Lesson 1: step-by-step instructions for activity involving running Galil motion controllers. Student should gain basic familiarity with Visual Studio, creating projects and files, working with 3rd party libraries.

Lesson 2: introduction to the debugger, C syntax for creating and manipulating variables, conditional statements and loops. “printf” display statements. “sprintf” command and conio library introduced to facilitate assignment.

Assignment: write a keyboard based controller for the robot, basically merge the conio demo from lesson 2 with the Galil control demo from lesson 1 using programming knowledge learned in lesson 2.

Lesson 3: iostream display statements. Functions, structures, operators.

Lesson 4: lab activity on ASCII communication over serial ports

Lesson 5a: arrays, pointers, strings

Assignment: use string to float conversion to get numbers from digital compass code from lesson 4.

Lesson 5b: multithreading

Assignment: put digital compass code developed in previous assignment into Galil control code; robot should rotate to desired heading.

Lesson 6: Event driven programming (setting dialog box text, using buttons and sliders), reading joystick

Assignment: joystick based controller for robot.