

Mechatronics AC/DC – Course Information

Mentor – Dwight Saffer

BSEE from VA Tech in 1983

Project Engineer with Burlington Industries 1983 to 1985

Project Engineer, General Manager, President with Electrical South, Inc. 1985-1990

Engineering Manager with Leesona Corporation 1990-1993

Owner of Logic Services, Inc. a computer and industrial control company 1993-Present

Mechatronics Instructor with GTCC, Fall Semester, 2014

Contact Information – 336-230-0855, mrlogic@logicservices.net

Course Introduction

This class is for students who want to learn about advanced manufacturing involving industrial computers (Programmable Logic Controllers), mechanisms, motors and motor controls, pneumatics, robotics, and microcontrollers.

Students will learn the fundamentals of AC and DC electricity, digital electronics, microcontroller programming, and computer control of mechanical systems. CAD software will be used to design electrical schematics. Students will control motors with manual components and computer controlled power electronics. Robots will be assembled and programmed. The Programmable Logic Controller will be connected and programmed to accept digital inputs, make program decisions, and control output devices such as lights, relays, and simple motor controls. The PLC will also be programmed to interface with advanced AC and DC motor controls.

Class Schedule

This class is two hours long. Typically the first part of the class will be used for lecture, demonstration, and review of homework. That will be followed by hands-on lab work. There will be a short break approximately half way through each class.

Most of the equipment that will be used in labs will be provided by Mr. Saffer. Some equipment may be loaned to the class by equipment manufacturers or distributors. It is the responsibility of all students to treat the equipment with care and respect.

Student Requirements

All students must be equipped with writing utensils. Students must have internet access and email accounts available outside of the classroom for research, reference material, file submissions, online quizzes and tests.

There are no textbooks required for this class. All course materials will be supplied or will be available on the internet. All equipment will be supplied.

Class Grading

Attendance	15%
Homework /Labs	50%
Projects	35%