

## CHEM 104 LABORATORY

### Laboratory Objectives:

*At the completion of the laboratory component of the class, you should be able to:*

- Work safely in the chemistry laboratory
- Perform measurements with accuracy and precision
- Use common laboratory equipment
- Observe chemical and physical changes

**Tentative Laboratory Schedule:** All laboratories meet in Caputo 328

*Section A: Friday 1:00-2:50*

*Section B: Wednesday 6:00pm-7:50pm*

<b>Week</b>	<b>Experiment (Tentative - order of experiments subject to change)</b>
Jan 25/27	Check-in & Safety Information: Exercise to Identification of Chemical Hazards: No prelab
Feb 1/3	Exp. 1: Identification of Hydrocarbons
Feb 8/10	Exp 2: Identification of Alcohols and Phenols
Feb 15/17	Exp.3: Identification of Aldehydes and Ketones
Feb 22/24	Exp.4: Properties of Carboxylic Acids and Esters
Feb 29/Mar2	Exp. 5: Preparation of Acetylsalicylic Acid (aspirin)
Mar 7/9	Exp.6: Carbohydrate Models Worksheet: No Pre-lab
Mar 14/16	<b>Spring Break - No lab</b>
Mar 21/23	Exp. 7: Carbohydrates
Mar 28/30	Exp. 8: Lipid Models Worksheet: No Pre-lab
Apr4/6	Exp. 9: Qualitative Test for Lipids
Apr 11/13	Exp. 10: Amino Acid/Protein Models Worksheet: No Pre-lab
Apr 18/20	Exp. 11: Properties of Amino Acids
Apr 25/27	Exp. 12: Make up lab session
May 2/4	Check-out

### Laboratory Attendance

Attendance at each laboratory session is mandatory. Only valid excuses will be accepted in order to make up labs. All make up labs will be held the week of April 25/27. ***In order to pass the course you must perform all the labs and do all the worksheets.***

### Laboratory Safety

*Safety is critical in a chemistry laboratory. General safety guidelines will be presented in the laboratory and should be followed at all times. Specific safety precautions for each experiment will be covered prior to each lab. Details on proper waste disposal will be covered in each experiment. Anyone willfully disregarding safety in the laboratory will be asked to leave and will receive a grade of zero for the experiment.*

### **Special Sensitivities**

If you have a condition that may affect your ability to perform laboratory exercises (ie. allergies, pregnancy, chemical sensitivity), to exit safely from the premises in an emergency, or which may cause an emergency during class or lab, please discuss this in confidence with your instructor and someone at the Office of Student Support Services.

**Pre-Lab (8 @ ~5 pts each = 40 pts)** (no pre-lab for experiment on safety or molecular modeling labs)

Before you even work in the laboratory, there is a prelab that must be completed for each experiment. The prelab will consist of questions that you should be able to complete after reading the laboratory procedure and reviewing the textbook reading for the particular week's experiment. The pre-lab assignment will be distributed in class on Tuesdays. It must be completed **prior** to the start of your laboratory section. You may not perform the lab exercise without completing and handing in a prelab at the beginning of lab. After that time, your grade for the prelab will automatically be recorded as zero, and you will not be able to perform the lab which will result in a zero for the lab.

**Worksheets ( 4 @ 20 pts ea = 80pts)**. These worksheets are completed during the lab and are handed in at the end of lab. They are dry labs that involve some construction of molecular models. They include a work sheet on safety during the first lab.

**Laboratory reports (8 @ 10 pts each = 80 pts)**. These are final write ups that reflect your data and include the post lab questions. **Post-Lab questions (8 @ ~5 pts each = 40 pts)**. After each lab, your report will consist of a number of post lab questions that must be completed as part of your lab notebook report. You will need your laboratory notebook for the questions, so make sure you keep a detailed notebook by having complete data, finished calculations and good observations of each laboratory experiment. Charts and tables from the lab book can be included.

**Notebooks (2 grades @ 10pts ea = 20)**

You must have your laboratory instructor check and sign your notebook before you leave the lab. Laboratory notebooks will be collected and graded twice during the semester: once at mid-term and another at the end of the semester.

