SIMON FRASER UNIVERSITY

S.83-110

MEMORANDUM

To: SENATE	From: J. M. WEBSTER DEAN OF GRADUATE STUDIES
Subject: PROPOSED GRADUATE CURRICULUM CHANGES - CHEMISTRY	Date: NOVEMBER 17, 1983

Action undertaken by the Senate Committee on Graduate Studies at its meeting of November 14, 1983, gives rise to the following motion:-

MOTION:

"That Senate approve and recommend approval to the Board of Governors, as set forth in S.83-110, changes in Chemistry including the following:-

i) Delete - CHEM 836-2 Theoretical Inorganic Chemistry
CHEM 837-2 Synthetic Inorganic Chemistry
CHEM 838-2 Problems in Structure and Stereochemistry

ii) New courses -
CHEM 832-3 Advanced Inorganic Chemistry
CHEM 836-3 Special Topics in Inorganic Chemistry I
CHEM 837-3 Special Topics in Inorganic Chemistry II"

J.M. Webster
Dean of Graduate Studies

SIMON FRASER UNIVERSITY

MEMORANDUM

H. Evans
Secretary to Senate

From: P. Dobud
Administrative Assistant
to the Dean of Science

Subject: RECOMMENDATIONS TO SCGS

Date: October 25, 1983

The following items, described in the enclosed documentation, have been approved by the Faculty of Science. Could you please arrange to have them placed on the Agenda of the next Senate Committee on Graduate Studies Committee meeting?

CHANGES IN CHEMISTRY GRADUATE COURSES

"To approve the following changes in the Chemistry Graduate Courses (area of Inorganic Chemistry) (paper F-83-8)."

DELETE: CHEM 836-2 (Theoretical Inorganic Chemistry)
CHEM 837-2 (Synthetic Inorganic Chemistry)
CHEM 838-2 (Problems in Structure and Stereochemistry)

ADD: CHEM 832-3 (Advanced Inorganic Chemistry)
CHEM 836-3 (Special Topics in Inorganic Chemistry I)
CHEM 837-3 (Special Topics in Inorganic Chemistry II)

P. Dobud

/mgj
Encls./

cc: D. Sutton, Chairman
Faculty of Science
Graduate Studies Committee

SIMON FRASER UNIVERSITY

MEMORANDUM

F 83-8

To: Faculty of Science Graduate Studies Committee	From: C.H.W. Jones, Chairman Department of Chemistry
Subject: PROPOSED CHANGES IN CHEMISTRY INORGANIC GRADUATE COURSES	Date: May 24, 1983 File C1823, D20

Changes to the Chemistry graduate courses, in the area of inorganic chemistry, as detailed below, have been approved by the Chemistry Graduate Program Committee and the Department. Approval is now sought from the Faculty GSC and Senate.

Delete CHEM 836-2 (Theoretical Inorganic Chemistry)
CHEM 837-2 (Synthetic Inorganic Chemistry)
CHEM 838-2 (Problems in Structure and Stereochemistry)

Add CHEM 832-3 (Advanced Inorganic Chemistry)
CHEM 836-3 (Special Topics in Inorganic Chemistry I)
CHEM 837-3 (Special Topics in Inorganic Chemistry II)

The inorganic graduate courses would then consist of:

CHEM 832-3 Advanced Inorganic Chemistry
CHEM 833-3 Rec. Adv. in Main Group Chemistry
CHEM 834-3 Rec. Adv. in Transition Metal Chemistry
CHEM 835-3 Rec. Adv. in Organometallic Chemistry
CHEM 836-3 Special Topics in Inorganic Chemistry I
CHEM 837-3 Special Topics in Inorganic Chemistry II

Scheduling:

CHEM 832-3 will be offered regularly each fall. It will be the course of choice for entering graduate students and as an 'outside' course for non-inorganic specialists.

CHEM 833, 834, 835 will be offered regularly, in organized fashion to suit demand.

CHEM 836 and 837 will be offered less frequently, as occasion arises. They will involve an in-depth treatment of very specialized topics in inorganic, organometallic or bioinorganic chemistry, primarily for inorganic Ph.D. students. The choice of topics will vary with the instructor. This will be an obvious vehicle for graduate courses given by specialist visiting faculty.

... 2

Rationale for the Change:

1. The old two-unit courses, CHEM 836, 837 and 838 have been rarely offered as demand and interest has been small. Two-unit courses are avoided by students where alternative three-unit courses are available (especially M.Sc. students).

2. The old courses no longer reflect current faculty research interests.

3. The introduction of special topic courses allows a greater flexibility in the inorganic teaching and accommodates current and visiting faculty interests and expertise.

4. The new course, 832, fulfills the need for an inorganic course accessible to non-inorganic specialists, and an advanced general inorganic course which will be taken by the majority of inorganic graduate students irrespective of their specialty interests.

5. The revision allows a student requiring a full 15 hours of inorganic graduate work to be easily accommodated.

C.H.W. Jones.

C.H.W. Jones

CHWJ:LV

Att.

CURRENT AND PROPOSED CALENDAR ENTRIES

Current	Proposed
	Chem. 832-3 - Advanced Inorganic Chemistry. An advanced treatment of the synthesis, structures, reactions and spectroscopic identification of inorganic compounds.
Chem. 836-2 - Theoretical Inorganic Chemistry. The calculation of electronic structures and other properties of inorganic compounds.	Chem. 836-3 - Special Topics in Inorganic Chemistry I. An advanced, in-depth treatment of a specialized area of inorganic chemistry.
Chem. 837-2 - Synthetic Inorganic Chemistry. Techniques for the synthesis and isolation of inorganic and organometallic compounds, including non-aqueous solvents, vacuum methods.	Chem. 837-3 - Special Topics in Inorganic Chemistry II. An advanced, in-depth treatment of a specialized area of inorganic chemistry.
Chem. 838-2 - Problems in Structure analysis of the reliability and significance of structural information obtained from the X-ray, spectroscopic and other techniques as applied to inorganic and organometallic systems.	

SIMON FRASER UNIVERSITY

New Graduate Course Proposal Form **Form GS.8**

1. CALENDAR INFORMATION:

Department: Chemistry Course Number: 832

Title: Advanced Inorganic Chemistry

Description: An advanced treatment of the synthesis, structures, reactions and spectroscopic identification of inorganic compounds.

Credit Hours: 3 Vector: 3-0-0 Prerequisite(s) if any:

2. ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 6 When will the course first be offered: 84-3 ~~85-3~~

How often will the course be offered: Each fall semester.

3. JUSTIFICATION:

CHEM 832 fulfills the need for an inorganic course accessible to non-inorganic specialists, and an advanced general inorganic course which will be taken by the majority of inorganic graduate students, irrespective of their specialty interests.

4. RESOURCES:

Which Faculty member will normally teach the course: Drs. Einstein, Peterson, Pomeroy or Sutton

What are the budgetary implications of mounting the course: None

Are there sufficient Library sources (append details): Yes. No additional holdings are required.

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: Derek Sutton Date: May 24 '83

Faculty Graduate Studies Committee: Derek Sutton Date: 23 June

Faculty: J F Cochran Date: OCT 24 1983

Senate Graduate Studies Committee: [signature] Date: 16/11/83

Senate: Date:

Chemistry 832-3

COURSE OUTLINE

Advanced Inorganic Chemistry

This course will provide an advanced treatment of the chemistry of selected types of inorganic compounds, and the use of spectroscopic and instrumental methods in structure elucidation and identification.

Topics will include:

1. Metal Carbonyls
2. Metal Hydrides and Organometallics
3. Homogeneous Catalysis
4. Applications of Group Theory in Inorganic Chemistry
5. Infrared and Raman Spectroscopy
6. Nuclear Magnetic Resonance - ^{1}H, ^{13}C, ^{31}P and Multinuclear NMR.

Faculty Competence

This course will be taught, from time-to-time, by any of the inorganic specialists in the Department: Drs. Einstein, Peterson, Pomeroy or Sutton.

SIMON FRASER UNIVERSITY

New Graduate Course Proposal Form — Form GS.8

1. CALENDAR INFORMATION:

Department: Chemistry Course Number: 836

Title: Special Topics in Inorganic Chemistry I

Description: An advanced, in-depth treatment of a specialized area of inorganic chemistry.

Credit Hours: 3 Vector: 3-0-0 Prerequisite(s) if any:

2. ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 5 When will the course first be offered: 84-3

How often will the course be offered: As demand requires.

3. JUSTIFICATION:

The introduction of special topic courses allows a greater flexibility in the inorganic teaching and accommodates current and visiting faculty interests and expertise.

6

4. RESOURCES:

Which Faculty member will normally teach the course: Drs. Einstein, Peterson, Pomeroy or Sutton, or visiting faculty

What are the budgetary implications of mounting the course: None

Are there sufficient Library sources (append details): Yes. No additional holdings are required.

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: Derek Sutton Date: May 24 '83

Faculty Graduate Studies Committee: Derek Sutton Date: 23 June.

Faculty: [signature] Date: OCT 20 1983

Senate Graduate Studies Committee: [signature] Date: 16/11/83

Senate: Date:

SIMON FRASER UNIVERSITY

New Graduate Course Proposal Form **Form GS.8**

1. CALENDAR INFORMATION:

Department: Chemistry Course Number: 837

Title: Special Topics in Inorganic Chemistry II

Description: An advanced, in-depth treatment of a specialized area of inorganic chemistry related to the research specialties of current or visiting faculty.

Credit Hours: 3 Vector: 3-0-0 Prerequisite(s) if any:

2. ENROLLMENT AND SCHEDULING:

Estimated Enrollment: 5 When will the course first be offered: 85-3

How often will the course be offered: As demand requires.

3. JUSTIFICATION:

The introduction of special topic courses allows a greater flexibility in the inorganic teaching and accommodates current and visiting faculty interests and expertise.

4. RESOURCES:

Which Faculty member will normally teach the course: Drs. Einstein, Peterson, Pomeroy or Sutton or visiting faculty.

What are the budgetary implications of mounting the course: None

Are there sufficient Library sources (append details): Yes. No additional holdings are required.

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: Derek Sutton Date: May 24 '83

Faculty Graduate Studies Committee: Derek Sutton Date: 23 Jun

Faculty: J.F. Corbett Date: OCT 24 1983

Senate Graduate Studies Committee: [signature] Date: 11/11/83

Senate: Date:

Chemistry 836-3, 837-3

COURSE OUTLINE

Special Topics in Inorganic Chemistry I and II

These two courses will be utilized as vehicles for in-depth treatments of selected specialized areas of inorganic chemistry as demand and opportunity arises. The areas to be treated will be those having importance to the research of the groups within the Department, those that are important new growth areas in inorganic chemistry and those that are specialities of visiting inorganic faculty (such as sabbaticals).

The listing of two such courses will enable some students to take two different special topics during their program.

Current topics include:

1. Metal-Metal Bonds and Transition Metal Clusters
2. Bioinorganic Chemistry
3. Transition Metal Chemistry of Small Molecules: O_2, N_2, NO, C_2H_4, etc.
4. Metal-Carbon Multiple Bonds - Metal Alkylidenes and Alkylidynes.
5. Organodiazo-Metal Chemistry
6. Hydrogenation of Carbon Monoxide

Faculty Competence

Appropriate courses would be constructed by inorganic faculty members concerned, within their areas of interest and expertise. Contributing faculty could be Drs. Einstein, Peterson, Pomeroy and/or Sutton.