

# **16.216: ECE Application Programming**

Fall 2011

## Lecture 8: Key Questions

September 21, 2011

1. Explain how to set the field width, alignment, and padding characters for values printed using `printf()`.
2. Explain how to set the precision of a value printed using `printf()`, and what the precision means for the different data types.

3. **Example:** Assume `int x = 123;` `float y = 4.56;` `double z = 7.89991;`

What does each of the following lines print?

a. `printf("%4d %5f %6lf\n", x, y, z);`

b. `printf("%.4d %.4f %.4lf\n", x, y, z);`

c. `printf("%08d %-7.1f %+4.1lf !\n", x, y, z);`

4. **Example:** Write a short code sequence to do each of the following:

a. Print three integers—`x`, `y`, and `z`

- Use field widths of 10, 20, and 30, respectively
- Put an extra space between each field
- Show the signs of all values and left justify them

b. Print four doubles—`d1`, `d2`, `d3`, `d4`

- Use field widths of 7 for all values
- Put an extra space between each field
- Show 1, 2, 3, and 4 places after the decimal point, respectively

c. Given three variables—`int w, p;` `double var;`

- Read values for `w` and `p` from the input
- Print `var` using field width `w` and precision `p`