ECE 403 Senior Project Outline

1 Introduction
    1.1 Provide purpose and description of project
    1.2 List specifications
    1.3 Forecast Report
2 Breakdown
    2.1 Power Supply overview
    2.2 Microprocessor
    2.3 Temperature Sensor
    2.4 User I/O
    2.5 Hot Plate Controls
    2.6 Alarm Circuitry
    2.6 Explain the software briefly
3 Details
    3.1 Hardware
        3.1.1 Power Supply
            3.1.1.1 Bridge Rectifier
            3.1.1.2 Buck Converter
        3.1.2 Microprocessor
        3.1.3 Temperature Sensor
            3.1.3.1 Wheatstone Bridge
            3.1.3.2 Instrumentation Amplifier
        3.1.4 User I/O
            3.1.4.1 LEDs
            3.1.4.2 LCD
            3.1.4.3 Keypad
        3.1.5 Hotplate Controller
            3.1.5.1 Zero-Sensing
            3.1.5.2 Triac
        3.1.6 Alarm Circuitry
    3.2 Software
        3.2.1 PID Controller/Triac signal
        3.2.2 Temperature conversion
        3.2.3 Alarm conditions