PO Box 1189
1042 W. Hamlet Avenue
Hamlet, NC 28345
(910) 410-1700
www.richmondcc.edu

COURSE SYLLABUS

COURSE: ATR 112 INTRODUCTION TO AUTOMATION

HOURS: Lecture: **2** Lab/Shop: **3** Work Exp/Clinical: **0** Credits: **3**

COURSE DESCRIPTION:

This course introduces the basic principles of automated systems and describes the tasks that technicians perform on the job. Topics include the history, development, and current applications of robots and automated systems including their configuration, operation, components, and controls. Upon completion, students should be able to understand the basic concepts of automation and robotic systems.

PREREQUISITE(S): ELN 260

COREQUISITE(S): None

TEXTBOOK(S) & OTHER SPECIAL REQUIREMENTS:

Open Educational Resources (OER) are listed in the course Moodle.

STUDENT LEARNING OUTCOMES:

Upon successful completion of this course, the student will be able to:

1. Demonstrate an understanding of advanced PLC topics including sequential programming.
2. Wire, configure, and program PLC analog inputs and outputs.
3. Demonstrate an understanding of industrial networks and how to network data between PLCs.
4. List and describe commonly used industrial sensors and actuators.
5. Configure and program PLC-based HMIs (Human Machine Interfaces).
6. Perform advanced PLC troubleshooting skills.
7. Demonstrate an ability to read and understand industrial schematics.
8. Demonstrate an understanding of machine vision fundamentals and how machine vision systems are used in industry.
9. Identify and describe the lloT (the Industrial Internet of Things).
10. Explain why industrial robots are important in modern automated manufacturing systems.

*****Please refer to the online version of the Richmond Community College Program & Course Catalog and the Student Handbook for current academic and general policies.**