Electronic Access Control, Level I	J147LM.A1	$ 15.00	$ 15.00
¤Electronic Access Control, Level II	J147LM.A2	$ 15.00	$ 15.00
Fire Alarm Systems, Level I *Based on the 2017 NEC*	J211LM.K1	$ 32.10	$ 24.78
Fire Alarm Systems, Level II *Based on the 2017 NEC*	J211LM.K2	$ 32.10	$ 24.78
I/T Code-2, Level I *Based on the 2017 NEC*	T266LM.K1	$ 31.47	$ 26.40
I/T Grounding and Bonding, Level I *Based on the 2017 NEC*	J210LM.K1	$ 36.24	$ 25.89
¤I/T Power Quality, Level I	T228LM.I1	$ 30.00	$ 22.00
Introduction to Network Technologies, Level I	J145LM.1	$ 31.00	$ 13.00
Introduction to Network Technologies, Level II	J145LM.2	$ 31.00	$ 13.00
¤Intrusion Detection, Level I - 2nd Ed.	J146LM.A1	$ 31.47	$ 57.23
Orientation, Level II	J200LM.I2	$ 32.10	$ 14.78
Paging Systems, Level I	T263LM	$ 31.00	$ 38.00
Telephony, Level I	T262LM	$ 31.00	$ 25.00
2nd Year Student Enrollment - Per Student			$ 434.86
2nd Year Session Enrollment - Per Group		$ 519.26	

Blended Learning 2nd Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price
AC Theory	S641	$ 61.08
Applied Grounding and Bonding	S36817	$ 57.80
Electronic Access Control	S104	$ 67.00
Fire Alarm Systems	S846	$ 59.90
Harris Handbook on Basic Telephony	S281	$ 16.16
Introduction to Network Technologies	S582	$ 56.10
Power Quality Analysis	S569	$ 43.30
2nd Year Student Book Kit	BL-T2-KIT18	$ 361.34
	Cost of LMS Suite plus Student Book Kit	$ 796.20

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

Electrical Systems 2017 NEC	S970	$ 60.05
Test Instruments	S471	$ 54.87
2nd Year Instructor Book Kit	BL-T2-KIT18-I	$ 476.26

3RD YEAR INSTALLER/TECHNICIAN 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
Installer/Tech 3rd Year Syllabus	J208T3.O	$ 4.66
Building Automation: CDA SW	J238SW.H	$ 23.70
I/T CCTV SW	J268SW	$ 25.85
Nurse Call Systems SW	J267SW	$ 43.09
Residential Advanced Tech SW	J275SW	$ 39.85
Semiconductor SW	J215SW.H	$ 30.16
Sound Reinforcement Systems SW	J269SW	$ 20.47
Installer/Tech 3rd Yr SW Kit	T3SWK18	$ 153.65

Instructor Guide Kit

Item Title	Item Number	Price
Installer/Tech 3rd Year Syllabus	J208T3.O	$ 4.66
Building Automation: CDA IG	J238IG.H	$ 34.47
I/T CCTV IG	J268IG	$ 36.62
Nurse Call Systems IG	J267IG	$ 53.86
Residential Advanced Tech IG	J275IG	$ 50.63
Semiconductor IG	J215IG.H	$ 51.29
Sound Reinforcement Systems IG	J269IG	$ 31.24
DC Theory IG	J202IG.I	$ 78.06
Orientation IG	J200IG.I	$ 68.30
Installer/Tech 3rd Yr IG Kit	T3IGK18	$ 273.50

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.

Note: Items in bold are updated for 2018.

Item Title	Item Number	Price
Building Automation: Control Devices and Applications	S518	$ 63.15
CCTV Surveillance Video Practice & Technology	S404	$ 67.32
Residential Audio & Video Systems	S484	$ 44.35
Automating and Integrating Residential Systems	S486	$ 33.79
Residential Cabling Technologies	S485	$ 44.35
Semiconductor Principles and Applications	S542	$ 61.08
Sound Reinforcement Handbook	S479	$ 41.18
Installer/Tech 3rd Yr SW Kit Complete	T3SWKC18	$ 499.80

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

DC Theory	S640	$ 61.08
Installer/Tech 3rd Yr IG Kit Complete	T3IGKC18	$ 674.22
Installer/Tech Course Presentation	TCP3K15	$ 94.21

*** Courses and/or books outlined on this page are based on the student's previous purchases. Each training center may adjust based on local training needs.**

3RD YEAR

INSTALLER/TECHNICIAN BLENDED LEARNING

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

Course	Item Code	Session	Student
2018 3rd Year Syllabus	J208T3LM.C	$ 0.00	$ 0.00
Audio/Video Systems, Level I	J155LM.A1	$ 10.00	$ 11.25
Building Automation 1, Level I	J238LM.H1	$ 32.10	$ 12.17
DC Theory, Level II, featuring ETS & Labs	J202LM.I2	$ 43.48	$ 53.84
Intelligent Network Video, Level I	J148LM.1	$ 31.47	$ 15.73
Intelligent Network Video, Level III	J148LM.3	$ 31.47	$ 9.44
Orientation, Level III	J200LM.I3	$ 32.10	$ 16.16
Residential Automation Systems, Level I	J156LM.A1	$ 10.00	$ 11.25
Residential Cabling, Level I	J157LM.A1	$ 10.00	$ 9.25
Semiconductors, Level I	J215LM.H1	$ 32.10	$ 15.27
Semiconductors, Level II	J215LM.H2	$ 32.10	$ 15.27
Sound Reinforcement Systems, Level I	J269LM.1	$ 15.00	$ 10.25
Sound Reinforcement Systems, Level II	J269LM.2	$ 15.00	$ 10.25
3rd Year Student Enrollment - Per Student			$ 190.13
3rd Year Session Enrollment - Per Group		$ 294.82	

Blended Learning 3rd Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price
Automating and Integrating Residential Systems	S486	$ 33.79
Building Automation: Control Devices	S518	$ 63.15
Intelligent Network Video	S530	$ 66.00
Residential Audio & Video Systems	S484	$ 44.35
Residential Cabling Technologies	S485	$ 44.35
Semiconductor Principles and Applications	S542	$ 61.08
Sound Reinforcement Handbook	S479	$ 41.18
3rd Year Student Book Kit	BL-T3-KIT18	$ 353.90
	Cost of LMS Suite plus Student Book Kit	$ 544.03

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

DC Theory	S640	$ 61.08
2nd Year Instructor Book Kit	BL-T3-KIT18-I	$ 414.98

1ST YEAR

OUTSIDE LINE CONSTRUCTION BLENDED LEARNING

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

Course	Item Code	Session	Student
Outside 1st Year, Level I	OA1-1LM	$ 30.00	$ 23.00
Outside 1st Year, Level II	OA1-2LM	$ 30.00	$ 23.00
Outside 1st Year, Level III	OA1-3LM	$ 30.00	$ 23.00
Outside 1st Year, Level IV	OA1-4LM	$ 30.00	$ 23.00
Outside 1st Year, Level V	OA1-5LM	$ 30.00	$ 23.00
Outside 1st Year, Level VI	OA1-6LM	$ 30.00	$ 23.00
1st Year Student Enrollment - Per Student			$ 138.00
1st Year Session Enrollment - Per Group		$ 180.00	

Blended Learning 1st Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price
Building a Foundation in Mathematics	S665	$ 66.26
DC Theory	S640	$ 61.08
The Guidebook for Linemen and Cablemen	S566	$ 68.33
Lineworker Rigging Practices	S489	$ 70.38
NJATC's Safety Handbook	S184	$ 22.18
Personal Protective Grounding for Worker Safety - 2nd Ed.	S562	$ 45.04
Underground Distribution	S468	$ 81.79
TI-30X IIS Solar Calculator	S159	$ 17.08
Student Test	OAT-1	$ 7.54
1st Year Student Book Kit	BL-O1-KIT	$ 439.68
	Cost of LMS Suite plus Student Book Kit	$ 577.68

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

Answer Key	OATAK-1	$ 18.31
1st Year Instructor Book Kit	BL-O1-KIT-I	$ 450.45

2ND YEAR

OUTSIDE LINE CONSTRUCTION BLENDED LEARNING

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

Course	Item Code	Session	Student
Outside 2nd Year, Level I	OA2-1LM	$ 30.00	$ 38.75
Outside 2nd Year, Level II	OA2-2LM	$ 30.00	$ 38.75
Outside 2nd Year, Level III	OA2-3LM	$ 30.00	$ 38.75
Outside 2nd Year, Level IV	OA2-4LM	$ 30.00	$ 38.75
Outside 2nd Year, Level V	OA2-5LM	$ 30.00	$ 38.75
Outside 2nd Year, Level VI	OA2-6LM	$ 30.00	$ 38.75
2nd Year Student Enrollment - Per Student			$ 232.50
2nd Year Session Enrollment - Per Group		$ 180.00	

Blended Learning 2nd Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price
AC Theory	S641	$ 61.08
Distribution Volume I: Transformer Theory for Line People	S036	$ 19.39
Flagger Certification Handbook	S348	$ 9.50
Terminations and Splices Theory- Practice	S094	$ 12.92
Test Instruments	S471	$ 54.87
Transformation for Lineworkers	S458	$ 53.84
Student Test	OAT-2	$ 7.54
2nd Year Student Book Kit	BL-O2-KIT	$ 219.14
	Cost of LMS Suite plus Student Book Kit	$ 451.64

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

Building a Foundation in Mathematics	S665	$ 66.26
DC Theory	S640	$ 61.08
The Guidebook for Linemen and Cablemen	S566	$ 68.33
Lineworker Rigging Practices	S489	$ 70.38
NJATC's Safety Handbook	S184	$ 22.18
Underground Distribution	S468	$ 81.79
Answer Key	OATAK-2	$ 18.31
2nd Year Instructor Book Kit	BL-O2-KIT-I	$ 599.93

3RD YEAR

OUTSIDE LINE CONSTRUCTION

Blended Learning Suite

Item Title	Item Number	Price
Distribution Volume II: Capacitors, Regulators, Circuit Protection	S037	$ 19.39
Hot Sticks: A Manual on High Voltage Line Maintenance	S035	$ 24.29
Live Line Work Practices	S459	$ 81.79
Personal Protective Grounding for Worker Safety	S562	$ 45.04
Substation Construction Guidelines	S496	$ 52.80
Online Access to Transformer Simulator	OATS2	$ 46.86
AC Theory	S641	$ 61.08
Distribution Volume I: Transformer Theory for Line People	S036	$ 19.39
The Guidebook for Linemen and Cablemen	S566	$ 68.33
Transformation for Lineworkers	S458	$ 53.84
3rd Year Lineman Test	OAT-3	$ 7.54
3rd Year Lineman SW Kit Complete	OA3SLKC	$ 406.07
3rd Year Lineman Answer Key	OATAK-3	$ 18.31
3rd Year Lineman IG Kit Complete	OA3SLIGKC	$ 606.44

ONLINE SOLUTION

	Pricing
OA3SLK	$ 190.11
OA3SLIGK	$ 245.05

3RD YEAR

OUTSIDE LINE CONSTRUCTION BLENDED LEARNING

COMING **FALL 2018**

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

Course	Item Code	Session	Student
Outside 3rd Year, Level I	OA3-1LM	$ 30.00	$ 31.00
Outside 3rd Year, Level II	OA3-2LM	$ 30.00	$ 31.00
Outside 3rd Year, Level III	OA3-3LM	$ 30.00	$ 31.00
Outside 3rd Year, Level IV	OA3-4LM	$ 30.00	$ 31.00
Outside 3rd Year, Level V	OA3-5LM	$ 30.00	$ 31.00
Outside 3rd Year, Level VI	OA3-6LM	$ 30.00	$ 31.00
3rd Year Student Enrollment - Per Student			$ 186.00
3rd Year Session Enrollment - Per Group		$ 180.00	

Blended Learning 3rd Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price
Distribution Volume II: Capacitors, Regulators, Circuit Protection	S037	$ 19.39
Hot Sticks: A Manual on High Voltage Line Maintenance	S035	$ 24.29
Live Line Work Practices	S459	$ 81.79
Substation Construction Guidelines	S496	$ 52.80
Student Test	OAT-3	$ 7.54
3rd Year Student Book Kit	BL-O3-KIT	$ 185.81
	Cost of LMS Suite plus Student Book Kit	$ 371.81

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

AC Theory	S641	$ 61.08
Distribution Volume I: Transformer Theory for Line People	S036	$ 19.39
Personal Protective Grounding for Worker Safety	S562	$ 45.04
The Guidebook for Linemen and Cablemen	S566	$ 68.33
Transformation for Lineworkers	S458	$ 53.84
Answer Key	OATAK-3	$ 18.31
3rd Year Instructor Book Kit	BL-O3-KIT-I	$ 444.26

1ST YEAR RESIDENTIAL BLENDED LEARNING

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

¤NOTE:
This suite has been updated to include the following:

¤Job Information 1, Level II

Course	Item Code	Session	Student
2018 1st Year Syllabus	J208R1LM.C	$ 0.00	$ 0.00
Blueprints, Level I	J244LM.I1	$ 32.10	$ 22.78
Code, Standards, and Practices 1, Level I *Based on the 2017 NEC*	J231LM.K1	$ 31.47	$ 26.40
DC Theory, Level I - 2nd Ed.	J202LM.K1	$ 10.87	$ 13.46
DC Theory, Level II - 2nd Ed.	J202LM.K2	$ 10.87	$ 13.46
DC Theory, Level III - 2nd Ed.	J202LM.K3	$ 10.87	$ 13.46
DC Theory, Level IV - 2nd Ed.	J202LM.K4	$ 10.87	$ 13.46
Job Information 1, Level I *Based on the 2017 NEC*	J221LM.M1	$ 16.04	$ 16.69
¤Job Information 1, Level II (prev. Job Info 2) *Based on the 2017 NEC*	J221LM.M2	$ 16.04	$ 16.69
Orientation, Level I	J200LM.I1	$ 32.10	$ 16.16
Orientation, Level II	J200LM.I2	$ 32.10	$ 14.78
1st Year Student Enrollment - Per Student			$ 167.34
1st Year Session Enrollment - Per Group		$ 203.33	

Blended Learning 1st Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price	
Blueprint Reading for Electricians	S648	$ 48.58	
DC Theory	S640	$ 61.08	
Electrical Systems 2017 *NEC*	S970	$ 60.05	
Residential Blueprint Set	S135	$ 8.61	
Test Instruments	S571	$ 59.00	
1st Year Book Kit	BL-R1-KIT	$ 228.71	
	Cost of LMS Suite plus Student Book Kit		$ 396.05
Building a Foundation in Mathematics	S665	$ 66.26	
TI-30X IIS Solar Calculator	S159	$ 17.08	
1st Year Instructor Book Kit w/ Math and Calculator	BL-R1M-KIT18	$ 312.05	

If additional Math study is needed, see Page 60.

2ND YEAR RESIDENTIAL BLENDED LEARNING

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

Course	Item Code	Session	Student
2018 2nd Year Syllabus	J208R2LM.C	$0.00	$ 0.00
AC Systems, Level I - 3rd Ed.	J103LM.K1	$ 32.10	$ 14.78
AC Theory, Level I - 3rd Ed.	J203LM.K1	$ 21.75	$ 26.92
AC Theory, Level II - 3rd Ed.	J203LM.K2	$ 21.75	$ 26.92
AC Theory, Level III - 3rd Ed.	J203LM.K3	$ 43.48	$ 53.84
Codeology, Level I *Based on the 2017 NEC*	J207LM.K1	$ 32.10	$ 29.57
Conduit Fabrication, Level I - 2nd Ed.	J204LM.H1	$ 32.74	$ 18.70
DC Theory, Level V - 2nd Ed.	J202LM.K5	$ 43.48	$ 53.84
Residential Code 2, Level I *Based on the 2017 NEC*	J293LM.K1	$ 15.30	$ 15.10
Residential Job Information 2, Level I	R255LM	$ 30.00	$ 33.45
Residential Wiring Practices, Level I *Based on the 2017 NEC*	J292LM.K1	$ 15.30	$ 12.92
2nd Year Student Enrollment - Per Student			$ 270.56
2ndYear Session Enrollment - Per Group		$ 289.47	

Blended Learning 2nd Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price	
AC Theory	S641	$ 61.08	
Applied Codeology	S01717	$ 48.23	
Conduit Bending and Fabrication	S495	$ 62.12	
Commercial Blueprint Set	S136.H	$ 18.31	
Electrical Wiring Residential	S03917	$ 99.96	
2nd Year Student Book Kit	BL-R2-KIT	$ 271.39	
	Cost of LMS Suite plus Student Book Kit		$ 541.95

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

Blueprint Reading for Electricians	S648	$ 48.58
Building a Foundation in Mathematics	S665	$ 66.26
DC Theory	S640	$ 61.08
Electrical Systems 2017 NEC	S970	$ 60.05
Test Instruments	S471	$ 54.87
2nd Year Instructor Book Kit	BL-R2-KIT-I	$ 562.23
Residential Course Presentation	RCP2K15	$ 94.21

3RD YEAR | RESIDENTIAL PRINTED WORKBOOK KITS

Student Workbook & Instructor Guide Kit

Item Title	Item Number	Price
Residential Syllabus 3rd Year	J208R3.O	$ 4.66
Inside Job Information-4 SW	J224SW	$ 38.77
Photovoltaic Systems SW	J230SW.J	$ 25.85
Residential Advanced Tech SW	J275SW	$ 39.85
Residential Fire Alarm & Security System SW	J296SW	$ 23.70
Residential Plan & Design SW	J294SW	$ 19.39
Telephone and Security Basics SW	J226SW.H	$ 21.54
Residential 3rd Yr SW Kit	R3SWK18	$ 143.39

Item Title	Item Number	Price
Residential Syllabus 3rd Year	J208R3.O	$ 4.66
Inside Job Information-4 IG	J224IG	$ 49.55
Photovoltaic Systems IG	J230IG.J	$ 36.62
Residential Advanced Tech IG	J275IG	$ 50.63
Residential Fire Alarm & Security System IG	J296IG	$ 34.47
Residential Plan & Design IG	J294IG	$ 30.16
Telephone and Security Basics IG	J226IG	$ 33.39
Orientation IG	J200IG.I	$ 68.30
Residential Motors & Transformers IG	J291IG	$ 40.42
Residential Wiring Practices IG	J292IG.K	$ 47.39
Residential Code-2 IG	J293IG.K	$ 52.98
Residential Job Information-2 IG	J255IG	$ 47.39
Residential 3rd Yr IG Kit	R3IGK18	$ 302.31

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.

Note: Items in bold are updated for 2018.

Item Title	Item Number	Price
Automating and Integrating Residential Systems	S486	$ 33.79
Harris Handbook on Basic Telephony	S281	$ 16.16
Photovoltaic Systems	S674	$ 70.40
Residential Security, Surveillance, and Access Systems	S483	$ 42.24
Residential Audio & Video Systems	S484	$ 44.35
Residential Cabling Technologies	S485	$ 44.35
Residential Fire Alarm and Carbon Monoxide Systems	S488	$ 44.35
Residential 3rd Yr SW Kit Complete	R3SWKC18	$ 416.71
Electrical Wiring Residential	S03917	$ 99.96
Electrical Systems 2017 NEC	S970	$ 60.05
Transformers & Motors	S018	$ 44.52
Residential 3rd Yr IG Kit Complete	R3IGKC18	$ 709.19
Residential Course Presentation	RCP3K14	$ 94.21

1ST YEAR SUBSTATION BLENDED LEARNING

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

Course	Item Code	Session	Student
Substation 1st Year, Level I	JSS1-1LM	$ 30.00	$ 31.00
Substation 1st Year, Level II	JSS1-2LM	$ 30.00	$ 31.00
Substation 1st Year, Level III	JSS1-3LM	$ 30.00	$ 31.00
Substation 1st Year, Level IV	JSS1-4LM	$ 30.00	$ 31.00
Substation 1st Year, Level V	JSS1-5LM	$ 30.00	$ 31.00
Substation 1st Year, Level VI	JSS1-6LM	$ 30.00	$ 31.00
1st Year Student Enrollment - Per Student			$ 186.00
1stYear Session Enrollment - Per Group		$ 180.00	

Blended Learning 1st Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price
Building a Foundation in Mathematics	S665	$ 66.26
DC Theory	S640	$ 61.08
The Guidebook for Linemen and Cablemen	S566	$ 68.33
Hot Sticks	S035	$ 24.29
Lineworker Rigging Practices	S489	$ 70.38
Live Line Work Practices	S459	$ 81.79
NJATC's Safety Handbook	S184	$ 22.18
Personal Protective Grounding for Worker Safety	S562	$ 45.04
Substation Construction Guidelines	S496	$ 52.80
Underground Distribution	S468	$ 81.79
TI-30X IIS Solar Calculator	S159	$ 17.08
Test Instruments	S471	$ 54.87
1st Year Test	JSS1T	$ 14.01
1st Year Student Book Kit	BL-S1-KIT	$ 659.90
	Cost of LMS Suite plus Student Book Kit	$ 845.90

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

1st Yr Answer Key	JSS1TAK	$ 19.39
1st Year Instructor Book Kit	BL-S1-KIT-I	$ 665.28

2ND YEAR SUBSTATION PRINTED WORKBOOK KITS

Student Workbook & Instructor Guide Kit

Item Title	Item Number	Price
Substation Technician SW 2-1 - 2-3	JSS2-1SW.I	$ 61.39
Substation Technician SW 2-4 - 2-6	JSS2-2SW.I	$ 67.86
Substation Technician Test	JSS2T	$ 14.01
2nd Year Substation SW Kit	JSS2SWK	$ 132.49

Item Title	Item Number	Price
Substation Technician IG 2-1 - 2-3	JSS2-1IG.I	$ 72.17
Substation Technician IG 2-4- 2-6	JSS2-2IG.I	$ 78.63
Substation Technician Answer Key	JSS2TAK	$ 19.39
DC Theory IG	J202IG.I	$ 78.06
2nd Year Substation IG Kit	JSS2IGK	$ 199.26

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	$ 61.08
Distribution Volume One Transformer Theory for Line People	S036	$ 19.39
Test Instruments	S471	$ 54.87
Transformation for Lineworkers	S458	$ 53.84
Building a Foundation in Mathematics	S665	$ 66.26
DC Theory	S640	$ 61.08
The Guidebook for Linemen and Cablemen	S566	$ 68.33
2nd Year Substation SW Kit Complete	JSS2SWKC	$ 307.11
2nd Year Substation IG Kit Complete	JSS2IGKC	$ 529.12

2ND YEAR

SUBSTATION BLENDED LEARNING

COMING
SUMMER 2018

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

Course	Item Code	Session	Student
Substation 2nd Year, Level I	JSS2-1LM	$ 30.00	$ 31.00
Substation 2nd Year, Level II	JSS2-2LM	$ 00.00	$ 31.00
Substation 2nd Year, Level III	JSS2-3LM	$ 30.00	$ 31.00
Substation 2nd Year, Level IV	JSS2-4LM	$ 30.00	$ 31.00
Substation 2nd Year, Level V	JSS2-5LM	$ 30.00	$ 31.00
Substation 2nd Year, Level VI	JSS2-6LM	$ 30.00	$ 31.00
2nd Year Student Enrollment - Per Student			$ 186.00
2nd Year Session Enrollment - Per Group		$ 180.00	

Blended Learning 2nd Year Textbook Kit

The Textbook Kit is purchased through the bookstore.

Item Title	Item Number	Price
AC Theory	S641	$ 61.08
Distribution Volume One Transformer Theory for Line People	S036	$ 19.39
Transformation for Lineworkers	S458	$ 53.84
2nd Year Student Book Kit	BL-S2-KIT	$ 134.31
	Cost of LMS Suite plus Student Book Kit	$ 320.31

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

Building a Foundation in Mathematics	S665	$ 66.26
DC Theory	S640	$ 61.08
Test Instruments	S471	$ 54.87
The Guidebook for Linemen and Cablemen	S566	$ 68.33
2nd Year Instructor Book Kit	BL-S2-KIT-I	$ 384.85

3RD YEAR SUBSTATION PRINTED WORKBOOK KITS

Student Workbook & Instructor Guide Kit

Item Title	Item Number	Price
Substation Technician SW 3-1 – 3-3	JSS3-1SW.I	$ 66.78
Substation Technician SW 3-4 – 3-6	JSS3-2SW.I	$ 66.78
Substation Technician Test	JSS3T	$ 14.29
Fiber Optics SW	J277SW	$ 23.70
3rd Year Substation SW Kit	JSS3SWK	$ 150.80

Item Title	Item Number	Price
Substation Technician IG 3-1 – 3-3	JSS3-1IG.I	$ 77.55
Substation Technician IG 3-4 – 3-6	JSS3-2IG.I	$ 77.55
Substation Technician Answer Key	JSS3TAK	$ 19.39
Fiber Optics IG	J277IG	$ 34.47
3rd Year Substation IG Kit	JSS3IGK	$ 183.11

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	S480	$ 61.08
Substation Operation and Maintenance	S601	$ 114.92
The Guidebook for Linemen and Cablemen	S566	$ 68.33
NJATC's Safety Handbook	S184	$ 22.18
Substation Construction Guidelines	S496	$ 52.80
Terminations & Splices Theory-Practices	S094	$ 12.92
Underground Distribution	S468	$ 81.79
3rd Year Substation SW Kit Complete	JSS3SWKC	$ 321.87
3rd Year Substation IG Kit Complete	JSS3IGKC	$ 544.27

1ST YEAR | TRAFFIC SIGNAL PRINTED WORKBOOK KITS

Student Workbook & Instructor Guide Kit

Item Title	Item Number	Price	Item Title	Item Number	Price
Traffic Signal Technician SW 1-1	TS1-1SW	$ 58.16	Traffic Signal Technician IG 1-1	TS1-1IG	$ 68.94
Traffic Signal Technician SW 1-2	TS1-2SW	$ 35.54	Traffic Signal Technician IG 1-2	TS1-2IG	$ 46.32
Traffic Signal Technician SW 1-3	TS1-3SW	$ 28.00	Traffic Signal Technician IG 1-3	TS1-3IG	$ 38.77
Traffic Signal Technician SW 1-4	TS1-4SW	$ 34.47	Traffic Signal Technician IG 1-4	TS1-4IG	$ 45.24
Traffic Signal Technician SW 1-5	TS1-5SW	$ 63.34	Traffic Signal Technician IG 1-5	TS1-5IG	$ 73.90
Traffic Signal Technician SW 1-6	TS1-6SW	$ 46.32	Traffic Signal Technician IG 1-6	TS1-6IG	$ 57.00
Traffic Signal Technician Test	TS1T06	$ 15.08	Traffic Signal Technician Answer Key	TS1TAK06	$ 20.47
1st Year Traffic Signal SW Kit	TS1SWK	$ 248.69	1st Year Traffic Signal IG Kit	TS1IGK	$ 325.25

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	$ 66.26
Conduit Bending and Fabrication	S377	$ 18.85
DC Theory	S640	$ 61.08
Electrical Systems 2017 NEC	S970	$ 60.05
Traffic Control Flagger's Certification Handbook	S348	$ 9.50
The Guidebook for Linemen and Cablemen	S566	$ 68.33
NJATC's Safety Handbook	S184	$ 22.18
The Lineworker's Rigging Handbook	S467	$ 53.84
TI-30X IIS Solar Calculator	S159	$ 17.08
1st Year Traffic Signal SW Kit Complete	TS1SWKC	$ 557.42
1st Year Traffic Signal IG Kit Complete	TS1IGKC	$ 627.27

2ND YEAR TRAFFIC SIGNAL PRINTED WORKBOOK KITS

Student Workbook & Instructor Guide 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	Item Title	Item Number	Price
Traffic Signal Technician SW 2-1	TS2-1SW	$ 35.54	Traffic Signal Technician IG 2-1	TS2-1IG	$ 46.32
Codeology SW	J207SW.J	$ 26.91	Codeology IG	J207IG.J	$ 35.90
Traffic Signal Technician SW 2-3	TS2-3SW	$ 36.61	Traffic Signal Technician IG 2-3	TS2-3IG	$ 47.40
Plans Set Booklet	TS2-3P	$ 15.08	Plans Set Booklet	TS2-3P	$ 15.08
Traffic Signal Technician SW 2-4	TS2-4SW	$ 35.54	Traffic Signal Technician IG 2-4	TS2-4IG	$ 46.32
Traffic Signal Technician SW 2-5	TS2-5SW	$ 38.77	Traffic Signal Technician IG 2-5	TS2-5IG	$ 49.55
Traffic Signal Technician SW 2-6	TS2-6SW	$ 63.34	Traffic Signal Technician IG 2-6	TS2-6IG	$ 73.90
Traffic Signal Technician Test	TS2T	$ 15.08	Traffic Signal Technician Answer Key	TS2TAK	$ 20.47
2nd Year Traffic Signal SW Kit	TS2SWK	$ 249.75	2nd Year Traffic Signal IG Kit	TS2IGK	$ 319.71

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	$ 61.08
Applied Codeology	S01714	$ 47.52
Personal Protective Grounding for Worker Safety	S562	$ 45.04
Test Instruments	S471	$ 54.87
Transformer Principles & Applications	S476	$ 62.12
Building a Foundation in Mathematics	S665	$ 66.26
DC Theory	S640	$ 61.08
The Guidebook for Linemen and Cablemen	S566	$ 68.33
NJATC's Safety Handbook	S184	$ 22.18
2nd Year Traffic Signal SW Kit Complete	TS2SWKC	$ 533.08
2nd Year Traffic Signal IG Kit Complete	TS2IGKC	$ 727.33

3RD YEAR TRAFFIC SIGNAL PRINTED WORKBOOK KITS

Student Workbook & Instructor Guide 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	Item Title	Item Number	Price
Traffic Signal Technician SW 3-1	TS3-1SW	$ 57.00	Traffic Signal Technician IG 3-1	TS3-1IG	$ 67.56
Traffic Signal Technician SW 3-2	TS3-2SW	$ 34.47	Traffic Signal Technician IG 3-2	TS3-2IG	$ 45.24
Traffic Signal Technician SW 3-3/3-4	TS3-3SW	$ 67.56	Traffic Signal Technician IG 3-3/3-4	TS3-3IG	$ 78.12
Fiber Optic SW	J277SW	$ 23.70	Fiber Optic IG	J277IG	$ 34.47
I/T CCTV SW	J268SW	$ 25.85	I/T CCTV IG	J268IG	$ 36.62
Traffic Signal Technician SW 3-6	TS3-6SW	$ 45.24	Traffic Signal Technician IG 3-6	TS3-6IG	$ 55.95
Traffic Signal Technician Test	TS3T	$ 15.08	Traffic Signal Technician Answer Key	TS3TAK	$ 20.47
3rd Year Traffic Signal SW Kit	TS3SWK	$ 249.75	3rd Year Traffic Signal IG Kit	TS3IGK	$ 330.53

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
Advance Ballasts Pocket Guide	J258.H	$ 7.54
CCTV Surveillance Video Practices	S404	$ 67.32
Reference Guide to Fiber Optics	S480	$ 61.08
W4IKS (Wapiti) Manual	S478	$ 36.96
AC Theory	S641	$ 61.08
3rd Year Traffic Signal SW Kit Complete	TS3SWKC	$ 408.15
3rd Year Traffic Signal IG Kit Complete	TS3IGKC	$ 538.56

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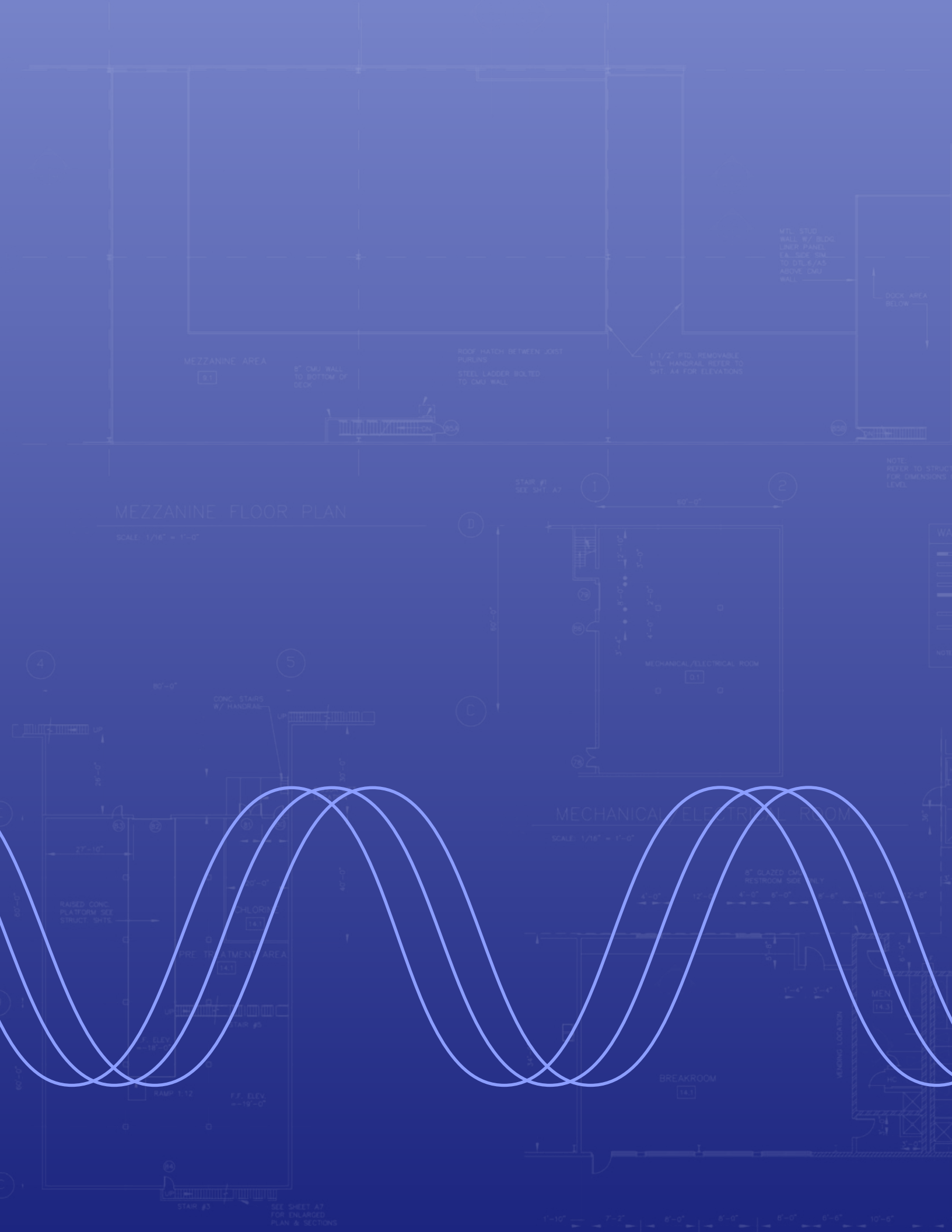
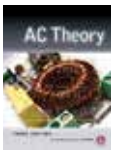

MEZZANINE FLOOR PLAN
SCALE: 1/16" = 1'-0"
MECHANICAL/ELECTRICAL ROOM
MEZZANINE AREA
ROOF HATCH BETWEEN JOIST PURLINS
STEEL LADDER BOLTED TO CMU WALL
8" CMU WALL TO BOTTOM OF DECK
1 1/2" PTD. REMOVABLE MTL. HANDRAIL REFER TO SHT. A4 FOR ELEVATIONS
MTL. STUD WALL W/ BLDG. LINER PANEL LAY SIDE SIM. TO DTL 6/A5 ABOVE CMU WALL
DOCK AREA BELOW
STAIR #1 SEE SHT. A7
CONC. STAIRS W/ HANDRAIL
RAISED CONC. PLATFORM SEE STRUCT. SHTS.
CHLORINE
PRE TREATMENT AREA
STAIR #2
RAMP 1:12
STAIR #3
SEE SHEET A7 FOR ENLARGED PLAN & SECTIONS
MECHANICAL/ELECTRICAL ROOM
SCALE: 1/16" = 1'-0"
BREAKROOM
KEYING LOCATION
NOTE: REFER TO STRUCT. FOR DIMENSIONS LEVEL

Topics

AC THEORY



AC Theory Textbook
S641 $ 61.08

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 I - 3rd Ed.
J103LM.K1 **Session:** $ 32.10 **Student:** $ 14.78

Prerequisite(s): DC Theory, Level IV

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 - 3rd Ed.
J203LM.K1 **Session:** $ 21.75 **Student:** $ 26.92

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

This course will introduce the inductor and capacitor, their inductance and capacitance effects in series or parallel, and the reactance they cause in an AC circuit. **PPTs included.**

AC Theory, Level II - 3rd Ed.
J203LM.K2 **Session:** $ 21.75 **Student:** $ 26.92

Prerequisite(s): AC Theory, Level I

This course builds upon the knowledge of reactance learned in AC Theory, Level I by applying a systematic approach to the calculation of AC circuits. The first three lessons cover working with series RL, RC, and RLC circuits before the next three lessons cover the study of parallel RL, RC, and RLC circuits. Next, circuits with no resistance (LC) are studied, followed by a summary lesson on comparing the distinguishing characteristics of series and parallel RLC circuits. The final lesson covers how to analyze and work with combination RLC circuits. **PPTs included.**

AC Theory, Level III - 3rd Ed.
J203LM.K3 **Session:** $ 43.48 **Student:** $ 53.84

Prerequisite(s): AC Theory, Level II

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

AC Theory, Level IV - 3rd Ed.

J203LM.K4 **Session:** $ 43.48 **Student:** $ 53.84

Prerequisite(s): AC Theory, Level III

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 $ 35.70 **J203LSW.J** $ 25.50

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.

ANTI-HARASSMENT

Anti-Harassment, Level I

J158LM **Session:** $ TBD **Student:** $ TBD

Prerequisite(s): None

Each Training Committee expects its employees, apprentices and all those who work with its employees and apprentices to treat each other with respect and dignity and to make all efforts to prevent and address harassment. This course is designed to address the training required by the Department of Labor and the local Training Committee in making sure its employees, apprentices and all those who work with its employees and apprentices fully recognize what harassment looks like, how it is defined, when and how to report it, and what the steps and responsibilities are in the need to resolve it. This course is designed for all audiences: current and new apprentices, Journey-level workers, staff, committee members, contractors, supervisors, and anyone else who is involved in the apprenticeship program.

BLUEPRINTS

Blueprint Reading for Electricians Textbook
S648 $ 48.58

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
J244LM.I1 **Session:** $ 32.10 **Student:** $ 22.78

Prerequisite(s): Code, Standards, and Practices 1, 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. **Online Blueprint Reader and PPTs included.**

Blueprints, Level II
J244LM.I2 **Session:** $ 32.10 **Student:** $ 32.10

Prerequisite(s): Blueprints, Level I

This 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
J244LM.I3 **Session:** $ 32.10 **Student:** $ 32.10

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	$ 8.61
Commercial Blueprints	S136.H	$ 18.31
Industrial Blueprints	S137	$ 12.92

Residential Planning and Design Workbook
J294IG $ 30.16 **J294SW** $ 19.39

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:
CONTROL DEVICES AND APPLICATIONS

Building Automation: Control Devices and Applications Textbook
S518 $ 63.15

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.

Building Automation 1: Control Devices and Applications, Level I
J238LM.H1 **Session:** $ 32.10 **Student:** $ 12.17

Prerequisite(s): 4,000 Hours of OJT

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
J238LM.H2 **Session:** $ 32.10 **Student:** $ 12.17

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 $ 34.47 **J238SW.H** $ 23.70

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 $ 45.24 **J238AMSW.H** $ 34.47

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 $ 142.86

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

BUILDING AUTOMATION:
SYSTEM INTEGRATION WITH OPEN PROTOCOLS

Building Automation: System Integration with Open Protocols Textbook
S519 $ 63.15

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.

Building Automation 2: System Integration with Open Protocols, Level I B
J239LM.I1B **Session:** $ 32.10 **Student:** $ 12.17

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. **PPTs included.**

Building Automation 2: System Integration with Open Protocols, Level I L
J239LM.I1L **Session:** $ 32.10 **Student:** $ 12.17

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. **PPTs included.**

Building Automation 2: System Integration with Open Protocols, Level II
J239LM.I2 **Session:** $ 32.10 **Student:** $ 12.17

Prerequisite(s): Building Automation 2, Level I L or Level I B

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. **PPTs included.**

Building Automation: System Integration with Open Protocols Workbook
J239IG.I $ 43.74 **J239SW.I** $ 30.67

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. **PPTs included.**

CCTV

CCTV Surveillance Video Practice & Technology

S404 $ 67.32

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 $ 36.62 **J268SW** $ 25.85

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 $ 105.26 **J268SWKC** $ 94.65

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

CCTV Surveillance CD

J268CD $ 37.70

CCTV Surveillance Kit Complete plus CD

J268IGKCCD $ 142.96

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

CODE-RELATED MATERIALS

Significant Changes to the *NEC* - 2017

S953 $ 48.56

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* 2017 Edition is an invaluable resource for electricians, electrical contractors, electrical inspectors, and electrical engineers, focusing on the most important changes that occurred between the 2014 and 2017 *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 2017 *NEC*.

Significant Changes to the *NEC* CD ROM

S953CD $ 89.04

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

Ugly's Electrical References, 2017 Edition

S954 $ 13.77

Ugly's Electrical References, 2017 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.

2017 *NEC*

S950 $ 80.85

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.

S951 2017 *NEC* Looseleaf $ 84.50

S955 2017 *NEC* Tabs $ 9.75

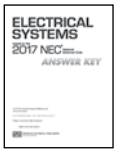
2017 *NEC* Handbook

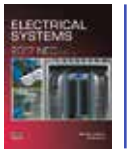
S952 $ 147.26

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 2017 *National Electrical Code.*

CODE-RELATED MATERIALS

Electrical Systems 17 *NEC*
Electrical Systems 17 *NEC* Answer Key
S970 $ 60.05 **S970AK** $ 9.50





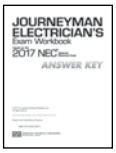
Electrical Systems is designed for use by Journeyman and master electricians, inspectors, contractors, and others in the electrical trade. This authoritative textbook is recognized in the industry for providing a comprehensive overview of the *National Electrical Code*®. Concise text and descriptive illustrations cover the *Code* and its application to wiring methods and materials, conductors and overcurrent protection devices, branch circuits and feeders, grounding, transformers, services, special locations, calculations, and renewable energy systems. Important changes in the *NEC*® are covered and identified.

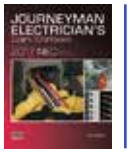
Journeyman Electrician's Exam Preparation, Based on the 2017 *NEC*
J151LM **Session:** $ 34.00 **Student:** $ 34.00
Prerequisite(s): None

NEW

The Journeyman Electrician's Exam Preparation course contains procedures commonly practiced in industry and trade. Specific procedures vary with each task and must be performed by a qualified person. This self-paced or synchronous course is designed to allow the learner to work through the electrical industry exam topics related to *NEC*® definitions, theory and formulas, basic *NEC* calculations, and Journey-level licensing exam questions. Performance on review questions open access to specific topic sample licensing exams. The learner who completes this course following the basic outlined instructions will be prepared to achieve maximum personal success on Journey-level licensing exams.

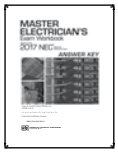
Journeyman Electrician's Exam Workbook
Journeyman Electrician's Exam Workbook Answer Key
J021SW17 $ 37.70 **J021AK17** $ 9.69





Journeyman Electrician's Exam Workbook is designed to help applicants prepare for the Journeyman electrician's state or local electrical licensing examinations. This practical workbook offers an exam overview, the requirements involved, and preparation strategies. The workbook contains more than 800 review and sample licensing exam questions and problems based on *NEC*®-related definitions, calculations, and factors associated with specific residential, commercial, or industrial applications.

Master Electrician's Exam Workbook
Master Electrician's Exam Workbook Answer Key
J024SW17 $ 36.96 **J024AK17** $ 9.50



NEW

Master Electrician's Exam Workbook is designed to help electricians prepare for their state or local electrical licensing exams. This comprehensive workbook covers information ranging from basic electrical theory to complex load calculations. References to *NEC*® articles and tables help the learner become efficient in locating code information in the *NEC*®, which is essential to passing the exam. Sample exams include six 25-question final exams and one 100-question final exam.

CODEOLOGY

Applied Codeology
S01717 $ 48.23

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 a 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 2017 *NEC*.

Codeology, Level I, Based on the 2017 *NEC*
J207LM.K1 **Session:** $ 32.10 **Student:** $ 29.57

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

Through repetition and thorough understanding of the "Build" - "Plan" - "Use" concepts, the learner will gain confidence in using the 2017 *NEC*. **PPTs included.**

CODE CALCULATIONS

Code Calculations Textbook

S00817 $ 42.87

The 2017 edition of Code Calculations solves math-related *Code* topics such as ampacity, conductor terminations, continuous and noncontinuous loads, box size, voltage drop, tap rules, motor installations, transformers, building loads, and electrical systems. The textbook is intended for a variety of *Code* users such as Apprentices, Journeyworkers, Foremen, Estimators, Project Managers, and Electrical Engineers. Code Calculations provides the necessary skills and knowledge to achieve a *Code*-compliant, adequate, and safe electrical installation, and is well suited for *Code* examination preparation study material.

Code Calculations, Level I, Based on the 2017 *NEC*

J227LM.K1 **Session:** $ 31.47 **Student:** $ 11.17

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

The Code Calculations, Level I, Based on the 2017 *NEC* 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 2017 *NEC*

J227LM.K2 **Session:** $ 31.47 **Student:** $ 11.17

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

The Code Calculations, Level II, Based on the 2017 *NEC* 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 2017 *NEC*

J227LM.K3 **Session:** $ 31.47 **Student:** $ 11.17

Prerequisite(s): Code Calculations, Level II

The Code Calculations, Level III, Based on the 2017 *NEC* 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, Complete, Based on the 2017 *NEC*

J227LM.K **Session:** $ 31.47 **Student:** $ 11.17

Prerequisite(s): None

The Code Calculations, Complete, Based on the 2017 *NEC* course places all topics covered by the Code Calculations Textbook (S00817) in one place. The course is focused on a complete comprehensive training for solving *Code*-related mathematical issues. **The course is identified for use outside the apprenticeship. Apprentices will cover these lessons according to the Core and Advanced credited curriculum utilizing other courses. PPTs included.**

Electrical Code Calculations, Level I, Based on the 2017 *NEC*

J227LM.K1 **Session:** $ 31.47 **Student:** $ 11.17

Prerequisite(s): Code, Standards, and Practices 2, Level II

The Electrical Code Calculations, Level I, Based on the 2017 *NEC* course focuses on training for solving *Code*-related calculations. This course covers lessons related to conductor ampacity, identification of boxes and fittings, and box and raceway fill. **PPTs included.**

CODE, STANDARDS AND PRACTICES

Code, Standards, and Practices 1, Level I, Based on the 2017 *NEC*

J231LM.K1 **Session:** $ 31.47 **Student:** $ 26.40

Prerequisite(s): None

The lessons in Code, Standards, and Practices 1, Level I, Based on the 2017 *NEC* give learners an introduction to the *NEC* and provide 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.

NEW

Code, Standards, and Practices 2, Level I, Based on the 2017 *NEC*

J232LM.K1 **Session:** $ 15.73 **Student:** $ 11.62

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

The learner is introduced to a number of the requirements of the 2017 *NEC* and is tasked with locating these requirements in the *NEC*.

NEW

Code, Standards, and Practices 2, Level II, Based on the 2017 *NEC*

J232LM.K2 **Session:** $ 15.73 **Student:** $ 11.62

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

The learner is introduced to a number of the 2017 *NEC* requirements for wiring methods and materials.

Code and Practices 3, Level I, Based on the 2017 *NEC*

J233LM.K1_CP **Session:** $ 31.47 **Student:** $ 26.40

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 2017 *NEC*

J234LM.K1_CP **Session:** $ 31.47 **Student:** $ 14.21

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*.

Code and Practices 5, Level I, Based on the 2017 NEC

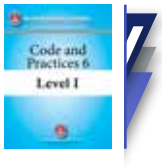
J235LM.K1_CP **Session:** $ 31.47 **Student:** $ 14.21

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

Code and Practices 6, Level I, Based on the 2017 *NEC*



J236LM.K1_CP **Session:** $ 31.47 **Student:** $ 26.39

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 motor branch circuit and transformer protection, short-circuit current protection, and selective coordination. **PPTs included.**

Installer/Technician Code 2, Level I, Based on the 2017 *NEC*

T266LM.K1 **Session:** $ 31.47 **Student:** $ 26.40

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

The Installer/Technician Code 2 course begins by introducing the principles involved in sizing building wire and then goes on to describe conduit and raceway basics. The course then introduces requirements for cable assemblies and general requirements for wiring methods and materials. Finally, the course introduces the requirements for remote control, signaling and power limited circuits, fire alarm systems, optical fiber cables and raceways, and communication circuits.

Residential Code 2, Level I, Based on the 2017 *NEC*

J293LM.K1 **Session:** $ 15.30 **Student:** $ 15.10

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

The Residential Electrical Worker must have the ability to perform job tasks efficiently and accurately in this highly competitive field. In order to do so, the Residential Electrical Worker must have a working knowledge of residential wiring requirements covered in the *National Electrical Code (NEC)*. This course covers requirements for proper box and conduit body selection, branch circuit and sizing building wire requirements for dwelling units, conductor ampacity calculations, requirements for cable assemblies, and wiring methods for dwelling units. The course will also cover requirements for switches and receptacles, specialty circuit interrupters, luminaires, metal raceways (EMT and FMC), and requirements for lighting and receptacle branch-circuits.

CONDUIT BENDING AND FABRICATION

Conduit Bending and Fabrication Textbook
S495 $ 62.12

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.

NEW

Conduit Fabrication, Level I - 2nd Ed.
J204LM.H1 **Session:** $ 32.74 **Student:** $ 18.70

Prerequisite(s): None

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

NEW

Conduit Fabrication, Level II - 2nd Ed.
J204LM.H2 **Session:** $ 32.74 **Student:** $ 18.70

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. **PPTs included.**

Conduit Bending and Fabrication Lab Manual
J204L $ 22.18

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 116 for more information.

CRANE CERTIFICATION

NEW

Crane Certification for the Electrical Industry Textbook
S521 $ 61.00

Crane Certification for the Electrical Industry is an introduction to cranes, federal regulations and industry standards, transporting cranes, safety practices for cranes, setting up and preparing cranes for lifts, making lifts, shutting down and securing cranes, and special operations, precautions, and tools. This process involves planning a lift, safely making a lift, and shutting down and securing a crane. Each step is critical to maintaining a controlled lift with a proper margin of safety.

NEW

Crane Certification Prep Course for the Electrical Industry - 2nd Ed.
J139LM.A **Session:** $ 31.62 **Student:** $ 25.50

Prerequisite(s): None

The Crane Certification Prep Course for the Electrical Industry - 2nd Ed. training program is focused on the safe operation and setup of cranes and how to properly use load charts and attachments. It covers different types of cranes, booms, and carriers in addition to the standards and regulations of cranes. This program is suited for both the beginner and the experienced operator. This course is also an outstanding resource for the electrical industry crane operation certification. **PPTs included.**

DC THEORY

DC Theory Textbook
S640 $ 61.08

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 - 2nd Ed.
J202LM.K1 **Session:** $ 10.87 **Student:** $ 13.46

Prerequisite(s): None

This course is an introduction to the fundamental terminology, formulas, devices, and components for the study of electrical theory. **PPTs included.**

DC Theory, Level II - 2nd Ed.
J202LM.K2 **Session:** $ 10.87 **Student:** $ 13.46

Prerequisite(s): DC Theory, Level I

This course builds upon the concepts learned in DC Theory, Level I by introducing the series circuit and component calculations, fundamental hazards of energized circuits, and basic test instruments. **PPTs included.**

DC Theory, Level III - 2nd Ed.
J202LM.K3 **Session:** $ 10.87 **Student:** $ 13.46

Prerequisite(s): DC Theory, Level II

This course builds upon the concepts learned in DC Theory, Level I by introducing the parallel circuit and component calculations. **PPTs included.**

DC Theory, Level IV - 2nd Ed.
J202LM.K4 **Session:** $ 10.87 **Student:** $ 13.46

Prerequisite(s): DC Theory, Level III

This course builds upon the concepts learned in DC Theory, Levels II and III, combining lessons learned regarding both series and parallel circuits. The participant will learn to distinguish series and parallel components of combination circuits, calculate component values, and take the next step in electrical theory understanding by studying voltage dividing circuits and the operation of the 3-wire, single-phase system. **PPTs included.**

DC Theory, Level V - 2nd Ed.
J202LM.K5 **Session:** $ 43.48 **Student:** $ 53.84

Prerequisite(s): DC Theory, Level IV

This course will expand on the concepts learned in all previous DC Theory levels. 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 allows the learner to apply DC Theory to solve real world problems. **PPTs included.**

DIGITAL ELECTRONICS

Digital Electronics, Level I

J240LM.I1 **Session:** $ 32.10 **Student:** $ 42.45

Prerequisite(s): DC Theory, Level IV

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 $ 68.30 **J240SW.I** $ 54.37

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

J229LM.I1 **Session:** $ 31.62 **Student:** $ 41.82

Prerequisite(s): AC Theory, Level III

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 $ 46.00 **J229SW.I** $ 31.43

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 $ 42.01

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 *electrical training ALLIANCE* 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 $ 87.24

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 $ 46.32 **J301SW.I** $ 35.54

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 $ 69.70 **J398SW.I** $ 55.76

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

J398LM **Session:** $ 31.06 **Student:** $ 41.19

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

NEW

Electrical Safety-Related Work Practices Textbook

S844 $ 52.78

The 2018 edition of the *Electrical Safety-Related Work Practices* textbook covers electrical safety requirements and safety-related work practices of OSHA and the National Fire Protection Association electrical safety in the workplace standard, *NFPA 70E.* Chapters explore safe work practices and methods to determine the arc flash PPE required to comply with *NFPA 70E* and the techniques that can be applied to significantly reduce or eliminate electrical hazards.

NEW

Electrical Safety-Related Work Practices, Level I, Based on the 2018 *70E*

J444LM.L1 **Session:** $ 32.10 **Student:** $ 51.74

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 safety culture, electrical hazards, lockout and tagout, fault current calculation basics, and the definition of an electrically safe work condition. **PPTs included.**

NEW

Electrical Safety-Related Work Practices, Level II, Based on the 2018 *70E*

J444LM.L2 **Session:** $ 32.10 **Student:** $ 51.74

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

Electrical Safety-Related Work Practices, Level II is designed to walk the learner through a number of the requirements related to work involving electrical hazards such as when energized work is justified, what is required when justified energized electrical work is permitted, and the requirements for the selection and use of personal and other protective equipment as well as the basics of identifying overcurrent protective devices and application of related requirements and informational notes. **PPTs included.**

NEW

Significant Changes to 70E, 2015

S745 $ 20.59

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 $ 31.63

NFPA 70E

S35918 $ 65.04 **Standard**

ELECTRIC VEHICLE INFRASTRUCTURE TRAINING PROGRAM

Electric Vehicle Infrastructure Training Program, Based on the 2014 *NEC*

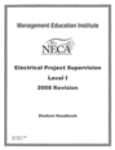
J138LM **Session:** $ 30.60 **Student:** $ 76.50

The Electric Vehicle Infrastructure Training Program (EVITP) provides technical training for electricians for the residential, commercial, public, and fleet electric vehicle charging markets. The course provides a thorough understanding of charging products and associated equipment on the market today. EVITP-certified electricians go to work with the ability to implement best practices in charging station and infrastructure site assessment, load calculation, configuration, installation, troubleshooting, commissioning, maintenance, and repair.

NECA ELECTRICAL PROJECT SUPERVISION TEXTBOOK (EPS)

Electrical Project Supervision Program Level 1

NEPS01 $ 46.59



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

NEPS02 $ 46.59

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

NEPS03 $ 46.59

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 Optics Textbook

S480 $ 61.08

The Fiber Optic Association (FOA) has partnered with the *electrical training ALLIANCE* 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

J277LM **Session:** $ 31.62 **Student:** $ 23.46

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 $ 34.47 **J277SW** $ 23.70

The workbook supports the 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 $ 14.01

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
S846 $ 59.90

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 2017 *NEC*
J211LM.K1 **Session:** $ 32.10 **Student:** $ 24.78

Prerequisite(s): DC Theory, Level IV and Job Information 1, Level II

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 2017 *NEC*
J211LM.K2 **Session:** $ 32.10 **Student:** $ 24.78

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 $ 85.37 **J211SLK** $ 54.90

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, 2016
Codebook S42016 $ 89.76
Handbook S42016HB $ 145.86

Trainer - See Page 117 for more information.

FIRE ALARM

CET: Firestopping Applications

J101LM **Session:** $ 31.06 **Student:** $ 10.35

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 $ 44.35

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 $ 34.47 **J296SW** $ 23.70

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 $ 78.82 **J296SWKC** $ 68.21

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

Residential Fire Alarm and Carbon Monoxide Systems CD

S488CD $ 44.35

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 $ 123.17

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
S36817 $ 57.80

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 2017 *NEC*
J210LM.K1 **Session:** $ 36.24 **Student:** $ 25.89

Prerequisite(s): AC Theory, Level III

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 2017 *NEC*
J210LM.K2 **Session:** $ 36.24 **Student:** $ 25.89

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.**

Installer/Technician Grounding and Bonding, Level I, Based on the 2017 *NEC*
T210LM.K1 **Session:** $ 31.00 **Student:** $ 25.00

Prerequisite(s): None

The Installer/Technician Grounding course introduces the student to the basic concepts of grounding, circuit basics, and overcurrent protection. The course then goes on to explain grounding electrodes, equipment grounding conductors, and grounding electrical equipment. Finally, the course explains the requirements for grounding at separate buildings or structures and grounding and bonding communications systems and equipment. **PPTs included.**

HAZARDOUS LOCATIONS

Hazardous Locations, Level I, Based on the 2017 *NEC*
J257LM.J1 **Session:** $ 32.10 **Student:** $ 27.46

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

NEW

Health Care Facility Electrical Systems Textbook

S798 $ 40.38

Health care facilities are some of the most critical buildings in any community. Electrical systems in health care facilities, from a design and installation aspect, are complex and unique. As these systems are installed in an extremely regulated environment, the complexity and chance of installation error exponentially increase. This text builds upon the strong foundation of the previous editions to bring the complexity of modern health care electrical systems into focus for installers. It examines an overall health care build environment including all relevant codes and standards. It covers both utility power and generated power configurations and the engineering required to provide safe, reliable, redundant power. The electrical distribution requirements for both normal and essential power systems are discussed, exploring how safe power is ultimately delivered to patient care spaces. This edition continues with critical maintenance processes and procedures and the special consideration required when working in existing health care facilities. The text also looks at the future of health care and the changes that technology and shifting labor demographics will bring to the build environment. This text has everything designed to keep installers on the cutting edge of health care electrical systems.

NEW

Health Care Facility Electrical Systems, Level I, Based on the *NFPA 99* and 2017 *NEC*

J260LM.K1 **Session:** $ 31.62 **Student:** $ 12.24

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

Health care facilities are complex systems designed to keep patients and staff safe during normal and catastrophic conditions. This course of study focuses in depth at the unique electrical systems found in all types of health care facilities. Using a typical one-line diagram as a guide, this course follows the flow of energy from the utility services and back-up generators, through the normal and essential electrical system distribution systems to the patient care spaces where the power is utilized. The requirements of several design and installation codes and standards are thoroughly discussed. **PPTs included.**

NEW

Health Care Facility Electrical Systems, Level II, Based on the *NFPA 99* and 2017 *NEC*

J260LM.K2 **Session:** $ 31.62 **Student:** $ 12.24

Prerequisite(s): Health Care Systems, Level I

This course of study builds on the foundation of the Health Care Facility Electrical Systems Level I course. Maintaining electrical distribution systems and equipment is a critical element in any health care organization's approved maintenance plan. The role of an electrical contractor in these approved maintenance plans is discussed, as well as the checklists and protocols needed to maintain critical, essential electrical system equipment successfully. Performing electrical work in existing, operating facilities is also covered including understanding and implementing Infection Rick Control Assessment/Mitigation (IRCA/M) plans designed to keep patients safe from infectious agents that may be distributed as part of the construction activities. A look at both the medical and construction technology that is revolutionizing health care construction and electrical systems wraps up this course of study. **PPTs included.**

HUMAN PERFORMANCE

NEW

Human Performance, Level I

J154LM **Session:** $ 34.00 **Student:** $ 34.00

Prerequisite(s): None

This course is an introductory summary to human performance improvement approach as was initially introduced by the Department of Energy (DOE) over the last decade. The course is based on the DOE Standard Human Performance Improvement Handbook, Volume 1: Concepts and Principles. The lessons are based on the approach and practices that have had proven success in the nuclear power and utility construction industries. The course provides instruction on reducing errors and understanding how controls can assist to reduce errors. It also assists students in identifying the anatomy of an event and the theory as to why humans commit errors. It teaches students the effect that the organization has on its employees and their behaviors. The final lesson within the course provides ways to control or mitigate errors while also instructing on the effectiveness and reliability of controls.

INSTRUMENTATION

Applied Science of Instrumentation Textbook
S600 $ 56.10

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
J126LM **Session:** $ 30.60 **Student:** $ 49.98

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.

Instrumentation Introduction - Module 2: Basics
J134LM **Session:** $ 30.60 **Student:** $ 49.98

Prerequisite(s): Instrumentation Introduction - Module 1

This Instrumentation Introduction - Module 2 course is the second step on the journey to become an Instrumentation Technician. This course is focused on the fundamentals of pressure, level, flow, and temperature measurements along with calibrations unique to both conventional and smart instrument transmitters. Rounding out the course is an in-depth discussion on control valves. Successful completion of this course is required in order to move on to Module 3, the final instructional course. **PPTs included.**

Instrumentation Introduction - Module 3: Advanced
J135LM **Session:** $ 25.50 **Student:** $ 34.68

Prerequisite(s): Instrumentation Introduction - Module 2

This Instrumentation Introduction - Module 3 course is the third step on the journey to become an Instrumentation Technician. Building upon the knowledge foundation presented in Modules 1 and 2, advanced topics of analytical measurement, process controllers, and control methods are presented. Rounding out the course is a discussion on common installation information. Successful completion of this module in addition to Modules 1 and 2 is required to sit for a theory-based qualification exam. **PPTs included.**

CET: Fluke Instrumentation Academy
J108LM **Session:** $ 31.06 **Student:** $ 52.81

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.

Instrumentation Lab Manual
J297LMIG $ 62.73 **J297LM** $ 44.60

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

Trainer - See Page 118 for more information.

INTELLIGENT NETWORK VIDEO

NEW

Intelligent Network Video Textbook

S530 $ 66.00

The *Intelligent Network Video: Understanding Modern Video Surveillance Systems, 2nd Edition* presents the rapidly changing technology landscape of the vastly improved image quality, better system performance, and higher level of intelligence in the systems. This is an invaluable reference for industry professionals who want to understand the latest technology advancements in modern video surveillance systems.

NEW

Intelligent Network Video, Level I

J148LM.1 **Session:** $ 31.47 **Student:** $ 15.73

Prerequisite(s): Structured Cabling, Level I

The Intelligent Network Video, Level I course will introduce basic video technologies including analog video surveillance, lens characteristics, IP video, video and audio technologies, encoders, and camera types. Though the course primarily focuses on network video, common components of both analog video and IP video are explored in detail.

NEW

Intelligent Network Video, Level II

J148LM.2 **Session:** $ 31.47 **Student:** $ 6.29

Prerequisite(s): Intelligent Network Video, Level I

Intelligent camera systems in use today are typically installed on either a small network or possibly installed on a large network. Today's Electrical Worker, therefore, must understand the function of a network and how networks are wired. The Intelligent Network Video, Level II course will introduce wired networks, wireless networks, and various network technologies that are used with video surveillance systems.

NEW

Intelligent Network Video, Level III

J148LM.3 **Session:** $ 31.47 **Student:** $ 9.44

Prerequisite(s): **Installer/ Technician** - Intelligent Network Video, Level I and Introduction to Network Technologies, Level I

Prerequisite(s): **Inside** - Intelligent Network Video, Level I and Intelligent Network Video, Level II or Introduction to Network Technologies, Level I

Intelligent network video system installation and network connection are important concepts in surveillance systems. However, there is so much more that goes into a truly intelligent network video system. The Intelligent Network Video, Level III course includes lessons on video management software, storage devices, hosted solutions, intelligent video, intelligent video solutions, and proper methods used to design an intelligent network video system.

JOB INFORMATION

Job Information 1, Level I, Based on the 2017 *NEC*

J221LM.M1 **Session:** $ 16.04 **Student:** $ 16.69

Prerequisite(s): None

In Job Information 1, Level I, Based on the 2017 *NEC*, students will learn about the proper care and use of basic tools of the trade. They will also learn about the typical workplace of an Electrical Worker. The course covers topics such as ladders, fastening devices, and alignment and measurement. Lessons on electrical safety, ground-fault interrupters, and twist-on wire connectors are also included.

Job Information 1, Level II, Based on the 2017 *NEC* (previously Job Information 2)

J221LM.M2 **Session:** $ 16.04 **Student:** $ 16.69

Prerequisite(s): Job Information 1, Level I

In the Job Information 2, Level I, Based on the 2017 *NEC* course, students learn about building wire construction and insulation properties. They are introduced to commonly-used electrical materials, firestopping, and wire-pulling techniques. They also review basic math principles needed on the job.

Installer/Technician Job Information 1, Level I - 2nd Ed.

T251LM.L1 **Session:** $ 15.50 **Student:** $ 14.00

Prerequisite(s): None

The Installer/Tech Job Information 1, Level I course begins by identifying basic electrical and telecom tools of the trade, including hand tools and test instruments. The course then introduces the student to the workplace of an Electrical Worker and ladder safety. Finally, this course introduces topics such as alignment and measurement, wire pulling, and electrical shock hazards.

Installer/Technician Job Information 1, Level II - 2nd Ed.

T251LM.L2 **Session:** $ 15.50 **Student:** $ 14.00

Prerequisite(s): Installer/Technician Job Information 1, Level I

The Installer/Tech Job Information 1, Level II course begins by introducing the hazards of overhead work being performed. The course then introduces knot tying, hoisting loads, and performing hand signals. In addition, this course describes wire construction and insulation properties, how wire is sized, electrical materials, working with prefixes, the metric system, and structured cabling symbols.

Installer/Technician Job Information 2, Level I - 2nd Ed.

T252LM.L1 **Session:** $ 15.50 **Student:** $ 14.00

Prerequisite(s): Installer/Technician Job Information 1, Level II

The Installer/Tech Job Information 2, Level I course begins by introducing the theories of magnetism and electromagnetism. The course then familiarizes the student with firestopping and occupancy based on the *International Building Code (IBC)*. Finally, the course introduces structured cabling management including boxes, cabling brackets, and flexible raceways.

Installer/Technician Job Information 2, Level II - 2nd Ed.

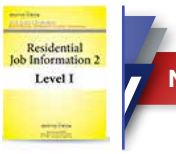
T252LM.L2 **Session:** $ 15.50 **Student:** $ 14.00

Prerequisite(s): Installer/Technician Job Information 2, Level I

The Installer/Tech Job Information 2, Level II course focuses on common materials that the Installer/Technician uses on a daily basis. These materials include steel boxes and covers, nonmetallic boxes, floor boxes, commercial fittings, and weatherproof boxes.

Residential Job Information 2, Level I

R255LM **Session:** $ 30.00 **Student:** $ 33.45



NEW

Prerequisite(s): Job Information 1, Level II, Based on the 2017 *NEC*

The Residential Wireman must have the ability to communicate effectively and understand the relation between labor and management. These topics are covered in depth. Other topics covered include testing and verifying circuit performance, installing wire and cable in dwelling units, analyzing and laying out residential circuits, and understanding job costs and actual takeoffs for dwelling units.

LEADERSHIP

Effective Leadership Skills for Construction Field Leaders Textbook

S097 $ 60.00

Effective Leadership Skills for Construction Field Leaders is packed with proven advice and case studies explaining how skilled tradesworkers transitioning into leadership roles can use new knowledge and strategies to advance their careers. This textbook helps skilled workers develop the critical leadership skills that result in the efficient and productive completion of projects on time and within budget.

Preparing for Leadership: Personal Qualities, Level I

J900LM **Session:** $ 31.00 **Student:** $ 14.10

This is the first in a series of courses which will lay the foundation for you to become a leader in the organized electrical industry. This course, Personal Qualities, explores the traits that each member of a team should possess. These qualities will help to facilitate the harmonious coordination between the team's many parts.

Preparing for Leadership: Personal Qualities, Level I (TTT Version)

J901LM **Student:** $ 34.00

The TTT version of the Preparing for Leadership: Personal Qualities course is an online course that MUST be completed before a Training Director is able to assign an Instructor to the "standard" version of this course. The instructor will be provided additional resources that will help to reinforce each of the topics as they are presented. This online TTT will allow the instructor to become familiar with this very unique content as it cannot be assumed that all instructors will have been exposed to this type of training in their past experience in the same manner that it can be assumed that all Journeyman Wireman have expertise in bending conduit.

NEW

Practicing Leadership: Foreman Development Series, Level I

J905LM **Session:** $ TBD **Student:** $ TBD

The Foreman's Development Series consists of 16 three-hour modules where foremen and Journeymen participate in an action-learning atmosphere of teaching and discussion focused on industry "best practices."

Classrooms, along with on-the-job training, are ideal places for craftsmen and women to acquire knowledge by discussing real-life examples with the free exchange of ideas. The program provides an overview of the duties and responsibilities of the foreman on a typical job and how the implementation of industry "best practices" can improve competitiveness in the construction marketplace. The series does not present a particular or individual point of view; it was crafted with input from a variety of industry experts.

LAN

Introduction to Networking Technologies

S482 $ 54.87

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 $ 46.00 **J265SW** $ 32.06

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 $ 90.45 **J265SWKC** $ 79.84

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

Introduction to Networking Technologies CD

S482CD $ 44.35

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 $ 134.81

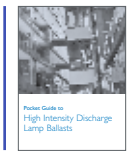
S482 Introduction of Networking Technologies Textbook | J265 Installer/Technician Local Area Networks Workbook
S482CD Introduction to Networking Technologies CD

LIGHTING ESSENTIALS

Lighting Design Basics

S599 $ 54.87

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 $ 7.54

Lighting Essentials, Level I - 2nd Ed.

J259LM.K1 **Session:** $ 16.04 **Student:** $ 9.32

Prerequisite(s): 4,000 Hours of OJT

The Lighting Essentials, Level I course gives a brief overview of the nature and science of light itself. Many electrical contractors "value engineer" a lighting architect's or lighting designer's lighting specifications. So to meet the needs of the owner/customer, the electrical contractors, or their employees, that are making lighting equipment and placement decisions should understand the nature and science of light and luminaries. The lessons also give an overview of lamp types, the quantity and quality of light sources and some basics on lighting control.

Lighting Essentials, Level II - 2nd Ed.

J259LM.K2 **Session:** $ 16.04 **Student:** $ 9.32

Prerequisite(s): Lighting Essentials, Level I

As the move continues toward energy conservation, many existing lighting systems (even those installed less than 10 years ago) could be replaced with newer more energy efficient lamps, luminaires and controls. The Lighting Essentials, Level II course describes some basic concepts to be aware of when approaching a lighting retrofit and also provides in-depth coverage of fluorescent lighting, High Intensity Discharge (HID) lighting, and LED lighting systems.

Lighting Essentials, Level III - 2nd Ed.

J259LM.K3 **Session:** $ 32.10 **Student:** $ 18.64

Prerequisite(s): Lighting Essentials, Level II

Lighting Essentials, Level III 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. The course also contains lessons on troubleshooting HID ballasts and makes an economic case for the use of LED lighting systems.

LIGHTNING PROTECTION

Lightning Protection, Level I

J276LM.J1 **Session:** $ 31.62 **Student:** $ 23.46

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. **PPTs included.**

LYNDA.COM COURSES

Lynda.com Excel Essential Training

LYN102 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

These Lynda.com Excel tutorials are designed to help you use Excel to analyze data on any level. Whether you're just learning how to create spreadsheets or need to perform advanced data analysis with functions, formulas, and charts, these courses will help you unlock the maximum potential of this popular data-analysis program.

Lynda.com FileMaker Pro Essential Training

LYN105 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Learn how to design and build smart, secure databases with FileMaker Pro 14 or 15, the software used to build the Trade School Apprentice Tracking System. The instructor walks through the essential FileMaker Pro skills--from creating tables and fields to designing layouts that display data in a smart way. Discover how to find and sort data, create reports, import and export data, write scripts, diagram relationships, and more.

Lynda.com Outlook Essential Training

LYN103 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Learn how to use Microsoft Outlook email with these Lynda.com training videos. Training includes how to set up Outlook and use Outlook Web Access and Microsoft Exchange. Find out how to manage your time with the Calendar and Tasks features, and connect to a wide variety of email, cloud computing, and social media accounts.

Lynda.com PowerPoint Essential Training

LYN100 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Learn all about Microsoft PowerPoint with Lynda.com expert-taught PowerPoint training videos. Watch beginner level how-to modules on designing compelling slide presentations, editing them, and sharing them with others.

Lynda.com Windows Essential Training

LYN101 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Get the most from Microsoft Windows. These Lynda.com expert-taught tutorials take you through everything from simply navigating the interface to building games, creating apps, and upgrading to the latest version of this powerful operating system.

Lynda.com Word Essential Training

LYN104 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Using these Lynda.com video tutorials, learn Microsoft Word fundamentals: how to write, edit, and design documents, format text, use spell check, perform mail merges, track changes, and more. Our expert-taught Word tutorials show how to use Word templates and other advanced features, and can help you learn Microsoft Word on both Mac and PC systems.

Lynda.com Adobe Acrobat Essential Training

LYN108 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Learn all about Adobe Acrobat with Lynda.com expert-taught training videos. Create compelling digital documents with these Acrobat tutorials. In these expert-taught video lessons, you'll learn how to open, create, and edit a PDF, and how to use Acrobat's advanced features: using hidden toolbars, editing images, and adjusting a PDF form for SEO.

LYNDA.COM COURSES

Lynda.com Access Essential Training
LYN114 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Learn all about Microsoft Access with Lynda.com expert-taught training videos. Watch video tutorials and learn how to use Access to manage data. Let experts teach you how to run an SQL query, create forms and reports, and navigate Access databases.

Lynda.com Adobe Illustrator Essential Training
LYN112 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Learn all about Adobe Illustrator with Lynda.com expert-taught training videos. Let expert instructors teach you all about Adobe Illustrator: how to work with layers, create infographics, trace artwork, and use the application's powerful drawing tools to create vector art like a pro. These Lynda.com Illustrator tutorials range from beginner to advanced.

Lynda.com Adobe InDesign Essential Training
LYN106 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Learn all about Adobe InDesign with Lynda.com expert-taught training videos. Watch expert-taught InDesign tutorials to learn page design and desktop publishing with this popular software. Discover how to use InDesign to create an EPUB, magazine layout, book, business card, interactive PDF, and more.

Lynda.com Adobe Photoshop Essential Training
LYN111 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Learn all about Adobe Photoshop with Lynda.com expert-taught training videos. Watch expert-taught Photoshop tutorials and learn image editing, retouching, and color correcting for all skill levels. Find out how to use Photoshop shapes and layers, how to retouch photos, and more.

Lynda.com Google Suite Essential Training
LYN113 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Learn all about Google Suite with Lynda.com expert-taught training videos. Learn how to use Google Drive, the popular cloud-based file storage, word processing, spreadsheet, and presentation software. Explore other Google software and services, such as Google Sheets and Google Docs.

Lynda.com Graphic Design Essential Training
LYN107 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Learn all about Graphic Design with Lynda.com expert-taught training videos. Learn the core skill areas and core tools used in graphic design in addition to learning basic graphic design principles anyone can use to make business documents more visually appealing.

Lynda.com Keynote Essential Training
LYN109 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Learn all about Keynote with Lynda.com expert-taught training videos. Make a slide presentation with the help of these Keynote tutorials. Learn how to use this popular presentation software to create slides that hold an audience's attention, add transitions, incorporate built-in themes, and wow an audience with your final product.

Lynda.com Prezi Essential Training
LYN110 **Session:** $ 0.00 **Student:** $ 7.11 **Instructor:** $ 7.11

Learn all about Prezi with Lynda.com expert-taught training videos. Learn how to create beautiful, dynamic presentations using Prezi, the powerful cloud-based tool. Progress from beginner basics to advanced techniques with online video tutorials taught by industry experts.

MATH

Building a Foundation in Mathematics Textbook

S665 $ 66.26

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

J201LM.I1 **Session:** $ 30.60 **Student:** $ 35.70

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)

J201LM.I2 **Session:**$ 30.60 **Student:**$ 44.88

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.**

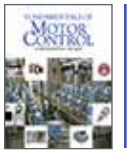
TI-30X IIS Solar Calculator

S159 $ 17.08

This scientific calculator is used for basic scientific, trigonometric functions, logarithms, reciprocals and more. The calculator includes slide-on hard case and two-line display for easy reading.

MOTOR CONTROL

Fundamentals of Motor Control Textbook
S547 $ 64.19



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
J209LM.H1 **Session:** $ 31.62 **Student:** $ 11.22

Prerequisite(s): Motors, Level II

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
J209LM.H2 **Session:** $ 31.62 **Student:** $ 11.22

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
J209LM.H3 **Session:** $ 31.62 **Student:** $ 11.22

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.

MOTORS & MOTOR DRIVES

Motors Textbook
S649 $ 69.37

The 2nd Edition 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.

Motors, Level I - 2nd Ed.
J206LM.J1 **Session:** $ 16.04 **Student:** $ 5.96

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

The Motors, Level I - 2nd Ed. course introduces the learner to theory concepts such as magnetism and induction. After the theory concepts have been mastered, the student is introduced to motor nameplates, AC alternators, three-phase motors, and squirrel-cage motors. **PPTs included.**

Motors, Level II, Based on the 2017 *NEC* - 2nd Ed.
J206LM.J2_17 **Session:** $ 31.00 **Student:** $ 11.50

Prerequisite(s): Motors, Level I

The Motors, Level II, Based on the 2017 NEC - 2nd Ed. course introduces the learner to wound-rotor motors, single-phase motors, motor protection, DC motors and generators, and a wide variety of starting methods. Finally, this course introduces NEC requirements and calculations needed for motor installations. **PPTs included.**

Motors, Level III - 2nd Ed.
J206LM.J3 **Session:** $ 32.10 **Student:** $ 11.90

Prerequisite(s): Motors, Level II

The Motors, Level III - 2nd Ed. course introduces the learner to complex motors. These motors include synchronous motors, multispeed motors, and special-application motors.Components such as braking, bearings, drive/clutch systems, and adjustable speed drives are also discussed. Finally, the course discusses troubleshooting and maintenance of motors. **PPTs included.**

CET: Electric Motor Drive
CET475 **Session:** $ 31.06 **Student:** $ 26.92

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. **PPTs included.**

MOTORS & TRANSFORMERS

Transformers & Motors

S018 $ 44.52

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 $ 40.42 **J291SW** $ 26.49

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 $ 66.08 **J291SWKC** $ 55.47

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

NETWORK TECHNOLOGIES

Introduction to Network Technologies Textbook

S582 $ 56.10

This rich resource is written for those looking to take the Network+ Exam, or those wanting to further their understanding of how network technologies work. This highly illustrated, user-friendly guide is packed with examples of how Internet Protocol (IP) networking is permeating all facets of electrical system control and monitoring. Start out with essential networking concepts and components and then progress to protocols and devices with switches. Learn through expert instruction on how to identify security threats and protect systems from malware. Discover best troubleshooting practices and get the insider's view on connectivity methods used in homes and enterprises.

Introduction to Network Technologies, Level I

J145LM.1 **Session:** $ 31.00 **Student:** $ 13.00

Prerequisite(s): Structured Cabling, Level I

This course is designed to give fundamental networking knowledge to the Electrical Worker by presenting topics including network topologies, the OSI model, network protocols, wireless technologies, and basic wiring principles. **PPTs included.**

Introduction to Network Technologies, Level II

J145LM.2 **Session:** $ 31.00 **Student:** $ 13.00

Prerequisite(s): Introduction to Network Technologies, Level I

The Introduction to Network Technologies, Level II course expands on content introduced in the Level I course. The course first starts by describing how switches are used in networks and then goes on to introduce how routing networks are created. The course then describes how names can be resolved to IP addresses, the importance of network security, how wide area networks are connected, troubleshooting, network fault tolerance, and management and administration of networks. **PPTs included.**

NURSE CALL SYSTEMS

Installer/Technician Nurse Call Systems Workbook

J267IG $ 53.86 **J267SW** $ 43.09

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

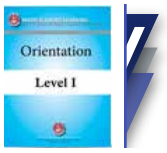
J267CD $ 37.70

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.

ORIENTATION

Orientation, Level I

J200LM.I1 **Session:** $ 32.10 **Student:** $ 16.16



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

J200LM.I2 **Session:** $ 32.10 **Student:** $ 14.78

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

J200LM.I3 **Session:** $ 32.10 **Student:** $ 16.16

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.

OSHA

NJATC's OSHA Construction 10-Hour Book Vol. 1
J050.I $ 42.01

The 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 $ 47.52

NJATC's OSHA Construction 20-Hour Book Vol. 2
J051 $ 22.62

OSHA Outreach Training - 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 $ 48.47

OSHA 10/30 Kit
J052K $ 64.62

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

OSHA 10/30 Kit with Standards
J052KC $ 88.91

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 $ 96.95

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 $ 185.86

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 $ 24.29

OUTSIDE CET COURSES

Effective Cover-Up

CET201 **Session:** $ 31.06 **Student:** $ 41.41

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

CET203 **Session:** $ 31.06 **Student:** $ 102.50

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

CET202 **Session:** $ 31.06 **Student:** $ 41.41

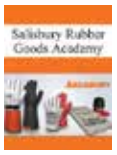
Personal protective grounding is a subject area that all Electrical Workers need to know. The more knowledge the worker has, the better probability that he or she will be able to assess the situation and proceed in the safest manner possible.

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

J201LM **Session:** $ 31.06 **Student:** $ 42.24



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.

OUTSIDE LINE BLENDED LEARNING

Outside 1st Year, Level I

OA1-1LM **Session:** $ 30.00 **Student:** $ 23.00

This course 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 lessons present the responsibilities of the apprentice and the advantages of an IBEW/NECA apprenticeship.. Other lessons teach the student about safety and hazard awareness and how to identify and care for basic tools of the trade. An introduction to OSHA is given and then the last lessons cover topics such as fall protection, climber cutouts, climbing poles, and pole top and bucket rescues.

Outside 1st Year, Level II

OA1-2LM **Session:** $ 30.00 **Student:** $ 23.00

Prerequisite(s): Outside 1st Year, Level I

This course covers a wide variety of topics. Students learn about how to avoid sexual harassment and the dangers of drug use. They also gain a thorough understanding of the history of the IBEW and NECA. Lessons cover the care and use of rubber gloves and protective line devices. The apprentice will learn how to work in a confined space and how to work with powered equipment, wood poles, and energized circuits. Safety topics and hand signals will also be covered.

Outside 1st Year, Level III

OA1-3LM **Session:** $ 30.00 **Student:** $ 23.00

Prerequisite(s): Outside 1st Year, Level II

The course opens with an introduction to whole numbers, fractions, decimals, and percentages. Lessons then transition to electron theory and electrical units. The apprentice also learns about ropes, knots, hitches and splices, ladders, powered equipment safety pertaining to underground and digger derricks. The last lessons cover hazard communication and personal protective equipment.

Outside 1st Year, Level IV

OA1-4LM **Session:** $ 30.00 **Student:** $ 23.00

Prerequisite(s): Outside 1st Year, Level III

To be successful in this industry, an Outside technician must be knowledgeable about mathematics and Ohm's Law. This course covers solving basic algebraic equations and solving power calculations. Students will learn about resistance, current, voltage and power in series circuits. Lessons explore the use and operation of blocks, slings, and chockers as well as various rigging tools and equipment. Guy types, anchors, line conductors, crossarms, and insulators also are covered.

Outside 1st Year, Level V

OA1-5LM **Session:** $ 30.00 **Student:** $ 23.00

Prerequisite(s): Outside 1st Year, Level IV

This course opens with lessons on voltage, resistance, current, and power in parallel circuits. The principles of magnetism and the electric system are then explored. Students then are taught about wire sizes and stringing. They learn about sagging in conductors and connecting an overhead service. The course ends with lessons on insulated platforms and good housekeeping.

Outside 1st Year, Level VI

OA1-6LM **Session:** $ 30.00 **Student:** $ 23.00

Prerequisite(s): Outside 1st Year, Level V

This course begins with lessons on resistance, current, voltage, and power in combination circuits. The student will then learn about two-way radios, underground systems, and excavation and shoring. Laying conduit and pulling cable are covered. The next lessons touch on manholes, underground systems, basket, aerial lifts, and platforms. The course closes with discussions on grounding and protective grounds, taking a line out of service, and lockout/tagout applications.

OUTSIDE LINE BLENDED LEARNING

Outside 2nd Year, Level I

OA2-1LM **Session:** $ 30.00 **Student:** $ 38.75

Prerequisite(s): Outside 1st Year, Level VI

The course opens with lessons that cover organizational topics such as the National Program, the IBEW Constitution, Parliamentary Procedure and How it Works, and Understanding Local Union Bylaws. It then covers Professional Personal Conduct, Absenteeism, Working Outdoors, and Emergency Response. The course closes with lessons on Reviewing the Applications of DC Theory, Fundamentals of Alternating Current, Understanding How the DC Generator Works, and Understanding the Design and Function of AC Generators.

Outside 2nd Year, Level II

OA2-2LM **Session:** $ 30.00 **Student:** $ 38.75

Prerequisite(s): Outside 2nd Year, Level I

Level II focuses primarily on transformers. It opens with lessons on test instruments, and then covers transformer construction, characteristics, operation, polarity, tap changers, installation, load checks, and protection. The last lesson in the course will teach students about vectors.

Outside 2nd Year, Level III

OA2-3LM **Session:** $ 30.00 **Student:** $ 38.75

Prerequisite(s): Outside 2nd Year, Level II

Successful Qualified Electrical Workers must possess a strong knowledge of math. Level III opens with the student covering Working with Prefixes and Powers of 10, The Customary and Metric Systems of Measurements, The Circle, Area and Volume, and Measuring and Drawing Angles. It then transitions to blueprint fundamentals, electrical drawings and diagrams, and civil drawings. It closes with lessons on staking sheets and stakes and measuring and leveling devices.

Outside 2nd Year, Level IV

OA2-4LM **Session:** $ 30.00 **Student:** $ 38.75

Prerequisite(s): Outside 2nd Year, Level III

Level IV opens with Introduction to Inductance and continues with lessons on Voltage Drop, Metering, Overvoltage Protection, Fault Indicator, Tower Footings, Tower Erection, Joining High-Line Conductors, and Sagging Conductors. The course also covers Dampers, Hold Down Weights, and Armor Rods, Phasing and Tying in Circuits, Overload Capabilities of Electrical Equipment, Phase Sequence, Back-feed, and Locating Faults and Restoring Service.

Outside 2nd Year, Level V

OA2-5LM **Session:** $ 30.00 **Student:** $ 38.75

Prerequisite(s): Outside 2nd Year, Level IV

Cabling splicing is the main focus of Level V. Topics covered include safety, materials and tools, preparation, terminations, elbows, grounding cables, pulling, insulation testing, and manufacturers kits. Students will learn how to use a megohmmeter and gain experience in cable fault locating, underground troubleshooting, and confined spaces.

Outside 2nd Year, Level VI

OA2-6LM **Session:** $ 30.00 **Student:** $ 38.75

Prerequisite(s): Outside 2nd Year, Level V

Crane and traffic signal practices are covered in the course. Crane topics include mobile cranes, boom capacities and load charts, rigging vectors, and lifting and digging operations. After gaining an overview of the traffic signal industry, students will focus on flagging, signs, and barricades, traffic control devices, hardware, and equipment. The course closes with lessons on caissons, basic signal blueprints, cabinets, and phasing and traffic flow.

COMING FALL 2018

OUTSIDE LINE BLENDED LEARNING

NEW

Outside 3rd Year, Level I

OA3-1LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Outside 2nd Year, Level VI

Level I opens with lessons on taking pride in the industy, an introduction to the COMET program, and productivity. Students will then learn about distribution circuits, alternating current, inductance, and capacitors. The course closes with lessons on transformers -- 3-phase voltages and connections and single-phase connections. Students also will learn about troubleshooting 3-phase banks.

NEW

Outside 3rd Year, Level II

OA3-2LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Outside 3rd Year, Level I

Level II starts with a lesson on labor-management relations, but is primarily about personal protective grounding. Topics covered include body currents, basic electric circuits, grounding history, equipotential zone grounding, equipment selection, installation of grounds, and step and touch potential. Including lessons on induced voltage and multiple grounds, truck grounding, underground distribution grounding, and grounding in substations. The last two lessons are on testing ground resistance and lightning protection.

NEW

Outside 3rd Year, Level III

OA3-3LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Outside 3rd Year, Level II

Level III focuses on live-line tools and work practices. The beginning of the course covers applying rubber protective devices and the identification and care of tools. The next lessons are on maintenance with hot sticks. The students then will learn about insulator and crossarm changes, helicopter timber changes, and special practices. The course closes with lessons on primary and single-phase revenue metering.

NEW

Outside 3rd Year, Level IV

OA3-4LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Outside 3rd Year, Level III

Level IV covers substation construction. Instruction includes safety procedures, federal regulations, print reading, making connections, and function and types of stations. The student will then move on to spill prevention, containment, and countermeasure plans. The remaining lessons cover foundations, installing grout, underground power cables, grounding grids, steel superstructure assembly, and installing insulators, control cables, and devices.

NEW

Outside 3rd Year, Level V

OA3-5LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Outside 3rd Year, Level IV

Level V continues the study of substations. Lessons cover equipment identification, oil circuit breakers, batteries, oils care and filtering, and air switches. Other topics included in this course are fuse principles, reclosers and sectionalizers, fault current, voltage regulations, tap changing, and capacitors. The course closes with lessons on power factor and power harmonics.

NEW

Outside 3rd Year, Level VI

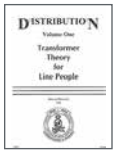
OA3-6LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Outside 3rd Year, Level V

Level VI prepares the student for life after class. Topics include the economics of unemployment, motivation, and the National Electrical Benefit Fund. Fiber optics, alternative energy sources, and high voltage lines are also covered. The course ends with lessons on foremanship and Journeyman responsibilities.

OUTSIDE

Distribution Volume I
S036 $ 19.39



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 $ 19.39

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.

Flagger's Certification Handbook
S348 $ 9.50

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.

The Guidebook for Linemen and Cablemen
S566 $ 68.33

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.

Hot Sticks
S035 $ 24.29

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.

Live Line Work Practices
S459 $ 81.79

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.

NJATC's Safety Handbook
S184 $ 22.18

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.

OUTSIDE

Substation Construction Guidelines
S496 $ 52.80

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 $ 114.92

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.

Terminations & Splices Theory - Practice
S094 $ 12.92

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.

Transformation for Lineworkers
S458 $ 53.84

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.

NEW

Transformer Lab Manual
S578LM $TBD

This *Transformer Lab Manual* presents an overview of electrical theory, transformer principles, and transformer bank construction, installation, and testing as it applies to distributing single-phase and three-phase power. This book is designed for students performing hands-on training on the 3-phase Innovations transformer trainer. Each module provides clear content supported with detailed illustrations, worksheets, and hands-on activities. Worksheets test student competency at the end of each module, and hands-on activities consist of installation and testing procedures for transformer bank connections.

OUTSIDE

Transformer Field Guide
S578 $ 43.00

NEW

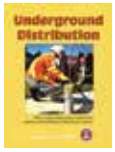
Transformer Field Guide contains procedures commonly practiced in industry and the trade. Variations taking into account specific circumstances may be appropriate. Specific procedures vary with each task and must be performed by a qualified person. For maximum safety, always refer to specific manufacturer recommendations, insurance regulations, specific job site and plant procedures, applicable federal, state, and local regulations, and any authority having jurisdiction. The material contained is intended to be an educational resource for the user.

Transformer Pocket Guide
S578PG $ 20.00

NEW

Transformer Pocket Guide contains procedures commonly practiced in industry and the trade. Variations taking into account specific circumstances may be appropriate. Specific procedures vary with each task and must be performed by a qualified person. For maximum safety, always refer to specific manufacturer recommendations, insurance regulations, specific job site and plant procedures, applicable federal, state, and local regulations, and any authority having jurisdiction. The material contained is intended to be an educational resource for the user.

Underground Distribution
S468 $ 81.79



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.

PAGING SYSTEMS

Paging Systems, Level I
T263LM **Session:** $ 31.00 **Student:** $ 38.00

Prerequisite(s): None

Paging systems, background music, and PA systems are evident almost everywhere. This course 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 course are designing and layouts, and sound masking systems.

PERSONAL PROTECTIVE GROUNDING

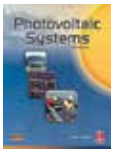
Personal Protective Grounding for Worker Safety
S562 $ 45.04

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.

Personal Protective Grounding for Worker Safety PowerPoint®
S562CD $ 15.53

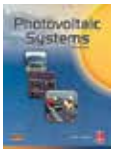
Grounding for safety is a key part of keeping a line worker safe during work on de-energized lines. Few other subjects provoke a stronger response from an experienced Electrical Worker than to inquire as to the preferred methods of providing personal protective grounding. This PowerPoint CD features the photos and sketches from the 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 $ 70.40

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.



Photovoltaic Systems, 3rd Ed.
CET674 **Session:** $ 31.06 **Student:** $ 20.71

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 $ 36.62 **J230SW.J** $ 25.85

The Photovoltaic Systems Workbook is a comprehensive resource and study guide associated with the 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 $ 107.37 **J230SWKC.J** $ 96.76

POWER QUALITY

Power Quality Analysis

S569 $ 43.30

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

J228LM.I1 **Session:** $ 31.62 **Student:** $ 24.48

Prerequisite(s): AC Theory, Level III; DC Theory, Level V

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.

Installer/Technician Power Quality, Level I

T228LM.I1 **Session:** $ 30.00 **Student:** $ 22.00

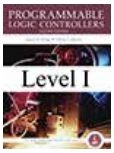
Prerequisite(s): None

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.

PROGRAMMABLE LOGIC CONTROLLERS

Programmable Logic Controllers Textbook
S597 $ 68.33

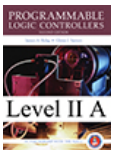
The 2nd Edition PLC textbook has been rewritten to allow JATCs and learners flexibility in their study of programmable logic controllers. The textbook contains four different sections, each with a different focus. The first section covers the physical installation of PLC systems. Subsequent sections 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
J237LM.J1 **Session:** $ 31.62 **Student:** $ 14.28

Prerequisite(s): Motor Control, Level I

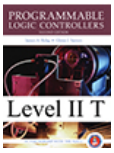
This course is a beginning level course for the study of programmable controllers and focuses on the Rockwell Automation (Allen-Bradley) PLC Systems. This course begins with basic PLC hardware requirements and the installation of PLC equipment including pilot devices, loads and analog devices typically 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
J237LM.J2A **Session:** $ 31.62 **Student:** $ 14.28

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, Level II T
J237LM.J2T **Session:** $ 31.62 **Student:** $ 14.28

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 Controller Trainers - See Page 119 for more information.

RESIDENTIAL ADVANCED TECHNOLOGY

Residential Advanced Technology Workbook

J275IG $ 50.63 **J275SW** $ 39.85

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 $ 37.70

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 $ 44.35

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.

NEW

Audio/Video Systems, Level I
J155LM.A1 **Session:** $ 10.00 **Student:** $ 11.25

Prerequisite(s): None

The audio and video systems of today can be very complicated to install and configure properly, and the room acoustics taken into account. Fortunately, the technologies that support these entertainment systems are not difficult to learn if taken one-step at a time. This course introduces audio signal and video signal fundamentals, the properties of sound, sound reproduction devices, video display technologies, home theater systems, cabling and connections, distributed audio and distributed video systems, and planning, testing and troubleshooting.

Residential Audio & Video Systems CD
S484CD $ 44.35

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 SYSTEMS, AUTOMATING & INTEGRATING

Automating & Integrating Residential Systems

S486 $ 33.79

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.

Residential Automation Systems, Level I

J156LM.A1 **Session:** $ 10.00 **Student:** $ 11.25

Prerequisite(s): None

This course 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 united system.

Automating & Integrating Residential Systems CD

S486CD $ 44.35

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 CABLING

Residential Cabling Technologies
S485 $ 44.35

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.

NEW

Residential Cabling, Level I
J157LM.A1 **Session:** $ 10.00 **Student:** $ 9.25

Prerequisite(s): None

The home network primarily allows a shared 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 $ 44.35

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 WIRING PRACTICES

Electrical Wiring Residential
S03917 $ 99.96

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, Level I, based on the 2017 *NEC*
J292LM.K1 **Session:** $ 15.30 **Student:** $ 12.92

NEW

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

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 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 learn general and device wiring methods and how to safely install and ground them. Safety is the first priority in an installation, the course will introduce specialty circuit interrupters, such as ground-fault circuit interrupters. Subsequent lessons will explore lighting branch circuits for bathrooms, hallways, garages, and workshop.

Electrical Wiring Residential CD
S039CD17 $ 225.33

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
S039IG17 $ 41.19

This is a printed version of the Instructor's Guide that is included on the e.Resource to Accompany Electrical Wiring Residential, 16th 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
S039LM17 $ 31.06

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 Signaling Practices
S661 $ 50.69

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
J241LM.J1 **Session:** $ 31.62 **Student:** $ 25.50

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 Test
S661T $ 1.06

Rigging and Lifting Test Answer Key
S661TAK $ 1.06

Rigging Course and Rigging and Lifting Principles Certificate
S560561C $ 1.29

Lineworker Rigging Practices Textbook
S489 $ 70.38

Lineworker Rigging Practices is an introduction to the physical principles, safety considerations, and common practices involved in hoisting loads in the outside line industry. This textbook covers planning a lift, evaluating and preparing a load, choosing appropriate rigging equipment, rigging a load, communicating hoisting instructions, and performing a lift safely.

Lineworker Rigging Practices, Level I
J144LM **Session:** $ 31.00 **Student:** $ 25.00

Prerequisite(s): None

This course is an introduction to the physical principles, safety considerations, and common practices involved in hoisting loads in the outside line industry. This involves planning a lift, evaluating and preparing a load, choosing appropriate rigging equipment, rigging a load, communicating hoisting instructions, and performing a lift safely.

Lineworker Rigging Practices Textbook plus Certificate
S489K $ 71.66

SECURITY

Security Access Control & Surveillance
S483 $ 42.24

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 $ 44.35

Electronic Access Control Textbook
S104 $ 67.00

NEW

Electronic Access Control, Second Edition is an introduction to interfacing systems from various Electronic Access Control (EAC) manufacturers, video, intercom and related systems into one unified system. It describes how to provide integration while also allowing building security managers to protect, control, and manage their own users' card data. Readers will be better able to manage their systems to protect the privacy of their cardholders' private information, simultaneously providing much improved control over the security of their buildings. This book details advanced card data management and advanced system access level management and offers the complete picture on EAC for readers at any level of expertise.

Electronic Access Control, Level I
J147LM.A1 **Session:** $ 15.00 **Student:** $ 15.00

Prerequisite(s): None

NEW

This course introduces the fundamentals of access control. The course topics include an overview of access control, security and access concepts, how electronic access control systems work, access control credentials and credential readers, types of access-controlled portals, electrified locks, and magnetic locks.

Electronic Access Control, Level II
J147LM.A2 **Session:** $ 15.00 **Student:** $ 15.00

Prerequisite(s): Electronic Access Control, Level I

NEW

This course introduces how locking devices impact life safety and the Americans with Disabilities Act (ADA). Course topics include life safety and exit devices, door types and door frames, doors and fire ratings, free egress electrified locks, electrified deadbolt locks, and portal control devices and applications. The course also covers access control panels and networks, cabling considerations, security system integration, and alarm system devices.

Electronic Access Control, Level III
J147LM.A3 **Session:** $ 15.00 **Student:** $ 12.00

Prerequisite(s): Electronic Access Control, Level II

NEW

This course introduces technician level and design topics. The course starts by introducing selection of the right lockset for a door, access control system servers and workstations, merging physical security with access control security, securing the system, design of the system, and installation, commissioning and testing.

Intrusion Detection, Level I - 2nd Ed.
J146LM.A1 **Session:** $ 31.47 **Student:** $ 57.23

Prerequisite(s): DC Theory, Level I or DC Theory, Level IV, 2nd Ed.

NEW

This course will introduce fundamental concepts for intrusion detection. Topics presented include terminology, magnetic contacts, motion sensors, glass break detectors, codes and standards associated with intrusion detection, and basic design of the system.

SEMICONDUCTOR

Semiconductor Textbook

S542 $ 61.08

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.

Semiconductors, Level I

J215LM.H1 **Session:** $ 32.10 **Student:** $ 15.27

Prerequisite(s): DC Theory, Level IV

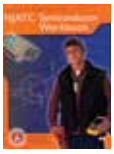
This course serves as an introduction to the wide world of electronics for the electrical profession. It provides the necessary background required to understand the concepts and theory associated with semiconductors, an essential component in the proper installation and maintenance of electrical systems.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

Semiconductors, Level II

J215LM.H2 **Session:** $ 32.10 **Student:** $ 15.27

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. **PPTs included.**



Semiconductor Workbook

J215IG.H $ 51.29 **J215SW.H** $ 30.16

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 studentwith the necessary skills to understand how many semiconductor devices function.

SOUND REINFORCEMENT

Sound Reinforcement Handbook

S479 $ 41.18

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.

Sound Reinforcement Systems, Level I

J269LM.1 **Session:** $ 15.00 **Student:** $ 10.25

Prerequisite(s): DC Theory, Level IV

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 course will look at the fundamental characteristics of this signal and show how it relates to frequency. The course begins by determining 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 course also discusses microphones, loudspeakers, and mixers.

Sound Reinforcement Systems, Level II

J269LM.2 **Session:** $ 15.00 **Student:** $ 10.25

Prerequisite(s): Sound Reinforcement Systems, Level I

This course expands on the material covered in Level I. 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.

Installer/Technician Sound Reinforcement Systems Workbook

J269IG $ 31.24 **J269SW** $ 20.47

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 $ 72.42 **J269SWKC** $ 61.81

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

SOUND REINFORCEMENT

Sound Reinforcement Handbook CD

S479CD $ 43.30

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 $ 115.72

S479 Sound Reinforcement Handbook
J269 Installer/Technician Sound Reinforcement Systems Workbook
S479CD Sound Reinforcement Handbook CD

STRUCTURED CABLING

Structured Cabling Textbook
S581 $ 44.35

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, Level I
J271LM.I1 **Session:** $ 31.62 **Student:** $ 25.50

Prerequisite(s): **Installer/Technician** - None
Inside - AC Theory, Level III

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

Voice-Data-Video Applications and Installations Textbook
S096 $ 99.00

Voice-Data-Video: Applications and Installation presents a comprehensive overview of low-voltage cabling, devices, and circuitry used in the installation and troubleshooting of systems used to transmit voice, data, and video. This text/workbook presumes a basic understanding of electricity and voice-data-video (VDV) applications. Component and circuit construction, operation, installation, termination, and troubleshooting are emphasized and supported by detailed technical illustrations. Practical applications and procedures are presented as they relate to copper and fiber-optic VDV systems. Chapter review questions and an activity help reinforce learning of key concepts.

Voice-Data-Video: Applications and Installation, Level I
J096LM.1 **Session:** $ 31.00 **Student:** $ 35.00

Prerequisite(s): AC Theory, Level III

This course offers an in-depth overview of copper and fiber optic cabling used for voice-data-video (VDV) applications in the electrical industry. The course introduces important concepts such as VDV safety as well as an overview of the VDV industry. The course then introduces tools used in the VDV industry, copper and fiber cabling systems, VDV prints, cabling standards and NEC requirements, and copper and fiber optic installation and testing methods.

SUBSTATION BLENDED LEARNING

Substation 1st Year, Level I

JSS1-1LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): None

This course 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 course 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 1st Year, Level II

JSS1-2LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Substation 1st Year, Level I

The first lessons in this course expose the student to everyday mathematical equations, with each lesson building upon the last. The remaining 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 course ends with a lesson that answers the question: What is electricity?

Substation 1st Year, Level III

JSS1-3LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Substation 1st Year, Level II

The fundamentals of electricity and DC circuits are presented in this course and built upon with in-depth coverage of Ohm's Law and its relation to voltage, current, resistance, and power. Lessons also introduce electrical devices and cover the principles of magnetism.

Substation 1st Year, Level IV

JSS1-4LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Substation 1st Year, Level III

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 course introduces OSHA, the reasons for its formation and its regulations. Several lessons deal specifically with situations substation technicians face, such as structure rescue and fall protection. The course 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 1st Year, Level V

JSS1-5LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Substation 1st Year, Level IV

This course explores the use and operation of blocks, slings, and chokers, as well as various rigging tools and equipment. It also explains the properties of ropes and how to use and care for them. This course discusses ladder safety topics including proper use, selection, and care. Lesson also introduce 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 1st Year, Level VI

JSS1-6LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Substation 1st Year, Level V

This course begins with an overview of the electric system in general then moves into the groundwork that goes into building a substation. Covering building substation foundations, excavating trenches, building duct banks, and proper methods of backfilling and compacting a trench. Three lessons discuss the various cable types used in substations, how to safely pull cable, and how to install cable in vaults and manholes. Concluding with two lessons on the substation ground grid. One lesson deals with ground grid construction and the last deals with the exothermic welding process used to join ground grid conductors together.

SUBSTATION BLENDED LEARNING

COMING **SUMMER 2018**

Substation 2nd Year, Level I

JSS2-1LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Substation 1st Year, Level VI

NEW

Level I opens with lessons that introduce the student to blueprints and specifications. Electrical drawings and diagrams, along with civil drawings, also are reviewed. Other lessons discuss what blueprint symbols mean and how drawings are scaled and dimensioned. This course also contains a lesson dealing with substation steel erection and a lesson that introduces measuring and leveling devices. The course concludes with a lesson on measuring and drawing angles and another on right triangles.

Substation 2nd Year, Level II

JSS2-2LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Substation 2nd Year, Level I

NEW

Level II 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. Lessons expand on previous lessons dealing with ground grids, equipment grounding, and the types of ground connectors available to the substation technician. The student will also learn about boom capacities, load charts, steel superstructure assembly, and erection. The last four lessons deal with installing insulators, bus/jumper types, and wire bus types.

Substation 2nd Year, Level III

JSS2-3LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Substation 2nd Year, Level II

NEW

Level III covers equipment specific to substations. The first two lessons are an overview of substation equipment and each of the remaining lessons concentrates on specific pieces of substation equipment beginning with the power transformer and ending with lightning arrestors. The lessons explain the function of each piece of equipment and point out the hazards associated with them. Besides the equipment mentioned, this course covers capacitors, reactors, rectifiers, voltage regulators, and switches.

Substation 2nd Year, Level IV

JSS2-4LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Substation 2nd Year, Level III

NEW

Level IV starts with a review of the applications of DC theory and is followed by lessons dealing with resistance, current, voltage, and power in combination circuits. The student will then compare DC to AC and be introduced to generators and the fundamentals of AC. The course concludes with a lesson on inductance and another on the causes and effects of voltage drop.

Substation 2nd Year, Level V

JSS2-5LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Substation 2nd Year, Level IV

NEW

Level V begins with a general safety awareness lesson, which is followed by a lesson on substation applications of lock-out/tag-out. The next lessons are on single-phase transformers and cover an introduction to transformers, their construction and characteristics, and how they 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 course concludes with two lessons on the use of test instruments.

Substation 2nd Year, Level VI

JSS2-6LM **Session:** $ 30.00 **Student:** $ 31.00

Prerequisite(s): Substation 2nd Year, Level V

NEW

Level VI starts with a review on how to conduct transformer load checks. Three-phase connections and voltages are covered and the lessons on single-phase transformers wrap up with information on ferroresonance and the specific hazards a substation technician may encounter when working with transformers. The next lessons include topics on step and touch potentials, equipotential zone grounding, and how to test ground (earth) resistance. This course concludes with two lessons that discuss subjects that substation technicians will be dealing with on a regular basis: power factor and power harmonics.

SUBSTATION PRINTED WORKBOOKS

Substation Technician Workbook 2-1 - 2-3

JSS2-1IG.I $ 72.17 **JSS2-1SW.I** $ 61.39

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.

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 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 2-3 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 $ 78.63 **JSS2-2SW.I** $ 67.86

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.

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 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 2-6 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 lessons that discuss subjects that substation technicians will be dealing with on a regular basis: power factor, and power harmonics.

SUBSTATION PRINTED WORKBOOKS

Substation Technician Workbook 3-1 - 3-3

JSS3-1IG.I $ 77.55 **JSS3-1SW.I** $ 66.78

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 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.

Substation Technician Workbook 3-4 - 3-6

JSS3-2IG.I $ 77.55 **JSS3-2SW.I** $ 66.78

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, 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

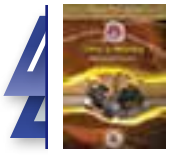
DVD003LM **Session:** $ 31.06 **Student:** $ 25.35

The first 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

DVD004LM **Session:** $ 31.06 **Student:** $ 25.35

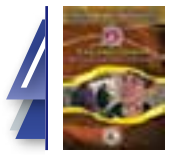
The second in the series combines two very important topics, professional personal behavior and safety, in a real-world workplace scenario. The goal of this program is to improve contractor and customer relations, be encouraging positive attitudes and professional work-site behaviors. Participants completing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

DVD005LM **Session:** $ 31.06 **Student:** $ 25.35

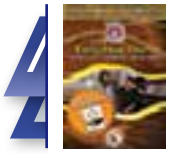
The third in the *Success in the Workplace* series addresses the critical issue of productivity. In today's highly competitive marketplace, there is no margin for mediocre performance or the old "make it last" attitude. Our mission is to meet the customer's needs by outperforming our competition with 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

DVD006LM **Session:** $ 31.06 **Student:** $ 25.35

The fourth 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

DVD007LM **Session:** $ 31.06 **Student:** $ 25.35

The fifth 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.

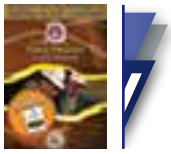
SUCCESS IN THE WORKPLACE

Fiscally Fit?: The Challenges of the Marketplace

DVD008LM **Session:** $ 31.06 **Student:** $ 25.35

The sixth 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



DVD009LM **Session:** $ 31.06 **Student:** $ 25.35

The seventh 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

DVD010LM **Session:** $ 31.06 **Student:** $ 25.35

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 $ 16.16

As the primary reference for the 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.

Telephony, Level I
T262LM **Session:** $ 31.00 **Student:** $ 25.00

Prerequisite(s): None

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 course 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.

TEST INSTRUMENTS

Test Instruments and Applications Textbook
S571 $ 59.00

NEW

Test Instruments and Applications is a comprehensive instructional tool that provides an overview of the basic principles, procedures, and applications for the safe, efficient, and practical use of common electrical test instruments used for new electrical equipment installation and for troubleshooting existing systems. Common electrical measurements are presented with an overview of measurement principles and procedures that feature over 80 common test instruments with various applications.

Test Instruments and Applications, Level I
J285LM.I1 **Session:** $ 32.10 **Student:** $ 24.85

Prerequisite(s): AC Systems, Level I

NEW

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. **PPTs included.**

CET: Milwaukee Test and Measurement Academy
CET501 **Session:** $ 31.06 **Student:** $ 57.98

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.

Test Instruments Textbook
S471 $ 53.80

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.

Test Instruments, Level I
Session: $ 31.47 **Student:** $ 24.36

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 Application Manual
J285AM $ 38.01

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.

TORQUE

Torque, Level I
J242LM.1 **Session:** $ 31.62 **Student:** $ 24.48
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.

TRAFFIC SIGNAL PRINTED WORKBOOKS

Traffic Signal Technician Workbook 1-1

TS1-1IG $ 68.94 **TS1-1SW** $ 58.16

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 *NEC*A. 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 $ 46.32 **TS1-2SW** $ 35.54

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 $ 38.77 **TS1-3SW** $ 28.00

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 $ 45.24 **TS1-4SW** $ 34.47

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 $ 73.90 **TS1-5SW** $ 63.34

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 PRINTED WORKBOOKS

Traffic Signal Technician Workbook 1-6

TS1-6IG $ 57.00 **TS1-6SW** $ 46.32

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 $ 46.32 **TS2-1SW** $ 35.54

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

TS2-2IG $ 45.78 **TS2-2SW** $ 35.36

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

Traffic Signal Technician Workbook 2-3

TS2-3IG $ 47.40 **TS2-3SW** $ 36.61

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 $ 15.08

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 $ 46.32 **TS2-4SW** $ 35.54

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 PRINTED WORKBOOKS

Traffic Signal Technician Workbook 2-5

TS2-5IG $ 49.55 **TS2-5SW** $ 38.77

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 $ 73.90 **TS2-6SW** $ 63.34

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 $ 67.56 **TS3-1SW** $ 57.00

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 $ 45.24 **TS3-2SW** $ 34.47

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 $ 78.12 **TS3-3SW** $ 67.56

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 PRINTED WORKBOOKS

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 $ 55.95 **TS3-6SW** $ 45.24

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

TDOM001-16 $ 153.00

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 *NEC*A Director stated "This should be standard issue for all *NEC*A Director's, I refer to my copy constantly."

The Americans With Disabilities Act Manual for Apprenticeship Programs

TDADA $ 153.00

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 $ 255.00

TDOM001-16 Operations Manual for Training Directors & JATC Members
TDADA The American With Disabilities Act Manual for Apprenticeship Programs

TRANSFORMERS

Transformer Principles and Applications Textbook
S476 $ 62.12

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: Inside Transformer Simulator
J112LM **Session:** $ 77.65 **Student:** $ 89.04

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 - 2nd Ed.
J205LM.I1 **Session:** $ 78.68 **Student:** $ 67.30

Prerequisite(s): AC Theory, Level II and Code, Standards, and Practices 2, Level II

This course is designed to teach the fundamentals of transformers and the different type 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. Once this topic is covered in detail, 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. Applying the knowledge of transformer connections, a lesson on Real World Transformer Connections comes before a study in transformer Harmonics and Power Generation and Distribution. **PPTs included.**

Transformers, Level II, Based on the 2017 *NEC* - 2nd Ed.
J205LM.I2_17 **Session:** $ 78.68 **Student:** $ 36.24

Prerequisite(s): Transformers, Level I and
Code Calculations, Level II or Electrical Code Calculations, Level I

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 - 2nd Ed.
J205LM.I3 **Session:** $ 78.68 **Student:** $ 12.42

Prerequisite(s): Transformers, Level I

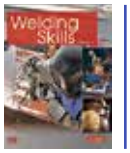
This course is the conclusion of the study of transformers and begins with a brief overview of Electrical Safety. Elaborating on previous knowledge, a study covering Special Transformers and Special Connections come before concluding with a lesson on Selection and Installation and a lesson on Maintenance and Troubleshooting. The students can use the Transformer Simulator to practice making real transformer connections in a safe environment. **PPTs included.**

WELDING SKILLS

Printreading for Welders Textbook
S101 $ 56.94

Printreading for Welders is an established text/workbook that presents printreading fundamentals, American Welding Society (AWS) welding symbols, and related printreading applications found in the welding and fabrication industry. This edition includes expanded printreading activities and the latest symbols and nomenclature from AWS A2.4: 2012 *Standard Symbols for Welding, Brazing, and Nondestructive Examination*. Detailed prints, descriptive photos, illustrations, printreading, and math content are included.

Welding Skills Textbook
S102 $ 92.14



Welding Skills is an industry-leading textbook that provides the essential welding knowledge and skills needed for successful employment. Practical skill-building exercises are given throughout, with step-by-step instructions for completing welds. Hundreds of illustrations, photos, and charts present welding principles and practices and aid comprehension.

Welding Skills, Level I
J133LM.P1 **Session:** $ 31.06 **Student:** $ 47.62

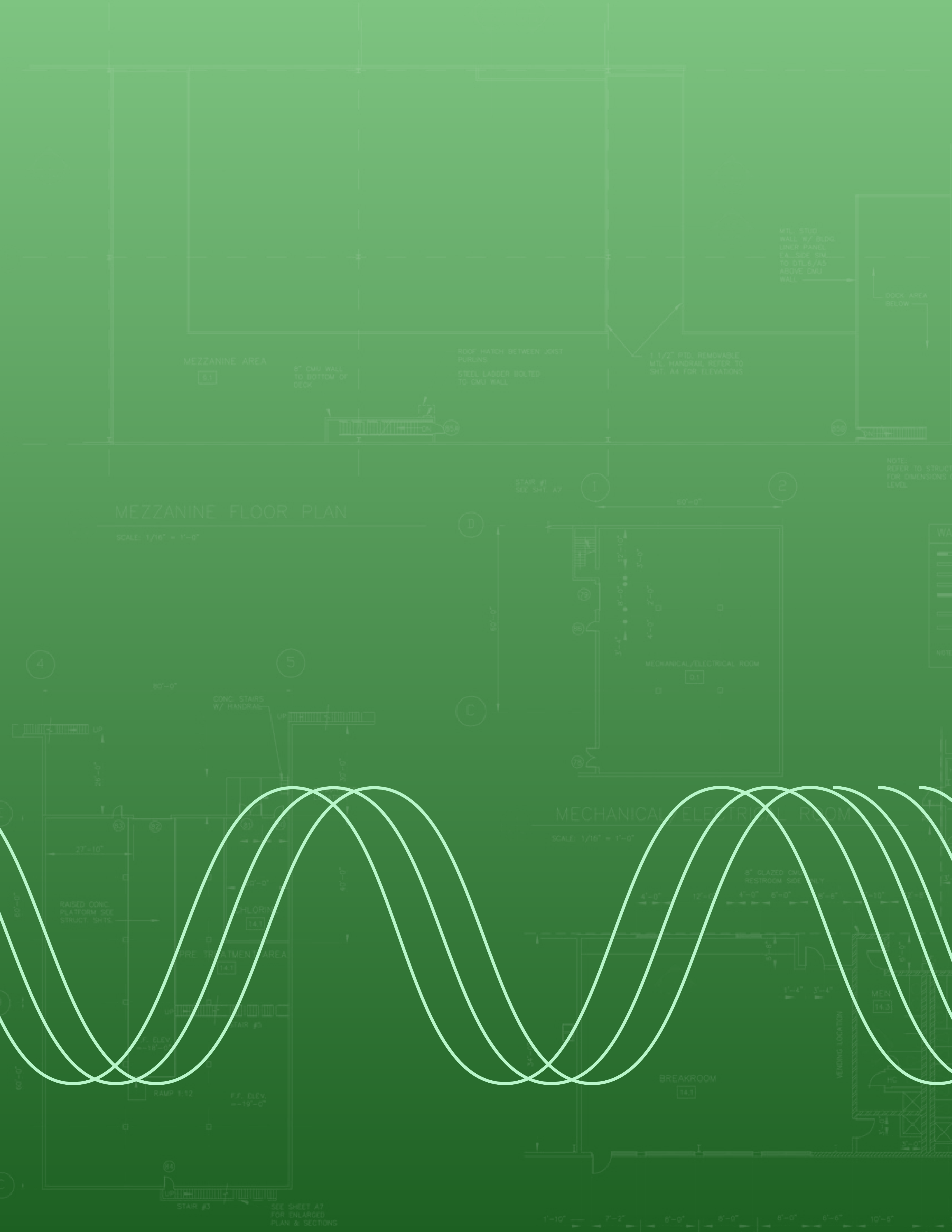
Prerequisite(s): None

Welding Skills, Level I presents an introduction to printreading fundamentals, American Welding Society welding symbols, and related printreading applications found in the welding and fabrication industry. Lessons also cover oxyacetylene welding, shielded metal arc welding, gas tungsten arc welding, and gas metal arc welding. **PPTs included.**

Welding Skills, Level II
J133LM.P2 **Session:** $ 31.06 **Student:** $ 44.52

Prerequisite(s): Welding Skills, Level I

Welding Skills, Level II covers more advanced topics such as weld evalutation and testing and welding technology. Lessons range from destructive testing to welding metallurgy to materials and fabrication standards and codes. **PPTs included.**


MEZZANINE FLOOR PLAN
SCALE: 1/16" = 1'-0"
MECHANICAL/ELECTRICAL ROOM
SCALE: 1/16" = 1'-0"
BREAKROOM

Resources

TEST GENERATOR SOFTWARE

Available for the Inside, Residential and Telecommunications Programs

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	RESIDENTIAL	INSTALLER/ TECHNICIAN
203.00 per year	101.50 per year	101.50 per year

On the Job Training, Supervising, Evaluating, and Certifying
DVD001 $ 201.88

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 craftsperson. 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 $ 201.88

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 $ 522.72

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 $ 31.06

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	$ 31.68
Establishing a Learning Environment	DVD071	$ 31.68
Effective Instructional Methods	DVD072	$ 31.68
Effective Use of Audio Visual Aids	DVD073	$ 31.68
Getting Ready to Teach	DVD074	$ 31.68
Evaluating Performance of Apprentices	DVD075	$ 31.68
Instructor Evaluation	DVD076	$ 31.68
Common Errors in Teaching	DVD077	$ 31.68
Instructor Training Kit	DVD070K	$ 211.20

SAFETY SUPPLEMENTALS

	Item Number	Price
Once the Arc Begins	DVD162	$ 31.68

RECRUITMENT DVDS

	Item Number	Price
More Than You Ever Imagined (National Training Institute Promotional DVD)	DVD026	$ 26.40
NJATC Recruitment DVD (Inside, Residential, Installer Technician and Outside Lineman)	S430	$ 47.52

SUCCESS IN THE WORKPLACE

Entire series now available on the Blended Learning System.

An Eight Volume Series of Informational Programs from the *electrical training ALLIANCE*

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 $ 201.88

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 $ 201.88

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 $ 201.88

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 $ 201.88

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 Blended Learning System.

An Eight Volume Series of Informational Programs from the *electrical training ALLIANCE*

Every Hour Counts: Productivity Increases Employment
DVD007 $ 201.88

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
DVD008 $ 201.88

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 $ 201.88

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 $ 201.88

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.

DOCUMENTS

DOCUMENTS

	Item Number	Price
Applications (100) & EEOC Forms (100) – Scannable	S258K	$ 20.47
Record Book	S071	$ 20.47
OJT Assignment Forms (100)	S225K	$ 20.47
Aplying and Qualifying for Apprenticeship	S155	$ 0.59
Sexual Harassment Policy Statement	S074	$ 1.89
Training Director Job Analysis	S219	$ 43.30

INSIDE DOCUMENTS

	Item Number	Price
Inside Standards	S220	$ 22.62
Inside Selection Procedure	S221	$ 11.84
Inside Affirmative Action Plan	S222	$ 5.92
Inside Trust Document	S058	$ 1.89
Inside Trust Document 501(c)3	S058C3	$ 1.89
Job Descriptions and Knowledge, Skills, and Abilities	S171	$ 14.01
Policy for Collection of Delinquent Inside Contributions	S022	$ 3.51
Inside Work Report Evaluation Form (100) – Scannable	S256K	$ 26.93
Interview Pamphlet (Pack of 100)	S319K	$ 33.79

INSTALLER/TECHNICIAN DOCUMENTS

	Item Number	Price
Telecommunication Standards	S226	$ 22.62
Telecommunication Selection Procedure	S227	$ 11.31
Telecommunication Affirmative Action Plan	S228	$ 5.92
Telecommunication Work Report Evaluation Form (100) (Scannable)	S259K	$ 26.93

OUTSIDE DOCUMENTS

	Item Number	Price
Outside Area Training Agreement	S075	$ 1.79
Outside Standards	S253	$ 22.62
Outside Selection Procedure	S254	$ 11.84
Outside Affirmative Action Plan	S255	$ 5.92
Outside Trust Document	S062	$ 1.83
Policy for Collection of Delinquent Outside Contributions	S021	$ 3.39

DOCUMENTS

RESIDENTIAL DOCUMENTS

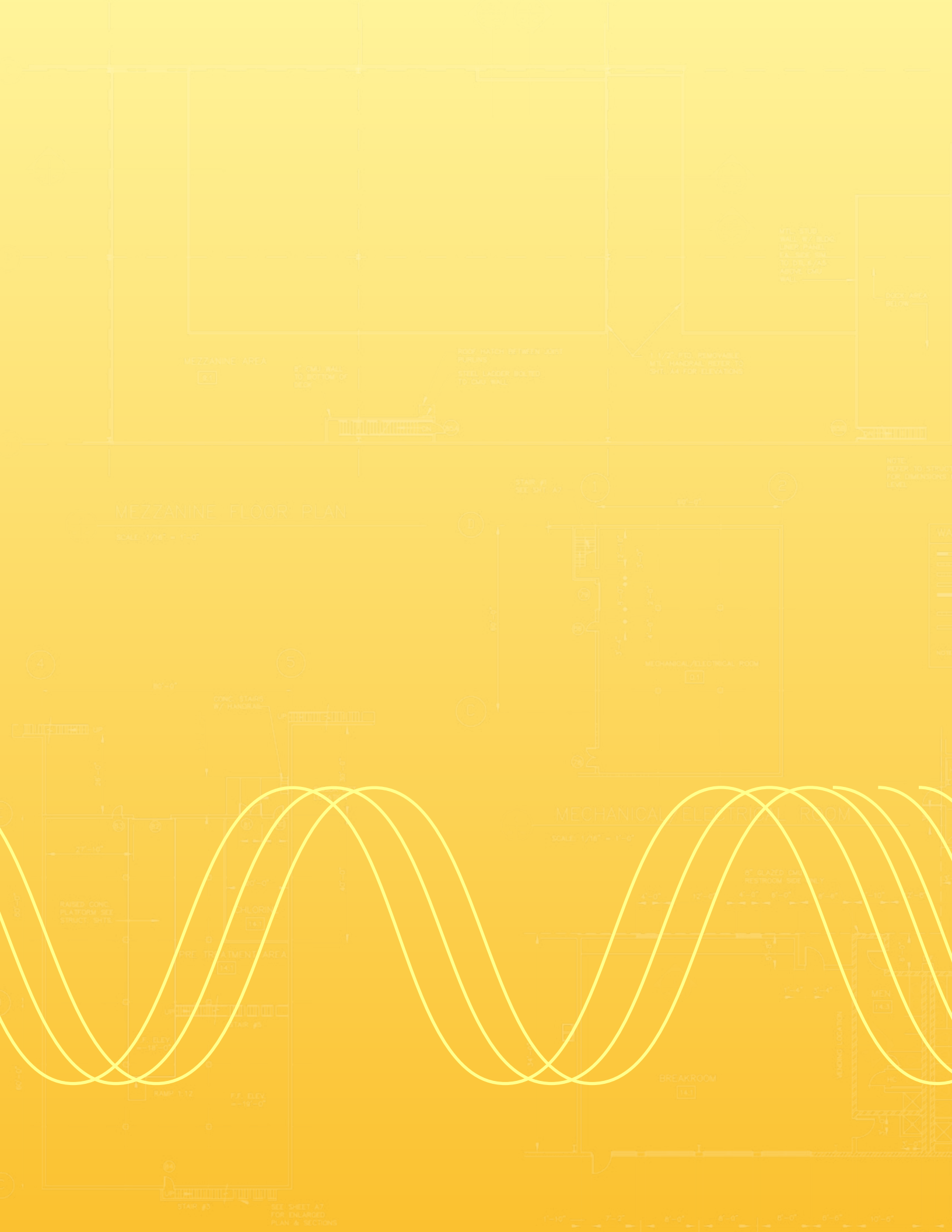
	Item Number	Price
Residential Standards	S250	$ 22.62
Residential Selection Procedure	S251	$ 11.31
Residential Affirmative Action Plan	S252	$ 5.92
Residential Work Report Evaluation Form (100) (Scannable)	S260K	$ 26.93

RECRUITMENT/PROMOTIONAL AND OTHER MATERIALS

	Item Number	Price
Applicant Interview Rating Form Kit	ARFK96	$ 30.62
Klein 18-Piece Tool Kit	KLE39076	$ 276.18
Electrical Trades Proficiency Evaluation Assessment Exam	P15617	$ 34.47
Electrical Trades Prof. Eval. Assessment Exam Answer Key	P156AK17	$ 12.38
Electrical Trades Prof. Eval. Assessment Exam Score Analysis	P156SA17	$ 12.38
Performance Evaluation Level 1-5	PEVALIK	$ 25.88
(Bundle) Performance Evaluation Level 1-5 (25 pack)	PEVALIK(Bundle)	$ 416.16
Performance Evaluation Level 6	PEVALK	$ 13.46
Performace Evaluation Kit Complete	PEVALKC	$ 26.93
Job Teaching Skills Card (Pack of 100)	S013K	$ 15.08
Ohm's Law Medallions	S052	$ 7.00
Brochure – Inside Apprenticeship	P500	$ 0.64
Brochure – Inside Apprenticeship (pack of 100)	P500K	$ 36.62
Brochure – Outside Lineman Apprenticeship	P501	$ 0.64
Brochure – Outside Lineman Apprenticeship (pack of 100)	P501K	$ 36.62
Brochure – Residential Apprenticeship	P502	$ 0.64
Brochure – Residential Apprenticeship (pack of 100)	P502K	$ 36.62
Brochure – Telecommunications (Installer/Technician) Apprenticeship	P503	$ 0.64
Brochure – Telecommunications (Installer/Technician) Apprenticeship (pack of 100)	P503K	$ 36.62
Military Recruitment Brochure	S342	$ 0.53
Recruitment Card (Pack of 100)	S401K	$ 17.24
Recruitment Card Holder	S401H	$ 4.59
Recruitment CD-ROM	S341	$ 11.62
Recruitment DVD	S430	$ 47.52
Blended Learning Student Notebook	N001	$ 7.34

RECRUITMENT/PROMOTIONAL AND OTHER MATERIALS

	Item Number	Price
Electrical Training ALLIANCE 1" Logo Decal	P300-1	$ 0.10
Electrical Training ALLIANCE 6" Logo Decal	P300-6	$ 0.61
Electrical Training ALLIANCE 8" Logo Decal	P300-8	$ 0.71
Electrical Training ALLIANCE 10" Logo Decal	P300-10	$ 1.02
Electrical Training ALLIANCE 30” x 11” Sign	P300-18	$ 40.00


MEZZANINE FLOOR PLAN
MECHANICAL/ELECTRICAL ROOM

Trainers

CONDUIT

Conduit Fabrication Mobile Workstation

This trainer will aid the student in using the knowledge gained through the Conudit Fabrication, Level I and Conduit Fabrication, Level II courses. The student is required to apply the skills to create the bends necessary to complete the projects that are detailed in the lab manual. Construction drawings are located in each course under Resources, Instructor Resources. 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 $ 85.37 **J211SL** $ 45.24

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 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 *electrical training ALLIANCE* customer service 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
Addressable Thermal Detector	H355	2
Multi Sensor Intel. Smoke Detector	SD355	7
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 *electrical training ALLIANCE* customer service 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 *electrical training ALLIANCE* customer service for pricing.

The 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 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 Instrumentation Trainer ensures that it will not become outdated.

PROGRAMMABLE LOGIC CONTROLLER

ControlLogix Trainer D270K

Call the *electrical training ALLIANCE* customer service 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 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
ORDER FORM

ELECTRICAL TRAINING ALLIANCE
Todd Stafford, EXECUTIVE DIRECTOR • 5001 HOWERTON WAY, SUITE N • BOWIE, MD 20715
PHONE: 888.NJA.4007 (888.652.4007) FAX: 888.NJA-5007 (888.652.5007)

PROGRAM # ____ ____ ____ ____ ____ ____ DAYTIME PHONE # _____/_____-_____

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THE EXTENDED COST WILL BE CALCULATED BY THE ELECTRICAL TRAINING ALLIANCE.

ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

AMERICAN COUNCIL ON EDUCATION (ACE) COLLEGE CREDIT

The *electrical training ALLIANCE*, in conjunction with the American Council on Education (ACE), has submitted *electrical training ALLIANCE* Apprenticeship Courses for evaluation and for the establishment of recommended college credit for each year of the apprenticeship program. When you register your apprenticeship training with ACE, **through the *electrical training ALLIANCE,*** you are eligible to receive a transcript which you can take to a college/university of your choice to receive college credit. The availability and amount of credit will be dependent on the college/university you apply to, and the type of degree you are seeking.

Below are the steps to help you successfully establish a record with ACE and receive an official transcript.
The JATC/AJATC Chairman and Secretary must sign this form in order to process the request.

Step 1: Submitting Your Application

Submit your College Credit Application and $45.00 processing fee made payable to the *electrical training ALLIANCE*. Payment can be made with a personal check, JATC check, money order, or cashier's check.

Please remember to include an email address on the form. You will be contacted by email with further instructions once your application is processed. Once you receive the email, you can then go to Step 2.

Step 2: Register Your Account on the ACE Website

Once your application has been approved and processed by the *electrical training ALLIANCE*, you will then receive an automated (no reply) email from ACE to inform you that your ACE record has been established. At this point, you may choose to activate your records by following the instructions in the email. Your username is your last name and your password is your social security number. Please DO NOT register with ACE prior to receiving this email. This will cause issues with the system.

Step 3: Activate Your Record

In order to do this you will need to log on to: https://www.acenet.edu/transcripts. Select Register Now and complete the information to establish your account. You only need to register on this site one time for the online Transcript Service. If you have previously registered for the online Transcript Service, it is not necessary to register again. This site will allow you to view your record and order transcripts. The *electrical training ALLIANCE* has paid your registration fee which includes one official transcript. Additional transcripts are $15.00 each.

RESOURCES

Lifelong Learning Resource Center
Resource Center hours M-F 8:45 AM – 4:45 PM ET
Toll Free 1.866.205.6267 or by email at credit@ace.nche.edu

View the list of cooperating colleges: Participating higher education institutions in the ACE Cooperating College and University Network attract increasing numbers of adult learners. It is important to note that having the ACE recommended credits does not suggest that all credits will apply toward any and all degrees. Some colleges may be reluctant to accept the credits and all courses are not guaranteed to apply toward all college degree programs.

If a college has denied your request to transfer your ACE credit recommendations please use the
Student Request for Assistance Form http://www2.acenet.edu/webforms/forms/credit/Request_for_Assistance.aspx

Student Resource Center/Transcripts and Transfer Tips
http://www.acenet.edu/news-room/Pages/Center-for-Education-Attainment-and-Innovation-Resource-Center.aspx

electrical training ALLIANCE
IBEW - NECA

TODD STAFFORD, EXECUTIVE DIRECTOR

ACE COLLEGE CREDIT APPLICATION

To earn college credit, simply complete this form. You must enter ***each year*** of apprenticeship for which you are applying. You may apply after successfully completing each year, or wait until you have completed your apprenticeship. Mail the completed form to the *electrical training ALLIANCE* along with a check for any applicable fees (payable to *electrical training ALLIANCE*). There is a **one-time** registration fee of $45.00 per student. The fee includes ONE complimentary transcript. Additional transcripts are $15.00 each and can be ordered directly from The American Council on Education (ACE) at: https://acenet.edu./transcripts. The JATC/AJATC Chairman and Secretary **MUST** certify by signing the form to validate the application.

STUDENT COMPLETES THIS SECTION:

*Please print **clearly** and complete all information.*

_____ _____
LAST NAME **FIRST NAME**

MALE ◯
FEMALE ◯
GENDER

_____
STREET ADDRESS

_____ _____
CITY **STATE**

_____ - _____ (_____) _____ - _____
POSTAL CODE **PHONE NUMBER**

_____ / _____ / _____ _____ - _____ - _____ _____
DATE OF BIRTH **SOCIAL SECURITY NUMBER** **E-MAIL ADDRESS**

I authorize the submission of this form and other information about my course participation to The American Council on Education (ACE). ACE will record, maintain and update this information as necessary.

_____ _____
SIGNATURE (do not print) **DATE**

COURSE CREDITS REQUESTED:

Indicate the completed course(s) you wish to receive credit for; use the list on the following page.

Course Number	Date Completed Ex.: 01/02/03	Course Number	Date Completed Ex.: 01/02/03

JATC/AJATC COMMITTEE CHAIRMAN & SECRETARY COMPLETE THIS SECTION

The following signatures certify that the individual listed on this form has successfully completed the course(s) itemized above, meeting all requirements of completion as outlined in the Apprenticeship Standards.

___ ___ ___ ___ ___ ___ _____ _____
JATC/AJATC Program Number **Committee Chairman** **Committee Secretary**

5001 Howerton Way, Suite N, Bowie, MD 20715
Phone: 301.715.2300 Business Fax: 301.715.2301
Office Hours: 8:45 am - 4:45 pm ET M-F

ACE COLLEGE CREDIT COURSE LIST

Choose from this list of course numbers for the completed course(s) you wish to receive credit for.

Course Number	Course Title	Evaluation Dates	Course Number	Course Title	Evaluation Dates
0001	Inside Wiremen 1st Year Course	(12/1982 - 6/2015)	0075	NJATC Fiber Optics 1	(8/2017 - 7/2020)
0002	Inside Wiremen 2nd Year Course	(12/1982 - 6/2015)	0019	NJATC Fire Alarm	(8/2005 - 7/2013)
0003	Inside Wiremen 3rd Year Course	(12/1982 - 6/2015)	0059	NJATC Fire Alarm 2	(8/2013 - 7/2020)
0004	Inside Wiremen 4th Year Course	(12/1982 - 6/2015)	0039	NJATC Hazardous Locations 1	(8/2013 - 4/2017)
0005	Inside Wiremen 5th Year Course	(12/1982 - 6/2015)	0060	NJATC Hazardous Locations 2	(8/2013 - 7/2017)
0024	Inside First Year Core Curriculum	(8/2012 - 7/2020)	0061	NJATC Health Care 1	(8/2013 - 7/2017)
0025	Inside Second Year Core Curriculum	(8/2012 - 7/2020)	0040	NJATC Health Care 2	(8/2013 - 7/2020)
0026	Inside Third Year Core Curriculum	(8/2012 - 7/2020)	0020	NJATC Instrumentation	(8/2005 - 7/2013)
0027	Inside Fourth Year Core Curriculum	(8/2012 - 7/2020)	0041	NJATC Instrumentation 1 and 2	(8/2013 - 7/2020)
0028	Inside Fifth Year Core Curriculum	(8/2012 - 7/2020)	0076	NJATC Intrusion Detection 1	(8/2017 - 7/2020)
0009	Installer/Technician First Year Curriculum	(2/1998 - 7/2013)	0063	NJATC Lighting Essentials 1	(8/2013 - 7/2020)
0010	Installer/Technician Second Year Curriculum	(2/1998 - 7/2013)	0042	NJATC Lighting Essentials 2	(8/2013 - 7/2020)
0011	Installer/Technician Third Year Curriculum	(2/1998 - 6/2015)	0062	NJATC Lightning Protection 1	(8/2013 - 7/2020)
0029	Installer/Technician First Year Curriculum	(9/2013 - 7/2020)	0043	NJATC Local Area Networks 1 and 2	(8/2013 - 7/2020)
0030	Installer/Technician Second Year Curriculum	(9/2013 - 7/2020)	0064	NJATC Motor Control 3	(8/2013 - 7/2020)
0031	Installer/Technician Third Year Curriculum	(9/2013 - 7/2020)	0021	NJATC Motors	(8/2005 - 7/2013)
0006	Outside Lineman 1st Year Course	(11/1984 - 7/2020)	0065	NJATC Motors 2	(8/2013 - 7/2020)
0007	Outside Lineman 2nd Year Course	(11/1984 - 7/2020)	0045	NJATC Paging Systems	(8/2013 - 7/2020)
0008	Outside Lineman 3rd Year Course	(11/1984 - 7/2020)	0046	NJATC Photovoltaics 2	(8/2013 - 3/2018)
0012	Residential First Year Curriculum	(4/1998 - 7/2013)	0066	NJATC Photovoltaics 1	(8/2013 - 3/2018)
0013	Residential Second Year Curriculum	(4/1998 - 7/2013)	0078	NJATC Photovoltaics Adv	(8/2013 - 3/2018)
0014	Residential Third Year Curriculum	(4/1998 - 7/2013)	0067	NJATC Power Quality Adv	(8/2013 - 7/2020)
0032	Residential First Year Curriculum	(9/2013 - 7/2020)	0068	NJATC Programmable Logic Controllers, Level I	(8/2013 - 7/2020)
0033	Residential Second Year Curriculum	(9/2013 - 7/2020)	0047	NJATC Programmable Logic Controllers, Level II, Addressed-Based and Tag-Based	(8/2013 - 7/2020)
0034	Residential Third Year Curriculum	(9/2013 - 7/2020)	0048	NJATC RF Communications	(8/2013 - 7/2020)
0053	NJATC AC Theory 3	(8/2013 - 7/2020)	0049	NJATC Security Systems 2	(8/2013 - 4/2017)
0073	NJATC Access Control 1	(8/2017 - 7/2020)	0070	NJATC Semiconductors 1	(8/2013 - 7/2020)
0036	NJATC Building Automation Advanced Courses	(8/2013 - 7/2020)	0050	NJATC Semiconductors 2	(8/2013 - 7/2020)
0054	NJATC Building Automation Control Devices	(8/2013 - 3/2018)	0051	NJATC Sound Reinforcement	(8/2013 - 7/2020)
0037	CCTV	(8/2013 - 7/2020)	0022	NJATC Structured Cabling	(8/2005 - 7/2013)
0055	NJATC Code and Practices 5	(8/2013 - 7/2017)	0071	NJATC Structured Cabling 1	(8/2013 - 7/2020)
0038	NJATC Code and Practices Advanced Courses	(8/2013 - 7/2020)	0015	NJATC Tech Math Course	(8/1996 - 12/2015)
0016	NJATC Code and Practices-3	(8/2005 - 7/2013)	0023	NJATC Telephone & Security Basics	(8/2005 - 12/2015)
0056	NJATC DC Theory 2	(8/2013 - 3/2018)	0052	NJATC Telephony	(8/2013 - 4/2017)
0017	NJATC Digital Electronics	(8/2005 - 7/2013)	0077	NJATC Test Instruments 1	(8/2017 - 7/2020)
0057	NJATC Digital Electronics 1	(8/2013 - 7/2020)	0072	NJATC Transformers 3	(8/2013 - 7/2020)
0018	NJATC Distributed Generation	(8/2005 - 7/2013)			
0058	NJATC Distributed Generation 1	(8/2013 - 7/2020)			

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