DCC

Danville Community College

COURSE SYLLABUS

DIVISION: Workforce Services

Revised: January 2015

CURRICULUM IN WHICH COURSE IS TAUGHT: Wood Science Technology

COURSE NUMBER AND TITLE: IND 161, Product Design and Development

CREDIT HOURS: 5

HOURS/WEEK LECTURE: 5

HOURS/WEEK LAB: 3

LECTURE/LAB COMBINATION: 5

I. **CATALOG DESCRIPTION:** Introduces the student to foundational concepts and tools in the design and development of products utilizing wood as a primary design medium.

II. **RELATIONSHIP OF THE COURSE TO CURRICULUM OBJECTIVES IN WHICH IT IS TAUGHT:** This course is designed to build confidence in the student and to stimulate a desire to learn about and possibly consider a career path in industrial automation and robotics.

III. **REQUIRED BACKGROUND:** This course is intended for anyone with an interest in and desire to learn the subject matter. No prior knowledge of the subject matter is required.

IV. **COURSE CONTENT:**
An introductory course for students with little or no prior experience in the subject matter. Course will be delivered through approximately 50% lecture and reading and 50% hands-on experimentation. The course will utilize training equipment including Amatrol and Festo trainers in electricity, motors, controls, communication, PLCs, and mechatronics. In addition, robotics will be taught using Mitsubishi and Intelitek robots.
- Measurement
- Electricity and Electrical Equipment
- Relays and Sensors
- Pneumatics,
- Basic Circuits
- PLC Logic
- Intro to Robotics

V. Learner Outcomes	VI. Evaluation
Bennett Mechanical	Class participation, homework, quizzes, and final exam
Metric System Basics of metric system with units and conversions	
Measurement Outside diameter Inside diameter Steps and depth Electricity and Electrical Equipment Basic Electricity Relays Multimeter Sensors Mechanical Power and Applications Pneumatics Basic circuits	Exercises to measure various materials and object sizes
Automation Logic PLC Logic	
Introduction to Robotics	

VII.   The course supports the following general education goals/objectives:

DCC Educational Objectives
➢   Communication
➢   Critical Thinking
➢   Information Literacy
➢   Quantitative Reasoning
➢   Culture and Social Understinding