

CHEMISTRY 3452

Quantitative Analysis Lab

CHEM 3452 Quantitative Analysis Lab: The lab course is to accompany the CHEM 3451 Quantitative Analysis to cultivate students' hand-on operation skills in field of quantitative analysis. Various experiments are designed to utilize statistical treatment of data, sampling and transfer techniques, gravimetric and volumetric methods, titration analysis, electroanalytical and introductory instrumental analysis.

Lab Instructors

- 1) Danny Taylor [dmt.tamu@gmail.com] (940) 565-4088
 - 2) Karthikeyan Pillai [karthik_unt@yahoo.com] (940) 565-4088
- Lab: CHEM room 283, Office : CHEM room 176

Lab Manual

Lab Manual will be provided. There will be a brief discussion of each lab at the beginning of the period. The student will be expected to have read the lab manual before coming to class, since the discussion will focus on why, not how, the lab is done.

Materials

Besides this lab manual, you will also need a lab notebook for class. You must have a writing utensil (pencil is not allowed) to record your data in ink. And eye protection, either safety glasses or goggles, is mandatory. Notebooks will be inspected at the end of lab session, and unannounced times during the semester, and graded according to completeness and organization.

Lab Reports

The last page of each lab handout is the lab report sheet, on which you will report your lab results. This information will come directly from your lab notebook (see below, lab TA will verify this at the end of each lab), and any blanks on the report must be filled in or explained. The completed lab report that gives concise summary of the results, correction and discussion are due at the beginning of the next lab period. Late lab reports will be penalized by one point (20 points/lab), and no lab report will be accepted more than two weeks after the date due.

***NOTE: LAB STARTS ON THE WEEK OF LABOR DAY**

MONDAY session (sec 301) will conduct both check-in and 2nd lab on the following MONDAY after Labor Day.

Lab Notebook

All students will use a lab notebook to record all data obtained in this lab. The notebook must be one in which the pages are permanently attached -- loose leaf notebooks are not acceptable. Recording data on scratch paper, paper towels, etc. before transfer to the notebook is expressly forbidden. Any student found using such scratch paper will have their lab grade for that lab lowered by 1 point (20 points/lab), and the scratch paper will be discarded.

Missing Lab: Missing lab will receive zero grade. No make-up lab unless permission obtained *in advance*. Medical absence requires proper doctor's statement.

Grading

The lab grade of CHEM 3452 will be calculated as follows

| | |
|--------------------------------|-----|
| Laboratory report and notebook | 75% |
| 2 Quizzes | 20% |
| TA Evaluation | 5% |

Notebooks will be inspected at the end of lab session, and unannounced times during the semester, and graded according to completeness and organization.

The "TA Evaluation" portion of your lab grade will reflect your attitude, preparedness, and safety-consciousness during lab.

Grading Scale

| Final percent Average | Letter Grade |
|-----------------------|--------------|
| 90 - 100 % | A |
| 80 - 89 % | B |
| 70 - 79 % | C |
| 60 - 69 % | D |
| Below 60 % | F |

The Chemistry Department believes in reasonably accommodating individuals with disabilities and complies with university policy established under Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (1990) to provide equal access and opportunity. Please communicate with your professor as to your specific needs and/or the office of Disability Accommodation (ODA) (Room 321, Union, 565-4323).

Academic Ethics: A high level of ethical conduct will be maintained in this course. Any evidence of an act of academic dishonesty during the exams will result in an automatic F and expulsion from this course. Please adhere to University policies and the UNT Code of Conduct and Discipline with respect to academic ethics and honesty.

<http://www.unt.edu/csrr/development/dishonesty.html>

<http://vpaa.unt.edu/academic-integrity.htm>

CHEM 3452

LABORATORY SCHEDULE

| Week of | <u>Lab #</u> | <u>Lab Title</u> |
|--|---------------------------------------|---|
| First week | (No Lab Meet - TA prepare Lab) | |
| 2nd week /Labor Day* | 1 | Check-in / Safety-Use of Lab Equipment |
| 3 rd week | 2 | Gravimetric Determination of Calcium |
| 4 th week | 3 | Determination of Acid in Vinegar |
| 5 th week | 4 | Determination of Sodium Carbonate |
| 6 th week | 5 | Determination of Water Hardness |
| 7th week | Quiz (Labs 1-5) | |
| 8 th week | 6 | Potentiometric Determination of KHP |
| 9 th week | 7 | Determination of Fe by KMnO ₄ |
| 10 th week | 8 | Determination of Iodine using Iodate |
| 11 th week | 9 | Faraday's Law: Ni Electroplating |
| 12 th week | 10 | Gas Chromatography/Mass Spectrometry |
| (No labs on Thanksgiving Week) | | |
| Week after Thanksgiving | Quiz (Labs 6-10) / Check-out | |

***NOTE: DUE TO THE LABOR DAY HOLIDAY, MONDAY session (sec 301) will conduct both check-in and 2nd lab on the following MONDAY after Labor Day.**