

INDEPENDENT STUDY: KINETICS AND TRANSITION METALS

SCH3UE 2002 - 2003

You are required to carry out an independent study unit as a part of SCH4UE. Although this usually takes place as a research project or an essay this assignment will involve other activity such as learning from a text-book.

Occasionally in university you will stumble across professors that do not know how to teach!!! This can be a very frustrating experience. You must basically teach yourself. Here is an exercise to help you prepare. You will be required to study this unit on your own in the summer, June - September 2003.

The information necessary for this unit is available to you in your text-books: Harwood and Petrucci. Answering the suggested questions below will assist you in preparing you for the depth of the answers required for the TEST.

The **Notes** for these units will be provided on my web -site: <http://www.savitapall.com>

The **Assignments** to complement the units will also be available on the web-site. Answering the suggested questions from the text book will assist you in preparing you for the depth of the answers required for the test.

All **Laboratory work** included in these units will be performed in class times upon your arrival in September.

To attain a mark for this ISU, you will be given a **UNIT TEST**, on each of the units - on a suitable pre-arranged date, upon your arrival in September 2003.

Review and Help Sessions will be set on pre-arranged days, **prior to the unit tests**.

Prepare clear and concise notes from the text-book in the format of review sheets, remember that balanced equations are very important and necessary in answering test and examination questions.

Wherever possible, search for an updated knowledge of environmental issues, and application of the chemistry to technology and society.

The independent study units are:

- (1) **Reaction Kinetics**
- (2) **Transition Metal Chemistry**

1. Reaction Kinetics

Notes

1. Introduction to Chemical Kinetics
2. Energy in Kinetics
3. Reaction Mechanism
4. Catalysis
5. Rate Law and Order
6. Table of Determination of Order
7. Half -Life
8. Arrhenius Equation

Assignments

1. Effect of Surface Area
2. Rate law order and potential Energy
3. Problems: First Order Reactions
4. Arrhenius Equation Problems

Labs

1. Factors Affecting Rates of Reaction
2. Study of Reaction Rates: The Clock reaction
3. Determination of Order of a Reaction
4. Determining the Activation Energy of a Reaction

Review

Kinetics - Review Notes and Questions

2. Transition Metal Chemistry

Notes

1. Transition Metal Notes

Lab

1. Colours of Transition Metal Compounds