

B.Sc. in Chemistry for the Medical Sciences (ChemMedSci)

Purpose. To serve the needs of students who have a strong interest in chemistry, but who ultimately plan on entering professional programs in the health sciences such as medicine, pharmacy, pharmaceutical sciences, dentistry, veterinary medicine, physiotherapy, etc.

Features of the Program. Traditional chemistry **Major** and **Honours** students take a chemistry-intensive program starting in their 2nd year. Students in the **ChemMedSci** program (**major or honours**) take a selection of chemistry courses balanced with additional courses from other departments that are useful preparation for health-oriented professional programs. As well as providing a solid grounding in chemistry, the program allows students to take recommended courses for entry to health-related professional programs of their choice. **ChemMedSci** students may also do the **co-op option** that alternates between academic study and work-related jobs in industry.

Program Requirements

1st Year

CHEM 101, 102
new MATH 100 or 109 or 102 and
 MATH 101 or 151 (for Major)
 MATH 100 (or 109) and 101 (for Honours)
 PHYS 102A/102B or 110/111 or 120/130
 BIOL 184, 186
 ENSH 101, 102; ATWP 135
 1 elective

2nd Year

CHEM 231, 234, 260
 One of 212, 225 or 245
 BIOL 225
 STAT 255 or 260
 2 courses drawn from **Pool A**
 2 electives

3rd and 4th Years

CHEM 337, 363, 437
 BIOC 300A, 300B
 One more of CHEM 212, 225 or 245
 3 CHEM 300/400 level **LECTURE** courses
 (CHEM 399, 498/499 are not eligible)
 2 more courses from **Pool A**
 2 courses drawn from **Pool B**
 7 electives (a total of 21 units of 300/400 level courses,
 i.e. 14 courses, are required for graduation)

new

ChemMedSci Honours program

Take CHEM 499A/499B and reduce electives to
 5 courses (admission to honours requires permission)

Pool A (alternatives may be acceptable. Check with the program advisor)

ANTH 250, BIOL 230, 248, 309, ENSH 202, 302, EPHE 141, 155, 160, 242, HS 200, MICR 200A, 200B, PHIL 331, PSYC 251, 332.

Pool B (alternatives may be acceptable. Check with the program advisor)

ANTH 352, BCMB 301A, 301B, BIOC 401, 403, 404, BIOL 359, 360, 361, 432, 436, 439, 447, MEDS 301, 410, MICR 303, 402, PYSC 345A, STAT 355.

Recommended high school math and science courses:

PRE-CALCULUS 11 & 12, CALCULUS 12, BIOLOGY 11 & 12, CHEMISTRY 11 & 12, PHYSICS 11 & 12

Absolutely essential: PRE-CALCULUS 11 & 12, BIOLOGY 11, CHEMISTRY 11, PHYSICS 11

Questions? Contact the program advisor, Dr. Dave Berg (djberg@uvic.ca)

1. Is this a pre-med program?

No. A pre-med program is an educational track directed towards entry to medical school offered by American schools that allows students to take all the medical school requirements (biology, chemistry, physics, math, etc.) in their first two years and then write the MCAT. The ChemMedSci program is a chemistry B.Sc. that is distinct from our traditional Major/Honours offering, in that the course offerings are structured to allow students to take pre-reqs (and other desired/recommended courses) for professional programs in the health sciences, while still building a strong competency in chemistry. ***Students will still need to chose electives to meet specific requirements for entry to their chosen professional program.***

2. How is this program different from the regular Chemistry Major/Honours stream?

Chemistry is a very diverse field. Some aspects of chemistry are very close to physics while others are closer to biology. Our traditional Major and Honours programs are intended to build expertise in all the sub-disciplines of chemistry. This is great for students looking to go on in chemistry (i.e. those heading to grad school, or to a career working in chemistry) but the sheer number of required courses (especially at the 2nd and 3rd year levels) can make it difficult for students who see a B.Sc in chemistry as a stepping-stone to other fields, particularly those heading to health-oriented programs. The ChemMedSci program provides a better option for students who like chemistry but who want to have more career options available at the end of the degree.

3. What happens if I don't get into the professional school of my choice?

You'll have a strong chemistry degree – albeit one with a different focus than our traditional Major program – and will be very employable in a number of industries that hire chemists. These include the pharmaceutical and food science industries, brewing industry, environmental monitoring and consulting, clinical trials monitoring, printing and polymer industries, and a range of analytical chemistry jobs. Graduates of this program will be particularly suited to the growing health monitoring industry, while the breadth of the program will leave graduates well-suited to create their own careers in any number of emerging fields.

4. Is this program a route to graduate school (MSc or PhD) in chemistry?

Yes, but not as good as our traditional **Major** or **Honours** Chemistry programs. Depending on the optional courses that you choose during the program, you'd be likely to receive entry to most chemistry graduate programs in Canada (particularly if you're interested in chemical biology) but the expanded chemistry requirements that come with the regular chemistry honours degree will ultimately serve you better if you really decide to focus on a career in chemistry.

5. Can I do co-op in this program?

Absolutely. UVic Chemistry and Physics were the originators of co-op in Western Canada, and we've continued to be very strong proponents of the value of co-op in an undergraduate degree. Students in the ChemMedSci program can apply to enter the Chem co-op program in their second year. Four co-op work terms are required but a proposed new "internship" option currently being planned by UVic's central co-op office will change things.

6. What other experiential learning opportunities are available?

In addition to the co-op option, UVic Chemistry has been a pioneer in introducing research experience at an earlier level in the undergraduate curriculum. Our Chem 298 and Chem 398 (non-credit "Research Experience" courses) provide opportunities for 2nd and 3rd year students to work in a research lab a few hours per week. Students have a chance to learn what research is all about, and to interact closely with both graduate students and faculty members. These courses frequently lead to students taking Chem 399 and Chem 498/499.

7. What are the requirements for entry into the program?

There is no direct entry from high school. Students must apply for entry to **UVic Faculty of Science** and then declare the ChemMedSci major, normally in their second year. Entry to the ChemMedSci honours program requires permission.

8. Do I need to maintain a minimum GPA in the program?

There is no minimum GPA for entry to the ChemMedSci major program but students must meet the university minimum for graduation. The honours program requires a graduating GPA of 5.5. Students are advised that many professional programs are very competitive, and require high GPA for entry.

9. I'll be taking chemistry courses alongside Chemistry Major/Honours students, and non-chemistry courses alongside Majors from those disciplines. Will I be at a disadvantage?

No! Our data indicate that many students now take non-traditional paths to a degree – it's not uncommon for students to take >1 year between "paired" courses, nor is it rare for students to hop between different majors. In contrast to the academic environment of 20 years ago, every student now approaches every course from a unique perspective, with a unique set of background skills.