



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF CHEMISTRY
COURSE OUTLINE
WINTER 2016

1. **Course: CHEMISTRY 417 – Modern Chromatographic Analysis**

Lecture Sections:

LEC	DAYS	TIME	ROOM	INSTRUCTOR	OFFICE	PHONE	EMAIL	OFFICE HOURS
L01	TuTh	11:00-12:15	ST 059	Dr. Thurbide	SB 219	220-5370	thurbide@ucalgary.ca	TuTh12:30-1:30

Departmental Office: SA 109, 220-5341, uginfo@chem.ucalgary.ca

2. **Prerequisites:** Chemistry 311 and Chemistry 315

3. **Grading:** The University policy on grading and related matters is described sections [F.1](#) and [F.2](#) of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Assignments (~4)	30%
Midterm test (in class March 1, 2016)	30%
Final exam (To be scheduled by the Registrar)	40%

Total	100%

The marks for each of the course components will be recorded as a numerical score and combined as shown above to arrive at the total numerical score which will then be converted to a letter grade to be reported to the Registrar.

Approximate Grading Scale:

A+	A	A-	B+	B	B-
95% - 100%	90% - 94%	85% - 89%	80% - 84%	75% - 79%	70% - 74%

C+	C	C-	D+	D	F
65% - 69%	60% - 64%	55% - 59%	50% - 54%	45% - 49%	0% - 44%

4. **Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself with these regulations. See also [Section E.6](#) of the University Calendar

5. **Course Materials:** There is no formal textbook assigned for this course. However the following text:
"Quantitative Chemical Analysis", D. C. Harris, 5th-9th Editions, W.H. Freeman.

May be found useful by some students as an alternate reference to supplement topics covered in class. This will be discussed in the opening lecture.

6. **Examination Policy:** All examinations will be closed book. Only non-programmable calculators (e.g., Casio FX260) are permitted for use during the exam components of the course. Students should also read the Calendar, [Section G](#), on Examinations.

7. **Writing:** In this course, the quality of the student's writing in laboratory reports will be a factor in the evaluation of those reports. See also [Section E.2](#) of the University Calendar.

8. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- (a) **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties.
- (b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).
- (c) **Academic Accommodation Policy:** Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities available at http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.pdf. Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Chemistry, Dr. Ashley Causton, by email ahugchem@ucalgary.ca or phone (403) 220-5353.
- (d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- (e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also <http://www.ucalgary.ca/secretariat/privacy>.
- (f) **Student Union Information:** VP Academic Phone: 403 220-3911 Email: suvpaca@ucalgary.ca
SU Faculty Rep. Phone: 403 220-3913 Email: science1@su.ucalgary.ca, science2@su.ucalgary.ca and science3@su.ucalgary.ca;
Student Ombuds Office: 403 220-6420 Email ombuds@ucalgary.ca <http://ucalgary.ca/provost/students/ombuds>
- (g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.
- (h) **U.S.R.I.:** At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses (www.ucalgary.ca/usri). Your responses make a difference - please participate in USRI Surveys.

Department Approval: Approved by Department Head

Date: December 1, 2015

UNIVERSITY OF CALGARY
DEPARTMENT OF CHEMISTRY

COURSE SYLLABUS

WINTER 2016

COURSE: CHEMISTRY 417, Modern Chromatographic Analysis

LEC	DAYS	TIME	ROOM	INSTRUCTOR	OFFICE	PHONE	EMAIL	OFFICE HOURS
L01	TuTh	11:00-12:15	ST 059	Dr. Thurbide	SB 219	220-5370	thurbide@ucalgary.ca	TuTh12:30-1:30

Supplemental Materials:

- "Quantitative Chemical Analysis", D. C. Harris, 5th-9th Editions, W.H. Freeman.

Note: this is not a required item, but some students may find it a useful alternate reference to supplement topics covered in class. This will be discussed in the opening lecture.

Tentative Outline of Topics to be Covered in the Course:

1. Sample Preparation
2. Basic Chromatographic Theory
3. Gas Chromatography
4. Liquid Chromatography
5. Other Separation Modes
6. Current Trends in Chromatography
7. Detection

Course Description:

This course is designed to cover major aspects involved in the process of chromatographic analysis, which is paramount to many modern laboratories. Fundamentals of separation science will be discussed including partition theory, sample preparation concepts and methods, chromatographic theory, essential concepts in gas and liquid chromatography, and introductory principles of detection. Additionally, emerging concepts will also be presented in developing areas such as micro-fluidic separation platforms, column technology, and novel mobile phases.