

**National Tsing Hua University**  
**Electrical Engineering Dept.,**  
**Fall Semester, 2019**

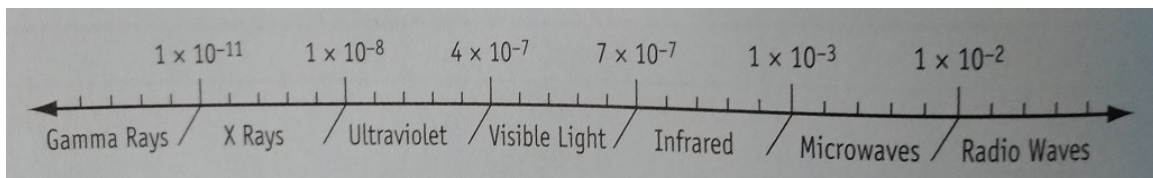
EE-2310 計算機程式設計 (Introduction to Programming)

**Homework #2 (3 points)**

**Due on Oct. 17, 2019 @ the Lab Session**

**Late Homeworks will NOT be accepted !**

1. If a scientist knows the wavelength of an electromagnetic wave, he/she can determine what type of radiation it is. Write a C++ program that asks for the wavelength in meters of an electromagnetic wave and then displays what that wave is, according to the following chart. (For example, a wave with a wavelength of 1E-10 meter would be an X-ray).



(Problem):

- (1) Ask the user to enter the wavelengths of three different electromagnetic waves in meters.
- (2) In your program, calculate the type of each of the three electromagnetic waves.
- (3) Display the following message with your results (as an example):

Please input three wavelengths in meters:

5E-7

0.4

0.003

The first electromagnetic wave with a wavelength of (5.0E-007) meter is a (Visible Light).

The second electromagnetic wave with a wavelength of (0.400) meter is a (Radio wave).

The third electromagnetic wave with a wavelength of (0.003) meter is a (Microwave).

Hint: You can use the following functions as examples to adjust the output format of a floating-point number.

**printf("x is %.1e \n", x);** // x will be printed in scientific notation, with 1 fractional digit in the significand.

**printf("y is %.3f \n", y);** // y will be printed in a fixed-point notation, with 3 fractional digits.