



<p>1.0 Degree Title Specify the two degrees for concurrent degree programs</p> <p>1.1 <input style="width: 100%;" type="text" value="B.Sc."/></p> <p>1.2 Concentration (Legacy = Concentration/Option) If applicable (30 char. max.) <input style="width: 100%;" type="text" value="Honours in Chemistry with Bio-Organic option"/></p> <p>1.3 Minor (with Concentration, if applicable) (30 char. max.) <input style="width: 100%;" type="text"/></p> <p>1.4 Category</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;">Faculty Program (FP)</td> <td style="width: 50%; border: none;">Honours (HON) <input checked="" type="checkbox"/></td> </tr> <tr> <td style="border: none;">Major</td> <td style="border: none;">Joint Honours</td> </tr> <tr> <td style="border: none;">Joint Major</td> <td style="border: none;">Component (HC)</td> </tr> <tr> <td style="border: none;">Major Concentration (CON)</td> <td style="border: none;">Internship/Co-op</td> </tr> <tr> <td style="border: none;">Minor</td> <td style="border: none;">Thesis (T)</td> </tr> <tr> <td style="border: none;">Minor Concentration (CON)</td> <td style="border: none;">Non-Thesis (N)</td> </tr> <tr> <td style="border: none;"></td> <td style="border: none;">Other</td> </tr> <tr> <td style="border: none;"></td> <td style="border: none;">Please specify</td> </tr> </table> <p>1.5 <input style="width: 100%;" type="text" value="B. Sc. Honours in Chemistry with Bio-Organic Option"/></p>	Faculty Program (FP)	Honours (HON) <input checked="" type="checkbox"/>	Major	Joint Honours	Joint Major	Component (HC)	Major Concentration (CON)	Internship/Co-op	Minor	Thesis (T)	Minor Concentration (CON)	Non-Thesis (N)		Other		Please specify	<p>2.0 Administering Faculty/Unit <input style="width: 100%;" type="text" value="Science/Chemistry"/></p> <p>Offering Faculty/Department</p> <p>3.0 Effective Term of revision or retirement Please give reasons in 5.0 "Rationale" in the case of retirement (Ex. Sept. 2004 = 200409)                      Retirement</p> <p>Term: <b>201509</b></p> <p>4.0 Existing Credit Weight                      Proposed Credit Weight</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: 1px solid black; text-align: center;">75</td> <td style="width: 50%; border: 1px solid black; text-align: center;">75</td> </tr> </table> <p>5.0 Rationale for revised program</p> <div style="border: 1px solid black; padding: 5px;"> <p>Under Required courses, CHEM 283 replaces CHEM 253 and CHEM 263 in a credit-neutral change. We are changing MATH 315 from a required course to a complementary course. As a department, we decided that 3 credits of ordinary differential equations are not core to a degree in chemistry. We are also putting PHYS 242 in as a required course, since it is an important prerequisite for CHEM 355. In order to accommodate this as a credit-neutral change, we will remove CHEM 365 as a required course. CHEM 502 will be restored as a required course to harmonize core requirements with the Majors option program, and to restore the credits reduced by the removal of MATH 315.</p> <p style="text-align: right;"><input type="checkbox"/></p> </div>	75	75
Faculty Program (FP)	Honours (HON) <input checked="" type="checkbox"/>																		
Major	Joint Honours																		
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Major Concentration (CON)	Internship/Co-op																		
Minor	Thesis (T)																		
Minor Concentration (CON)	Non-Thesis (N)																		
	Other																		
	Please specify																		
75	75																		

6.0 Revised Program Description (Maximum 150 words)

<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
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## 7.0 List of existing program and proposed program

Existing program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

### Required Courses (57 credits)

The required courses in this program consist of 57 credits in chemistry, biology and mathematics, listed below. The courses marked with an asterisk (\*) are omitted from the program of students who have successfully completed them at the CEGEP level but the Chemistry courses must be replaced by courses in that discipline if students wish to be eligible for admission to the Ordre des chimistes du Québec. Students from outside Quebec or transfer students should consult the Academic Adviser.

See <http://www.chemistry.mcgill.ca/advising/inside/advisors.php>.

A computer science course, either COMP 202 or COMP 208, is strongly recommended during U1 for students who have no previous introduction to computer programming. Students should contact their adviser on this matter. Completion of Mathematics MATH 222 and MATH 315 during U1 is also strongly recommended.

\* Denotes courses with CEGEP equivalents.

\*\* Students who have successfully completed MATH 150 and MATH 151 are not required to take MATH 222.

BIOL 200 Molecular Biology (3 credits)  
BIOL 201 Cell Biology and Metabolism (3 credits)  
CHEM 212 Introductory Organic Chemistry 1 (4 credits) \*  
CHEM 222 Introductory Organic Chemistry 2 (4 credits) \*  
CHEM 223 Introductory Physical Chemistry 1 (2 credits)  
CHEM 243 Introductory Physical Chemistry 2 (2 credits)  
**CHEM 253 Introductory Physical Chemistry 1 Laboratory (1 credit)**  
**CHEM 263 Introductory Physical Chemistry 2 Laboratory (1 credit)**  
CHEM 281 Inorganic Chemistry 1 (3 credits)  
CHEM 287 Introductory Analytical Chemistry (2 credits)  
CHEM 297 Introductory Analytical Chemistry Laboratory (1 credit)  
CHEM 302 Introductory Organic Chemistry 3 (3 credits)  
CHEM 345 Molecular Properties and Structure 1 (3 credits)  
CHEM 355 Molecular Properties and Structure 2 (3 credits)  
**CHEM 365 Statistical Thermodynamics (2 credits)**  
CHEM 367 Instrumental Analysis 1 (3 credits)  
CHEM 377 Instrumental Analysis 2 (3 credits)  
CHEM 381 Inorganic Chemistry 2 (3 credits)  
CHEM 392 Integrated Inorganic/Organic Laboratory (3 credits)  
CHEM 493 Advanced Physical Chemistry Laboratory (2 credits)  
MATH 222 Calculus 3 (3 credits) \*\*  
**MATH 315 Ordinary Differential Equations (3 credits)**

### Complementary Courses (18 credits)

18 credits selected as follows:

6 credits of research\*:

\* Students may take up to 12 Research Project credits but only 6 of these may be used to fulfil the program requirement.

CHEM 470 Research Project 1 (6 credits)  
CHEM 480 Research Project 2 (3 credits)

6 credits, **two of the following courses:**

BIOL 202 Basic Genetics (3 credits)  
BIOL 301 Cell and Molecular Laboratory (4 credits)  
**CHEM 502 Advanced Bio-Organic Chemistry (3 credits)**  
MIMM 211 Introductory Microbiology (3 credits)  
MIMM 214 Introductory Immunology: Elements of Immunity (3 credits)  
MIMM 314 Intermediate Immunology (3 credits)  
MIMM 323 Microbial Physiology (3 credits)  
PHGY 209 Mammalian Physiology 1 (3 credits)  
PHGY 210 Mammalian Physiology 2 (3 credits)

and 6 credits of additional Chemistry courses at the 400 level or higher.

Proposed program (list courses as follows: Subj Code/Crse Num, Title, Credit weight, under the headings of: Required Courses, Complementary Courses, Elective Courses)

### Required Courses (57 credits)

The required courses in this program consist of 60 credits in chemistry, biology and mathematics, listed below. The courses marked with an asterisk (\*) are omitted from the program of students who have successfully completed them at the CEGEP level but the Chemistry courses must be replaced by courses in that discipline if students wish to be eligible for admission to the Ordre des chimistes du Québec. Students from outside Quebec or transfer students should consult the Academic Adviser.

See <http://www.chemistry.mcgill.ca/advising/inside/advisors.php>.

A computer science course, either COMP 202 or COMP 208, is strongly recommended during U1 for students who have no previous introduction to computer programming. Students should contact their adviser on this matter. Completion of Mathematics MATH 222 during U1 is also strongly recommended.

\* Denotes courses with CEGEP equivalents.

\*\* Students who have successfully completed MATH 150 and MATH 151 are not required to take MATH 222.

BIOL 200 Molecular Biology (3 credits)  
BIOL 201 Cell Biology and Metabolism (3 credits)  
CHEM 212 Introductory Organic Chemistry 1 (4 credits) \*  
CHEM 222 Introductory Organic Chemistry 2 (4 credits) \*  
CHEM 223 Introductory Physical Chemistry 1 (2 credits)  
CHEM 243 Introductory Physical Chemistry 2 (2 credits)  
**CHEM 283 Introductory Physical Chemistry Laboratory (2 credits)**  
CHEM 281 Inorganic Chemistry 1 (3 credits)  
CHEM 287 Introductory Analytical Chemistry (2 credits)  
CHEM 297 Introductory Analytical Chemistry Laboratory (1 credit)  
CHEM 302 Introductory Organic Chemistry 3 (3 credits)  
CHEM 345 Molecular Properties and Structure 1 (3 credits)  
CHEM 355 Molecular Properties and Structure 2 (3 credits)  
CHEM 367 Instrumental Analysis 1 (3 credits)  
CHEM 377 Instrumental Analysis 2 (3 credits)  
CHEM 381 Inorganic Chemistry 2 (3 credits)  
CHEM 392 Integrated Inorganic/Organic Laboratory (3 credits)  
CHEM 493 Advanced Physical Chemistry Laboratory (2 credits)  
**CHEM 502 Advanced Bio-Organic Chemistry (3 credits)**  
MATH 222 Calculus 3 (3 credits) \*\*  
**PHYS 242 Electricity and Magnetism (2 credits)**

18 credits selected as follows:

6 credits of research\*:

\* Students may take up to 12 Research Project credits but only 6 of these may be used to fulfil the program requirement.

CHEM 470 Research Project 1 (6 credits)  
CHEM 480 Research Project 2 (3 credits)

6 credits, **three of the following courses:**

BIOL 202 Basic Genetics (3 credits)  
BIOL 301 Cell and Molecular Laboratory (4 credits)  
MIMM 211 Introductory Microbiology (3 credits)  
MIMM 214 Introductory Immunology: Elements of Immunity (3 credits)  
MIMM 314 Intermediate Immunology (3 credits)  
MIMM 323 Microbial Physiology (3 credits)  
PHGY 209 Mammalian Physiology 1 (3 credits)  
PHGY 210 Mammalian Physiology 2 (3 credits)  
**MATH 315 Ordinary Differential Equations (3 credits)**  
**CHEM 365 Statistical Thermodynamics (2 credits)**

and 6 credits of additional Chemistry courses at the 400 level or higher.

Attach extra page(s) as needed

8.0 Consultation with  
Related Units

Yes  No

Financial Consult  Yes  No

Attach list of consultations

9. Approvals

Routing Sequence	Name	Signature	Date
Department			
Curric/Acad Committee			
Faculty 1			
Faculty 2			
Faculty 3			
SCTP			
GS			
APPC			
Senate			

Submitted by

Name   
Phone   
Email   
Submission Date

To be completed by ARR:

CIP Code