

CHEM 3823 (Fall 2018-2019)

ANALYTICAL CHEMISTRY 2: Instrumental Methods

INSTRUCTOR	Dr. Vlad Zamlynny (office: ELL118)
LECTURE	ELL312 (Slot 1, MWF 8:30-9:30 am)
LAB	ELL317 (Slot 28, W 1:30-4:30 pm)
TEXT	Skoog, West, Holler, Crouch Fundamentals of Analytical Chemistry 9th Ed (or 8th Ed).
PREREQUISITE COURSE:	CHEM 2813 with a grade of C- or better

COURSE OUTLINE

CHEM 3823 is a second course in analytical chemistry that is taken during the third year of a typical Chemistry Major program. This course teaches the theory and application of **instrumental** analytical techniques. Such topics as: (i) **introduction** to chemical instrumentation; (ii) atomic, and molecular **spectrometry** (both optical and mass methods); (iii) gas and liquid **chromatography** are included in this course. The knowledge gained in lectures will be applied during laboratory practicum to acquire useful skills necessary for work with such laboratory equipment as Atomic Emission, Atomic Absorption, Ultraviolet-Visible and Infrared spectrometers, fluorimeters, Gas-Liquid and High-Performance Liquid chromatographers. The lab section of the course includes a field trip to the Institute for Marine Biosciences, one of the most prominent analytical research facilities in Atlantic Canada.

Students will extensively use computers during their course work, and are expected to prepare all the laboratory reports as computer-generated print-outs. The lab reports will be typically due in a week from completion of an experiment and the penalty for late reports will be a deduction of 20 % of the grade assigned for a lab for every extra day (*i.e.* the grade of zero will be automatically assigned if the report is not turned in within 5 days following the due date). The only exceptions from this rule will be delays due to illness, serious family reasons or special events promoted by Acadia University. In all instances a note from a reliable source verifying the cause of absence must be provided promptly.

The progress of students in CHEM 3823 will be evaluated based on performance in (optional) on-line assignments, two 50 min in-class written mid-term tests, a 3 hour written final exam and 9 laboratory reports.

Note that the final grade will be assigned only if the passing grade (*i.e.* >50%) for the laboratory portion of the course is received.

The final grade (100%) will be calculated according to the following schedule:

Final exam	(Date: TBA)	45 %	50*%
Mid-term tests	<u>(Tentative)</u> Dates: Oct 10, Nov 19)	32 % = 2 * 16 %	32*%
Laboratory Reports		18 % = 9 * 2 %	18*%
Assignments (total)		5 %	0* %

***NOTE:** If a student chooses to do assignments as an ungraded homework (see Options C* and D* below), the 5% grade normally allocated for the assignments will be added to the final exam's maximum score (*i.e.* each exam question will be worth extra 10% weight: $5/50 \times 100\% = 10\%$). The assignments will be given weekly. They will be similar in many aspects to the (graded) exam questions. Help will be available after the lab. and during regular office hours.

Textbook/assignment options:

- **Option A**

Purchased from Acadia Bookstore {~\$250+tax}

New 9th Edition Textbook + OWL2 on-line assignments bundle
[45% final + 5% assignments]

ISBN:9781285716435: Skoog: BNDL: Fundamentals of Analytical Chemistry.

- **Option B**

Purchased on-line {~\$150+tax}

e-book + OWL2 on-line assignments
[45% final + 5% assignments]

ISBN:9781285190235: IAC (Instant Access Code) OWL2: 24 months.

Option B Instructions:

Open www.nelsonbrain.com

Sign Up using your personal data and Acadia e-mail account.

Log In to your account just created.

Search for 9781285190235 (as an ISBN code)

Add to cart and purchase the product of this **Option B.**

- **Option C***

Can be Purchased from Acadia Bookstore {~\$175+tax}

Old 8th Edition Textbook (+ ungraded homework assignments)

ISBN:9780030355233

- **Option D***

Can be Purchased from Acadia Bookstore {~\$220 +tax}

Can be rented from Acadia Bookstore for one 3 month term {~\$160+tax}

Can be rented in digital format from Acadia bookstore for 3 months term
{~\$75+tax}

New 9th Edition Textbook ONLY (i.e. without OWL2) (+ungraded homework assignments)

ISSN:978049558286

***[50% final + 0% assignments] (grading scheme for options C* and D*)**

NOTE 1: e-book and OWL2 on line assignment access is for 2 years and can be extended by the instructor upon request if adequate reasoning is provided. Thus, the same e-book or textbook OWL2 bundle can be used in both CHEM2813 and CHEM3823 classes taken in normal, 2-year sequence.

NOTE 2: prices are based on previous years and therefore are approximate estimates. Bookstore will have exact numbers.

Students with disabilities that affect learning:

If you are a student with documentation for accommodations who anticipates needing supports or accommodations, please contact Dr. Abu Kamara, Coordinator, Accessible Learning Services at 902-585-1291, abu.kamara@acadiau.ca or Marissa McIsaac, Accessibility Officer at 902-585-1520, disability.access@acadiau.ca. Accessible Learning Services is located in Rhodes Hall.