S.90-18

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Senate

From: L. Salter
Chair, SCAP

Subject: Departments of Chemistry and Physics - Curriculum Revisions
SCAP 89-67

Date: November 16, 1989

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

Motion #1:

"that Senate approve and recommend approval to the Board of Governors as set forth in S. 90-18 curriculum revisions in the Department of Chemistry including

New courses	CHEM 801 - 2	Student Seminar I
	CHEM 802 - 2	Student Seminar II
	CHEM 805 - 4	M.Sc. Research Seminar
	CHEM 806 - 4	Ph.D. Research Seminar

Motion #2:

"that Senate approve and recommend approval to the Board of Govenors as set forth in S. 90-18 changes in the requirements for admission from a Master's Program to the Ph.D. Program in the Department of Physics"

New Graduate Course Proposal Form

CALENDAR INFORMATION:

Department: Chemistry **Course Number:** 801

Title: Student Seminar I

Description: Discussion of Recent Literature in Chemistry Through Student Seminars

Credit Hours: 2 **Vector:** _____ **Prerequisite(s) if any:** -

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 12 (+8 in CHEM 802) **When will the course first be offered:** 90-1

How often will the course be offered: Annually, in the Spring Semester.

JUSTIFICATION:

This course would be required by all M.Sc. students in Chemistry, under the proposed new departmental requirements for graduate programs. Its inception was recommended by the External Review of Chemistry, held in the Spring, 1988.

RESOURCES:

Which Faculty member will normally teach the course: A team of 4, drawn from the organic, inorganic, bio- and physical/nuclear divisions of chemistry.

What are the budgetary implications of mounting the course: No new faculty or resources are required. The present cumulative examination system will be dropped.

Are there sufficient Library resources (append details): Yes

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 Graduate Studies Committee: P.W. Percival Date: 16 Feb 89

Faculty Graduate Studies Committee: P.W. Percival Date: 7 March 89

Faculty: C.H.W. Jones Date: 17 April 89

Senate Graduate Studies Committee: B.C. Date: _____

Senate: _____ Date: _____

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New Graduate Course Proposal Form

CALENDAR INFORMATION:

Department: Chemistry **Course Number:** 802

Title: Student Seminar II

Description: Discussion of Recent Literature in Chemistry Through Student Seminars (identical to CHEM 801).

Credit Hours: 2 **Vector:** _____ **Prerequisite(s) if any:** CHEM 801 or Master's Degree.

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 8 (+12 in CHEM 801) **When will the course first be offered:** 90-1

How often will the course be offered: Annually, in the Spring Semester.

CHEM 801 and 802 would be mounted as one course.

JUSTIFICATION:

See CHEM 801. A separate course number (802) is required to permit Ph.D. students to take the seminar twice.

RESOURCES:

Which Faculty member will normally teach the course: A team of 4, drawn from the organic, inorganic, bio- and physical/nuclear divisions of Chemistry.

What are the budgetary implications of mounting the course: No new faculty or resources are required. The present cumulative examination system will be dropped.

Are there sufficient Library resources (append details): Yes

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 Graduate Studies Committee: P.W. Percival Date: 16 Feb '89
Faculty Graduate Studies Committee: P.W. Percival Date: 7 March '89
Faculty: C.H.W. Jones Date: 17 April 89
Senate Graduate Studies Committee: [signature] Date: _____
Senate: _____ Date: _____

Course Outline:

CHEM 801 Student Seminar I / CHEM 802 Student Seminar II

CHEM 801 is a required course for all students in the M.Sc. program in Chemistry, and must be taken before the end of the 4th semester of registration.

CHEM 802 is a required course for all students in the Ph.D. program in Chemistry, and must be taken before the end of the 7th semester of registration (4th semester for those entering with a Master's degree).

CHEM 801 and 802 will meet as a single seminar class, and will be graded by a common team of instructors, one each from the organic, inorganic, bio- and physical/nuclear divisions of chemistry.

Each student must present one seminar on a subject outside the immediate area of his/her research. Seminar titles will be assigned by the instructors, no more than 3 weeks prior to the presentation. A single page abstract including source citations must be distributed by the student one week prior to the presentation.

A typical seminar topic would be the discussion of some recent major innovation or step forward in a particular branch of chemistry. Students will need to search and read primary research literature, and to summarize their findings in a coherent oral presentation.

Students will be graded on the content and presentation of the seminar, and also on their ability to answer questions posed by other students and the instructors.

New Graduate Course Proposal Form

CALENDAR INFORMATION:

Department: Chemistry **Course Number:** 805

Title: M.Sc. Research Seminar

Description: Critical Evaluation of Written and Oral Research Reports.

Credit Hours: 4 **Vector:** _____ **Prerequisite(s) if any:** -

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 12 (+8 in CHEM 806) **When will the course first be offered:** 90-3

How often will the course be offered: Annually, in the Fall Semester.

JUSTIFICATION:

This course (and/or the equivalent CHEM 806) would be required by all graduate students in Chemistry, as proposed by the new departmental requirements for graduate degrees. Its inception was recommended by the External Review of Chemistry, held in Spring 1988.

RESOURCES:

Which Faculty member will normally teach the course: A team of 4, normally drawn from the Departmental Graduate Studies Committee.

What are the budgetary implications of mounting the course: No new faculty or resources are required. The present cumulative examination system will be dropped.

Are there sufficient Library resources (append details): Yes.

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 Graduate Studies Committee: P.W. Percival Date: 16 Feb 89
Faculty Graduate Studies Committee: P.W. Percival Date: 7 March 89
Faculty: CHW Jenks Date: 17 April 89
Senate Graduate Studies Committee: BDC Date: _____
Senate: _____ Date: _____

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New Graduate Course Proposal Form

CALENDAR INFORMATION:

Department: Chemistry **Course Number:** 806

Title: Ph.D. Research Seminar

Description: Critical Evaluation of Written and Oral Research Reports.

Credit Hours: 4 **Vector:** _____ **Prerequisite(s) if any:** CHEM 805

ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 8 (+12 in CHEM 805) **When will the course first be offered:** 90-3

How often will the course be offered: Annually, in Fall semester. CHEM 805 and 806 would be mounted as one course.

JUSTIFICATION:

See CHEM 805. A separate course number (806) is required to allow Ph.D. students to take this seminar a second time, if 805 was taken for the M.Sc. degree.

RESOURCES:

Which Faculty member will normally teach the course: A team of 4, normally drawn from the Departmental Graduate Studies Committee.

What are the budgetary implications of mounting the course: No new faculty or resources are required. The present cumulative examination system will be dropped.

Are there sufficient Library resources (append details): Yes.

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 Graduate Studies Committee: P.W. Percival Date: 16 Feb '89

Faculty Graduate Studies Committee: P.W. Percival Date: 7 March '89

Faculty: CHH. Jones Date: 17 April 89

Senate Graduate Studies Committee: R.S. Clay Date: _____

Senate: _____ Date: _____

Course Outline:

CHEM 805 M.Sc. Research Seminar / CHEM 806 Ph.D. Research Seminar

CHEM 805 is a required course for all students in the M.Sc. program in Chemistry. It must be taken at the first opportunity following two semesters registration in the graduate program. It will normally be scheduled in the Fall semester.

CHEM 806 is a required course for all students in the Ph.D. program in Chemistry except those who have transferred (with credit for CHEM 805) from the M.Sc program. It must be taken at the first opportunity following two semesters registration in the Ph.D. program.

CHEM 805 and 806 will meet as a single seminar class, and will be graded by a common team of instructors, one each from the organic, inorganic, bio- and physical/nuclear divisions of chemistry.

Each student must prepare a short (no more than 10 pages) written report on his/her research to date, make an oral presentation, and defend the plan of research and any results to date in an oral examination. The written report must be submitted no later than 1 week prior to the oral presentation.

In case of unsatisfactory performance in either the written or oral report the student will be permitted to resubmit the report before the end of semester. Failure to pass CHEM 805 or CHEM 806 will be considered evidence of unsatisfactory progress and the student will be required to withdraw from the degree program.

PROPOSAL

CHEMISTRY GRADUATE DEGREE REQUIREMENTS

M.Sc. Program

a) Course Work

12 semester hours of graduate course credit, including CHEM 801-2 (Student Seminar I) and CHEM 805-4 (M.Sc. Research Seminar). CHEM 805 must be taken at the first opportunity following two semesters registration in the program.

b) Research

A major part of the Master's degree program will be devoted to original research. A thesis describing this research must be submitted and defended at the conclusion of the degree program.

Ph.D. Program

a) Course Work

For students entering with a B.Sc. or equivalent:
20 semester hours of graduate course credit, including CHEM 801-2 (Student Seminar I) and CHEM 802-2 (Student Seminar II) and CHEM 806-4 (Ph.D. Research Seminar). CHEM 806 must be taken at the first opportunity following two semesters registration in the program. CHEM 805 will be accepted in place of CHEM 806 for students who have transferred from the M.Sc. program.

For students entering with a Master's degree:
12 semester hours of graduate course credit, including CHEM 802-2 (Student Seminar II) and CHEM 806-4 (Ph.D. Research Seminar). CHEM 806 must be taken at the first opportunity following two semesters registration in the program.

b) Research

The major portion of the Ph.D. program will be devoted to original research. A thesis embodying new and significant results must be presented and defended at the conclusion of the degree program.

Transfer from the M.Sc. to the Ph.D. Program

In addition to satisfying the University requirements, students wishing to transfer from the M.Sc. program to the Ph.D. program without submitting a Master's thesis will be judged by the Graduate Program Committee on the research reports submitted in CHEM 805.

JUSTIFICATION for REVISION of CHEMISTRY GRADUATE DEGREE REQUIREMENTS
and CONCOMITANT INTRODUCTION of CHEM 801,802,805 and 806

The Chemistry graduate programs were reviewed as part of the External Review of the Chemistry Department carried out in Spring 1988. The Department has accepted most of the criticisms and proposals from the Review, and the Departmental Graduate Studies Committee has proposed revisions designed to enable the Review recommendations.

The Review criticized the average time required to graduate, and suggested that one factor is the onerous examination and course work requirements of our degree programs. The present cumulative examinations (one for M.Sc., three for Ph.D.) each include a written document, an oral presentation and oral examination by the Supervisory Committee. Although the work required for each examination is at least as much as a regular lecture course, no course credit is given, nor is there tangible recognition of the quality of an individual's efforts (the exams are graded pass/fail).

Valuable elements of the present cumulative examination system include: literature research, design of a research plan, reading outside the immediate area of research, and practice in oral presentation and oral examination. All these are retained in the proposed new courses.

Since it is proposed that all Chemistry graduate students will have to take the new courses, it will be easier to rank the students for purposes such as fellowship selection. Performance in CHEM 805 would be particularly valuable as a criterion for use in applications to transfer from the M.Sc. to the Ph.D. program.

There is more opportunity for the students to learn from each other in a regular seminar series than under the present system, where cumulative examinations are scheduled at irregular intervals and are often poorly attended.

"The criteria for early transfer from the M.Sc. to the Ph.D. program be changed from the present calendar entry:

Admission from a Master's Program to the Ph.D. Program

The department does not encourage students to proceed to a Ph.D. without first obtaining an M.Sc.; however, a student who so desires may be admitted from an M.Sc. program to a Ph.D. program with a grade point average of at least 3.8, the approval of the student's Supervisory Committee, and the approval of the Department Chairman and the Senate Graduate Studies Committee. A student who does not meet these criteria but meets the minimum university requirements, may apply to the department for such an admission; the application will then be discussed at a departmental meeting where it will be either approved or denied.

to the following:

Admission from a Master's Program to the Ph.D. Program

The department does not encourage students to proceed to a Ph.D. without first obtaining an M.Sc.; however, a student may be admitted from an M.Sc. program to a Ph.D. program with a cumulative grade point average of at least 3.67 calculated over a minimum of 15 graduate level credits, and the approval of the student's Supervisory Committee, the approval of the Physics Department Graduate Studies Committee, the Department Chair and the Senate Graduate Studies Committee.

RATIONALE

The new calendar entry takes into account the changes in the graduate grading system from A, B, Pass to A, A^-, B^+, B, B^-, C.