S.74-51

SIMON FRASER UNIVERSITY

MEMORANDUM

To: SENATE

From: SENATE COMMITTEE ON UNDERGRADUATE STUDIES

Subject: NEW COURSE PROPOSAL - CHEM 420-3 - ~~CLINICAL CHEMISTRY~~

Date: APRIL 18, 1974

MOTION 1: "That Senate approve, as set forth in S.74-51, The new course proposal for CHEM 420-3 - Clinical Chemistry."

MOTION 2: "That Senate waive the normal two semester time lag requirement in order that CHEM 420-3 may be first offered in the Fall semester 74-3."

S.74-51

SIMON FRASER UNIVERSITY

MEMORANDUM

To: SENATE

From: Senate Committee on Undergraduate Studies

Subject: New Course Proposal - Faculty of Science

Date: April 19, 1974

The Senate Committee on Undergraduate Studies has examined the attached new course proposal for Chemistry 420-3: Clinical Chemistry and recommends its approval to Senate. Should this approval be forthcoming, the Committee further recommends that the normal two semester time lag be waived in order that this course may be first offered during the Fall semester, 1974.

It should be noted that the offering of this course represents movement into a new area for the Chemistry Department. However, it is not anticipated, at this time, that this course should form the basis for a new program, but rather a means of testing the acceptability of such a course and the viability of the introduction of this area in the Department's curriculum. Thus, in keeping with the first entry under Section 2 of the course proposal form, the Senate Committee on Undergraduate Studies recommends that the course be offered once and evaluated before any subsequent offering.

I. Mugridge

:ams

att.

Scus 74-16

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Senate Committee on Undergraduate Studies	From: S. Aronoff, Dean of Science
Subject: NEW COURSE PROPOSAL - CHEM 420-3 "Clinical Chemistry"	Date: March 26, 1974

The Faculty of Science approved the attached new course proposal, CHEM 420-3, "Clinical Chemistry", at its meeting of March 19, 1974. It is recommended that this course be approved for an initial offering in 74-3.

lw

Enclosures
cc: Chairman, Dept. of Chemistry

F-1-9

SIMON FRASER UNIVERSITY

MEMORANDUM

To S. Aronoff,
Dean of Science

From T.N. Bell, Chairman,
Department of Chemistry

Subject

Date 17th December 1973

Please find attached course proposal, Clinical Chemistry, which was approved by the Department at a meeting held on Friday, 7th December 1973.

It is intended that the course be offered in the fall semester 1974 with no further commitment at this time. Thus I would be grateful if you would deal with this proposal in the immediate future in order that if approved through the various committees, Senate approval can be obtained for a fall 1974 course mounting.

The Department is at this time carefully considering curriculum development with a view to extending its present offerings to areas not encompassed in the present programs of B.Sc. chemistry, biochemistry, chemical physics. We anticipate that by extending our offerings in the chemistry majors program we can provide options with some applied bias which would be not only of benefit to our own internal students, but potentially to off-campus persons.

The feedback which should result from this particular course will be of immense benefit to us in helping guide the right kind of future development which the Department wishes to undertake. Hence the requirement for mounting this course as soon as possible.

In order to teach this course we would have to use external expertise, and thus require an appointment of a sessional lecturer for this purpose. The man we would consider for this purpose is Dr. R.A. Rockerbie of the Lions Gate Hospital. I request that you seek the necessary funding as a parallel action to considerations for this course proposal.

T.N. Bell

TNB:rdh

Encl.

RECEIVED
Dec 18/73
hand-delivered by T. Bell.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. **Calendar Information** Department: Chemistry

Abbreviation Code: Chem **Course Number:** 420 **Credit Hours:** 3 **Vector:** 3-1-0

Title of Course: Clinical Chemistry

Calendar Description of Course: An introduction to the biochemical processes in the organs, tissues and fluids of the human body and the effect of disease on these processes. Biochemical methods and laboratory diagnoses as applied to the study of disease.

Nature of Course Lecture/Tutorial

Prerequisites (or special instructions):
Chem 252-3, Chem 421-3 or permission of Department

What course (courses), if any, is being dropped from the calendar if this course is approved: None - Course is an elective

2. **Scheduling**

How frequently will the course be offered? To be offered once and then evaluated.

Semester in which the course will first be offered? 1974-3

Which of your present faculty would be available to make the proposed offering possible? None

3. **Objectives of the Course** The present core curriculum and choice of electives do not adequately prepare the B.Sc. graduate in chemistry to be of practical value in the clinical laboratory as it now operates within the hospital, public health, or industrial environment. This course will provide the student with exposure and some basic knowledge of the health-care field and will expand his field of competency generally. Course outline attached.

4. **Budgetary and Space Requirements** (for information only)

What additional resources will be required in the following areas:

Faculty	Appointment of sessional lecturer
Staff	-
Library	-
Audio Visual	-
Space	-
Equipment	-

5. **Approval**

Date: 14 Dec 73.	March 26, 1974	
	S. Aronoff	
Department Chairman	**Dean**	**Chairman, SCUS**

SCUS 73-34b:- (When completing this form, for instructions see Memorandum SCUS 73-34a. Attach course outline).

Course Outline

The following list of topics are relevant to Clinical Chemistry. A coherent set from these topics will be presented in this course.

1. Course introduction, review of development of clinical chemistry.
2. Differentiation of health and disease, pathological processes, concept of normal physiological ranges.
3. Quality assurance systems, reference materials, error analysis.
4. Specimen collection, handling and storage, deproteinization.
5. Respiratory function and biochemical acid-base balance.
6. Disorders and assessment of acid-base equilibria.
7. Fluid and electrolyte regulation, osmolality.
8. Renal anatomy, biochemistry of urine formation.
9. Assessment of renal function.
10. Anatomic considerations of the liver, bilirubin metabolism.
11. Liver function tests and their role as dignostics.
12. Electrophoretic assessment of protein disturbances.
13. The immunoglobulins: classes, structure and function.
14. Immune mechanisms and deficiency states.
15. Amino acids, inborn errors of metabolism.
16. Biochemical disorders of carbohydrate metabolism.
17. Lipids: methods of transport, interrelationship with carbohydrate metabolism.
18. Lipoprotein patterns in disease, cholesterol, triglycerides.
19. Pathophysiology of the thyroid gland: laboratory findings in disease.
20. Steroid hormones, biochemical interrelationships of the pituitary and adrenal glands.
21. Laboratory assessment of the pituitary-adrenal axis.
22. Diagnostic enzymology.
23. Cardiac enzyme disturbances and their diagnostic implications.

24. Pancreatic secretions and malfunction in disease.
25. Biochemistry of the gastro-intestinal system and assessment.
26. Malabsorption.
27. Principles of pharmacology, classes of drug action.
28. Clinical toxicology, drugs of abuse.
29. Toxicological analyses.
30. Drug interaction in biochemical testing.
31. Automated analyses, discrete sampling and flow systems.
32. Laboratory data processing, and patterns of work-flow.
33. Field trip to clinical laboratory.
34. Methodology development and criteria for selection.
35. Clinical chemistry in industrial and occupational health.

Library Resources Recommended for Clinical Chem 420-3

Journals and Periodicals

Appears to be adequate, although one leading journal, i.e. Clinica Chimica Acta, is not on the shelves. This journal is very costly (about $125./annum) and is being discontinued by many libraries. The journal is desirable but when weighed against the cost is probably not justifiable.

Books

The following should be acquired by the library:

1. Tietz, N.W., Fundamentals of Clinical Chemistry, 1970 W.B. Saunders.
2. Henry, R.J., Clinical Chemistry, Principles and Technics, Harper and Rowe, 1964.
3. Harper, H.A., Review of Physiological Chemistry, 14th ed., Lange Medical Publishers, 1973.
4. H. Varley, Practical Clinical Biochemistry, Interscience Books Inc., 4th ed., 1967.

Recommended Text

Baron, D.N., A Short Textbook of Chemical Pathology, English Universities Press Ltd., 247 p., 1973, 3rd ed.

* For use as text in proposed course.