

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Senate

From: J. Munro, Chair
Senate Committee on
Academic Planning

Subject: Faculty of Science -
Graduate Curriculum Revisions

Date: November 16, 1994

Action undertaken by the Senate Graduate Studies Committee and the Senate Committee on Academic Planning, gives rise to the following motion:

Motion:

"that Senate approve and recommend approval to the Board of Governors the Co-op Option to the M.Sc. Degree in Chemistry/Biochemistry, including new courses:

CHEM 881-0	Co-op Practicum I
CHEM 882-0	Co-op Practicum II"

Proposal for a Co-op Education Option to the MSc Degree in Chemistry/Biochemistry

Summary

This is a proposal to allow the Chemistry Department to offer, as well as the regular M.Sc. program, a modified program that includes two 1-semester work terms (practica) in an industrial or government laboratory in addition to the normal coursework and thesis requirements for the M.Sc. degree.

Introduction

The Chemistry Department has been a strong supporter of the Faculty of Science Undergraduate Co-op Education Program leading to the B.Sc. degree. Numerous Chemistry/Biochemistry majors have opted for this program and have benefitted from it in widening their undergraduate education and improving their preparation for and prospects of subsequent employment.

This proposal increases the opportunity for SFU Chemistry/Biochemistry students to take advantage of a cooperative program by introducing it at the M.Sc. degree program level as well.

SFU would not be the first to do this: Guelph - Waterloo have had a co-op option for both the M.Sc. and Ph.D. degrees in Chemistry for several years. At SFU, there are already graduate co-op programs in Mathematics/Statistics and Resource and Environmental Management.

The proposal is, in part, a response to the view expressed by some of the employers associated with the undergraduate co-op program to the effect that they would particularly welcome, as employees, students who had completed graduate degrees with co-op work experience. This view has received further favourable response in an informal market survey conducted with other employers.

The Proposal

The M.Sc. co-op option will differ from the regular M.Sc. program only in the addition of two 1-semester co-op practicum courses Chem 881 and Chem 882 (see course proposal forms, attached) and the evaluation of the co-op work report.

At SFU, the timing of the M.Sc. Chemistry research seminar courses Chem 801 and 805, as well as the desire not to have the work terms interrupt already-begun thesis research has led to a suggested program in which the research and thesis defence are completed first and the two work terms are engaged in subsequently. A year by year breakdown of the program follows. This differs from the Guelph - Waterloo program, where the thesis research is interrupted by the two work terms.

The co-op work term will be graded (Satisfactory, Unsatisfactory or Withdrawn) by a Departmental sub-committee using the following criteria:-

the assessment made by a performance evaluation (written) by the employer supervisor.

the assessment made by visitation of the student during the co-op work term.

the work report written by the student and submitted to the co-op office.

Successful completion of the practica will be recognized by a co-op certificate. Participation in this program by non Canadian citizens will be subject to Canadian Government Regulations.

Students are not required to necessarily express an interest in doing the co-op option at the time of admission to the M.Sc. degree. However, so as to allow the co-op coordinator time to find suitable employers, students must register for the co-op option no than later the beginning of the penultimate semester prior to the beginning of the first work term (i.e. 8 months). Registration will be subject to the mutual agreement of the supervisory committee and the student, as approved by the Department Graduate Studies Committee. Withdrawal from the Coop program after the registration commitment has been made will require the approval of the Graduate Program Committee.

Students who graduate from the M.Sc. co-op option will, of course, be eligible to apply for entry to the Ph.D. program.

The M.Sc. co-op option will be the responsibility of the M.Sc. Co-op Committee, a subcommittee of the Departmental Graduate Studies Committee consisting of one member of the Departmental Graduate Studies Committee plus the Co-op Coordinator, which will report to the Departmental Graduate Studies Committee.

Employers wishing to participate in the M.Sc. co-op program will be required to submit a suitable work term project proposal. The M.Sc. Co-op Committee will help by providing criteria for projects that are considered suitably challenging and appropriate for the M.Sc. level candidate. The Departmental Graduate Studies Committee is responsible for approving the work term project proposal.

Yearly Timetable*

Year 1	Fall	2 Grad. Courses	T/A	Thesis research
	Spring	Chem 801	T/A	Thesis research
	Summer			Thesis research
Year 2	Fall	Chem 805	T/A	Thesis research
	Spring	Work Registration	T/A	Thesis research
	Summer	Work Interviews		Thesis defence
Year 3	Fall	Chem 881	Practicum	
	Spring	Chem 882	Practicum	

* This is the most accelerated possibility. More probably the Thesis defence might occur in Year 3 Fall, to be followed by practica in Spring and Summer.

Implementation

Approval of this proposal by the Department, Faculty and University will be sought as early as possible in 1994.

The responsibilities of the co-op coordinator for undergraduate students in Chemistry/Biochemistry will be modified to include coordination of the graduate M.Sc. co-op option.

Suitable employment placements will be arranged for Chem 881 to be first offered in Fall 1995. This will allow students presently in the M.Sc. program to consider the co-op option and to register in January 1995 for the Fall 1995 work term.

Anticipated Benefits

The co-op M.Sc. option will provide participating students with work experience during the M.Sc. degree program, give potential employers first hand knowledge of the abilities and academic skills of our graduate students, and improve employment prospects for our graduates.

It will help to develop further liaison between the Department and government or industrial research laboratories.

In some cases, faculty and industrial contacts may find that there are mutual interests that may lead to research collaborations or co-op practica that are more closely related to research at SFU than otherwise.

Initially 4 placements per year are anticipated. It is expected that the cost of field travel for site visits and Coordinator's salary will be covered on existing funds for Chem\Biochem undergraduate co-op programs, since the same personnel will be coordinating both co-op options. Many of the same employers will be common clients, so current field travel costs will cover both graduate and undergraduate placements. Some extra telephone and correspondence costs will be involved but these are not expected to be high.

Proposed Calendar Entry:-

Co-operative Education Program

The Department of Chemistry offers a Co-operative Education option in its graduate program in order to allow students to gain work experience outside the academic sphere. Students who are currently enrolled in the department's M.Sc. program may apply for registration in Chem 881 and Chem 882. This option is only tenable after the completion of an M.Sc. thesis and defense but before formal graduation. Registration in these courses requires the approval of the Graduate Program Committee on the evaluation of the Supervisory Committee.

CALENDAR INFORMATION:

Department: Chemistry/Biochemistry Course Number: 881-0

Title: Co-op Practicum I

Description: First Semester Work Experience Term for Graduate Students

Credit Hours: 0 Vector: 0 Prerequisite(s) if any: Completion of-M.Sc. thesis including Defence

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 4/year When will the course first be offered: September 1995

How often will the course be offered: Each semester where there is demand

JUSTIFICATION:

Would attract high quality graduate students by offering good long term employment opportunities.

RESOURCES:

Which Faculty member will normally teach the course: n/a

What are the budgetary implications of mounting the course: None; the program will be administered by the Cooperative Education office and Chemistry Department using present resources.

Are there sufficient Library resources (append details): n/a

- Appended: a) Outline of the Course
- b) An indication of the competence of the Faculty member to give the course.
- c) Library resources

Approved: Departmental of Chemistry Graduate Studies Committee: [Signature] Date: Dec.16, 1993

Faculty Graduate Studies Committee: [Signature] Date: 94-04-07

Faculty: RJ Zindt Date: 94/06/30

Senate Graduate Studies Committee: [Signature] Date: 94/11/17

Senate: 4 Date: _____

CALENDAR INFORMATION:

Department: Chemistry/Biochemistry Course Number: 882-0

Title: Co-op Praticum II

Description: Second Semester work Experience for Graduate Students

Credit Hours: 0 Vector: 0 Prerequisite(s) if any: Completion of M.Sc. thesis including Defence

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 4/year When will the course first be offered: Sept. 1995

How often will the course be offered: Each semester where there is demand

JUSTIFICATION:

Would attract high quality graduate students by offering good long term employment opportunities

RESOURCES:

Which Faculty member will normally teach the course: n/a

What are the budgetary implications of mounting the course: None; the program will be administered by the Cooperative Education office and Chemistry Department using present resources.

Are there sufficient Library resources (append details): n/a

- Appended: a) Outline of the Course
- b) An indication of the competence of the Faculty member to give the course.
- c) Library resources

Approved: Departmental ^{of Chemistry} ~~Graduate Studies Committee:~~ [Signature] Date: Dec. 16, 1993

Faculty Graduate Studies Committee: [Signature] Date: 94-04-07

Faculty: [Signature] Date: 94/06/30

Senate Graduate Studies Committee: [Signature] Date: 94/11/17

Senate: [Signature] Date: _____