Both modules have the same course requirements (total of 10.0 courses)

**Required Chemistry “Core” (6.0 courses)**

2384B, 3370A, 3371F, 3372G, 3373F, 3374A

**Biochemical Content Requirement (0.5 course)**

Choose one 0.5 course from:
- Biochem 2280A
- Chem 3391A/B
- Chem 4493A/B

**Capstone Research Project (1.5 courses)**

Chem 4491E

**Required Options (2.0 courses)**

Choose four of the 0.5 courses below. At least 1.0 (two 0.5 courses) must be at the 4000 level, or 0.5 if 4493A/B is chosen to fulfill the biochemical content requirement.

- Chem 3300F/G
- Chem 3320A/B
- Chem 3330F/G
- Chem 3364A/B
- Chem 3391A/B
- Chem 3393A/B
- Chem 4400A/B
- Chem 4415B
- Chem 4444A/B
- Chem 4471A/B
- Chem 4472A/B
- Chem 4473A/B
- Chem 4474A/B
- Chem 4481A/B
- Chem 4483A/B
- Chem 4493A/B
- Chem 4494A/B

Note: additional App Math and Calc options given on pg 4

Our **Honors Specialization in Chemistry, Specialization in Chemistry**, and Honors Specialization in Biochemistry-Chemistry modules are programs that have been accredited by the Canadian Society for Chemistry, the national professional society for chemists.

Accreditation means that students graduating with a B.Sc. from these programs meet the strict educational requirements of the Federation of Chemical Professionals of Canada and can practice as chemical professionals in Canada.
What is the Chemistry Core?

The Chemistry Core is a collection of 12 half-courses required in all of our modules. It consists of the four major areas of chemistry:

Analytical: 2272, 3372
Inorganic: 2271, 2281, 3371
Organic: 2273, 2283, 3373
Physical: 2374, 2384, 3374

The core also consists of a course (3370) on the elucidation of chemical structure, and it is very useful for those interested in the area of chemical synthesis.¹

¹ For students pursuing careers in computational or physical chemistry, Chem 3370 can be substituted with Chem 3300 under special permission. Contact chemcounselling@uwo.ca.
Students in all Chemistry modules are required to take at least one 0.5 course that has a significant amount of biochemical content:

You must select at least 0.5 course$^2$ from the following:

**Biochem 2280A$^3$**
This course covers the foundations of biochemistry. Select it if you are considering a joint module with Biochemistry, or a double major with Biology or a BMSc department.

**Chem 3391A/B**
This course is highly recommended if you are interested in inorganic chemistry and wish to learn about why metals are essential to life.

**Chem 4493A/B**
Take this course if your interest lies in the area of organic and synthetic chemistry.

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$^2$ This is the minimum. Students with a strong interest in chemistry related to life sciences are advised to take additional biochemistry options.

$^3$ Those planning to pursue a chemistry career related to life sciences are strongly encouraged to take Biochem 2280A.
Students are required to choose a minimum of 2.0 courses from this list of Required Options. At least 1.0 of the 2.0 must be at the 4000 level.

Chem 3300F/G
In this course you will learn how to use computational chemistry methods and general-purpose scientific software to visualize molecular structure, model reaction mechanisms, simulate molecular spectra, and facilitate numerical and symbolic calculations. Because these tools are useful in many areas of chemistry, the course is highly recommended for all chemistry students.

Students interested in synthetic chemistry and materials should consider:
Chem 3320, 3300, 3393, 4471, 4473, 4481, 4483

Students interested in physical chemistry should consider:
Chem 3300, 3364, 4444, 4472, 4474, 4494; Calc 2302, 2303; App Math 2402, 2811, 2814

Students interested in biological chemistry should consider:
Chem 3391, 3393, 4415, 4493, 4494; Biochem 2280

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This is the minimum. Students who are considering graduate studies are strongly advised to take additional options.
Recommended Optional Non-Chemistry Courses
These courses provide valuable transferrable skills to professional scientists

Business Admin 2295F/G
This is a business course specifically for science students in Years 3 and 4. No prerequisites are required.
http://www.westerncalendar.uwo.ca/Courses.cfm?CourseAcadCalendarID=MAIN_019425_1&SelectedCalendar=Live&ArchiveID=

Biology 2244A/B - Analysis & Interpretation of Data
This course is about measurement, data sampling, estimation, and the testing of statistical hypotheses. It is great for analytical and physical chemists (particularly courses including quantum, microscopic phenomena, statistical mechanics, simulations).
http://www.westerncalendar.uwo.ca/Courses.cfm?CourseAcadCalendarID=MAIN_009143_1&SelectedCalendar=Live&ArchiveID=

Computer Science
CS 1032A/B: advanced Excel, database, applications in business
CS 1046A/B: beginner’s programming course (JavaScript)
CS 1026A/B: programming in Python
CS 2120A/B: also programming in Python for life sciences
Contact a CS academic counsellor if you have any inquiries:
https://www.csd.uwo.ca/current_students/undergraduate_students/academic_counselling.html

Philosophy 1230A/B - Reasoning and Critical Thinking
This course is designed to enhance a student’s ability to evaluate various forms of reasoning found in everyday life.
http://www.westerncalendar.uwo.ca/Courses.cfm?CourseAcadCalendarID=MAIN_019875_5&SelectedCalendar=Live&ArchiveID=

Writing 2131F/G
Writing for sciences. No prerequisites are required.
http://www.westerncalendar.uwo.ca/Courses.cfm?CourseAcadCalendarID=MAIN_020442_1&SelectedCalendar=Live&ArchiveID=
Optional Mathematics Courses to Consider

(module or elective options)
Applied Mathematics 2402A - Ordinary Differential Equations
Applied Mathematics 2811B - Linear Algebra II
Applied Mathematics 2814F/G - Numerical Analysis
Calculus 2302A/B - Intermediate Calculus I
Calculus 2303A/B - Intermediate Calculus II

(elective options)
Mathematics 2211A/B - Linear Algebra
Mathematics 2120A/B - Intermediate Linear Algebra
Mathematics 2122A/B - Real Analysis I
Mathematics 3122A/B - Real Analysis II
Mathematics 2155F/G - Mathematical Structures
Mathematics 2124A/B - Introduction to Mathematical Problems
Statistical Sciences 2857A/B - Probability and Statistics I