

**Hampden Engineering  
Equipment Alignment  
for the UEEII Package**



	<b>Core competency Standard Units All Core competency standard units to be achieved</b>	<b>Weighting Points</b>
UEENEEG063A	Arrange circuits, control and protection for general electrical installations	40
<b>H-GFP-2</b>	Experiment 1 - Identification of Components in a Single-Phase Ground Fault Protection System Experiment 2 - Single-Phase Ground Fault Protection System Operation (Personal Protection ONLY) Experiment 3 - Confirmation of Single-Phase GFCI Rating Experiment 4 - Identification of Components in a three-Phase Ground Fault Protection System Experiment 5 - Three-Phase Ground Fault Protection System Operation Experiment 6 - GFP System Response to Simulated Ground Fault Loads	

	<b>Core competency Standard Units All Core competency standard units to be achieved</b>	<b>Weighting Points</b>
UEENEEG108A	Trouble-shoot and repair faults in low voltage electrical apparatus and circuits	40
<b>H-RCSD-2A</b>	H-RCSD-2A  Description The Model H-RCSD-2A Residential Remote Control Switching Demonstrator is based on the Leviton 'Decora Home Controls' using the various DHC Home Automation Components designed to simulate a residential house wiring system including a complete comprehensive training program. Mounted on the panel are the following components: <ul style="list-style-type: none"> <li>• Load Center with Circuit Breakers, (1)</li> <li>• Four-button Transmitter, (2)</li> <li>• Four-button Dimming Transmitter, (1)</li> <li>• Two-button Transmitter, (1)</li> <li>• Split Receptacle Receiver, (8)</li> <li>• 3-way Master Module, (2)</li> <li>• Single-pole Dimming Receptacle Receiver, (3)</li> <li>• 3-way Slave Receiver, (5)</li> <li>• Four-address Programmer, (1)</li> <li>• 3-way Incandescent Dimmer Module, (3)</li> <li>• Fixture Relay Module, (1)</li> <li>• All lights On/Off Transmitter, (1)</li> <li>• Lamp Module with 7.5 watt lamp, (10)</li> <li>• GFI Duplex Receptacle, (2)</li> <li>• SPST Toggle Switch, (1)</li> </ul>	

<b>H-RCSD-3A</b>	H-RCSD-3A	
	<p>Description</p> <p>The Model H-RCSD-3A Residential/Commercial Remote Control Switching Demonstrator is based on the LonWorks® Control System using the various building automation components designed to simulate a residential/commercial wiring system, including a complete comprehensive training program. These devices freely exchange operating system information utilizing an internally accepted and LonMark® Interoperability Association controlled open protocol.</p>	
	<p>The following components are included:</p> <ul style="list-style-type: none"> <li>• Load Center with circuit breakers (1)</li> <li>• Universal Input Modules (2) Provides Digital and Analog</li> <li>• Wall Switch (1)</li> <li>• Digital Thermostat (1)</li> <li>• Scheduler Module (1)</li> <li>• Dimmer Control Units (2)</li> <li>• Occupancy Sensor (1)</li> <li>• Network Relay (1)</li> <li>• Dual Relay Switching Unit (1)</li> <li>• Smoke Detector (1)</li> <li>• Fire Alarm (1)</li> <li>• Security Control Module (1)</li> <li>• Keypad (1)</li> <li>• Colored Lamps with sockets (8)</li> <li>• Fluorescent Lamps with fixtures (2)</li> <li>• 12V.DC Power Supply (1)</li> <li>• 24V.DC Power Supply (1)</li> <li>• Laptop Computer with cables (1)</li> <li>• USB Interface Module (1)</li> <li>• LonMaker™ for Windows (1)</li> <li>• Instructor Insertable Faults (12)</li> <li>• Cord Set</li> </ul>	

<b>H-RCSD-4A</b>	<b>H-RCSD-4 Experiments</b>	
	<p><b>Network Experiments</b></p> <p>Experiment 1—Reading the Resi-Tester</p> <p>Experiment 2—Network Connection Familiarization</p> <p>Experiment 3—Troubleshooting Shorted Wires</p> <p>Experiment 4—Locating and Diagnosing a Problem</p> <p>Experiment 5—Creating a Computer Network</p> <p><b>Video Experiments</b></p> <p>Experiment 6—Testing Cable Runs</p> <p>Experiment 7—Troubleshooting by Viewing Display (1)</p> <p>Experiment 8—Troubleshooting by Viewing Display (2)</p> <p>Experiment 9—Troubleshooting by Viewing Display (3)</p> <p><b>Audio Experiments</b></p> <p>Experiment 10—Audio Troubleshooting (1)</p> <p>Experiment 11—Audio Troubleshooting (2)</p> <p>Experiment 12—Audio Troubleshooting (3)</p> <p>Experiment 13—Audio Troubleshooting (4)</p> <p><b>System Experiment</b></p> <p>Experiment 14—Power Faults</p>	

	<b>Group B – Qualification Elective Units Complete units to a minimum weighting of 80 You may select all your elective units from this Group Weighting Points</b>	<b>Weighting Points</b>
UEENEEA110A	Assemble, mount and connect control gear and switchgear	40
<b>H-SWGT-1</b>	<p><b>Purpose</b> The Hampden Model H-SWGT-1 Switchgear Trainer has been designed to NEMA standards for the purpose of introducing students to correct equipment selection and wiring practices used in switchgear and motor control centers. The modular design permits component re-arrangement to demonstrate design and wiring variations.</p> <p><b>Description</b> The Hampden Model H-SWGT-1 Switchgear Trainer is a custom made assembly of standard components, which are sized for use in a typical electrical teaching shop. This Trainer is rated for 208 volts, three-phase, four-wire, with a 30 amp main breaker. The main bus bar is rated at 600 amps and the ground bus bar is rated at 300 amps. Other voltage, current and frequency ratings are available up to 480 volts and 600 amps. The construction is modular consisting of two frames, each with a 300 amp bus system. Each frame has a total capacity of several modules which will total 72 inches high, and consisting of a mix of control devices and blank panels. There is a 9-inch wire way top and bottom, and a 4-inch vertical wire way. The first frame contains the main circuit breaker, current transformers, two 1/3 HP motor starters, and blank panels, which could allow for future expansion.</p> <p>The second frame contains the electrical system monitor, two 15 amp feeder circuit breaker modules, and blank panels, which could allow for future expansion. Each motor starter assembly consists of a circuit breaker, control transformer, fuses, motor starter, run pilot light, stop pilot light, and on-off selector switch. The motors to be controlled are not included with this trainer. Each feeder breaker assembly consists of the circuit breaker and control handle. The external circuitry to be feed from these circuits is not included with this trainer.</p> <p>The electrical system monitor is a microprocessor-based monitoring and protective device that provides electrical metering and system protection. This device is designed to replace individual meters, relays and recorders. The electrical system monitor consists of a operator control panel, a three-phase power module and a I/O module. The operator control panel consists of membrane pushbuttons for the selection of voltage, current watts, vars, VA, PF, frequency, watt-hours, var-hours, and VA-hours. Alarm data and alarm reset are also pushbutton selectable. Other selectable parameters include % total harmonic distortion, demand, minimum and maximum values, and reset capabilities.</p>	

UEENEEA112A	Fabricate and assemble bus bars	40
<b>MCI-1000-WSB</b>	<p>The Model H-MCI-1000-WSB-1 Wiring Service Board Trainer is ideal for learning wiring skills in Electrical Shops with limited space. The following manuals are furnished with the trainer: The National Electrical Code, Blue Print Reading, and Instructor's Guide.</p> <p>The Wiring Service Board Trainer consists of the mounted boxes and fixtures shown and assorted accessories.</p> <p>Mounted Parts</p> <ul style="list-style-type: none"> <li>• Boxes, Single-gang and two-gang</li> <li>• Distribution Box</li> <li>• Meter Socket</li> <li>• Service Entrance Weatherhead w/Clamp</li> <li>• Fluorescent Fixture</li> <li>• Range and Dryer Receptacles</li> <li>• Pipe Ground</li> <li>• Identification Plates</li> </ul> <p>Unmounted Parts</p> <ul style="list-style-type: none"> <li>• Box Covers: Duplex and Switch</li> <li>• Receptacles: Duplex and Lamp</li> <li>• Switches</li> <li>• Circuit Breakers</li> <li>• Plaster Rings</li> <li>• Wire: Telephone and Ground</li> <li>• Cable: Service, BX, Romex, Range, Dryer</li> <li>• Service Cable Strap</li> <li>• Wire Nuts</li> <li>• Connectors: Box, Cable, and Water Tight</li> <li>• Insulators and Electrical Tape</li> </ul> <p>H-MCI-1000-WSB-1 Wiring Service Board Trainer MODEL H-MCI-1000-WSB-1 Dimensions: 76"H x 51"W x 31"D Shipping Weight: 300 lbs</p> <p>Also included with the Model H-MCI-1000-WSB-1 is "Get Wired" computer software with topics such as: Home Electricity Basics, Adding New Wiring, High Tech Wiring, and The Data Highway.</p> <p>"Get Wired" requires the following:</p> <ul style="list-style-type: none"> <li>• 386 or higher 100% IBM® compatible PC</li> <li>• 2 MB RAM minimum</li> <li>• 3 MB hard disk space</li> <li>• Microsoft® Windows 3.1™ or later</li> <li>• VGA or better graphics (double-speed recommended)</li> <li>• CD-ROM drive (double-speed recommended)</li> </ul>	

UEENEEF102A	Install and maintain cabling for multiple access to telecommunication services	120
<b>H-ETST-1</b>	Component Discriptions Initial Trainer Setup Start-Up Procedure Troubleshooting Flow Chart Switched Faults Experiments Non-Switched Faults Experiments	
UEENEEG113A	Install and maintain emergency and safety systems.	60
<b>H-EM-2</b>	General Description Installation Trainer Set-Up Testing Procedures Emergency Lighting Zones Test DC Circuit Overload Test Low Level DC Test Main AC Failure Test Operation Shut-Down	
UEENEEG116A	Diagnose and rectify faults in lifts/escalator systems	80
<b>H-FP-223-14-FP</b>	HYDRAULIC PRESSURE OBSERVATION FLOW CONTROL AND MEASUREMENT PRESSURE COMPENSATION VALVE TEST MOTOR SPEED CONTROL WITH FLOW & PRESSURE MEASUREMENT OPERATION OF MOTOR WITH SOLENOID CONTROL VALVE BI-DIRECTIONAL MOTOR CONTROL HORIZONTAL CYLINDER OPERATION VERTICAL CYLINDER OPERATION WITH PRESSURE MEASUREMENT	
UEENEEG118A	Maintain operation of electrical mining equipment and systems	60
<b>H-MCTT-1</b>	Introduction Trainer Familiarization and Initial Checkout Circuit Element Description and Operation Troubleshooting Procedures	
<b>Fault Switch</b>	<b>Function</b>	
<b>1</b>	Center - Opens line between load terminal of the 24 volt circuit breaker and JACK 2. Because there is no power at Jack 2, the buzzer will sound.	
	Upward - Shorts 24 volt JACKS 1 and 2. Because this short will trip the 24 volt circuit breaker, the buzzer will sound.	
<b>2</b>	Center - Opens line between N.C. contact terminal of first pole on time delay relay and JACK 3.	

	Upward - Shorts N.C. contact (Between JACKS 3 and 4) of first pole on time delay relay.	
<b>3</b>	Center - Opens line between N.O. contact terminal of first pole on time delay relay.	
	Upward - Shorts N.On contact terminal of first pole on time delay relay and JACK 5.	
<b>4</b>	Center - Opens line between N.C. contact terminal of second pole on time delay relay and JACK 6.	
	Upward - Shorts N.C. contact (between JACKS 6 and 7) of second pole on time delay relay.	
<b>5</b>	Center - Opens line between N.O. contact terminal of second pole on time delay relay and JACK 8.	
	Upward - Shorts N.O. contact (Between JACKS 7 and 8) of second pole on time delay relay.	
<b>6</b>	Center - Opens line between one time delay relay input terminal and JACK 9.	
	Upward - Shorts input (Between JACKS 9 and 10) to time delay relay.	
<b>7</b>	Center - Opens line between one contact A terminal of 3-position selector switch and JACK 11.	
	Upward - Shorts contact A (Between JACKS 11 and 12) of 3-position selector switch.	
<b>8</b>	Center - Opens line between one contact B terminal of 3-position selector switch and JACK 13.	
	Upward - Shorts contact B (Between JACKS 13 and 14) of 3-position selector switch and JACK 13.	
<b>9</b>	Center - Opens line between one terminal of stop pushbutton #1 and JACK 19.	
	Upward - Shorts contact (Between JACKS 19 and 20) of stop pushbutton #1.	
<b>10</b>	Center - Opens line between one terminal of stop pushbutton #2 and JACK 21.	
	Upward - Shorts contact (Between JACKS 21 and 22) of stop pushbutton #2.	
<b>11</b>	Center - Opens line between one N.O. contact terminal of start pushbutton #1 and JACK 23.	
	Upward - Shorts N.O. contact (Between JACKS 23 and 26) of start pushbutton #1.	
<b>12</b>	Center - Opens line between one N.C. contact terminal of start pushbutton #1.	
	Upward - Shorts N.C. contact (Between JACKS 24 and 25) of start pushbutton #1.	
<b>13</b>	Center - Opens line between one N.O. contact terminal of start pushbutton #2 and JACK 27.	
	Upward - Shorts N.O. contact (Between JACKS 27 and 30) of start pushbutton #2.	
<b>14</b>	Center - Opens line between one N.C. contact terminal of start pushbutton #2 and JACK 28.	



	Upward - Shorts N.C. contact (Between JACKS 28 and 29) of start pushbutton #2.	
<b>15</b>	Center - Opens line between one N.O. contact terminal of limit switch #1 pushbutton and JACK 31.	
	Upward - Shorts N.O. contact (Between JACKS 31 and 34) of limit switch #1 pushbutton.	
<b>16</b>	Center - Opens line between one N.C. contact terminal of limit switch #1 pushbutton and JACK 32.	
	Upward - Shorts N.C. contact (Between JACKS 32 and 33) of limit switch #1 pushbutton.	
<b>17</b>	Center - Opens line between one N.O. contact terminal of limit switch #2 pushbutton and JACK 35.	
	Upward - Shorts N.O. contact (Between JACKS 35 and 38) of limit switch #2 pushbutton.	
<b>18</b>	Center - Opens line between one terminal of thermal overload relay pushbutton at motor starter M-2 and JACK 39.	
	Upward - Shorts contact (Between JACKS 39 and 40) of thermal overload relay pushbutton at motor starter M-2.	
<b>19</b>	Center - Opens line between one terminal of motor starter M-2 coil and JACK 41.	
	Upward - Shorts coil of motor starter M-2 (Between JACKS 41 and 42).	
<b>20</b>	Center - Opens line between N.O. contact terminal of first pole on motor starter relay at M-2 and JACK 43.	
	Upward - Shorts N.O. contact (Between JACKS 43 and 44) of first pole on motor starter relay at M-2.	
<b>21</b>	Center - Opens line between N.C. contact terminal of first pole on motor starter relay at M-2 and JACK 45.	
	Upward - Shorts N.C. contact (Between JACKS 44 and 45) of first pole on motor starter relay at M-2 and JACK 46.	
<b>22</b>	Center - Opens line between N.O. contact terminal of second pole on motor starter relay at M-2.	
	Upward - Shorts N.O. contact (Between JACKS 46 and 47) of second pole on motor starter relay at M-2 and JACK 48.	
<b>23</b>	Center - Opens line between N.C. contact terminal of second pole on motor starter relay at M-2 and JACK 48.	
	Upward - Shorts N.C. contact (Between JACKS 47 and 48) of second pole on motor starter relay at M-2.	
<b>24</b>	Center - Opens line between one terminal of thermal overload relay pushbutton at motor starter M-1 and JACK 49.	
	Upward - Shorts contact (Between JACKS 49 and 50) of thermal overload relay pushbutton at motor starter M-1.	
<b>25</b>	Center - Opens line between one terminal of motor starter M-1 coil and JACK 51.	
	Upward - Shorts coil of motor starter M-1 (Between JACKS 51 and 52).	
<b>26</b>	Center - Opens line between N.O. contact terminal of first pole on motor starter relay at M-1.	

	Upward - Shorts N.O. contact (Between JACKS 53 and 54) of first pole on motor starter relay at M-1.	
<b>27</b>	Center - Opens line between N.C. contact terminal of first pole on motor starter relay at M-1 and JACK 56.	
	Upward - Shorts N.C. contact (Between JACKS 54 and 55) of first pole on motor starter relay at M-1.	
<b>28</b>	Center - Opens line between N.O. contact terminal of second pole on motor starter relay at M-1 and JACK 56.	
	Upward - Shorts N.O. contact (Between JACKS 56 and 57) of second pole on motor starter relay at M-1.	
<b>29</b>	Center - Opens line between one terminal of control relay CR-2 coil and JACK 59.	
	Upward - Shorts coil of control relay CR-2 (Between JACKS 59 and 60).	
<b>30</b>	Center - Opens line between N.O. contact terminal of first pole on control relay CR-2 and JACK 61.	
	Upward - Shorts N.O. contact (Between JACKS 61 and 62) of first pole on control relay CR-2.	
<b>31</b>	Center - Opens line between N.O. contact terminal of second pole on control relay CR-2 and JACK 64.	
	Upward - Shorts N.O. contact (Between JACKS 64 and 65) of second pole on control relay CR-2.	
<b>32</b>	Center - Opens line between N.C. contact terminal of second pole on control relay CR-2 and JACK 66.	
	Upward - Shorts N.C. contact (Between JACKS 65 and 66) of second pole on control relay CR-2.	
<b>33</b>	Center - Opens line between N.C. contact terminal of third pole on control relay CR-2 and JACK 69.	
	Upward - Shorts N.C. contact (Between JACKS 68 and 69) of third pole on control relay CR-2.	
<b>34</b>	Center - Opens line between one terminal of control relay CR-1 coil and JACK 70.	
	Upward - Shorts coil of control relay CR-1 (Between JACKS 70 and 71).	
<b>35</b>	Center - Opens line between N.O. contact terminal of first pole on control relay CR-1 and JACK 72.	
	Upward - Shorts N.O. contact (Between JACKS 72 and 73) of first pole on control relay CR-1.	
<b>36</b>	Center - Opens line between N.C. contact terminal of first pole on control relay CR-1.	
	Upward - Shorts N.C. contact (Between JACKS 73 and 74) of first pole on control relay CR-1.	
<b>37</b>	Center - Opens line between N.O. contact terminal of second pole on control relay CR-1 and JACK 75.	
	Upward - Shorts N.O. contact (Between JACKS 75 and 76) of second pole on control relay CR-1/	
<b>38</b>	Center - Opens line between N.C. contact terminal of second pole on control relay CR-1 and JACK 77.	

	Upward - Shorts N.C. contact (Between JACKS 76 and 77) of second pole on control relay CR-1.	
<b>39</b>	Center - Opens line between N.O. contact terminal of third pole on control relay CR-1 and JACK 78.	
	Upward - Shorts N.O. contact (Between JACKS 78 and 79) of third pole on control relay CR-1.	
<b>40</b>	Center - Opens line between N.C. contact terminal of third pole on control relay CR-1 and JACK 80.	
	Upward - Shorts N.C. contact (Between JACKS 79 and 80) of third pole on control relay CR-1.	

	<b>Group A – Imported and Common Elective Units You may complete units to a maximum weighting of 60 Weighting Points</b>	<b>Weighting Points</b>	
UEENEEG129A	Overhaul and repair switchgear and controlgear	60	
<b>H-MWS-MW</b>	Wind electrical coils	40	
	Place and connect electrical coils	40	
	Rewind single phase machines	40	
	Rewind LV three phase induction machines rated for low voltage	60	
	<p>The Hampden MODEL H-MWS-MW Manual Winder for Fractional Horsepower Motors provides an inexpensive means for students to assemble the bare-bones components of a motor, such as provided in the Hampden Motor Assembly Kits, into a complete working motor.</p> <p>Description</p> <p>The Hampden MODEL H-MWS-MW Manual Winder is a hand operated coil winder complete with hand wheel, adjustable mandrel and a turn counter. The winder is used to construct different windings according to the motor specifications.</p> <p>Optional Components</p> <p>For a complete Winding Station the following items are available separately:</p> <p>MODEL H-MWS-TP Tool Package  MODEL H-MWS-CF Coil Form  MODEL H-2533 International/External Growler  MODEL H-2105 Armature and Stator Holder  MODEL H-1102 Balancing Way  MODEL H-2201 Coil Tamper  MODEL H-2211 Wedge Driver  MODEL H-2610 Coil Shaper  MODEL HMC-3 Mobile Cart</p>		

UEENEEG164A	Repair mechanical and electrical components of electrical machines	40
<b>NEI Trainers</b>	<p>General</p> <p>Hampden NEI Series Trainers were developed for the specific training of wind turbine technicians in Electrical Generation of motors and machines. The Hampden NEI Series Trainers will provide the understanding of the principles of motors and how varying loads effect these motors.</p> <p>Modules</p> <p>BPS-100-NEI AC/DC Power Supply with RL-100-NEI Resistance Load</p> <ul style="list-style-type: none"> <li>• Electrical Services Provided:</li> <li>• Fixed 125VDC</li> <li>• Variable 0–125 VDC *</li> <li>• Variable 0–150 VDC *</li> <li>• Variable 0–135 VAC</li> </ul> <p>120VAC Duplex receptacle instrumentation provided:</p> <ul style="list-style-type: none"> <li>• 0–150 volts AC/DC</li> <li>• 0–5 Amps DC</li> <li>• -5–0–5 Amps DC</li> <li>• 0–150 volts DC</li> </ul> <p>Resistance load provided:</p> <ul style="list-style-type: none"> <li>• 25 watts</li> <li>• 7 watts</li> </ul> <p>* Controlled by the same autotransformer</p> <p>Model SFR-100-NEI Series Field Rheostat Variable 0–3 ohms</p> <p>MGB-10-NEI-A Two Machine Motor Base with CSM-10P Capacitor Start Motor, DM-10P DC Generator and VIL-10P Variable Inertia Load The base incorporates all the motor winding connections and switches.</p> <p>MGB-10-NEI-B Two Machine Motor Base with DM-10P DC Motor and PB-10P Proxy Brake. The base incorporates all the motor winding connections.</p> <p>HPT-100A Digital Photo Tachometer The Model HPT-100A Hand Tachometer measures rotational speed between 50 rpm and 10,000 rpm. The photo sensor is mounted on a magnetic bracket that allows “hands free” speed measurement. Line-powered (115V or 230V AC) digital circuits display speed via five 0.5" high 7-segment LEDs. Accurate within 1 rpm. Also provides a 0 to 5 volt DC analog output for use as a feedback signal in closed loop motor speed control systems</p>	

	<p>Three Phase Modules</p> <p>MGB-10-NEI-C Two machine Motor Base with SM-100 -3 Synchronous Machine and PB-10P Prony Brake. The base incorporates all the motor winding connections.</p> <p>BPS-104 AC/DC Power Supply</p> <p>These electrical services are provided:</p> <ul style="list-style-type: none"> <li>• Fixed 208/120V AC, 3Ø, 15 amps</li> <li>• Variable 0–125V DC, 6 amps, isolated, 1% ripple*</li> <li>• Variable 0–140V AC, 6 amps, 1Ø, isolated*</li> <li>• Variable 0–240/140V AC, 9 amps 3Ø, 4-wire*</li> <li>• Variable 0–150V DC, 1 amp, isolated, 1% ripple</li> </ul> <p>The following meters are provided:</p> <ul style="list-style-type: none"> <li>• AC Voltmeter—0 to 150/300V</li> <li>• AC Ammeter—0 to 0.5/2/4/8A</li> <li>• DC Voltmeter—0 to 75/150V</li> <li>• DC Ammeter—0 to 0.5/1/2.5/5A</li> </ul>	
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UEENEEG182A	Supply effective and efficient lighting products for domestic and small commercial applications	40
<b>H-RCSD-2A</b>	<p>Description</p> <p>The Model H-RCSD-2A Residential Remote Control Switching Demonstrator is based on the Leviton 'Decora Home Controls' using the various DHC Home Automation Components designed to simulate a residential house wiring system including a complete comprehensive training program.</p> <p>Mounted on the panel are the following components:</p> <ul style="list-style-type: none"> <li>• Load Center with Circuit Breakers, (1)</li> <li>• Four-button Transmitter, (2)</li> <li>• Four-button Dimming Transmitter, (1)</li> <li>• Two-button Transmitter, (1)</li> <li>• Split Receptacle Receiver, (8)</li> <li>• 3-way Master Module, (2)</li> <li>• Single-pole Dimming Receptacle Receiver, (3)</li> <li>• 3-way Slave Receiver, (5)</li> <li>• Four-address Programmer, (1)</li> <li>• 3-way Incandescent Dimmer Module, (3)</li> <li>• Fixture Relay Module, (1)</li> <li>• All lights On/Off Transmitter, (1)</li> <li>• Lamp Module with 7.5 watt lamp, (10)</li> <li>• GFI Duplex Receptacle, (2)</li> <li>• SPST Toggle Switch, (1)</li> </ul>	

UEENEEG183A	Provide advice on the application of energy efficient lighting for ambient and aesthetic effect	20
<b>H-RCSD-2A</b>	<p>Description</p> <p>The Model H-RCSD-2A Residential Remote Control Switching Demonstrator is based on the Leviton 'Decora Home Controls' using the various DHC Home Automation Components designed to simulate a residential house wiring system including a complete comprehensive training program.</p> <p>Mounted on the panel are the following components:</p> <ul style="list-style-type: none"> <li>• Load Center with Circuit Breakers, (1)</li> <li>• Four-button Transmitter, (2)</li> <li>• Four-button Dimming Transmitter, (1)</li> <li>• Two-button Transmitter, (1)</li> <li>• Split Receptacle Receiver, (8)</li> <li>• 3-way Master Module, (2)</li> <li>• Single-pole Dimming Receptacle Receiver, (3)</li> <li>• 3-way Slave Receiver, (5)</li> <li>• Four-address Programmer, (1)</li> <li>• 3-way Incandescent Dimmer Module, (3)</li> <li>• Fixture Relay Module, (1)</li> <li>• All lights On/Off Transmitter, (1)</li> <li>• Lamp Module with 7.5 watt lamp, (10)</li> <li>• GFI Duplex Receptacle, (2)</li> <li>• SPST Toggle Switch, (1)</li> </ul>	

UEENEEG189A	Install and maintain emergency lighting systems	40
<b>H-EM-2C</b>	<p>General</p> <p>Description</p> <p>Installation</p> <p>Trainer Set-Up</p> <p>Testing Procedures</p> <ul style="list-style-type: none"> <li>Emergency Lighting Zones Test</li> <li>DC Circuit Overload Test</li> <li>Low Level DC Test</li> <li>Main AC Failure Test</li> </ul> <p>Operation</p> <p>Shut-Down</p>	

UEENEEH150A	Assemble and set up basic wired and wireless security systems	80
<b>H-BACT-3</b>	<p>Experiment 1 Checkout &amp; Testing</p> <p>Experiment 2 Normal Response Loop (Basic Protection Zone Type 1)</p> <p>Experiment 3 Normal Response Loop (Basic Protection Zone Type 1 and Type 4)</p> <p>Experiment 4 Entry/Exit Zone</p> <p>Experiment 5 Normal Response Loop, Open Circuit Devices (Basic Protection Zone Type 4)</p> <p>Experiment 6 Inside Alarm (Mini-Howler)</p> <p>Experiment 7 12VDC Bell</p> <p>Experiment 8 Layout No. 7</p> <p>Experiment 9 Layout No. 8</p>	
UEENEEI102A	Solve problems in pressure measurement circuits and systems	40
<b>H-ICS-FT</b>	<b>H-ICS-FT Experiments</b>	
	<p>1 Flow Trainer Process Familiarization</p> <p>2 Flow Trainer Instrumentation Familiarization</p> <p>3 Recorder Troubleshooting</p> <p>4 Variable Speed Pump Familiarization</p> <p>5 Variable Speed Pump Troubleshooting</p> <p>6 IDP10-I d/p Cell Flow Transmitter Familiarization</p> <p>7 Troubleshooting the d/p Cell Transmitter</p> <p>8 IDP10-I d/p Cell Transmitter Calibration</p> <p>9 Familiarization with Foxboro 762CNA Microcontroller</p> <p>10 762CNA Microcontroller Troubleshooting</p> <p>11 Proportional Only Control</p> <p>12 Proportional Plus Integral Control</p> <p>13 Proportional Plus Integral Plus Derivative Control</p> <p>14 Control of Differential Pressure</p> <p>15 Self-tune Option</p> <p>16 Setting The Alarms</p> <p>17 DAT Contact Inputs</p>	

H-ICS-LT	H-ICS-LT Experiments	
	1 Trainer Familiarization 2 Trainer Instrumentation Familiarization 3 Recorder Familiarization and Troubleshooting 4 Cell Level Transmitter Familiarization 5 Cell Level Transmitter Calibration 6 Troubleshooting The Level Transmitter 7 Bubble Type Measurement of Level 8 Control Valve Operation 9 Valve Characteristics 10 Current-to-Pneumatic (I/P) Converter 11 Troubleshooting The I/P Converter 12 Familiarization With Foxboro 762 Microcontroller 13 Proportional Only Control 14 Proportional Plus Integral Control 15 Proportional Plus Integral Plus Derivative Control 16 Self-Tune Option 17 Setting The Alarms 18 DAT Contact Inputs	

H-ICS-PT	H-ICS-PT Experiments	
	1 Trainer Process Familiarization 2 Trainer Instrumentation Familiarization 3 IGP10 Pressure Transmitter Familiarization 4 IGP10 Transmitter Calibration Using Local Display 5 Self-Tune Option 6 Control Valve Operation 7 Valve Characteristics 8 Troubleshooting The Pressure Transmitter 9 Current-to-Pneumatic (I/P) Converter 10 Troubleshooting the I/P Converter 11 Familiarization with the Foxboro 762CNA Microcontroller 12 Troubleshooting The Control Valve 13 Proportional Only Control 14 Proportional Plus Integral Control 15 Proportional Plus Integral Plus Derivative Control 16 Setting The Alarms 17 DAT Contact Inputs	



<b>H-ICS-TT</b>	<b>H-ICS-TT Experiments</b>	
	1 Temperature Trainer Process Familiarization 2 Temperature Trainer Instrumentation Familiarization 3 Air Velocity Transmitter 4 Familiarization with the Foxboro 762CNA Microcontroller 5 Configuring the Foxboro 762CNA Microcontroller 6 "T" Thermocouple Temperature Transmitter 7 Troubleshooting the "T" Thermocouple Temperature Transmitter 8 RTD Detector Temperature Transmitter 9 Troubleshooting the RTD Detector Temperature Transmitter 10 On/Off Temperature Control 11 Troubleshooting On/Off Temperature Control 12 Proportional Only Control 13 Proportional Plus Integral Control 14 Proportional Plus Integral Plus Derivative Control 15 Self-Tune Option 16 Setting The Alarms 17 DAT Contact Inputs	

<b>UEENEEJ102A</b>	Prepare and connect refrigerant tubing and fittings	30
<b>H-RST-5</b>	<b>H-RST-5 Experiments</b>	
	1 – Familiarization with the H-RST-5 2 – The Refrigeration Cycle 3 – Deflected Evaporator Air Flow 4 – Restricted Evaporator Air Flow 5 – Restricted Condenser Air Flow 6 – High Pressure Protection 7 – Low Pressure Protection	

<b>UEENEEJ103A</b>	Establish the basic operating conditions of vapour compression systems	60
<b>H-RST-2</b>	<b>H-RST-2 Experiments</b>	
	1—Hand Expansion Valve Controlled Refrigeration System 2—Thermostatic Expansion Valve Controlled Refrigeration System 3—Capillary Tube Controlled Refrigeration System 4—Capillary Tube Controlled Reverse Cycle (Heat Pump) 5—Low Side Float Controlled Flooded System	

<b>UEENEEJ104A</b>	Establish the basic operating conditions of air conditioning systems	20
<b>H-ACCS</b>	<b>H-ACCS Experiments</b>	
	Service Project 1 Service Project 2 Service Project 3 Service Project 4 Service Project 5	

UEENEEK125A	Solve basic problems in photovoltaic energy apparatus and systems	20
<b>H-PVIT-1</b>	Introduction General System Components for Solar Electric Systems What Part do you need? What System Voltage is best Solar Panels Battery-Based Systems Charge Controllers Inverters	

UEENEEK148A	Install, configure and commission photovoltaic grid connected power systems	20
<b>H-190-1</b>	Introduction Systems Operation Human Machine interface (HMI) Display Screens Power Meter Programming	
<b>H-190-2</b>	Introduction Systems Operation Human Machine Interface (HMI) Display Screens Power Meter Programming	
<b>H-190-3</b>		
<b>H-190-4</b>		
<b>H-190-5</b>		