



<p>1.0 Degree Title Please specify the two degrees for concurrent degree programs</p> <p><input type="text" value="B.Sc."/></p> <p>1.1 Major (Legacy= Subject)(30-char. max.)</p> <p><input type="text" value="Honours in Chemistry with Measurement Option"/></p> <p>1.2 Concentration (Legacy = Concentration/Option) If applicable to Majors only (30 char. max.)</p> <p>1.3 Minor (with Concentration, if Applicable) (30 char. max.)</p> <p><input type="text"/></p>	<p>2.0 Administering Faculty/Unit</p> <p><input type="text" value="Science/Chemistry"/></p> <p>Offering Faculty/Department</p> <p><input type="text" value="Science/Chemistry"/></p> <p>3.0 Effective Term of Implementation (Ex. Sept. 2004 = 200409) Term</p> <p><input type="text" value="201509"/></p>
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4.0 Rationale and Admission Requirements for New Proposal

Although the Chemistry Department has several program options, none currently target students interested in physical or analytical chemistry. The proposed program is to fill this hole in our offerings. This new program has been formulated in response to student requests. Over the last decade, there has been a larger emphasis on synthesis in our other program offerings with a decreased emphasis on numerical and instrumental offerings. This new program offers an option for chemistry students who are more interested in non-synthetic aspects of chemistry.

5.0 Program Information
Please check appropriate box(es)

<p>5.1 Program Type</p> <p><input checked="" type="checkbox"/> Bachelor's Program</p> <p><input type="checkbox"/> Master's</p> <p><input type="checkbox"/> M.Sc. (Applied) Program</p> <p><input type="checkbox"/> Dual Degree/Concurrent Program</p> <p><input type="checkbox"/> Certificate</p> <p><input type="checkbox"/> Diploma</p> <p><input type="checkbox"/> Graduate Certificate</p> <p><input type="checkbox"/> Graduate Diploma</p> <p><input type="checkbox"/> Ph.D. Program</p> <p><input type="checkbox"/> Doctorate Program (Other than Ph.D.)</p> <p><input type="checkbox"/> Private Program</p> <p><input type="checkbox"/> Off-Campus Program</p> <p><input type="checkbox"/> Distance Education Program (By Correspondence)</p> <p><input type="checkbox"/> Other (Please specify)</p>	<p>5.2 Category</p> <p><input type="checkbox"/> Faculty Program (FP)</p> <p><input type="checkbox"/> Major</p> <p><input type="checkbox"/> Joint Major</p> <p><input type="checkbox"/> Major Concentration (CON)</p> <p><input type="checkbox"/> Minor</p> <p><input type="checkbox"/> Minor Concentration (CON)</p> <p><input checked="" type="checkbox"/> Honours (HON)</p> <p><input type="checkbox"/> Joint Honours Component (HC)</p> <p><input type="checkbox"/> Internship/Co-op</p> <p><input type="checkbox"/> Thesis (T)</p> <p><input type="checkbox"/> Non-Thesis (N)</p> <p><input type="checkbox"/> Other</p> <p><input type="checkbox"/> Please specify</p> <p><input type="text"/></p>	<p>5.3 Level</p> <p><input checked="" type="checkbox"/> Undergraduate</p> <p><input type="checkbox"/> Dentistry/Law/Medicine</p> <p><input type="checkbox"/> Continuing Studies (Non-Credit)</p> <p><input type="checkbox"/> Collegial</p> <p><input type="checkbox"/> Masters & Grad Dips & Certs</p> <p><input type="checkbox"/> Doctorate</p> <p><input type="checkbox"/> Post-Graduate Medicine/Dentistry</p> <p><input type="checkbox"/> Graduate Qualifying</p> <p><input type="checkbox"/> Postdoctoral Fellows</p> <p>5.4 FQRSC (Research) Indicator (for GPS) Yes <input type="checkbox"/> No <input type="checkbox"/></p>
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<p>6.0 Total Credits</p> <p><input type="text" value="74"/></p>	<p>7.0 Consultation with Related Units Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Financial Consult Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Attach list of consultations.</p> <p><input type="text"/></p>
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8.0 Program Description (Maximum 150 words)

This is a B.Sc. Honours program in chemistry with an emphasis on additional background and advanced courses of interest to physical and analytical chemists.

9.0 List of proposed program for the New Program/Major or Minor/Concentration.

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

Program Requirement:

Note: Attainment of the Honours degree requires a CGPA of at least 3.00.

Program Prerequisites

PRE-PROGRAM REQUIREMENTS:

Students entering from the Freshman program must have included CHEM 110 and CHEM 120 or CHEM 115, BIOL 111 or BIOL 112, MATH 133, MATH 140/MATH 141 or MATH 150/MATH 151, PHYS 131/PHYS 142, or their equivalents in their Freshman year. Quebec students must have completed the DEC with appropriate science and mathematics courses. Note that students who have successfully completed MATH 150 and MATH 151 do not have to take MATH 222.

Required Courses (59 credits)

The required courses in this program consist of 59 credits in chemistry, physics 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. Students completing this program will not be eligible for admission to the Ordre des chimistes du Québec without additional chemistry electives. This program is not currently accredited by the Canadian Society for Chemistry. See <http://www.chemistry.mcgill.ca/advising/inside/advisors.php>.

Completion of Mathematics MATH 222 and MATH 315 during U1 is strongly recommended.

* Denotes courses with CEGEP equivalents.

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

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 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 493 Advanced Physical Chemistry Laboratory (2 credits)
CHEM 575 Chemical Kinetics (3 credits)
MATH 222 Calculus 3 (3 credits) **
MATH 223 Linear Algebra (3 credits)
MATH 315 Ordinary Differential Equations (3 credits)
COMP 208 Computers in Engineering (3 credits)
PHYS 241 Signal Processing (3 credits)
PHYS 242 Electricity and Magnetism (2 credits)

Complementary courses (9 credits)

6 credits, choose two of:

CHEM 514 Biophysical Chemistry (3 credits)
CHEM 516 Nuclear and Radiochemistry (3 credits)
CHEM 531 Chemistry of Inorganic Materials (3 credits)
CHEM 533 Small Molecule Crystallography (3 credits)
CHEM 534 Nanoscience and Nanotechnology (3 credits)
CHEM 547 Laboratory Automation (3 credits)
CHEM 555 NMR Spectroscopy (3 credits)
CHEM 556 Quantum Chemistry (3 credits)
CHEM 567 Chemometrics: Data Analysis (3 credits)
CHEM 577 Electrochemistry (3 credits)
CHEM 585 Colloid Chemistry (3 credits)
CHEM 593 Statistical Mechanics (3 credits)
CHEM 597 Spectroscopy (3 credits)

9.0 List of proposed program for the New Program/Major or Minor/Concentration.

If new concentration (option) of existing Major/Minor (program), please attach a program layout (list of all courses) of existing Major/Minor.

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

3 additional credits at the 400 or 500 level.

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)

Attach extra page(s) as needed

10.0 Approvals

Routing Sequence	Name	Signature	Date
Department	<input type="text"/>	<input type="text"/>	<input type="text"/>
Curric/Acad Committee	<input type="text"/>	<input type="text"/>	<input type="text"/>
Faculty 1	<input type="text"/>	<input type="text"/>	<input type="text"/>
Faculty 2	<input type="text"/>	<input type="text"/>	<input type="text"/>
Faculty 3	<input type="text"/>	<input type="text"/>	<input type="text"/>
CGPS	<input type="text"/>	<input type="text"/>	<input type="text"/>
SCTP	<input type="text"/>	<input type="text"/>	<input type="text"/>
APC	<input type="text"/>	<input type="text"/>	<input type="text"/>
Senate	<input type="text"/>	<input type="text"/>	<input type="text"/>

Submitted by

Name

To be completed by ARR:

Phone

CIP Code

Email

Submission Date

From: Amy Szuchmacher Blum, Dr.
Sent: November-21-14 3:12 PM
To: Josie D'Amico
Subject: Fwd: Re: consultation report: new chemistry program proposed

Sorry--I forgot to forward this one.

--Amy

----- Original Message -----

Subject:Re: consultation report: new chemistry program proposed

Date:11/21/2014 12:56 PM

From:Clark Verbrugge <clump@cs.mcgill.ca>

To:Amy Szuchmacher Blum, Dr. <amy.blum@mcgill.ca>

Hi Amy,

Yes, this looks fine, especially given the low numbers involved: we have no objections, or specific comments.

On 14-11-18 03:22 PM, Amy Szuchmacher Blum, Dr. wrote:

> Hello Clark,

>

> I was given your name as the contact for Computer Science from Josie D'Amico. In light of updates to the department's curriculum over the last several years, we are proposing a new program targeting undergrads interested in physical and/or analytical chemistry that de-emphasizes synthesis in favor of instrumentation, analytical and physical chemistry based courses. We would like to include COMP 208 as a required course for the program (see attached forms).

>

> We envision 5-8 students per year in this program, so we would expect that number to take COMP 208 if this is approved. My understanding is that we already send a handful of students to COMP 208 already, and that these are the students likely to be interested in this program. Could you please send comments in the next week or so?

>

> Thanks,

> Amy

>

--

tfn,

clark

clump@cs.mcgill.ca

From: Amy Szuchmacher Blum, Dr.
Sent: November-21-14 10:09 AM
To: Josie D'Amico
Subject: Fwd: Re: consultation report: new chemistry program proposed

This is the consultation from Math.

--Amy

----- Original Message -----

Subject: Re: consultation report: new chemistry program proposed

Date: 11/18/2014 3:37 PM

From: Vojkan Jaksic <jaksic@math.mcgill.ca>

To: Amy Szuchmacher Blum, Dr. <amy.blum@mcgill.ca>

CC: Vojkan Jaksic <jaksic@math.mcgill.ca>

Dear Amy,

this proposal is fine with Department of Mathematics and Statistics.

Best regards, Vojkan

> On Nov 18, 2014, at 3:18 PM, Amy Szuchmacher Blum, Dr.
> <amy.blum@mcgill.ca> wrote:

>

>

> Hello Vojkan,

>

> I was given your name as the contact for Math from Josie D'Amico. In light of updates to the department's curriculum over the last several years, we are proposing a new program targeting undergrads interested in physical and/or analytical chemistry that de-emphasizes synthesis in favor of instrumentation, analytical and physical chemistry based courses. We would like to include PHYS 241 and 242 as required courses for the program (see attached forms).

All of our students currently take MATH 222 and 315, so this shouldn't change things there. We envision 5-8 students per year in this program, so we would expect that number to take MATH 223 if this is approved. Could you please send comments in the next week or so?

>

> Thanks,

--Amy

>

> Dr. Amy Szuchmacher Blum

> Associate Professor

> McGill University

> Department of Chemistry

> 801 Sherbrooke Street West

> Montreal, QC H3A 0B8

> Canada

From: Amy Szuchmacher Blum, Dr.
Sent: November-21-14 10:08 AM
To: Josie D'Amico
Subject: Fwd: PHYS 241 and 334
Hi Josie,

This is the consultation from Physics.

--Amy

----- Original Message -----

Subject:PHYS 241 and 334

Date:11/20/2014 1:32 PM

From:Guy Moore <guymoore@hep.physics.mcgill.ca>

To:Amy Szuchmacher Blum, Dr. <amy.blum@mcgill.ca>

CC:Fritz Buchinger, Dr. <fritz.buchinger@mcgill.ca>

Hi Amy,

So I am getting back to you about your questions. First, regarding the proposed programs in Chemistry, I have spoken with the instructor of PHYS 241 (Signal Processing) and he feels that there is space in the class and it should not be a problem to accommodate a few more students. Regarding PHYS 242 (Electricity and Magnetism), it is strictly a service course for the Chemistry department, so of course we are fine with it being in the program, and in any case there will probably be no net effect on the enrollment. So the physics department is happy with these programs.

Regarding CHEM/PHYS 334: I have spoken with Peter Grutter, who originally developed the course jointly with Bruce Lennox. He felt that the change to a 400-level course is against the original spirit of the course as introduced at the time, which was to let students see some of the things going on in materials science before/without high level background. On the other hand, physics has not been involved in instructing the course since 2010, and very few physics students take the course, which is not in any physics program. If the role or nature of the course has evolved with time, that should be represented in its number and description. But at some level maybe there is not longer a good reason for it to be double listed. Would it make sense to make it just CHEM 4XX? [I will ask our nano people if they have strong feelings about this.]

guy

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Guy D. Moore

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