

General information

Course: CHEM 218
Section: 51
Term: Winter 2015
Credits: 3.0
Location: CC-305
Time: Wed 6:00 -8:30 pm

Instructor: Prof. Dajana Vuckovic
Department: Chemistry and Biochemistry
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Office hours: **Mon 4-5 pm**
Wed 3-4 pm or by appointment

Course Description

Calendar course description: Prerequisite: CHEM 217. Chemical equilibria and titration curves of oxidation-reduction, precipitation, and non-aqueous systems; potentiometry and potentiometric titrations; introduction to spectroscopy with emphasis on molecular and atomic absorption spectroscopy, fluorescence spectroscopy. Lectures and laboratory.

Expanded course description: This course is the second part of an introduction to “classical” methods of analysis that rely heavily on equilibria such as precipitation, redox and potentiometric titrations. Also covered is an introduction to spectroscopy with emphasis on molecular and atomic absorption spectroscopy, as well as on fluorescence spectroscopy. The course will focus on the analytical and instrumental aspects pertaining to these topics. A solid understanding of how to manipulate equilibria functions is essential, as are good skills using spreadsheet software such as Excel or QuattroPro.

Laboratory Experiments

- As described in the laboratory manual
- All **five** experiments must be completed
- A passing grade for the lab **must** be obtained to receive credits for CHEM218

Assignments

The development of and ability to perform quantitative calculations is an essential part of this course. To solve problems effectively, it is essential that you understand the theoretical principles of analytical chemistry. Solution of numerical problems will constitute the **major** part of the mid-term and final examination. For assignments, please hand in complete solution to the assigned problems, not just the final answers.

Grading scale

→ Midterm Exam	Wednesday Feb. 18th, 2015	25%
→ Final Exam	TBD, during exam period April 17-May 2	35% (comprehensive)
→ Assignments	5 assignments, 3% of final grade each	15%
→ Laboratory		25%

A passing grade is required in both theory and laboratory to obtain credits for CHEM 218.

Schedule :

→ Assignment due dates: Assignments are due by 05:55 pm before the beginning of the class on the stated dates:

January 28, 2015 – Assignment 1

February 11, 2015 – Assignment 2

Mar 18, 2015 – Assignment 3

April 1, 2015 - Assignment 4 - group presentation

April 8, 2015 – Assignment 5

→ Late policy on assignments: No late assignments will be accepted unless medical note is provided. Any assignments that are not handed in by due date and time will be assigned a mark of **zero**. Assignments will **not** be accepted by email. Only printed or hand-written solutions to the assignment will be accepted.

→ Please note that the week of Feb 23 is the midterm break, so there will be **no** class or labs held during this week.

Textbook

→ Chemistry 217/218 Laboratory Manual

→ QUANTITATIVE CHEMICAL ANALYSIS, 8th edition, by Harris (7th, 6th & 5th editions are ok but chapter names and numbers may be different)

- Section 1.5: Introduction to Titrations
- Precipitation titrations: Sections 26.5, 26.6, 26.7, 26.8
- Chapter 13: Fundamentals of Electrochemistry
- Chapter 15: Redox Titrations
- Chapter 14: Electrodes and Potentiometry
- Chapter 17: Fundamentals of Spectrophotometry
- Chapter 18 Applications of Spectrophotometry (Sections 18.1 and 18.2 only)
- Chapter 19: Spectrophotometers
- Chapter 20: Atomic Spectroscopy
- Appendices D, F, and H

MOODLE

All assignments and occasional course notes will be posted on Moodle course website. Please check the course website periodically to access these online materials. For any issues in terms of Moodle use please consult Helpdesk at extension 7613.

STUDY GUIDE and some GOOD ADVICE

- DO's**
- do all questions on distributed assignments
 - do questions in text pertaining to topics discussed in class: especially homework problems posted on Moodle
 - keep up with the reading
 - seek assistance well before the exams
- DON'Ts**
- don't underestimate the theory component of this course
 - don't underestimate the lab component of this course
 - don't wait until the last minute to study (practice, practice, ...)

Labs (room SP-210): same as in CHEM217

- Lab supervisor: Khalil Rahman (phone: 848-2424, ext. 3357)
- Labs start on: week of January 12th, 2015
- If you're exempted from the lab, you must see Ms. Hilary Scuffel (ext. 3355, Office: SP 275.01)
- Missed experiments require a valid excuse (e.g. medical form) and still require to be performed

RIGHTS AND RESPONSIBILITIES**Plagiarism:**

The most common offense under the Academic Code of Conduct is plagiarism which the Code defines as "the presentation of the work of another person as one's own or without proper acknowledgement." This could be material copied word for word from books, journals, internet sites, professor's course notes, etc. It could be material that is paraphrased but closely resembles the original source. It could be the work of a fellow student, for example, an answer on a quiz, data for a lab report, a paper or assignment completed by another student. It might be a paper purchased through one of the many available sources. Plagiarism does not refer to words alone - it can also refer to copying images, graphs, tables, and ideas. "Presentation" is not limited to written work.

It also includes oral presentations, computer assignments and artistic works. Finally, if you translate the work of another person into French or English and do not cite the source, this is also plagiarism.

In Simple Words: Do not copy, paraphrase or translate anything from anywhere without saying where you obtained it! (Source: The Academic Integrity Website: <http://provost.concordia.ca/academicintegrity/plagiarism/>)

The academic code of conduct can be found in section 17.10 of the academic calendar (<http://www.concordia.ca/academics/undergraduate/calendar/current/17-10.html>). Any form of unauthorized collaboration, cheating, copying or plagiarism found in this course will be reported and the appropriate sanctions applied. The mandatory seminar is a clear and fair opportunity to learn what our faculty regards as academic misconduct. Failure to take part in this learning opportunity and thus ignorance of these regulations is no excuse and will not result in a reduced sanction in any case where academic misconduct is observed.

MANDATORY QUIZ AND SEMINAR

As part of this course, you are **required** to i) attend a Chemistry and Biochemistry Departmental Seminar on the academic conduct code and the appropriate use of information sources and ii) pass

the online quiz associated with this seminar (note: passing grade for the quiz is 100%). The aim of this seminar is to clarify the academic conduct code in terms of what practices will be considered unacceptable with regards to work submitted for grading in Chemistry and Biochemistry courses. **You are only exempt from repeating the seminar and the quiz if you have done both in Winter 2010 or more recently,*** otherwise you are required to repeat both this term. This short seminar (1 hour) will be held at the following times (note that late-comers will not be admitted):

Date	Time	Place
Monday, Jan. 19	16:45-17:45	CC-310
Monday, Jan. 19	20:45-21:45	HC-130
Tuesday, Jan. 20	16:45-17:45	CC-310
Wednesday, Jan. 21	16:45-17:45	CC-310
Wednesday, Jan. 21	20:45-21:45	HC-157
Thursday, Jan. 22	16:45-17:45	CC-310
Friday, Jan. 23	16:45-17:45	CC-310

As space for each of the seminars is limited by the room size, please sign up to your preferred time. Sign up sheets are available outside SP 201.01 (Departmental office).

If you do not complete this course requirement, your final grade for the course may be lowered by one full letter grade with an incomplete (INC) notation until such time as this requirement is completed. Please refer to the undergraduate calendar (section 16.3.6) for details on removal of an incomplete notation.

* You are exempt if you can locate your ID in the pdf file located on the CHEM 101 Moodle site (for guest login, go to: <http://moodle.concordia.ca/moodle>, Arts and Science, Chemistry and Biochemistry, Specialized Chemistry Sites, CHEM 101, look under FAQ).