

# Feinberg Graduate School

## Course Identification

**Title:** Chemistry of Elements

**Code:** 20142121

## Lecturers and Teaching Assistants

**Lecturer(s):** Prof. Igor Lubomirsky

**Teaching Assistants:** N/A

## Course Schedule and Location

**Year:** 2014

**Semester:** First Semester

**Day & Time & Location:** Sunday, 0915-1100, Perlman, Rm 404

**First Lecture:** 27/10/2013

**No. of planned sessions:** 14

## Field of Study, Course Type and Credit Points

Chemical Sciences; Basic; 2.00 points

## Prerequisites

Prerequisites: basic physical chemistry, basic descriptive quantum chemistry, basic thermodynamics (equilibrium thermodynamics), common sense (if available), healthy curiosity (strongly advisable). No knowledge in mathematics is needed; however, ability to perform basic logical analysis is absolutely necessary.

## Restrictions

**Number of students:** No

## Language of Instruction

English

## Registration

**Registration by:** 20/11/2013

## Attendance

Expected and Recommended

## Grade Type

Numerical (out of 100)

## Grade Breakdown (in %)

**Attendance / participation:**

**Weekly Assignments:**

**Interim exam/assignment:** 50%

**Seminar presentation:**

**Final Exam/assignment:** 50%

## Estimated Course Workload

**Number of hours an ordinary student is expected to spend weekly on independent study, homework etc. related to the course:**

2

## Reading List

Any book that would help to refresh the knowledge on prerequisites would help, i.e., any book on general chemistry.

The course will be mostly based on:

[1] Greenwood N.N., Earnshaw A., Chemistry of Elements

[2] Housecroft C., and Sharpe A., Inorganic Chemistry

## Syllabus

The course is addressed to the students that did not previously receive systematic course in chemistry of elements.

Course content:

The course will follow the periodic table and provide information, slightly extended beyond a basic course, about the chemical properties of the elements and their compounds. The emphasis will be on the systematic comparative analysis of the chemical properties of elements and major tendencies. The course will be structured as covering the elements of the major groups (s- and p-) elements, as those for which the tendencies are easy to trace (about 2/3 of the course).

Another 1/3 of the course is meant to describe d-elements (transition metals), with the main emphasis on the duality of their chemical properties (combination of metallic and non-metallic tendencies). The differences between the first row and the second/third rows of d-elements will be analyzed in detail. Chemical properties of lanthanides will be considered briefly in the aspect of their similarity to the 3a and 3b groups.

Extra topic: Chemical properties of Th, U and Pu.

## Learning Outcomes

Upon successful completion of this course students should be able to:

[1] Describe the similarity and the main trends in the basic inorganic chemistry of elements.

[2] Assess chemical properties of a compound based on the basic chemical trends and analogy with other compounds.

## Website

N/A

## Comments

N/A

## Updates

20/10/2013 - Shalom all,

First lecture will be held on 27.10 and the second lecture on 17.11.2013

Thanks Michal

## Course Rating

The year the course was taught last 2013

Number of students who answered the questionnaire 15

Number of students who took the course for credits 16

General	Rating
<b>The rating is on a 5-point scale</b> (1=really bad 2=not too good 3=reasonable to good 4=very good 5=excellent)	
Selection of topics covered in the course	3.67
Background material	3.00
Organization of the course	3.07
Practicality of excercises	2.93
Adequacy of assignments	3.75
Fairness of grading	-
<b>Level of difficulty</b> (1=too easy 2=quite easy 3=reasonable 4=difficult 5=extremly difficult)	3.47
<b>In comparison to other FGS courses</b> (1=the worst course 2=many courses are better 3=average 4=few courses are better 5=the best course)	2.67
Lecturers	Rating
<b>Teaching ability of the lecturers</b> (1=really bad 2=not too good 3=reasonable to good 4=very good 5=excellent)	
Prof. Igor Lohomirsky	3.07

--