Wednesday, April 18, 1979.

The Eighth regular meeting of the Senate of The University of British Columbia for the Session 1978–79 was held on Wednesday, April 18, 1979 at 8.00 p.m. in the Board and Senate Room.

Present: President D. T. Kenny (Chairman), Chancellor J. V. Clyne, Mr. N. Akiha, Mr. M. E. Antosz, Dean G. S. Beagrie, Mr. W. H. Birmingham, Mrs. M. F. Bishop, Dr. E. V. Bohn, Dr. C. B. Bourne, Dr. K. T. Brearley, Dr. T. H. Brown, Dr. J. G. Cragg, Dr. J. Dahlie, Dr. J. D. Dennison, Dr. A. J. Elder, Dr. C. V. Finnegan, Mr. R. C. Formosa, Mrs. E. D. Fulton, Ms. A. Gardner, Ms. P. Gouldstone, Dr. A. G. Hannam, Dr. T. D. Heaver, Miss V. Johl, Dr. F. R. C. Johnstone, Dr. L. D. Jones, Mr. W. R. Julien, Dr. W. M. Keenlyside, Mr. E. G. Kehler, Dean W. D. Kitts, Dr. H. C. Knutson, Mr. J. Kulich, Dean P. A. Larkin, Dean P. A. Lusztig, Dean K. M. Lysyk, Dr. D. J. MacDougall, Ms. C. E. McAndrew, Dr. C. A. McDowell, Mr. W. A. McKerlich, Dr. J. H. McNeill, Mr. J. F. McWilliams, Acting Dean A. D. Moore, Mr. C. Niwinski, Dr. R. A. Nodwell, Dr. J. F. Richards, Dr. V. C. Runeckles, Dr. S. O. Russell, Mr. M. M. Ryan, Mr. R. H. Santo, Dr. R. F. Scagel, Dr. G. G. E. Scudder, Dr. M. Shaw, Mr. B. K. Short, Dr. J. G. Silver, Mr. G. P. L. Smith, Dr. R. H. T. Smith, Dr. J. K. Stager, Mr. B. Stuart-Stubbs, Dr. O. Sziklai, Mr. M. P. Thacker, Mr. G. A. Thom, Mr. D. F. Thompson, Mr. L. Valg, Dean G. M. Volkoff, Miss C. L. V. Warren, Mr. D. L. Watts, Dean R. M. Will, Dr. M. D. Willman, Dr. J. L. Wisenthal, Mr. B. M. S. Wright.

Observer: Mr. J. A. Banham

Messages of regret for their inability to attend were received from Mr. W. G. Burch, Rev. P. C. Burns, Mrs. L. Daniells, Dean J. A. F. Gardner, Mr. F. Lee, Dr. D. Lupini, Dr. A. J. McClean, Rev. J. P. Martin, Dean B. E. Riedel, Mrs. J. C. Wallace, Dean W. A. Webber.

Senate membership

New student senators

The Chairman welcomed to Senate the following student members:-

Agricultural Sciences
Mr. B. M. S. Wright

Applied Science
Mr. R. H. Santo

Arts
Miss V. Johl

Commerce and Business Administration
Mr. N. Akiha

Dentistry
Mr. M. E. Antosz

Education
Mr. F. Lee

Forestry
Mr. M. P. Thacker

Graduate Studies
Mr. D. W. Smith

Law
Mr. D. F. Thompson

Medicine
Mr. W. R. Julien

Pharmaceutical Sciences
Mr. R. C. Formosa

Science
Mr. E. G. Kehler

Members-at-large:-
Ms. A. A. Gardner
Mr. C. Niwinski
Mr. B. K. Short
Mr. G. P. L. Smith
Mr. D. L. Watts

Dean of Science

Senate offered congratulations to Dr. Finnegan on his appointment as Dean of the Faculty of Science.

Minutes of the previous meeting

Dr. Elder)
Dr. Wisenthal) That the minutes of the Seventh regular meeting of Senate for the Session 1978-79, having been circulated, be taken as read and adopted.

Carried

Business arising from the Minutes

English admission requirement - report by the President (P.7159)

The Chairman suggested that this item be deferred until later in the meeting when the report of the Ad hoc Committee on Standards in English was discussed.

Ad hoc Committee on Examinations (P.7164-5)

Notice of motion had been given at the previous meeting.

Dr. Smith)
Dr. Cragg) That Senate establish an ad hoc committee to examine the timing and length of the December and April examination periods, and in particular:

(i) the implications for the educational process of having the examination period commence the day following the conclusion of classes;

(ii) the desirability of allowing students a period to digest and review the complete course before the final examination;

(iii) the feasibility of adopting a class scheduling system that would automatically assign examination slots (so that at the time of registration the possibility of examination conflicts would be ruled out);

(iv) the possibility of students occasionally being required to write several examinations on the same day.

It was explained in the material circulated that the motion arose from concerns expressed at the gradual reduction in the number of Saturday examinations, and in the pause, however brief, between the conclusion of classes and the commencement of examinations. It was recognized that the accommodation of relatively large numbers of students with "non-standard" programs (that is, programs that depart from a rigidly defined schedule) resulted in a formidable allocation problem, and that given

Business arising from the Minutes

Ad hoc Committee on Examinations (continued)

time constraints (for example, the length of the first term) and constraints on resources (for example, support staff costs involved in supervising evening and Saturday examinations) the present system was inevitable. However, a thorough review of the situation was urged so that it could be determined whether alternatives existed and if so what their adoption would involve.

The motion was put and carried.

From the Board of Governors

Notification of approval in principle of Senate recommendations - subject, where applicable, to the proviso that none of the programs be implemented without formal reference to the President and the formal agreement of the President; and that the Deans and Heads concerned with new programs be asked to indicate the space requirements, if any, of such new programs.

(i) New courses, course and curriculum changes recommended by the Faculty of Commerce and Business Administration (P.7156-7 & 7168)

(ii) The establishment of The Albert E. Hall Chair in Finance, recommended by the Faculty of Commerce and Business Administration (P.7159)

(iii) Master of Arts Program in Family Studies recommended by the Faculty of Graduate Studies (P.7156-7 & 7168-9)

(iv) Changes in the four-year B.S.N. program recommended by the School of Nursing (P.7156-7 & 7169-71)

(v) Affiliation between The University of British Columbia and Children's Hospital, subject to such minor changes in wording as may be required, recommended by the Faculty of Medicine (P.7160-4)

Prizes, Scholarships and Bursaries

Dr. Knutson)
Dean Lysyk) That the new award (listed in Appendix 'A') be accepted subject to the approval of the Board of Governors and that a letter of thanks be sent to the donor.

Carried

Reports of Committees of Senate

Curriculum Committee (See Appendix 'B')

Dr. Wisenthal presented the report. The committee recommended approval of: modification of the Rangeland Resources Option, new courses and course changes submitted by the Faculty of Agricultural Sciences; curriculum changes and calendar description for the Clinical Engineering Program submitted by the Faculty of Applied

Reports of Committees of Senate

Curriculum Committee (continued)

Science; curriculum changes submitted by the Faculty of Commerce and Business Administration; new program, program changes, new courses and course changes submitted by the Faculty of Science; and a proposal to offer an M.A. and M.F.A. with a concentration in Film/Television Studies submitted by the Faculty of Graduate Studies.

Dr. Wisenthal referred to the proposals submitted by the Faculty of Agricultural Sciences and explained that approval of a proposed new course Soil Science 214 (1½) Forest and Agricultural Climatology was being withheld pending the submission of proposed changes to the existing Geography 214. In recommending approval of the proposals submitted by the Faculty of Applied Science the committee requested that the statement on prerequisites in the calendar description of the Clinical Engineering Program be replaced by a statement, inserted prior to the list of courses, to the effect that students without the formal prerequisite courses should consult the Department or Faculty concerned and the Director of the Clinical Engineering Program.

Dr. Wisenthal)
Dr. Brown) That the proposals submitted by the Faculty of Agricultural Sciences, the Faculty of Applied Science, the Faculty of Commerce and Business Administration and the Faculty of Science be approved.

Carried

Dr. Wisenthal)
Dean Will) That the proposal of the Faculty of Graduate Studies to offer an M.A. and M.F.A. with a concentration in Film/Television Studies be approved.

Carried

Nominating Committee

Dr. Stager explained that there was a vacancy on the Nominating Committee for one student representative. It was agreed that Senate members could call for nominations from the floor.

Mr. Niwinski)
Mr. Kehler) That Mr. Brian Short be nominated to serve as student representative on the Senate Nominating Committee.

Dr. Elder)
Ms. Gouldstone) That nominations be closed.

Carried

Mr. Short was declared elected.

Reports of Committees of Senate

Ad hoc Committee on form of Degrees and Diplomas

Dr. Knutson presented the following report:

"At its meeting of September 13, 1978 Senate recommended the establishment of a committee to investigate the form of degrees and diplomas. Senate took this action following a request of the Faculty of Forestry that "interest areas" be indicated on degree parchments.

The committee concluded that it would not be desirable to indicate specific study areas on degree parchments as proposed because of practical difficulties regarding the lead time necessary for the printing of diplomas and possible implications of narrow academic background. However, the committee agreed that where a student graduated "with honours" or on an "honours program" that this fact should be noted on the degree parchment.

The objective of the Faculty of Forestry could be met in another way by having a student's transcript of academic record indicate the areas of specialization and by providing the student with a "certification of graduation" giving more detail than is possible on a degree parchment but not with a full statement of record as appears on the transcript of academic record.

The committee recommends to Senate the following:

1) that a new form be prepared for issuance to all graduates to be entitled "Certification of Degree". Its purpose would be to convey information intermediary between the spareness of the diploma and the detail of a transcript of academic record. The certification would include the name of the degree, the program of study and the standing obtained (where appropriate). This form would be provided to graduates at the same time as final year marks are issued;

2) that where provision is made to recognize high academic achievement over more than one year, such as "graduation with honours", the degree parchment have indicated on it "with honours";

3) that where a student has graduated on an honours program that this fact be indicated on the degree parchment as "honours program";

4) that the transcripts of records of Forestry graduates, and other graduates where appropriate, indicate the areas of interest or specialization in addition to the information on name of degree and class standing obtained which is provided at present.

Except for these proposals, the committee concluded that no other change in the form of degrees and diplomas was necessary."

Dr. Knutson)
Dr. Sziklai) That the recommendations of the committee be approved.

Carried

Ad hoc Committee on Standards in English

President Kenny reported that following the last Sente meeting he had met with Dr. Finnegan, Dean Will, Dr. Jordan (Head of the Department of English), and

Reports of Committees of Senate

Ad hoc Committee on Standards in English (continued)

Mr. Young (Associate Registrar) to discuss the question of the English admission requirement. The consensus was that the matter should be handled by the Admissions Committee. The President also stated that as a result of this meeting he had been requested to write to the Minister of Education in an attempt to obtain further data on the Ministry's English Placement Test but that he had not yet received a reply.

The President further reported that, under Senate's instructions, the Basic Composition Workshop was to be terminated in August 1979. However, assurances had been given by Mr. Kulich, Director of the Centre for Continuing Education, that the Centre was prepared to offer 24 sections of the Basic Composition Workshop which would accommodate approximately 360 students. The English Department would be responsible for making recommendations as to which students would benefit from this remedial work. The workshops would be three hours per week and there would be a charge of approximately $150. The President also stated that it was his understanding that students would be advised to take the course but that it was not obligatory.

The following report of the Ad hoc Committee on Standards in English had been circulated. The Agenda Committee had recommended, however, that the report be discussed by Senate but that no attempt be made to arrive at a specific conclusion, and that the matter, including the transcript of the discussion, be referred to the Senate Admissions Committee.

"In April 1976 Senate passed the following resolutions:

1. That the Senate of The University of British Columbia affirms that school-level instruction in basic English composition is not a proper function of the University.
2. That Senate hereby gives notice of its intention to terminate the existing "Basic Composition Workshop" program by August 1979, subject to the provision of a program for students whose work in subjects other than English is demonstrably outstanding.
3. That, beginning in September 1979, admission to First Year at U.B.C. be limited to students demonstrating basic competence in English composition or whose work in subjects other than English is demonstrably outstanding; and that the Senate Admissions Committee be asked to consider effective ways in which such competence could be assessed.
4. That Senate request the President to urge the Ministry of Education to provide leadership, co-ordination and financing for "English as a Second Language" programs in the Province.

Reports of Committees of Senate

Ad hoc Committee on Standards in English (continued)

"At the March 1979 meeting of Senate the Admissions Committee brought forward a proposal in response to these resolutions. When that proposal was rejected, Senate still was left with the responsibility of finding means to assess competence in English composition demonstrated by first year applicants to U.B.C. After six meetings on this issue the English Standards Committee comes to Senate in order to suggest that the solution may very well be found in the use of secondary school results in conjunction with the results of an independent test. The question is whether to use secondary school grades alone or to use another criterion as well. The Committee suggests that the English 12 grade as the sole criterion cannot be a satisfactory measure of a student's competence in writing. In a subject like English, the standard must vary considerably from one school to another and one teacher to another. As the English Department observes in a report that it submitted to the Senate Admissions Committee, "The result of making the individual teacher or school the sole arbiter of a student's writing ability would be gross unfairness: a poor writer from school A might be admitted to U.B.C., while a relatively good writer from school Z might be rejected."

We are also impressed by evidence arising from the first year of operation of the Ministry of Education's English Placement Test. We offer for Senate's scrutiny excerpts from a statistical report prepared by the Educational Research Institute of British Columbia, which administers the English Placement Test:

> "Quite clearly, the three scores on the E.P.T. (i.e. the results of the three different components of the English Placement Test), taken together, hold a substantially greater relationship to (U.B.C.) English 100 grades than do English 12 grades taken alone as English 12 grades, when used alone, are relatively weak predictors of English 100 grades; hence the associated error of prediction is relatively high. The three E.P.T. scores, when applied in combination, have increased the strength of the predictive relationship from 22% (for English 12 grades alone) to 37%. It is evident, however, that the strongest realtionship is obtained when all four measures have been used (42%). It seems reasonable to suggest that the most effective means of predicting success in English 100, and simultaneously identifying those students most requiring remedial instruction in English grammar and composition, is to employ English 12 grades and E.P.T. scores in combination. In this manner, and perhaps only in this manner, can reasonable accuracy in prediction be achieved."

What is true here for purposes of placement is also true for purposes of admission, where it is even more important to have the most reliable predictive evidence available. Our point in citing this E.R.I.B.C. report is to indicate that a test like the English Placement Test appears to be necessary in order for the University to have a reasonable indication of a student's readiness for English 100.

We are not, however, recommending the use of any particular examination. We appreciate that the question of modifying the present use of the English Placement Test has become a sensitive issue, but we would draw Senate's attention to the existence of at least one other examination that would definitely be available to us, and that is designed in a way that would meet our needs. This

Reports of Committees of Senate

Ad hoc Committee on Standards in English (continued)

"is the English Composition Test which is part of the Achievement Testing Program of the College Board (based in Princeton, N.J.). In the words of the College Board's publication, Guide to the Admissions Testing Program 1978-79, the English Composition Test is "designed to measure the student's ability to write clear and effective prose that satisfies the requirements of standard written English". The Test "provides an indication of ability to do the kind of writing that will probably be expected in college." We must emphasize once again that we are not recommending any particular examination, but proposing that the Admissions Committee, after considering all available evidence, should select the examination to be used.

Proposals:

1. That Senate endorse the principle that the University use results of an English composition examination as one of the criteria by which a student's writing ability is assessed for purposes of admission into first year.
2. That Senate ask the Admissions Committee to select an examination in English composition to be available for use in admitting students entering the University in September 1980.
3. That Senate ask the Admissions Committee to formulate means of identifying those students whose work in subjects other than English is demonstrably outstanding (as in Recommendation 3 of the Report of the English Standards Committee, April 1976)."

In the absence of Dr. Burns, Chairman of the committee, Dr. Wisenthal presented the report. He stated that the object of the report was to make a case for the use of an examination in writing competence for admission purposes. Such an examination would not, however, be the sole criterion but would be used as one of the criteria for admission.

Dr. Wisenthal)
Mrs. Bishop) That the report be received.

During the following discussion opinions were expressed that the Admissions Committee should examine whether students fail English 100 for reasons other than literacy; that it was unfair for a student to be allowed to enter the University without an understanding of the language; and that even if the University were allowed to use the results of the Ministry of Education's English Placement Test for admission purposes it would not necessarily be of use in predicting success in English 100. Several members expressed their support of the report.

After further discussion the motion to receive the report was put and carried.

In reply to a query Dr. Finnegan stated that the Admissions Committee would make a progress report at the May meeting of Senate.

Report of the Librarian 1977-78

The report had been circulated for information. In speaking briefly to the report Mr. Stuart-Stubbs, the Librarian, referred to the continuing problem of lack of space. It was stated in the report that the University, through its support of the collections budget during recent difficult years, had shown its determination to continue to meet the many and diverse needs of the users of the Library. In converting its cataloguing records to machine-readable form, the Library was attempting to provide access to the contents of the collections both more efficiently and effectively. However, the predictable growth of the collections toward the third millionth volume imposed a need for space to contain them. All available space would be filled at the end of eight years. Given the amount of time required for the completion of even minor building projects, planning for a new research library should begin now.

Dean Larkin, Chairman of the University Library Committee, paid tribute to the excellent work of the Librarian and his staff.

Report on Continuing Education Activities of The University of British Columbia 1977–78

The report had been circulated for information. Mr. Kulich stated that this was the second report and that an attempt had been made to include more information on Continuing Education activities at U.B.C. In commenting briefly on the report Dr. MacDougall, Chairman of the Committee on Continuing Education, paid tribute to Mr. Kulich for the work done in collecting the information.

Faculty of Dentistry

Deadline date of application for admission

A proposal to change the deadline date for receiving applications for admission to the Faculty of Dentistry have been circulated. It was stated that a personal interview of prospective students was being introduced and that more time was needed to undertake this procedure.

Dean Beagrie)
Dean Will)

That the deadline date for receiving applications for admission to the Faculty of Dentistry be changed from April 30 each year to December 31 of the previous year.

Carried

Departmental Review Policy

In response to the requirement that each Faculty report to Senate on policies and procedures for reviews, the Faculty of Dentistry submitted the following statement:

Faculty of Dentistry

Departmental Review Policy (continued)

"The review methods utilized in the Faculty of Dentistry are:

Professional review by an outside body every five years; this is part of the accreditation program within the Faculty of Dentistry reviewed by the Canadian Dental Association Accreditation Team, in which an assessment of the basic science, clinical science, and clinical content of both the undergraduate dental student program and dental hygiene program is carried out.

Internal reviews of the Faculty of Dentistry have taken place over the last several years. These consist of a subcommittee looking at departmental organization, a subcommittee of the Curriculum Committee, which is reviewing the curriculum, and a subcommittee looking at the general committee structure within the Faculty. Each and all of these present their findings for ratification to the Faculty as a whole."

Dean Beagrie)
Dr. Silver) That the departmental review policy of the Faculty of Dentistry be approved.

Carried

Faculty of Applied Science

Departmental Review Policy

Senate was informed that statements of policies and procedures of the professional bodies which have accepted responsibility for appraising programs in the Faculty of Applied Science were on file with the Secretary of Senate. A report listing the documents together with the composition of the visiting accreditation team for Engineering and the composition of the visiting boards for Architecture and Nursing had been circulated.

Dr. Moore)
Mr. Short) That the report be accepted.

Carried

Faculty of Science

Departmental Review Policy

The Faculty of Science submitted the following proposal concerning departmental review policy:

"The Faculty of Science endorses in general terms the policy adopted by Senate with the following additional specific comments. (See Senate minutes P.6858-60 September 14, 1977 for Senate policy.)

With respect to point 1, the Faculty wishes to emphasize the need for flexibility with regard to timing.

Faculty of Science

Departmental Review Policy (continued)

"With regard to point 3a the Faculty endorses the principle of including outside experts. The mix of three external and two U.B.C. experts from outside the Department has been found satisfactory.

With respect to point 3b the Dean has solicited nominations of suitable external experts both from members of the Department and from persons in allied disciplines. The final composition of committees to review Departments should be left to the Dean who has to ascertain the availability of those nominated and then strike a balanced committee."

Dean Volkoff)
Dr. Finnegan) That the departmental review policy of the Faculty of Science be approved.

Carried

Report of the Tributes Committee

Dr. Stager presented the report of the Tributes Committee. Members of the gallery were asked to leave.

Memorial Minute

The following memorial statement had been prepared in accordance with the custom of Senate in recognition by the University and the Senate of the late Roy Daniells.

IN MEMORIAM

ROY DANIELLS

On Friday evening, April 13, 1979, The University of British Columbia lost one of its most distinguished and beloved scholars and alumni when Professor Roy Daniells died quietly at his home on Allison Road.

A native of London, England, Roy Daniells came to Canada at the age of eight. He received his public and high school education in Victoria and attended The University of British Columbia, where he received the degree of Bachelor of Arts. He went on to the University of Toronto, where he obtained the degrees of Master of Arts and Doctor of Philosophy.

Professor Daniells joined the U.B.C. faculty in 1946 as Professor of English, after being Head of the English Department at the University of Manitoba for nine years. He was appointed Head of English in 1948, a position he held until 1965, when he was named the first University Professor of English Language and Literature in recognition of his scholarship in English literature and his activities as poet and writer.

Roy Daniells was author of two volumes of poetry: Deeper into the Forest, and The Chequered Shade. He contributed criticism, poetry and prose to Canadian and American scholarly and general periodicals. He is best known for his studies in 17th Century English literature, particularly for the book; Milton, Mamerism and Baroque.

Report of the Tributes Committee

Memorial Minute (continued)

Professor Daniells served for almost four terms as a member of the Senate of this University, 1948 to 1954 and from 1969 until the end of 1974.

Professor Daniells was a Fellow of the Royal Society of Canada. He became its President in 1970, at which time he was honoured as the recipient of the Lorne Pierce Medal. The citation read in part for "achievement of special significance and conspicuous merit in imaginative or critical literature."

He served for a term as chairman of the Humanities Research Council of Canada. In 1972 he was made a Companion of the Order of Canada in recognition of "outstanding merit of the highest degree, especially service to Canada and to humanity at large." He held honorary degrees from Queen's, Toronto, McMaster, New Brunswick and Windsor Universities, and in 1975 U.B.C. conferred upon him the degree of Doctor of Letters Honoris causa.

Professor Daniells was one of UBC's outstanding teachers, and was widely known as a witty and entertaining speaker.

Members of Senate convey to his wife, Laurenda, their daughters, Susan and Sara, and other members of the family its deepest sympathy.

Dr. Stager)
Mr. Clyne) That the memorial statement for Roy Daniells be spread on the minutes of Senate and that a copy be sent to the relatives of the deceased.

Carried

The meeting adjourned at 10.10 p.m.

The next regular meeting of Senate will be held on Wednesday, May 23, 1979.

Secretary

Confirmed,

Chairman

APPENDIX 'A'

New award recommended to Senate

The Beverley Maureen Becker Memorial Scholarhip - A scholarship in the amount of $125 has been made available by family and friends of the late Beverley M. Becker. Ms. Becker was a former student of the U.B.C. School of Librarianship and graduated with her M.L.S. in 1975. The award will be made to the top ranking student in the advanced reference course in the School of Librarianship, and will be made on the recommendation of the faculty.

APPENDIX 'B'

Course and curriculum proposals

FACULTY OF AGRICULTURAL SCIENCES

Rangeland Resources Option

The existing Rangeland Resources program in the Department of Plant Science has been modified and will be established as an option in four departments, namely, Agricultural Economics, Animal Science, Plant Science and Soil Science.

Deletion	AGSC 101

Plant Science

New course	PLNT 259 (1½) Crops and Cropping Systems
Changes	PLNT 336 - change in hours and delete prerequisite PLNT 433, 434, 437 - change in hours PLNT 425 - addition to description

FACULTY OF APPLIED SCIENCE

Civil Engineering

Change	CIVL 463 - change in units from (2) to (3), and change in hours

Engineering Physics

(a) New option in Metallurgy for Engineering Physics students:

Option 3 - 3rd Year

METL 376	Structure and Properties of Steel	(3-3*-0; 0-0-0)
APSC 270	Mechanics of Solids	(2-0-1; 2-0-1)

and two of:

METL 370	Structure of Metals	(2-0-0; 0-0-0)
METL 374	Deformation Processes	(0-0-0; 2-3*-0)
CPSC 118	Principles of Computer Programming	(0-0-0; 3-0-2)
ELEC 358	Digital Systems & Minicomputers	(0-0-0; 2-3*-2*)

(b) Change in option in Metallurgy for Engineering Physics students:

Option 3 - 4th Year

METL 378	Diffusion and Phase Transformations	(0-0-0; 2-0-0)
METL 470	Engineering Alloys	(0-0-0; 2-0-0)
METL 495	Metallurgical Laboratory	(0-0-0; 0-5-0)

and three of:

METL 472	Welding and Joining	(2-3*-0; 0-0-0)
METL 480	Fracture	(2-0-0; 0-0-0)
METL 488	Dislocation Theory	(2-0-0; 0-0-0)
METL 492	Powder Metallurgy	(2-0-0; 0-0-0)
METL 474	Mechanical Working	(0-0-0; 2-0-0)
METL 476	Casting and Solidification	(0-0-0; 2-0-0)
METL 486	Nuclear Materials	(0-0-0; 2-0-0)

APPENDIX 'B'

FACULTY OF APPLIED SCIENCE (continued)

Admission requirements for Simon Fraser University Students

That CHEM 117, Quantitative Chemistry Laboratory, be dropped, and PHYS 131, General Physics Laboratory, be added to the list of required courses. The other required general Chemistry Laboratory course, CHEM 115, will still be retained.

Applied Science and Graduate Studies

Clinical Engineering Program - calendar description:

The Master of Engineering degree is offered to qualified engineering graduates who seek to apply engineering principles at an advanced level to patient-care technology in hospitals and other health care institutions. The Clinical Engineering program provides a basic knowledge of the life and health sciences; training in the application of engineering principles to the clinical environment, patient-oriented technology, design and development, safety procedures; skills in administration and communication. The program consists of course work and practical experience in local hospitals.

Prerequisite: Graduation in Engineering. Students are advised to acquire a basic knowledge of biology, organic chemistry and electronics before applying for entry. Students without the formal prerequisite courses should consult the Department or Faculty concerned and the Director of the Clinical Engineering Program.

Courses:

PHED	391	Human Anatomical Systems
BIOL	201	Cell Biology
COMM	323	Human Resource Management I
PATH	375	Introduction to Human Pathology
HCEP	503	Health Service Institutions and their Operations
HCEP	454	Systems and Computer Applications in Medicine
HCEP	455	Introduction to Biomedical Engineering Technology
APSC	550	Biomedical Measurements and Biomaterials
APSC	552	Clinical Engineering Seminar
APSC	554	Directed Studies in Clinical Engineering

plus at least 5 units of approved graduate level Engineering courses

New courses

APSC 550 (1½)	Biomedical Measurements and Biomaterials
APSC 552 (1)	Clinical Engineering Seminar
APSC 554 (3)	Directed Studies in Clinical Engineering

FACULTY OF COMMERCE AND BUSINESS ADMINISTRATION

Curriculum changes: Pre-Commerce - Students who apply to enter the Faculty of Commerce and Business Administration must have completed 15 units, including English 100, 3 units chosen from Mathematics 100, 101, 111 and 130, and Economics 100. Credit will not be granted for both Mathematics 105 and Commerce 211. Students should note the English composition requirement of the Faculty. Electives may not be taken from courses in Commerce and Business Administration.

APPENDIX 'B'

FACULTY OF COMMERCE AND BUSINESS ADMINISTRATION

Curriculum changes: (continued)

First Year Commerce - The first year program will consist of Commerce 110, 111, 120, 151, 153, Economics 301 and 302, Computer Science 101; and 3 units of electives chosen from any Faculty other than Commerce. A student who has completed Mathematics 101 is exempt from Commerce 111 and will substitute an additional 1½ units of electives.

FACULTY OF SCIENCE

Computer Science

Change CPSC 220 - change in prerequisites

Geophysics and Astronomy

New Program

Combined Honours Geophysics and Another Subject

First Year		Second Year	
Mathematics 100 and 101	(3)	Computer Science 101	(1½)
Physics 120, 115 or 110	(3)	Mathematics 200, 220, 221, 315	(6)
Chemistry 120 or 110	(3)	Physics 201, 205, 209	(4)
English 100	(3)	Arts Elective	(3)
Elective*	(3)	Elective*	(3)
	(15)		(17½)

Third Year		Fourth Year	
Mathematics 316 and 300	(4½)	Mathematics 400	(3)
Physics 303 and 309	(3)	Electives*	(14)
Arts Elective	(3)		(17)
Electives*	(6)		
	(16½)		

*Electives must be approved by the Honours advisers of the two departments concerned. They must be chosen to satisfy the general regulations of the Faculty of Science and must include at least 4½ units of Geological Sciences and 7½ units of Geophysics.

Changes in Programs

Major Astronomy

Change fourth year to:

Astronomy 401, 402	(3)
Astronomy 421, 431	(2)
Physics 412, 413, 414	(4½)
Elective	(5½)

APPENDIX 'B'

FACULTY OF SCIENCE

Geophysics and Astronomy

Changes in Programs (continued)

Combined Honours Geology and Geophysics

Change the program to read:

First Year		Second Year	
Geology 125 +	(1½)	Geology 210/216	(4½)
Geophysics 120 +	(1½)	Mathematics 200/201/221	(4½)
Chemistry 110 or 120	(3)	Physics 213, 215	(4)
Physics 110 or 115 or 120	(3)	Computer Science 101	(1½)
Mathematics 100/101	(3)	Arts Elective	(3)
English 100	(3)		(17½)
	(15)		

Third Year		Fourth Year	
Geology 305/320	(4½)	Geology 314	(1½)
Geophysics 320, 322	(3)	Geology 415 or 425	(1½)
Mathematics 315/316	(3)	Geophysics 420/421	(3)
Physics 311/319	(3)	Electives*	(8)
Electives*	(3)	Arts Elective	(3)
	(16½)		(17)

+ Geology 105 (3) may be substituted. Special arrangements may be made for students unable to complete this requirement in first year.

* Electives must include at least 3 units selected from Geophysics 422, 423, 424, 427, which are offered alternate years only, and Geophysics 425. In addition, Geophysics 449 (2) or Geology 449 (3) must be included in Fourth Year.

Physics

New courses	PHYS 414 (1½)	Radioactivity/Nuclear Physics
	PHYS 415 (1)	Introductory Solid State Physics
	PHYS 416 (1)	Plasma Physics
Changes	PHYS 411, 413 - changes in units and hours	
	PHYS 412 - change in title, description, units and hours	

Change in Program

Physics Major

Change the Physics electives courses listed under Third and Fourth Years to read:

"At least 8 units of Physics courses from Physics 314 (2), 326 (3), 411 (1½), 412 (1½), 413 (1½), 414 (1½), 415 (1), 416 (1), 419 (1-3), 421 (1)"

APPENDIX 'B'

FACULTY OF SCIENCE (continued)

Psychology

Change to Credit in the Faculty of Science

Psychology 413 (3) Research in Sensation and Perception (if 220 taken previously)

Psychology 416 (3) Research Methods in Conditioning and Learning (if 220 taken previously)

Change in Description - PSYC 413 and 416:

Add to the course description of both 413 and 416, "Students who have credit for Psychology 220 obtain Science unit credit for completing this course".

Zoology

Changes Zoology 203 and 205 - change in hours

FACULTY OF GRADUATE STUDIES

Theatre

M.A. and M.F.A. with a concentration in Film/Television Studies

Students will be considered for acceptance into the graduate program from any recognized undergraduate degree program in film and/or television studies or, in the case of students with a degree in areas other than film/television studies, with an equivalent background in film and television history, film and television criticism, aesthetics, and in all aspects of production (writing, directing, cinematography, editing, and production management). Competencies in these fields will be determined either by means of evaluation of transcripts or other evidence of experience, or by diagnostic examination, or both. Deficiencies in any areas must be remedied before the student can be advanced to full graduate standing. Students may elect to concentrate in one of two streams: the M.A. in history/theory/criticism; or the M.F.A. in production.

Normal residence in the program will be two years. Students of history/criticism/theory will be encouraged to acquire a language competency beyond English and French. Each course of study will be designed by the advising faculty specifically to meet the needs and interests of the individual student. Typical patterns follow:

M.F.A. IN PRODUCTION

First Year		Second Year	
Theatre 533	(3)	Thesis	(3/6/9)
Grad. seminar in film/tele.	(3)	Grad. seminar in film/tele.	(3)*
Course in film/television 400 or above	(3)	OR Elective, 400 or above	(3)*
OR course outside Department 300 or above	(3)	Comprehensive Examination	
Theatre 535	(1)		

*One or more of these courses may be excluded, depending upon unit value assigned to the thesis.

APPENDIX 'B'

FACULTY OF GRADUATE STUDIES

Theatre

M.A. and M.F.A. with a concentration in Film/Television Studies (continued)

M.A. in HISTORY/CRITICISM/THEORY

First Year		Second Year	
Grad. seminar in film/tele.	(3)	Thesis	(3/6/9)
Course in film/television 400 or above	(3)	Grad. Seminar in film/tele.	(3)*
Course outside Department 300 or above	(3)	OR Elective, 400 or above	(3)*
Theatre 535	(1)	Comprehensive Examination	

*One or both of these courses may be excluded, depending upon unit value assigned to the thesis.

- Minimum requirements for all students include: Theatre 535; two other courses in Film/Television at the 500 level; the thesis; and the comprehensive examination.
- The comprehensive examination will be administered at the end of the student's second year of study. The comprehensive will be oral, or written, or a combination of oral and written.
- All students will be required to take Theatre 535, Colloquium in Film/Television, during their first year of study as a classified graduate student.
- The nature of the thesis will depend upon the area of specialization. It may consist of written work, in the case of history/criticism/theory students, or written or production work, in the case of production students.

New courses	THTR 531 (3)	Seminar: Styles in Film/Television
	THTR 532 (3)	Seminar: Study of Major Film/Television Artists
	THTR 533 (3)	Advanced Problems in Film/Television Production
	THTR 534 (3)	Seminar in Film and Television Studies
	THTR 535 (1)	Colloquium in Film/Television
Changes	THTR 547 - change in title	
	THTR 549 - change in unit value, now (3/6/9)	