

# **16.216: ECE Application Programming**

Fall 2013

Lecture 5: PE1  
September 13, 2013

1. Describe the basic elements of a flowchart.

2. Design a flowchart to solve the following:

- Prompt a user to enter four numbers on a single line, which represent the contents of a 2x2 array
- After reading the values, your program should print the matrix represented by these values
  - For example, if the user enters “1 2 3 4”, print:  
1 2  
3 4
  - Assume all values have the same number of digits
- Also, calculate the matrix discriminant and print it on a separate line
  - In the example above, discriminant =  $(1 \times 4) - (2 \times 3) = 4 - 6 = -2$

3. Convert the flowchart you wrote into a C program.

4. Explain the useful features of a debugger.

**Note:** At this point, we'll run through the use of the Visual Studio debugger; feel free to use this space to take notes on that demonstration.