CHEMISTRY

Major, Bachelor of Science (Honours) | degree PLAN

CHEMISTRY

Chemistry explores the composition, structure, and transformation of matter. Frequently called the central science, it provides the basis for studies in many other disciplines, ranging from biology to materials science, in addition to being a booming discipline of its own.

Sample Year by Year

1ST YEAR
- CHEM 112/6.0
- 8.0 units from MATH 110/6.0, MATH 111/6.0, MATH 112/3.0
- PHYS 104/6.0 or PHYS 106/6.0 or PHYS 117/6.0
- MATH 120/6.0 or MATH 121/6.0 or (MATH 123/3.0 and MATH 124/3.0)
- 9.0 units of electives and/or minor

2ND YEAR
- CHEM 211/3.0
- CHEM 212/3.0
- CHEM 213/3.0
- CHEM 221/3.0
- CHEM 222/3.0
- CHEM 223/3.0
- 12.0 units of electives and/or minor

3RD YEAR
- 12.0 units from CHEM 311/3.0, CHEM 312/3.0, CHEM 313/3.0, CHEM 321/3.0, CHEM 322/3.0, CHEM 323/3.0
- CHEM 397/6.0
- 12.0 units of electives and/or minor

4TH YEAR
- CHEM 497/6.0
- 6.0 units from CHEM 311/3.0, CHEM 312/3.0, CHEM 313/3.0, CHEM 321/3.0, CHEM 322/3.0, CHEM 323/3.0
- 3.0 units of CHEM at the 400 level
- 15.0 units of electives and/or minor

Note that degree requirements are revised regularly. The most current requirements, including course lists and options, are available in the Academic Calendar at: Quartsic.com/academic-calendar

2018-19 thresholds

2.7 cGPA AUTOMATIC ACCEPTANCE
min C+ in CHEM 112

1.9 cGPA PENDING LIST
min C- in CHEM 112

*Thresholds are made on a competitive basis and are updated annually. For the latest information please visit: Quartsic.com
In first year you will have the chance to explore the foundations of Chemistry in biology, chemistry, geography and geology along with some electives. See the back page for specific courses to consider. Attend Majors Night in the Winter term to learn more about Plan options.

Join clubs on campus such as Let’s Talk Science, Women in Science and Engineering or the Undergraduate Science Case Competition. See the AMS Clubs Directory or the Queen’s Get Involved page for more ideas.

Volunteer on or off-campus with community organizations such as Science Rendezvous. Consider joining an intramural sports or an athletics team. Check out the Athletics and Recreation site.

Prepare for work or study in a multi-cultural environment by taking QUIC’s Intercultural Competency Certificate, and research possible immigration regulations. Speak to a QUIC advisor to get involved in their programs, events, and training opportunities.

Grappling with program decisions? Go to Majors Night or get some help wondering about career options from Career Services. Attend departmental information sessions on Plan selection (March).

In second year you will have the chance to participate in research-based courses that can lead to Graduate School or to your future career path. Make sure to finish up all your courses for your major and your optional minor and/or certificate(s).

Look into summer jobs by talking to the dept. or Career Services about work through SWEP, NSERC-USRA or Work-Study.

Consider applying to do a 12-16 month QUIP internship between your third and fourth year.

Do some targeted networking with alumni working in careers of interest by joining the LinkedIn group Queen’s Connects. Check out Career Services networking workshops. Participate in meetings with the Queen’s Chemistry Innovation Council (QIOC).

Consider joining associations like the Chemical Institute of Canada or the Association of the Chemical Profession of Ontario. Join groups on LinkedIn reflecting specific careers or topics of interest in Chemistry.

Consider a 12-16 month QUIP internship. Investigate requirements for full-time jobs, graduate studies, or other opportunities. Assess what you’re lacking and fill in gaps – check out the Career Services workshops for help. Consider presenting your research results at the Southern Ontario Undergraduate Student Chemistry Conference in the Spring or at Inquiry@Queen’s.

International students interested in staying in Canada can speak with an International Student Advisor.

Where can I go? A degree in Chemistry can take your career in many directions. Many students choose to continue their academic journey with a Master’s. Our students are equipped with a strong foundation for careers in:

- Environmental research
- Forensic science
- Environmental sustainability
- Materials science
- Patent law
- Pharmaceuticals
- Pharmacy
- Public health
- Quality control
- Sustainability design

Taking time to explore career options, build experience and network can help you have a smooth transition to the world of work after graduation.

In third year you will have the chance to explore the foundations of Chemistry in biology, chemistry, geography and geology along with some electives. See the back page for specific courses to consider. Attend Majors Night in the Winter term to learn more about Plan options.

Want to make sure your academics are where you want them to be? Visit SASS (Student Academic Support Services) and the Writing Centre for some help.

Consider entrepreneurial opportunities via programs like the Queen’s Innovation Connector Summer (QICS).

Consider presenting and publishing your work through Inquiry@Queen’s.

In fourth year you will have the chance to participate in research-based courses that can lead to Graduate School or to your future career path. Make sure to finish up all your courses for your major and your optional minor and/or certificate(s).

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A chance to start grouping courses in areas of interest, or to keep it more general and explore many areas of Chemistry. Meet with an Academic Advisor to make sure you are on track and have planned out your courses for next year — for some ideas, see the back page.

Start focusing on areas of interest. Research education requirements for careers of interest. If needed, prepare to take any required tests (like the LSAT or MCAT) and get help thinking about grad school from Career Services, as well as departmental resources; start looking into graduate school scholarship applications.

Build your intercultural competence by getting involved with other cultures or by practicing or improving your language skills.

Apply to jobs or future education, or make plans for other adventures. Get help from Career Services with job searching, resumes, interviews, Grad School applications, or other decisions.

What will I learn? A degree in Chemistry can equip you with valuable and versatile skills, such as:

- Academic and technical skills to conduct research, understand scientific journal articles, trouble-shooting, clearly explain and interpret research data
- Organizational skills to compile, organize and maintain accurate records
- Ability to operate laboratory equipment and to employ appropriate scientific lab techniques
- Proficiency in mathematical and logical analysis
- Sensitivity to the health and safety of others - safe handling, storage and disposal of hazardous chemicals
- Written and oral communication skills to prepare and present reports from research ideas and information using current technology
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- Team working in a multidisciplinary context
- Resource and time management
- Practical and fundamental knowledge of all subdisciplines of chemistry

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Connect with professors at socials or attend speaker events. Start or continue volunteering.

Attend departmental resources; start looking into graduate studies, or other opportunities. Assess where you would like to build your intercultural competence by getting involved with other cultures or by practicing or improving your language skills.

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In an exchange in your future? Start thinking about where you would like to study abroad. Apply in January for a third year exchange through the International Programs Office.

Volunteer on or off-campus with community organizations such as Science Rendezvous. Consider joining an intramural sports or an athletics team. Check out the Athletics and Recreation site.

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CHEMISTRY
Specialization,
Bachelor of Science (Honours)

Sample Year by Year

1ST YEAR
- CHEM 112/6.0
- 3.0 units from MATH 110/6.0, MATH 111/6.0, MATH 112/3.0
- PHYS 104/6.0 or PHYS 106/6.0 or PHYS 117/6.0
- MATH 120/6.0 or MATH 121/6.0 or (MATH 123/3.0 and MATH 124/3.0)
- 9.0 units of electives

2ND YEAR
- CHEM 211/3.0
- CHEM 212/3.0
- CHEM 213/3.0
- CHEM 221/3.0
- CHEM 222/3.0
- CHEM 223/3.0
- 12.0 units of electives

3RD YEAR
- CHEM 311/3.0
- CHEM 312/3.0
- CHEM 313/3.0
- CHEM 321/3.0
- CHEM 322/3.0
- CHEM 323/3.0
- CHEM 397/6.0
- 6.0 units of electives

4TH YEAR
- CHEM 497/6.0
- 12.0 units of CHEM at the 400 level or above or from BCHM at the 300 level or above; BCHM 218/3.0, PHYS 424/3.0
- 12 units from CHEM or BCHM at the 300 level or above; BCHM 218/3.0, PHYS 424/3.0
- 3.0 units of electives

PLAN:
90.0 units plus electives to a total of 120 units.

CORE
OPTION
ELECTIVES

Note that degree requirements are revised regularly. The most current requirements, including course lists and options, are found in the Academic Calendar at: QUartsci.com/academic-calendar

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2.7 cGPA AUTOMATIC ACCEPTANCE
min C+ in CHEM 112

1.9 cGPA PENDING LIST
min C+ in CHEM 112

*Thresholds are made on a competitive basis and are updated annually. For the latest information please visit: QUartsci.com

Chemistry explores the composition, structure, and transformation of matter. Frequently called the central science, it provides the basis for studies in many other disciplines, ranging from biology to materials science, in addition to being a booming discipline of its own.

Top 5 Reasons to study Chemistry

1. Chemistry opens very broad career options.
2. With extensive experimental training, Chemistry studies are very hands-on and fun!
3. Queen’s Chemistry Department is a very supportive and nurturing environment; our graduating class is small and close-knit.
4. All major and specialization students conduct research in fourth year as part of their plan.
5. Queen’s Chemistry programs are accredited by the Canadian Society for Chemistry.

10% of alumni work in Government
11% of alumni work in Health & Medicine
14% of alumni work in Research & Development
32% of alumni work in Education

Not too long ago, Jenny Du was a student at Queen’s. Now she’s living the California lifestyle at a cool startup. As the Director of Extraction, Jenny works with a team at Apeel Sciences to use natural plant extracts to formulate edible coatings that work to extend the shelf-life of fresh produce.
CHEMISTRY

SPECIALIZATION MAP

SPECIALIZATION BACHELOR OF SCIENCE (HONOURS)

1ST YEAR

GET THE COURSES YOU NEED
In first year you will have the chance to explore the foundations of Chemistry in biology, chemistry, geography and geology along with some electives. See the back page for specific courses to consider. Attend Majors Night in the Winter term to learn more about Plan options.

GET RELEVANT EXPERIENCE
Join clubs on campus such as Let’s Talk Science, Women in Science and Engineering or the Undergraduate Science Case Competition. See the AMS Clubs Directory or the Queen’s Get Involved page for more ideas.

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Volunteer on or off campus with community organizations such as Science Rendezvous. Consider joining an intramural sports or an athletics team. Check out the Athletics and Recreation site.

GET THINKING GLOBALLY
Prepare for work or studies in a multi-cultural environment by taking QIC’s Intercultural Competency Certificate, and research possible immigration regulations. Speak to a QIC advisor to get involved in their programs, events, and training opportunities.

GET READY FOR LIFE AFTER GRADUATION
Grappling with program decisions? Go to Majors Night or get some help wondering about career options from Career Services. Attend departmental information sessions on Plan selection (March).

2ND YEAR

GET THE COURSES YOU NEED
Start going deeper into the discipline of Chemistry, while considering a certificate such as French for Professionals. Attend Degree + in the Fall term to learn more about Certificates and Internship options. Want to make sure your academics are where you want them to be? Visit SASS (Student Academic Support Services) and the Writing Centre for some help.

GET RELEVANT EXPERIENCE
Look into summer jobs by talking to the dept. or Career Services about work through SWEET, NSERC- USRA or Work-Study. Consider entrepreneurial opportunities via programs like the Queen’s Innovation Connector Summer Initiative (QICS).

GET CONNECTED WITH THE COMMUNITY
Get involved with the Departmental Student Council (DSC). Connect with professors at socials or attend speaker events. Start or continue volunteering.

GET THINKING GLOBALLY
Is an exchange in your future? Start thinking about where you would like to study abroad. Apply in January for a third year exchange through the International Programs Office.

GET READY FOR LIFE AFTER GRADUATION
Explore different careers of interest by reading books in the Career Services Information Area, such as the Chemistry Careers. For more information check out Career Cruising or by finding and connecting with alumni on LinkedIn.

3RD YEAR

GET THE COURSES YOU NEED
A chance to start grouping courses in areas of interest, or to keep it more general and explore many areas of Chemistry. Meet with an Academic Advisor to make sure you are on track and have planned out your courses for next year — for some ideas, see the back page.

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4TH OR FINAL YEAR

GET THE COURSES YOU NEED
In fourth year you will have the chance to participate in research-based courses that can lead to Graduate School or to your future career path. Make sure to finish up all your courses for your degree and your optional certificate.

GET RELEVANT EXPERIENCE
Investigate requirements for full-time jobs, graduate studies, or other opportunities. Assess what you’re lacking and fill in gaps – check out the Career Services skills workshop for help. Consider presenting your research results at the Southern Ontario Undergraduate Student Chemistry Conference in the Spring or at Inquiry@Queen’s.

GET CONNECTED WITH THE COMMUNITY
Consider joining associations like the Chemical Institute of Canada or the Association of the Chemical Profession of Ontario. Join groups on LinkedIn reflecting specific careers or topics of interest in Chemistry.

GET THINKING GLOBALLY
International students interested in staying in Canada can speak with an International Student Advisor. Consider widening your global skills by applying to the dual MSc Queen’s – Stuttgart degree. Do your research at the University of Stuttgart in Germany.

GET READY FOR LIFE AFTER GRADUATION
Apply to jobs or future education, or make plans for other adventures. Get help from Career Services with job searching, resumes, interviews, Grad School applications, or other decisions.

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A degree in Chemistry can equip you with valuable and versatile skills, such as:

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