

# Chemistry 3113: Quantum Chemistry

## Course Outline – Winter 2023

- Professor: Dr. Bobby Ellis (office: 115 Elliott Hall; e-mail: [bobby.ellis@acadiau.ca](mailto:bobby.ellis@acadiau.ca))
- Lectures: Tues. and Thurs. 9:30-11:00 am in 312 Elliott Hall
- Tutorials: Optional tutorials will be held prior to midterm and final exams
- Office Hours: Mon. and Wed. 9:00-10:00 am (or by appointment)
- Textbook: Quantum Chemistry and Molecular Interactions by Cooksy  
ISBN-13: 978-0-321-81416-6; the textbook is **not required**,  
but access to a quantum chemistry textbook is recommended
- Resources: Supplementary problems and other course resources:  
<http://www.acadiau.ca/~bellis/resources/>
- Other: A molecular model kit may be useful

Evaluation:	Assignments/Quizzes	10%	
	Computational Work	30%	
	Midterm Exam #1	10%	Thursday, February 2, 2023
	Midterm Exam #2	10%	Thursday, March 2, 2023
	Midterm Exam #3	10%	Thursday, March 23, 2023
	Final Exam	30%	

	Alpha	GPA	%
Grade Conversion:	A+	4.33	90 – 100
	A	4.00	85 – 89
	A-	3.67	80 – 84
	B+	3.33	77 – 79
	B	3.00	73 – 76
	B-	2.67	70 – 72
	C+	2.33	67 – 69
	C	2.00	63 – 66
	C-	1.67	60 – 62
	D+	1.33	57 – 59
	D	1.00	53 – 56
D-	0.67	50 – 52	
F	0.00	0 – 49	

**Programmable calculators are not allowed for midterm or final exams.**

**There are no make-up midterms.** If you miss a midterm examination for a valid reason, the points are transferred to the value of the final exam.

The goals of this course are to solidify and build upon the concepts first presented in Introductory Chemistry.

The topics covered in this course include:

1. Computational Chemistry
2. Comparing Classical and Quantum Mechanics
3. One-Electron Atoms
4. Many-Electron Atoms
5. Chemical Bonds
6. Energy States and Spectroscopy

### Accessible Learning Services

If you are a student with documentation for accommodations or if you anticipate needing supports or accommodations, please contact:

Ian Ford, Accessibility Resource Facilitator at 902-585-1520, [disability.access@acadiau.ca](mailto:disability.access@acadiau.ca)  
Marissa McIsaac, Manager, [disability.access@acadiau.ca](mailto:disability.access@acadiau.ca)

Accessible Learning Services is located in Rhodes Hall, rooms 111-115.