AMTEC Modules

AMT 100: Computer Literacy

- AMT 1001: Orientation to Computer Systems
- AMT 1002: Operating Systems
- AMT 1003: Computer Applications
- AMT 1004: Internet/Intranet

AMT 101: Fluid Power and Electrohydraulics/Pneumatics

- AMT 1011: Fundamentals of Fluid Power & Electrohydraulics/Pneumatics
- AMT 1012: Flow, Directional, Pressure Control Valves
- AMT 1013: Pumps, Actuators, & Accumulators
- AMT 1014: Reservoirs, Fluids, & Filters
- AMT 1015: Hose, Piping, & Tubing
- AMT 1016: Electrohydraulics/Pneumatics
- AMT 1017: Systems and System Troubleshooting

AMT 102: General PM and Predictive Maintenance

- AMT 1021: Basic PM
- AMT 1022: Advanced Technologies

AMT 103s: PLC (Siemens)

- AMT 1031s: Introduction to Siemens PLC's
- AMT 1032s: Siemens Hardware and Software (I/O)
- AMT 1033s: Programming Siemens PLC's
- AMT 1034s: Siemens PLC Communication

AMT 103ab: PLC (Allen-Bradley/Rockwell)

- AMT 1031ab: Introduction to Allen-Bradley PLC's
- AMT 1032ab: Allen-Bradley Hardware & Software
- AMT 1033ab: Programming Allen-Bradley PLC's
- AMT 1034ab: Allen-Bradley PLC Communication

AMT 104: Blueprint Reading/Schematics

- AMT 1041: Drafting Fundamentals
- AMT 1042: Orthographic Interpretation

AMT 105: Robotics

- AMT 1051: Introduction to Robotics
- AMT 1052: Programming/Editing
- AMT 1053: Maintenance and PM
- AMT 1054: Troubleshooting Using Error Codes
- AMT 1055: Integration of PLC with Robotics

AMT 106: Controls & Instrumentation

- AMT 1061: Fundamentals
- AMT 1062: Sensors & Photoeyes
- AMT 1063: Calibration and Loop Tuning
- AMT 1064: Final Control Elements

AMT 107: Basic Electricity & Electronics

- AMT 1071: Introduction to Basic Electricity
- AMT 1072: Instruments
- AMT 1073: Components & Circuits
- AMT 1074: Solid State Devices

AMT 108: Mechanical Systems/Mechanical Drives/ Power Transmissions

- AMT 1081: Basic Mechanical Power Transmission
- AMT 1082: Flexible Drives
- AMT 1083: Couplings and Alignment
- AMT 1084: Bearings, Shafts, & Seals
- AMT 1085: Brakes & Clutches
- AMT 1086: Gears & Cams

AMT 109: Safety

- AMT 1091: Basic OSHA Safety
- AMT 1092: Hoists & Cranes
- AMT 1093: Rigging Awareness & Fundamentals

AMT 110: Welding & Fabrication

- AMT 1101: Introduction to Welding
- AMT 1102: SMAW
- AMT 1103: GMAW
- AMT 1104: Oxy/Fuel Cutting and Joining

AMT 120: Machine Tool Operations

- AMT 1201: Introduction to Machining Operations
- AMT 1202: Measuring & Layout Tools
- AMT 1203: Hand & Power Tools
- AMT 1204: Saws
- AMT 1205: Drill Press
- AMT 1206: Turning
- AMT 1207: Milling

Module Descriptions

AMT 100: Computer Literacy

- Introduces participants to the typical computer systems and basics of using operating systems related to advanced manufacturing industry
- Covers how to use application program software such as Microsoft Office
- Provides students with basic skills in using Internet and Intranet to search for manuals, software, drivers, etc.

AMT 101: Fluid Power and Electrohydraulics/Pneumatics

- Covers principals of fluid power, calculations of physical properties of fluids, troubleshooting fluid power components and systems with an emphasis on safety
- Explains how to use control valves, pumps, actuators, accumulators, reservoirs, fluids, filters, hose, piping, tubing, and preventive and predictive maintenance techniques

AMT102: General PM and Predictive Maintenance

- activities include how to check for wear and tear, replacing components to avoid breakdown, lubricating, cleaning, and testing to keep equipment optimized for efficiency and accuracy

AMT 103s: PLC (Siemens)

- Overview of Siemens PLC system architectures, networks and software options.
- Addresses industrial communications, how to start a new project, wiring and configuration, understanding the programming

AMT 103ab: PLC (Allen-Bradley)

- Overview of Allen-Bradley PLCs system architectures, basic numbering systems, computer terminology, industrial communications
- Learn about wiring and configurations of I/O modules, ladder logic programming, function block programming, etc.

AMT 104: Blueprint Reading/Schematics

- Read, manipulate, and understand a mechanical part print
- Recognize, identify, describe, and relate the components used in schematics and symbols

AMT 105: Robotics

- Introduces basic components, types of robots, safety, programming, and integrating PLC with robot applications
- Covers robot maintenance, preventative maintenance, and troubleshooting robots using error codes

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AMT 106: Controls & Instrumentations

- Teaches how to troubleshoot/replace/install circuit boards, sensors, and photoeyes
- Shows how loop tuning will assure quality standards, what different modes of control have on maintaining process quality
- Become proficient in troubleshooting motors and variable speed drives, interpreting relay logic, interpreting relay logic and sizing of components for various applications

AMT 107: Basic Electricity & Electronics

- Introduces various elements of basic electricity such as the identification of electrical symbols as well as interpretation of schematics, cross referencing prints, tracing circuits, interpreting charts
- Explains different electrical measurement instruments with safe measuring techniques emphasized. Various circuits as well as combinational and sequential ladder logic designs are examined.

AMT 108: Mechanical Systems/Mechanical Drives/Power Transmissions

- A mechanical system consists of a combination of components that function together to perform work and motion. Mechanical drive systems may also change the size, direction, and speed of the applied force
- Covers power transmission, calculation of speed and force, mechanical drawing, safe work practices, common hand tools
- Learn about flexible chain drives, how to install, align, and maintain shaft couplings
- Introduces the various components of the mechanical systems such as bearing, shafts, seals, brakes, clutches, gears, and cams

AMT 109: Safety

- OSHA regulations, safety rules related to the use of cranes, hoists, and rigging equipment
- American Red Cross First Aid/CPR/AED program is available for additional fee

AMT 110: Welding & Fabrication

- Covers shielded metal arc welding, gas metal arc welding, oxy-fuel welding cutting
- Various techniques, equipment, filler metals, and safety

AMT 120: Machine Tool Operations

- Emphasis on safe applications of machining procedures and machines used by multi-skilled industrial maintenance technicians
- Measuring and Layout Tools, Hand and Power Tools, Saws, Drill Press, Lathes, Milling
- Various types of each tools are explored