

Chemistry 312

"Intermediate Analytical Chemistry"

Fall 2015

This course is an introduction to modern instrumental analytical methods of analysis. Instrumental methods are the workhorse of the modern analytical laboratory and are used by nearly all branches of chemistry and biochemistry in both industry and academia. This course will cover statistics, data processing, chromatographic theory and practice, atomic spectroscopy and a little mass spectrometry.

COURSE INSTRUCTORS:

Professor Cameron Skinner

- Office: Science Pavillion 275-27
- Office phone: 848-2424 ext 3341
- E-mail: Cameron.Skinner at Concordia.ca
- Office hours: any time by appointment.

Senior lab supervisor

Rita Umbrasa

- Office: Science Pavillion 330.01
- Email: Ritaumbrasa@hotmail.com

WEB SITE FOR INFORMATION

Moodle, accessible *via* your MyConcordia portal

SCHEDULED LECTURE PERIODS:

Thursday 6:00-8:30 Room CC-112

COURSE TEXT:

Required: Principles of Instrumental Analysis, Skoog, Holler and Nieman sixth edition (about \$210, ouch!). There should be lots of old copies and the fifth edition contains almost all of the same information.

LABORATORIES (room SP 320)

Begin the **SECOND** week (September 14th) **with a mandatory dry check-in and Lab 1 handout.**

Use a carbon-copy notebook, they are available in the Bookstore. (Student Laboratory Notebook with spiral binding, Made by Hayden McNeil, ISBN 1-930882-74-2)

All lab marks count towards your final grade (*i.e.* none will be thrown out). If you cannot hand in a lab report you **MUST** notify R. Umbrasa before the report is due! Failure to do so may result in your report being refused.

Late lab reports will be penalized by 10% per day after they are due!

Also e-mail the text of your report to: Chem312@concordia.ca

Use the lab report template provided on the Moodle/course website.

GRADING

There will be a single midterm that will cover statistics and chromatography. The final will be comprehensive with an emphasis on the remaining material. You must complete the avoiding cheating and plagiarism course as well (see below), otherwise I will reduce your grade one full letter grade and assign an incomplete notation.

GRADING SCHEME

Midterm:	30% or 20%
Final:	35% or 45%
Lab:	25%
Assignments:	10%

The final mark is calculated to give you the highest score!

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

It is also important that you realize that:

**You must pass both the lab & class components to pass the course!!
I consider 60% a pass for the lab and 50% a pass for the course.**

Grade range	Letter equivalent
0-50	F
50-53	D-
53-57	D
57-60	D+
60-63	C-
63-67	C
67-70	C+
70-73	B-
73-77	B
77-80	B+
80-87	A-
87-95	A
95+	A+

EXAM PREPARATION:

The exams will test both problem solving and general knowledge. For example, you should be able to draw in great detail any system or subsystem studied and to explain its operation. In general, you should know how things work, their advantages, disadvantages and their limitations. In addition, you should be able to critically evaluate a technique and you should be able to choose the best method to solve a particular problem. Rote memorization of the book will not take you too far in this course.

PROGRAMMABLE CALCULATORS: NOT ALLOWED IN MIDTERM OR FINAL EXAMS

CHEATING AND PLAGIARISM

Academic Integrity is one of the cornerstones of academic life at Concordia University. Every year some students find themselves in a very serious predicament when they unintentionally, unknowingly or through carelessness violate the Academic Code. Sanctions are severe and often result in students failing the course in which the infraction occurred, or worse. So, don't do it, don't try it and don't even think about it! If you do, you will have to explain yourself to the Dean.

As part of this course, you are required to attend a Chemistry and Biochemistry seminar on avoiding plagiarism and academic dishonesty. Students that fail to attend the seminar and pass the quiz (100% grade) will have their grade lowered by a full letter grade and an incomplete notation until they complete the seminar. **You only need to attend this course once unless you attended it more than 5 years ago.**

I encourage you to seek out the help of your classmates and to assist each other in solving problems. However, you should prepare your answers, and all of your submitted work, SEPARATELY. I will assume that identical answers are the work of a single individual and multiple copies of this work are simple evidence of cheating and plagiarism.

The single-most common issue is plagiarism. One of the most common reasons that students give to explain the plagiarism is that they were unaware of how to cite sources correctly. All students are required to acknowledge the work of other authors by using a clear and accepted citation style when they submit written work to the university. In this course, students can use any of the major citation styles. An easy to use ACS guide can be found [on the Library's website](#). If you fail to provide correct or complete citations you can be charged with plagiarism. Be warned, text-matching software will be used in this course.

Citation highlights:

Quotation: When you are **presenting the words of another** author you **must, in all cases, place them in quotes** or separate them from your text and cite them. The [APA citation style page](#) has a good and simple explanation of how to properly quote text; look for the section on quotation and follow it carefully! It is not acceptable to just cite the text as if it were a paraphrase or refer to the author as having stated something (e.g. Smith wrote in his paper...). Improperly quoted text is the single most common error that students make.

Paraphrasing: You are expected to paraphrase the sources of information (e.g. books, journals, the internet, newspapers etc.) that you use in preparing your work. Paraphrasing is more than changing a few words or rearranging the structure of a sentence. A useful guide on how to paraphrase can be found [on the University of Toronto website](#).

Images and non-text: Each image, chart and other non-text item taken from another source must cite the original source in the caption. Do not presume the reader will know you didn't create it. Each idea, quote or piece of information taken from a source must be individually identified.

A simple bibliographic list of your sources at the end of your document is not an acceptable form of citation.

Ignorance is not an acceptable excuse for plagiarism.

**This material is an extract from the Undergraduate Calendar
Code of Conduct (Academic) (<http://registrar.concordia.ca/calendar/17/17.10.html>)**

Offenses:

Any form of cheating, plagiarism, personation, falsification of a document as well as any other form of dishonest behaviour related to the obtention of academic gain or the avoidance of evaluative exercises committed by a student is an academic offence under this Code.

Any attempt at or participation related in any way to an academic offence is also an offence under this Code and shall be dealt with in accordance with the procedures set out in this Code.

Without limiting the generality of article above, academic offences include, but are not restricted to, the carrying out or attempting to carry out or participating in:

1. **plagiarism — the presentation of the work of another person, in whatever form, as one's own or without proper acknowledgement;**
2. **the contribution by one student to another student of work with the knowledge that the latter may submit the work in part or in whole as his or her own;**
3. **unauthorized collaboration between students;**
- ...
12. **the falsification of a fact or research data in a work including a reference to a source, which has been fabricated. Falsification shall not include those factors intrinsic to the process of academic research such as honest error, conflicting data or differences in interpretation or judgment of data or of experimental design.**

Punishment:

1. Reprimand the student;
2. Direct that a piece of work be re-submitted;
3. **Enter a failing grade for the piece of work in question or for the course, if applicable;**
4. Enter a failing grade and ineligibility for a supplemental examination or any other evaluative exercise for the course;
5. **Impose the obligation to take and pass courses of up to twenty-four (24) credits in addition to the total number of credits required for the student's programme as specified by the Dean. If the student is registered as an Independent student, the sanction will be imposed only if he or she applies and is accepted into a programme;**
6. Impose specified community service at the University of up to ten (10) hours per week for a specified period of time;
7. Refer the case to the Academic Hearing Board.