

COURSE SYLLABUS
SOUTHEAST MISSOURI STATE UNIVERSITY

Department of Industrial Technology

Course No.: ET-194

Title of Course: Fundamentals of Programmable Logic Controllers

Revision: Fall 99

Instructor: Mr. Scott Wright
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I. Catalog Description and Credit Hours of Course:

An introductory to Programmable Logic Controls (PLC), focusing on the underlying principles of how PLCs work and providing practical information and skills about installing, programming, and troubleshooting a PLC system. Two (2) hour lecture and Two (2) hours lab per week. Three (3) credit hours.

II. Prerequisites:

ET-162, DC/AC Circuits I or consent of the instructor, (knowledge of computers and numbering systems is helpful but not required).

III. Objectives of Course:

Upon completion of this course the students will be able to:

- A. Understand the fundamentals Programmable Logic Controllers systems.
- B. Identify the types of PLC communications and network systems.
- C. Design, edit, test, and document PLC Ladder Logic Programs.
- D. Diagnose and troubleshoot PLCs using Rockwell's A.I. and R.S. Series software.
- E. Specify safety consideration for personnel, field devices and automated equipment.

IV. Expectations of Students:

- A. Regular attendance and participation.
- B. Keep a complete set of notes from the lectures and demonstrations.
- C. Complete all laboratory and homework assignments.
- D. Take all quizzes and examinations.

V. Course Content or Outline:	Week(s)
A. Introduction to Programmable Logic Controllers.	1
B. Micrologix PLC Hardware Components	2
C. Numbering Systems	3
D. Introduction to A.I. Series Software	4
E. Basics of PLC Programming	5
F. Fundamentals of Logic	6
G. Programming Ladder Logic Controls	7
H. SLC-500 Hardware Components	8
I. Programming SLC-500 Systems	9
J. SLC-500 Troubleshooting	10
K. PLC-5 Hardware Components	11
L. Introduction to R.S. Series Software	12
M. Programming PLC-5 Systems	13
N. PLC-5 Troubleshooting	14-16

VI. Textbook(s) and/or Selected References and Materials:

A. Textbook:

Petruzella, Frank D., (© 1998). *Programmable Logic Controllers: 2/e.*
Glencoe/McGraw-Hill.

VII. Basis for Student Evaluation:

A. Class Participation	5%
B. Quizzes	15%
C. Lab Assignments/Reports	40%
D. Examinations (Midterm and Final)	40%

Letter grades will be based on the following criteria:

90 – 100%	=	A
80 – 89%	=	B
70 – 79%	=	C
60 – 69%	=	D
Below 60%	=	F

VIII. Lab Fees: There is a \$10.00 lab fee for this course to cover the cost of laboratory consumables and reproduction cost for handouts provided by the instructor.

IX. Disabilities Statement: If you have special needs addressed by the Americans with Disabilities Act and need course materials in alternative format, notify your course instructor immediately. Reasonable efforts will be made to accommodate your special needs.

(Items above are subject to change upon the discretion of the instructor)