



**NIDA CORPORATION
COMPUTER ASSISTED INSTRUCTION**

LESSON AND OBJECTIVE LISTING

**Master Course Listing
Cables and Connectors**

2018-08-30

OBJECTIVE LISTING - Master Course Listing

TABLE OF CONTENTS

<u>MODEL 1413</u>	
MOD 35 - CIRCUIT CONSTRUCTION	1
<u>MODEL 1410</u>	
MOD 36 - SOLDERING (LEAD)	1
<u>MODEL 1409</u>	
MOD 37 - LEAD-FREE SOLDERING	4
<u>MODEL 1459</u>	
MOD 38 - CABLES AND CONNECTORS	6

Representative



Technology Education Concepts

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OBJECTIVE LISTING - Master Course Listing

LESSON ID/TITLE

CARDS/KITS

MOD 35 - CIRCUIT CONSTRUCTION

5021-912-130 Circuit Construction	130X
▪ Describe soldering and breadboarding methods of circuit construction.	
▪ Describe the Nida Series PC130X.	
▪ Describe how to construct a simple series circuit using PC130X.	
▪ Insert and remove a component from the PC130X breadboard card.	
5021-912-160 DC Circuit Construction	130X
▪ Construct a series circuit.	
▪ Verify series circuit operation.	
▪ Construct a parallel circuit.	
▪ Verify parallel circuit operation.	
▪ Construct a series-parallel circuit.	
▪ Verify series-parallel circuit operation.	
▪ Construct a circuit using various components.	
▪ Verify circuit operation.	
5021-912-190 AC Circuit Construction	130X
▪ Construct an AC circuit.	
▪ Verify AC circuit operation.	
5021-912-220 Analog Circuit Construction	130X
▪ Construct an analog circuit.	
▪ Verify analog circuit operation.	
5021-912-250 Digital Circuit Construction	130X
▪ Construct a digital circuit.	
▪ Verify digital circuit operation.	

MOD 36 - SOLDERING (LEAD)

5021-914-130 Soldering Safety and Electrostatic Sensitive Devices	---
▪ Understand the safety requirements of soldering chemicals and supplies.	
▪ Describe the procedure for use of an eyewash station.	
▪ Define an electrostatic sensitive device.	
▪ Describe the sources of electrostatic discharge and list its hazards to electronic components.	
▪ Identify the static-producing materials in the work area.	
▪ Explain the principles of static control and methods employed in developing static control facilities.	
▪ Describe the special handling, identification, packaging, and protection requirements for electrostatic sensitive devices.	
5021-914-160 Solder and Soldering Equipment	---
▪ Identify different types of solder.	
▪ Identify proper solder flux.	
▪ Understand how to handle a soldering iron properly.	
▪ Understand how and why a soldering iron tip is tinned.	
▪ Understand correct use of safety equipment.	
▪ Identify hand tools used to aid soldering.	
▪ Describe proper use of heat sinks and wire forming tools.	
▪ Use safety equipment properly.	
▪ Demonstrate how to tin a soldering iron tip properly.	

OBJECTIVE LISTING - Master Course Listing

LESSON ID/TITLE

CARDS/KITS

MOD 36 - SOLDERING (LEAD) (cont.)

- 5021-914-170 Solder and Soldering Equipment Practical Exam ---
 - Use safety equipment properly.
 - Demonstrate how to tin a soldering iron tip properly.
- 5021-914-190 Wire Stripping, Tinning, and Splicing ---
 - Identify different types of wire strippers and trimmers.
 - Identify the proper tools used to strip various wires.
 - Understand how to strip wires using wire strippers.
 - Identify methods of wire tinning.
 - Understand how and when to tin a wire.
 - Identify methods of wire splicing.
 - Understand how and when to splice a wire.
 - Strip wires using the available wire strippers.
 - Demonstrate wire tinning.
 - Demonstrate wire splicing.
- 5021-914-200 Wire Stripping, Tinning, and Splicing Practical Exam ---
 - Use safety equipment properly.
 - Demonstrate how to properly the strip and tin the end of a wire.
 - Demonstrate how to properly make a wire splice.
- 5021-914-220 Terminal Types and Connections ---
 - Understand the IPC/EIA J-STD-001C standards used for turret, bifurcated, and hook terminals.
 - Identify turret, bifurcated, and hook terminals.
 - Describe the application of turret, bifurcated, and hook terminals.
 - Understand the IPC/EIA J-STD-001C standards used for pierced and cup turrets.
 - Identify pierced and cup turrets.
 - Describe the application of pierced and cup turrets terminals.
 - Solder connections to a turret terminal.
 - Solder connections to a bifurcated terminal.
 - Solder connections to a hook terminal.
 - Solder connections to a pierced terminal.
 - Solder a connection to a cup terminal.
- 5021-914-230 Terminal Types and Connections Practical Exam ---
 - Use safety equipment properly.
 - Demonstrate how to properly solder a wire to a turret terminal.
 - Demonstrate how to properly solder a wire to a bifurcated terminal.
 - Demonstrate how to properly solder a wire to a hook terminal.
 - Demonstrate how to properly solder a wire to a pierced terminal.
 - Demonstrate how to properly solder a wire to a cup terminal.
- 5021-914-250 Printed Circuit Board Types and Manufacturing Methods 1410K1
 - Identify the general characteristics of PC boards.
 - Identify several connection methods used on PC boards.
 - Identify the options and procedures available for repairing broken circuit board copper lands.
 - Prepare a circuit board for repair using a surface mount jumper.
 - Repair a circuit board using a surface mount jumper.
- 5021-914-260 Printed Circuit Board Types and Manufacturing Methods Practical Exam 1410K1
 - Use safety equipment properly.

OBJECTIVE LISTING - Master Course Listing

LESSON ID/TITLE

CARDS/KITS

MOD 36 - SOLDERING (LEAD) (cont.)

- 5021-914-260 Printed Circuit Board Types and Manufacturing Methods Practical Exam (cont.)
- Demonstrate how to properly prepare a PC board for installation of a surface mount jumper wire.
 - Demonstrate how to properly solder a surface mount jumper wire.
- 5021-914-280 Through-Hole Non-Polarized Component Soldering and Desoldering 1410K1
- Understand the soldering process.
 - Identify good, cold, flux, and disturbed solder connections.
 - Identify common non-polarized components.
 - Identify tools used to form leads.
 - Understand lead forming methods.
 - Identify the methods used to mount components on a PCB.
 - Understand desoldering methods.
 - Understand how to correct poor solder connections.
 - Form component leads.
 - Mount and solder components to a PCB.
 - Desolder components from a PCB.
- 5021-914-290 Through-Hole Non-Polarized Component Soldering Practical Exam 1410K1
- Use safety equipment properly.
 - Demonstrate how to properly form the leads of a thru-hole component.
 - Demonstrate how to properly solder non-polarized thru-hole components.
 - Demonstrate how to properly desolder non-polarized thru-hole components.
- 5021-914-310 Through-Hole Polarized Component Soldering 1410K1
- Identify common polarized components.
 - Identify orientation of components.
 - Explain heat fragility of some components.
 - Form leads of polarized components.
 - Mount polarized components on a PCB.
 - Solder heat-sensitive components on a PCB.
 - Solder polarized components on a PCB.
- 5021-914-320 Through-Hole Polarized Component Soldering Practical Exam 1410K1
- Use safety equipment properly.
 - Demonstrate how to properly solder polarized thru-hole components.
 - Demonstrate how to properly desolder polarized thru-hole components.
- 5021-914-340 Soldering Surface Mount Devices 1410K1
- Explain differences between through-hole and SMD technologies.
 - Identify common SMD components.
 - Understand SMD soldering and desoldering techniques.
 - Prepare surface mount pads for soldering of a component.
 - Solder a surface mount resistor to a PCB.
 - Solder a surface mount IC to a PCB.
- 5021-914-350 Soldering Surface Mount Devices Practical Exam 1410K1
- Use safety equipment properly.
 - Demonstrate how to properly tin a PC board in preparation for installation of surface mount components.
 - Demonstrate how to properly solder surface mount components.
 - Demonstrate how to properly desolder surface mount components.

OBJECTIVE LISTING - Master Course Listing

LESSON ID/TITLE

CARDS/KITS

MOD 36 - SOLDERING (LEAD) (cont.)

5021-914-370 Coax Cable Connectors	---
<ul style="list-style-type: none"> ▪ Review BNC connector history, advantages, and limitations. ▪ Review RG-58 cable history, advantages, and limitations. ▪ Understand the assembly of the UG-88C/U BNC connector. ▪ Understand how a UG-88C/U BNC connector is attached to a coaxial cable. ▫ Install a UG-88C/U BNC connector on the RG-58 A/U cable. 	
5021-914-380 Coax Cable Connectors Practical Exam	---
<ul style="list-style-type: none"> ▫ Use safety equipment properly. ▫ Demonstrate how to properly a BNC connector on a cable. 	
5021-914-920 Soldering Post-Test (Theory)	---

MOD 37 - LEAD-FREE SOLDERING

5021-916-130 Soldering Safety and Electrostatic Sensitive Devices	---
<ul style="list-style-type: none"> ▪ Understand the safety requirements of soldering chemicals and supplies. ▪ Describe the procedure for use of an eyewash station. ▪ Define an electrostatic sensitive device. ▪ Describe the sources of electrostatic discharge and list its hazards to electronic components. ▪ Identify the static-producing materials in the work area. ▪ Explain the principles of static control and methods employed in developing static control facilities. ▪ Describe the special handling, identification, packaging, and protection requirements for electrostatic sensitive devices. 	
5021-916-160 Solder and Soldering Equipment	---
<ul style="list-style-type: none"> ▪ Identify different types of solder. ▪ Identify proper solder flux. ▪ Understand how to handle a soldering iron properly. ▪ Understand how and why a soldering iron tip is tinned. ▪ Understand correct use of safety equipment. ▪ Identify hand tools used to aid soldering. ▪ Describe proper use of heat sinks and wire forming tools. ▫ Use safety equipment properly. ▫ Demonstrate how to tin a soldering iron tip properly. 	
5021-916-170 Solder and Soldering Equipment Practical Exam	---
<ul style="list-style-type: none"> ▫ Use safety equipment properly. ▫ Demonstrate how to tin a soldering iron tip properly. 	
5021-916-190 Wire Stripping, Tinning, and Splicing	---
<ul style="list-style-type: none"> ▪ Identify different types of wire strippers and trimmers. ▪ Identify the proper tools used to strip various wires. ▪ Understand how to strip wires using wire strippers. ▪ Identify methods of wire tinning. ▪ Understand how and when to tin a wire. ▪ Identify methods of wire splicing. ▪ Understand how and when to splice a wire. ▫ Strip wires using the available wire strippers. ▫ Demonstrate wire tinning. ▫ Demonstrate wire splicing. 	

OBJECTIVE LISTING - Master Course Listing

LESSON ID/TITLE

CARDS/KITS

MOD 37 - LEAD-FREE SOLDERING (cont.)

- 5021-916-200 Wire Stripping, Tinning, and Splicing Practical Exam ---
 - Use safety equipment properly.
 - Demonstrate how to properly the strip and tin the end of a wire.
 - Demonstrate how to properly make a wire splice.
- 5021-916-220 Terminal Types and Connections ---
 - Understand the IPC/EIA J-STD-001C standards used for turret, bifurcated, and hook terminals.
 - Identify turret, bifurcated, and hook terminals.
 - Describe the application of turret, bifurcated, and hook terminals.
 - Understand the IPC/EIA J-STD-001C standards used for pierced and cup turrets.
 - Identify pierced and cup turrets.
 - Describe the application of pierced and cup turrets terminals.
 - Solder connections to a turret terminal.
 - Solder connections to a bifurcated terminal.
 - Solder connections to a hook terminal.
 - Solder connections to a pierced terminal.
 - Solder a connection to a cup terminal.
- 5021-916-230 Terminal Types and Connections Practical Exam ---
 - Use safety equipment properly.
 - Demonstrate how to properly solder a wire to a turret terminal.
 - Demonstrate how to properly solder a wire to a bifurcated terminal.
 - Demonstrate how to properly solder a wire to a hook terminal.
 - Demonstrate how to properly solder a wire to a pierced terminal.
 - Demonstrate how to properly solder a wire to a cup terminal.
- 5021-916-250 Printed Circuit Board Types and Manufacturing Methods 1410K1
 - Identify the general characteristics of PC boards.
 - Identify several connection methods used on PC boards.
 - Identify the options and procedures available for repairing broken circuit board copper lands.
 - Prepare a circuit board for repair using a surface mount jumper.
 - Repair a circuit board using a surface mount jumper.
- 5021-916-260 Printed Circuit Board Types and Manufacturing Methods Practical Exam 1410K1
 - Use safety equipment properly.
 - Demonstrate how to properly prepare a PC board for installation of a surface mount jumper wire.
 - Demonstrate how to properly solder a surface mount jumper wire.
- 5021-916-280 Through-Hole Non-Polarized Component Soldering and Desoldering 1410K1
 - Understand the soldering process.
 - Identify good, cold, flux, and disturbed solder connections.
 - Identify common non-polarized components.
 - Identify tools used to form leads.
 - Understand lead forming methods.
 - Identify the methods used to mount components on a PCB.
 - Understand desoldering methods.
 - Understand how to correct poor solder connections.
 - Form component leads.
 - Mount and solder components to a PCB.
 - Desolder components from a PCB.

OBJECTIVE LISTING - Master Course Listing

LESSON ID/TITLE

CARDS/KITS

MOD 37 - LEAD-FREE SOLDERING (cont.)

- 5021-916-290 Through-Hole Non-Polarized Component Soldering Practical Exam 1410K1
- Use safety equipment properly.
 - Demonstrate how to properly form the leads of a thru-hole component.
 - Demonstrate how to properly solder non-polarized thru-hole components.
 - Demonstrate how to properly desolder non-polarized thru-hole components.
- 5021-916-310 Through-Hole Polarized Component Soldering 1410K1
- Identify common polarized components.
 - Identify orientation of components.
 - Explain heat fragility of some components.
 - Form leads of polarized components.
 - Mount polarized components on a PCB.
 - Solder heat-sensitive components on a PCB.
 - Solder polarized components on a PCB.
- 5021-916-320 Through-Hole Polarized Component Soldering Practical Exam 1410K1
- Use safety equipment properly.
 - Demonstrate how to properly solder polarized thru-hole components.
 - Demonstrate how to properly desolder polarized thru-hole components.
- 5021-916-340 Soldering Surface Mount Devices 1410K1
- Explain differences between through-hole and SMD technologies.
 - Identify common SMD components.
 - Understand SMD soldering and desoldering techniques.
 - Prepare surface mount pads for soldering of a component.
 - Solder a surface mount resistor to a PCB.
 - Solder a surface mount IC to a PCB.
- 5021-916-350 Soldering Surface Mount Devices Practical Exam 1410K1
- Use safety equipment properly.
 - Demonstrate how to properly tin a PC board in preparation for installation of surface mount components.
 - Demonstrate how to properly solder surface mount components.
 - Demonstrate how to properly desolder surface mount components.
- 5021-916-370 Coax Cable Connectors ---
- Review BNC connector history, advantages, and limitations.
 - Review RG-58 cable history, advantages, and limitations.
 - Understand the assembly of the UG-88C/U BNC connector.
 - Understand how a UG-88C/U BNC connector is attached to a coaxial cable.
 - Install a UG-88C/U BNC connector on the RG-58 A/U cable.
- 5021-916-380 Coax Cable Connectors Practical Exam ---
- Use safety equipment properly.
 - Demonstrate how to properly a BNC connector on a cable.
- 5021-916-920 Lead-Free Soldering Post-Test (Theory) ---

MOD 38 - CABLES AND CONNECTORS

- 5021-216-130 Cables, Connectors, and Tools ---
- Define wire.
 - Define cable.
 - Define harness.

OBJECTIVE LISTING - Master Course Listing

LESSON ID/TITLE

CARDS/KITS

MOD 38 - CABLES AND CONNECTORS (cont.)

- 5021-216-130 Cables, Connectors, and Tools (cont.)
 - Identify solid and stranded wires.
 - Understand the purpose of a connector.
 - Determine the difference between a plug and jack.
 - Understand connector terminology.
 - Understand the purpose of cutters.
 - Understand the purpose of crimpers.
 - Understand the purpose of a multimeter.
 - Understand the purpose of a cable tester.
- 5021-216-160 Single Wire Assemblies W7
 - Identify the steps used to prepare, build, and test single wire assemblies.
 - Assemble a FASTON type connector.
 - Assemble a butt splice.
 - Assemble a 0.156 KK Series connector.
 - Build and test single wire assemblies without guidance.
- 5021-216-190 Flat Satin Cable and RJ Connectors W6
 - Describe flat satin cable.
 - Understand flat satin cable applications.
 - Describe the RJ11 connector.
 - Describe the RJ45 connector.
 - Understand RJ11 and RJ45 applications.
 - Assemble an RJ14 cable.
 - Assemble an RJ45 cable.
 - Build and test flat satin cable assemblies without guidance.
- 5021-216-220 Cabling Standards and Categories of Performance ---
 - Understand the origin of cabling standards.
 - Know the agencies responsible for establishing standards.
 - Define Universal Service Ordering Codes.
 - Understand the types of serial data connections.
 - Describe characteristics of a multi-conductor cable.
 - Describe characteristics of a flat satin cable.
 - Describe characteristics of a twisted pair cable.
 - Describe characteristics of a coaxial cable.
 - Identify UTP, SFTP, and STP cable.
 - Understand Cat 1 through Cat 7 cable properties.
- 5021-216-250 Twisted Pair Cable W6
 - Identify and describe how a modular RJ45 plug is used.
 - Identify and describe how a keystone jack is used.
 - Identify the difference between an ATT 110 punchdown type jack and a CAT 5 TIA/EIA-568-A/B keystone type jack.
 - Identify and describe how CAT 5 UTP cable is used.
 - Understand T568A, T568B, and 10BASE-T wiring standards.
 - Understand straight-through and cross-over wiring methods.
 - Understand how to prepare CAT 5 UTP cable for assembly with an RJ45 modular plug and CAT 5 TIA/EIA-568-A/B keystone type jack.
 - Identify the tools used to attach a modular RJ45 plug and CAT 5 TIA/EIA-568-A/B keystone type jack to CAT 5 UTP.

OBJECTIVE LISTING - Master Course Listing

LESSON ID/TITLE

CARDS/KITS

MOD 38 - CABLES AND CONNECTORS (cont.)

- 5021-216-250 Twisted Pair Cable (cont.)
 - Understand how to attach a CAT 5 TIA/EIA-568-A/B keystone type jack to a UTP cable following T568A standards.
 - Prepare, build, and test a CAT 5 UTP cable with RJ45 plugs following T568A standards and the straight-through wiring method without guidance.
 - Prepare, build, and test CAT 5 UTP cable with a CAT 5 TIA/EIA-568-A/B keystone type jack following T568A standards and the straight-through wiring method.

- 5021-216-280 Multi-Wire Cable w7
 - Describe a multi-wire cable.
 - Identify a D-Sub connector.
 - Understand how a D-Sub connector is used.
 - Understand the purpose of DCE and DTE devices.
 - Identify DCE and DTE cable configurations.
 - Identify and examine the parts and types of D-Sub connectors.
 - Examine the RS-232 wiring standard.
 - Prepare, build, and test a multi-wire cable assembly using a D-Sub connector and RS-232 standards.
 - Prepare, build, and test multi-wire cable assemblies without guidance.

- 5021-216-310 Coaxial Cable w6
 - Describe the parts of a coaxial cable.
 - Recognize types of coaxial cable.
 - Identify coaxial cable applications.
 - Recognize an F-type coaxial connector.
 - Recognize a BNC coaxial connector.
 - Understand how to prepare a coaxial cable for assembly with an F-type connector and a BNC connector.
 - Identify the tools used to construct a coaxial cable assembly.
 - Understand how to test a coaxial cable assembly with a multimeter.
 - Prepare, build, and test a coaxial cable assembly with F-type connectors.
 - Prepare, build, and test a coaxial cable assembly with BNC type connectors.

- 5021-216-920 Cables and Connectors Post-Test (Theory) ---

NOTES

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