Job Ready

- **AGRICULTURE MECHANICS**
  - **Test Code:** 2102
  - **CIP Code:** 01.0201
  - **Written Component:** The written test consists of 183 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (7%), Welding and Mechanics (15%), Power and Machinery (27%), Electrical Power and Process (11%), Agricultural Structures (15%), Agribusiness (11%), Environmental and Natural Resource Systems (9%), and Careers in Agriculture Mechanics (5%).
  - **Performance Component:** The performance test consists of 6 jobs and three hours are allowed for administration. The following jobs are included on the assessment: Horizontal Square Groove Butt Weld – SMAW (22%), Oxyacetylene Cutting (19%), Troubleshoot and Diagnose a Gas Engine (20%), Install a Switch to Control a Light (12%), Mark a Common Rafter (16%), and Set-up and Instrument Leveling of the Farm Level (11%).

- **COMMERCIAL FOODS**
  - **Test Code:** 4020
  - **CIP Code:** 12.0508
  - **Written Component:** The written test consists of 187 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (6%), Sanitation (11%), Culinary Career Overview (13%), Culinary Techniques (24%), Recipes and Culinary Math (7%), Purchasing and Management Skills (10%), Menu Design and Nutrition (11%), Customer and Table Service (12%), and Culinary Equipment (6%).
  - **Performance Component:** The performance test consists of 3 jobs and three hours and 30 minutes are allowed for administration. The following jobs are included on the assessment: Identification of Hand Tools, Herbs, Spices, and Flavorings (13%), Knife Skills (13%), and Cooking Skills (74%).
• CULINARY ARTS LEVEL 1-PREP COOK
  o Test Code: 4436
  o CIP Code: 12.0508
  o Written Component: The written test consists of 170 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Recipes (5%), Knife Skills (5%), Large and Small Equipment (7%), Sanitation and Safety (21%), Food Preparation (7%), Fruits, Vegetables, and Starches (7%), Bakery Products (4%), Stocks, Sauces, and Hot Soups (5%), Meats and Poultry (5%), Fish and Seafood (4%), Breakfast Food (8%), Dairy Products and Alternatives (5%), Culinary Nutrition (8%), Culinary Math (5%), and Employability Skills (4%).
  o Performance Component: The performance test consists of 7 jobs and two hours and five minutes are allowed for administration. The following jobs are included on the assessment: Comprehensive Skills (23%), Identification of Kitchen Equipment (7%), Identification of Herbs, Spices, Fruits, and Vegetables (7%), Knife Sharpening: Stone and Steel (7%), Mise En Place (13%), Prepare Chef Salad with Vinaigrette Dressing (23%), and Prepare Cheese Omelet (20%).

• CULINARY ARTS LEVEL 2-COOK
  o Test Code: 4536
  o CIP Code: 12.0508
  o Written Component: The written test consists of 212 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Recipes (5%), Knife Skills (4%), Large and Small Equipment (6%), Sanitation and Safety (17%), Food Preparation (8%), Fruits, Vegetables, and Starches (6%), Bakery Products (6%), Stocks, Sauces, and Hot Soups (6%), Meats and Poultry (6%), Fish and Seafood (4%), Breakfast Foods (6%), Dairy Products and Alternatives (6%), Culinary Nutrition (6%), Culinary Math (6%), Employability Skills (3%), and Dining Service (5%).
  o Performance Component: The performance test consists of 4 jobs and two hours and 30 minutes are allowed for administration. The following jobs are included on the assessment: Prepare Sautéed Chicken with fine Herb Sauce (27%), Prepare Rice Pilaf (23%), Prepare Steamed Green Vegetables and Carrots (25%), and Prepare Salad Course (25%).
• FLORICULTURE
  o **Test Code:** 4049
  o **CIP Code:** 01.0608
  o **Written Component:** The written test consists of 141 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Basic Floral Design (28%), Intermediate Floral Design (16%), Advanced Floral Design (10%), Small Floriculture or Floriculture-Greenhouse Business (25%), and Plant Science (21%).
  o **Performance Component:** The performance test consists of 4 jobs and two hours and 30 minutes are allowed for administration. The following jobs are included on the assessment: Isosceles Triangle Arrangement (23%), Design a Multi-Flower Corsage (31%), Cash Register/Sales (13%), and Plant Classification and Identification (33%).

• FLORICULTURE-GREENHOUSE
  o **Test Code:** 4949
  o **CIP Code:** 01.0608
  o **Written Component:** The written test consists of 196 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Basic Floral Design (20%), Intermediate Floral Design (12%), Advanced Floral Design (7%), Small Floriculture or Floriculture-Greenhouse Business (18%), Plant Science (15%), Soil Sciences (9%), and Greenhouse Operations (19%).
  o **Performance Component:** The performance test consists of 5 jobs and two hours and 55 minutes are allowed for administration. The following jobs are included on the assessment: Isosceles Triangle Arrangement (19%), Design a Multi-Flower Corsage (25%), Cash Register/Sales (10%), Plant Classification and Identification (26%), and Start/Propagate Herbaceous Plant from a Stem Tip Cutting (20%).

• FOREST PRODUCT AND PROCESSING
  o **Test Code:** 3037
  o **CIP Code:** 03.0511
  o **Written Component:** The written test consists of 189 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (8%), Logging, Harvesting (10%), Tree Identification (3%), Sawmill Operation (12%), Diesels and Hydraulics (7%), Chain Saws (8%), Silviculture and Forest Management (9%), Forest Ecology and Protection (14%), Surveying (8%), Timber Cruising (9%), Wildlife (6%), and Business Management and Employability Skills (6%).
- **Performance Component**: The performance test consists of 7 jobs and two hours and 50 minutes are allowed for administration. The following jobs are included on the assessment: Manually Fell a Tree (15%), Identify Leaf, Bud, and Bark Specimens (11%), Grade Hardwood or Pine Lumber (11%), Scale Hardwood or Pine Logs (11%), Sharpen and Adjust Chain Saw (12%), Calculate Acreage (19%), and Plot and Analyze 1/5 Acre (21%).

- **HORTICULTURE-LANDSCAPING**
  - **Test Code**: 4149
  - **CIP Code**: 01.0601
  - **Written Component**: The written test consists of 171 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: General Knowledge (28%), Pest and Disease Management (12%), Fundamentals of Irrigation (6%), Basic Nursery/Greenhouse Skills (9%), Horticulture Business and Retailing (11%), Landscape Design (8%), Landscape Installation and Construction (10%), Landscape and Turf Maintenance (9%), and Arboriculture (7%).
  - **Performance Component**: The performance test consists of 5 jobs and two hours are allowed for administration. The following jobs are included on the assessment: Identify and Control Pests (22%), Identify Equipment Features (18%), Plant a Container-Grown Shrub (24%), Prune a Tree and an Evergreen Shrub (16%), and Stake out a Site-Plan—Entrance Walkway (20%).

- **PRODUCTION AGRICULTURE**
  - **Test Code**: 3063
  - **CIP Code**: 01.0301
  - **Written Component**: The written test consists of 187 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Animal Science (29%), Conservation and Sustainable Natural Resources (6%), Plant Science (21%), Soil Management (6%), Agricultural Technology (14%), and Agri-Business (24%)
  - **Performance Component**: The performance test consists of 6 jobs and three hours and 5 minutes are allowed for administration. The following jobs are included on the assessment: Vehicle Maintenance (20%), Calculate Net Worth (28%), Determine Genotypes and Phenotypes (Punnett Square) (14%), Crop Leaf Identification (6%), Administer an Injection (18%), and Compute Acreage (14%).
• RETAIL COMMERCIAL BAKING
  o **Test Code:** 4010
  o **CIP Code:** 12.0501
  o **Written Component:** The written test consists of 197 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety and Sanitation (14%), Business and Math Skills (12%), Identification, Classification, and Properties of Ingredients (8%), Baking Preparation (Mise en Place) (12%), Basic Baking (28%), Product Merchandising (9%), Purchasing, Receiving, Inventory, and Storage (6%), Nutrition (4%), and Human Relations and Career Skills (7%).
  o **Performance Component:** The performance test consists of 4 jobs and four hours and 45 minutes are allowed for administration. The following jobs are included on the assessment: Soft Dinner Roll Dough (18%), Cake Decorating (28%), Fruit Pie (26%), and Pâte à Choux (28%).

• SMALL ANIMAL SCIENCE AND TECHNOLOGY
  o **Test Code:** 3103
  o **CIP Code:** 51.0808
  o **Written Component:** The written test consists of 196 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety and Sanitation (6%), Animal Care Management (18%), Grooming (5%), Genetics and Reproduction (15%), Management of Small Animal-Related Businesses (9%), Animal First Aid (23%), Health and Disease Control (14%), and Nutrition (10%).
  o **Performance Component:** The performance test consists of 6 jobs and two hours and 25 minutes are allowed for administration. The following jobs are included on the assessment: Identify Tools and Equipment (12%), Proper Restraint and Sex Determination of Small Animals (31%), Identify Parasites (14%), Fill Syringes (16%), Canine: Safety, Handling, Restraint, and External Anatomy Identification (20%), and Determine Proper Diet for Animals (7%).
• WIND TURBINE MAINTENANCE TECHNICIAN
  o **Test Code:** 2150
  o **CIP Code:** 47.9999
  o **Written Component:** The written test consists of 164 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (23%), Equipment Operation (4%), Electrical Mechanical Systems (28%), Hand Tools (11%), Maintain Equipment (18%), Computational Technical and Writing Skills (13%), and Introduction to Careers in Wind Technology (3%).
  o **Performance Component:** The performance test consists of 5 jobs and two hours are allowed for administration. The following jobs are included on the assessment: Identification of Safety Equipment (21%), Demonstration of Safety Equipment and Climbing Technique (33%), Connect a Start-Stop Switch to a Contactor and Start a Motor (21%), Identification of Hand Tools and Fasteners (8%), and Torque Testing (17%).

Pathway
• AGRICULTURAL BIOTECHNOLOGY
  o **Test Code:** 1229
  o **CIP Code:** 26.1201
  o **Written Component:** The written test consists of 112 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Agriculture Technical Skills (14%), Agricultural Biotechnology Technical Skills (18%), Academic Foundations (13%), Systems (5%), Ethics and Legal Responsibilities (6%), Communications (13%), Information Technology Applications (5%), Problem Solving, Critical Thinking, and Decision Making (5%), Leadership and Teamwork (6%), Safety, Health, and Environment (9%), and Employability and Career Development (6%).
• ANIMAL SYSTEMS
  o **Test Code:** 1227
  o **CIP Code:** 01.0999
  o **Written Component:** The written test consists of 112 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Agriculture Technical Skills (14%), Animal Systems Technical Skills (18%), Academic Foundations (13%), Systems (5%), Ethics and Legal Responsibilities (6%), Communications (13%), Information Technology Applications (5%), Problem Solving, Critical Thinking, and Decision Making (5%), Leadership and Teamwork (6%), Safety, Health, and Environmental (9%), and Employability and Career Development (6%).

• NATURAL RESOURCE SYSTEMS
  o **Test Code:** 1228
  o **CIP Code:** 03.9999
  o **Written Component:** The written test consists of 113 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Agriculture Technical Skills (14%), Natural Resources Technical Skills (18%), Academic Foundations (13%), Systems (5%), Ethics and Legal Responsibilities (6%), Communications (13%), Information Technology Applications (5%), Problem Solving, Critical Thinking, and Decision Making (5%), Leadership and Teamwork (6%), Safety, Health, and Environment (9%), and Employability and Career Development (6%).
Job Ready

- ARCHITECTURAL DRAFTING
  - **Test Code:** 4004
  - **CIP Code:** 15.1303
  - **Written Component:** The written test consists of 189 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Preparing to Draw (6%), Geometric Construction (7%), Applied Mathematics (14%), Drawing Techniques – Supplementary Views (6%), Planning (10%), Architectural Drawing Types (20%), Site Plans (8%), Structural Drawings (6%), Mechanical and Electrical Systems (5%), Supplemental Drafting Activities (8%), Specifications (3%), and Sustainable Architecture and Design (7%).
  - **Performance Component:** The performance test consists of three jobs and two hours and 45 minutes are allowed for administration. The following jobs are included on the assessment: Architectural Symbols and Abbreviations (17%), Elevation (34%), and Kitchen and Bathroom Floor Plan (49%).

- BUILDING CONSTRUCTION OCCUPATIONS
  - **Test Code:** 4011
  - **CIP Code:** 46.0415
  - **Written Component:** The written test consists of 151 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety and General Knowledge (17%), Carpentry (30%), Masonry (14%), Electrical (7%), Plumbing (6%), Energy Efficiency (8%), and Blueprints, Building Layout, and Site Layout (18%).
  - **Performance Component:** The performance test consists of five jobs and two hours and 25 minutes are allowed for administration. The following jobs are included on the assessment: Solder Pipe (21%), Lay Out Rafter (19%), Calculate and Cut a Stud (10%), Rough and Finish Electrical (23%), and 8-Inch Block Wall Construction (27%).

Architecture and Construction Cluster – Assessment Overview
• BUILDING TRADES MAINTENANCE
  o **Test Code:** 4012
  o **CIP Code:** 46.0401
  o **Written Component:** The written test consists of 171 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (12%), Tools and Materials (12%), Carpentry (13%), Painting and Wall Covering (5%), Masonry (8%), Electrical (12%), Plumbing (12%), General Maintenance (13%), Grounds and Equipment Maintenance (7%), and HVAC (Heating, Ventilation, and Air Conditioning) (6%).
  o **Performance Component:** The performance test consists of five jobs and two hours and 45 minutes are allowed for administration. The following jobs are included on the assessment: Carpentry: Construct Frame (31%), Plumbing: Sweat Piping (21%), Electricity: Rough Wiring (17%), Dry Wall (17%), and Electricity: Finish Wiring (14%).

• CABINETMAKING
  o **Test Code:** 3014
  o **CIP Code:** 48.0703
  o **Written Component:** The written test consists of 156 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (10%), Design and Layout (13%), Estimating and Measuring (7%), Hand and Portable Power Tools (15%), Stationary Saws (7%), Boring Machines (4%), Milling (9%), Assembly (22%), Finishing (7%), and Installation (6%).
  o **Performance Component:** The performance test consists of three jobs and three hours and 20 minutes are allowed for administration. The following jobs are included on the assessment: Develop a Cut List (24%), Lay Out, Cut, and Assemble Face Frame (34%), and Lay Out and Assemble One Drawer (42%).
• CAD
  o **Test Code:** 4973
  o **CIP Code:** 15.1302
  o **Written Component:** The written test consists of 114 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Identify Hardware and Operating Systems (9%), Use Hardware and Operating Systems (9%), Interpret and Read Blueprints (14%), Create and Manipulate Mechanical Drawing Information (46%), Draw and Design Assemblies (6%), and Use 3-D Modeling (16%).
  o **Performance Component:** The performance test consists of three jobs and two hours are allowed for administration. The following jobs are included on the assessment: Create a 2-D Orthographic Drawing with a Section View (36%), Create a 3-D Solid Model (26%), and Create Two Parts to be Mated and Mate the Parts (38%).

• CAD-CAM
  o **Test Code:** 3073
  o **CIP Code:** 15.1302
  o **Written Component:** The written test consists of 190 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Identifying Hardware and Operating Systems (5%), Using Hardware and Operating Systems (5%), Interpreting and Reading Blueprints (11%), Creating and Manipulating Mechanical Drawing Information (21%), Drawing and Designing Assemblies (4%), Using 3-D Modeling (7%), Machining Fundamentals (16%), CNC Operation (18%), CNC Programming Preparation (6%), and CNC Programming Using a CAM System (7%).
  o **Performance Component:** The performance test consists of three CAD jobs and one CAM job and three hours are allowed for administration. The following jobs are included on the assessment: Create a 2-D Orthographic Drawing on CAD with a Section View (23%), Create a 3-D Solid Model (17%), Create Two Parts to be Mated and Mate the Parts (25%), and Manufacture a Part from an Existing Drawing (35%).
• **CARPENTRY**
  o *Test Code:* 4215  
  o *CIP Code:* 46.0201  
  o *Written Component:* The written test consists of 170 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (15%), Tools and Accessories (9%), Blueprint Reading and Estimation Skills (18%), Foundations, Forms, and Concrete (7%), Rough Framing (16%), Exterior Finish (13%), Interior Finish (13%), and Carpentry Related Mathematics (9%).  
  o *Performance Component:* The performance test consists of seven jobs and two hours and 45 minutes are allowed for administration. The following jobs are included on the assessment: Tool and Material Identification (9%), Square Layout (13%), Establish a Starting Course for Vinyl Siding Using a Builder’s Level (12%), Blueprint Reading and Exterior Sole Plate Layout (17%), Rafter Lay Out (19%), Stairway Stringer (11%), and Interior Frame (19%).

• **CONSTRUCTION MASONRY - BLOCK**
  o *Test Code:* 4025  
  o *CIP Code:* 46.0101  
  o *Written Component:* The written test consists of 153 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (12%), Craft Knowledge (9%), Hand and Power Tools (6%), Materials (8%), Blueprints and Specifications (6%), Project Layout (12%), Block (22%), Flashing, Weeps, and Insulation (6%), Math and Measurements (10%), Masonry Structure Maintenance (5%), and Professionalism (4%).  
  o *Performance Component:* The performance test consists of three jobs and two hours and 35 minutes are allowed for administration. The following jobs are included on the assessment: Job Layout (20%), Construct a Block Wall/Pier in Stretcher/Running Bond (63%), and Project Jointing (17%).
• CONSTRUCTION MASONRY - BRICK
  o Test Code: 4125
  o CIP Code: 46.0101
  o Written Component: The written test consists of 172 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (10%), Craft Knowledge (8%), Hand and Power Tools (5%), Materials (6%), Blueprints and Specifications (5%), Project Layout (12%), Brick (22%), Fireplaces and Chimneys (9%), Flashing, Weeps, and Insulation (6%), Math and Measurements (9%), Masonry Structure Maintenance (4%), and Professionalism (4%).
  o Performance Component: The performance test consists of three jobs and three hours and 10 minutes are allowed for administration. The following jobs are included on the assessment: Job Layout (18%), Construct a Brick Wall/Pier in Stretcher/Running Bond (67%), and Project Jointing (15%).

• ELECTRICAL CONSTRUCTION TECHNOLOGY
  o Test Code: 4130
  o CIP Code: 46.0399
  o Written Component: The written test consists of 164 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Introduction to the Electrical Construction Technology Career (4%), OSHA Regulations and Electrical Safety Practices (7%), Meters, Measurements, Testing (6%), Identification and Selection of Tools, Materials, and Components (13%), National Electrical Code (NEC) (12%), Blueprints, Specifications, and Estimations (6%), AC Theory, Magnetic Theory, and DC Theory (13%), Circuit Theorems and Conversions (8%), Wiring, Circuits, and Installation (10%), Green and Renewable Technology (6%), Transformers (4%), and Motors (11%).
  o Performance Component: The performance test consists of three jobs and three hours and 20 minutes are allowed for administration. The following jobs are included on the assessment: Bend Conduit (34%), Switching and GFCI Receptacle in a Residential Setting (42%), and Install Two Smoke Alarms in a Commercial Setting (24%).
• ELECTRICAL OCCUPATIONS
  o **Test Code:** 3029
  o **CIP Code:** 46.0399
  o **Written Component:** The written test consists of 171 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (10%), Wiring Methods (17%), Tools (5%), Motors and Motor Controls (10%), National Electrical Code (22%), Blueprint Reading (6%), Applied Mathematics (10%), Alternating Current (AC) (10%), and Direct Current (DC) (10%).
  o **Performance Component:** The performance test consists of four jobs and three hours and 25 minutes are allowed for administration. The following jobs are included on the assessment: Install Cable from Meter Base to Service Entrance Panel (36%), Install GFCI Circuit Breaker in Existing 100 AMP Panel (10%), Wire Lighting Control (32%), and Install Door Chimes (22%).

• FUNDAMENTALS OF CONSTRUCTION
  o **Test Code:** 0177
  o **CIP Code:** 46.9999
  o **Written Component:** The written test consists of 169 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Foundations of Safety (6%), Jobsite Safety and Safety Regulations (17%), Personal Protective Equipment (8%), Hazard Analysis (16%), Hand Tools (25%) and Power Tools (28%).
  o **Performance Component:** The performance test consists of four jobs and one hour and 35 minutes is allowed for administration. The following jobs are included on the assessment: Circular Saw (19%), Drill Holes (37%), Pneumatic Fasteners (19%), and Jobsite Hazards (25%).
• HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)
  o **Test Code:** 3045
  o **CIP Code:** 47.0201
  o **Written Component:** The written test consists of 200 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Electricity (12%), Soldering, Brazing, and Welding (7%), Pipefitting (3%), Controls (5%), Installation and Service (4%), Related Math and Science (5%), Refrigeration (6%), Refrigerant Recovery (4%), General Safety (6%), Computer Literacy (4%), Employability Skills (3%), Air Conditioning (7%), Heat Pumps and Electric Heat (8%), Hydronic Systems (4%), Forced Air, Gas, and Oil Units (12%), Humidity and Air Movement (3%), and Sheet Metal and Ductwork (7%).
  o **Performance Component:** The performance test consists of two jobs and three hours and 30 minutes are allowed for administration. The following jobs are included on the assessment: Gas Furnace Start-up and Check (40%), and Air Conditioning (60%).

• HEATING, VENTILATION, AIR CONDITIONING, AND REFRIGERATION (HVAC/R)
  o **Test Code:** 3064
  o **CIP Code:** 47.0201
  o **Written Component:** The written test consists of 118 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Electricity (20%), Soldering, Brazing, and Welding (12%), Pipefitting (5%), Controls (9%), Installation and Service (6%), Related Math and Science (8%), Refrigeration (10%), Refrigerant Recovery (7%), General Safety (11%), Computer Literacy (6%), and Employability Skills (6%).
  o **Performance Component:** The performance test consists of two jobs and three hours are allowed for administration. The following jobs are included on the assessment: Gas Furnace Start-up and Check (50%), and Refrigerant Recovery and System Recharge (50%).

Architecture and Construction Cluster – Assessment Overview
• HVACR – INSTALLATION AND START-UP
  o **Test Code:** 2111
  o **CIP Code:** 47.0201
  o **Written Component:** The written test consists of 143 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: OSHA Guidelines and General Safety (11%), Related Math, Building Science, Blueprints, and Tools (13%), Electricity (10%), Pipe Fitting, Soldering, and Brazing (9%), Airflow and Ductwork (11%), Warm Air Systems (14%), Hydronic Systems (5%), Air Conditioning – Residential (16%), Heat Pumps, Electric Heat (7%), and Introduction to Refrigeration (4%).
  o **Performance Component:** The performance test consists of three jobs and two hours and 25 minutes are allowed for administration. The following jobs are included on the assessment: Brazing and Soldering (37%), Refrigerant Recovery (22%), and Gas Furnace Start-Up and Check-Out (41%).

• HVACR – SERVICE AND REPAIR
  o **Test Code:** 2110
  o **CIP Code:** 47.0201
  o **Written Component:** The written test consists of 138 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: OSHA Guidelines and General Safety (10%), Related Math, Building Science, Blueprints, and Tools (17%), Electricity (13%), Pipe Fitting, Soldering, and Brazing (9%), Airflow and Ductwork (5%), Warm Air Systems (16%), Hydronic Systems (4%), Air Conditioning – Residential (14%), Heat Pumps, Electric Heat (4%), and Refrigeration (8%).
  o **Performance Component:** The performance test consists of three jobs and three hours are allowed for administration. The following jobs are included on the assessment: Troubleshoot and Repair Heat Pump (34%), Pump Down Refrigeration System and Replace Liquid Line Filter Drier (49%), and Locate an AC/R System Leak (17%).
• INDUSTRIAL ELECTRICITY
  o **Test Code:** 2050
  o **CIP Code:** 47.0105
  o **Written Component:** The written test consists of 191 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: DC Theory (7%), AC Theory (7%), Test Equipment (6%), Electrical Drawings (11%), General Wiring (8%), National Electrical Code (6%), Electrical Controls (9%), Generators (3%), Motors (17%), Transformers (8%), Variable Frequency Drives (VFDs) (4%), Programmable Logic Controllers (PLCs) (6%), and Safety (8%).
  o **Performance Component:** The performance test consists of four jobs and three hours and 20 minutes are allowed for administration. The following jobs are included on the assessment: Tools and Materials Identification (14%), Conduit Bending (27%), Wiring a Motor Starter (34%), and Replacing Ballast in a Fluorescent Fixture (25%).

• INDUSTRIAL ELECTRONICS
  o **Test Code:** 2051
  o **CIP Code:** 47.0105
  o **Written Component:** The written test consists of 197 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: DC Electricity (13%), AC Circuits (13%), Test Equipment (10%), Semiconductors (13%), Electronics Circuits (13%), Digital/Micro Circuits (13%), Transducers (5%), Ladder Logic and Motors (5%), Safety (10%), and Programmable Logic Controllers (5%).
  o **Performance Component:** The performance test consists of seven jobs and three hours are allowed for administration. The following jobs are included on the assessment: Semiconductor Testing (15%), Solder/De-solder Components (24%), Meter Usage (16%), Circuit Construction (13%), Oscilloscope Usage (13%), Troubleshooting (11%), and Gate Substitution (8%).

• INDUSTRIAL MAINTENANCE MECHANICS
  o **Test Code:** 2074
  o **CIP Code:** 47.0303
  o **Written Component:** The written test consists of 169 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Machinery and Equipment (16%), Tools and Safety (14%), Electronics and Electrical Principles (13%), Hydraulics and Pneumatics (14%), Motors and Motor Controls (14%), Mechanism Drives (10%), Industrial Robotics Systems (8%), and Blueprints and Schematics (11%).
• **Performance Component:** The performance test consists of four jobs and three hours are allowed for administration. The following jobs are included on the assessment: Connect and Operate a Circuit (20%), Assemble a Multiple Shaft Gear Drive System (31%), Read and Interpret and Industrial Blueprint (29%), and Troubleshoot an Electrical Control System (20%).

• **INTERIOR DECORATING AND DESIGN (WRITTEN ONLY)***
  - **Test Code:** 1032
  - **CIP Code:** 50.0408
  - **Written Component:** The written test consists of 172 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety and Environmental Issues (7%), Elements and Principles of Design (14%), Textiles, Fibers, and Fabrics (10%), Interior Materials and Products (7%), Furnishings and Accessories (8%), Art Periods and Design Styles (6%), Visual Presentation (6%), Technical Knowledge (6%), Retail Operation Procedures (14%), Marketing Skills (13%), and Housing Issues (9%).

• **MECHANICAL DRAFTING AND DESIGN***
  - **Test Code:** 4038
  - **CIP Code:** 15.1306
  - **Written Component:** The written test consists of 150 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Preparing to Draw: Basic Drawing and Dimensioning Skills (25%), Applied Mathematics (7%), Identify Measurements (4%), Geometric Construction (13%), Engineering Drawings (6%), Multiview Drawings (10%), Section Views (9%), Auxiliary Views (4%), and Dimensioning Skills (22%).
  - **Performance Component:** The performance test consists of four jobs and three hours are allowed for administration. The following jobs are included on the assessment: Auxiliary Views (21%), Drawing Completion and Dimensioning (36%), Pattern Development (19%), and Section Drawing (24%).
• **PLUMBING**
  o **Test Code:** 4061  
  o **CIP Code:** 46.0503  
  o **Written Component:** The written test consists of 173 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (8%), Plumbing Math (10%), General Plumbing Practices (24%), Joining Pipes and Fittings (9%), Drainage (8%), Vent Installation (4%), Water Supply and Distribution (7%), Hot Water Systems (6%), Traps (8%), Installing Fixtures (7%), and Plumbing Service and Repair (9%).
  o **Performance Component:** The performance test consists of two jobs and three hours are allowed for administration. The following jobs are included on the assessment: Install and Prepare to Leak Test a DWV System (50%) and Install and Prepare to Leak Test a Water Supply System (50%).

• **TECHNICAL DRAFTING**
  o **Test Code:** 4054  
  o **CIP Code:** 15.1301  
  o **Written Component:** The written test consists of 201 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Basic Drawing Skills (12%), Geometric Construction (13%), Applied Mathematics (17%), Dimensioning Skills (18%), Multiview Drawing (17%), Threads and Fasteners (7%), Manufacturing Processes (10%), and Design Principles (6%).
  o **Performance Component:** The performance test consists of four jobs and three hours and 15 minutes are allowed for administration. The following jobs are included on the assessment: Visualization (30%), Orthographic Drawing (50%), Development (10%), and Assembly—Bill of Material (10%).
- **WIND TURBINE MAINTENANCE TECHNICIAN**
  - **Test Code:** 2150
  - **CIP Code:** 47.9999
  - **Written Component:** The written test consists of 164 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (23%), Equipment Operation (4%), Electrical and Mechanical Systems (28%), Hand Tools (11%), Maintain Equipment (18%), Computational Technical and Writing Skills (13%), and Introduction to Careers in Wind Technology (3%).
  - **Performance Component:** The performance test consists of five jobs and two hours are allowed for administration. The following jobs are included on the assessment: Identification of Safety Equipment (21%), Demonstration of Safety Equipment and Climbing Technique (33%), Connect a Start-Stop Switch to a Contactor and Start a Motor (21%), Identification of Hand Tools and Fasteners (8%), and Torque Testing (17%).

**Pathway**

- **CONSTRUCTION**
  - **Test Code:** 1128
  - **CIP Code:** 46.9999
  - **Written Component:** The written test consists of 97 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Architecture and Construction Technical Skills (15%), Construction Technical Skills (15%), Academic Foundations (15%), Systems (6%), Ethics and Legal Responsibilities (6%), Communication (8%), Information Technology Applications (5%), Problem Solving, Critical Thinking, and Decision Making (7%), Leadership and Teamwork (6%), Safety, Health, and Environment (8%), and Employability and Career Development (9%).
- **DESIGN AND PRE-CONSTRUCTION**
  - **Test Code:** 1127
  - **CIP Code:** 15.1399
  - **Written Component:** The written test consists of 105 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Architecture and Construction Technical Skills (13%), Design and Pre-Construction (20%), Academic Foundations (13%), Systems (6%), Ethics and Legal Responsibilities (6%), Communication (8%), Information Technology Applications (5%), Problem Solving, Critical Thinking, and Decision Making (7%), Leadership and Teamwork (6%), Safety, Health, and Environment (8%), and Employability and Career Development (8%).

- **MAINTENANCE OPERATIONS**
  - **Test Code:** 1129
  - **CIP Code:** 46.9999
  - **Written Component:** The written test consists of 101 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Architecture and Construction Technical Skills (14%), Maintenance Operations Technical Skills (18%), Academic Foundations (14%), Systems (6%), Ethics and Legal Responsibilities (6%), Communication (8%), Information Technology Applications (4%), Problem Solving, Critical Thinking, and Decision Making (7%), Leadership and Teamwork (6%), Safety, Health, and Environment (8%), and Employability and Career Development (9%).
Job Ready

- ADVERTISING AND DESIGN
  - Test Code: 4119
  - CIP Code: 09.0903
  - Written Component: The written test consists of 200 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Computer Literacy (12%), Typography (13%), Design Literacy and Application (19%), Color Theory and Application (11%), Digital Illustration and Drawing (9%), Photography (4%), Production and Printing (12%), Communication and Career Skills (9%), Work Environment (3%), Multimedia (2%), and Digital Image Manipulation (6%).
  - Performance Component: The performance test consists of two jobs and two hours and 45 minutes are allowed for administration. The following jobs are included on the assessment: Design: Computer Comprehensive - Prepare and Print Files (64%), and Layout: Redesign (36%).

- AUDIO-VISUAL COMMUNICATIONS TECHNOLOGY
  - Test Code: 3005
  - CIP Code: 10.0201
  - Written Component: The written test consists of 177 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Photography (10%), Computer Based Technology (12%), Audio and Video Production (28%), Creative Development (8%), Visual Design (8%), Project Management (13%), Equipment Operation, Maintenance, and Troubleshooting (11%), Network Technology (8%), and Related Information (2%).
  - Performance Component: The performance test consists of three jobs and three hours are allowed for administration. The following jobs are included on the assessment: Audio-Visual Editing (34%), Videography (33%), and Engineering and Troubleshooting (33%).

Arts, A/V Technology, and Communications Cluster – Assessment Overview
- **GRAPHIC PRODUCTION TECHNOLOGY**
  - **Test Code:** 4242
  - **CIP Code:** 10.0305
  - **Written Component:** The written test consists of 198 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Introduction to Printing (15%), Electronic Publishing and Printing, Pre-Press, and Output (40%), Offset Press Operations (14%), Digital Operations (11%), Binding, Finishing and Distribution Processes (20%).
  - **Performance Component:** The performance test consists of two jobs and two hours and 15 minutes are allowed for administration. The following jobs are included on the assessment: Design and Pre-Press (62%), and Paper Drill, Shrink Wrap, Package and Prepare for Pick-up (38%).

- **TECHNICAL THEATER**
  - **Test Code:** 7700
  - **CIP Code:** N/A
  - **Written Component:** The written test consists of 229 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Understanding Technical Theater (6%), Costuming/Make-up and Hair (21%), Scenic and Prop Construction (19%), Electrics (16%), Human Properties (6%), Running Crews (13%), Stage Management (8%), and Sound (11%).
  - **Performance Component:** Assessment format: Each content area is considered a separate performance assessment and must be ordered individually. Schools can choose to administer one or multiple content areas. Costume: Pattern and Sew an Apron (3 hours), Make-up and Hair: Make-up and Hair for a Period Styling (2 hours), Construction: Construct a 2’ x 4’ Fabric Covered Theatrical Style Flat (2 hours), Electrics: Setup, Hang, Cable, and Focus Three Unit Light Plot (2 hours), Sound: Setup Sound System (2 hours), and Stage Management: Tape out a Ground Plan (1 hour) and Create a Mini-prompt Book with Blocking and Cue Annotation (1 hour and 30 minutes).

- **TELEVISION PRODUCTION**
  - **Test Code:** 3427
  - **CIP Code:** 10.0202
  - **Written Component:** The written test consists of 186 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (8%), Pre-Production (16%), Production (49%), Post-Production (18%), and Ethics, Communications, and General Field Knowledge (9%).
Performance Component: The performance test consists of three jobs and three hours is for administration. The following jobs are included on the assessment: Create and Script Video (31%), Shot Composition (41%), and Edit Shots with Interview (28%).

• VISUAL COMMUNICATIONS AND INTERACTIVE MEDIA DESIGN
  o Test Code: 3425
  o CIP Code: 09.0702
  o Written Component: The written test consists of 189 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (6%), Career Overview (7%), Computer Literacy (20%), Interactive Media (16%), Visual Literacy (10%), Conceptual Design Process (12%), Color Theory (10%), Typography (14%), and Materials and Tools (5%).
  o Performance Component: The performance test consists of three jobs and three hours are allowed for administration. The following jobs are included on the assessment: Create a Logo (50%), Create a Static Web page (25%), and Create a Business Card (25%).

• WEB DESIGN
  o Test Code: 2750
  o CIP Code: 11.0801
  o Written Component: The written test consists of 160 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Internet Basics (13%), Programming/Markup/Scripting (14%), Editors (17%), Web Graphics (9%), Web Multimedia (10%), Web Marketing and Business Management (8%), Site Design (17%), and Administration and Maintenance (12%).
  o Performance Component: The performance test consists of five jobs and three hours are allowed for administration. The following jobs are included on the assessment: Create the Cascading Style Sheet (CSS) (13%), Create the Template (23%), Create the Home Page (15%), Create the Form Page (16%), and Create the Content Pages (33%).
Pathway

- **BROADCASTING AND JOURNALISM**
  - **Test Code:** 1106
  - **CIP Code:** 09.0499
  - **Written Component:** The written test consists of 104 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Arts and Communications Technical Skills (14%), Broadcasting and Journalism Technical Skills (19%), Academic Foundations (12%), Systems (6%), Ethics and Legal Responsibilities (7%), Communication (12%), Information Technology Applications (7%), Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (7%), Safety, Health, and Environment (5%), and Employability and Career Development (5%).

- **PERFORMING ARTS**
  - **Test Code:** 1107
  - **CIP Code:** 50.9999
  - **Written Component:** The written test consists of 104 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Arts and Communication Technical Skills (14%), Performing Arts Technical Skills (19%), Academic Foundations (12%), Systems (6%), Ethics and Legal Responsibilities (7%), Communication (12%), Information Technology Applications (7%), Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (7%), Safety, Health, and Environment (5%), and Employability and Career Development (5%).

- **VISUAL ARTS**
  - **Test Code:** 1108
  - **CIP Code:** 50.9999
  - **Written Component:** The written test consists of 104 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Arts and Communication Technical Skills (14%), Visual Arts Technical Skills (19%), Academic Foundations (12%), Systems (6%), Ethics and Legal Responsibilities (7%), Communication (12%), Information Technology Applications (7%), Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (7%), Safety, Health, and Environment (5%), and Employability and Career Development (5%).
Job Ready

- ACCOUNTING - ADVANCED
  - Test Code: 4900
  - CIP Code: 52.0302
  - Written Component: The written test consists of 225 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Journalizing (12%), Posting (8%), Payroll Preparation (16%), Cash and Banking Procedures (13%), Merchandise Inventory (8%), Completion of Accounting Cycle (10%), Identification and Application of Source Data (4%), Mechanical and Electronic Accounting Devices (4%), Security (7%), Basic Accounting Knowledge (6%), Advanced Accounting Principles (12%).
  - Performance Component: The performance test consists of seven jobs and three hours and 15 minutes are allowed for administration. The following jobs are included on the assessment: Journal Entries (27%), Posting Verification (10%), Payroll (12%), Complete Worksheet (7%), Financial Statements (14%), Ratio and Partial Horizontal Analysis (10%), and Advanced Journal Entries (20%).

- ACCOUNTING - BASIC
  - Test Code: 4000
  - CIP Code: 52.0302
  - Written Component: The written test consists of 194 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Journalizing (13%), Posting (9%), Payroll Preparation (18%), Cash and Banking Procedures (13%), Merchandise Inventory (9%), Completion of Accounting Cycle (13%), Identification and Application of Source Data (5%), Mechanical and Electronic Accounting Devices (5%), Security (8%), and Basic Accounting Knowledge (7%).
  - Performance Component: The performance test consists of seven jobs and two hours and 50 minutes are allowed for administration. The following jobs are included on the assessment: Identification of Account Balances (7%), Journal Entries (32%), Posting Verification (12%), Banking (9%), Payroll (15%), Complete Worksheet (9%), and Financial Statements (16%).
• **ADMINISTRATIVE ASSISTING**
  o **Test Code:** 4101
  o **CIP Code:** 52.0401
  o **Written Component:** The written test consists of 195 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Computer Applications (33%), Working in an Office Environment (19%), Records Management (10%), Office Procedures (18%), and Accounting and Computational Skills (20%).
  o **Performance Component:** The performance test consists of five jobs and three hours are allowed for administration. The following jobs are included on the assessment: Business Writing – Memo Preparation (15%), Document Processing (37%), Preparing a Spreadsheet (20%), Creating a Chart (14%), and Create a Flyer (14%).

• **BUSINESS INFORMATION PROCESSING**
  o **Test Code:** 4013
  o **CIP Code:** 11.0601
  o **Written Component:** The written test consists of 158 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Computer Concepts and Applications (20%), Internet Operations (9%), Computer Operations (9%), Reporting and Data Management (7%), Business Software Applications (18%), Business Math (12%), Communications (17%), and Office Environment Safety (8%).
  o **Performance Component:** The performance test consists of five jobs and two hours and 50 minutes are allowed for administration. The following jobs are included on the assessment: File Management (11%), Spreadsheet (37%), Word Processing: Create and Format (18%), Word Processing: Table Creation (19%), and Presentations (15%).

• **FINANCIAL AND MANAGERIAL ACCOUNTING (WRITTEN ONLY)**
  o **Test Code:** 2120
  o **CIP Code:** 52.0302
  o **Written Component:** The written test consists of 128 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Journalizing (14%), Cash and Banking Procedures (8%), Merchandise Inventory (12%), Financial Statements (15%), Competence in Technology (6%), Internal Control (6%), Basic Accounting Knowledge (12%), and Advanced Accounting Practices (27%).
Pathway

- ADMINISTRATIVE SERVICES
  - **Test Code:** 1205
  - **CIP Code:** 52.0499
  - **Written Component:** The written test consists of 107 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: Business Management Technical Skills (15%), Administrative Services (18%), Academic Foundations (12%), Systems (6%), Ethics and Legal Responsibilities (6%), Communications (6%), Information Technology Applications (14%), Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (6%), Safety, Health, and Environmental (6%), and Employability and Career Development (5%).

- GENERAL MANAGEMENT
  - **Test Code:** 1203
  - **CIP Code:** 52.0299
  - **Written Component:** The written test consists of 110 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: Business Management Technical Skills (15%), General Management (20%), Academic Foundations (12%), Systems (5%), Ethics and Legal Responsibilities (5%), Communications (6%), Information Technology Applications (14%), Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (6%), Safety, Health, and Environment (6%), and Employability and Career Development (5%).

- HUMAN RESOURCES MANAGEMENT
  - **Test Code:** 1204
  - **CIP Code:** 52.1099
  - **Written Component:** The written test consists of 108 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: Business Management Technical Skills (15%), Human Resources Management (19%), Academic Foundations (12%), Systems (6%), Ethics and Legal Responsibilities (6%), Communications (6%), Information Technology Applications (14%), Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (6%), Safety, Health, and Environmental (5%), and Employability and Career Development (5%).
Job Ready

- **EARLY CHILDHOOD EDUCATION AND CARE - ADVANCED**
  - **Test Code:** 4017
  - **CIP Code:** 19.0708
  - **Written Component:** The written test consists of 215 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Health and Safety (10%), Cognitive Development (12%), Language Development and Communication (10%), Physical Development (9%), Social and Emotional Development (9%), Community and Family Relationships (4%), Observation, Documentation, and Assessment (6%), Professionalism (9%), Classroom Organization and Arrangement (12%), Creativity (5%), Diversity in the Classroom (4%), Inclusion of Children with Special Needs (5%), and Positive Guidance Techniques and Reinforcement (5%).
  - **Performance Component:** The performance test consists of three jobs and two hours and 55 minutes are allowed for administration. The following jobs are included on the assessment: Curriculum Planning (18%), Small Group Teaching (50%), and Arrange a Room (32%).

- **EARLY CHILDHOOD EDUCATION AND CARE - BASIC**
  - **Test Code:** 4016
  - **CIP Code:** 19.0708
  - **Written Component:** The written test consists of 193 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Health and Safety (11%), Cognitive Development (10%), Language Development and Communication (10%), Physical Development (9%), Social and Emotional Development (10%), Community and Family Relationships (5%), Observation, Documentation, and Assessment (3%), Professionalism (10%), Classroom Organization and Arrangement (12%), Creativity (6%), Diversity in the Classroom (4%), Inclusion of Children with Special Needs (4%), and Positive Guidance Techniques and Reinforcement (6%).
  - **Performance Component:** The performance test consists of five jobs and 45 minutes are allowed for administration. The following jobs are included on the assessment: Demonstrate Washing of Caregiver’s Hands (20%), Introduction Activity (20%), Story Presentation (25%), Gross Motor Stretching Activity (20%), and Closure Activity (15%).
Pathway

- EDUCATION AND TRAINING
  - **Test Code:** 1125
  - **CIP Code:** 13.9999
  - **Written Component:** The written test consists of 138 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Education and Training Technical Skills (14%), Education and Training Technical Skills (17%), Academic Foundations (9%), Systems (10%), Ethics and Legal Responsibilities (8%), Communications (14%), Information Technology Applications (4%), Problem Solving and Critical Thinking (4%), Leadership and Teamwork (6%), Safety, Health, and Environmental (6%), and Employability and Career Development (8%).
Employability Skills Cluster

Assessment Overview

Job Ready

- 21ST CENTURY SKILLS FOR WORKPLACE SUCCESS (WRITTEN ONLY)
  - **Test Code:** 1437
  - **CIP Code:** 35.0103
  - **Written Component:** The written test consists of 144 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Reading Skills (4%), Math Skills (8%), Writing Skills (8%), Speaking and Listening Skills (10%), Computer Applications and Digital Media (7%), Reasoning, Problem-Solving, and Decision Making (7%), Understanding the “Big Picture” (7%), Work Ethics (4%), Positive Attitude (5%), Independence and Initiative (7%), Self Presentation (6%), Attendance (5%), Collaboration (9%), Personal Health and Wellness (3%), Entrepreneurship (4%), and Personal Finance (6%).

- CAREER SKILLS (WORKPLACE READINESS FOR MIDDLE SCHOOL) (WRITTEN ONLY)
  - **Test Code:** 1100
  - **CIP Code:** 35.0103
  - **Written Component:** The written test consists of 41 questions and one hour and 30 minutes are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one or two sessions. The following categories are included on the assessment: Communications (24%), Problem Solving and Critical Thinking (17%), Information Technology Applications (10%), Systems (10%), Safety, Health, and Environment (10%), Leadership, Management, and Teamwork (12%), Ethics and/or Legal Responsibilities (5%), and Employability and/or Career Development (12%).

- WORKPLACE READINESS (WRITTEN ONLY)
  - **Test Code:** 3033
  - **CIP Code:** 35.0103
  - **Written Component:** The written test consists of 90 questions and one hour and 30 minutes are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Communication (24%), Problem Solving and Critical Thinking (19%), Information Technology Applications (8%), Systems (9%), Safety, Health, and Environment (9%), Leadership and Teamwork (11%), Ethics and/or Legal Responsibilities (6%), and Employability and/or Career Development (14%).

- WORKPLACE SUCCESS SKILLS FOR MIDDLE SCHOOL (WRITTEN ONLY)
  - **Test Code:** 1350
- **CIP Code:** 35.0103
- **Written Component:** The written test consists of 50 questions and one hour and 30 minutes are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one or two sessions. The following categories are included on the assessment: Reading Skills (6%), Math Skills (12%), Writing Skills (14%), Speaking and Listening Skills (12%), Computer Applications and Digital Media (12%), Reasoning, Problem-Solving, and Decision Making (6%), Work Ethics (6%), Positive Attitude (6%), Independence and Initiative (6%), Self Presentation (4%), Attendance (4%), Collaboration (4%), Personal Health and Wellness (4%), and Personal Finance (4%).
Job Ready

- ACCOUNTING - ADVANCED
  - **Test Code:** 4900
  - **CIP Code:** 52.0302
  - **Written Component:** The written test consists of 225 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Journalizing (12%), Posting (8%), Payroll Preparation (16%), Cash and Banking Procedures (13%), Merchandise Inventory (8%), Completion of Accounting Cycle (10%), Identification and Application of Source Data (4%), Mechanical and Electronic Accounting Devices (4%), Security (7%), Basic Accounting Knowledge (6%), and Advanced Accounting Principles (12%).
  - **Performance Component:** The performance test consists of seven jobs and three hours and 15 minutes are allowed for administration. The following jobs are included on the assessment: Journal Entries (27%), Posting Verification (10%), Payroll (12%), Complete Worksheet (7%), Financial Statements (14%), Ratio and Partial Horizontal Analysis (10%), and Advanced Journal Entries (20%).

- ACCOUNTING - BASIC
  - **Test Code:** 4000
  - **CIP Code:** 52.0302
  - **Written Component:** The written test consists of 194 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Journalizing (13%), Posting (9%), Payroll Preparation (18%), Cash and Banking Procedures (13%), Merchandise Inventory (9%), Completion of Accounting Cycle (13%), Identification and Application of Source Data (5%), Mechanical and Electronic Accounting Devices (5%), Security (8%), and Basic Accounting Knowledge (7%).
  - **Performance Component:** The performance test consists of seven jobs and two hours and 50 minutes are allowed for administration. The following jobs are included on the assessment: Identification of Account Balances (7%), Journal Entries (32%), Posting Verification (12%), Banking (9%), Payroll (15%), Complete Worksheet (9%), and Financial Statements (16%).
• FINANCIAL AND MANAGERIAL ACCOUNTING (WRITTEN ONLY)
  o **Test Code:** 2120
  o **CIP Code:** 52.0302
  o **Written Component:** The written test consists of 128 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Journalizing (14%), Cash and Banking Procedures (8%), Merchandise Inventory (12%), Financial Statements (15%), Competence in Technology (6%), Internal Control (6%), Basic Accounting Knowledge (12%), and Advanced Accounting Practices (27%).

Pathway
• BANKING AND RELATED SERVICES
  o **Test Code:** 1096
  o **CIP Code:** 52.0803
  o **Written Component:** The written test consists of 104 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Finance Technical Skills (13%), Banking and Related Services Technical Skills (17%), Academic Foundations (13%), Systems (5%), Ethics and Legal Responsibilities (6%), Communications (12%), Information Technology Applications (8%), Problem Solving, Critical Thinking, and Decision Making (9%), Leadership and Teamwork (7%), Safety, Health, and Environmental (6%), and Employability and Career Development (4%).

• BUSINESS FINANCIAL MANAGEMENT
  o **Test Code:** 1095
  o **CIP Code:** 52.0899
  o **Written Component:** The written test consists of 106 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Finance Technical Skills (13%), Business Financial Management Technical Skills (19%), Academic Foundations (13%), Systems (5%), Ethics and Legal Responsibilities (6%), Communications (12%), Information Technology Applications (7%), Problem Solving, Critical Thinking, and Decision Making (8%), Leadership and Teamwork (7%), Safety, Health, and Environmental (6%), and Employability and Career Development (4%).
• FINANCIAL AND INVESTMENT PLANNING
  o **Test Code:** 1094
  o **CIP Code:** 52.0804
  o **Written Component:** The written test consists of 106 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Finance Technical Skills (13%), Financial and Investment Planning Technical Skills (19%), Academic Foundations (13%), Systems (5%), Ethics and Legal Responsibilities (6%), Communications (12%), Information Technology Applications (7%), Problem Solving, Critical Thinking, and Decision Making (8%), Leadership and Teamwork (7%), Safety, Health, and Environmental (6%), and Employability and Career Development (4%).
Job Ready

- **BIOTECHNOLOGY**
  - Test Code: 4075
  - CIP Code: 41.0101
  - **Written Component**: The written test consists of 198 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Work Habits (6%), Knowledge of Biotechnology (9%), Laboratory Knowledge and Skills (35%), Ethics (4%), Safety in the Biotechnology Laboratory (13%), Working in a Highly Regulated Environment (5%), and Appropriate Use of Equipment and Instrumentation (28%).
  - **Performance Component**: The performance test consists of six jobs and two hours and five minutes are allowed for administration. The following jobs are included on the assessment: Colony Isolation and Streaking Bacteria (27%), Using Volumetric Equipment: Using Micropipettes (17%), Using Volumetric Equipment: Serological Pipettes (11%), Making a Molar Solution (18%), Making a Dilution and Using a Spectrophotometer (17%), and Generating and Utilizing a Standard Curve (10%).

- **DENTAL ASSISTING**
  - Test Code: 4226
  - CIP Code: 51.0601
  - **Written Component**: The written test consists of 179 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Introduction to the Dental Assisting Profession (8%), Communication Skills and Business Office Procedures (8%), Infection Control and Hazard Management (15%), Clinical Procedures (40%), Radiological and Digital Imaging Procedures (19%), and Dental Sciences (10%).
  - **Performance Component**: The performance test consists of six jobs and one hour and 40 minutes are allowed for administration. The following jobs are included on the assessment: Prepare Instruments for Autoclaving (21%), Assemble Equipment to Expose Radiographic Film (12%), Mount Full Series Radiographs (12%), Assemble and Disassemble Aspirating Syringe (21%), Take a Single Mandibular Alginate Impression (22%), and Prepare Class III (Anterior) Composite Instrument Tray (12%).
• HEALTH ASSISTING
  o **Test Code:** 4143
  o **CIP Code:** 51.0899
  o **Written Component:** The written test consists of 163 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: First Aid and General Safety (19%), Medical Terminology (18%), Body Systems (9%), Observation and Communication (15%), Documentation and Legal Issues of the Health Assisting Profession (10%), and Health Assistant Skills (29%).
  o **Performance Component:** The performance test consists of four jobs and one hour and 10 minutes are allowed for administration. The following jobs are included on the assessment: Hand Washing and Personal Protective Equipment (PPE) (29%), Change a Patient Gown (29%), Measure Vital Signs, Height and Weight (29%), and Transfer Patient from Bed to Wheelchair (13%).

• HOME HEALTH AIDE
  o **Test Code:** 4048
  o **CIP Code:** 51.2602
  o **Written Component:** The written test consists of 195 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: First Aid and Basic Emergency Measures (6%), Abbreviations, Terminology, and Client Observation (10%), Employability Skills (5%), Client Care (14%), Safety (12%), Nutrition and Elimination (10%), Positioning (3%), Client Transfer (5%), Provide Personal Care (11%), Home Maintenance Management (5%), Child Care (3%), Medications (6), and Client Rights (10%).
  o **Performance Component:** The performance test consists of six jobs and two hours and 10 minutes are allowed for administration. The following jobs are included on the assessment: Obtain and Record Vital Signs (15%), Therapeutic Diet Meal Planning (6%), Bathing and Personal Care of Adult (37%), Occupied Bedmaking (21%), First Aid for Bleeding (8%), and Transfer Client from Bed to Wheelchair (13%).
• MEDICAL ASSISTING
  o **Test Code:** 4455
  o **CIP Code:** 51.0899
  o **Written Component:** The written test consists of 197 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Medical Office Procedures (12%), Foundations for Healthcare (10%), General Laboratory Procedures and Diagnostic Testing (14%), Clinical Practices and Patient Care (38%), Medical Assisting Safety (8%), Patient Instruction (9%), and Medical Law and Ethics for Health Care (9%).
  o **Performance Component:** The performance test consists of six jobs and one hour and 15 minutes are allowed for administration. The following jobs are included on the assessment: Positioning (9%), Blood Pressure and Pulse Measurement (23%), Electrocardiogram (18%), Visual Acuity Screening (21%), Lab Requisition Form (18%), and Applying and Removing Sterile Gloves (11%).

• NURSING ASSISTING
  o **Test Code:** 4158
  o **CIP Code:** 51.3902
  o **Written Component:** The written test consists of 202 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Basic Nursing Assisting Skills (28%), Infection Control (9%), Communication Skills (12%), Personal Care Skills (12%), Mental Health and Social Service Needs (11%), Ethics, Rights, and Legal Responsibilities (12%), Basic Restorative Devices (9%), and Employability Skills (7%).
  o **Performance Component:** The performance test consists of five jobs and one hour and 45 minutes are allowed for administration. The following jobs are included on the assessment: Obtain and Record Standard Vital Signs (18%), Apply and Remove Personal Protective Equipment (14%), Demonstrate Wheelchair Assistance (14%), Make an Occupied Bed (20%), and Provide a Modified Bed Bath for an Adult Female Patient (34%).

• PRACTICAL NURSING
  o **Test Code:** 4162
  o **CIP Code:** 51.3999
  o **Written Component:** The written test consists of 202 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Medical Office Procedures (12%), Foundations for Healthcare (10%), General Laboratory Procedures and Diagnostic Testing (14%), Clinical Practices and Patient Care (38%), Medical Assisting Safety (8%), Patient Instruction (9%), and Medical Law and Ethics for Health Care (9%).
  o **Performance Component:** The performance test consists of six jobs and one hour and 15 minutes are allowed for administration. The following jobs are included on the assessment: Positioning (9%), Blood Pressure and Pulse Measurement (23%), Electrocardiogram (18%), Visual Acuity Screening (21%), Lab Requisition Form (18%), and Applying and Removing Sterile Gloves (11%).

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paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Communication and Employability (10%), Legal and Ethical Responsibilities (15%), Anatomy, Physiology, and Pathophysiology (5%), Patient Care Skills (32%), Administer Medication (19%), Infection Control (5%), Psychological Support (8%), and Supervised Management Functions (6%).

- **Performance Component:** The performance test consists of six jobs and three hours are allowed for administration. The following jobs are included on the assessment: Take Vital Signs (20%), Transfer a CVA Patient (15%), Insertion of Indwelling Catheter (19%), Remove Contaminated Linen from Isolation Unit (7%), Administration of Medication (12%), and Demonstrate Handwashing, Application, and Removal of Personal Protective Equipment (PPE) (27%).

**Pathway**
- **DIAGNOSTIC SERVICES**
  - **Test Code:** 1386
  - **CIP Code:** 51.0999
  - **Written Component:** The written test consists of 103 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Health Sciences Technical Skills (17%), Academic Foundations (11%), Systems (7%), Ethics and Legal Responsibilities (8%), Communication (9%), Information Technology Applications (6%) Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (6%), Safety, Health, and Environment (9%), Employability and Career Development (6%), and Diagnostic Services Technical Skills (15%).

- **HEALTH INFORMATICS**
  - **Test Code:** 1387
  - **CIP Code:** 51.0799
  - **Written Component:** The written test consists of 104 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Health Sciences Technical Skills (17%), Academic Foundations (11%), Systems (7%), Ethics and Legal Responsibilities (7%), Communications (9%), Information Technology Applications (6%) Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (6%), Safety, Health, and Environment (9%), Employability and Career Development (6%), and Health Informatics (16%).
• HEALTHCARE CORE
  o **Test Code:** 1141
  o **CIP Code:** 51.9999
  o **Written Component:** The written test consists of 108 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: Awareness and Sensitivity to Client Needs (12%), Behaviors for Success in Healthcare Setting (14%), Communication in Healthcare Settings (27%), Healthcare Ethics (12%), Legal Issues in Healthcare (11%), Healthcare Safety and Standard Precautions (12%), and Respecting Client and Staff Diversity (12%).

• THERAPEUTIC SERVICES
  o **Test Code:** 1385
  o **CIP Code:** 51.0899
  o **Written Component:** The written test consists of 101 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Health Sciences Technical Skills (18%), Academic Foundations (12%), Systems (7%), Ethics and Legal Responsibilities (8%), Communications (9%), Information Technology Applications (6%) Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (6%), Safety, Health, and Environmental (8%), Employability and Career Development (6%), and Therapeutic Services (14%).
Job Ready

- COMMERCIAL FOODS
  - **Test Code:** 4020
  - **CIP Code:** 12.0508
  - **Written Component:** The written test consists of 187 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (6%), Sanitation (11%), Culinary Career Overview (13%), Culinary Techniques (24%), Recipes and Culinary Math (7%), Purchasing and Management Skills (10%), Menu Design and Nutrition (11%), Customer and Table Service (12%), and Culinary Equipment (6%).
  - **Performance Component:** The performance test consists of three jobs and three hours and 30 minutes are allowed for administration. The following jobs are included on the assessment: Identification of Hand Tools, Herbs, Spices, and Flavorings (13%), Knife Skills (13%), and Cooking Skills (74%).

- CULINARY ARTS LEVEL 1-PREP COOK
  - **Test Code:** 4436
  - **CIP Code:** 12.0508
  - **Written Component:** The written test consists of 170 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Recipes (5%), Knife Skills (5%), Large and Small Equipment (7%), Sanitation and Safety (21%), Food Preparation (7%), Fruits, Vegetables, and Starches (7%), Bakery Products (4%), Stocks, Sauces, and Hot Soups (5%), Meats and Poultry (5%), Fish and Seafood (4%), Breakfast Food (8%), Dairy Products and Alternatives (5%), Culinary Nutrition (8%), Culinary Math (5%), and Employability Skills (4%).
  - **Performance Component:** The performance test consists of seven jobs and two hours and five minutes are allowed for administration. The following jobs are included on the assessment: Comprehensive Skills (23%), Identification of Kitchen Equipment (7%), Identification of Herbs, Spices, Fruits, and Vegetables (7%), Knife Sharpening: Stone and Steel (7%), Mise En Place (13%), Prepare Chef Salad with Vinaigrette Dressing (23%), and Prepare Cheese Omelet (20%).
• CULINARY ARTS LEVEL 2-COOK
  o **Test Code:** 4536
  o **CIP Code:** 12.0508
  o **Written Component:** The written test consists of 212 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Recipes (5%), Knife Skills (4%), Large and Small Equipment (6%), Sanitation and Safety (17%), Food Preparation (8%), Fruits, Vegetables, and Starches (6%), Bakery Products (6%), Stocks, Sauces, and Hot Soups (6%), Meats and Poultry (6%), Fish and Seafood (4%), Breakfast Foods (6%), Dairy Products and Alternatives (6%), Culinary Nutrition (6%), Culinary Math (6%), Employability Skills (3%), and Dining Service (5%).
  o **Performance Component:** The performance test consists of four jobs and two hours and 30 minutes are allowed for administration. The following jobs are included on the assessment: Prepare Sautéed Chicken with Fine Herb Sauce (27%), Prepare Rice Pilaf (23%), Prepare Steamed Green Vegetables and Carrots (25%), and Prepare Salad Course (25%).

• HOSPITALITY MANAGEMENT – FOOD AND BEVERAGE
  o **Test Code:** 3079
  o **CIP Code:** 52.0909
  o **Written Component:** The written test consists of 161 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Introduction to the Hospitality Industry (13%), Guest Relations and Concierge (9%), Marketing and Sales (14%), Safety and Security (7%), Opening and Settling Financial Transactions (10%), Travel and Tourism (7%), Legal and Ethical Responsibilities (5%), Restaurant Management (27%), and Food and Beverage Service (8%).
  o **Performance Component:** The performance test consists of seven jobs and three hours and 40 minutes are allowed for administration. The following jobs are included on the assessment: Demonstrate Napkin Folding (14%), Identify Equipment (6%), Perform Table-Side Service (14%), Prepare Chicken Cordon Bleu (21%), Serve Guests (22%), Pricing Menu Items (7%), and Complete a Banquet Event Order Sheet (16%).
• HOSPITALITY MANAGEMENT – LODGING
  o **Test Code:** 3080
  o **CIP Code:** 52.0909
  o **Written Component:** The written test consists of 170 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Introduction to the Hospitality Industry (13%), Guest Relations and Concierge (8%), Marketing and Sales (15%), Safety and Security (8%), Opening and Settling Financial Transactions (9%), Travel and Tourism (6%), Legal and Ethical Responsibilities (6%), Housekeeping Management (12%), and Front Office Procedures (23%).
  o **Performance Component:** The performance test consists of five jobs and two hours and 15 minutes are allowed for administration. The following jobs are included on the assessment: Folio and Form Completion (17%), Customer Relations and Role Play (27%), Pricing Menu Items (18%), Complete a Banquet Event Order Contract Form (27%), and Set up Continental Breakfast Buffet Table (11%).

• RETAIL COMMERCIAL BAKING
  o **Test Code:** 4010
  o **CIP Code:** 12.0501
  o **Written Component:** The written test consists of 197 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety and Sanitation (14%), Business and Math Skills (12%), Identification, Classification, and Properties of Ingredients (8%), Baking Preparation (Mise en Place) (12%), Basic Baking (28%), Product Merchandising (9%), Purchasing, Receiving, Inventory, and Storage (6%), Nutrition (4%), and Human Relations and Career Skills (7%).
  o **Performance Component:** The performance test consists of four jobs and four hours and 45 minutes are allowed for administration. The following jobs are included on the assessment: Soft Dinner Roll Dough (18%), Cake Decorating (28%), Fruit Pie (26%), and Pâte à Choux (28%).
Pathway

- **LODGING**
  - **Test Code:** 1287
  - **CIP Code:** 52.0904
  - **Written Component:** The written test consists of 103 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Hospitality and Tourism Technical Skills (13%), Lodging (19%), Academic Foundations (13%), Systems (6%), Ethics and Legal Responsibilities (6%), Communication (13%), Information Technology Applications (6%), Problem Solving, Critical Thinking, and Decision Making (7%), Leadership and Teamwork (6%), Safety, Health, and Environment (6%), and Employability and Career Development (5%).

- **RECREATION, AMUSEMENTS, AND ATTRACTIONS**
  - **Test Code:** 1289
  - **CIP Code:** 31.0101
  - **Written Component:** The written test consists of 100 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Hospitality and Tourism Technical Skills (13%), Recreation, Amusements, and Attractions Technical Skills (17%), Academic Foundations (13%), Systems (6%), Ethics and Legal Responsibilities (6%), Communication (13%), Information Technology (6%), Problem Solving, Critical Thinking, and Decision Making (8%), Leadership and Teamwork (6%), Safety, Health, and Environment (7%), and Employability and Career Development (5%).

- **RESTAURANT, FOOD, AND BEVERAGE SERVICES**
  - **Test Code:** 1286
  - **CIP Code:** 52.0905
  - **Written Component:** The written test consists of 103 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Hospitality and Tourism Technical Skills (13%), Restaurants, Food, and Beverage Services Technical Skills (19%), Academic Foundations (13%), Systems (6%), Ethics and Legal Responsibilities (6%), Communication (13%), Information Technology (6%), Problem Solving, Critical Thinking, and Decision Making (7%), Leadership and Teamwork (6%), Safety, Health, and Environment (6%), and Employability and Career Development (5%).
• TRAVEL AND TOURISM
  o **Test Code:** 1288
  o **CIP Code:** 52.0903
  o **Written Component:** The written test consists of 104 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Hospitality and Tourism Technical Skills (13%), Travel and Tourism (20%), Academic Foundations (13%), Systems (6%), Ethics and Legal Responsibilities (6%), Communication (13%), Information Technology Applications (6%), Problem Solving, Critical Thinking, and Decision Making (7%), Leadership and Teamwork (6%), Safety, Health, and Environment (6%), and Employability and Career Development (4%).
Job Ready

- COSMETOLOGY
  - Test Code: 4082
  - CIP Code: 12.0401
  - Written Component: The written test consists of 180 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety and Sanitation (20%), Scientific Concepts (23%), Salon-Related Business Skills (13%), Physical Services (11%), Chemical Services (19%), and Hair Designing (14%).
  - Performance Component: The performance test consists of five jobs and three hours are allowed for administration. The following jobs are included on the assessment: 90-Degree Haircut (19%), Blow Dry, Curl, and Press Hair (19%), Chemical Applications (29%), Manicure (16%), and Facial (17%).

- EARLY CHILDHOOD EDUCATION AND CARE - ADVANCED
  - Test Code: 4017
  - CIP Code: 19.0708
  - Written Component: The written test consists of 215 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Health and Safety (10%), Cognitive Development (12%), Language Development and Communication (10%), Physical Development (9%), Social and Emotional Development (9%), Community and Family Relationships (4%), Observation, Documentation, and Assessment (6%), Professionalism (9%), Classroom Organization and Arrangement (12%), Creativity (5%), Diversity in the Classroom (4%), Inclusion of Children with Special Needs (5%), and Positive Guidance Techniques and Reinforcement (5%).
  - Performance Component: The performance test consists of three jobs and two hours and 55 minutes are allowed for administration. The following jobs are included on the assessment: Curriculum Planning (18%), Small Group Teaching (50%), and Arrange a Room (32%).
• EARLY CHILDHOOD EDUCATION AND CARE - BASIC
  o **Test Code:** 4016
  o **CIP Code:** 19.0708
  o **Written Component:** The written test consists of 193 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Health and Safety (11%), Cognitive Development (10%), Language Development and Communication (10%), Physical Development (9%), Social and Emotional Development (10%), Community and Family Relationships (5%), Observation, Documentation, and Assessment (3%), Professionalism (10%), Classroom Organization and Arrangement (12%), Creativity (6%), Diversity in the Classroom (4%), Inclusion of Children with Special Needs (4%), and Positive Guidance Techniques and Reinforcement (6%).
  o **Performance Component:** The performance test consists of five jobs and 45 minutes are allowed for administration. The following jobs are included on the assessment: Demonstrate Washing of Caregiver’s Hands (20%), Introduction Activity (20%), Story Presentation (25%), Gross Motor Stretching Activity (20%), and Closure Activity (15%).

• HOME HEALTH AIDE
  o **Test Code:** 4048
  o **CIP Code:** 51.2602
  o **Written Component:** The written test consists of 195 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: First Aid and Basic Emergency Measures (6%), Abbreviations, Terminology, and Client Observation (10%), Employability Skills (5%), Client Care (14%), Safety (12%), Nutrition and Elimination (10%), Positioning (3%), Client Transfer (5%), Provide Personal Care (11%), Home Maintenance Management (5%), Child Care (3%), Medications (6%), and Client Rights (10%).
  o **Performance Component:** The performance test consists of six jobs and two hours and ten minutes are allowed for administration. The following jobs are included on the assessment: Obtain and Record Vital Signs (15%), Therapeutic Diet Meal Planning (6%), Bathing and Personal Care of Adult (37%), Occupied Bedmaking (21%), First Aid for Bleeding (8%), and Transfer Client from Bed to Wheelchair (13%).
Pathway

- **EARLY CHILDHOOD DEVELOPMENT AND SERVICES**
  - **Test Code:** 1236
  - **CIP Code:** 19.0708
  - **Written Component:** The written test consists of 110 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Human Services Technical Skills (15%), Early Childhood Development Services Technical Skills (19%), Academic Foundations (10%), Systems (6%), Ethics and Legal Responsibilities (6%), Communication (8%), Information Technology (8%) Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (9%), Safety, Health, and Environment (7%), and Employability and Career Development (6%).

- **FAMILY AND COMMUNITY SERVICES**
  - **Test Code:** 1237
  - **CIP Code:** 19.0707
  - **Written Component:** The written test consists of 107 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Human Services Technical Skills (15%), Family and Community Services (17%), Academic Foundations (10%), Systems (7%), Ethics and Legal Responsibilities (6%), Communications (8%), Information Technology Applications (8%) Problem Solving, Critical Thinking, and Decision Making (7%), Leadership and Teamwork (9%), Safety, Health, and Environment (7%), and Employability and Career Development (6%).

- **PERSONAL CARE SERVICES**
  - **Test Code:** 1238
  - **CIP Code:** 51.2602
  - **Written Component:** The written test consists of 100 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Human Services Technical Skills (16%), Personal Care Services Technical Services (11%), Academic Foundations (11%), Systems (7%), Ethics and Legal Responsibilities (6%), Communications (9%), Information Technology Applications (9%) Problem Solving, Critical Thinking, and Decision Making (7%), Leadership and Teamwork (10%), Safety, Health, and Environment (8%), and Employability and Career Development (6%).
Job Ready

- COMPUTER NETWORKING FUNDAMENTALS
  - Test Code: 4514
  - CIP Code: 11.0901
  - Written Component: The written test consists of 194 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: PC Principles (10%), Network Connections (6%), Physical Connection Types (7%), Network Standards and Devices (11%), Network Troubleshooting (10%), Routing and Switching (12%), Network Terminology (6%), Network Architecture (5%), Network Addressing (12%), Security (11%), and Network Planning and Design (10%).
  - Performance Component: The performance test consists of two jobs and two hours are allowed for administration. The following jobs are included on the assessment: Select and Connect Equipment to Set Up a Simple LAN with Two Workstations (39%) and Set up a Workgroup, Create Users, Create Shares, and Install a Printer (61%).

- COMPUTER PROGRAMMING
  - Test Code: 4023
  - CIP Code: 11.0201
  - Written Component: The written test consists of 166 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Analyze Programming Problems and Flowchart Solutions (15%), Design Program Solutions (13%), Code Programs (19%), Test Programs (14%), Maintain Programs (7%), Complete User Documentation and Technical Writing (8%), and General Information and Concepts (24%).
  - Performance Component: The performance test consists of two jobs and three hours are allowed for administration. The following jobs are included on the assessment: Write a Program (61%) and Design Solution Logic (39%).
• COMPUTER REPAIR TECHNOLOGY
  o **Test Code:** 4515
  o **CIP Code:** 47.0104
  o **Written Component:** The written test consists of 193 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (7%), Installing, Configuring, and Upgrading (13%), Diagnosing and Troubleshooting (22%), Preventive Maintenance (10%), System Boards, Storage, Processors, and Memory (7%), Input-Output (I/O) Devices (4%), Printing (5%), Basic Networking (19%), Security (6%), and Customer Support and Ethics (7%).
  o **Performance Component:** The performance test consists of three jobs and one hour and 55 minutes are allowed for administration. The following jobs are included on the assessment: Device Identification (19%), Installing New Hardware/Troubleshooting (37%), and Network Connectivity (44%).

• COMPUTER TECHNOLOGY
  o **Test Code:** 4122
  o **CIP Code:** 11.1006
  o **Written Component:** The written test consists of 153 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Professional Standards, Ethics, and Business Practices (14%), General Computer Knowledge and Concepts (20%), PC (Personal Computer) Hardware Knowledge (21%), PC (Personal Computer) Software Knowledge (18%), Networking and Data Communications (16%), and Security (11%).
  o **Performance Component:** The performance test consists of four jobs and three hours are allowed for administration. The following jobs are included on the assessment: File Management Using Windows GUI (31%), Word Processing Applications (15%), Spreadsheet Applications (19%), and Network Connectivity (35%).

• WEB DESIGN
  o **Test Code:** 2750
  o **CIP Code:** 11.0801
  o **Written Component:** The written test consists of 160 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Internet Basics (13%), Programming/Markup/Scripting (14%), Editors (17%), Web Graphics (9%), Web Multimedia (10%), Web Marketing and Business Management (8%), Site Design (17%), and Administration and Maintenance (12%).
Performance Component: The performance test consists of five jobs and three hours are allowed for administration. The following jobs are included on the assessment: Create the Cascading Style Sheet (CSS) (13%), Create the Template (23%), Create the Home Page (15%), Create the Form Page (16%), and Create the Content Pages (33%).

Pathway

- INFORMATION SUPPORT AND SERVICES
  - Test Code: 1131
  - CIP Code: 11.0199
  - Written Component: The written test consists of 107 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: Information Technology Applications Technical Skills (15%), Information Support Services Technical Skills (18%), Academic Foundations (10%), Systems (12%), Ethics and Legal Responsibilities (8%), Communications (10%), Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (5%), Safety, Health, and Environment (8%), and Employability and Career Development (8%).

- INTERACTIVE MEDIA
  - Test Code: 1132
  - CIP Code: 11.0899
  - Written Component: The written test consists of 107 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: Information Technology Applications Technical Skills (15%), Interactive Media Technical Skills (18%), Academic Foundations (10%), Systems (12%), Ethics and Legal Responsibilities (8%), Communications (10%), Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (5%), Safety, Health, and Environment (8%), and Employability and Career Development (8%).

- NETWORK SYSTEMS
  - Test Code: 1130
  - CIP Code: 11.9999
  - Written Component: The written test consists of 113 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: Information Technology Applications Technical Skills (14%), Network Systems Technical Skills (22%), Academic Foundations (10%), Systems (12%), Ethics and Legal Responsibilities (8%), Communications (10%), Problem Solving,
Critical Thinking, and Decision Making (5%), Leadership and Teamwork (4%), Safety, Health, and Environment (8%), and Employability and Career Development (7%).
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Job Ready

- CRIMINAL JUSTICE
  - **Test Code:** 4181
  - **CIP Code:** 43.0107
  - **Written Component:** The written test consists of 187 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Crime Scene Management (8%), Use of Force (10%), Criminal Law and Procedures (10%), Court System (12%), Health and Safety (6%), Police Concepts and Skills (25%), Corrections (8%), Communication (11%), Security: National, International, and Private (5%), and Understanding and Work with Special Populations (5%).
  - **Performance Component:** The performance test consists of four jobs and two hours and 45 minutes are allowed for administration. The following jobs are included on the assessment: Crime Scene Investigation (35%), Arrest (27%), Visual Memory Test (11%), and Traffic Stop and Citation Issue (27%).

- CRIMINAL JUSTICE ADVANCED (WRITTEN ONLY)
  - **Test Code:** 1890
  - **CIP Code:** 43.0107
  - **Written Component:** The written test consists of 206 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Criminal Justice Systems (24%), Criminal Justice Procedures (14%), Crime Scene Investigation and Evidence Handling (14%), Interview and Interrogation (12%), Criminal Law and Courtroom Procedures (23%), and Issues and Ethics in Criminal Justice (13%).

- PROTECTIVE SERVICES
  - **Test Code:** 2480
  - **CIP Code:** 43.9999
  - **Written Component:** The written test consists of 172 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Public Safety (19%), Law Enforcement (32%), Fire Fighting (19%), Emergency Medical Services (15%), Career Development (8%), and Homeland Security (7%).
- **Performance Component:** The performance test consists of eight jobs and two hours and 45 minutes are allowed for administration. The following jobs are included on the assessment: Street Interview (8%), Arrest and Search (19%), Complete an Incident Report (10%), Chemical Identification (7%), Fire Suppression Demonstration (17%), Vital Signs (18%), Perform CPR on an Adult (10%), and Patient Assessment (11%).

**Pathway**

- **EMERGENCY AND FIRE MANAGEMENT SERVICES**
  - **Test Code:** 1135
  - **CIP Code:** 43.0299
  - **Written Component:** The written test consists of 102 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Law, Public Safety, and Security Technical Skills (11%), Emergency and Fire Management Services Technical Skills (17%), Academic Foundations (16%), Systems (6%), Ethics and Legal Responsibilities (8%), Communications (7%), Information Technology Applications (4%), Problem Solving, Critical Thinking, and Decision Making (7%), Leadership and Teamwork (4%), Safety, Health, and Environment (12%), and Employability and Career Development (8%).

- **EMERGENCY MEDICAL SERVICES**
  - **Test Code:** 1138
  - **CIP Code:** 51.0999
  - **Written Component:** The written test consists of 102 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Law, Public Safety, and Security Technical Skills (11%), Emergency Medical Services Technical Skills (17%), Academic Foundations (16%), Systems (6%), Ethics and Legal Responsibilities (8%), Communications (7%), Information Technology Applications (4%), Problem Solving, Critical Thinking, and Decision Making (7%), Leadership and Teamwork (4%), Safety, Health, and Environment (12%), and Employability and Career Development (8%).
• LEGAL SERVICES
  o **Test Code:** 1137
  o **CIP Code:** 22.9999
  o **Written Component:** The written test consists of 114 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Law, Public Safety, and Security Technical Skills (11%), Legal Services Technical Skills (25%), Academic Foundations (14%), Systems (5%), Ethics and Legal Responsibilities (7%), Communications (6%), Information Technology Applications (4%), Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (4%), Safety, Health, and Environment (11%), and Employability and Career Development (7%).

• SECURITY AND PROTECTIVE SERVICES
  o **Test Code:** 1136
  o **CIP Code:** 43.9999
  o **Written Component:** The written test consists of 109 questions and two hours are allowed for administration. The test is administered exclusively through the online system and can be administered in one, two, or three sessions. The following categories are included on the assessment: General Law, Public Safety, and Security Technical Skills (10%), Security and Protective Services Technical Skills (22%), Academic Foundations (15%), Systems (6%), Ethics and Legal Responsibilities (7%), Communications (6%), Information Technology Applications (5%), Problem Solving, Critical Thinking, and Decision Making (6%), Leadership and Teamwork (5%), Safety, Health, and Environment (11%), and Employability and Career Development (7%).
Manufacturing Cluster

Assessment Overview

Job Ready

• APPAREL AND TEXTILE PRODUCTION AND MERCHANDISING
  o Test Code: 3018
  o CIP Code: 19.0999
  o Written Component: The written test consists of 185 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Garment Construction (24%), Finished Garment Alterations (12%), Textiles (12%), Applied Mathematics (10%), Design and Patternmaking (7%), Industrial and Domestic Apparel Manufacturing (13%), Apparel Technology (6%), Apparel and Textile Merchandising (11%), and Career Opportunities (5%).
  o Performance Component: The performance test consists of five jobs and three hours are allowed for administration. The following jobs are included on the assessment: Patternmaking (12%), Invisible Zipper Insertion (16%), Seam Samples (16%), Bodice Construction (28%), and Lay Out, Cut, and Construct Straight Legged Pants (28%)

• CAD-CAM
  o Test Code: 3073
  o CIP Code: 15.1302
  o Written Component: The written test consists of 190 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Identifying Hardware and Operating Systems (5%), Using Hardware and Operating Systems (5%), Interpreting and Reading Blueprints (11%), Creating and Manipulating Mechanical Drawing Information (21%), Drawing and Designing Assemblies (4%), Using 3-D Modeling (7%), Machining Fundamentals (16%), CNC Operation (18%), CNC Programming Preparation (6%), and CNC Programming Using a CAM System (7%).
  o Performance Component: The performance test consists of three CAD jobs and one CAM job and three hours are allowed for administration. The following jobs are included on the assessment: Create a 2-D Orthographic Drawing on CAD with a Section View (23%), Create a 3-D Solid Model (17%), Create Two Parts to be Mated and Mate the Parts (25%), and Manufacture a Part from an Existing Drawing (35%).
• MANUFACTURING TECHNOLOGY
  o **Test Code:** 2084
  o **CIP Code:** 48.9999
  o **Written Component:** The written test consists of 195 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Manufacturing Math, Science, and Measurement (9%), Workplace Safety, Health, and Job Skills (12%), Quality Assurance (9%), Blueprint Reading (9%), Manufacturing Fundamentals, Processes, and Materials (12%), Material Handling (5%), Industrial Robotics Systems (4%), Computer Use (7%), Process Control (9%), Purchasing and Resource Identification Activities (4%), Electronics and Hydraulics (12%), and Design Processes (8%).
  o **Performance Component:** The performance test consists of three jobs and three hours are allowed for administration. The following jobs are included on the assessment: Milling Operations (47%), Assemble a Multiple Shaft Gear Drive System (31%), and Determining Gage Block Combinations (22%).

• PRECISION MACHINING
  o **Test Code:** 4152
  o **CIP Code:** 48.0501
  o **Written Component:** The written test consists of 174 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Organization and Shop Safety Practices (10%), Measurement and Inspection (9%), Metallurgical Processes and Heat Treating (6%), Blueprint Interpretation and Process Planning (6%), Layout and Benchwork (7%), Band Saw Machines (6%), Lathes (17%), Milling Machines (17%), Surface Grinding (7%), Computer Numerical Control (CNC) Programming, Preparation, Operations (10%), and Drill Press (5%).
  o **Performance Component:** The performance test consists of two jobs and two hours and 30 minutes are allowed for administration. The following jobs are included on the assessment: Milling Operations (55%) and Lathe Operations (45%).
• WELDING
  o **Test Code:** 4272
  o **CIP Code:** 48.0508
  o **Written Component:** The written test consists of 172 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (12%), Physical Characteristics and Mechanical Properties of Metals (10%), Weld Fit-up and Quality (15%), Welding Symbols and Blueprint Reading (7%), Oxyfuel Cutting (OFC) (12%), Arc Cutting Process (Carbon Arc and Plasma Arc) (11%), Shielded Metal Arc Welding (SMAW) (9%), Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW) (12%), and Gas Tungsten Arc Welding (GTAW) (12%).
  o **Performance Component:** The performance test consists of six jobs and three hours are allowed for administration. The following jobs are included on the assessment: Oxyfuel Cutting (23%), SMAW V-Groove, 3G (20%), GMAW, 2F (12%), Aluminum GTAW Tee Joint, 2F, (15%), Stainless Steel GTAW Lap Joint, 2F (12%) and Uphill FCAW, 3F (18%).
Job Ready

- **ADVERTISING AND DESIGN**
  
  o **Test Code:** 4119
  
  o **CIP Code:** 09.0903
  
  o **Written Component:** The written test consists of 200 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Computer Literacy (12%), Typography (13%), Design Literacy and Application (19%), Color Theory and Application (11%), Digital Illustration and Drawing (9%), Photography (4%), Production and Printing (12%), Communication and Career Skills (9%), Work Environment (3%), Multimedia (2%), and Digital Image Manipulation (6%).

  o **Performance Component:** The performance test consists of two jobs and two hours and 45 minutes are allowed for administration. The following jobs are included on the assessment: Design: Computer Comprehensive - Prepare and Print Files (64%), and Layout: Redesign (36%).

- **FASHION MERCHANDISING (WRITTEN ONLY)**
  
  o **Test Code:** 4002
  
  o **CIP Code:** 52.1902
  
  o **Written Component:** The written test consists of 209 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Core Competencies (19%), Fashion Merchandising Skills (26%), Customer Service/Sales and Techniques (9%), Cash Handling Skills (5%), Stockroom Skills (5%), Selling Area Skills (5%), Advertising, Visual Merchandising, Sales Promotion Skills (13%), Market Research (9%), and Principles of Management (9%).
• RETAIL MERCHANDISING
  o **Test Code:** 4153
  o **CIP Code:** 52.1803
  o **Written Component:** The written test consists of 199 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Advertising and Promotion (5%), Communications (6%), Visual Merchandising (6%), Marketing and Merchandising (13%), Technology in Retail Merchandising (9%), Economics (8%), Customer Service, Sales, and Selling (10%), Professionalism in Retail Merchandising (19%), Retail-Related Mathematics (15%), and Entrepreneurship (9%).
  o **Performance Component:** The performance test consists of five jobs and two hours and 20 minutes are allowed for administration. The following jobs are included on the assessment: Inventory Check-In (16%), Cash Handling (22%), Handling Customer Returns (17%), Product Knowledge and Selling (20%), and Virtual Cash Drawer Closing of a Retail Business (25%).
Job Ready

- **ELECTRIC POWER AND DISTRIBUTION**
  - **Test Code:** 2039
  - **CIP Code:** 46.0303
  - **Written Component:** The written test consists of 183 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Maintain a Safe Work Environment (7%), Perform Job Site Planning Activities (3%), Climbing Skills (5%), Pole Framing and Construction Specifications (10%), Equipment Operation (7%), Setting and Replacing Poles (8%), Transformer Installation (7%), Service Installation and Metering (5%), Conductor Installation and Repair (8%), Rubber Gloving Methods (7%), Underground Distribution (6%), Substations and Voltage Regulation (7%), Fusing and System Coordination (6%), Maintain Line Equipment and Tools (5%), Maintain Records and Documentation (5%), and Problem Solving and Troubleshooting (4%).
  - **Performance Component:** The performance test consists of seven jobs and one hour and 32 minutes are allowed for administration. The following jobs are included on the assessment: Hurtman Rescue Using a Handline (17%), Transformer Connections (14%), Material and Tool Identification (8%), Tool Identification and Use (8%), Knot Tying (5%), Truck Operation (36%), and Meter Installation (12%).

- **ELECTRICAL CONSTRUCTION TECHNOLOGY**
  - **Test Code:** 4130
  - **CIP Code:** 46.0399
  - **Written Component:** The written test consists of 164 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Introduction to the Electrical Construction Technology Career (4%), OSHA Regulations and Electrical Safety Practices (7%), Meters, Measurements, Testing (6%), Identification and Selection of Tools, Materials, and Components (13%), National Electrical Code (NEC) (12%), Blueprints, Specifications, and Estimations (6%), AC Theory, Magnetic Theory, and DC Theory (13%), Circuit Theorems and Conversions (8%), Wiring, Circuits, and Installation (10%), Green and Renewable Technology (6%), Transformers (4%), and Motors (11%).
  - **Performance Component:** The performance test consists of three jobs and three hours and 20 minutes are allowed for administration. The following jobs are included on the assessment: Bend Conduit (34%), Switching and GFCI Receptacle in a Residential Setting (42%), and Install Two Smoke Alarms in a Commercial Setting (24%).
• ELECTRICAL OCCUPATIONS
  o **Test Code:** 3029
  o **CIP Code:** 46.0399
  o **Written Component:** The written test consists of 171 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (10%), Wiring Methods (17%), Tools (5%), Motors and Motor Controls (10%), National Electrical Code (22%), Blueprint Reading (6%), Applied Mathematics (10%), Alternating Current (AC) (10%), and Direct Current (DC) (10%).
  o **Performance Component:** The performance test consists of four jobs and three hours and 25 minutes are allowed for administration. The following jobs are included on the assessment: Install Cable from Meter Base to Service Entrance Panel (36%), Install GFCI Circuit Breaker in Existing 100 AMP Panel (10%), Wire Lighting Control (32%), and Install Door Chimes (22%).

• ELECTRONICS
  o **Test Code:** 3034
  o **CIP Code:** 15.0399
  o **Written Component:** The written test consists of 180 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (5%), DC Circuits (21%), AC Circuits (19%), Solid State Circuits (17%), Soldering and De-Soldering (3%), Use of Equipment (13%), Digital Theory (11%), and Electronics-Related Mathematics (11%).
  o **Performance Component:** The performance test consists of five jobs and three hours and ten minutes are allowed for administration. The following jobs are included on the assessment: IC Identification (12%), DC Circuit Construction and Analysis (26%), Power Supply Construction and Analysis (21%), De-Soldering and Soldering (17%), and CE Amplifier Construction and Analysis (24%).
• ELECTRONICS TECHNOLOGY
  o **Test Code:** 4035
  o **CIP Code:** 15.0303
  o **Written Component:** The written test consists of 155 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety Practices (12%), Fundamental Electrical Principles and Theory (14%), Digital Electronic Circuits (14%), Electronic Device Analysis and Applications (22%), Electronic Testing Equipment (8%), Direct Current (DC) Circuit Analysis (5%), Alternate Current (AC) Analysis (13%), Prototyping and Fabrication Techniques (8%), and Careers in Electronics (4%).
  o **Performance Component:** The performance test consists of four jobs and three hours and 15 minutes are allowed for administration. The following jobs are included on the assessment: De-Soldering and Soldering (27%), Power Supply Construction and Circuit Analysis (23%), Op Amp Construction and Analysis (18%), and Design and Build a Combinational Logic Circuit (32%).

• INDUSTRIAL ELECTRICITY
  o **Test Code:** 2050
  o **CIP Code:** 47.0105
  o **Written Component:** The written test consists of 191 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: DC Theory (7%), AC Theory (7%), Test Equipment (6%), Electrical Drawings (11%), General Wiring (8%), National Electrical Code (6%), Electrical Controls (9%), Generators (3%), Motors (17%), Transformers (8%), Variable Frequency Drives (VFDs) (4%), Programmable Logic Controller (PLCs) (6%), and Safety (8%).
  o **Performance Component:** The performance test consists of four jobs and three hours and 20 minutes are allowed for administration. The following jobs are included on the assessment: Tools and Materials Identification (14%), Conduit Bending (27%), Wiring a Motor Starter (34%), and Replacing Ballast in a Fluorescent Fixture (25%).
• INDUSTRIAL ELECTRONICS
  o **Test Code:** 2051
  o **CIP Code:** 47.0105
  o **Written Component:** The written test consists of 197 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: DC Electricity (13%), AC Circuits (13%), Test Equipment (10%), Semiconductors (13%), Electronic Circuits (13%), Digital/Micro (13%), Transducers (5%), Ladder Logic and Motors (5%), Safety (10%), and Programmable Logic Controllers (5%).
  o **Performance Component:** The performance test consists of seven jobs and three hours are allowed for administration. The following jobs are included on the assessment: Semiconductor Testing (15%), Solder/De-solder Components (24%), Meter Usage (16%), Circuit Construction (13%), Oscilloscope Usage (13%), Troubleshooting (11%), and Gate Substitution (8%).

• MANUFACTURING TECHNOLOGY
  o **Test Code:** 2084
  o **CIP Code:** 48.9999
  o **Written Component:** The written test consists of 195 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Manufacturing Math, Science, and Measurement (9%), Workplace Safety, Health, and Job Skills (12%), Quality Assurance (9%), Blueprint Reading (9%), Manufacturing Fundamentals, Processes, and Materials (12%), Material Handling (5%), Industrial Robotics Systems (4%), Computer Use (7%), Process Control (9%), Purchasing and Resource Identification Activities (4%), Electronics and Hydraulics (12%), and Design Processes (8%).
  o **Performance Component:** The performance test consists of three jobs and three hours are allowed for administration. The following jobs are included on the assessment: Milling Operations (47%), Assemble a Multiple Shaft Gear Drive System (31%), and Determining Gage Block Combinations (22%).
• MECHATRONICS-LEVEL 1 (WRITTEN ONLY)
  o **Test Code:** 2040
  o **CIP Code:** 14.4201
  o **Written Component:** The written test consists of 209 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Introduction to Mechatronics: Safety (15%), Introduction to Mechatronics: Communication (5%), Instrumentation and Measurement (21%), Electrical (18%), Mechanical (16%), Hydraulic and Pneumatic Systems (12%), and Computer and Control Systems (13%).

• PRE-ENGINEERING/ENGINEERING TECHNOLOGY
  o **Test Code:** 2475
  o **CIP Code:** 15.9999
  o **Written Component:** The written test consists of 202 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Overview of Engineering (10%), Design Process/Problem Solving (11%), Manufacturing (12%), Assembly and Fabrication (5%), Materials (6%), Communication and Teamwork (10%), Safety (8%), and Engineering Systems (38%).
  o **Performance Component:** The performance test consists of two jobs and three hours and 30 minutes are allowed for administration. The following jobs are included on the assessment: Technical Writing (60%) and Oral Presentation (40%).
Job Ready

- **AUTOMOTIVE TECHNICIAN-ADVANCED**
  - **Test Code:** 4008
  - **CIP Code:** 47.0604
  - **Written Component:** The written test consists of 203 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Customer Relations and Shop Procedures (6%), Engine Repair (10%), Automatic Transmission/Transaxle (10%), Manual Drivetrain and Axles (12%), Suspension and Steering (12%), Brakes (9%), Electrical/Electronic Systems (16%), Heating and Air Conditioning (9%), and Engine Performance (16%).
  - **Performance Component:** The performance test consists of eight jobs and three hours and 10 minutes are allowed for administration. The following jobs are included on the assessment: Identification of Parts (8%), Disc Brake Assembly (18%), Tire Service and Balance (9%), Cylinder Head Service (13%), Perform Fuel System Pressure Test (14%), Windshield Washer Circuit Inoperative (8%), Test and Diagnose Battery, Starting, and Charging System (20%), and Test Electronic Engine Control Component (10%).

- **AUTOMOTIVE TECHNICIAN-CORE**
  - **Test Code:** 4309
  - **CIP Code:** 47.0604
  - **Written Component:** The written test consists of 172 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Engine Repair (5%), Automatic Transmission and Transaxle (5%), Manual Drive Train and Axles (14%), Suspension and Steering (8%), Brakes (13%), Electrical and Electronic Systems (15%), Heating and Air Conditioning (9%), Engine Performance (20%), and Customer Relations and Shop Procedures (11%).
  - **Performance Component:** The performance test consists of four jobs and one hour and 50 minutes are allowed for administration. The following jobs are included on the assessment: Brakes: Disc Brake Assembly Service (35%), Electrical/Electronic Systems: Test and Diagnose Battery, Starting, and Charging System (32%), Engine Performance: Test Electronic Engine Control Component (15%), and Suspension and Steering: Tire Service and Balance (18%).
• COLLISION REPAIR
  o **Test Code:** 4106
  o **CIP Code:** 47.0603
  o **Written Component:** The written test consists of 160 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (13%), Business Fundamentals (9%), MIG/GMAW and STRSW (15%), Structural (15%), Non-Structural (27%), and Mechanical and Electrical Systems (21%).
  o **Performance Component:** The performance test consists of three jobs and two hours and 15 minutes are allowed for administration. The following jobs are included on the assessment: Welding (46%), Sheet Metal Repair (40%), and Vehicle Measurement (14%).

• COLLISION REPAIR AND REFINISHING TECHNOLOGY
  o **Test Code:** 3183
  o **CIP Code:** 47.0603
  o **Written Component:** The written test consists of 188 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (11%), Business Fundamentals (8%), MIG/GMAW and STRSW (13%), Structural (13%), Non-Structural (23%), Mechanical and Electrical Systems (17%), and Painting and Refinishing (15%).
  o **Performance Component:** The performance test consists of four jobs and three hours are allowed for administration. The following jobs are included on the assessment: Welding (33%), Sheet Metal Repair (28%), Door Striker Adjustment (17%), and Refinishing (22%).

• DIESEL TECHNOLOGY
  o **Test Code:** 4127
  o **CIP Code:** 47.0613
  o **Written Component:** The written test consists of 178 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (6%), Shop Practices, Tools, and Equipment (14%), Diesel Engines (23%), Suspension and Steering (12%), Brakes (11%), Electrical and Electronic Systems (11%), Drivetrains (10%), and Preventive Maintenance (13%).
**Performance Component**: The performance test consists of five jobs and two hours and 30 minutes are allowed for administration. The following jobs are included on the assessment: Cylinder Liner Installation (18%), Perform a Wheel Bearing Adjustment and Brake Stroke Measurement (25%), Check and Adjust Rocker Level Clearance (15%), Perform a Coolant System Inspection (11%), and Electrical Testing (31%).

- **HEAVY EQUIPMENT MAINTENANCE AND REPAIR**
  - **Test Code**: 3046
  - **CIP Code**: 47.0302
  - **Written Component**: The written test consists of 174 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Maintain and Repair Engine (16%), Maintain and Repair Power Train (10%), Maintain and Repair Electrical System (12%), Maintain and Repair Brake System (11%), Welding (5%), Preventive Maintenance (11%), Maintain and Repair Hydraulic System (11%), General Shop Practices (10%), Air Conditioning (7%), and Heavy Equipment Undercarriage (7%).

  - **Performance Component**: The performance test consists of seven jobs and two hours and 25 minutes are allowed for administration. The following jobs are included on the assessment: Test Cooling System (10%), Electrical Testing (19%), Adjust Valve Clearance (12%), Set Carrier Bearing Ring and Pinion Backlash (14%), Identify Brake Components (8%), Measure and Adjust Track (10%), and Cut and Weld Steel (27%).

- **SMALL ENGINE TECHNOLOGY**
  - **Test Code**: 4168
  - **CIP Code**: 47.0606
  - **Written Component**: The written test consists of 195 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Safety (10%), General Shop Practices (6%), Maintenance (12%), Lubrication Systems (5%), Fuel System Fundamentals (14%), Governor (6%), Ignition (6%), Starters and Charging Systems (6%), Cylinder Head and Valve, Service and Maintenance (10%), Engine Assembly (9%), and Troubleshooting (16%).

  - **Performance Component**: The performance test consists of seven jobs and three hours and five minutes are allowed for administration. The following jobs are included on the assessment: Start and Adjust Engine (12%), Ignition Service (18%), Measure Parts (9%), Valve Service (15%), Carburetor Service (19%), Invoicing Parts (14%), and Manual Starter Service (13%).
Pathway

- LOGISTICS TECHNOLOGY/DISTRIBUTION CENTER SERVICES
  - Test Code: 2071
  - CIP Code: 52.0203
  - **Written Component**: The written test consists of 157 questions and three hours are allowed for administration. The test can be administered via the online system or in a paper/pencil format in one, two, or three sessions. The following categories are included on the assessment: Operations/Safety and Ergonomics (18%), Operations/Inventory Management (11%), Operations/Procurement (3%), Operations/Receiving (9%), Operations/Putaway (6%), Operations/Picking (Order Selection) (4%), Operations/Packing (3%), Operations/Shipping (8%), Operations/Material Handling Equipment (17%), Operations/Technology (10%), Customer Relations/Direct Communication with Customers (1%), Customer Relations/Customer Requirement Analysis (5%), Logistics/Supply Chain Management (4%), and Logistics/Industry Trends and Current Topics (1%).
  - **Performance Component**: The performance test consists of five jobs and three hours and 45 minutes are allowed for administration. The following jobs are included on the assessment: Inventory Control/Cycle Count (14%), Material Handling Equipment (36%), Receiving (17%), Order Fulfillment Process (20%), and Bill of Lading (13%).