

Chemistry 415/612

"Analytical Separations"

2008

This course is an introduction to modern separation science. It will cover many aspects of practical separation science through an examination of modern HPLC techniques. This is not a theory course. It will give instruction and guidance on how to develop practical HPLC separations. The main focus is in reversed phase separations but the knowledge gained is easily adapted to other modes.

COURSE INSTRUCTOR:

Professor Cameron Skinner

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- Web Page: <http://faculty.concordia.ca/skinner/>
- Office hours any time by appointment.

SCHEDULED LECTURE PERIODS:

Thursdays, 6-8:15 PM, AD-411

COURSE TEXT: Practical HPLC Method Development by Snyder. In the bookstore, \$160

BASIC INTRODUCTION TO CHROMATOGRAPHY

Title Principles of Instrumental Analysis, Skoog, Holler and Nieman fifth edition

Reserves in the library (or will be):

Title High-performance liquid chromatography / John H. Knox ... [et al.].

-- *Call no.* QD 79 C454H53

Title Chromatography : fundamentals and applications of chromatographic and electrophoretic methods / edited by E. Heftmann.

-- *Call no.* QD 79 C4C485 1983

Title Chromatography : concepts and contrasts / James M. Miller.

-- *Call no.* QD 79 C4M55 1988

Not on reserve but noteworthy:

Title Unified separation science / J. Calvin Giddings.

-- *Call no.* QD 63 S4G53 1991

The *classic* in the field, probably the most referenced chromatography book ever. Giddings develops a unified chromatographic theory. It's a little too deep for the novice, even though he claims its aimed at the graduate level student.

READING LIST & TENTATIVE EXAM SCHEDULE

Chapter	Pages	Section	Exam
Overview/Review & 1	1-20		
2-3	21-71	up to 3.2.3	
3	77-99		
			Jan 17
4	100-139	up to 4.4.3	
4-5	161-203	up to 5.2.4	
			Feb 7
5-6	203-264	up to 6.5	
Mid-term break!! (Feb 18-22)			
8	350-401		
			Mar 6
9	402-437 (all)		
11	479-521	up to 11.4	
			Mar 27 or Apr 3

GRADING

The total grade will be based on four exams worth 100 % of the course mark. An all-encompassing final exam will be available, to be held during final exam period (April 12-30), for those students who have a C grade or lower. You must complete the avoiding cheating and plagiarism seminar/course as well. If you don't your grade will be lowered by one letter and you will receive an incomplete grade.

Grade range	Graduate grading scheme	Undergraduate grading scheme
0-50	F	F
50-53	F	D-
53-57	F	D
57-60	F	D+
60-63	F	C-
63-67	C	C
67-70	C+	C+
70-73	B-	B-
73-77	B	B
77-80	B+	B+
80-85	A-	A-
85-90	A	A
90-100	A+	A+

EXAM PREPARATION:

The exams will test knowledge gained in this course, creative problem solving and general knowledge. You will be expected to be able to draw on knowledge from previous courses (*e.g.* CHEM 312, thermodynamics, etc.) to solve problems.

This material is an extract from the Calendar, Code of Conduct (Academic).

(http://www.concordia.ca/Academic_Info/General_Academic_Info/Calendar99-00/16/16.html#16.3.13)

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:

- i. personation — assuming the identity of another person or having another person assume one's own identity;
- ii. **plagiarism — the presentation of the work of another person as one's own or without proper acknowledgement;**
- iii. **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;**
- iv. multiple submission — the submission of a piece of work for evaluative purposes when that work has been or is currently being submitted for evaluative purposes in another course at the University or in another teaching institution without the knowledge and permission of the instructor or instructors involved;
- v. **the obtention by theft or any other means of the questions or answers of an examination or of any other University-related resource that one is not authorized to possess;**
- vi. the possession or use during an examination of any non-authorized documents or materials or possessing a device allowing access to or use of any non-authorized documents or materials;
- vii. **the use of another person's examination during an examination;**
- viii. communication with anyone other than an invigilator during an examination or the obtention of any non-authorized assistance during an examination;
- ix. tearing or mutilating an examination booklet, inserting pages into a booklet or taking a booklet from the examination room;
- x. the falsification of a document, in particular a document transmitted to the University or a document of the University, whether transmitted or not to a third party, whatever the circumstances;
- xi. 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 judgement of data or of experimental design.

Punishment:

- i. Reprimand the student;
- ii. Direct that a piece of work be re-submitted;
- iii. Enter a failing grade for the piece of work in question or for the course, if applicable;
- iv. Enter a failing grade and ineligibility for a supplemental examination or any other evaluative exercise for the course;
- v. 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;
- vi. Impose specified community service at the University of up to ten (10) hours per week for a specified period of time;
- vii. Refer the case to the Academic Hearing Board.