

# Welcome to Chemistry 105 (General Chemistry I)

- " No lab this week.
- " Discussion meets Wednesday afternoon.
- " First meeting of gen chem workshop Friday 9:00 -11:00 am in HS -305. Alternate meeting time is Monday 5:30 -7:30. See syllabus and web site for more information.
- " Instructor: Dr. Jonathan Gutow  
Office Hours: MWF 9:50 -10:50, T Th 9:30 -10:30  
or by appointment.
- " Web site:  
[www.uwosh.edu/faculty\\_staff/gutow/Chem\\_105\\_S08\\_Main.shtml](http://www.uwosh.edu/faculty_staff/gutow/Chem_105_S08_Main.shtml)

# Should you be in this class?

## YES

- " Science major
- " Pre-chiropractic
- " Pre-dental
- " Pre-medical
- " Pre-pharmacy
- " Pre-physical therapy
- " Pre-veterinary

## NO

- " Not currently at the level of Math 104 or above.

## MAYBE NOT

- " Prenursing (take 101)
- " To fulfill general education requirements (Chem 103 and 104 satisfy this).

# Syllabus Scavenger Hunt

1. Put your name in upper left corner. Write question # and answer on card. You are encouraged to discuss this with your neighbours.
2. Is attendance in lab required?
3. What is Dr. Gutow's phone number?
4. What type of calculator is required for this class?
5. What is the prerequisite for this class?
6. How can you get extra credit points in this class?
7. When is the first discussion quiz?
8. Your lab grade will not depend on (select one): written report sections, prelabs, the results of your experiment, attendance, your participation in lab, your laboratory notebook.
8. What is the minimum % of the total points necessary to get an average grade?
9. Where should you look if you are missing a handout?
10. When does workshop (extra practice sessions) meet?

# Atomic Structure

- A. Historical perspective
- B. Rutherford Experiment
- C. Evidence of quantization from light
- D. Bohr Model (Rydberg Equation)
- E. Wave Particle Duality (Debroglie relation)
- F. Modern model of atom
- G. Pauli exclusion principle and electron spin
- H. Order of subshell filling/energy (from ionization energies)
- I. Electron configurations from the periodic table
- J. Periodic trends and how they are related (atomic size, ionization energy, electron affinity, ionic radii, formation of ionic compounds)

Chang Fig. 2.6

# Chang Figure 7.2

# Chang Figure 7.1

$\nu$ =frequency       $\lambda$ = wavelength

# Double Slit Diffraction



Seeing Diffraction  
With Your Hand

01\_15\_n.JPG

# Frequency vs. Wavelength of Electromagnetic Radiation

Chang Figure 7.3

$$" \nu = c/\lambda, \quad c = 3.00 \times 10^8 \text{ ms}^{-1}$$

# Try It

Green light has  $\lambda = 500. \text{ nm}$  , what is its frequency ( $\nu$ )?

"  $\nu = c/\lambda$ ,  $c = 3.00 \times 10^8 \text{ ms}^{-1}$

You need to know!

Chang Table 1.3

Answer:

$$\nu = 3.00 \times 10^8 \text{ ms}^{-1} / 500. \times 10^{-9} \text{ m} = 6.00 \times 10^{14} \text{ s}^{-1}.$$