

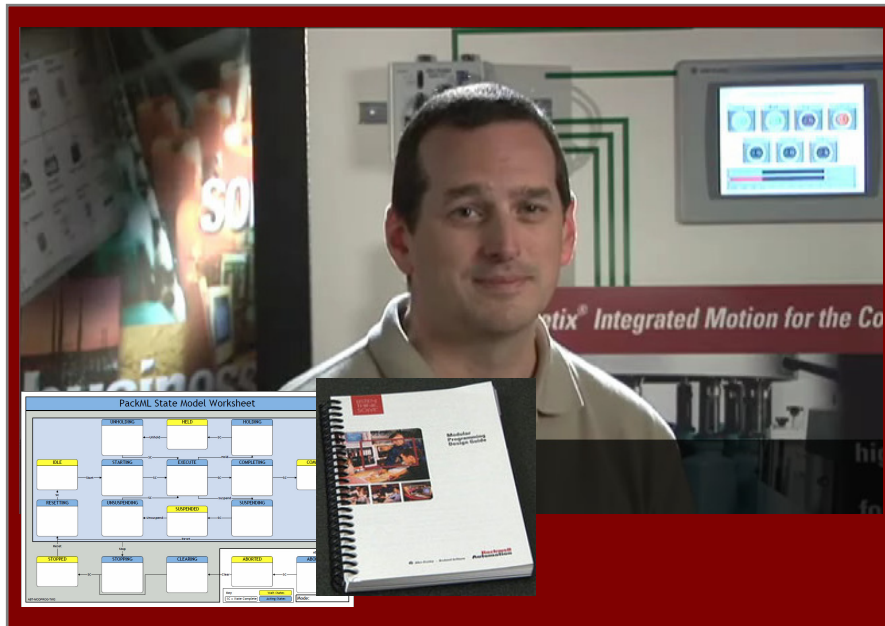
Logix5000™ Controllers

Modular Programming for Machine Applications Course Description

SELF-STUDY LESSONS

Disk 1

- Introducing Modular Programming
- Selecting Modes and States
- Breaking Down States Into Steps
- Identifying Equipment Modules
- Breaking Down Equipment Modules Into Steps
- Identifying Control Modules
- Organizing Unit Procedures
- Defining Interfaces for Procedures and Modules
- Implementing Modular Programming into RSLogix 5000™ Software
- Implementing Modular Programming Tools



Self-Study Kit

This self-study kit allows you to progress through a course at your own pace without an instructor.

This course provides you with the skills and knowledge to produce a software design specification for a machine or line of machines. The modular programming concepts in this course are derived from the ISA-88.01 industry standard and include the OMAC PackML state and data models as defined in the ISA-TR88.00.02 technical report. The specification will follow modular programming guidelines and describe:

- Equipment and control modules for controlling the machine's I/O devices
- Procedures for supervising and coordinating the modules
- Data structures for interfacing procedures with modules
- State model for machine's overall operation
- Naming conventions for software components

By using a modular approach to your software design, your software becomes much easier to reuse from project to project. As your base of modular code increases, your development time decreases. Additionally, the quality of the code increases because you can refine it each time you reuse it.

For those in plant engineering and maintenance roles, this course will help you integrate and maintain equipment that uses modular design concepts.

Intended Audience

- Control engineers who want to improve the efficiency of their software development process
- Plant engineers who need to integrate and maintain lines of machines
- Technicians and other maintenance individuals who need to interpret and maintain modular software programs

Prerequisites

To successfully complete this course, the following prerequisites are required:

- First-hand knowledge of how your machines operates
- Able to organize data into programs and routines and create user-defined data types in RSLogix 5000 software
- Able to write and program ladder diagrams in RSLogix 5000 software

You can use these courses to get the prerequisite RSLogix 5000 skills:

- *RSLogix 5000 Level 2: Basic Ladder Logic Programming* (Course No. CCP151)
- *RSLogix 5000 Level 3: Project Development* (Course No. CCP143)

Student Materials

To enhance and facilitate your learning experience, the following materials are provided as part of the course package:

- *Modular Programming Training DVD*, which contains self-paced training content and electronic job aids.
- *Modular Programming Design Guide*, which contains key steps and guidelines to develop modular code.
- *PackML State Model Worksheet*, which contains the state model used in this course. The worksheet has a rewriteable surface that aids in developing and organizing modular programming concepts.

Student Materials (cont.)

- *Integrated Architecture: Foundations of Modular Programming*, which contains industry standard modular programming concepts and methodologies implemented by Rockwell Automation.
- *Power Programming Template*, provides pre-configured modular code in an RSLogix 5000 project file in order to quickly start programming.
- *Description of Operations*, which aids in developing and organizing modular programming concepts in an Excel spreadsheet.

Learning Activities & Features

Rockwell Automation e-Learning courses include the following features:

- Discussions of basic principles and/or concepts
- Descriptive and detailed technical explanations
- Animated sequences
- Integrated questions
- Interactive simulations
- Navigation menu to locate specific course topics
- Glossary of terms

To Purchase

To register for this or any other Rockwell Automation training course, contact your local authorized Allen-Bradley Distributor or your local Sales/Support office.

You can also access course information via the Web at <http://www.rockwellautomation.com/services>

Catalog Numbers

- *Modular Programming for Machine Applications: 9393-MODPROG*

www.rockwellautomation.com

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