

Industrial Control Technology (10-assignment)



This is an integrated instructional module designed specifically to operate within a Modular Program environment. It is ideal for use with our Scantek Technology program. The module includes a 10-assignment exploratory curriculum that is split into two parts. Each part includes a pre-test and post test. The module includes hardware, software and curriculum materials sufficient to provide a complete learning experience.

The curriculum incorporates continuous assessment through questions. When used in conjunction with a ClassAct networked management system, this provides instant feedback of student performance. The assessments begin with a comprehensive pre-test. This quiz includes questions for each subsequent assignment, together with questions that will specifically test math and reading ability.

Every assignment starts with a series of questions designed to track inventory. These ensure that any missing items are located before they are needed.

Each assignment is divided into a series of tasks. Hands-on tasks form the core of the student work. Where appropriate, these are accompanied by research tasks based upon software applications. Assessment questions are incorporated into each task.

Typical 10-assignment topic areas include:

- Custom, batch and mass production methods
- Infrared sensor, Reed switch and push button sensing devices
- Logic AND, OR and NOT functions
- Pneumatic cylinder, electric motor and lamp actuators
- Ladder logic programming
- Latch function

Typical 10-assignment activities include:

- Use a custom production method to build three models.
- Use CAI to investigate the history of industrial control and explore the sensors and actuators on the Work-Cell.
- Use CAI to investigate automation and electrical, pneumatic and hydraulic power systems.
- Load and run a program that activates the Work-Cell actuators.
- Create a simple program that turns on the conveyor when a switch is pressed.
- Create a vending machine program and use it to select 'Soda Cans'.
- Discover logic gates and look at the use of ladder logic programs.
- Modify the 'latch' program so that the conveyor belt can be stopped.
- Edit a program to include the use of Reed switches.
- Create a program that can be used to eject bobbins into the appropriate storage bins by pressing red and green buttons.
- Create a program using timers to move a bobbin along the conveyor belt and stop in front of a cylinder piston, where it will be ejected.
- Create a program that will sort the Work-Cell bobbins.
- Identify errors within a larger program. Correct the program according to given guidelines.

Each assignment is designed around a list of performance objectives. These lists include academic, technical and occupational objectives. The assignments are written in such a way as to enable a student to attain the performance objectives, with the assessment questions linked to these in order to provide a measure of true competency.

The performance objectives are used by the ClassAct management system to generate a comprehensive portfolio of student competency reports. Default reports supplied with this module include:

- Entry report
- Technical/Occupational Exit report
- Basic Skills report based upon the federal SCAN's report.

The items supplied with this instructional module include:

- 10-assignment On-Screen Student Assignment Guide CD
- 10-assignment Student Assignment Guide
- 10-assignment Student Workbook
- 10-assignment Instructor's Guide
- Computer Aided Instruction software
- Industrial Control Technology Work-Cell
- Industrial Control Work-Cell 'Machine Cover'
- Hand Pump Compressor
- Manufacturing Systems Kit
- Relay Actuator output/opto-isolated input card

Additional items required:

- Computer

Module Facts

For Technology Program, order as: ST290/10 Industrial Control Technology

	No.	Average time
Assignments	10	45 minutes
Extension Activities	2	45 minutes
Total		9 hours



LJ Technical Systems
Web site: www.ljgroup.com