S.94-2

SIMON FRASER UNIVERSITY

MEMORANDUM

To:	Senate	**From:**	J.M. Munro, Chair Senate Committee on Academic Planning
Subject:	Curriculum Revisions Faculty of Applied Sciences	**Date:**	December 10, 1993

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

Motion:

"that Senate approve and recommend approval to the Board of Governors the curriculum revisions for the Faculty of Applied Sciences as set forth in S.94 - 2 as follows:

S.94 - 2a Department of Communication
S.94 - 2b School of Kinesiology"

S.94-2a

Department of Communication

SCUS Reference: SCUS 93 - 33
SCAP Reference: SCAP 93 - 45

i) Changes to Calendar entry for fields of study
ii) Revised graduation requirements
iii) Course renumbering
iv) New general courses:

CMNS 386 - 3	Special Topics
CMNS 483 - 5	Directed Study
CMNS 408 - 4	Communication Network Project Group
CMNS 428 - 4	Media Analysis Project Group
CMNS 438 - 4	International Communication Project Group
CMNS 458 - 4	Information Technology Project Group
CMNS 478 - 4	Publishing Project Group

v) New courses:

CMNS 456 - 4	Communication to Mitigate Disasters
CMNS 473 - 4	Publication Design and Print Production
CMNS 426 - 4	Workshop in Communication Design for Non-Broadcast Video
CMNS 345 - 3	Communication and Development

For Information:
Acting under delegated authority of Senate, SCUS has approved the following revisions as detailed in SCUS 93 - 33:

Revised course descriptions and prerequisites for:
CMNS 235-3, 261-3, 454-4, 370, 471, 472, 301, 362, 363, 446

FAS-UCC 93-5

UNDERGRADUATE CURRICULUM REVISIONS

DEPARTMENT OF COMMUNICATION

SEPTEMBER 1993

Introduction

The Department of Communication has undergone many changes over the past few years, including the addition of new faculty and communication technology, and yet, apart from a few isolated instances, its undergraduate curriculum has largely remained intact. Although we do not feel that this is the appropriate moment for large-scale expansion, various inadequacies and problems with course offerings and graduation requirements are in need of clarification, revision and updating.

The proposed revisions fall into these categories:

1) Calendar entry: **Department's fields of study**
2) Revised graduation requirements for the Major, with corresponding changes in the Minors.
3) Course renumbering.
4) Revised course descriptions and prerequisites.
5) Additional general course numbers.
6) New courses proposed by faculty.

I. Calendar entry: **Department's fields of study**

Until now, the Department has presented its curriculum under three topic headings: Media, Technology and Science, Policy. These are referred to in the Calendar entry for Graduation Requirements as "areas of concentrations" and in departmental oral culture as "the three streams". All courses have been, somewhat arbitrarily, listed in only one of these areas. The purpose of the divisions was, first of all, to help students make sense of the program, and secondly, by requiring at least one course from each "stream", to ensure some degree of breadth in their programs.

However, our experience with this model over the years has encountered several problems. Faculty increasingly chafe at having their courses listed in one area when they are fully aware of connections and implications across areas. More seriously, certain courses end up being oversubscribed by students whose main interest seems to be in getting their "area requirement" filled.

The solution is relatively simple:

1) To retain the value of alerting students to the Department's various and overlapping themes, an alphabetical list of **"fields of study" will be listed in which** courses may appear more than once where appropriate.

2) All references in Graduation Requirements to taking courses from each of the Department's (three) areas will be dropped.

The calendar entry, with prefactory paragraph, would now read:

The Department of Communication is interdisciplinary in its approach. It offers a concentrated program of study in a variety of areas. Course progressions in each of the topic fields are listed below for the guidance of students, but students are encouraged to take courses from more than one field of study in Communication.

Fields of Study:

Acoustic and electroacoustic communication (258, 259, 358, 359)
Advertising and social marketing (130, 215, 315)
Applied communication research (260, 261, 301, 362, 363)
Communication policy in media & information technology (130, 230, 333, 334, 335, 433, 448)
History and theory of communication (110, 210, 304, 310, 422)
International communication & development (130, 346, 444, 446)
Interpersonal & intercultural communication (225, 325)
Journalism & news media analysis (110, 130, 235, 335, 341)
Mass media/popular culture (110, 130, 220, 221, 320, 321, 421, 422)
Network analysis (201, 301, 401)
Political communication (130, 322, 341)
Political economy of communication (130, 240, 444)
Publishing (335, 370, 371, 372, 375, 471, 472)
Technology, science & public policy (130, 253, 342, 353, 442, 453, 454)

Note that, for clarity, the proposed renumbering of certain courses (section III) has not been included in this list.

The Dept. also wishes to include the faculty research areas and general introduction to the Dept. as found in the Graduate section. The complete text of this revised entry, including the above (with renumbering) is found in Appendix II.

II. Revised Graduation Requirements

The following changes to the Graduation Requirements for the Major need to be made, followed by a brief rationale. A few corresponding changes to the Minors are also required.

1. Drop reference to taking courses from each field of study.
2. CMNS260 added to methods courses; requirement now being at least one 200 level course, and at least one 300 level course.
3. Entry to 400 level dependent on completion of methods course requirements (& minimum 90 hours).
4. Outside course requirement increased from 52 to 60 hours.
5. Drop requirement of Issues Seminar at 400 level.
6. One required Science course must be from Applied Sciences.
7. Add other departments & programs to list (General Studies to Arts section; Women's Studies, Canadian Studies, & Education to Social Sciences section; add Engineering Science to Science section).
8. Directed Study and Field Placement not included in courses to satisfy upper level requirement.

Rationale:

1. As described in section I.
2. CMNS260 (Intro to Empirical Communication Research Methods) is now being regularly taught and should be included in the list of available courses in applied communication research. Further, because of a perceived lack of student expertise in this

area, the requirement will be increased to two courses from the given list. Conceptually, the 200 level courses in this area are intended to be general and introductory, and the 300 level courses to be thematic because they deal with specific research areas such as networks, evaluation methods and audiences. The 300 level courses will have a 200 level prerequisite in order to ensure a level of competence in basic research methodology.

3. Students may now take courses at the 400 level without having completed an applied research methods course, thereby limiting their ability to carry out projects appropriate to this level. The proposed wording of the requirement will alleviate this problem, but by including the word "normally", special cases may be dealt with individually.

4. The Department considers the "breadth" requirement to be of great importance for our students, and is one of the few departments which specifies a minimum spread of such courses across the humanities, social sciences, and sciences. Although not all departments express the "outside" requirement in this manner, 60 hours is not atypical.

5. The requirement of the Issues Seminar has resulted in such courses becoming over-subscribed and students often have difficulty in graduating if they cannot get such a course in a timely manner. Given the range of courses that are available at the 400 level, it seems unnecessary to continue this requirement.

6. In order to promote increased awareness of other programs within the Faculty, at least one of the two "science" requirements should come from those programs in Applied Sciences.

7. Some newer departments and programs need to be added to the listings to keep them current and complete.

8. Students are sometimes using the Directed Study option in place of upper level seminar courses, thereby requiring more faculty time. The Department believes that, while Directed Study is important, it should follow upper level coursework and not replace it. Note that the change does not affect the student's ability to take Directed Study courses, only that they do not count as part of the 7 required upper level courses. The current requirements are silent as to the Field Placement course, and this should be made explicit for the same reasons as Directed Study.

The calendar entry of Graduation Requirements for the Major will now read, including additions in **bold**, deletions bracketed [], as follows:

- completion of CMNS 110-3 and CMNS 130-3

- completion of four additional lower level courses in Communication (for a total of 18 lower level credit hours in Communication). [At least one course must be chosen from each of the department's areas of concentration.]

- completion of a course in basic science or social science methods (a list of approved course offerings is available from the Department of Communication). [This course should normally be taken prior to CMNS 261-3, CMNS 301-4, CMNS 362-4 or CMNS 363-4.]

- completion of **two courses in applied communication research, including** one of **CMNS 260-3 or** 261-3, **and one of** CMNS 301-4, 362-4, or 363-4.

- completion of 7 upper level (4 credit) courses in Communication. At least two of these shall be regularly scheduled 400 level offerings. [of which at least one shall be an advanced level "issues" seminar in the Department of Communication.] Normally upper level courses should not be taken unless lower level course work has been completed, **and normally 90 credit hours and the courses required in applied communication research must be taken prior to the 400 level courses**.

[No more than four credits may be taken in directed study] **Directed Study and Field Placement courses may not be taken** to meet the above mentioned requirement of 7 upper level courses for a major in Communication.

- including these requirements, a major requires a minimum of 28 upper level credit hours in Communication out of a total of 45 hours for the degree.

- to meet the requirements for a degree in Communication, at least [52] **60** credit hours must be chosen from disciplines other than Communication.

- Students must include a minimum of:
  - 12 semester hours chosen from Contemporary Arts, English, French, General Studies, History, Latin American Studies, Linguistics, Philosophy, or Spanish.
  - 2 courses chosen from Biochemistry, Biological Sciences, Chemistry, Computing Science, **Engineering Science, Environmental Science,** Kinesiology, Mathematics, Physics, **one of which will be from the Faculty of Applied Sciences.**
  - One upper level course (plus lower level prerequisites) chosen from Archaeology, Business Administration, **Canadian Studies**, Criminology, Economics, **Education**, Geography, Political Science, Psychology, Sociology and Anthropology, **Women's Studies.**

Communication Minor Program

- completion of CMNS 110-3 and CMNS 130-3.

- completion of 4 upper level courses in Communication. [At least one course must be chosen from each of the department's areas of concentration. Normally, no more than one of these upper level Communication courses may be any of directed study, field placement or special topics may be taken] **Directed Study and Field Placement courses may not be taken** for credit towards the course requirements for a minor in Communication.

Communication Extended Minor Program

Admission Requirements

- completion, with a grade of C- or higher, of CMNS 110, 130 and four courses at the 200 level [, including at least one course from each of the department's areas of concentration (Media, Technology and Science, Policy)]. In addition, a minimum CGPA or transfer GPA of 2.25 is a prerequisite for acceptance to this program.

Graduation Requirements

- completion of the above-mentioned six courses, totalling 18 lower level credit hours.

- completion of a course in basic science or social science methods [CMNS 260 or one of the course offerings in other departments, as approved by the Department of Communication.] **(a list of approved course offerings is available from the Department of Communication).** [This course should be taken prior to CMNS 261-3, CMNS 301-4, CMNS 362-4 or CMNS 363-4.]

- completion of two courses in applied communication research, including one of **CMNS 260-3 or** 261-3, **and one of** CMNS 301-4, 362-4, or 363-4.

- completion of at least 4 upper level courses in Communication. [Normally, no more than one of these upper level Communication courses may be any of directed study, field placement or special topics] **Directed Study and Field Placement courses may not be taken** for credit towards the course requirements for an extended minor in Communication

III. Course Renumbering

The Department has traditionally used the middle digit of its course numbers as a means to indicate relationships between courses (see Appendix I). However, over the years, several inconsistencies have arisen in this scheme which it would be desirable to correct.

1) The advertising courses (215, 315) more properly belong in the -2- group which deal with media. Therefore we propose they be renumbered 223, 323 respectively.
2) The interpersonal courses (225, 325) more properly belong in the -0- group which deal with communication networks and processes. Therefore we propose they be renumbered 205, 305 respectively.
3) Political Communication (341) and Telecommunication Regulation (448) more properly belong with other media policy courses. Therefore we propose they be renumbered 331, 436 respectively.
4) The Department groups its "service" courses in the -8- group. Therefore, there is a gross anomaly in Field Placement (439) and Selected Topic (250). These should become 489 and 286 respectively (note that the 400 level Special Topic course is 486 and we are proposing a 386 version later in this document).

Note: For each of these courses, the following sentence will need to be added:

Students with credit for CMNS xxx may not take this course for further credit.

IV. Revised course descriptions and prerequisites

1) CMNS 235-3 Revised calendar description with minor edits to reflect current course themes.
2) CMNS 261-3 Revised calendar description to drop "policy" focus in keeping with the revised role of this course as an introduction to applied communication research (see section II). However, CMNS 333 should have 261 as a prerequisite.
3) CMNS 454-4 Prerequisites being dropped to "strongly recommended" status. In practice, the Instructor has found that too many permissions are required.
4) Publishing courses prerequisites to be changed to reflect current course content:

Course	Proposed Prerequisite	Former Prerequisite
370	372	371
471	371 & 372	371
472	372	371 & 372

5) CMNS 301, 362 and 363 require prerequisites at 200 level (i.e. one of CMNS 260, 261) to indicate the sequential nature of these courses.
6) CMNS 446 should have the newly proposed course (345, see Section VI) as a prerequisite, since 345 is being introduced as an introduction to this area.

V. New general course numbers

The Department has a number of courses which are available to all faculty to use for specific types of teaching, such as Special Topics, Directed Study, and Field Placement. In order to fill some gaps in the range of such courses that are available, the following additional course numbers are being proposed:

1) A 300-level Special Topic course, CMNS 386-3.
2) A 5-credit Directed Study CMNS 483-5.
3) A set of 4-credit project-oriented courses at the 400 level in several areas of the Department where applied work is regularly undertaken.

Rationale:

In general, all of the proposed courses have in common that they have no specific or fixed curriculum, and that they put no extra burden on faculty or other resources. In fact, in some cases we expect a modest alleviation of workload to result from the availability of these numbers. However, the main reason for their introduction is that they will facilitate particular types of learning experiences.

1) The limited number (2) of current Special Topic courses (CMNS 250, to be renumbered 286, and CMNS 486) has proved limiting, for instance where two such upper level courses are proposed in the same semester, or where a faculty member prefers the topic to be conducted at a 300 level. Therefore we propose CMNS 386-3 to fill this gap.

2) All regularly scheduled 400-level courses were standardized to 4 credits some years ago. Although Directed Study courses now exist for 2, 3 and 4 credits, larger scale projects have no course number to use. Occasionally, projects have been divided into simultaneous 2 and 3 credit Directed Studies, which is clearly awkward. No course exists between the 4-credit Directed Study and the 15-credit Individual Study Semester. Students are often left in an awkward position of having to fulfil 45 credits when they have 11 four-credit courses and there is no 1-credit course to take. A 5-credit D.S. would nicely fill this gap.

Further, as seen in section II, Directed Study will no longer be eligible to count as one of the required 400-level courses. This will probably reduce the number of such courses being requested of faculty. As a result, we expect that faculty can judiciously advise students as to the number of credits appropriate to the project being proposed; we will propose to faculty that 4 credits be considered the norm, and that the 5-credit option only be undertaken when clearly justifiable.

3) Occasionally a number of students arrive at the 400 level simultaneously who share a common interest in applied communication research in a specific area and who wish to study with a specific faculty member or members. These instructors are faced with the choice of either creating a Special Topic course, even though only one such number exists at the 400 level, or enrolling all of the students individually in Directed Study. The latter option, which is the most common choice, puts an extra workload on the Department in managing individual enrolments.

In some instances, resourceful faculty have arranged a weekly group meeting with these students and discovered that an exciting synergy emerges as students report on their progress with the project and receive feedback not only from the faculty but also from other students who critique and comment. The other students also learn by mentally working through the concepts and details of many research projects, not just their own. Moreover, they can share in the results of the research in a manner that is otherwise difficult to achieve.

Therefore, we propose course numbers in several areas which are involved in applied research, as identified by the middle digit of the course numbering (see Appendix I):

408-4 Communication Network Project Group
428-4 Media Analysis Project Group
438-4 Communication Policy Project Group
448-4 International Communication Project Group
458-4 Information Technology Project Group
478-4 Publishing Project Group

Minimum enrolment in these courses will be 3, and one or more faculty will arrange a weekly meeting with the students involved.

VI. New courses proposed by faculty

As a result of ongoing program and research developments on the part of faculty, the following new courses are being proposed by faculty as indicated in brackets:

1) CMNS 456-4 Communication to Mitigate Disasters (P. Anderson)
2) CMNS 473-4 Publication Design and Print Production (R. Lorimer)
3) CMNS 426-4 Workshop in Communication Design for Non-Broadcast Video (S. Kline)
4) CMNS 345-3 Communication and Development (P. Howard, R. Anderson)

Rationale:

1) Traditionally, we have invited new faculty members, such as Peter Anderson, to develop and propose one new course that reflects their specific research interests. This tradition has resulted in a set of unique courses at the upper level which can capitalize on faculty members' specific areas of expertise and offer a valuable learning experience, particularly for our majors. Participation in such courses often leads to further research work with the faculty member and even graduate study on occasions. The proposed course is a classic example of this tradition, as initiated by a new faculty member in one of his specific areas of expertise, one in which he is rapidly being recognized internationally. The course has already been successfully taught once as an issues seminar (433).

2) A number of courses have been developed by Prof. Rowly Lorimer as part of the Publishing Minor. In this case, the course has been offered twice under a Special Topic rubric and has proved to be very successful. All of the resources needed for it are already in place and since it has been offered already, the Department thinks that it is appropriate to move the course into a regular number. Again, it capitalizes on the expertise and technology available within the Department and is a good example of applied communication. As well, this course completes the program for the Publishing Minor.

3) Prof. Steve Kline has offered this workshop twice previously as a Special Topic and Issues Seminar; he now wishes to move it into a regular format because of the success it has had. The course represents the upper level work that logically follows from the students' progression through the courses in advertising (215, 315) and television (220). It will operate as a small group lab using the existing resources of the Media Analysis Lab which regularly supports graduate and outside research projects. The proposed course, which will be "limited entry" in nature, will allow particularly talented undergraduates to participate more intensively in non-broadcast video applications. The course also reflects a current direction for the Department which is to enhance its applied component which in this case links student work on campus to community and non-profit organizations.

4) CMNS 345, Communication & Development, is another case of a course being proposed by a new faculty member, Prof. Pat Howard, who has specific expertise in this field. The course will also fill a much needed gap as a prerequisite to CMNS 446 (Communication of Science and the Transfer of Technology) for which students need more preparation. No additional resources are required to mount this course, part of which will be based on the introductory material from 446.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Communication

Abbreviation Code: CMNS (New) Course No: 386 Credit Hours: 3 Vector: 0-3-0

Title of Course: Special Topics in Communication

Calendar Description of Course:

Intensive analysis of a particular topic in the general area of communication.

Nature of Course: Seminar

Prerequisites (or special instructions): Prerequisites depend on topic and are published before registration.

What course(s), if any, is being dropped from the calendar if this course is approved:

2. Scheduling

How frequently will the course be offered? As needed

Semester in which the course will first be offered? after 94-3.

Which of your present faculty would be available to make the proposed offering possible?

All Faculty

3. Objectives of the Course (rationale)

The course allows faculty to develop and try out a new course either on a one-time basis, or with the view to introducing it as a regular course later.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty: no additional resources of any kind required.

Staff:

Library:

Audio Visual:

Space:

Equipment:

5. Approval

Date: Sept. 29/93

Department Chair

Oct 18, 1993

Dean

Chairman, SCUS

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

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

Department: Communication

1. **Calendar Information**

Abbreviation code: CMNS Course No.: 483 Credit hours: 5 Vector: 0-0-5

Title of course: Directed Study.

Calendar description of course: Independent reading and research on topics selected in consultation with the supervising instructor.

Nature of course: Individual study.

Prerequisites (or special instructions): two upper division CMNS courses and consent of instructor. No more than 10 hours of directed study may be taken.

What course(s), if any, is being dropped from the calendar if this course is approved? None.

2. **Scheduling**

How frequently will the course be offered? As needed.
Semester in which the course will first be offered: After 94-3.
Which of your present faculty would be available to make the proposed offering possible? All faculty.

3. **Objectives of the Course (rationale)**

The 5-credit version allows students and faculty flexibility to undertake larger projects for which extra credit is deserved.

4. **Budgetary and Space Requirements:**

What additional resources will be required in the following areas:

- Faculty:
- Staff:
- Library: No additional resources required.
- Audio Visual:
- Space:
- Equipment:

5. **Approval:**

Date: Sept. 28, 1993 Parveen Bawa _____

Robert D. Anderson Oct 18, 1993 _____

Dept. Chair Dean Chair, SCUS

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SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information — Department: Communication

Abbreviation Code: CMNS (New) Course No: 408 Credit Hours: 4 Vector: 0-0-4

Title of Course: Communication Network Project Group

Calendar Description of Course:

An advanced workshop in network analysis foccussed on applied researcl

Nature of Course: Laboratory

Prerequisites (or special instructions): two upper division CMNS courses and permission of the instructor

What course(s), if any, is being dropped from the calendar if this course is approved:

2. Scheduling

How frequently will the course be offered? As needed

Semester in which the course will first be offered? after 94-3

Which of your present faculty would be available to make the proposed offering possible? any faculty teaching in the area

3. Objectives of the Course (rationale)

The course will operate in the manner of Directed Study, focussed around applied projects, but will involve a group meeting with one or more faculty.

4. Budcetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty:

Staff: no additional resources required

Library:

Audio Visual:

Space:

Equipment:

5. Approval

Date: Sept. 29/93 — Parveen Bawa — _____

Department Chair (Assoc) — Dean Nov. 16, 1993 — Chairman, SCUS

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

11.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

Department: Communication

1. Calendar Information

Abbreviation code: CMNS Course No.: 428 Credit hours: 4 Vector: 0-0-4

Title of course: Media Analysis Project Group.

Calendar description of course: An advanced workshop in media analysis focussed on applied research.

Nature of course: Laboratory.

Prerequisites (or special instructions): two upper division CMNS courses and permission of instructor.

What course(s), if any, is being dropped from the calendar if this course is approved? None.

2. Scheduling

How frequently will the course be offered? As needed.
Semester in which the course will first be offered: After 94-3.
Which of your present faculty would be available to make the proposed offering possible? Any faculty teaching in the area.

3. Objectives of the Course (rationale)

The course will operate in the manner of Directed Study, focussed around applied projects, but will involve a group meeting with one or more faculty.

4. Budgetary and Space Requirements:

What additional resources will be required in the following areas:

- Faculty:
- Staff:
- Library: No additional resources required.
- Audio Visual:
- Space:
- Equipment:

5. Approval:

Date:	Sept 28, 1993	Nov 16, 1993	----------
	Robert D. Anderson	Pamela Zave	----------
	Dept. Chair	Dean	Chair, SCUS

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12.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information — Department: Communication

Abbreviation Code: CMNS (new) Course No: 438 Credit Hours: 4 Vector: 0-0-4

Title of Course: Communication Policy Project Group

Calendar Description of Course:

An advanced workshop in communication policy in media and information technology focussed on applied research.

Nature of Course: Laboratory

Prerequisites (or special instructions): two upper division CMNS courses and permission of the instructor.

What course(s), if any, is being dropped from the calendar if this course is approved:

2. Scheduling

How frequently will the course be offered? As needed

Semester in which the course will first be offered? after 94-3

Which of your present faculty would be available to make the proposed offering possible? any faculty teaching in the area

3. Objectives of the Course (rationale)

The course will operate in the manner of Directed Study, focussed around applied projects, but will involve a group meeting with one or more faculty.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty:

Staff: no additional resources required

Library:

Audio Visual:

Space:

Equipment:

5. Approval

Date: Sept. 29/93	Nov 16, 1993	
Department Chair (Assoc.)	Dean	Chairman, SCUS

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

13.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. Calendar Information — Department: Communication

Abbreviation Code: CMNS (new) Course No: 448 Credit Hours: 4 Vector: 0-0-4

Title of Course: International Communication Project Group

Calendar Description of Course:

An advanced workshop in international communication and development focussed on applied research.

Nature of Course: laboratory

Prerequisites (or special instructions): two upper division CMNS courses and permission of the instructor.

What course(s), if any, is being dropped from the calendar if this course is approved:

2. Scheduling

How frequently will the course be offered? as needed

Semester in which the course will first be offered? after 94-3

Which of your present faculty would be available to make the proposed offering possible? many faculty teaching in the area

3. Objectives of the Course (rationale)

The course will operate in the manner of Directed Study, focussed around applied projects, but will involve a group meeting with one or more faculty.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty: no additional resources required

Staff:

Library:

Audio Visual:

Space:

Equipment:

5. Approval

Date: Sept 29/93	Nov 16, 1993	
Department Chair (Assoc.)	Dean	Chairman, SCUS

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

14.

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SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

Department: Communication

1. Calendar Information

Abbreviation code: CMNS Course No.: 458 Credit hours: 4 Vector: 0-0-4

Title of course: Information Technology Project Group.

Calendar description of course: An advanced workshop in applied information technology and its evaluation focussed on applied research.

Nature of course: Laboratory.

Prerequisites (or special instructions): two upper division CMNS courses and permission of instructor.

What course(s), if any, is being dropped from the calendar if this course is approved? None.

2. Scheduling

How frequently will the course be offered? As needed.
Semester in which the course will first be offered: After 94-3.
Which of your present faculty would be available to make the proposed offering possible? Any faculty teaching in the area.

3. Objectives of the Course (rationale)

The course will operate in the manner of Directed Study, focussed around applied projects, but will involve a group meeting with one or more faculty.

4. Budgetary and Space Requirements:

What additional resources will be required in the following areas:

- Faculty:
- Staff:
- Library: No additional resources required.
- Audio Visual:
- Space:
- Equipment:

5. Approval:

Date: Sept 28, 1993 Nov 16, 1993 _____

Robert D. Anderson — Dept. Chair
Parveen Bawa — Dean
_____ — Chair, SCUS

15.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Communication

Abbreviation Code: CMNS Course No: 478 (new) Credit Hours: 4 Vector: 0-0-4

Title of Course: Publishing Project Group

Calendar Description of Course:

An advanced workshop in publishing analysis or design focussed on applied research.

Nature of Course: Laboratory

Prerequisites (or special instructions): two upper division CMNS courses and permission of the instructor

What course(s), if any, is being dropped from the calendar if this course is approved:

2. Scheduling

How frequently will the course be offered? as needed

Semester in which the course will first be offered? after 94-3

Which of your present faculty would be available to make the proposed offering possible? many faculty teaching in the area

3. Objectives of the Course (rationale)

The course will operate in the manner of Directed Study, focussed around applied projects, but will involve a group meeting with one or more faculty.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty:

no additional resources required

Staff:

Library:

Audio Visual:

Space:

Equipment:

5. Approval

Date: Sept. 27/93	Nov 16, 1993	
Department Chair (Assoc.)	Dean	Chairman, SCUS

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

16.

c:newcours 90/2/8

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. Calendar Information Department: **Communication**
Abbreviation Code: **CMNS** New Course No: **456** Credit Hours: **4** Vector: **0-3-1**
Title of Course: **Communication to Mitigate Disasters**
Calendar Description of Course: **An examination of the special role communication and information systems play in efforts to mitigate effects of major emergencies and disasters. Topics include: Canadian and international disaster management programs, practices and issues; principles of emergency communication planning and operation, and the application and influence of new communication and information technologies (including electronic networks) in hazard information gathering, interpretation, exchange and management.**
Nature of Course: **Seminar/Lab**
Prerequisites (or special instructions): **One of CMNS 230, 253 or 353 (Students who have taken CMNS 433 when taught as "Communication to Mitigate Disasters" may not take CMNS 456 for further credit.)**
What course(s), if any, is being dropped from the calendar if this course is approved: **None**

2. Scheduling
How frequently will the course be offered? **Once a year.**
Semester in which the course will first be offered? **Course is currently offered as CMNS 433. New course to be offered in 95-1.**
Which of your present faculty would be available to make the proposed offering possible? **Peter Anderson, Linda Harasim**

3. Objectives of the Course (rationale) **This course allows students to examine disaster management as a fundamental area of communication application. The course is intended to expose students, from a communication perspective, to the complexities of integrating academic, government, industry and community research and planning activities into programs designed to address risk associated with natural and socio-technological hazards. This course builds upon literature from all four areas, as well as upon research skills and knowledge of communication systems and processes developed by students in lower level communication courses.**
The course has been previously offered as CMNS 433 (Issues in Communication Policy). It is proposed that the course be regularized by placing it under a separate title and course number.

4. Budgetary and Space Requirements (for information only)
What additional resources will be required in the following areas:
Faculty: **None**
Staff: **None**
Library: **Minimal. A few additional books. Much of the literature is readily available.**
Audio Visual: **All basic equipment available through IMC. Seminar room must have computer network and telephone connections.**
Space: **None**
Equipment: **Access to the campus computer network will be required for completion of one course assignment. Packet and portable radio equipment for demonstration purposes.**

5. Approval

Date: Sept. 29/93	Nov 16, 1993	
Department Chair (Assoc.)	Dean	Chair, SCUS

17.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. Calendar Information Department: **Communication**

Abbreviation Code: **CMNS** New Course No: **473** Credit Hours: **4** Vector: **2-0-2**

Title of Course: **Publication Design and Print Production**

Calendar Description of Course: **An examination of theory, principles and applications in publication design and print production including computer applications. The course focuses on magazines, books and electronic formats. Creative, marketing and managerial issues will all be explored.**

Nature of Course: **Lecture, Lab**

Prerequisites (or special instructions): **CMNS 372 plus 60 hours**

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

2. Scheduling
How frequently will the course be offered? **Once a year.**
Semester in which the course will first be offered? **94-3**
Which of your present faculty would be available to make the proposed offering possible? **Lorimer, sessionals**

3. Objectives of the Course (rationale) **Design and production constitute a main element of publishing. This course completes the offerings necessary for the Publishing Minor.**

4. Budgetary and Space Requirements (for information only)
What additional resources will be required in the following areas:
Faculty:
Staff:
Library: **The collection to be assembled for the Masters in Publishing will serve this course.**
Audio Visual:
Space:
Equipment:

5. Approval

Date: Sept. 29/93	Oct 18, 1993.	
Department Chair (Assoc.)	Dean	Chair, SCUS

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. Calendar Information Department: **Communication**

Abbreviation Code: **CMNS** New Course No: **426** Credit Hours: **4** Vector: **0-0-4**

Title of Course: **Communication Design for non-Broadcast Video**

Calendar Description of Course: **The workshop examines the growing role that video is playing in a variety of public relations, industrial, advocacy and educational contexts. The emphasis of this course is on issues of communication design in relation to the goals and values in specific communication forums.**

Nature of Course: **Workshop/Lab**

Prerequisites (or special instructions): **220, 221 plus two of 315, 320, 363**

What course(s), if any, is being dropped from the calendar if this course is approved:

2. Scheduling
How frequently will the course be offered? **Once a year.**
Semester in which the course will first be offered? **Fall of 1994**
Which of your present faculty would be available to make the proposed offering possible? **Steve Kline, Martin Laba**

3. Objectives of the Course (rationale) **The course is to strengthen the applied communication stream in the media area by emphasis on the application of communication theory and analysis in real communication contexts. Students will acquire essential skills for organizing productions, editing and evaluating their videos.**

4. Budgetary and Space Requirements (for information only)
What additional resources will be required in the following areas:
Faculty:
Staff:
Library:
Audio Visual: Existing media lab facilities are sufficient.
Space:
Equipment:

5. Approval

Date: Sept. 29/93	Nov. 16, 1993	
Department Chair (Assoc.)	Dean	Chair, SCUS

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. Calendar Information Department: **Communication**

Abbreviation Code: **CMNS** New Course No: **345** Credit Hours: **4** Vector: **2-2-0**

Title of Course: **Communication and Development**

Calendar Description of Course: **An introduction to explanations and interpretations of the roles of communication in development, and the historical framework through which such analysis is made. It shows how an unequal structure of world political-economy is conserved in association with ever-increasing amounts of information and new means to communicate. Examples from Canada and other countries will be used.**

Nature of Course: **Lecture/Tutorial**

Prerequisites (or special instructions): **CMNS 110 or 130 and completion of 60 credit hours.**

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

2. Scheduling
How frequently will the course be offered? **Annually**
Semester in which the course will first be offered? **1995-1**
Which of your present faculty would be available to make the proposed offering possible? **Patricia Howard, Robert Anderson**

3. Objectives of the Course (rationale) **Undergraduate students have been offered only one 400-level course (446) on the relationship of communication and development. That course lacks an appropriate introduction and is therefore too heavily burdened.**

4. Budgetary and Space Requirements (for information only)
What additional resources will be required in the following areas:
Faculty: **None**
Staff: **None**
Library: **Already sufficient**
Audio Visual: **Already sufficient**
Space: **None**
Equipment: **None.**

5. Approval

Date: Sept. 29/93	Oct. 18, 1993	
Department Chair (Assoc.)	Dean	Chair, SCUS

20.

APPENDIX I: Present Course Numbering & Proposed Changes in [] at right

-0-

201 Intro to Human Cmn Networks
301 Cmn Network Research Methods
303 Cmn as a Biological & Social Process
304 Cmn and the Language of Everyday Life
401 Cmn Network Research

-1-

110 Intro to Cmn Studies
210 History of Cmn
215 Advertising as Social Cmn **[223]**
310 Cmn Thought in the Evolution of the Soc. Sciences
315 Cultural Dimension of Advertising **[323]**

-2-

220 Understanding Television
221 Media and Audiences
225 Intro to Interpersonal Cmn **[205]**
320 Children, Media and Culture
321 Cultural Production of Popular Music
322 Cmn in Conflict and Intervention
325 Interpersonal Cmn in a Technological Env't **[305]**
421 Issues Seminar
422 Media and Ideology

-3-

130 Explorations in Mass Cmn
230 Intro to Cmn Media
235 Intro to Journalism in Canada
333 Broadcasting Regulation and Policy in Canada
334 Cultural Policy
335 Newspaper Industry & Press Policy in Canada
433 Issues in Cmn Policy
439 Field Placement **[489]**

-4-

240 The Political Economy of Cmn
341 Political Communication **[331]**
342 Science & Public Policy I: Risk Cmn
346 International Cmn
442 Science and Public Policy II: Standards
444 Political Economy of International Cmn
446 The Cmn of Science and the Transfer of Tech
448 Telecom Regulation in N.America **[436]**

-5-

250 Selected Topic **[286]**
253 Intro to Information Tech: The New Media
258 Intro to Electroacoustic Cmn
259 Acoustic Dimensions of Cmn I
353 Social Contexts of Information Tech
358 Sound Tape Recording: Theory & Uses
359 Acoustic Dimensions of Cmn II
453 Issues in the Information Society
454 Computer Mediated Work and Workplace Cmn

-6-

260 Intro to Empirical Methods for Cmn Research
261 Documentary Research in Cmn
362 Evaluation Methods for Applied Cmn Research
363 Approaches to Media and Audience Research

-7-

370 The Business of Publishing
371 The Structure of the Book Publishing Industry in Canada
372 The Publishing Process
375 Magazine Publishing
471 Selected Topics in Publishing
472 Books, Markets and Readers

-8-

480 Directed Study
481 Directed Study
482 Directed Study
486 Special Topics in Cmn

-9-

395 Cmn Practicum I (Co-op)
396 Cmn Practicum II
494 Cmn Practicum III
495 Cmn Practicum IV
496 Cmn Practicum V
497 Honors Seminar
498 Individual Study Semester (Hon)
499 Individual Study Semester

APPENDIX II. PROPOSED CALENDAR ENTRY (not updated for personnel)

Department of Communication
Location: 6135 Classroom Complex
Telephone: 291-3687
Chair: R.S. Anderson BA (Br Col), MA, PhD (Chic)

Professor Emeritus
T.J. Mallinson BA (Br Col), MA (Columbia U), PhD (Tor)

Professors
R.S. Anderson BA (Br Col), MA, PhD (Chic)
R.S. Gruneau BA (Guelph), MA (Calg), PhD (Mass)
P. Heyer BA (Sir G Wms), MA (New Sch Soc Res), MPhil, PhD (Rutgers)
S. Kline BA (Tor), PhD (Lond)
W. Leiss BA (F Dickinson), MA (Brandeis), PhD (Calif), Vice-President Research
R.M. Lorimer BA, MA (Manit), PhD (Tor), Director of Canadian Centre for Studies in Publishing
B.D. Truax BSc (Qu), M Mus (Br Col)
J.W. Walls BA, MA, PhD (Indiana), Director of David Lam Centre for International Communication
A. Wilden PhD (Johns H)

Associate Professors
P. Guild BA (Wat), MA (Carl), PhD (Oxf)
R.A. Hackett BA (S Fraser), MA, PhD (Qu)
L.M. Harasim BA, MA (Alta), PhD (Tor)
M.P. Hindley BA (Leeds), MS (New Mexico Highlands)
M. Laba BA (York), MA, PhD (Nfld)
C.A. Murray BA, MA (Wat), PhD (Qu), Director of Centre for Policy Research on Science and Technology
W.D. Richards, Jr. BA (Mich State), MA, PhD (Stan)

Assistant Professors
P.S. Anderson BGS, MA (S Fraser)
A.C.M. Beale BA, MA, PhD (McG)
P.M. Howard BA, MA (Regina), PhD (S Fraser)
R.W. Howard BA (Upsala), MA (Mich), PhD (Br Col)

Lecturer
D. Gutstein BArch, MArch (Br Col)

Advisors: L. Menkveld
6137 Classroom Complex
291-3520

P. Heyer
2610 Harbour Centre/6150 Classroom Complex
291-5204/3859

The department appoints a student peer advisor each Fall and Spring semester to consult with students about their programs. As well, faculty members on the department's Undergraduate Curriculum Committee are available for student consultations.

Faculty and Areas of Research

The study of communication has recently emerged as an identified academic discipline. At the same time, a number of the traditional disciplines in the social sciences, the humanities, and the natural sciences employ communicational approaches in various areas. Communicational perspectives are also becoming prominent in the professions, notably in law, medicine, counselling, business, labor, education, trade, diplomacy, advertising, broadcasting, etc. As a social science, communication is distinctively trans-disciplinary.

The department has drawn on a number of perspectives, but is most readily distinguished by the fact that it treats communication as a humanistic social science, and is concerned with the contexts within which information in all its diverse forms is created, coded, communicated, and controlled. This approach is designed to provide students with wide opportunities to explore both communication theory and communication practice, as well as the relationship between the two. It encourages the concrete application of theory and research to modern society its historical origins, its dominant values, its institutions and policies, its present structure, its current problems and its potential for change.

P.S. Anderson	Telecommunication and broadcasting policy; communication technology; communication to mitigate disasters/emergency communications
R.S. Anderson	International development; communication in conflict and intervention; community economic development
A.C.M. Beale	Communication theory and technology issues; film and video; cultural policy; feminist analyses
R.S. Gruneau	Popular culture and media, communications and cultural theory
R.A. Hackett	Political communication; journalism and media studies, news discourse on war, peace and social movements

L.M. Harasim	Computer mediated communication and collaboration; new media; international development
P. Heyer	Technology and society; the history of social thought; communication theory
M.P. Hindley	Interpersonal communication; communication and psychological issues; family communication; conflict resolution
P.M. Howard	Workplace communication and computerized technologies; political communication in non-capitalist societies; technology transfer
R.W. Howard	Communication and development; international communication; political communication in non-capitalist societies
S. Kline	Advertising; social marketing; children's media and culture; audience research
M. Laba	Media theory and analysis; applied media research; popular culture and communication
W. Leiss	Advertising; risk communication; science and technology policy
R.M. Lorimer	Publishing, mass communication
T.J. Mallinson	Interpersonal and group processes; organizations
C.A. Murray	Strategic marketing, policy and regulation in telecommunications and broadcasting; political communication and opinion research; social marketing
W.D. Richards, Jr.	Communication network theory and methods; dynamic system simulation methods; social and organizational network research
B.D. Truax	Acoustic and electroacoustic communication; soundscape studies; computer music; tape studio
J.W. Walls	Intercultural communication; communication; computerized communication in Asian languages; language and culture in translation
A. Wilden	Communication and culture; sex/gender differences and stereotyping; socialization; media analysis; systems ecology; critical theory; videomontage; strategy of communication

Program of Studies

The Department of Communication offers a specialized program of studies in Communication leading to a Bachelor of Arts major or honors degree. It also offers a minor program and a variety of courses in Communication for students in other degree programs in the University.

Students with a degree in Communication can seek employment opportunities in:

management or research connected with communication industries, such as radio, television, book publication and telecommunications (courses in media production or journalism are not offered, however)
research or policy development in government or industry related to the use of media, public information, public policy formation or the introduction of communications technologies in organizations or in international development
research or development related to the field of marketing or advertising (in conjunction with a specialization in business administration) or political communications
public education, information or relations
specialized research or production in acoustic communication

The Department of Communication is interdisciplinary in its approach. It offers a concentrated program of study in a variety of areas. Course progressions in each of the topic areas are listed below for the guidance of students, but students are encouraged to take courses from more than one area of concentration in the Department of Communication.

Areas of Concentration:

Acoustic & electroacoustic communication (258, 259, 358, 359)
Advertising (130, 223, 323)
Applied communication research (260, 261, 301, 362, 363)
Communication policy in media & information technology (130, 230, 333, 334, 335, 433, 436)
History and theory of communication (110, 210, 303, 304, 310, 422)
International communication & development (130, 346, 444, 446)
Interpersonal & intercultural communication (205, 305)
Journalism & news media analysis (110, 130, 235, 335, 331)
Mass media/popular culture (110, 130, 220, 221, 320, 321, 421, 422)
Network analysis (201, 301, 401)
Political communication (130, 322, 331)
Political economy (130, 240, 444)
Publishing (335, 370, 371, 372, 375, 471, 472)
Technology, science & public policy (130, 253, 342, 353, 442, 453, 454)

SIMON FRASER UNIVERSITY

DEPARTMENT OF COMMUNICATION

BURNABY, BRITISH COLUMBIA
CANADA V5A 1S6
Telephone: (604) 291-3687
Fax: (604) 291-4024

16 November 1993

Parveen Bawa
Associate Dean
Faculty of Applied Sciences

FAX: 5802

Dear Parveen

The package of changes to our curriculum was sent to the Dean's office about three weeks ago. I understand that at SCUS today questions were raised about Library costs which must be borne by the Department for new courses. I confirm that the Department will bear the costs for books, etc. for the new courses, and that Ralph Stanton in the Library is aware of this.

RSA

Robert S. Anderson
Professor and Chair

RSA/dz
c: Judith Osborne, Chair, SCUS

25.

FAX

W.A.C. Bennett Library, Room 4003
Simon Fraser University
Burnaby, BC Canada
V5A 1S6

TEL (604) 291-4658
FAX (604) 291-3023

TRANSMITTAL SHEET

Date: November 16, 1993 Time: 04:13 PM

From: R. Stanton Division: Library Management

Telephone: (604) 291-5946 e-mail:

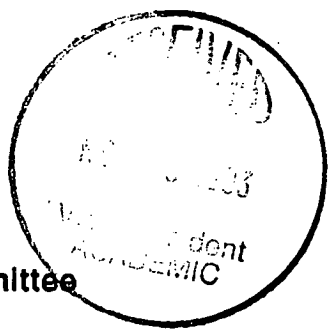
TRANSMITTING THE FOLLOWING PAGES TO:

Company/Institution: SFU

Location: Burnaby, BC

Attention: **Parveen Bawa**
Chair Undergraduate Curriculum Committee

FAX #: 3040



REMARKS/SPECIAL INSTRUCTIONS:

The Communications Department and the Library are agreed that the Library's assessment of COM 456, 473, 426, 345 is appropriate and that the Department will pay the costs associated with the course.

We are transmitting 1 page(s) *including* this cover page. If you do not receive all of the pages being transmitted, please contact us immediately at the above number.

School of Kinesiology

SCUS Reference: SCUS 93 - 38
SCAP Reference: SCAP 93 - 45b

i) Changes to core courses required for Kinesiology majors

ii) Course deletions:
- KIN 341 - 3 Sports Medicine I
- KIN 441 - 3 Sports Medicine II

iii) Delete B.Sc. Honours in Applied Physiology Program and B.Sc. Honours in Sport Science Program

iv) Additional Calendar statement re grade of C- or better in prerequisite

v) New course:
- KIN 221 - 3 Special Topics in Kinesiology

vi) Restructuring of the requirements for an honors degree in Kinesiology including

New course
- KIN 497 - 3 Undergraduate Honors Thesis Proposal

Change of credit hours for KIN 499 - from 15 credits to 12 credits

vii) Reorganization of biomechanics courses including

New courses
- KIN 201 - 3 Basic Biomechanics
- KIN 301 - 3 Biomechanics Laboratory

Deletion of
- KIN 401 - 4 Mechanics of Human Movement
- KIN 402 - Change of credit hours, prerequisites, vector

viii) New courses:
- KIN 207 - 3 Information Processing in Human Motor Systems
- KIN 412 - 3 Molecular and Cellular Cardiology
- KIN 418 - 4 Electrophysiological Techniques Laboratory

ix) New courses for Human Factors/Ergonomics concentration
- KIN 280 - 3 Introduction to Human Factors/Ergonomics
- KIN 380 - 3 Occupational Biomechanics
- KIN 382 - 3 Physical Hazards in the Workplace
- KIN 383 - 3 Human-Machine and Human-Computer Interaction
- KIN 486 - 3 Industrial Design

over ....

x) Deletion of
KIN 480 - 3 Human Factors in Working Environments
xi) Delete Post Baccalaureate Diploma in Occupational Science
xii) Program approval for current SFU students (internal transfers)
xiii) Change to Major program requirements
xiv) Change to Honors program requirements
xv) Change to Minor program requirements
xvi) Change to Certificate in Health and Fitness Studies

For Information:
Acting under delegated authority of Senate, SCUS has approved the following revisions as detailed in SCUS 93 - 38

Change of prerequisites: KIN 205, 305, 306, 142, 303

To: Senate Committee on Undergraduate Studies

From: Craig Asmundson
UCC Chair
School of Kinesiology

Subject: Kinesiology Calendar Changes For Discussion At SCUS Meeting On Nov. ?

Date: October 21/93

C Asmundson

The Calendar changes described below were approved at School of Kinesiology meetings on September 16, September 23, and October 1, 1993, and at a Faculty of Applied Sciences UCC meeting on October 13, 1993.

1. Changes to the core courses required for all Kinesiology majors. Please refer to the attached document.

2. Removal of Kinesiology 341 and 441 from the Calendar. Please refer to the attached one page rationale.

3. **Proposal:** Delete the BSc Honours in Applied Physiology program and the BSc Honours in Sport Science program.

   Justification:

   a) Both of these programs are rigid and offer students very little flexibility. For the Honors in Applied Physiology program, 130 of the 132 credits are specified courses. Furthermore, 72 of these credits must be upper level credits. For the Honors in Sports Science program, 128 of the 132 credits are specified courses. The stringent requirements and lack of flexibility in these programs are inconsistent with the Calendar changes that were made for the 1993/94 Calendar where the required number of upper division credits for the major program(54 credits --> 45 credits) and the honors program(72 credits --> 60 credits) were reduced.

   b) We now have areas of concentration in Physiological Sciences and Active Health and along with our undergraduate honors research courses, KIN 497 and KIN 499, students can obtain a specialization in applied physiology or sports sciences without having to adhere to a very rigid program.

   c) The enrolment in these honors programs has been low.

4. **Proposal:** addition to the Calendar in the section where the descriptions of Kinesiology courses are given - "Students wishing to register for Kinesiology courses must have obtained a grade of C- or better in prerequisite courses."

Justification: The School of Kinesiology currently has the following statement in the Calendar - "All courses listed as required for the major must be completed at a grade of C- or higher." However, because the proposed sentence shown above isn't in the Calendar, students during telephone registration are allowed into courses even if they have a "D" letter grade in a prerequisite course.

5. **Proposal:** for KIN 205, change the prerequisites from "**BISC 101**, CHEM 102, and Physics 101" to "**BICH 221**, CHEM 102, and Physics 101".

   Justification: All students in KIN 205 will now have a similar background and the first four to five weeks of the semester won't have to be spent covering basic celluar biology concepts.

6. **Proposal:** KIN 305 & 306 - remove BICH 221 as a prerequisite for these courses because BICH 221 will be a prerequisite for KIN 205 and KIN 205 is a prerequisite for KIN 305 and 306.

7. **Proposal:** for KIN 142 we should have the same prerequisites as for KIN 105 -"Grade 11 biology, chemistry, and physics are recommended."

   Justification: no prerequisites are currently listed for this course in the Calendar. These prerequisites would not prevent students from taking the course but they would indicate to students that this is a science course and that a basic knowledge of biology, chemistry, and physics would be useful.

8. **Proposal:** For Kin 303, add Kin 142 as a prerequisite so that the prerequisite description in the Calendar reads "Kin 142 and 60 credit hours".

   Justification: Students entering Kin 303 should have a knowledge of skeletal anatomy, basic kinanthropometry and human performance measurement.

9. Kinesiology 221-3 - "Special Topics in Kinesiology". Please refer to the attached course proposal.

10. Restructuring of the requirements for an honors degree in Kinesiology. Please refer to the attached new course proposal.
    a) Proposal for a new course - KIN 497-3 - "Undergraduate Honors Thesis Proposal".
    b) Changes to KIN 499 - "Individual Study Semester" - change from a 15 credit course to a 12 credit course. Some changes have also been made to the Calendar description for KIN 499-12.

11. Reorganization of biomechanics courses. Please refer to the attached course proposals.
    a) Creation of Kinesiology 201-3 - "Basic Biomechanics"
    b) Creation of Kinesiology 301-3 - "Biomechanics Laboratory"
    c) Alterations to Kinesiology 402-3 - "Mechanical Properties of Tissues"

12. New Course proposal - KIN 207-3 - "Information Processing in Human Motor Systems". Please refer to the attached course proposal.

13. New Course proposal - KIN 412-3 - "Molecular and Cellular Cardiology". Please refer to the attached course proposal.

14. New Course proposal - KIN 418-4 - "Electrophysiological Techniques Laboratory". Please refer to the attached course proposal.

15. New Course proposal for the Human Factors/Ergonomics concentration. A rationale is given for the creation of this concentration in the School of Kinesiology. The following new courses have been proposed. Please refer to the attached course proposals.
    a) KIN 280-3 - "Introduction to Human Factors/Ergonomics "
    b) KIN 380-3 - "Occupational Biomechanics "
    c) KIN 382-3 - "Physical Hazards in the Workplace "
    d) KIN 383-3 - "Human-Machine and Human-Computer Interaction "
    e) KIN 486-3 - "Industrial Design "

16. **Proposal:** KIN 480-3, "Human Factors in Working Environments" - delete this course from the Calendar.

    Justification: With the reorganization of the undergraduate program in Kinesiology and the development of a Human Factors/Ergonomics stream, this course has been replaced by new courses.

17. **Proposal:** Delete the Post Baccalaureate Diploma in Occupational Science from the Calendar.

    Justification:
    The proposed concentration in Human Factors/Ergonomics will provide undergraduate training in this area which could not be matched within the confines (30 credits) of a PBD.

18. **Direct admissions** for students from secondary schools and transfer students from recognized post-secondary institutions - please refer to the front page of attached document titled "Proposed Kinesiology Calendar Changes For The 1994/95 Calendar". REFERRED TO SCEMP.

    On pages 2-7 of this document, the Kinesiology section of the Calendar has been rewritten.
    With a direct admission policy similar to that of the Faculty of Science, the School of Kinesiology will be better able to manage

enrolments and improve scheduling procedures so that students can graduate sooner.

19. Program approval for current SFU students (internal transfers) - please refer to page 3 of the attached document titled "Proposed Kinesiology Calendar Changes For The 1994/95 Calendar" . These requirements are the same as for transfer students from recognized post-secondary institutions.

20. **Major program requirements** - please refer to page 3 of the attached document titled "Proposed Kinesiology Calendar Changes For The 1994/95 Calendar" . Please refer to the statements regarding maintenance of a 2.30 grade point in order to remain in the program as a major.

    Justification: With the implementation of direct admissions procedures, we will be admitting a percentage of our students (that quota or percentage has yet to be established) directly from high school based on their high school grades. The quality of education is different amongst different high schools. Therefore an "A" letter grade in math from school X may not indicate the same level of proficiency in mathematics as an "A" letter grade in math from school Y. Students will therefore have to prove that they can perform at university to be allowed to remain as majors in our program. Students are currently approved as majors after they have accumulated 30 credits at SFU, mostly in science courses, and have proven that they can perform at university.

21. **Major program requirements** - please refer to pages 4 and 5 of the attached document titled "Proposed Kinesiology Calendar Changes For The 1994/95 Calendar". All Kinesiology majors are required to obtain a minimum of 39 upper division Kinesiology credits(12 required course credits and 27 elective course credits) to fulfill requirements for their BSc Kinesiology degree.

    Justification: Currently, Kinesiology majors are required to obtain a minimum of 42 upper division Kinesiology credits to fulfill requirements for their BSc Kinesiology degree. STAT 301-3 has been added as a required course. With the addtion of the three credits from STAT 301 to the 39 upper division Kinesiology credits, Kinesiology majors will have 42 of their 45 upper division credits specified as they do now.

22. **Honors program requirements** - please refer to page 5 of the attached document titled "Proposed Kinesiology Calendar Changes For The 1994/95 Calendar". Under "Honors Program Requirements on page 5, (b) and (c) are university regulations which automatically apply to Kinesiology. We are suggesting the addition of (a) and (d).
The minimum number of upper division Kinesiology credits required for Kinesiology honours students will be 54.

Justification: Kinesiology majors will require 39 upper division Kinesiology credits. The extra 15 credits upper division Kinesiology credits required for honors students come from the two honors thesis courses - KIN 497-3 and KIN 499-15. A perusal of the Calendar shows that many departments at SFU require at least 15 more discipline specific upper division credits for their honors students than for their majors students.

23. **Kinesiology Minor Program** - please refer to page 6 of the attached document titled "Proposed Kinesiology Calendar Changes For The 1994/95 Calendar".
a) Add the following sentence to the Calendar, under requirements for a minor in Kinesiology: "A minimum G.P.A. of 2.0 calculated from those upper division Kinesiology courses used to satisfy the requirements for a Minor in Kinesiology."
b) Regulations regarding application for a minor in Kinesiology have been formalized.

Justification:
a) Currently a student majoring in a subject area outside of Kinesiology and also enrolled in the Kinesiology Minor Program could obtain the minor with an average grade point of less than 2.00 in the upper division Kinesiology courses used to satisfy the requirements for a Minor in Kinesiology.
b) We currently don't have any regulations in the Calendar regarding application and acceptance as a minor in Kinesiology.

24. **Certificate in Health and Fitness Studies** - please refer to page 7 of the attached document titled "Proposed Kinesiology Calendar Changes For The 1994/95 Calendar".
Add the following sentence to the Calendar: "A minimum grade point of at least 2.00 is required, calculated on all courses counting towards the certificate."

Justification: Currently a student majoring in a subject area outside of Kinesiology and also enrolled in the Certificate in Health and Fitness Studies program could obtain the certificate with an average grade point of less than 2.00 in the certificate courses.

Core Courses Required For All Kinesiology Majors

Four concentrations have been proposed for the undergraduate program in the School of Kinesiology:

Human Factors/Ergonomics
Health and Physiological Sciences
Active Health
Human Movement Sciences

For the 1994/95 Calendar year, the suggested pathway of courses for each of these concentrations will be described in brochures which will be available at the Kinesiology General Office. In either 1995/96 or 1996/97, the pathway of courses for each of these concentrations will be put into the Calendar.

A common core of courses is required for students whether or not they choose a concentration. The list of core courses shown on the attached page was approved at a Kinesiology school meeting on September 23, 1993. How does the list of core courses shown on the attached page differ from the current list of core courses as described on pages 75-76 of the 1993/94 Calendar?

1. BISC 102-4 has been dropped as a required course. This course covers plants and ecology and was judged to be not relevant to Kinesiology majors. Students are exposed to plants and ecology in Grade 12 biology or BISC 100 at SFU which is the Grade 12 equivalent bioscience course. BISC 102 is not a prerequisite for any Kinesiology course. It is a prerequisite for BICH 221, but I have been told by both Lin Kemp who is the UCC Chair in Biosciences and Thor Borgford who is involved in the Biochemistry program, that Kinesiology majors will be able to have the BISC 102 prerequisite waved for BICH 221.

2. Five credits of chemistry have been dropped - either the combination of CHEM 103-3 and 118-2 or the combination of CHEM 250-3 and 255-2. None of these four courses are prerequisites for any kinesiology course. CHEM 102-3 is a prerequisite for KIN 205 while CHEM 150-3 and 155-2 are prerequisites for KIN 305 and 306. If students want to take more chemistry credits, they will be able to do this. Students in the Health and Physiological Sciences concentration will require 20 credits of chemistry to fulfill medical school requirements. Please also note that in the Kinesiology Undergraduate Program survey which was conducted last semester, with the exception of CHEM 150 (52%), only 30-40 percent of Kinesiology majors rated the required chemistry courses as being relevant to the majors program.

3. KIN 201-3, "Introduction to Biomechanics" - this will replace Kin 401 as the required biomechanics course.

4. KIN 207-3, "Information Processing in Human Motor Systems" - this is a new core course.

5. STATS 301-3, "Statistics for the Life Sciences" - this is a new course which will appear in the 1994/95 Calendar. The course has been designed with participation of representatives from Kinesiology, Biosciences, Biochemistry and Statistics. In the Kinesiology Undergraduate Program survey, in response to the question, "Are there any courses that aren't presently part of the requirements for a Kinesiology Major but that you believe should be part of the required course load", the most frequent response was to include a statistics/research design course.

CORE COURSES REQUIRED FOR ALL KINESIOLOGY MAJORS
OCT. 18/93

LOWER DIVISON REQUIRED COURSES FROM FACULTY OF SCIENCE

31 credits from the following courses:

BISC 101 - General Biology	4	
BICH 221 - Cell Biology and Biochemistry*	3	7
CHEM 102 - General Chemistry I	3	
CHEM 115 - General Chemistry Laboratory I	2	
CHEM 150 - Organic Chemistry I	3	
CHEM 155 - Organic Chemistry Laboratory I	2	10
MATH 154 - Calculus I for the Biological Sciences (or MATH 151- Calculus I)	3	
MATH 155 - Calculus II for the Biological Sciences (or MATH 152- Calculus II)	3	6
PHYS 101 - General Physics I (or PHYS120)	3	
PHYS 102 - General Physics II (or PHYS121)	3	
PHYS 130 - General Physics Laboratory A (or PHYS131)	2	8

KINESIOLOGY LOWER DIVISON REQUIREMENTS

15 credits from the following lower division courses:

KIN 142 - Introduction to Kinesiology	3	
KIN 201 - Introduction to Biomechanics	3	
KIN 203 - Computer Applications in Kinesiology (or CMPT 103-3)	3	
KIN 205 - Introduction to Human Physiology	3	
KIN 207 - Information Processing in Human Motor Systems	3	15

UPPER DIVISON REQUIREMENTS

15 credits from the following upper division courses:

KIN 305 - Human Physiology I	3	
KIN 306 - Human Physiology II	3	
KIN 326 - Functional Anatomy	3	
KIN 407 - Human Physiology Laboratory	3	
STAT 301 - Statistics for the Life Sciences	3	15

Total credits from required core courses 61 credits

* For Kinesiology majors, BISC 102 will be waived as a prerequisite for BICH 221

COURSE DELETION AND RATIONALE

School of Kinesiology

Course Deletions:

Kinesiology 341-3 - "Sports Medicine I"

Kinesiology 441-3 - "Sports Medicine II"

Rationale - The professor who has been teaching this course for the past 10 years, Dr. Murray Allen, departed from SFU at the end of August 1993.

These sports medicine courses were at one time very popular, but this has changed. The popularity of sports medicine has decreased as the field has become saturated with practitioners. For Kinesiology graduates, this is even more of a factor as they realize that they cannot apply their knowledge without a medical degree(M.D.). Furthermore, the B.C. College of Physicians and Surgeons objected to the use of the word "medicine" in the title of these courses.

The "sports injury" material from Kin 341 and 441 that is relevant to kinesiologists can be covered in one course, Kinesiology 241, that is taught either by Dr. Tom Richardson or by Dr. Don Hedges. Other material from Kin 341 and 441 related to the field of exercise rehabilitation and to the problem repetitive strain injuries in the workplace will be covered, along with other topics, in a new course - Kinesiology 481, "Activity Generated Musculoskeletal Disorders", which will be brought forward for the 1995/96 Calendar. This course will probably be taught as a special topics course in the 1994/95 academic year.

RATIONALE FOR NEW COURSE PROPOSAL

SCHOOL OF KINESIOLOGY

KINESIOLOGY 221-3: SPECIAL TOPICS IN KINESIOLOGY

RATIONALE:

The School of Kinesiology needs a lower division special topics course to provide a vehicle for pilot testing new lower division courses before they go into the Calendar with their own specific course number. Having a lower division special topics course also allows the possibility of having adjunct professors or visiting professors teach a lower division course related to their area of expertise on a one-time basis.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. **Calendar Information** **Department:** Kinesiology

Abbreviation Code: KIN **Course #:** 221 **Credit Hrs:** 3 **Vector:** 3-1-0

Title of Course: Special Topics in Kinesiology

Calendar Description of Course:
Selected topics in areas not currently offered within the undergraduate course offerings in the School of Kinesiology.

Nature of Course: Three, one hour lectures per week plus one hour of tutorial per week

Prerequisites (or special instructions): To be announced in the Course Timetable and Registration Instructions.

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 every 3-6 semesters.

Semester in which the course will first be offered? Unknown at present time.

Which of your present faculty would be available to make the proposed offering possible? Any faculty member in the School of Kinesiology.

3. **Objectives of the Course:**
To provide a vehicle for pilot testing new lower division courses before they go into the Calendar with their own specific course number.

4. **Budgetary and Space Requirements**

What additional resources will be required in the following areas:
Faculty - none
Staff - none
Library* - none
Audio Visual - none
Space - none
Equipment - none

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5. **Approval**

Date: 19 Oct 1993	Oct 21, 1993	
(Department Chair)	(Dean)	(Chair, SCUS)

School of Kinesiology

Library Resources for New Courses

Course number and name:
Kinesiology 221-3, "Special Topics in Kinesiology"

Are the current SFU library resources adequate for this course?
YES

What additional library resources are essential for the offering of this course? None

1. **Textbooks** - this can't be specified at the present time because it will vary each time the course is offered, depending on the area which the course covers and who teaches the course.

2. **Journals** - none

What additional library resources, if any, would be desirable but not essential for the offering of this course?

1. Textbooks - none
2. Journals - none

Faculty member making course proposal: Craig Asmundson

Signature: R.C Asmundson Date: Oct 4/93

Restructuring of the Requirements for an Honors Degree in Kinesiology - Overview

Present requirements: Students wishing to graduate with a Kin. (Hons) degree must have 132 credits, and must complete Kin 499-15 (Undergraduate Thesis).
Proposed changes: The proposal is to change the credit rating of Kin 499 from 15 to 12 credits, and require that students complete an undergraduate honours thesis proposal, the semester preceding the Kin 499. It is proposed that a new course be introduced (Kin 497-3) and identified as an Undergraduate Honours Thesis Proposal (i.e. Kin 497-3: Undergraduate Thesis Honours Proposal).

Rationale

Currently, students register for Kin 499 at the end of the semester preceding their undergraduate thesis work. They then have 4 months within which to conduct a literature review, develop a research hypothesis, establish a research paradigm, set-up their experimental arrangement, learn to use the equipment, conduct the research, and write it up for formal presentation. In many cases, the experiments have to be approved by the appropriate Ethics Committees, and this may require several weeks. Due to the usual lack of preparation of students in their chosen field of study, proposals for Kin 499 are normally written with the help of faculty. Students have little input at the proposal stage. Also, only brief outlines are submitted for Kin 499.

The quality of our undergraduate theses may be compromised by the magnitude of the work, which needs to be completed in one semester. The intent of the present proposal is to allow students to conduct a literature review, and discuss potential research questions with the chosen supervisor. By registering in a Kin 497 the semester prior to the Kin 499, the student can develop a formal research proposal. By doing so, the feasability of the research may be assessed by the faculty supervisor and the UCC Chair. Also, the student has the opportunity to interact with other faculty and graduate students and thus obtain constructive input regarding the proposed project. It is anticipated that the students may be required by their faculty supervisor to present their proposal at laboratory meetings. Since students completing an Honours degree are the ones that usually pursue graduate work, the experience of writing and presenting a research proposal will prepare them for the process at the graduate level. For those pursuing professional and other vocations, the experience will teach them the proper process for submitting research applications.

By working with the student on a Kin 497 prior to a Kin 499, the faculty member may assess the students interest and research potential. Continuation of the collaboration (i.e. Kin 499) may be contingent upon the student successfully completing the Kin 497. The Kin 497 then acts as a trial period for both student and faculty member.

RATIONALE FOR NEW COURSE PROPOSAL

SCHOOL OF KINESIOLOGY

KIN 497-3 Kinesiology Undergraduate Honours Thesis Proposal

RATIONALE:

Currently, students register for Kin 499 at the end of the semester preceding their undergraduate thesis work. They then have 4 months within which to conduct a literature review, develop a research hypothesis, establish a research paradigm, set-up their experimental arrangement, learn to use the equipment, conduct the research, and write it up for formal presentation. In many cases, the experiments have to be approved by the appropriate Ethics Committees, and this may require several weeks. Due to the usual lack of preparation of students in their chosen field of study, proposals for Kin 499 are normally written with the help of faculty. Students have little input at the proposal stage. Also, only brief outlines are submitted for Kin 499.

The quality of our undergraduate theses may be compromised by the magnitude of the work, which needs to be completed in one semester. The intent of the present proposal is to allow students to conduct a literature review, and discuss potential research questions with the chosen supervisor. By registering in a Kin 497 the semester prior to the Kin 499, the student can develop a formal research proposal. By doing so, the feasability of the research may be assessed by the faculty supervisor and the UCC Chair. Also, the student has the opportunity to interact with other faculty and graduate students and thus obtain constructive input regarding his proposed project. It is anticipated that the students may be required by their faculty supervisor to present their proposal at laboratory meetings. Since students completing an Honours degree are the ones that usually pursue graduate work, the experience of writing and presenting a research proposal will prepare them for the process at the graduate level. For those pursuing professional and other vocations, the experience will teach them the proper process for submitting research applications.

By working with the student on a Kin 497 prior to a Kin 499, the faculty member may assess the students interest and research potential. Continuation of the collaboration (i.e. Kin 499) may be contingent upon the student successfully completing the Kin 497. The Kin 497 then acts as a trial period for both student and faculty member.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. Calendar Information Department Kinesiology

Abbreviation Code: Kin Course #: 497 Credit Hrs: 3 Vector: 0-3-0

Title of Course: Kinesiology Undergraduate Honours Thesis Proposal

Calendar Description of Course: Supervised directed study and research leading to the development of a formal undergradute thesis proposal for work to be conducted in Kin 499-12. The activity in the Kin 497 may be augmented by other course work and a pilot study. In cases where an industrial/community partner is involved in the development of a project, the work need not be conducted at Simon Fraser Univeristy and may be completed external to SFU. Supervision of the Kin 497 will be conducted by a suitable faculty member, but may be co-supervised by an industrial/community partner. Supervisor(s) must be approved by the Undergraduate Curriculum Committee. The plan of activities for each Kin 497-3 should be submitted to the Chair of the Undergraduate Curriculum Committee for approval one month prior to the semester in which the course will be taken.

Nature of Course: Directed studies

Prerequisites (or special instructions): Only students in the Honours programme may register for Kin 497; 90 credit hours, Stats 301, and permission of the Chair, Undergraduate Curriculum Committee.

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? As requested by students.

Semester in which the course will first be offered? 94-3

Which of your present faculty would be available to make the proposed offering possible? All faculty.

3. Objectives of the Course: The quality of our undergraduate theses may be compromised by the magnitude of the work, which needs to be completed in one semester. The intent of the present proposal is to allow students to conduct a literature review, and discuss potential research questions with the chosen supervisor. By registering in a Kin 497 the semester prior to the Kin 499, the student can develop a formal research proposal. By doing so, the feasability of the research may be assessed by the faculty supervisor and the UCC Chair. Also, the student has the opportunity to interact with other faculty and graduate students and thus obtain constructive input regarding his proposed project. It is anticipated that the students may be required by their faculty supervisor to present their proposal at laboratory meetings. Since students completing an Honours degree are the ones that usually pursue graduate work, the experience of writing and presenting a research proposal will prepare them for the process at the graduate level. For those pursuing professional and other vocations, the experience will teach them the proper process for submitting research applications.
By working with the student on a Kin 497 prior to a Kin 499, the faculty member may assess the students interest and research potential. Continuation of the collaboration (i.e. Kin 499) may be contingent upon the student successfully completing the Kin 497. The Kin 497 then acts as a trial period for both student and faculty member.

4. Budgetary and Space Requirements

NO ADDITIONAL RESOURCES REQUIRED.

5. **Approval** (KIN 497) ~~JH~~

Date:	19 OCT 1993	Oct. 21, 1993	
	~~JH~~	Parveen Bawa	
	(Department Chair)	(Dean)	(Chair, SCUS)

Course outline:

Kin 497: Undergraduate Honours Thesis Proposal

CALENDAR DESCRIPTION

Supervised directed study and research leading to the development of a formal undergraduate thesis proposal for work to be conducted in Kin 499-12. The activity in the Kin 497 may be augmented by other course work and a pilot study. In cases where an industrial/community partner is involved in the development of a project, the work need not be conducted at Simon Fraser University and may be completed external to SFU. Supervision of the Kin 497 will be conducted by a suitable faculty member, but may be co-supervised by an industrial/community partner. Supervisor(s) must be approved by the Undergraduate Curriculum Committee. The plan of activities for each Kin 497-3 should be submitted to the Chair of the Undergraduate Curriculum Committee for approval one month prior to the semester in which the course will be taken. Prerequisite: only students in the Honours programme may register for Kin 497; 90 credit hours, Stats 301, and permission of the Chair, Undergraduate Curriculum Committee.

GENERAL CONSIDERATIONS

Students wishing to pursue an Honours degree in Kinesiology are required to complete an Undergraduate Honours Thesis Proposal.

Students should submit a plan of activities for each Kin 497 to the Chairperson of the Undergraduate Curriculum Committee (UCC) for approval at least one month prior to the semester in which the course will be taken. The plan of activities should indicate the grading scheme and should be signed by both student and supervisor.

Deadlines

The following deadlines must be met by students registered in Kin 497:

6th week of classes:	Initial draft of thesis proposal to be submitted to supervisor(s).
7th week of classes:	Application for approval of the research should be submitted to the University Ethics Review Committee.
8th week of classes:	Completed draft.
12th week of classes:	Final draft signed by supervisor(s) and Chairperson, UCC.

Late proposals will be accepted only if the Chairperson responds favourably to a written request received before the final deadline. Students wishing to pursue a Kin 499 may not defer the grade to the next semester. All requirements must be completed before the beginning of the semester in which the Kin 499 will be conducted. Students should ensure that the research proposal has received approval of the University Ethics Review Committee, prior to initiating any research related to the Kin 499.

Audience

The thesis proposal is written for the upper level students and faculty of the School of Kinesiology, and you can therefore assume a high level of knowledge, although some may be less familiar than others with the technical aspects of your project or its practical applications. Think carefully about what the audience may need to know in order to judge the value and feasibility of your project. When in doubt, err on the side of providing too much rather than too little information.

Purpose

The goal of your proposal is to persuade the audience (faculty and students) that your thesis is worthwhile. To do so, you must convince them of the following:

- The project is worth doing insofar as it fills an existing need or advances research or technology in some significant way;
- It is technically feasible;
- You have the technical expertise necessary to carry it out;
- You have a clear sense of what the project entails and of the methods involved in completing it successfully;
- The necessary facilities and funding are available;
- It can be completed in the time allowed;
- It is appropriately challenging for a senior Kinesiology student.
- The research meets the guidelines of the University Ethics Review Committe.

CONTENT CONSIDERATIONS

The proposal should contain the following main sections: Abstract, Objectives, Background, Introduction, Methodology, Analyses, References.

Abstract

The abstract should be a maximum of 500 words and should summarize the objectives of the thesis, the proposed methodology and analyses of results.

Objectives

The objectives of the thesis should be clearly specified. This may be in the form of research questions which will be addressed or a list of hypotheses which will be tested. Normally this section should not exceed one page.

Background

The background section should provide a concise review of the pertinent literature. Include any theoretical/historical information which may help the committee member who is least familiar with the project to understand it well enough to place it in the appropriate context and to judge its contribution to the field. Since this section is essentially a literature review, the length may vary considerably. You should normally not need to exceed 20 pages.

Introduction

The introduction should provide relevant background information on the specific research question you wish to address. It should provide a rationale for proposed project. Since the Background section provides a concise and pertinent review of the research field, your Introduction can be quite concise and should be no longer than 4 pages (recommended length is two to three pages).

Methods

This section should outline in detail the manner in which you wish to conduct the project. Divide this section into subsections and discuss each one separately:

• Protocol. Indicate the protocol you will employ. In the event that your project requires approval by the University Ethics Review Committee, append either the letter of approval from the University Ethics Committee, or the application to the Committee for approval of the project.

• Instrumentation. Outline the instrumentation you will use and explain how it will be calibrated and how measurements will be made. Include a statement regarding the availability, location and functional status of the equipment.

The length of the Methods section will depend on the nature of the protocol. You should not feel constrained by length requirements in this section, but should incorporate as much detail as you feel is necessary. Do not forget to include Model names of equipment you will be using, as well as the name and location of the manufacturer. Normally, you should be able to outline in detail your proposed methodology in four to six pages.

Analyses of Results

Outline the analyses of results you will perform. Explain how you will test each hypotheses listed in the Objectives section. You should provide a calculation of the power of any statistical tests you will perform. You may provide graphical presentations of hypothetical results to aid your description of the analyses of results.

Similar to the Methods section, you should explain in as much detail as you deem necessary, the analyses you will conduct once the data are collected. Normally, the length of this section should not exceed six pages. Your committee will be evaluating whether you will be able to accept or reject your hypothesis based on the results of your analyses. In the event that you have been able to complete a pilot study, you may wish to present the results of your pilot study to demonstrate how the analyses will be conducted. It is appropriate to indicate the computer software you will be using for analysing your results.

Some important items which should be incorporated in this section include:

• a calculation of the number of trials needed to achieve a suitable power of statistical analyses.

• a clear definition of the probability you will accept for making a Type I and Type II error.

• a clear description of the statistical analyses you will conduct; be prepared to defend your choice of statistical procedures.

The structure of this section will depend a great deal on the nature of the experiment you are proposing. For example, if you are proposing to develop a mathematical model to simulate a physiological response, your presentation in this section will be quite different than for an experimental study. Nevertheless, having identified the mathematical procedures you will undertake to develop the model in the Methods section, you should present an outline of how you plan to test your model in this section.

Conclusions

Summarize the implications of your work and, if appropriate, the practical implications of your results. Expand upon those points most likely to convince your committee that your proposed project will both succeed and make a valuable contribution to the field. Normally this section should not exceed one page.

References

You should use the form of referencing recommended by the Canadian Journal of Physiology and Pharmacology. Refer to the journal for guidelines.

Appendices

Place as much turgid material as possible in appendices (i.e. mathematical derivations, computer programs, elaborate diagrams of equipment). In the event that your proposed research requires the approval of the University Ethics Review Committee, then the letter approval and/or your application to the Committee should be in an Appendix.

FORMAT CONSIDERATIONS

The proposal should include the following pages or sections:

Title page
Acceptance Form (available from Undergraduate Secretary)
Abstract
Table of contents
List of Figures and Tables
Objectives
Background
Introduction
Methods
Analyses of Results
Conclusion
References
Appendices (if required)

ACCEPTANCE PROCEDURE

Your completed proposal should be read and accepted by your supervisor(s) and by the Chairperson of the Undergraduate Curriculum Committee. At any stage in the acceptance procedure, the proposal may be returned to you for revision. To avoid making this process any longer or more complicated than necessary, we suggest that before submitting your proposal officially, you have your supervisor read and comment on it.

GRADING

The development of your proposal includes several important components, and you will be graded on all of them accordingly. These include:

Preparation (literature review, meetings with your supervisor and pilot study).	30%
Oral presentation (to a forum determined by your supervisor).	10%
The written submission	60%

School of Kinesiology

Library Resources for New Courses

Course number and name: Kin 497

Are the current SFU library resources adequate for this course?
YES

What additional library resources are essential for the offering of this course? None.

Faculty member making course proposal:

Signature: R C Richardson Date: Oct 4/97

COURSE ALTERATION AND RATIONALE

SCHOOL OF KINESIOLOGY

FROM: Kin 499-15: Individual Study Semester

Directed study and research project in Kinesiology. With the advice of two supervisors, one of whom must be a faculty member in the School of Kinesiology, the student will submit a proposal (500 words) to the Kinesiology Undergraduate Curriculum Committee before the end of classes in the semester previous to the one in which the student wishes to undertake KIN 499. Once the project is approved, the student will carry out research and present the work in the form of a written scientific paper by the last day of classes of that semester. The paper will also be presented orally as a seminar in an open forum at the end of the semester. Prerequisites: a minimum CGPA of 3.0, 90 completed credit hours and permission of the school. Students with credit for KIN 499 may not take either KIN 496 or KIN 498 for furter credit. Kinesiology majors are permitted to count a maximum of six credits from KIN 496, 498 and 499 towards their degrees. A student may not register for KIN 499 and Co-op (Kin 351, 352, 451, 452, 453) concurrently.

TO: ***Kin 499-12: Kinesiology Undergraduate Honours Thesis***

A thesis based on research previously proposed in Kin 497. Formal approval of the research topic is given by attaining a minimum grade of B in Kin 497. Regulations regarding the locale of the work, supervision and other arrangements, follow those for Kin 497. The written thesis should be submitted to the Chair of the Undergraduate Curriculum Committee by the last day of exams of the semester. The thesis will also be presented orally as a seminar in an open forum at the end of the semester. Prerequisites: Kin 497. Only students in the Honours programme may register for Kin 499. A student may register for one other course concurrently with Kin 499 with permission from the faculty supervisor for Kin 499.

RATIONALE: *Please see comments in covering letter.*

Course outline:

Kin 499: **Undergraduate Honours Thesis**

CALENDAR DESCRIPTION

A thesis based on research previously proposed in Kin 497. Formal approval of the research topic is given by attaining a minimum grade of B in Kin 497. Regulations regarding the locale of the work, supervision and other arrangements, follow those for Kin 497. The written thesis should be submitted to the Chair of the Undergraduate Curriculum Committee by the last day of exams of the semester. The thesis will also be presented orally as a seminar in an open forum at the end of the semester. Prerequisites: Kin 497. Only students in the Honours programme may register for Kin 499. A student may register for one other course concurrently with Kin 499 with permission from the faculty supervisor for Kin 499.

GENERAL CONSIDERATIONS

An undergraduate thesis should be based on the work proposed in Kin 497.

Deadlines

The following deadlines must be met:

11th week of semester:	Submit a draft to your supervisors.
12th week of semester:	Your final draft must be submitted to your supervisors and the Chair of the Undergraduate Curriculum Committee, and a date for your oral presentation set.
14th week of semester:	Final revisions must be completed and the thesis ready for binding. Once all revisions have been incorporated you should submit the thesis to the Chair, UCC.

Audience

Write your thesis for your peers. Imagine that it will be read by other senior Kinesiology students. Assume that your readers will not be specialists in your area and will likely be unfamiliar with some of the technical aspects of your project. Keep in mind that it is essential to provide such readers with appropriate background information.

Purpose

A successful undergraduate thesis will demonstrate your skill as a scientific-technical writer and your ability to integrate knowledge, to solve problems, to undertake and complete a complex and challenging project, and to maintain professional standards.

Supervisory Committee

In addition to a Senior Supervisor, who will be a faculty member in the School of Kinesiology, you should also have a co-supervisor. The co-supervisor need not be a faculty member at Simon Fraser University, but in such cases must be approved by the UCC.

Getting started

Be sure to allow sufficient time to revise your work. It is not uncommon to underestimate the amount of time required to write a report, and make matters worse by putting off the writing to the last possible minute. This combination of wishful thinking and procrastination is particularly dangerous when writing a relatively long report on a long-term project. The most productive approach is to write sections of the first draft as your work progresses. By making writing an integral part of your thesis project, instead of a separate and final step, you can significantly reduce the sense of drudgery and frustration which so often accompanies after-the-fact report writing. By drafting in stages, you can also help ensure the success of your project, because putting concepts into words may clarify your thinking and help bring potential problems into focus.

It is advisable to keep a daily record of your activities, especially of your practical work. You will be conducting many new practical procedures and may forget the finer details when it comes to the final write-up of your thesis. By keeping a daily log book of all your work, no matter how mundane, you will easily recall all your activities.

Copyright

If you reproduce copyrighted material, including illustrations or written material over 500 words in length, you must obtain written permission from the copyright holder.

The Oral Thesis Presentation

As you are writing your thesis, you should give some consideration to what you will include in your oral thesis presentation. In general, you are expected to give a 20 to 30 minute summary of the research and work upon which your thesis is based. You should arrange your oral presentation in somewhat the same manner as your written thesis. Due to the time limit, you should keep your background review to a minimum. Your main goal is to make your presentation concise, interesting and informative. Visual aids should be used to achieve this goal.

The Oral Thesis Presentation will be chaired by a faculty member designated by the Chair of the Undergraduate Curriculum Committee, and should be attended by at least one member of your supervisory committee. In the event that one member of your supervisory committee cannot attend the oral presentation, comments and questions from that member will be forwarded in writing to the Chair prior to your presentation.

Following your presentation, you are expected to answer questions from your supervisors and the audience (faculty, students and other observers). You will then be asked to leave the room, as the supervisory committee considers various issues related to your work (most notably, any revisions which you might be required to make). Finally, you will be asked to return to the room for the final comments of the committee. Answering questions and receiving comments from the committee generally takes about an hour.

CONTENT CONSIDERATIONS

Descriptions of the major sections of your thesis are outlined below.

Abstract

The abstract provides readers with an accurate summary of the scope and content of the thesis. It should briefly describe your project, its significance, the method of your research, your results, and your contribution to the field. Consider the abstract as a very short verion of your thesis which could be published as a separate document. Use the past tense, minimizing technical language and ensuring that any technical terms you do use are

either familiar to all potential readers or adequately defined. Include only information also found in the thesis.

Acknowledgements

Acknowledge the help you received from anyone who worked with you on your project or provided significant help in terms of advice, information, constructive criticism, financial support, or facilities.

Background

A concise literature review of the field should be provided in this section. You can imagine that the main text of your thesis (Abstract, Introduction, Methods, Results, Discussion, References) constitutes a research paper, as found in scholarly journals. Indeed, it should not exceed the normal length of such journal articles. However, a non-specialist may have dificulty in appreciating the significance of your work without being provided with a broader picture of the research field. The background is supposed to provide such a non-specialist with a clear and concise review of the area, and should highlight the controversial issues. It should also include relevant theoretical and/or historical background information necessary for the reader to understand the project, to place it in the appropriate context, or to judge its contribution to the field.

The Background section in your thesis is essentially an updated version of the Background section in your Thesis Proposal.

Introduction

In contrast to the Background, which provides a review of the area in general, the Introduction should focus on the specific issue being addressed by the thesis. It should present the current state of knowledge in the area and should explain how your research contributes to the field.

Methods

Your thesis must contain sufficient detail so that someone could replicate your study. This section should outline in detail the research design and experimental protocol, and should describe all the instrumentation used. Include the Model type and manufacturers' names of all materials and instrumentation used. Finally, describe all the variables you monitored and explain the manner in which your results were obtained (i.e. data acquisition). Normally, results are analysed using statistical procedures. Any such mathematical or statistical procedures used in the analyses of results should be described in the Methods section.

Results

The results section should describe the responses of all the variables you measured in your experiments. In addition to a description of the results, you should also outline the results of any statistical analyses conducted. This section should include not only a written description of the results obtained, but also graphical presentations.

Discussion

The results of your research needs to be discussed in detail. In particular, you should state whether your hypotheses were confirmed. You should discuss the constraints, failures and weaknesses of the project, emphasize its contribution ot the field, and provide recommendations for future studies. You may wish to structure your Discussion into subsections, each dealing with a particular finding. Strive for a strong final statement, perhaps by stressing the potential impact of your accomplishments.

References

References in your thesis should be cited according to an accepted format. It is recommended that you write the thesis in the format accepted by a journal in which you would like to publish your results. Each scientific journal includes a section on Instructions to Authors, and you are advised to follow such guidelines. A recommended journal, where you may find appropriate guidelines is the Canadian Journal of Physiology and Pharmacology.

Appendices

Place as much turgid material as possible in appendices (i.e. mathematical derivations, computer programs, elaborate diagrams of equipment designed). Your thesis should contain all the detail necessary for replication, but much of this detail should appear in the appendices rather than in the central chapters. Your chapters should provide sufficient detail and context so that readers can appreciate the full significance of your accomplishments, but an appendix is the appropriate place for those details which are only useful to someone who plans to apply your work, perhaps by acting upon a proposal for future work presented in your final chapter.

FORMAT CONSIDERATIONS

The following guidelines should be adhered to in writing the thesis.

Sections of the Thesis

You are expected to include the following sections in your thesis in the order listed below. Where applicable, the recommended length of each section is given in brackets:

Title Page
Approval Page
Abstract (500 words)
Acknowledgements (1 page)
Dedication (optional; 1 page)
Table of Contents
List of Figures and Tables
Objectives (1 page)
Background (not to exceed 20 pages)
Introduction (not to exceed 4 pages)
Methods (not to exceed 6 pages)
Results (not to exceed 6 pages)
Discussion (not to exceed 6 pages)
Conclusions (1 page)
References
Appendices

Pagination

The sections from Title Page to List of Figures and Tables must be paginated in lower case Roman numerals (omit page number for Title page). The remainder of the text should be paginated in Arabic numerals.

Margins and paper

Margins must be 1.25 inches (3.2 cm) on the left side of the page and 1 inch (2.5 cm) on the top, bottom, and right sides. Ensure that page numbers, titles, and so on are within these margins as several mm will be trimmed from bound copies of the thesis. Use plain white, 8 1/2" x 11" (21 x 28 cm) 20-lb. bond paper.

Typeface and Print Quality

Use the same type face throughout, with possible exception of appendices, which must nevertheless produce clear photocopies. Whether or not you use proportional spacing or justification is up to you (you may prefer the look of a justified page). The final draft of your thesis, with the possible exception of some appendices, must be letter-quality with crisp, black letters. You should use a laser printer for the final draft. Dot matrix print quality is not acceptable.

Submitting the Final Draft

After your thesis has been defended and final revisions approved by your supervisor(s), you must provide the School of Kinesiology with a faultless, letter quality copy. You are responsible for cost of printing the original copy of the thesis and of binding your copy. The School will pay for duplicating two copies and for binding two copies (one for the School and one for your senior supervisor). If you wish to print and bind additional copies of your thesis, you must indicate this at the time of submitting your final draft. You will be billed for the additional costs.

Sample Pages

The final two pages of this section provide samples of a thesis title page and an approval page.

TITLE OF THESIS
(in upper case letters, centred on appropriate number of lines)

by

Your Name
(in upper and lower case letters)

A THESIS SUBMITTED IN PARTIAL FULFILMENT

OF THE REQUIREMENTS FOR THE DEGREE OF

BACHELOR OF SCIENCE (HONOURS)
in the School of Kinesiology

SIMON FRASER UNIVERSITY

(as shown here)

DATE
(Month Year)

APPROVAL

Name:
Degree:
Title of Thesis:

(signature line)
_____
(Name)
Chairman
Undergraduate Curriculum Committee
School of Kinesiology, SFU

Examining Committee

Chairperson:

(signature line)
_____
(Name)
(Position)
School of Kinesiology, SFU

Senior Supervisor:

(signature line)
_____
(Name)
(Position)
(School or Department)

Co-supervisor:

(signature line)
_____
(Name)
(Position)
(School/Department/Company)

Date Approved: _____

SUMMARY OF CURRICULUM CHANGES

SUMMARY OF ITEMS TO BE CONSIDERED

SCHOOL OF KINESIOLOGY

B.Sc. (Kinesiology) Calendar Entry
B.Sc. (Kinesiology) Major Program Requirements.

New Course Proposals
KIN 201
KIN 301

Course Deletion Proposal
KIN 401

Course Change Proposal
KIN 402 Credit hours, Prerequisites, Vector

SUMMARY OF THE RATIONALE FOR THESE CHANGES

The School of Kinesiology has three required upper-level laboratory courses (KIN 326, 401 and 407). As students often wait until close to completion of their degrees before applying to take these courses a shortage of space often occurs. In addition, laboratory courses are very demanding on faculty and T.A. time and departmental resources. The School of Kinesiology is presently developing streams within its undergraduate program. Due to continued budget cuts and enrollment increases, the School has decided that it would be prudent to reduce the number of laboratory courses required in the general Kinesiology core. Students will be able to take more specific applied laboratory courses related to their stream without generating a bottle neck problem similar to the one we experience with KIN 401.

The School has discussed this issue and has decided to retain KIN 407 as a core course and to delete KIN 401. However, it was agreed that only the laboratory component of KIN 401 be made a non-core area, and that the lecture material from KIN 401 be kept in the core. It is therefore proposed that a new course KIN 201 (which would comprise of the lecture material from KIN 401) be added to the core. KIN 201 would be a lecture course and the School of Kinesiology could offer it twice a year to more students than can currently be serviced by offering KIN 401 three times per year. In addition, the School will realize a considerable cost savings by these changes.

This proposed addition of KIN 201 obviously results in necessary alterations to KIN 401. KIN 401 will be deleted and a new laboratory course KIN 301 developed in its place. Due to the creation of KIN 201 and KIN 301 changes to o the existing KIN 402 are considered desirable. Specific rationale for these proposals is discussed with each individual proposal forms.

RATIONALE FOR NEW COURSE PROPOSAL

SCHOOL OF KINESIOLOGY

Basic Biomechanics KIN 201-3

RATIONALE:

Biomechanics is a core area of research in the School of Kinesiology. Presently, the biomechanics course KIN 401 is a required core course. If KIN 201 is approved KIN 401 will be deleted. The faculty of the School of Kinesiology have agreed that a new course at the 200 level should replace KIN 401 as the required biomechanics course. This lower designation will help the School's development of streams by allowing the specific streams to designate more specialized upper division credits.

A further benefit of this change is due to the fact that KIN 401 requires, (as will KIN 201) PHYS 101 as a prerequisite (which in turn requires MATH 151 or 154 as a prerequisite). Many KIN 401 students had forgotten some of the fundamentals of physics and calculus by the time they had occasion to apply them in this fourth year course and consequently struggled with the course material. Over the years, numerous students have suggested that it would be easier to take biomechanics soon after the calculus courses.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. CALENDAR INFORMATION **DEPARTMENT:** KINESIOLOGY

Abbreviation Code: KIN **Course #:** 201 **Credit hrs:** 3 **Vector** 3-1-0

Title of Course: Basic Biomechanics

Calendar description of course:

This course will cover the application of basic mechanics to human movement. It will provide students with a basic understanding of how forces act on body segments and how movements are produced. The subject matter of this course is relevant to quantifying all forms of physical activity, from activities of daily living, physically challenged movement patterns, to elite athletic performance. It also has applications in medical settings, including rehabilitation and sports medicine.

Nature of Course:
The course will consist of three hours of lecture and one hour of tutorial per week. Weekly reading assignments will be provided and discussed. Evaluation will consist of assignments, midterm and final exams.

Prerequisites: MATH 152 or 155, PHYS 101 or 120, KIN 142. Students with credit for KIN 401 may not take KIN 201 for further credit.

What course (courses), if any, is being dropped from the calendar if this course is approved: KIN 401 (if KIN 301 is approved)

2. Scheduling

How frequently will the course be offered? Twice per year.

Semester in which course will first be offered? Fall 1994.

Which of your present faculty would be available to make the proposed offering possible?

Dr. A.E. Chapman
Dr. T.E. Milner
Mr. A.J. Leyland

3. Objectives of the Course

This course is designed to give students a good working knowledge of the application of Newtonian mechanics to human movement. The subject matter in this course is relevant to many areas of kinesiological and medical study, including: occupational biomechanics; rehabilitation; physical education; sports performance; and sports medicine. Students will study fundamental mechanical concepts such as Newton's Laws of motion and learn the application of these laws to a variety of human movements. Students will develop an understanding of the possible inaccuracies involved in qualitative assessment of human movement and be introduced to the theory of quantitative biomechanical analysis of human motion.

4. Budgetary and Space Requirements

What additional resources will be required in the following areas:

Faculty	none
Staff	none
Library	none
Audio Visual	none
Space	none
Equipment	none (this is not a laboratory class)

5. Approval (KIN 201)

Date: 19 OCT 1993 JH — Oct. 21, 1993 — _____

Director Kinesiology — Dean Applied Science — Chairman SCUS

COURSE OUTLINE/READING LIST

1. Course Name and Instructor

KIN 201 Basic Biomechanics
Instructor: Dr. A.E. Chapman, Dr. T.E. Milner or Mr. Tony Leyland

2. Course Objectives

This course is designed to give students a good working knowledge of the application of Newtonian mechanics to human movement. The subject matter in this course is relevant to many areas of Kinesiological and medical study, including: ergonomics (occupational biomechanics); rehabilitation; elite sports performance; sports medicine; and physical education.

Students will be reintroduced to fundamental mechanical concepts such as Newton's Laws of motion and learn the application of these laws to a variety of human movements. Students will develop an understanding of the inaccuracies involved in qualitative assessment of human movement and be introduced to the use of calculus to quantify human motion.

3. Required and Recommended Readings

There is no required text for this course. Students will be responsible for lecture material and will be assigned readings from some of the following texts.

Chapman, A.E. Biomechanics Booklet.
This booklet may be purchased for $10 from the course instructor.

Özkaya, N. and M. Nordin. Fundamentals of Biomechanics, Equilibrium, Motion and Deformation. Van Nostrand Reinhold, New York, 1991

Winter, D. Biomechanics and Motor Control of Human Movement (Second Edition) Wiley InterScience, New York, 1990.

Adrian, M.J. and J.M. Cooper. Biomechanics of Human Movement. Benchmark Press, Indianapolis, 1989.

Hall, S. Basic Biomechanics, Mosby, New York, 1989.

Hay, J.G. The Biomechanics of Sports Techniques (Third Edition). Prentice Hall, New Jersey, 1985.

Winter, D. Biomechanics of Human Movement. John Wiley & Sons, New York, 1979.

Dyson, G.H.G. The Mechanics of Athletics (Sixth edition). University of London Press, London, 1973.

4. Course Requirements and Grading Structure

Students will be responsible for lecture notes and assigned readings. A number of assignments will be allocated during the course.

Assignments	25%
Mid-term examination	25%
Final examination	50%

5. Course Outline

Forms of motion; linear kinematics; finite differentiation.
Equations of uniformly accelerated motion.
Vectors and projectiles.
Linear kinetics; Newton's laws of motion.
Resolution of forces; friction; work and energy.
Conservation of energy; power.
Centre of mass; momentum; conservation of momentum.
Impulse; collisions.
Angular motion; moments; couples; eccentric force.
Moment of inertia; transfer and conservation of angular momentum.
Rotational analogues of Newton's laws.
Levers; biomechanics of the skeletal and muscular system.
Linked segment models of the human body.
Centripetal, centrifugal and Coriolis forces.
Inverse dynamic analysis.
Joint force power; whole body mechanical work.
Fluid mechanics (aerodynamics).

SCHOOL OF KINESIOLOGY

Library Resources for New Courses

Course number and name: KIN 201 Basic Biomechanics

Are the current SFU library resources adequate for this course? YES

What additional library resources are essential for the offering of this course?

None

What additional library resources, if any, would be desirable but not essential for the offering of this course?

1. Textbooks - give title, authors, publisher, ISBN #, price

Biomechanics of Human Movement. Adrian, M.J. & J.M. Cooper. Benchmark Press, Indianapolis, 1989.
ISBN #:
Price:

2. Journals - give title and library subscription price, if known

Faculty members making course proposal: Dr. A.E. Chapman
Dr. T.E. Milner
Mr. A.J. Leyland

Signature: for Dr. A.E. Chapman **Date:**

COURSE ALTERATION AND RATIONALE

SCHOOL OF KINESIOLOGY

FROM:	Mechanics of Human Movement	KIN 401-4
TO:	Biomechanics Laboratory	KIN 301-3

RATIONALE:

The present KIN 401 has six laboratory sessions to compliment its lecture component. Because that lecture component is being moved to the non-laboratory course KIN 201, KIN 401 either had to be deleted completely or have new laboratories added to it. The rationale for adding KIN 201 to the calendar is discussed within that new course proposal. The School of Kinesiology felt that laboratory course on the analysis of human movement from a biomechanical perspective must remain within the program. Students of Kinesiology should be well-versed in the practical application of the lecture material presented in KIN 201 "Basic Biomechanics". In rehabilitation, sports coaching, workplace evaluation and many other settings our students will be called on to measure and evaluate human performance in terms of variables such as force production, movement patterns, reduction of injury potential and economy of movement.

It was therefore decided to create KIN 301. The addition of a new faculty member and research equipment in the area of Biomechanics (Dr. T. Milner), has increased the potential number of laboratories that can be offered in Biomechanics. The six laboratories from KIN 401 will be altered and improved and along with some laboratories from KIN 402 and some new concepts. These changes will allow for the development of the 11 laboratories planned for KIN 301.

It was considered just changing the name, vector and content of KIN 401 to reflect these changes but it is hoped students will take KIN 301 shortly after KIN 201 so the lower number designation was considered desirable.

The rationale for moving some laboratories out of KIN 402 is explained in the course change proposal for KIN 402.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. CALENDAR INFORMATION **DEPARTMENT:** KINESIOLOGY

Abbreviation Code: KIN **Course #:** 301 **Credit hrs:** 3 **Vector** 0-0-4

Title of Course: Biomechanics Laboratory

Calendar description of course:

This laboratory course covers the quantitative biomechanical evaluation of human movement. Analysis techniques for quantifying motion of body segments in athletes, normal populations and special populations will be included. Experiments will measure force production in whole body activities such as walking and jumping. Experiments will also look at the nature of muscular force generation and the mechanical properties of the musculoskeletal system.

Nature of Course: The course will consist of four hours of laboratory per week.

Prerequisites: PHYS 130 or 131, KIN 201. Students with credit for KIN 401 may not take KIN 301 for further credit.

What course (courses), if any, is being dropped from the calendar if this course is approved: KIN 401

2. Scheduling

How frequently will the course be offered? Once, possibly twice per year.
Semester in which course will first be offered? Spring 1995.

Which of your present faculty would be available to make the proposed offering possible?

Dr. A.E. Chapman
Dr. T.E. Milner
Mr. A.J. Leyland

3. Objectives of the Course

This course is designed to give students a good working knowledge of the practical field and laboratory application of Newtonian mechanics to human movement. The subject matter in this course is relevant to many areas of Kinesiological and medical study, including: ergonomics (occupational biomechanics); rehabilitation; physical education; sports performance; and sports medicine. Students will learn how to use a variety of techniques using: the force platform; video and high speed filming analysis; the and methods of measuring mechanical properties of the musculoskeletal system. In short, this course will teach students practical skills in the quantitative biomechanical analysis of human motion.

4. Budgetary and Space Requirements

What additional resources will be required in the following areas:

Faculty	none
Staff	none
Library	none
Audio Visual	none
Space	none
Equipment	none

This course can be developed without additional equipment. However, we would have to utilize some faculty member's research equipment. As this is not ideal we will apply for funding to buy equipment for this course during regular faculty equipment budget determination. However, we do not wish to give the impression that the course cannot be offered unless equipment is purchased.

5. Approval KIN 301

Date: 19 OCT 1993 Oct. 21, 1993 _____

Director Kinesiology | Dean Applied Science | Chairman SCUS

COURSE OUTLINE/READING LIST

1. Course Name and Instructor

KIN 301 Biomechanics Laboratory
Instructor: Dr. A.E. Chapman, Dr. T.E. Milner or Mr. Tony Leyland

2. Course Objectives

This course is designed to give students a good working knowledge of the application of Newtonian mechanics to human movement. The subject matter in this course is relevant to many areas of Kinesiological and medical study, including: ergonomics (occupational biomechanics); rehabilitation; elite sports performance; sports medicine; and physical education.

Students will be reintroduced to fundamental mechanical concepts such as Newton's Laws of motion and learn the application of these laws to a variety of human movements. Students will develop an understanding of the inaccuracies involved in qualitative assessment of human movement and be introduced to the use of calculus to quantify human motion.

3. Required and Recommended Readings

Kinesiology 301 Laboratory Book. (To be developed).

Students will be responsible for laboratory content and may be assigned readings from some of the following texts.

Özkaya, N. and M. Nordin. Fundamentals of Biomechanics, Equilibrium, Motion and Deformation. Van Nostrand Reinhold, New York, 1991

Winter, D. Biomechanics and Motor Control of Human Movement (Second Edition) Wiley InterScience, New York, 1990.

Adrian, M.J. and J.M. Cooper. Biomechanics of Human Movement. Benchmark Press, Indianapolis, 1989.

Winter, D. Biomechanics of Human Movement. John Wiley & Sons, New York, 1979.

4. Course Requirements and Grading Structure

Students will be responsible for laboratory write-ups and assigned readings.

Laboratory Write-Ups	50%
Midterm examination	20%
Final examination	30%

SCHOOL OF KINESIOLOGY

Library Resources for New Courses

Course number and name: KIN 301 Biomechanics Laboratory

Are the current SFU library resources adequate for this course? YES

What additional library resources are essential for the offering of this course?

None

What additional library resources, if any, would be desirable but not essential for the offering of this course?

1. Textbooks - give title, authors, publisher, ISBN #, price

2. Journals - give title and library subscription price, if known

Faculty members making course proposal: Dr. A.E. Chapman
Dr. T.E. Milner
Mr. A.J. Leyland

Signature: for Dr. A.E. Chapman **Date:**

COURSE ALTERATION AND RATIONALE

SCHOOL OF KINESIOLOGY

FROM:	Mechanical Properties of Tissues	KIN 402-4
TO:	Mechanical Properties of Tissues	KIN 402-3

RATIONALE:

KIN 402 as it exists includes a laboratory component of only 6 laboratories. The new course proposal for KIN 201 and the alteration of KIN 401 into KIN 301 will result in some of these laboratories being moved to KIN 301. Many of the concepts presented in KIN 402 can be demonstrated with computer modeling, and assignments will be set in which the students will use computer models of human tissues to learn about their properties. These computer models, along with the transfer of existing labs to KIN 401 will eliminate the need for a laboratory component in KIN 402. This proposal therefore is to change KIN 402 to a lecture and tutorial course and subsequently change its associated vector.

These proposals will be more cost effective as no laboratory T.A. will be required for KIN 402, while KIN 301 will become more efficient as a full slate of 12 laboratories will be developed.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. CALENDAR INFORMATION **DEPARTMENT:** KINESIOLOGY

Abbreviation Code: KIN **Course #:** 402 **Credit hrs:** 3 **Vector** 2-1-0

Title of Course: Mechanical Properties of Tissues

Calendar description of course:

A study of the mechanical behaviour of tissues in the body and relation of this behaviour to their structure and function. The course is designed to fill the gap between anatomical (micro and macro) structure and physiological function, with a view to assessing the effects of unusual conditions (including exercise) upon behaviour of tissues.

Nature of Course: The course will consist of two hours of lecture and one hour of tutorial per week.

Prerequisites: KIN 301

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 course will first be offered? Spring 1995.

Which of your present faculty would be available to make the proposed offering possible?

Dr. A.E. Chapman

3. Objectives of the Course

This course is designed to study the biomechanical behaviour of the following tissues; muscle, bone, ligament, tendon, and cartilage. Also studied is lubrication, stability and wear in joints. A modeling approach is taken using both phenomenological and rheological models. The underlying theme is how the mechanical characteristics of tissues contribute to the determination of patterns of human movement.

4. Budgetary and Space Requirements

What additional resources will be required in the following areas:

Faculty	none
Staff	none
Library	none
Audio Visual	none
Space	none
Equipment	none. The computer model presently used was developed in-house and has been transfered into Macintosh format. KIN 402 students can use the university Macintosh assignment lab for their assignments. Other computer models may be purchased or developed at a later date, but no immediate funding is required for this course.

5. Approval KIN 402

Date: 19 OCT 1993 Oct. 21, 1993.

Director Kinesiology	Dean Applied Science	Chairman SCUS

SCHOOL OF KINESIOLOGY

Library Resources for New Courses

Course number and name: KIN 402 Mechanical Properties of Tissues

Are the current SFU library resources adequate for this course? YES

What additional library resources are essential for the offering of this course?

None

What additional library resources, if any, would be desirable but not essential for the offering of this course?

1. **Textbooks - give title, authors, publisher, ISBN #, price**

2. **Journals - give title and library subscription price, if known**

Faculty members making course proposal: Dr. A.E. Chapman
Dr. T.E. Milner
Mr. A.J. Leyland

Signature: for **Dr. A.E. Chapman** **Date:**

RATIONALE FOR NEW COURSE PROPOSAL

DEPARTMENT OF KINESIOLOGY

KIN 207-3 Information Processing in Human Motor Systems

RATIONALE:

This course is part of the reorganization of the undergraduate program in Kinesiology. KIN 207 will be a required, core course in the restructured curriculum. With the addition of new faculty (Hoffer, MacKenzie, Marteniuk, Milner, Weeks) and increased expertise in the area of human motor control in the School of Kinesiology, this is both possible and desirable. The course complements other lower level, core Kinesiology courses (Kin 142, 201, 205,). KIN 207 will be a useful introduction for subsequent study of: human information processing in motor learning and performance (Kin 367 and 467); systems control of movement (Kin 415 and 442); and human factors/ergonomics (Kin 280 and subsequent courses in this new stream). The course is intended to provide students with an introduction to basic concepts in human motor systems and human motor control. The course will include psychological, physiological and computational approaches to understanding voluntary, goal-directed human movement from a behavioural perspective. An introduction will be provided to basic activity systems, including locomotion, communication through speech and gesture, and manipulation. The course may be of interest to students in other units in the Faculty of Applied Science and in other Faculties at SFU. The first offering of the course is planned for the Fall of 1994.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. **Calendar Information** **Department:** Kinesiology

Abbreviation Code: KIN **Course #:** 207 **Credit Hrs:** 3 **Vector:** 3-1-0

Title of Course: Information Processing in Human Motor Systems

Calendar Description of Course: Students are introduced to human motor systems from psychological, physiological and computational approaches. We consider voluntary goal-directed movements, primarily from a behavioural perspective, and the motor systems underlying locomotion, communication (speech, gesture, drawing, writing), emotional expression, grasping and manipulation. (Lecture)

Nature of Course: Required core course. Three, one hour lectures per week. One tutorial per week.

Prerequisites (or special instructions): Kin 142 OR by permission of instructor.

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 or twice per year

Semester in which the course will first be offered? Fall, 1994

Which of your present faculty would be available to make the proposed offering possible?
In addition to Dr. MacKenzie, Drs. Dickinson, Goodman, Marteniuk, and Weeks could teach this course.

3. **Objectives of the Course:**
1) To provide introductory knowledge of human motor systems and human motor control in kinesiology.
2) To provide a framework for subsequent studies of human factors, human information processing, human performance and human motor control systems.

4. **Budgetary and Space Requirements**

What additional resources will be required in the following areas:
Faculty: none
Staff: none
Library: copy of the course text
Audio Visual: none
Space: none
Equipment: none

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5. **Approval**

Date:	19 Oct 1993	Oct. 21, 1993	
	(Department Chair)	(Dean)	(Chair, SCUS)

75.

Kin 207- 3
Information Processing in Human Motor Systems

Professor: Dr. Christine MacKenzie **Office:** K9626 **Phone:** 291-3004

Course Overview:
This course provides an introduction to basic concepts in the motor systems underlying goal directed human movement. Problems of planning and control of goal-directed movements are considered, from psychological, physiological and computational perspectives. Voluntary, automatic and uncontrolled movements are contrasted. Considered are motor systems underlying posture, locomotion, communication and manipulation. Upon completion of the course, the student should have an understanding of basic concepts, approaches and problems in human motor systems.

Topics to be covered:
1. Human Movement - Plan for this course
2. Human Motor Systems
   a) A Systems Approach
   b) Information and Information Processing
   c) Levels of Analysis (in space and time)
   d) Levels of Constraints
   e) The CNS as Controller
      i) The Conceptual Nervous System
      ii) The Central Nervous System
      iii) The Computational Neuronal System
3. Tasks and Activity Systems
   a) Tasks, Motivations, Plans and Programs
   b) Posture and Stability
   c) Locomotion
   d) Communication - Speech, gesture, writing, drawing
   e) Expression
   f) Grasping and Manipulation
4. Recurring Themes and Future Directions

Student evaluation:

Midterm 1	25
Midterm 2	25
Final Exam	50
Total	100

Course Text:
Rosenbaum, D.A. (1991). *Human motor control.* New York: Academic Press.

School of Kinesiology

Library Resources for New Courses

Course number and name: Kinesiology 207

Are the current SFU library resources adequate for this course?

yes - see course text below

What additional library resources are essential for the offering of this course?

The course text:
Rosenbaum, D.A. (1991). *Human motor control.* New York: Academic Press.

What additional library resources, if any, would be desirable but not essential for the offering of this course?

none

Faculty member making course proposal: Dr. Christine MacKenzie

Signature: CMacKenzie Date: September 20, 1993

Rationale for a New Course Proposal

Dept.: Kinesiology

Course: Molecular and Cellular Cardiology
Kin 412 (3hrs) 2-1-0

Rationale: This course has been taught two times previously. Based on the student evaluations, the course has been received enthusiastically. The content of this course builds on what is learned in Kinesiology 305 but it also attempts to integrate what has been learned in a variety of lower level courses in several disciplines. There is considerable effort in discussing both the theoretic aspects of the field as well as some applications of this knowledge. It may draw from students both from the streams of Health and Physiological Sciences and Active Health in the School of Kinesiology as well as students from other departments.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: KINESIOLOGY

Abbreviation Code: KIN Course Number: 412 Credit Hours: 3 Vector: 2-1-0

Title of Course: MOLECULAR AND CELLULAR CARDIOLOGY

Calendar Description of Course:
This course entails a detailed analysis of the molecular and cellular basis of cardiac function. The material will be derived from myriad disciplines including: Anatomy (Histology & Ultrastructure), Biomechanics, Physiology, Electrophysiology, Biochemistry and Molecular Biology. A particular emphasis will be placed on the mechanisms by which the heart responds to stresses such as Ischemia and Exercise.

Nature of Course

Prerequisites (or special instructions):
KINESIOLOGY 305

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? 1 x p.a.

Semester in which the course will first be offered? 95-1

Which of your present faculty would be available to make the proposed offering possible? G.F. Tibbits

3. Objectives of the Course

To learn to integrate information from a variety of disciplines.
To learn to critically evaluate the literature in the area.
To learn to present scientific controversies.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty	Nil
Staff	Nil
Library	Existing serials adequate
Audio Visual	Nil
Space	Nil
Equipment	Nil

5. Approval

Date: 19 Oct 1993	Oct. 21, 1993	
Department Chairman	Dean	Chairman, SCUS

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

School of Kinesiology

Library Resources for New Courses

Course number and name: Kinesiology 412

Are the current SFU library resources adequate for this course?
(YES) NO

What additional library resources are essential for the offering of this course? NONE

1. **Textbooks** - give title, authors, publisher, ISBN #, price
(all books currently in library)

Physiology of the Heart, A.M. Katz. Raven Press. ISBN 0-88167-838-4

Excitation-contraction coupling and cardiac contractile force. D.M. Bers, Kluwer Academic Publishers. ISBN 0-7923-1186-8.

Heart and Cardiovascular System, 2nd. Edition. H.A. Fozzard, Raven Press.

2. **Journals** - give title and library subscription price, if known

American Journal of Physiology
Journal of Molecular Cellular Cardiology
Circulation research

The library currently subscribes to these three journals.

What additional library resources, if any, would be desirable but not essential for the offering of this course?

1. Textbooks - give title, authors, publisher, ISBN #, price
2. Journals - give title and library subscription price, if known

Faculty member making course proposal:
G.F. Tibbits
Signature: G.F. Tibbits Date: 19 Sept. 93

Kinesiology 412
Molecular and Cellular Cardiology

Instructor: G. F. Tibbits
Office: K9630

T.A.:

OVERVIEW

The course presents a detailed analysis of the scientific basis of cardiac function. The material will be derived from a variety of disciplines including anatomy (histology and ultrastructure), biomechanics, physiology, electrophysiology, biochemistry and molecular biology. A particular emphasis will be placed on the mechanisms by which the heart responds to stressors such as ischemia and exercise. Course structure: two hours of lecture and one hour tutorial per week.

PREREQUISITES

Kinesiology 305

TEXT

Required:
Physiology of the Heart
A.M. Katz, Raven Press (1992)

Recommended (will be on reserve in library):
Excitation-contraction coupling and cardiac contractile force
D.M. Bers, Kluwer Scientific Press (1991)

GRADING

Debate	20%
Paper	20%
Midterm	20%
Final	40%

BRIEF COURSE OUTLINE

- Cardiac Structure
  - Anatomy, Histology and Ultrastructure
- Cardiac Excitation
  - Electrophysiology and EKG
- Cardiac Contraction
  - Excitation-contraction coupling
  - Biomechanics of cardiac contraction
- Cardiac Metabolism
- Regulation of Cardiac Output
- Response to Stressors
  - Atherosclerosis
  - Ischemia
  - Exercise
- Cardiac Hypertrophy

RATIONALE FOR NEW COURSE PROPOSAL

DEPARTMENT OF Kinesiology

XXXX 000-0 Electrophysiological Techniques Lab 418 4 credits

RATIONALE:

Indicate the major reasons for the addition or alteration of the course. These might include: changes in faculty; expansion of areas of study within the department; support to joint programs or cognate departments, etc.

At the present time members of the School of Kinesiology are applying a great deal of effort to improving our undergraduate program. As part of my commitment I have developed an upper level laboratory course on the electrophysiology of excitable tissues. This course will build on our school's strength in the physiology of muscle, heart and brain and will prepare students for careers in the research, science, health and technical professions.

The course emphasizes problem solving, experimental manipulation, and critical data interpretation in an open laboratory environment. Students will have extended lab access to complete their assignments and to carry out simple curiosity driven work on their own. The results of each assignment, as well as any additional findings, will be presented to the rest of the group in an informal lab discussion held at the beginning of each session. Students will maintain both a data log and an analysis book. This large format book will document the objectives, experimental results, data analysis and critical interpretation of each session's work in an informal and conceptual manner. This approach encourages student to think about their results and to explore new ideas without the constraints of a formal lab report. The analysis book will be used as visual material during the regular oral presentations and will form an annotated record of the students progress throughout the course.

The motivation for this course is based on the need to offer our students practical, hands on experiences in research to compliment the theoretical and conceptual material delivered in lectures. The university system is under increasing pressure to provide students with an education relevant to their future careers. At present, students interested in professional careers in university based research, hospital based laboratory and diagnostic services, physiotherapy, nursing or medicine must attend or take transfer courses from other Canadian or American universities in order to develop the skills taught in this course. This is a major frustration voiced by many of my K306, directed studies, and special topics students. These students make it clear that they strongly support the mounting of upper levels laboratory courses designed to enhance practical laboratory skills or to expose them to realistic research environments.

A second motivation for this course is based on the benefits of enhancing our academic ties with Engineering Sciences. Over the last 2 years I have chaired the Biomedical Engineering Curriculum Committee in the School of Engineering Sciences. The end result is that the biomedical engineering stream is now a combined Bachelor/Masters program. Both the engineering faculty and students view Kinesiology as their major source of non-engineering expertise and are highly motivated to develop joint courses at both the graduate and undergraduate level. This interest spans all of the disciplines of Kinesiology but the interface between electronics and excitable tissues is a key issue. In response to this need for

increased ties between our two schools I have frequently included biomedical engineering students in my courses. The result of this cross fertilization is a greatly enhanced learning environment for both Kinesiology and Engineering students since these groups have different, yet very complimentary, perspectives on biology, electrical theory and the approach to research.

A pilot of this course took place in the summer of 1992 with the financial support of the School of Engineering. The students were drawn from Kinesiology, Engineering and Biology. The course was highly successful as indicated by the attached comments from several of the students. The students made clear progress in their technical, communication, record keeping, and data analysis skills and came away from the course with an intimate knowledge of the neuron and its role in brain function. This result is strong justification for continuing to offer this course to our students.

At the present time Biosciences is altering BISC 405 to increase the emphasis on neurophysiology. Dr. K. Delaney, the course supervisor has reviewed the course outline and objectives of K418 and agrees that academic overlap of K418 and the Biosciences course is small. His course is a comparative approach to the integrative function of the nervous system with a particular emphasis on synaptic function where as K418 will use a single model system to focus on general research methods in the neurosciences.

The course will accept between 12 and 16 students. Based on the Kinesiology undergraduate program survey taken in the summer of 1993 the majority of students feel that physiology is an important component of Kinesiology at SFU and over 50% of our students are considering further training in professional schools in the medical field. Many of these students contact me directly to voice their desire for an upper levels laboratory course in the neurosciences. It is clear by the number of enquiries that we will fill the available positions in the course on a regular basis.

Please note: a new course proposal form, course outline, and reading list must accompany any new course/program proposal - see Appendix B for an example.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. **Calendar Information** **Department** Kinesiology
Abbreviation Code: **Course #:** KIN418 **Credit Hrs:** 4 **Vector:** 2-0-5
Title of Course: Electrophysiological Techniques Lab
Calendar Description of Course:

This laboratory course allows students to explore basic biophysical and electrophysiological properties of excitable tissues in a realistic research environment and to develop practical laboratory skills for the neurosciences.

Nature of Course: Electrophysiology Laboratory

Prerequisites (or special instructions): required KIN306, recommended K415

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? Inter or summer semester

Which of your present faculty would be available to make the proposed offering possible? Dr. Tom Richardson

3. **Objectives of the Course:**

The objective of this laboratory course is to allow students to explore basic biophysical and electrophysiological properties of excitable tissues in a realistic research environment and to develop practical laboratory skills for the neurosciences.

4. **Budgetary and Space Requirements**

What additional resources will be required in the following areas:

Faculty: The only faculty required will be Dr. Tom Richardson the course instructor.

Teaching Assistance: A teaching assistant skilled in the area will be required.

Equipment: The pilot took place in the instructors research laboratory using the instructors equipment. In the future the course will share equipment available through BISC 305 and 405. All of the basic equipment for four basic setups is presently available. This will accommodate from 12 to 14 students. Please see the letter from Dr. Delaney.

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5. **Approval**

Date: 21 Oct 1993 Oct 21, 1993

(Department Chair) (Dean) (Chair, SCUS)

SCUS 73-34b:-(*When completing this form, for instructions see Memorandum SCUS 73-34a. Attached course outline).* Arts 92-3 (* **note: a separate library report is now required)**

84.

To: The Undergraduate Curriculum Committee

From: Dr. K. Delaney, Biosciences

Date: Oct 19, 1993

Re: KIN 418 course proposal

Dear Members,

This letter is to confirm that at least four basic electrophysiological recording setups are presently functional and available for Dr. Richardson's proposed course. These setups will be free for use by KIN 418 each summer as well as other times during the year. These setups will support between 12 and 16 students.

The equipment was purchased in order to enhance BISC 305 (comparative physiology) and 405 (cell physiology). At the present time I am altering BISC 405 to increase the emphasis on neurophysiology. This course will have some common elements with the course proposed by Dr. Richardson. However, it is a comparative approach to the integrative function of the nervous system where as KIN 418 will use a single system to concentrate on general research methods in the neurosciences.

I have had an enthusiastic response to the neurophysiological emphasis of BISC 405 and have no trouble filling all the available places in the course. I expect that KIN 418 will be accepted by the students with equal enthusiasm. I believe these two courses are highly synergistic and I strongly support the acceptance of KIN 418.

Sincerely

Kerry Delaney

Dr. K. Delaney

CC

COURSE OUTLINE/READING LIST

ELECTROPHYSIOLOGICAL TECHNIQUES LAB K418
INSTRUCTOR - Dr. Tom Richardson

The objective of this laboratory course is to allow students to explore basic biophysical and electrophysiological properties of excitable tissues in a realistic research environment and to develop practical laboratory skills for the neurosciences. The course teaches the basics of both intra and extracellular recording techniques through experiments demonstrating the physiology of the membrane potential, synaptic and non-synaptic interactions, simple motor and sensory reflexes, as well as various forms of potentiation and inhibition within small networks of neurons.

Small groups of students will work as a team on an electrophysiological "set up". Each experimental assignment is designed to exercise the students ability to plan and execute many of the routine tasks involved in measuring the properties of excitable tissues. During the first half of the course students will develop fundamental skills working on the isolated ganglion preparation of the medical leech, hirudo medicinalis. These ganglia have a very simple organization and large, easily penetrated neurons. After students are familiar with the basics they will have the opportunity to apply their new skills in assignments using the slice preparation of the rat hippocampus.

Each day in the lab will consist of:

1) a one hour pre-lab demonstration and lecture introducing the relevant physiological principles and practical techniques necessary for the session.

2) a one hour group discussion of the previous lab's results. During this session each student will present their own data to the rest of the group in a semiformal manner. The instructor will use this time to foster a general discussion focused on the fundamentals of the physiology as well as the practical aspects of laboratory research.

3) an open ended laboratory session where the students carry out electrophysiological recordings and data analysis using modern laboratory equipment (in the instructors lab).

By the end of the course each student will have recorded the electrical activity of living neurons under a variety of conditions and will be competent with using standard intracellular and extracellular methods. They will be familiar with common laboratory equipment including pre-amplifiers, filters, stimulation units, micromanipulators, glass micropipettes, as well as output devices such as oscilloscopes, chart recorders, and other modern data acquisition devices. Of equal importance, they will have a working knowledge of several key electrophysiological concepts.

This course will expose students to a simulated research environment where they will have the opportunity to experience, first hand, many of the important activities involved in the study of excitable tissues. Through this process they will also develop a better understanding of the process of scientific investigation relevant to careers in hospital laboratories, university research, biomedical engineering, physiotherapy and the medical professions.

GRADING

Laboratory progress/Seminar participation 50%
Practical laboratory final 50%

COURSE SCHEDULE

WK1 Equipment assembly and operation
Using a capacitor/resistor model of a cell test set-up
Measure input resistance, electrode resistance, rmp

WK2 Make and test glass micropipettes in Ringers
Study ganglion preparation/anatomy
Make first intracellular recording
Measure membrane time constant, RMP, input resist, etc.

WK3 Construct a map of ganglion
Characterize action potentials of cell types

WK4 Examine electrical coupling between cells
Conduct collision experiment

WK5 Examine chemical synapses
Lucifer yellow injection to study neuronal anatomy

WK6 Sensory/motor pathways using isolated skin/ganglion
Stimulate skin, record from sensory neurons
Stimulate motor neurons, record skin responses

WK7 Open lab review
Introduction to hippocampal anatomy

WK8 The population response
Hippocampal slice recording
Orthodromic stimulation
Extra-cellular CA1 vs dentate gyrus

WK9 TMP
Intra-cellular/extra-cellular recording in the slice
Anti-dromic stimulation

WK10 Extra-somatic field potentials
Effect of ephaptic interactions on population responses

WK11 Preparation session
Set-up hippocampal slice chamber, solutions, tissue

WK12 Open lab review

WK13 Lab final

School of Kinesiology

Library Resources for New Courses

Course number and name: K418 Electrophysiology Techniques Lab

Are the current SFU library resources adequate for this course?
YES

What additional library resources are essential for the offering of this course?

1. Textbooks the following books are already in the library

Principles of Neural Science by Kandel, Schwartz and Jessell
Synaptic Organization of the Brain by Shepherd
From Neuron to Brain by Kuffler, Nicholls and Martin

2. Journals - The following journals are already in our library

Brain Research
Journal of Neurophysiology

What additional library resources, if any, would be desirable but not essential for the offering of this course?

1. Textbooks - give title, authors, publisher, ISBN #, price
2. Journals - give title and library subscription price, if known

NONE

Faculty member making course proposal: Dr. Tom Richardson

Signature: _____ Date: Sept 20, 93

KINESIOLOGY STREAM IN HUMAN FACTORS/ERGONOMICS

The field of Human Factors/Ergonomics has shown considerable expansion over the last 10 years. There has not been a commensurate increase in the training of Human Factors/Ergonomics specialists. In fact, there is no formal training at the B.Sc level in Western Canada in this area. The National Research Council estimates that the demand for human factors specialists will exceed the supply "well into the 1990s."

The proposed program is based in the School of Kinesiology. This is a logical choice since many existing core courses in Kinesiology form the basis for study in this applied field. Secondly, a new faculty member with expertise in Human Factors/Ergonomics was recently hired and other members of the School have either principal or secondary research interests in this area. There is also a precedent for housing Human Factors/Ergonomics in Kinesiology. Such a program has been recently introduced at Waterloo.

The new program will make some demands in terms of resources. While one course directly in this field (Kin 480) will be dropped and its equipment become available, new courses will require additional funds. Application will be made for funds available for new initiatives. In addition, because of its prerequisite structure, the courses will be phased in over a three year period, enabling equipment purchase to be spread over a number of fiscal years.

Instructors for the new courses have been identified and courses can be offered without increase in faculty. This has been accomplished by a combination of the following strategies. New faculty hired in the past two years were selected with this program in mind. One course will be dropped. Other courses will be re-scheduled to a less frequent campus offering, where correspondence versions of the course ensure that students will not have reduced access.

The enclosed program is incomplete. In subsequent years new course proposals will be forthcoming. Currently the program lacks a course in work physiology. A revision of physiology offerings is underway in Kinesiology in which issues of overlap and application are being addressed. This may result, for example, in a new course being proposed which combines material from the fields of exercise and work physiology (exercise physiology exists already as a course). In addition, courses in activity related musculo-skeletal disorders, thermal physiology and a laboratory course are planned and will be proposed when resources for these courses can be assured.

RATIONALE FOR NEW COURSE PROPOSAL

SCHOOL OF KINESIOLOGY

KINESIOLOGY 280-3
INTRODUCTION TO HUMAN FACTORS/ERGONOMICS

RATIONALE:

This course forms part of the reorganization of the undergraduate program in Kinesiology. KIN 280 will be a required course in the undergraduate **Human Factors/Ergonomics** stream of Kinesiology and will be relevant to students in other units of the Faculty of Applied Sciences as well as the Faculty of Arts. An overview of human capabilities, limitations, characteristics, behaviour, motivation, as well as environmental characteristics is essential to promote a *systems approach* to the design of things, procedures people use, and the environment in which they use them. The overall objective is to provide students a background from which to delve into more specialized upper-level courses in the human factors/ergonomics stream. As well, the course will be relevant to students in other units of the FAS, Psychology, and Business Adminstration.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. **Calendar Information** **Department:** Kinesiology

Abbreviation Code: KIN **Course #:** 280 **Credit Hrs:** 3 **Vector:** 2-1-0

Title of Course: Introduction to Human Factors/Ergonomics

Calendar Description of Course: This course deals with the field of Human Factors. Human Factors refers to designing for human use. The approach of the course is to present a systematic application of relevant information about human capabilities, limitations, characteristics, behaviour, and motivation to the design of things, procedures people use, and the environment in which they use them.

Nature of Course: Two, one hour lectures each week. One hour laboratory or tutorial session each week.

Prerequisites (or special instructions): KIN 142, 201, 207, or permission of the instructor

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, fall semester

Semester in which the course will first be offered? 94-3

Which of your present faculty would be available to make the proposed offering possible? D. Weeks is available to offer this course. As well, C. MacKenzie, D. Goodman, R. Marteniuk, J. Morrison would be capable of offering this course.

3. **Objectives of the Course:** Students will study aspects of information input, human output and control, workplace design, environmental conditions, as well as some selected human factors applications. Emphasis will be placed on the empirical research basis of human factors by stressing basic concepts and the human factors considerations involved in the topics covered. The overall objective is to provide students a background from which to delve into more specialized upper-level courses in the human factors/ergonomics stream.

4. **Budgetary and Space Requirements**

What additional resources will be required in the following areas:
Faculty: None
Staff: None
Library: see attachment
Audio Visual: None
Space: Use of existing laboratory space in Kinesiology/ Academic Computing Services labs will be booked
Equipment: some software packages may be required ($2000 - $5000)

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5. **Approval**

Date: 19 Oct 1993 Oct. 21, 1993

(Department Chair) (Dean) (Chair, SCUS)

School of Kinesiology

Library Resources for New Courses

Course number and name: KIN 280 - Introduction to Human Factors Engineering

Are the current SFU library resources adequate for this course?

YES X NO

What additional library resources are essential for the offering of this course?

1. **Textbooks** - give title, authors, publisher, ISBN #, price

The books currently available in the library are attached. This list appears to be sufficient to offer this course

2. **Journals** - give title and library subscription price, if known

Necessary journals are presently held in the library and are sufficient, assuming that they are not cut due to funding.

What additional library resources, if any, would be desirable but not essential for the offering of this course?

1. Textbooks - give title, authors, publisher, ISBN #, price
2. Journals - give title and library subscription price, if known

Faculty member making course proposal: D. J. Weeks
Signature: _____ Date: Oct 4/93

RATIONALE FOR NEW COURSE PROPOSAL

SCHOOL OF KINESIOLOGY

KINESIOLOGY 380-3: OCCUPATIONAL BIOMECHANICS

RATIONALE:

This course forms part of a reorganization of the undergraduate program in Kinesiology. The existing upper levels required course in Biomechanics (KIN 401) is being replaced by a more introductory lower levels equivalent course (KIN 201). This provides more flexibility for specialist courses and more advanced study in Biomechanics at the upper levels, and forms a bridge between 1st year Math's and Physics and upper levels biomechanics courses. KIN 380 will be a required course in the undergraduate "Ergonomics" stream of Kinesiology. Biomechanics is a fundamental component of Ergonomics education and practice, and is essential to the effective offering of this program within Kinesiology.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. **Calendar Information** **Department:** Kinesiology

Abbreviation Code: KIN **Course #:** 380 **Credit Hrs:** 3 **Vector:** 3 - 0 - 0

Title of Course: Occupational Biomechanics

Calendar Description of Course: This course will teach the principles of biomechanical analysis and their application in the workplace. Topics will include techniques for measurement and analysis of movement; analysis of forces and accelerations in three dimensions; work and power; simple biomechanical and biodynamic models; standards for lifting and carrying - their application and limitations.

Nature of Course: Three one hour lectures each week.

Prerequisites (or special instructions): KIN 201, KIN 205, and KIN 326 which may be taken concurrently.

What course (courses), if any, is being dropped from the calendar if this course is approved: KIN 480 - Human Factors in the Working Environment

2. **Scheduling**

How frequently will the course be offered? Once per year, fall semester
Semester in which the course will first be offered? 94-3

Which of your present faculty would be available to make the proposed offering possible J. Morrison

3. **Objectives of the Course:** This course will teach students how to apply the principles of biomechanical analysis to common work tasks. The course will draw upon the knowledge base aquired in KIN 201, and further extend the concepts and principles learned in that course. Students will learn techniques used to measure movement, and to analyze forces, work and power, and their application and limitations when applied in an industrial setting. Course material will include the construction of simple biomechanical models, existing standards for lifting and carrying, and recognition of their limitations.

Occupational biomechanics comprises one unit in KIN 480 ("Human Factors in the Working Environment"), which will be dropped from the Calendar. The occupational biomechanics material will be substantially expanded.

4. **Budgetary and Space Requirements**

What additional resources will be required in the following areas:

Faculty	None
Staff	None
Library*	Chaffin DS, Andersson GBJ. Occupational Biomechanics, Second Edition. N.Y.: John Wiley + Sons, 1991.
Audio Visual	None
Space	None
Equipment	None

5. **Approval**

Date: 21 Oct 1993 Oct. 21, 1993

(Department Chair) (Dean) (Chair, SCUS)

94.

School of Kinesiology

Library Resources for New Courses

Course number and name: KIN 380 - Occupational Biomechanics

Are the current SFU library resources adequate for this course?
YES NO X

What additional library resources are essential for the offering of this course?

1. **Textbooks** - give title, authors, publisher, ISBN #, price

a) Chaffin D. B., Andersson G. B. J. Occupational Biomechanics. 2nd Edition, N. Y. John Wiley + Sons, 1991 (2 copies)

b) Mital, A., Nicholson, A.S., and Ayoub, M.M. A Guide to Manual Materials Handling. Taylor Francis, London(U.K.) and Washington (D.C.). ISBN: 0-85066-801-8

2. **Journals** - give title and library subscription price, if known

Ergonomics: Taylor Francis, London
Journal of Biomechanics
Both of these journals are presently held in the Library but could be cut due to funding.

What additional library resources, if any, would be desirable but not essential for the offering of this course?

1. Textbooks - give title, authors, publisher, ISBN #, price
2. Journals - give title and library subscription price, if known

Faculty member making course proposal: J. B. Morrison

Signature: for J. B. Morrison Date: Oct 4/93

OL

RATIONALE FOR NEW COURSE PROPOSAL

SCHOOL OF KINESIOLOGY

KINESIOLOGY 382-3: PHYSICAL HAZARDS IN THE WORKPLACE

RATIONALE:

Indicate the major reasons for the addition or alteration of the course. These might include: changes in faculty; expansion of areas of study within the department; support to joint programs or cognate departments, etc.

This course forms part of the reorganization of the undergraduate program in Kinesiology. The existing upper levels course KIN 480 - Human Factors in the Working Environment, is being dropped. The material contained in KIN 382 has been taught in KIN 480, but as this was the only course in Human Factors/Ergonomics, it was not possible to include all subjects in each offering of the course, and the topics covered varied from year to year. Some of the topics covered in KIN 480 have been moved to KIN 380 and the remaining material will be covered in KIN 382. KIN 382 will be a required course in the undergraduate "Ergonomics" stream of Kinesiology. An understanding of the physical aspects of the working environment and their interaction with health, safety and performance is essential in order to develop a "systems" approach to work place evaluation, modification , and ergonomic design.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. **Calendar Information** **Department:** Kinesiology

Abbreviation Code: KIN **Course #:** 382 **Credit Hrs:** 3 **Vector:** 2 - 0 - 2

Title of Course: Physical Hazards in the Workplace

Calendar Description of Course: The focus of this course will be the study of the physical environment and its effects on the health, safety and performance of the worker.. Physical problems associated with noise, vibration, lighting, radiation dust and ventilation will be examined together with methods of recognition, treatment, protection and prevention.

Nature of Course: Two, one hour lectures each week. One, two hour laboratory session each week.

Prerequisites (or special instructions): KIN 142, PHYS 130 or 131, KIN 201, KIN 205, KIN 280. Students with credit for KIN 480 may not take KIN 382 for further credit.

What course (courses), if any, is being dropped from the calendar if this course is approved: KIN 480 - Human Factors in the Working Environment

2. **Scheduling**

How frequently will the course be offered? Once per year

Semester in which the course will first be offered? After 94-3

Which of your present faculty would be available to make the proposed offering possible? J. Morrison, E. Banister, S. Brown

3. **Objectives of the Course:** Students will study physical aspects of the environment and their effects on health, safety, comfort and performance. Emphasis will be placed on the relationship between physical measures (of sound, vibration, light, etc.) and physiological response (in terms of acute and chronic health effects). Students will learn instrumentation, measurement techniques, interpretation of data, dose-response relationships, and industrial standards for human exposure to environmental factors.

4. **Budgetary and Space Requirements**

What additional resources will be required in the following areas:

Faculty	None
Staff	None
Library	Refer to attached library report form
Audio Visual	None
Space	Use of existing teaching laboratory space in Kinesiology.
Equipment	Please refer to attached explanation.

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5. **Approval**

Date: 21 Oct 1993 Oct 21, 1993

(Department Chair) (Dean) (Chair, SCUS)

KIN 382 "Physical Hazards in the Workplace"

Proposed Laboratories

prepared by Stephen Brown and Jim Morrison, October 12, 1993

Course format

Two, one-hour lectures and one two-hour lab each week.
Course offered once/year.
Course scheduled with three laboratory groups, with up to 10 students per group.

Course pre-requisites

KIN 142, PHYS 130 or 131, KIN 201, KIN 205

Grading

50% exams, 50% assignments/lab reports. There will be no project in this course; projects will be done in KIN 487 ("Project Lab in Human Factors/Ergonomics").

Purpose of the labs

- reinforce the concepts presented in lecture
- introduce students to equipment, measurement techniques, and exposure guidelines/limits
- develop ability at scientific and technical report writing

Proposed labs

Noise

Lab 1	Area and grid sampling
Lab 2	Dosimetry
Lab 3	Audiometry (measurement of hearing threshold levels)

Vibration

Lab 4	Hand-arm vibration
Lab 5	Whole body vibration

Light

Lab 6	Light measurement
Lab 7	Measurement of vision (Snellen chart, colour-blindness, dark adapatation)

Radiation

Site visit to Laser Lab in Engineering Sciences
Site visit to "Hot Lab" in Biosciences

Ventilation

Lab 8 Measure air flow rates and temperature control in Man/Machine Lab

Equipment needs (cost in $ Can)

Develop a generic data collection and processing system (e.g., laptop PC-compatible computer with A/D board and LabTech Notebook and DADISP software), and use a range of transducers (e.g., noise level meter, accelerometer, light meter) whose analogue output is directed to the computer. This will be less expensive than a number of systems each dedicated to measuring just one variable.

Year 1

Use existing resources to develop and test labs:

- Dr. Morrison's research equipment:
  - PC-compatible laptop computer (Zenith 8086 + extension chasis) (1)
  - Lab Tech Notebook (1)
  - DADISP (1)
  - A/D board (1)
  - accelerometers (3)
- KIN 480 equipment
  - Sound level meters (2 with frequency analyzer module, 4 without)
  - B+K hand/arm vibration meter (1)
  - Litemate/Spotmate light meters (2)
- KIN 407 equipment
  - Zenith 286 PC-compatible computers (3)
  - A/D boards (3)
  - Lab Tech Notebook (3)
  - DADISP (3)

Purchase:

- HV Lab software for processing vibration signals; cost $1,500 (1)

Year 2, purchase (at cost of $10,900):

- laptop-computer; $4,200 for Zenith 80486SX (or $3,700 for 80386SL with lower processing speed). Lap-tops are specified as the

students will use them to collect noise and vibration data at various industrial sites off-campus
- 2 accelerometers; @ $900 = $1,800
- seat pan with triaxial accelerometer for recording whole-body vibration; $2,500
- 6 amplifiers for transducers; @ $300 = $1,800
- A/D board with higher sampling rate than those used in KIN 407; $600

The three computers and A/D boards used by KIN 407 (see above) and, to a lesser extent, by KIN 203, 401, 480 and 485 are dated. Limited RAM makes it impossible to run the newer, larger programs and to display in real-time data sampled at high sampling rates (e.g., 1 KHz). Slow processing speed delays large computations (such as curve fitting/smoothing and frequency spectral analysis). Old A/D boards limit data collection to two channels at 1 KHz, the minimum sampling rate needed to faithfully record signals such as electrical activity from muscles. The old computers have served our courses well, but need to be upgraded. The computers and A/D boards which we plan to purchase for KIN 382 will be available for our other undergraduate laboratory courses, and will meet the need for the upgrade.

Year 3, purchase (at cost of $10,900):
- two more laptop-computers; @ $4,200 = $8,400
- two more A/D boards like the one purchased in Year 2; @ $600 = $1,200
- Gravis sound card. This device fits into a slot in the mother board of the computer. $300
- Digital sound system to use with Gravis sound card and computer; $1,000. Sounds collected in the field, or simulations of sounds, are stored in digital form on a floppy disk by a lap-top computer. The sounds may later be played back in the lab on the sound system. This allows the students to measure noises in the lab, perform frequency spectral analysis of sounds, and study the effects of addition of noises and cancellation of sound pressure waves due to reflections. It is not practical to borrow a sound system from IMC for this purpose, because the system will need to be hardwired and programmed to get the sound levels produced in the lab to reproduce the sound levels measured in the field. The system will remain set up in the lab for the semester, students will book time, and work with the system in pairs.

School of Kinesiology

Library Resources for New Courses

Course number and name: KIN 382 - Physical Hazards in the Workplace.

Are the current SFU library resources adequate for this course?

YES NO X

What additional library resources are essential for the offering of this course?

1. **Textbooks** - give title, authors, publisher, ISBN #, price

a) Work Design: Industrial Ergonomics, Stephen Konz, 2nd Ed. T 60.8 K66, 1983 (2nd Copy for reserve).

b) Evaluation of Human Work. J. R. Wilson, and E.N. Corlett Taylor Francis Ltd. LT59.7 E93, 1990 (2nd copy).

c) The Worker At Work. T. M. Fraser Taylor Francis Ltd. HG 7261 F 72, 1989 (2nd copy for reserve).

2. **Journals** - give title and library subscription price, if known

What additional library resources, if any, would be desirable but not essential for the offering of this course?

1. Textbooks - give title, authors, publisher, ISBN #, price
2. Journals - give title and library subscription price, if known
   - *International Journal of Industrial Ergonomics. Elsevier Science Publishers: North Holland. ISSN: 0169-8141.*

Faculty member making course proposal: J. B. Morrison

Signature: R C Armstrong for J B Morrison Date: Oct 4/95

RATIONALE FOR NEW COURSE PROPOSAL

DEPARTMENT OF KINESIOLOGY

KIN 383-3 Human-Machine and Human-Computer Interaction

RATIONALE:

This course is part of the reorganization of the undergraduate program in Kinesiology. KIN 383 is a required course in the Human Factors/Ergonomics stream in the School of Kinesiology. There are three new faculty members with interest in this area (MacKenzie, Marteniuk, Weeks) The course focuses on human-machine, and specifically, human-computer interaction. With increased growth and focus on information technology in B.C. and Canadian industry, this course will meet the needs of students with interests in the area of human factors at the interface with machine or computer. The course may be of interest to students in other units in the Faculty of Applied Science (e.g., Communications, Computing Science, Engineering Science) and in other Faculties at SFU. The course was offered by Dr. MacKenzie as Kin 421 (Selected Topics) in Spring, 1992, and Spring, 1993 semesters, and will be offered again in the Spring, 1994 semester. The first offering of KIN 383 is intended for Spring, 1995.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. **Calendar Information** **Department:** Kinesiology

Abbreviation Code: KIN **Course #:** 383 **Credit Hrs:** 3 **Vector:** 2-1-0

Title of Course: Human-Machine and Human-Computer Interaction

Calendar Description of Course: Human information processing and motor control factors are considered as factors relevant to effective, usable human-machine interfaces. A user-centred approach deals with task analysis, context of use, information processing demands, the interface, and the design, assessment and usability of tools, machines and computers. (Lecture/Tutorial)

Nature of Course: Advanced study and project on human-machine interaction. One, two hour lecture and one hour tutorial

Prerequisites (or special instructions): At least 60 credit hours and Kin 280 OR by permission of instructor. Kin 203 or relevant computing background required.

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 or Fall, 1995

Which of your present faculty would be available to make the proposed offering possible? In addition to Dr. MacKenzie, Drs. Dickinson, Marteniuk, and Weeks have expressed interest in teaching the course.

3. **Objectives of the Course:**

1) To provide knowledge of human-machine interaction.
2) To provide exposure and experience in the process of iterative design.
3) To provide independent learning opportunities.
4) To provide experience in cooperative group projects.
5) To improve seminar communication skills.

4. **Budgetary and Space Requirements**

What additional resources will be required in the following areas:
Faculty: none
Staff: none
Library: none - see attached form
Audio Visual: occasional use of A-V equipment (e.g., video)
Space: none
Equipment: none

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5. **Approval**

Date:	19 Oct 1993	Oct. 21, 1993	
	(Department Chair)	(Dean)	(Chair, SCUS)

Kin 383-3
Human-Machine and Human-Computer Interaction

Professor: Dr. Christine MacKenzie **Office:** K9626 **Phone:** 291-3004

Course Overview:

Human Factors Motto: **"Honour the user"**

In this course we examine topics in human factors relevant to human-machine and human-computer interaction. Included are the main topics of: context of usage, the human, the machine, user interfaces, and their design and evaluation. In addition to lectures and tutorials, students will select a human-machine interface problem for in-depth investigation. In the latter half of the course, students present a seminar to the group (ie., learning from one another), and submit a final, written report on the project.

Topics to be covered:

1. Plan for this course
2. Human factors and human-machine interaction - definitions, scope
3. Context of using tools, machines, computer
   a) Tasks and allocation
   b) Systems and system design
   c) Design and evaluation
4. The Human
   a) Human information processing model
   b) Models of human communication
   c) Action, motor control and modes for interaction
5. The Machine
   a) Visual, auditory and tactile displays
   b) Tools and controls
   c) Computer input and output devices
6. The Interface (a user-centred perspective)
   a) Task demands
   b) Knowledge and control
   c) Direct manipulation as a model
   d) Intelligent graphic interfaces
7. Evaluation

Student evaluation:

Participation	10
Midterm	30
Project	
Proposal	5
Detailed outline	10
Presentation	20
Final report	25
Total	100

Course Text - Required:

Shneiderman, B. (1992). Designing the user interface: Strategies for effective human-computer interaction. Second edition. New York: Addison-Wesley, Inc.

Recommended Resources:

Kantowitz, B.H. & Sorkin, R.D. (1983). Human factors: Understanding people-system relationships. New York: Wiley.

Meister, D. (1989). Conceptual aspects of human factors. Baltimore: John Hopkins University Press.

Wickens, C.D. (1992). Engineering psychology and human performance. Second edition. New York: HarperCollins Ltd.

Suggested project topics (refer also to past reports on reserve in the library):
Anthropometry and the design of workspace, Technical aids for the elderly, Shiftwork effects on human performance with specific interfaces, Visual perception of video display terminals, Effects of gloves on control operations, Attentional directors - Comparing different warning signals, Software usability, Use of simulations and/or mockups, Speech technology in human-machine interfaces, Interface design and motor vehicle accidents, Comparisons of hand activated controls, Detecting errors in complex systems from visual displays, Specialized peripheral devices for special populations.
(or pick your own, with permission of instructor)

School of Kinesiology

Library Resources for New Courses

Course number and name: Kinesiology 383

Are the current SFU library resources adequate for this course?

yes - but need course text

What additional library resources are essential for the offering of this course?

1. Course Textbook:
   Shneiderman, B. (1992). Designing the user interface: Strategies for effective human-computer interaction. Second edition. New York: Addison-Wesley, Inc..
   ISBN 0-201-57286-9

What additional library resources, if any, would be desirable but not essential for the offering of this course?

1. Books:
   Proceedings of *future* conferences on Human-Computer Interaction (e.g., SIGCHI (Special Interest Group on Computer-Human Interaction) of the Association for Computing Machinery, *as they become available.*
   Proceedings of *future* symposia and conferences on human considerations in "virtual reality", *as they become available.*

2. Journals: new journals on human factors in human-computer interaction and virtual reality, *as they become available.*

Faculty member making course proposal: Dr. Christine MacKenzie

Signature: CMacKenzie Date: September 20, 1993

RATIONALE FOR NEW COURSE PROPOSAL

DEPARTMENT OF KINESIOLOGY

KINESIOLOGY 486 INDUSTRIAL DESIGN

RATIONALE:

This course forms part of the reorganization of the undergraduate program in Kinesiology. KIN 486 will be a required course in the undergraduate **Human Factors/Ergonomics** stream of Kinesiology.and will be relevant to students in other units of the FAS as well. In an industrial context, a well-designed human-machine system must have more than just good display and control components. The essence of industrial design is to arrange system components so as to minimize production inefficiencies and quality control and safety compromises. The objective of the course is to learn the rudiments of design layout. Industrial examples will be presented to illustrate how human-factors input can improve the production process and help to control some of the extreme hazards that arise in industrial environments.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. **Calendar Information** **Department:** Kinesiology

Abbreviation Code: KIN **Course #:** 486 **Credit Hrs:** 3 **Vector:** 2-1-0

Title of Course: Industrial Design

Calendar Description of Course: The objective of the course is to learn the rudiments of design layout. In an industrial context, a well-designed human-machine system must have more than just good display and control components. The essence of industrial design is to arrange system components so as to minimize production inefficiencies and quality control and safety compromises. Industrial examples will be presented to illustrate how human-factors input can improve the production process and help to control some of the extreme hazards that arise in industrial environments.

Nature of Course: Two, one hour lectures each week. One hour laboratory or tutorial session each week.

Prerequisites (or special instructions): KIN 203 or relevant computing experience, 303, 326, and 380

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, spring semester

Semester in which the course will first be offered? 95-1

Which of your present faculty would be available to make the proposed offering possible? D. Weeks. As well, Mr. Gavril Morariu (Research Engineer) and Mr. Richard Ward (Lab Instructor) may be available to help with labs.

3. **Objectives of the Course:**

Students will learn:
- how things can be designed to fit the physical dimensions of people, including displays and control, tools, workstations
- processes used in a number of major industries
- how tasks are combined into jobs, and the effects of job rotation, shift work, and work-rest schedules on performance
- the stages of the design process, and the role of different members of the design team
- how to express design ideas using CAD (Computer-Aided Design)

4. **Budgetary and Space Requirements**

What additional resources will be required in the following areas:
Faculty: None
Staff: None
Library: see attachment
Audio Visual: None
Space: Use of existing laboratory space in Kinesiology/Academic Computing Services labs will be booked
Equipment: CAD software ($1000 - $3000)

5. **Approval** Kin 486

Date:	19 Oct 1993	Oct 21, 1993	
	[signature]	Parveen Bawa	
	(Department Chair)	(Dean)	(Chair, SCUS)

School of Kinesiology

Library Resources for New Courses

Course number and name: KIN 486 - Industrial Design

Are the current SFU library resources adequate for this course?
YES X NO

What additional library resources are essential for the offering of this course?

1. **Textbooks** - give title, authors, publisher, ISBN #, price

The books currently available in the library are attached. This list appears to be sufficient to offer this course

2. **Journals** - give title and library subscription price, if known

Necessary journal are presently held in the library and are sufficient, assuming that they are not cut due to funding.

What additional library resources, if any, would be desirable but not essential for the offering of this course?

1. Textbooks - give title, authors, publisher, ISBN #, price
2. Journals - give title and library subscription price, if known

Faculty member making course proposal: D. J. Weeks
Signature: Daniel J. Weeks Date: Oct 4/93