CHEM 1107 – Spring 2009

CHEMISTRY FOR HEALTH SCIENCES

General Information
Room: DH 1105, M, W, 1:00-2.10 p.m.
Instructor: Dr. Anna Debska-Chwaja
Tel.: 201 692 2391
e-mail: debskan@fdu.edu
Office hours by special arrangement

Course Description
An inquiry approach to the learning of chemical principles with examples taken from the health sciences. Material covered is divided into three main parts: general chemistry, organic chemistry and biochemistry.

Textbook:
Handouts will be given at the beginning of each class covering the day’s topics, the assigned reading and the homework.

Grading policy:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Exam I</td>
<td>15%</td>
</tr>
<tr>
<td>Exam II</td>
<td>15%</td>
</tr>
<tr>
<td>Lab</td>
<td>35%</td>
</tr>
<tr>
<td>Homework</td>
<td>10%</td>
</tr>
<tr>
<td>Attendance</td>
<td>5%</td>
</tr>
</tbody>
</table>

Exams: They are multiple-choice in-class exams. Students who scored more than 80% on Exam I and Exam II and are happy with the grade can skip these sections for the final exam.

Homework will be based on topics discussed in class and will be from the textbook or reaction papers based on assigned reading, and provided by the instructor. Students are required to have all the material given in class in a folder, and part of the homework grade will be based on the organizational skills of the student (neatness and completeness of the folder).
Homework will be collected on the Monday following the week it was assigned. Late homework will not be accepted.

Laboratory: Will be hands-on activities in the organic chemistry laboratory on the fifth floor in Dickinson Hall. Each assignment is considered complete when the lab report is turned in before the next week lab. Late reports will not be accepted.
**Academic Integrity:** The Dean has asked us to call your attention to the University policy on cheating, plagiarism, and other violations of academic integrity. You can find a complete statement of policy in the FDU Undergraduate and Graduate Studies Bulletins. I do not condone cheating and I shall take measures if I find evidence of it.

**Grade Distribution:** The course will not be graded on a curve.

**Letter Grades**

- > 900 A
- 870 - 899 A-
- 840 - 869 B+
- 810 - 839 B
- 780 - 809 B-
- 740 - 779 C+
- 700 - 739 C
- 650 - 699 C-
- 600 - 649 D

**Students with Disabilities**

If you have a documented disability, please talk to me or send me an email.

---

**CHEM 1107 – Course Outline**

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
</table>
| 1.   | Introduction. The scientific method. Exponential notation.  
|      | Matter, energy, heat.  
|      | Measurements and unit conversions.  
|      | Density and specific gravity.  
|      | Hypothermia, hyperthermia and cold compresses. |
| 2.   | Atoms.  
|      | Electronic structure. Periodic table.  
|      | Strontium-90. Abundance of elements on Earth and in people.  
|      | Ionic bonds. Ionic compounds in medicine.  
|      | Covalent bonds. Hemoglobin.  
|      | Nitric oxide – air pollutant. |
| 3.   | Formula weight. The mole.  
|      | Oxidizing antiseptics. |

Review for exam I

5. **Exam I.**
   Alkanes.
   Alkenes and alkynes.
   Pheromones. Cis-trans isomerism in vision.

6. Aromatic compounds.
   Carcinogenic fused aromatics and smoking.
   Alcoholic beverages. Alcohols as drugs and poisons. Nitroglycerine.

7. Aldehydes.
   Ketones.
   Chloral hydrate. Toxicity and LD50.
   Carboxylic acids.
   Aspirin. Flavoring agents.

8. Esters.
   Absorbable staples.
   Amines.
   Amphetamines. The solubility of drugs in body fluids.
   Amides.
   Review for the exam II

9. **Exam II.**
   Carbohydrates.
   Blood groups. Galactosemia. Chiral drugs.

10. Lipids.
    Rancidity. Soaps and detergents. Multiple sclerosis.
    Cholesterol and heart attacks. Lipid storage diseases.
    Anabolic steroids. Antiinflammatory drugs.

    Enzymes.
    Sulfa drugs. Penicillin. Heavy metal poisoning.

DNA fingerprinting.

13. Chemical Communications.
Nitric oxide and long-term memory.

Review for the exam

15. Final exam