

CHEM 2813 (Fall 2018-2019)  
ANALYTICAL CHEMISTRY 1: Classical Methods

INSTRUCTOR Dr. Vlad Zamlynny (Office: E118)  
LECTURE E 303 (Slot 4, MWF 11:30 am -12:30 pm)  
LAB E 317 (Slot 28, M 1:30 - 4:30 pm)  
TEXT Skoog , West, Holler, Crouch  
Fundamentals of Analytical Chemistry 9<sup>th</sup> Ed (or 8<sup>th</sup> Ed.)  
PREREQUISITE COURSE: CHEM 1123 or 1023 with a grade of C- or better  
(or the permission of the Department)

### COURSE OUTLINE

CHEM 2813 is the first course in analytical chemistry that is taken during the second year of a typical Chemistry Major program. The emphasis of this course is on the theory and applications of classical analytical techniques as well as the evaluation of experimental results. The following topics are included in this course: (i) an introduction to **statistics** relevant to analytical and physical chemistry; (ii) theory and applications of **classical analytical methods** of gravimetry and titrimetry; (iii) an **introduction modern analytical methods** such as potentiometry, spectroscopy and chromatography.

The knowledge gained in lectures will be applied during a laboratory practicum to acquire useful skills in the field of analytical chemistry. Training includes the use of basic chemical equipment such as volumetric glassware and analytical balances as well as more advanced instrumentation such as pH meters, UV-Vis spectrophotometers and Gas-Liquid Chromatography equipment. Some experimental data will be collected by a computer, interfaced to an instrument giving an opportunity to learn basic computerized data acquisition.

Students will extensively use computers during their course work, and are expected to prepare all the laboratory reports as computer-generated print-outs. The reports are usually expected within a week from completion of experiments. The penalty for late reports will be a deduction of 20 % of a maximum grade associated with a particular experiment 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 2813 will be evaluated based on the 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 %	<b>50*%</b>
Mid-term tests	( <b><u>Tentative</u></b> dates: Oct 15, Nov 19)	32% = 2 * 16 %	32*%
Laboratory practicum		18 % = 9 * 2 %	18*%
Assignments (total)		5 %	0*%

\*If students chose to do ungraded homework assignments (see Option3\* below), the 5% assignment grade will be added to their final exam (*i.e.* each exam question will be worth extra 10% weight:  $5/50 \times 100\% = 10\%$ ).

**Textbook/assignment options:**

- **Option A**

**Purchased from Acadia Bookstore {~\$230+tax}**

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

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

- **Option B**

**Purchased on-line {~\$140+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](http://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 8<sup>th</sup> Edition Textbook (+ ungraded homework assignments)

ISBN:9780030355233

- **Option D\***

**Can be Purchased from Acadia Bookstore {~\$215+tax}**

**Can be Rented from Acadia Bookstore for one 3 month term {~\$150+tax}**

**Can be Rented in digital format from Acadia Bookstore for one 3 month term**  
**{~\$75+tax}**

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

ISBN:978049558286

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

**NOTE1:** 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.

**NOTE2:** prices are approximate. 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](mailto:abu.kamara@acadiau.ca) or Marissa McIsaac, Accessibility Officer at 902-585-1520, [disability.access@acadiau.ca](mailto:disability.access@acadiau.ca). Accessible Learning Services is located in Rhodes Hall.