ECE-395-101
Microprocessor Lab
Fall 2003
Wednesdays 6:00 PM - 9:50 PM

Instructor: David Harrison
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Course Web Page: http://www-ec.njit.edu/~djh7970/ee395

Required Materials:
ECE-395 Microprocessor Laboratory Manual v1.00 by Dr. Sol Rosenstark
(Available at school bookstore or it can be downloaded from course web page)

Microprocessor Parts Kit
(Available at ACL Equipment Corporation in Livingston, New Jersey, 973-740-9800)

Experiments:

Exp. 1 – Acquiring and Completing the SBC (Single Board Computer)
• Finishing board assembly (solder headers, attach proto-board, etc.)
• Program EEPROM
• Insert IC’s (Integrated Circuits)
• Demonstrate monitor program

Exp. 2 – Developing Software for the SBC
• Find ‘X’ program
• Move a string in RAM program
• Adding numbers program

Exp. 3 – An Event Driven Annunciator System
• Demonstrate annunciator program

Exp. 4 – Testing and Simulating Some IC’s
• Quad logic gate (NAND, AND, OR) chip tester
• D flip-flop simulation
• JK flip-flop simulation

Exp. 5 – Testing the Serial Port
• Clock Tolerance for the UART
• Observation of the Serial Waveform

Exp. 6 – DAC (Digital to Analog Converter) Interface with the Microprocessor
• Square wave Demonstration
• Triangle wave Demonstration
• Sine wave demonstration

Exp. 7 – The Logic Analyzer
• Demonstration of logic analyzer with SBC
• Using logic analyzer to observe endless loop program

Note: You must complete pre-lab work, demonstrate each experiment and hand in a hard copy of any programs to get credit
Quizzes:
There will be two quizzes which count toward your final grade. The first quiz, on the fourth week of class is on the lab manual and board layout lecture. The second quiz, on the last week of class, will be on the single board computer operation, programming and experiments. Both quizzes will be open book and notes.

Grading Policy:
Exp. 1 – 10 points
Exp. 2 – 10 points
Exp. 3 – 10 points
Exp. 4 – 10 points
Exp. 5 – 10 points
Exp. 6 – 10 points
Exp. 7 – 10 points
Quiz 1 – 10 points
Quiz 2 – 10 points
Attendance – 10 points
Total – 100 points

Grades:
A ----- greater than 89 points
B+ ----- 85 – 89 points
B ----- 80 – 84 points
C+ ----- 75 – 79 points
C ----- 70 – 74 points
D ----- 60 – 69 points
F ----- less than 60 points

Class Schedule:

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