COLLEGE OF CHEMISTRY COURSE GUIDE (../INDEX.HTML)

CHEM 1AL - GENERAL CHEMISTRY LABORATORY (1 UNIT)

COURSE OVERVIEW

SUMMARY

Chem 1AL is a general chemistry lab for non-chemistry majors, designed to introduce a variety of topics, ranging from acid base chemistry to light chemistry. Chem 1AL also primarily emphasizes “green” chemistry and the practice of sustainable techniques which can be used in the laboratory. The first two labs are pretty introductory, but after those, you begin to move into the more expansive two and three week labs. For example, in the three week Biofuels lab, you learn how to synthesize your own “biofuel” and from your data, write a short argumentation on which fuel is “better,” (in terms of sustainability, quality etc.) At the end of the semester, there is a final exam based on both lecture and lab material from the course.

PREREQUISITES

Chem 1A (chem1a.html); may be taken concurrently

TOPICS COVERED

Unit I: Introduction

- Airbags: Making the most aerodynamic but effective airbag using sodium bicarbonate (baking soda) and acetic acid (vinegar)

- Smells: Learn how the structures of molecules affect their properties through smells.

Unit II: Polymers

- Polymers: Crosslinking through creating your own “toy” and evaluating its properties.

Unit III: Acid Base Chemistry

- Titration: calculate the molarity of a solution

Unit IV: Biofuels

- Synthesis and isolation of biodiesel: exploring viscosity and combustion.

Unit V: Extraction

- Extraction of curcumin from turmeric, calculate molarity from spectroscopy readings.

SKILLS LEARNED

- Titration
- Synthesis and Isolation
- Extraction
- Reading spectrometry data
- Quantitative Data Analysis
- Scientific Writing

WORKLOAD

COURSEWORK

- iClicker question participation
- 10 online pre-lab assignments
- Lab notes from throughout your experiment, to be turned in at the end of the lab time
- 10 lab worksheets to be done during/after your lab section
- 1 argumentation exercise
- 1 final exam

TIME COMMITMENT

One hour lab lecture each week. 3 hours of lab every week. Approximately 3 hours of pre/post lab worksheets.

CHOOSING THE COURSE

WHEN TO TAKE

Chem 1AL is a pretty laid back class, so you should be fine taking it with other classes you need, no matter the difficulty.

WHAT NEXT?

Depending on your major, the next step would usually be to enroll in Chem 3A (chem3a.html) and 3AL (chem3al.html), Organic Chemistry for non-chemistry majors.

ADDITIONAL COMMENTS AND TIPS

Chem 1AL can be extremely nitpicky at times, so just beware of the hidden requirements (such as submitting your post lab worksheets online as well as submitting them in person during lab.) Good luck!

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