

SIMON FRASER UNIVERSITY

MEMORANDUM

S76-10

SENATE

From SENATE COMMITTEE ON ACADEMIC

PLANNING

Subject PROPOSED UNDERGRADUATE PROGRAM IN
CLINICAL CHEMISTRY

Date DECEMBER 18, 1975

MOTION:

"That Senate approve and recommend approval to the Board of Governors the proposed program in Clinical Chemistry as set forth in S76-10 including:-

general regulations for a major program and an honors program and proposed new courses CHEM 397-15, 398-15, 399-15, 420-3, 423-3, 424-2."

MEMORANDUM

SENATE

From SENATE COMMITTEE ON ACADEMIC
PLANNING

Subject CLINICAL CHEMISTRY

Date DECEMBER 18, 1975

Action taken by the Senate Committee on Academic Planning at its meeting of December 17th, 1975 gives rise to the following motion:

MOTION 1

That Senate approve and recommend approval to the Board of Governors of the proposal for a program in Clinical Chemistry as set forth in SCAP 75-4 revised.

There was considerable discussion within the Senate Committee on Academic Planning regarding the assignment of credit to the three clinical chemistry practica (Chemistry 397, 398, and 399). While a number of alternatives were considered, the consensus of the Senate Committee on Academic Planning was that the Clinical Chemistry Training Program experience most closely resembled the Professional Development Program in the Faculty of Education and that, therefore, credit should be assigned in an analogous manner. It is thus recommended that each of the three Clinical Chemistry practica be assigned credit of fifteen semester hours. Because of the specialized nature of the practica, it is also recommended that credit for the practica not be transferred to other degree programs in the University.

December 1975

CLINICAL CHEMISTRY PROGRAM PROPOSAL

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Practicum (Chem 397-8-9)

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CLINICAL CHEMISTRY AT S.F.U.

A PROPOSAL

Background

Clinical chemistry has been developing rapidly as a vigorous specialty in Canada. The growing importance and complexity of the service provided by the clinical chemistry laboratories has aroused interest in establishing standards of education and training that will insure competence in those responsible for the practice at the patient-care level. A survey was recently made of clinical chemistry training available at and beyond the B.Sc. level in Canada. In some areas programs are well-developed and operational; in others, they are in the planning stages; and in still others, they are non-existent.

Canadian Programs in Clinical Chemistry (CC) and Medical Laboratory Sciences (MLS) (B.Sc. and Higher)

<u>University</u>	<u>Level</u>	<u>Status</u>
University of Alberta (MLS)	B.Sc.	operational
Lakehead University (MLS)	B.Sc.	operational
University of Toronto (CC)	PostDoctoral	operational
University of Windsor (CC)	Ph.D.	operational
University of Montreal	B.Sc.	planning
McGill University (CC)	Ph.D, postdoctoral	planning
McMaster University (CC)	Ph.D.	operational
Univ. of Western Ontario (CC)	postdoctoral	planning
University of Ottawa (CC)	postdoctoral	planning
Univ. of Saskatchewan (MLS)	B.Sc.	operational
University of Waterloo (MLS)	B.Sc.	operational

Training programs in British Columbia fall in the latter category. At the 1974 Annual Meeting of IUPAC, endorsement was

given to the teaching of clinical chemistry in chemistry departments.

Much of the current need for Medical Laboratory Technologists is met by personnel trained in two year programs. In British Columbia training in Medical Laboratory Technology is to the 2 year level, undertaken by a number of approved and accredited hospitals in cooperation with the B.C.I.T. and Cariboo College. In practice a grade XII graduate enrolls in the Medical Technology program at B.C.I.T. or C.C. After one successful year of formal training equivalent to senior matriculation the student applies for sponsorship to an approved hospital. If sponsored, the student completes one further year at the educational institution and proceeds to one year of practical hospital training. After a successful hospital training period candidates are eligible to write the C.S.L.T. (Canadian Society of Laboratory Technologists) examinations. These examinations are multifaceted in that they test the candidates expertise in hematology, clinical microbiology, histology, clinical chemistry and blood bank technology. Successful completion of these examinations leads to the professional qualification of Registered Technologist with what is termed a General Certificate.

A survey of B.C. hospital and private laboratories in 1974 indicated a need for persons specializing in the area of Clinical Chemistry. The provincial need for such trainees is currently estimated at ten per year and is barely met by recruitment from outside the province, training B.Sc. chemists and bio-

chemists and upgrading qualifications of technologists with two year's formal training.

Refresher courses in clinical chemistry, sponsored by the Education Committee of the B.C. Society of Medical Technologists during both 1973 (held at BCIT) and 1974 (SFU as host) were highly successful and well attended by practising laboratory technologists.

The provincial government stated its intention to aid the development of teaching facilities in the health-care field. They have also urged provincial universities to evaluate their offerings in terms of the needs of society for university graduates.

Proposal

It is proposed to initiate a program leading to a B.Sc. in chemistry with concentration in the area of clinical chemistry. It is proposed that courses in this area of concentration be available at times convenient to practising laboratory technologists so that they may form part of a continuing and advanced education program.

Persons completing the proposed option would be eligible to write the CSLT examination in Clinical Chemistry, the successful completion of which would qualify them for Subject Certification. That is, they would have specialist qualifications in Clinical Chemistry with respect to their two-year trained colleagues who have general qualifications. In addition the clinical chemistry courses in this program would be of value to practising technologists in their academic preparation for Advanced Registered Technologist Certification examinations.

Approach

Course offerings in Chemistry, Biosciences, Biochemistry, Kinesiology, Mathematics, Physics, and Computing Science at S.F.U. have been examined with a view toward development of an undergraduate program with concentration in Clinical Chemistry. This examination led to the formulation of a core of courses which were considered necessary for the graduate to meet for the requirements proposed by Committees on Education in Clinical Chemistry (CSCC). In addition to existing university courses, it was considered essential to include two new lecture and one new laboratory course in the specific area of clinical chemistry.

Entrance

Because of the need for concurrent theoretical and practical training we recommend that only those applicants be allowed to enter this program who are able to be placed in teaching hospital laboratories during the course of their studies. It is recommended that this requirement be waived for those students with one year of similar laboratory experience.

The proposed mechanism of entrance is as follows:

1. The student applies to SFU and is accepted into the University.
2. Student completes first years of basic science courses (per typical program outline) and applies for admission into Clinical Chemistry Program to Chemistry Department.

3. Chemistry Department, with Hospital personnel (Advisory Board), select students to be admitted. At this time provision for hospital training is made.
4. Students admitted go forward.

Program Operation

It is proposed to establish an advisory board to oversee the operation of this program. Membership should be distributed between the university departments contributing major numbers of courses, (Chemistry, Biosciences, Kinesiology) and the hospital laboratories involved in the off-campus training. The advisory panel should be involved in curriculum review and coordination of the hospital training. This latter function will involve selection and placement of students in approved laboratories.

Program Objectives

To prepare the Clinical Chemistry Program graduate with the following abilities:

1. Work independently in the clinical chemistry laboratory.
2. Read, understand, develop, and standardize methods for routine laboratory use.
3. Understand all phases of clinical chemistry laboratory operation.
4. Monitor quality control.
5. Troubleshoot a method and spot potential errors.
6. Understand data reduction and dissemination.
7. Understand the physiological significance of the data.
8. With guidance, aid in the training of technicians and technologists in methods of analysis.

9. Understand the fundamentals of instrumental design, operation, and methodology as used in clinical chemistry laboratories.
10. Assist the laboratory director in carrying out research projects.

Program

A Major and an Honors Program in Clinical Chemistry is offered by S.F.U. through the Department of Chemistry. This program is designed so that the student will be eligible to write the Subject Registered Technologist Certification Examination in Clinical Chemistry concurrent with obtaining the B.Sc. degree. This Program is also available to interested medical laboratory technologists who wish to pursue their studies in such a way that they will be eligible to write the Subject Advanced Registered Technologist Examinations in Clinical Chemistry concurrent with obtaining the B.Sc. Because of the requirement of the Canadian Society of Laboratory Technologists that a student train in an approved laboratory for one year as a partial requirement for an R.T., each student without prior hospital laboratory experience, will be required to train in an accredited hospital laboratory normally in one semester of each of the second, third and fourth year of study. Students may be admitted to the B.Sc. Clinical Chemistry Program with advance standing. Transfer credit may be granted for appropriate academic work completed at other institutions to a maximum of 60 semester hours excluding hospital training or 105 hours including acceptable hospital laboratory training (an accepted equivalent of Chem 397, 398, 399).

The courses required of students in the Clinical Chemistry Program who have had no previous post secondary training are:

Biochemistry:

- 301-3 The Structure and Reactivity of Biomolecules
- 302-3 Metabolism
- 311-2 Analysis of Biomolecules Laboratory
- 312-2 Metabolism Laboratory

Bioscience:

- 101-4 Introduction to Biology
- 102-4 " " "
- 303-3 Microbiology
- 428-3 Experimental Techniques I

Chemistry:

- 104-3 General Chemistry I
- 105-3 General Chemistry II
- 115-2 General Chemistry Laboratory
- 117-2 Quantitative Chemistry Laboratory
- 233-2 Inorganic Chemistry of Biological Processes
- 251-3 Organic Chemistry I
- 252-3 Organic Chemistry II
- 256-2 Organic Chemistry Laboratory I
- 397-15,398-15,399-15 Hospital Training
- 416-3 Modern Methods of Analytical Chemistry
- 420-3 Clinical Chemistry I
- 423-3 Clinical Chemistry II
- 424-2 Clinical Chemistry Laboratory

Computing Science:

105-3 Introduction to Concepts and Procedures

Kinesiology:

100-3 Introduction to Concepts and Procedures

336-3 Microscopic Anatomy (Histology)

405-3 Human Physiology I

406-3 Human Physiology II

407-3 Human Physiology Laboratory

Mathematics:

101-3 Introduction to Statistics

151-3 Calculus I

152-3 Calculus II

302-3 Statistical Methods

Physics:

101-3 General Physics I

102-3 General Physics II

333-4 Introduction to Instrumentation in the Life
Sciences

Total semester hours. = 140

In addition to these courses students pursuing the Clinical Chemistry Program must complete additional university B.Sc. requirements. For the Major Program these requirements involve the completion of an additional 25 semester hours of electives (165 total)

Applicants for admission to the Honors Clinical Chemistry Program will normally be expected to achieve a cumulative grade average of B in post secondary courses. The University requires that a student maintain this standard to continue in an Honors Program.

In addition to the courses listed above students pursuing the Clinical Chemistry Honors Program must complete an additional 37 semester hours of course work (177 total) to include:

Biochemistry: 411-2 Enzymology Laboratory

Bioscience: 401-3 Biochemistry II

 405-3 Cell Physiology

Chemistry: 341-3 Radiochemistry

and either Chemistry 481-5 or Biochemistry 491-5.

Typical Program Outline

First Year (27)

Biosci	101-4, 102-4
Chem	104-3, 105-3, 115-2, 117-2
Math	101-3, 151-3, 152-3

Second Year (40)

Chem	233-2, 251-3, 252-3, 256-2, 397-15
Comp Sci	105-3
Phys	101-3, 102-3
Kines	100-3, 336-3

Third Year (41)

Biochem	301-3, 302-3, 311-2, 312-2
Biosci	303-3
Chem	398-15
Kines	405-3, 406-3, 407-3
Phys	333-4

Fourth Year (32)

Biosci	428-3
Chem	416-3, 420-3, 423-3, 424-2, 399-15
Math	302-3

Special Instructions for Clinical Chemistry Hospital Training
397, 398, and 399

1. Students must complete normal University registration procedures and be admissible to the University before enrolling in Clinical Chemistry 397, 398, or 399. It is highly recommended that such students complete their University registration sixty days in advance of the commencement of the semester in which they plan to enrol in these courses. In addition, students desiring to enrol in these courses must make written application to the Chemistry Department at least sixty days before the commencement of the semester in which the course commences. Later applicants will be considered only if space is available.
2. In the event that the number of applicants to Clinical Chemistry 397, 398, and 399 exceeds facilities and staffing capabilities, the Clinical Chemistry Admissions Committee will select those applicants considered to be the best qualified.
3. Students who have indicated their intention to undertake a given semester of Clinical Chemistry 397, 398 or 399, and who do not honor this commitment, are considered to re-enrol in Clinical Chemistry Hospital Training courses is not given automatically. Such permission must be sought by written request from the student to the Chemistry Department 3 months prior to the start of the semester in which the student proposes to re-enrol in these courses.
4. Students may request or be required to discontinue studies in Clinical Chemistry Hospital Training. A refund schedule for students withdrawing from Chemistry 397, 398, and 399 will parallel that approved from time to time by the Board of Governors *for EDUC 901.*
5. Clinical Chemistry 397, 398, and 399 are considered full time professional studies and may not normally be taken in conjunction with other academic or professional courses. *These courses will be graded on a pass/fail basis (and do not constitute part of the grade point average).*

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

Calendar Information

Department: Chemistry
Abbreviation Code: CHEM Course Number: 397 Credit Hours: 15 Vector: _____

Title of Course: Clinical Chemistry Hospital Training

Calendar Description of Course: Full-time practical experience in approved training hospital laboratories in the use of chemical diagnostic tests. (Credit for this course is not transferable to other degree programs at S.F.U.)

Nature of Course

Prerequisites (or special instructions):

Chem 117 or Permission of the Department of Chemistry

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

2. Scheduling

How frequently will the course be offered? Every semester

Semester in which the course will first be offered? Fall 1976

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

3. Objectives of the Course

To give the student practical clinical laboratory experience in approved laboratories and to meet Canadian Society of Laboratory Technologists requirements for Registration as a medical technologist in Clinical Chemistry.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty A SFU employed coordinator will be required*

Staff Nil

Library Nil

Audio Visual Nil

Space Nil

Equipment Nil

* Same person as instructing Chem 420, 423 and 424.

5. Approval

Date: 11 Sep 75

E. J. Wells
Department Chairman

Dean

Chairman, SCUS

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Chemistry

Abbreviation Code: CHEM Course Number: 398 Credit Hours: 15 Vector: _____

Title of Course: Clinical Chemistry Hospital Training

Calendar Description of Course:

Full-time practical experience in approved training hospital laboratories in the use of chemical diagnostic tests.

(Credit for this course is not transferable to other degree programs at S.F.U.)

Nature of Course

Prerequisites (or special instructions):

Chem 397 or permission of the Chemistry Department

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

2. Scheduling

How frequently will the course be offered? Every semester

Semester in which the course will first be offered? Fall 1976

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

3. Objectives of the Course

To give the student practical clinical laboratory experience in approved laboratories and to meet Canadian Society of Laboratory Technologists requirements for Registration as a medical technologist in Clinical Chemistry.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty A part time teaching appointee will be required*

Staff Nil

Library Nil

Audio Visual Nil

Space Nil

Equipment Nil

* same person as instructing Chem 420, 423 and 424

5. Approval

Date: 11 Sep 75

[Signature]
Department Chairman

Dean

Chairman, SCUS

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Chemistry

Abbreviation Code: CHEM Course Number: 399 Credit Hours: 15 Vector: _____

Title of Course: Clinical Chemistry Hospital Training

Calendar Description of Course:

Full-time practical experience in approved training hospital laboratories in the use of chemical diagnostic tests.

(Credit for this course is not transferable to other degree programs at S.F.U.)

Nature of Course

Prerequisites (or special instructions):

Chem 398 or Permission of the Chemistry Department

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

2. Scheduling

How frequently will the course be offered? Every semester

Semester in which the course will first be offered? Fall 1976

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

3. Objectives of the Course

To give the student practical clinical laboratory experience in approved laboratories and to meet Canadian Society of Laboratory Technologists requirements for Registration as a medical technologist in Clinical Chemistry.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty A part time teaching appointee will be required*

Staff Nil

Library Nil

Audio Visual Nil

Space Nil

Equipment Nil

* same person as instructing Chem 420, 423 and 424

5. Approval

Date: 11 Sep 75

E. J. Wells

Department Chairman

Dean

Chairman, SCUS

CHEMISTRY 397,398,399

COURSE OUTLINE

The laboratory training program is designed to allow the student to gain practical experience in a functional clinical chemical laboratory. This practical training will supplement the theoretical courses (CHEM 420 and 423).

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

Calendar Information

Department: Chemistry

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

Title of Course: Clinical Chemistry I

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):

Prerequisite: Third year standing in Chem or Biochem or permission of department.

What course (courses), if any, is being dropped from the calendar if this course is approved: This is a course similar in content to Chemistry 420-3 offered in 74-3 as an evening course.

2. Scheduling

How frequently will the course be offered? once per year

Semester in which the course will first be offered? Fall 1976

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

3. Objectives of the Course

To relate the principles of chemistry as they apply to the nature and detection of disease.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty An additional professional appointment will be required*

Staff Nil

Library Nil

Audio Visual Nil

Space Nil

Equipment Nil

* Same person as instructing Chem 423, 424

5. Approval

Date: 11 Sep 75

E. J. Wells
Department Chairman

Dean

Chairman, SCUS

COURSE OUTLINE

<u>Week</u>	<u>Topics</u>
1	--Course introduction, review of development of clinical chemistry --Differentiation of health and disease, pathological processes, concept of normal physiological ranges.
2	--Quality assurance systems, reference materials, error analysis. --Specimen collection, handling and storage, deproteinization
3	--Respiratory function and biochemical acid-base balance --Disorders and assessment of acid-base equilibria
4	--Fluid and electrolyte regulation osmolality
5	--Renal anatomy, biochemistry of urine formation
6	--Assessment of renal function
7	--Anatomic considerations of the liver, bilirubin metabolism
8	--Liver function tests and their role as diagnostics
9	--Electrophoretic assessment of protein disturbances --The immunoglobulins: classes, structure and function --Immune mechanisms and deficiency states
10	--Biochemical disorders of carbo-hydrate metabolism
11	--Lipids: methods of transport, inter-relationship with carbo-hydrate metabolism --Lipoprotein patterns in disease, cholesterol, triacylglycerides
12	--Pancreatic secretions and malfunction in disease --Biochemistry of the gastro-intestinal system and assessment --Malabsorption
13	--The cerebrospinal fluid system --Iron and magnesium metabolism, diagnostic implications

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

Calendar Information

Department: Chemistry

Abbreviation Code: CHEM Course Number: 423 Credit Hours: 3 Vector: 3-1-0

Title of Course: Clinical Chemistry II

Calendar Description of Course:

A continuation of Chem 420-3 dealing with the nature and appraisal of disease-affected systematic function; pharmacological and analytical aspects of clinical toxicology; clinical laboratory systems.

Nature of Course Lecture Tutorial

Prerequisites (or special instructions): Chem 420-3 or permission of department

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

2. Scheduling

How frequently will the course be offered? Once per year

Semester in which the course will first be offered? Spring 1977

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

3. Objectives of the Course

To relate the principles of chemistry as they apply to the nature and detection of disease.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty An additional professional appointment will be required*

Staff Nil

Library Nil

Audio Visual Nil

Space Nil

Equipment Nil

* same person as instructing Chem 420 and 424

5. Approval

Date: 11 Sep 75

S. J. Wells
Department Chairman

Dean

Chairman, SCUS

CLINICAL CHEMISTRY 423-3

COURSE OUTLINE

<u>Week</u>	<u>Topics</u>
1	--Pathophysiology of the thyroid gland: laboratory findings in disease.
2	--Steroid hormones, biochemical inter-relationships of the pituitary and adrenal glands. --Laboratory assessment of the pituitary-adrenal axis.
3	--Adrenal medullary hormones.
4	--Porphyrins: metabolism and measurement. --Hormones of the reproductive system.
5	--Amino acids, inborn errors of metabolism.
6	--Diagnostic enzymology. --Cardiac enzyme disturbances and their diagnostic implications.
7	--Principles of pharmacology, classes of drug action.
8	--Clinical toxicology, drugs of abuse.
9	--Toxicological analyses.
10	--Automated analyses, discrete sampling and flow systems.
11	--Drug interaction in biochemical testing.
12	--Laboratory data processing, and patterns of work-flow.
13	--Clinical chemistry in industrial and occupational health.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

Calendar Information

Department: Chemistry

Abbreviation Code: CHEM Course Number: 424 Credit Hours: 2 Vector: 0-0-4

Title of Course: Clinical Chemistry Laboratory

Calendar Description of Course:

This course is designed to teach the principles used in the development and assessment of analytical procedures for established diagnostic tests; practical exercises in trouble-shooting of chemical methods will be undertaken.

Nature of Course Laboratory

Prerequisites (or special instructions):

Chem 398, Chem 420 or permission of department; ordinarily taken with Chem 423.

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

2. Scheduling

How frequently will the course be offered? Once per year

Semester in which the course will first be offered? Spring 1977

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

3. Objectives of the Course

This course will enable the student to recognize and remedy the sources of error in chemical diagnostic tests. It is also anticipated that students completing the course will be equipped to independently improve and/or introduce new diagnostic tests.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty An additional appointment will be required*

Staff 1/4 time Demonstrator

Library Nil

Audio Visual Nil

Space Laboratory space for 20 persons is available

Equipment

* same person as instructing Chem 420 and 423.

5. Approval

Date: 11 Sep 75

H. Wells.
Department Chairman

Dean

Chairman, SCUS

CHEMISTRY 124

COURSE OUTLINE

Week

- 1 Colorimetric determination of glucose in serum, and systematic study of the effect of procedural variables.
- 2 Measurement of serum amylase activity with different substrates and assessment of precision, and correlation of results.
- 3 Evaluation and comparison of a kinetic and an end-point method for the quantitation of lactate dehydrogenase activity in serum.
- 4+5 Use of criteria for the systematic evaluation of test procedure for the measurement of cholesterol in serum.
- 6 Development of a procedure for the quantitation of urea using p-dimethylamino-benzaldehyde.
- 7 Error detection in a troublesome procedure for the measurement of urea in serum by the Berthelot reaction
- 8 Introduction of modifications to improve a procedure for serum bilirubin quantitation
- 9 Assessment of test sensitivity for the detection of hemoglobin and ketonic substances
- 10 Evaluation of serum reference materials for use as standards.
- 11) Student selection of a test procedure
- 12) for an endocrine hormone on the basis of published
- 13) appraisals, followed by setting it up in the laboratory.

ESTIMATE OF COSTS FOR CLINICAL CHEMISTRY OPTION OPERATION

Personnel Required:

Consultant - half time Faculty level (per AC16)
January 1, 1976 - August 31, 1976

This position is required to achieve a close liaison with hospitals and the provincial government for the funding and placement of Clinical Chemistry training.

Appointments in Clinical Chemistry

-two half time faculty appointments (per AC16)
September 1, 1976 onwards

The duties of these appointments involve teaching Chem 420, 423, 424 and liaison of the practicum as outlined in the attached.

Laboratory Technician - one fourth of full time Grade 8 or 9 technician is required per year to maintain Chem 424 experiments.

Teaching Assistant - one 15hr graduate level teaching assistantship will be required per year for Chem 424.

Clerk Typist - one fourth of full time clerk typist will be required to meet education material preparation and liaison requirements.

Equipment:

Chemistry 424 will require four Coleman 2 visible spectrophotometers (or equivalent) \$1000 each = \$4000.00

One additional recorder for available UV spectrophotometer will be required \$1000.00

TOTAL EQUIPMENT \$5000.00

Materials and Supplies

Chemistry 424 will require glassware and chemicals costing
approximately \$3000.00

Advertising, promotion \$ 500.00

Travel expenses to B.C. Hospitals and Victoria \$ 500.00

TOTAL NON-SALARY REQUIREMENTS \$9000.00

DUTIES OF PROPOSED APPOINTEE IN CLINICAL CHEMISTRY INVOLVING

CHEM 397, 398, 399

1. To promote good public relations with hospital laboratories and such other institutions as may be involved in the training of students.
2. To liaise with hospital laboratory administrators and provincial government offices in connection with wages or stipends for students while in training in hospital laboratories.
3. To jointly arrange a syllabus of instruction with each training laboratory for the training of students pursuant to the objectives of Chem 397-8-9. The syllabus will vary depending on the patterns of workflow within the specific laboratory, and on the individual students prior experience.
4. To supervise the selection and placement of students for training purposes in (CMA) approved laboratories.
5. To co-ordinate, monitor and assess the progress of students while in practicum training and to maintain records thereof.
6. To advise hospital laboratories in the selection and assignment of suitable laboratory exercises to fulfill the requirements of the syllabus.
7. To hold regular, probably bi-weekly, tutorials for these students in the lower mainland, and to arrange for same in other areas as needed.
8. To act as a student councillor on matters pertaining to the practical training.