



Course Documentation Outline

School of Business, Biosciences and Justice Studies

SECTION I

1. Program (s): Biosciences – Year 3
2. Course Name: Organic Chemistry - Chromatography
- 3.
4. Course Code: CHEM 3002 4.Credit Value: 3
5. Course Hours: 45

Class	Lab	Field	Other	Total
3				45

5. Prerequisites/Corequisites/Equivalent Courses

PR/CO/EQ	Course Code	Title
PR	CHEM 2002	Chemical Instrumentation 2
PR	CHEM 2005	Analytical Chemistry 2

6. Faculty: Nathan Manion Date: Sept.2, 2008 Effective Date: September 2008
7. Dean/Chair's Approval: *Dan Holland* Date: September 2008
9. Revision Number: Date: Effective Date:
10. Notes

Section II

11. **Calendar Description:**

This course stresses theory and application of modern chromatographic methods - high performance liquid chromatography, gas chromatography, and supercritical fluid chromatography.

12. **Provincial Context:**

This course meets the following Ministry of Education and Training requirements:

a). **Prior Learning Assessment (PLA)**

Students may apply to receive credit by demonstrating achievement of the course learning outcomes through previous life and work experiences.

This course is eligible for challenge through the following method(s) indicated by *

Challenge Exam	Portfolio	Interview	Other	Not Eligible
X				

PLAR Contact:

13. **Employability Skills emphasized in this course**

	communication - written		communication - visual		communication - oral
X	analytical	X	creative thinking	X	decision making
X	interpersonal	X	numeracy	X	organizational
X	problem solving	X	technological		other (specify)

14. **Required Texts, Materials, Resources or Technical Materials Required:**

There is no required text for this class. Complimentary user and troubleshooting guides have been provided by phenomenex.

15. **Evaluation Plan**

Students will demonstrate learning in the following ways:

Assignment Description	Evaluation Methodology	Due Date
Worksheet 1	Take home assignment – 2%	September 17
Worksheet 2	Take home assignment – 2%	September 24
Peer-led Workshop 1	In-class workshop – 5%	October 1
Test 1	Test 1 – 10%	October 3
Worksheet 3	Take home assignment – 2%	October 22
Peer-led Workshop 2	In-class workshop – 5%	October 29
Test 2	Test 2 – 10%	October 31

Worksheet 4	Take home assignment – 2%	November 12
Peer-led Workshop 3	In-class workshop – 5%	November 26
Test 3	Test 3 – 10%	November 28
Oral presentation and peer-led discussion	Presentation and discussion – 10%	December 3
Peer/self evaluation	In-class assignment – 2%	December 3
Current Literature Collection and Review	Literature Review – 15%	December 5
Review for final exam	Review	December 5
FINAL EXAM	Final Exam – 20%	December 10
<i>These dates are a guideline – tentative and subject to change</i>		

16.Other:

Contact information for Nathan Manion:

Office: 2L25a 613-969-1913

Students are expected to make every effort to complete tests and submit assigned work on time. The instructor should be notified in advance if a student is unable to meet a scheduled deadline, otherwise late assignments may not be accepted for evaluation and a grade of zero may be assigned for missed tests. Every effort will be made to accommodate students unable to meet specified deadlines due to extenuating circumstances; however, the instructor reserves the right to refuse late assignments and to reschedule tests/examinations.

Section III

17. Curriculum Delivery, Learning Plan and Learning Outcomes:

Course Components/Content	Related Learning Outcomes	Learning Activities/Resources
<p>HPLC</p>	<p>HPLC Primer</p> <ul style="list-style-type: none"> • History, Definitions and Types • Basics • Column Hardware Design • Separation Mechanisms • Detectors • Terminology <p>Mass Spec Primer</p> <p>Polymers Analysis</p> <p>Ion Analysis</p> <p>Laboratory Informatics Primer</p>	<p>Worksheets – take home assignments</p> <p>Peer-led workshops – in Class</p> <p>Tests – in Class</p> <p>Oral presentation and Peer-led discussion</p> <p>Peer/self evaluation</p> <p>Current literature collection and review</p> <p>Final Exam</p>

<p>GC</p>	<p>GC</p> <ul style="list-style-type: none"> • From the beginning • Flow control • Sample introduction • Columns • Kovats retention index • McReynolds constants • Temperature programming • Detectors <p>Capillary GC</p> <ul style="list-style-type: none"> • From the beginning • Capillary columns • Factors influencing a separation • Instrumentation considerations • Injection considerations • Injection methods • Column selection • Column care and feeding 	<p>See previous</p>
<p>Hyphenated methods</p>	<p>From the beginning MS detectors GC-MS interfacing GC-MS data Target compound analysis LC-MS GC-FTIR GC-AES</p>	<p>See previous</p>

SFC	From the beginning Supercritical Fluids Extraction Chromatography SFC Equipment Pressure programming Modifier solvents	See previous
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