AMATROL®

MECHATRONICS LEARNING SYSTEMS

ELECTRICAL, MECHANICAL, & FLUID POWER TECHNOLOGIES

Unmatched Expansion Opportunities

Expand Your Learning Opportunities

Fanuc Servo Robot Integration

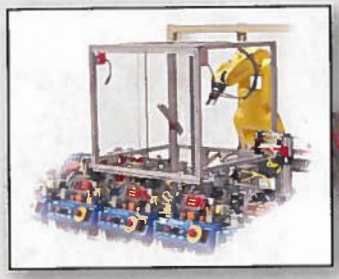
Fanuc Robot Integration

>87-500F, 25098

Integrate a user-supplied Fanuc robot with the Mechatronics Station 5.

- User Supplied Fanuc Robot
- Fanuc Robot Interface and Cabling Package
- Custom Gripper Set
- Safety Enclosure

Available for Station 5



Fanuc 200iC

Fanuc 200iD/4S

Quality Assurance

Vision Inspection

> 87-VS1

This system uses an industrial vision camera to identify components on the mechatronics line or as a stand-alone system.

- Vision Camera
- Vision Programming
- Output Discrete Signals
- Part Inspection

Interactive Multimedia

Available for All Stations

Tracking/Identification

Mechatronics Barcode Learning System

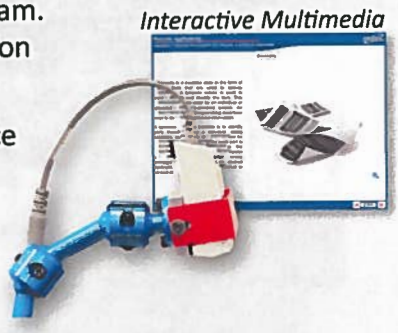
> 87-BR1S7300, 87-BR1AB53

Adds the widely used barcode data collection system to your mechatronics program.

- Barcode Reader Operation
- Serial Communications
- PLC Data Instructions
- Barcode Reader Interface
- PLC Programming

Available for Individual Stations 4, 7 or Combination of 3 & 5

Interactive Multimedia



RFID Learning System

> 87-RF1S7300, 87-RF1AB53

Provides an RFID system to identify and track components.

- RFID Function
- RFID Operation
- RFID Applications
- RFID Components

Available for Individual Station 5 or Combinations of 3 & 4, 5 & 7, or 6 & 7

Interactive Multimedia

PLC Training

PLC Learning System

> 87-IOSS7, 87-IOS-AB5300

Allows a Station's PLC to be used as a stand-alone PLC trainer.

- Introduction to Programmable Controllers
- Basic Programming
- PLC Motor Control
- PLC Timer Control
- Event Sequencing

Available for all Stations

eBook

Mechatronics Simulation

MechaSIM

> 87-MSSS7, 87-MSSAB53

Simulation software allows PLC programs to be created/tested before downloading to the Mechatronics Stations.

- PLC CIM Simulation
- MechaSIM Software Navigation
- Multiple Station Simulation

Using Industrial Components

AMATROL

to Meet Your Changing Needs!

Fault Troubleshooting

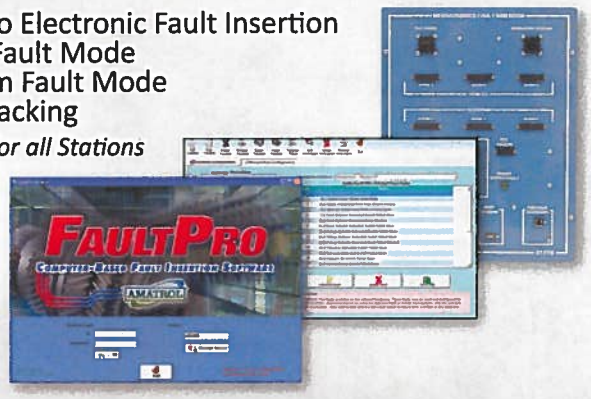
Electronic Fault Insertion: FaultPro

>87-FTSS7, 87-FTSAB53, 87-FTSAB53A

Take your training to the next level with FaultPro, an electronic fault insertion system!

- FaultPro Electronic Fault Insertion
- Single Fault Mode
- Random Fault Mode
- Data Tracking

Available for all Stations



Manual Fault Insertion Module

> 87-MF1

This module provides the ability to manually insert faults into any station.

- 12 Fault Capability
- Faults for PLC, Switches, Sensors, etc.
- Connects to any Station
- Quick & Easy Fault Insertion

Available for all Stations

Controls

Mechatronics Profibus –Siemens S7314

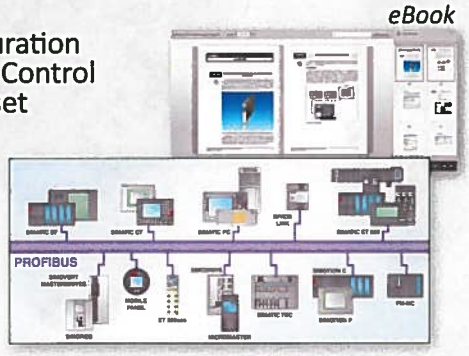
> 87-DPS7

Incorporates a Profibus communications network to two or more of the mechatronics stations having Siemens S7314 processors.

- Communication Network
- Data Exchange
- Network Configuration
- Multiple Station Control
- System Stop/Reset

Use with any two Stations having Siemens S7314 processors

eBook



Mechatronics Ethernet

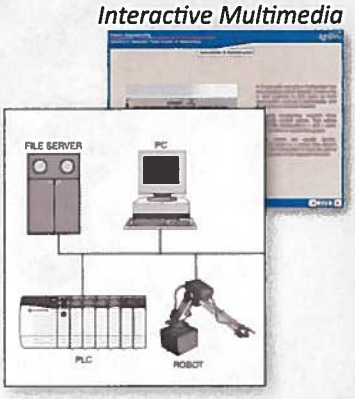
> 87-ENAB53

Integrates an Ethernet communications network to two or more stations having Allen Bradley 5300 processors.

- Network Operation
- Network Installation
- Configuration
- Produced/Consumed Data & Messages
- Data Transfer

Use with any two Stations having AB 5300 series processors

Interactive Multimedia



HMI Terminal

> 87-HMIS7A, 87-HMIAB53, 87-HMIAB53A

Teach how to monitor and control the mechatronic systems using a human-machine-interface.

- HMI Configuration
- HMI Operation
- Project Transfer
- Application Editing
- Field Objects
- Multi-Point Network Applications

Available for all Stations

eBook Curriculum

Analog Modules

>87-AS-S7, 87-ASAB53, 87-ASAB53A

Each station has the ability to utilize various analog signals depending on the station.

- Station 1: Pressure to Current Transmitter
- Station 2: Ultrasonic Gauging Sensor
- Station 3: Analog Output to Stepper Motor Interface
- Station 4: Analog Output to PWM interface
- Station 5: Pressure Analog Output Transducer
- Station 6: Analog Output to PWM Interface
- Station 7: Linear Potentiometer

Each Station is a Complete Training System with

Amatrol's Skill-Based Curriculum Takes

Amatrol's Mechatronics Learning Systems are fully supported with
The best instructional design practices were used to create engaging

Station 1: Pick & Place Feeding

- Material feeding systems
- Pneumatic robots
- Powered parts feeder
- Vacuum grippers
- Hall-effect sensors
- Magnetic sensors

Vacuum Pick & Place Feeding

Station 2: Gauging

- Go/No-Go gauging
- Analog sensor adjustment
- Non-servo linear traverse axis
- Synchronous belt drive
- Ball screw drives
- Part rejection/transfer

Linear Transfer

Station 5: Servo Robotic Assembly

- Servo robots
- Gravity feeder
- Pick & place assembly
- Pneumatic screw feeder
- Part insertion

Servo Robot Valve Placement

Station 6: Torquing

- Automated torque system
- Electric traverse slide
- DC motor torque
- Variable speed motors
- Clutches

Fastener Torquing

Use Stations Separately or in Combinations!

Each individual station is a small mechatronics system by itself with each having several integrated technologies on it. Stations can be mixed and matched to build and change the system to meet your training and budget needs.

STATION	POSSIBLE STATION COMBINATIONS
1 Material Feeding	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
2 Gauging	● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
3 Indexing	● ● ● ● ● ● ● ● ● ● ● ● ● ● ●
4 Sorting/Buffering	● ● ● ● ● ● ● ● ● ● ● ● ●
5 Assembly	● ● ● ● ● ● ● ● ● ● ● ● ● ●
6 Torquing	● ●
7 Inventory	● ● ● ● ● ● ● ● ● ● ●
8 Machining	● ● ● ●

3-Station Combo: Material Feeding, Gauging, & Inventory Stations

Multiple Integrated Technologies

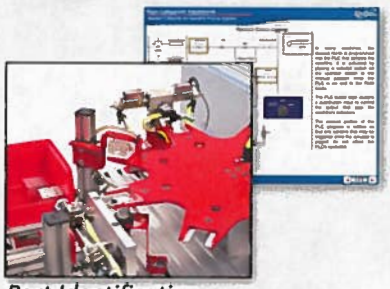
AMATROL

Your Program Where You Want It To Go!

highly interactive multimedia curriculum and detailed hands-on skills.
interactions, animations, video, and text that appeal to a wide range of learners.

Station 3: Orientation Processing

- Index tables
- Stepper motors
- Homing sensors
- Fiber optic sensors
- Part transfer
- Parts orientation
- Capacitor sensors



Part Identification

Station 4: Sorting & Buffering

- Sorting
- Buffering
- Flat belt conveyors
- Photoelectric sensors
- Inductive sensors

Valve Body Sorting

Station 7: Inventory Storage

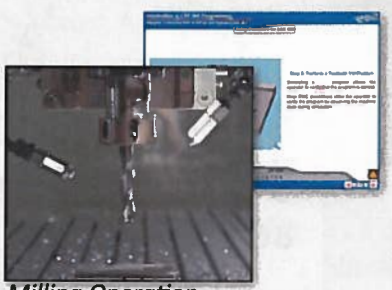
- Pick & place storage
- Pneumatic grippers, brakes
- Infrared sensors
- Programmable pneumatic traverse module

Valve Inventory

Station 8: CNC Mill

> 87-CNCM60

- Denford CNC mill
- CNC tooling
- Pneumatic vise
- Servo robot interface



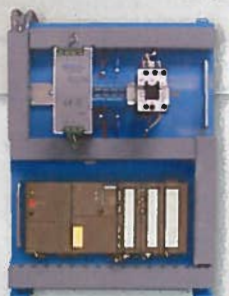
Milling Operation

Coming Soon: Station 9 - Electro-Hydraulic

Incredible Range of PLC Models Available!

Amatrol offers 6 different PLC models that can be mixed and matched to create the ultimate real-world training experience. Industries use different PLC models, and your training can as well!

Use on the Stations or as Stand-Alone PLC Trainers!

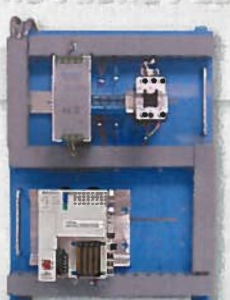


S7315

Siemens PLCs

Available Processors:

- *S7313*
- *S7314*
- *S7315*



AB5300 L16

Allen Bradley PLCs

Available Processors:

- *AB1200*
- *AB5300 L32*
- *AB5300 L16*

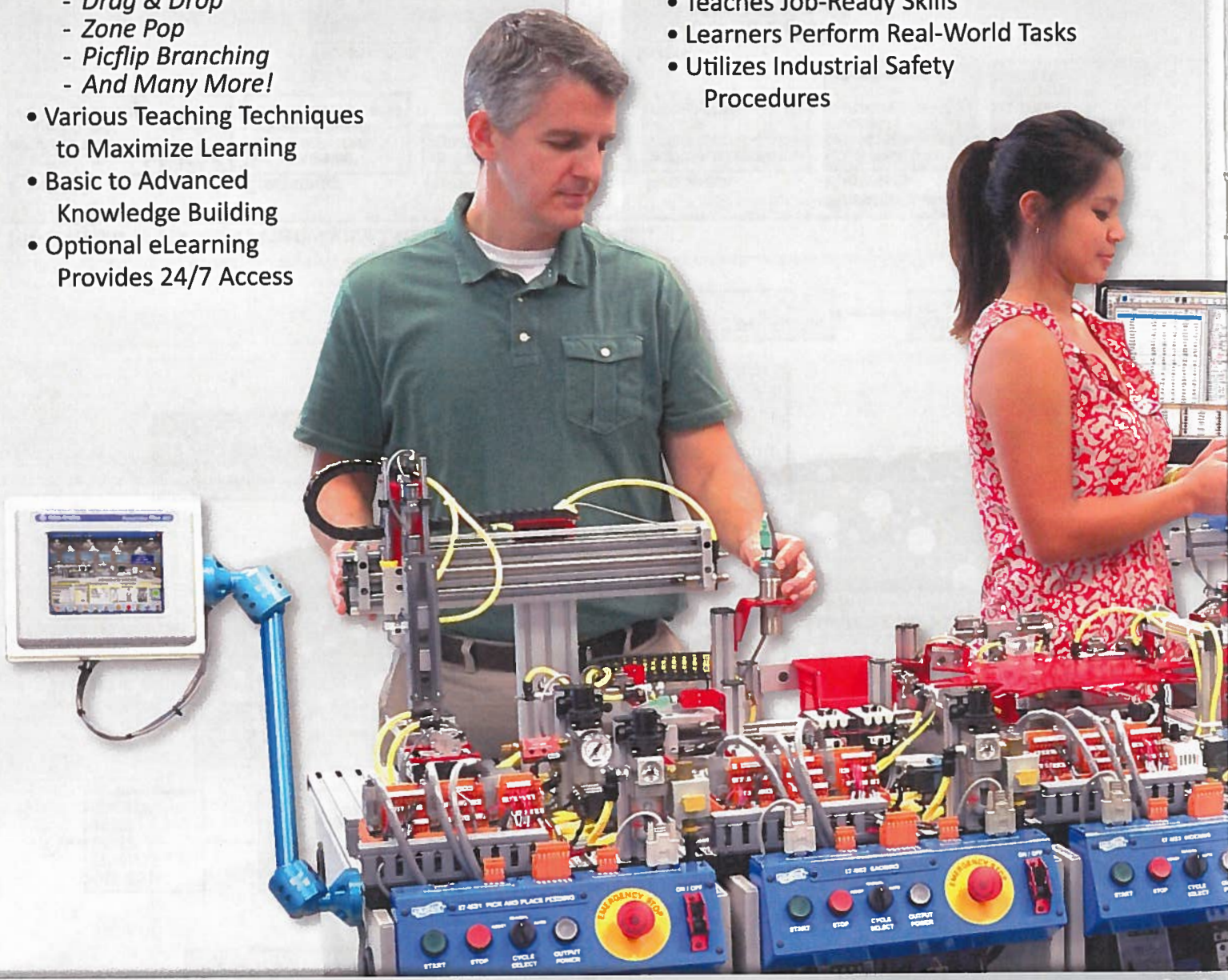
Pneumatic Valve Assembly Using All

Interactive Multimedia Curriculum

- Dynamic Problem-Solving Interactions
  - *Drag & Drop*
  - *Zone Pop*
  - *Picflip Branching*
  - *And Many More!*
- Various Teaching Techniques to Maximize Learning
- Basic to Advanced Knowledge Building
- Optional eLearning Provides 24/7 Access

Off-the-Shelf Industrial Components

- Recreates Industrial Environment
- Teaches Job-Ready Skills
- Learners Perform Real-World Tasks
- Utilizes Industrial Safety Procedures



Station 1
Pick & Place Feeding

Station 2
Gauging

Station
Orientation

Expand Your Training With

Only Amatrol's Mechatronics System offers this incredible range

Fault Troubleshooting

HMI

PLC Training

CNC Interface

Simulation

Vision

Mechatronics Technologies!

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Wide Array of Technologies

- 8 Types of Electronic Sensors
- 3 Types of Electrical Motors
- 4 Types of Pneumatic Actuators
- 20 Different Mechanical Power Transmission Components
- PLC Programming Software

True Assembly Operation

- Pick & Place Feeding Operation
- Valve Body Gauging & Positioning
- Aluminum/Acrylic Valve Body Sorting & Buffering
- Servo Robotic Valve Spool Assembly
- Final Assembly Torquing
- Pick & Place Inventory Storage

Siemens Mechatronics Certification!
Visit Amatrol.com or Siemens-certification.com

3 Processing | *Station 4 Sorting & Buffering* | *Station 5 Servo Robotic Assembly* | *Station 6 Torquing* | *Station 7 Inventory Storage*

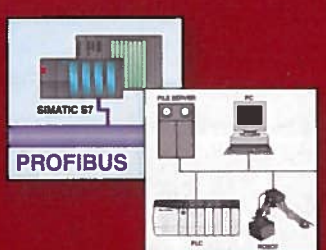
Unmatched Range of Options!

of options with curriculum to enhance or expand your training

Inspection

Barcode Technology

RFID Technology



Communication Networks

Fanuc Robot Integration

MECHATRONICS SKILLS

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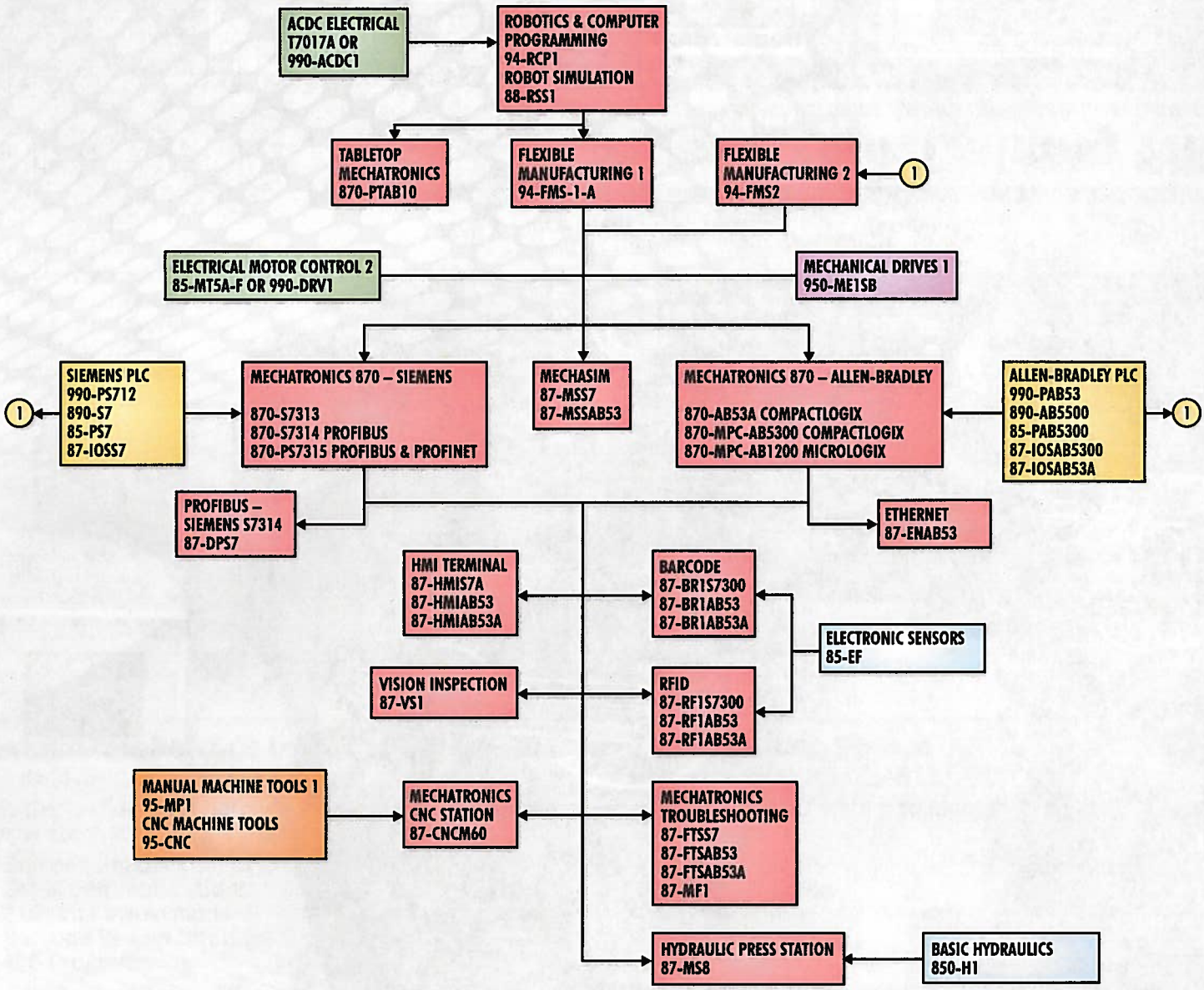

MECHATRONICS PROGRAMS FREQUENTLY INCLUDE COURSES SUCH AS...

ELECTRICAL
- MOTOR CONTROL TROUBLESHOOTING
- BASIC ELECTRICAL WIRING
- CONTROL WIRING
- POWER DISTRIBUTION

ELECTRONICS
- PLC NETWORKING
- PLC I/O INTERFACING
- OPERATOR INTERFACES
- AC/DC ELECTRONIC DRIVES

FLUID POWER
- PNEUMATICS
- FLUID POWER TROUBLESHOOTING

MECHANICAL
- MECHANICAL FABRICATION
- CONVEYORS
- RIGGING
- PUMP SYSTEMS

MANUFACTURING PROCESSES
- PRINT READING
- PRODUCTION ASSEMBLY
- WELDING
- FASTENERS
- GASKETS
- CONTAMINATION

MATERIALS
- MATERIALS ENGINEERING
- FERROUS METALS
- NON-FERROUS METALS
- PLASTICS
- COMPOSITES
- CERAMICS

LEAN TECHNOLOGIES
- TPM
- 5S
- POKA-YOKE
- LEAN THEORY
- VISUAL WORKPLACE
- KAIZEN

QUALITY ASSURANCE
- PRECISION GAUGING
- QUALITY TOOLS
- SPC

SAFETY
- SAFETY PRACTICES/REGULATIONS
- PERSONAL PROTECTIVE EQUIPMENT
- LOCKOUT/TAGOUT
- ACCIDENT RESPONSE

*SEE AMATROL.COM FOR A COMPLETE COURSES LIST.

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