

**SIMON FRASER UNIVERSITY
MEMORANDUM**

To: Senate

From: J. M. Munro, Chair
Senate Committee on
Academic Planning

Subject: Curriculum Changes -
Faculty of Applied Sciences

Date: November 8, 1991

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.91-54 as follows

- | | |
|---------------|-------------------------------|
| i) S.91-54a | Department of Communication |
| ii) S.91-54b | School of Computing Science |
| iii) S.91-54c | School of Engineering Science |
| iv) S.91-54d | School of Kinesiology" |

**Department of Communication
Curriculum Revisions**

SCUS References: SCUS 91-8; SCUS 91-36
SCAP Reference: SCAP 91-35a

New Courses:
CMNS 320-4 Children, Media and Culture
CMNS 370-4 The Business of Publishing
CMNS 375-4 Magazine Publishing
CMNS 472-4 Books, Markets and Readers

~~and curriculum revisions~~

For Information:

Acting under delegated authority of Senate, SCUS has approved revisions to the following courses as detailed in SCUS 91-8:

CMNS 110-3 Change of title
CMNS 353-4 Change of title
CMNS 235-3 Addition of prerequisite

Acting under delegated authority of Senate, SCUS has approved revisions to the following courses as detailed in SCUS 91-36:

CMNS 225-3 Editorial revision to calendar description
CMNS 325-4 Change of title and editorial revision to calendar description

To: Faculty of Applied Sciences Undergraduate Curriculum
Committee
From: Bob Hackett, Chair, Undergraduate Curriculum Committee
Dept. of Communication
Subject: Proposed changes to undergraduate curriculum in
Communication
Date: June 10, 1991

RECEIVED

JUN 11 1991

FACULTY OF
APPLIED SCIENCE

The Undergraduate Curriculum Committee of the Department of Communication, at its meeting held on Feb. 7, 1991, and at a special follow-up meeting on April 9, 1991, approved the following, and submits them now for consideration.

I. NEW COURSE PROPOSALS

a) CMNS 320-4 Children, Media and Culture (documentation -- outline, new course proposal form, confirmation of no overlap with other faculties' curriculum -- attached)

Background and Rationale: The course adds an option in our media studies "stream", which accounts for almost half of our second to fourth-year enrolments. It constitutes a suitable "follow-up" to CMNS 220, Understanding Television. In addition, the proposed course reflects the research interests and draws upon the expertise of Dr. Stephen Kline, a recently appointed faculty member.

b) CMNS 370-4 The Business of Publishing (Documentation attached)

Background and Rationale: While it may appear in the calendar as a new course, CMNS 370-4 in reality would be offered in place of one version of BUS 495-3, Selected Topics. BUS 495 has sometimes been offered as The Business of Publishing, and as such, it was an upper level option for students in our department's Publishing Minor Program. If the proposed new course is approved, BUS 495 would no longer be offered as The Business of Publishing. This change has the full support of the Faculty of Business Administration, as indicated by the memo from Professor Bob Rogow; indeed, it is that Faculty's preference that the Communication department take the course over, since few business majors have been interested in such an industry-specific course.

Other Notes: CMNS 371 is a prerequisite for CMNS 370. Students who have taken BUS 493 or 495 as The Business of Publishing may not take CMNS 370 for further credit.

c) CMNS 375-4 Magazine Publishing (Documentation attached)

Background and Rationale: The course is integral to the expansion of the Canadian Centre for Studies in Publishing, which offers the Publishing Minor Program in association with the Department of Communication, beyond the field of book publishing into other aspects of the publishing industry. Magazine publishing is an area that is lively and attractive to students,

and there are plenty of suitable potential instructors in the Vancouver area. The course moreover offers a greater choice for students taking the Publishing Minor; currently they must take four of the five available upper level courses.

Note: Students who have taken CMNS 471 as Magazine Publishing may not take CMNS 375 for further credit.

d) CMNS 472-4 Books, Markets and Readers. (Documentation attached)

Background and Rationale: The course represents a further upper-year addition to the Publishing Minor Program. It has been successfully taught in the past as a selected topics course, and would be offered up to once a year as resources permit.

Note: CMNS 372 is intended as a prerequisite for CMNS 472. Students who have taken CMNS 471 (Selected Topics in Publishing) as Books, Markets and Readers may not take CMNS 472 for further credit.

II. FURTHER CHANGE CONTINGENT UPON APPROVAL OF THE ABOVE FOUR COURSES

The Upper Level Requirements for the Publishing Minor Program would be changed to take into account the new courses. In addition, we propose to add an existing course, CMNS 335-4 (The Newspaper Industry and Press Policy in Canada) as an upper year option for the Publishing Minor. Currently (p. 58 of the 1991/92 Calendar) these requirements are as follows:

Four courses must be chosen from the following. Normally no more than two courses from the Department of Communication can be counted towards the minor; students wishing to count more than two CMNS courses must receive permission of the program advisor:

CMNS 371-4
 CMNS 372-4
 CMNS 471-4
 ENGL 388-4
 BUS 495-3

The proposed new Publishing Minor Upper Level Requirements would simplify and broaden students' options, and would maintain a manageable flow of students through courses. The addition of CMNS 335 reflects the expansion of the publishing program's scope beyond strictly book publishing. The new Upper Level Requirements for the Publishing Minor Program would be as follows:

Four courses must be chosen from the following:

CMNS 335-4
 CMNS 370-4
 CMNS 371-4
 CMNS 372-4
 CMNS 375-4
 CMNS 471-4
 CMNS 472-4
 ENGL 388-4
 CMNS 471-4
 CMNS 472-4
 ENGL 388-4

SIMON FRASER UNIVERSITY
MEMORANDUM

To: Rowland Lorimer

From: Sharon Thomas
Collections Management

Subject: New Course Proposals Date: July 24, 1991

Maureen Wallace has examined the Library's holdings with respect to your new course proposals for:

CMNS 370 THE BUSINESS OF PUBLISHING
CMNS 375 MAGAZINE PUBLISHING
CMNS 320 CHILDREN, MEDIA AND CULTURE
CMNS 472 BOOKS, MARKETS AND READERS.

Her assessments of the Library's holdings are accurate and it is certainly no exaggeration to say that we could profitably spend several thousand dollars in building collections in support of these courses. However, it is also true that we can offer these courses with the present collection and that we have, in fact, done so under the special topics umbrella. As is so often the case in these matters, it is not a question of whether or not we can support these courses but rather of how well we can do so. I would suggest, however, that to expect to do it without at least an additional expenditure of approximately \$200 per course for reserve books and the occasional addition to the general collection would prove to be unrealistic. .

Sharon Thomas

SIMON FRASER UNIVERSITY

W.A.C. BENNETT LIBRARY

M E M O R A N D U M

TO: Don George,
Dean - Faculty of
Applied Sciences

FROM: Maureen Wallace,
Library Collections
Management Coordinator

SUBJECT: NEW COURSE PROPOSALS

DATE: June 19, 1991

CMNS 370 - The Business of Publishing

This course proposal is well within library collection parameters. However, we can expect to spend \$300 - \$500 for reserve copies and for those titles we lack.

CMNS 375 - Magazine Publishing

The library's current collection cannot adequately support this course. We can expect to spend \$1,000 - \$1,500 for retrospective titles and ca. \$200 - \$300 per annum for new titles.

CMNS 320 - Children, Media and Culture

While this course proposal is within current library collection parameters we may expect to spend \$200 - \$500 for additional acquisitions.

CMNS 472 - Books, Markets and Readers

This course is well within library collection parameters for the general topic. We can expect to expend \$300 - \$400 for bibliographies and critical works in specific genre areas.

Maureen A. Wallace

IS0600(MSW)

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Communication

Abbreviation Code: CMNS Course No: 320 Credit Hours: 4 Vector: 1-2-1

Title of Course: Children, Media and Culture

Calendar Description of Course:

The course examines the part played by communication media in children's lives by reviewing the debates and research in this field. Specific attention will be paid to the issues of violence, literacy, imagination, quality and marketing through an examination of the critical writing and advocacy movements which have arisen around the problem of children's media.

Nature of Course:

Lecture, seminar and lab/project format: overview of the field combined with student field/lab projects

Prerequisites (or special instructions):

CMNS 220

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 per year

Semester in which the course will first be offered? 92-3 (Has already been offered successfully as a special topics course)
Which of your present faculty would be available to make the proposed offering possible? Kline

3. Objectives of the Course (rationale)

Although children and media is a major theme in the field of communication research and advocacy, it has never been taught within the department as a regularly-scheduled course. This course is part of the development of the media analysis area which accounts for almost half of our 2nd to 4th year course enrolments.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty: None

Staff: None

Library: Some additional acquisitions in the areas of media literacy and children & culture

Audio Visual: None: The course uses the existing and projected facilities of the department's Media Analysis Laboratory

Space: "

Equipment: "

5. Approval

Date: MAR 24 1991

[Signature]
Department Chair

[Signature]
July 12 91
Dean

October 29/91
[Signature]
Chair 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

1. Calendar Information

Department: Communications

Abbreviation Code: CMNS Course number: 370 Credit Hours: 4 Vector: 3-0-0

Title of Course: The Business of Publishing

Calendar Description of Course: This course examines business practices within publishing firms. It emphasizes financial planning and operations, acquisitions, marketing and promotion.

Nature of Course: Lecture using case studies and theory.

Prerequisites (or special instructions): 60 credit hours

What course (courses), if any, is being dropped from the calendar if this course is approved: once a year offering of Bus. 495 on this topic.

2. Scheduling

How frequently will the course be offered? once per year

Semester in which the course will first be offered? 92-3 or as early as feasible.

Which of your present faculty would be available to make the proposed offering possible? Lorimer, Jane Fredeman, sessionals, new appointments as made.

3. Objectives of the course

This course will introduce the practical and theoretical problems involved in running a publishing business including determining markets and print runs, obtaining grants, author advances, financial requirements and controls, agency representation, and rights sales.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff included in Publishing Centre submissions

Library covered by graduate program requirements

Audio Visual nil

Space classroom space

Equipment nil

5. Approval

Date: MARCH 14/91 July 12 '91 Oct 29/91

[Signature]
Dept Chair

[Signature]
Dean

[Signature]
Chair, SCUS

Senate Committee on Undergraduate Studies

New Course Proposal Form

1. Calendar Information

Department: Communications

Abbreviation Code: CMNS Course number: 375 Credit Hours: 4 Vector: 0-3-0

Title of Course: Magazine Publishing

Calendar Description of Course: This course addresses the basic concepts and practices used in the magazine publishing industry in the areas of business, writing, editing, design, marketing, advertising, distribution, and production. It emphasizes readership and editorial policy, new technology and changing costs and revenue patterns.

Nature of Course: Seminar with coordinator and specialists

Prerequisites (or special instructions): 60 credit hours

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? 92-3 or as early as feasible.

Which of your present faculty would be available to make the proposed offering possible? Lorimer, sessionals, new appointments as made.

3. Objectives of the course

This course will provide an overview of magazine publishing drawing contrasts to book publishing.

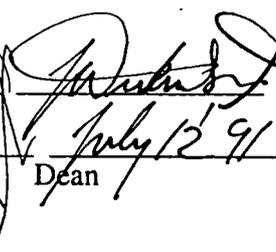
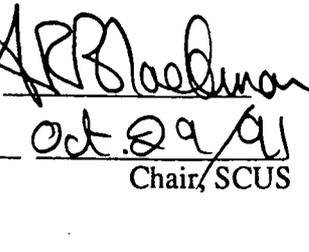
4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty	
Staff	included in Publishing Centre submissions
Library	books and serials
Audio Visual	nil
Space	classroom space
Equipment	nil

5. Approval

Date: MARCH 14/91

Dept Chair Dean Chair, SCUS

Senate Committee on Undergraduate Studies

New Course Proposal Form

1. Calendar Information

Department: Communications

Abbreviation Code: CMNS Course number: 472 Credit Hours: 4 Vector: 0-3-0

Title of Course: Books, Markets and Readers

Calendar Description of Course: This course will examine the major markets for the sale of books, book buying, and book reading. Special emphasis will be placed on popular genres and successful authors and outlets such as independent and chain bookstores, book clubs, libraries and specialty stores.

Nature of Course: Seminar. Industry personnel will present some material.

Prerequisites (or special instructions): 60 cr. hours, CMNS 371 and 372

What course (courses), if any, is being dropped from the calendar if this course is approved: (previously taught as special topic)

2. Scheduling

How frequently will the course be offered? once per year

Semester in which the course will first be offered? 92-3 or as early as feasible.

Which of your present faculty would be available to make the proposed offering possible? Lorimer, Jane Fredeman, Adjunct Professor Paul Whitney.

3. Objectives of the course

This course will provide an understanding of book publishing from the point of view of retailing and consumption (both reading and purchasing). It will also provide insights into how successful authors work within popular genres.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff included in Publishing Centre submissions

Library covered by graduate program requirements

Audio Visual nil

Space classroom space

Equipment nil

5. Approval

Date: June 10, 1991

Dept Chair

Dean

12 July 91

Chair, SCUS

06-29/91

Chair, SCUS

**School of Computing Science
Curriculum Changes**

SCUS Reference: SCUS 91-9 and 91-9 (revised)
SCAP Reference: SCAP 91-35b

New Course:
CMPT 116-1

Introduction to a Second Programming
Language: SMALLTALK

For Information:

Acting under delegated authority of Senate, SCUS has approved revisions to the following courses as detailed in SCUS 91-9:

CMPT 111, 112, 113, 114, 115 - Editorial change (Recognizes new course CMPT 116)
CMPT 391-3 Revisions to title, credit hours (from 3 to 4) and vector, course description and addition of corequisite

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Computing Science

Abbreviation Code: CMPT Course Number: 116

Credit Hours: 1 Vector: Not Applicable

Title of Course: Introduction to a Second Programming Language: SMALLTALK (Self-study)

Calendar Description of Course:

This is a self-study course for students who wish to learn SMALLTALK. A study guide is provided and the student will have regular meetings with the instructor.

(This course may not be taken for credit if the student has studied SMALLTALK in a previous course)

Nature of Course Self-study

Prerequisites (or special instructions): Prerequisites: CMPT 101 or 102 or 103.

Students may not receive credit for more than two of CMPT 111, 112, 113, 114, 115 or 116.

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

2. Scheduling

How frequently will the course be offered? Every Semester

Semester in which the course will first be offered? 92-3

Which of your present faculty would be available to make the proposed offering possible? Rob Cameron, Warren Burton

3. Objectives of the Course

The objective of the CMPT 116 course is to provide the students with the opportunity to learn an additional language of their choice in a guided self-study format. CMPT 116 is intended to cover a language, SMALLTALK from the "object-oriented programming paradigm.

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty None

Staff None

Library None

Audio Visual None

Space None

Equipment None

5. Approval

Date: June 25, 1991

Arthur R. Kristman
Department Chair

July 12 91

[Signature]
Dean

October 29/91

[Signature]
Chair, SCUS

**School of Engineering Science
Curriculum Changes**

SCUS References: SCUS 91-10; SCUS 91-46

SCAP Reference: SCAP 91-35c

New Course:

ENSC 370-4 Transducers and Embedded Systems

and curriculum revisions

For Information:

Acting under delegated authority, SCUS has approved revisions to the following courses as detailed in SCUS 91-10:

ENSC 280-4	Change to course description, credit hours and vector
ENSC 495-4	Change in credit hours and vector, course description
ENSC 400/401/402	Change to course descriptions
ENSC 491/492/493/494	Change to course descriptions

SENATE COMMITTEE ON UNDERGRADUATE STUDIES
NEW COURSE PROPOSAL FORM

1. Calendar Information

Department: Engineering Science

Abbreviation Code: ENSC Course Number 370 Credit Hours: 4 Vector: 2-0-4

Title of Course: Transducers and Embedded Systems

Calendar Description of Course:

This course introduces the student to the two areas of transduction: sensing and actuation, and to the practical aspects of interfacing transducers to computers to form embedded systems. The course illustrates the limitations of measurement and its effect on sensors and actuators through coverage of measurement techniques and transduction devices. It includes transducer/processor interfacing, and software techniques for data acquisition and control. This course is strongly laboratory based with a substantial project component. ENSC 105-1, taken concurrently with this course, will assist the student with project management and documentation.

Nature of Course: Lecture/Lab/Project

Prerequisites (or special instructions):

Prerequisites: ENSC 222, CMPT 290

Corequisites: ENSC 105

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

2. Scheduling

How frequently will this course be offered? 1 semester/year

Semster in which the course will first be offered? 93-1

Which of your present faculty would be available to make the proposed offering possible? Glen Chapman, Shahram Payendeh, Albert Leung, Andrew Rawicz

3. Objectives of the Course

This course would be the compulsory project course (in conjunction with ENSC-105) for the Automation Engineering option (NB. all other ENSC options take CMPT-390/391 in conjunction with ENSC-105). It is believed that a course covering transducers (ie. sensors & actuators) and their interface to (micro)processors would be more applicable and of greater benefit to the Automation Engineering option than would the CMPT-390/391 advanced digital design courses.

Keeping in mind that this is a 4-credit course with 2 credits worth of lecture material, it should meet the following objectives:

- a. Introduce the student to the limitations of measurement and its effect on sensors and actuators (ie. error analysis, sensitivity, accuracy, dynamics, repeatability).
- b. Introduce the student to the range of transducers available for input (sensors) and output (actuators) operations. This covers the areas of transducer principles and selecting the right transducer for the job.
- c. Introduce the student to the analogue conditioning required between the transducer and the analog/digital interface.
- d. Cover the range of analog-to-digital and digital-to-analog conversion options, their characteristics and their suitability to different applications.
- e. Cover (various aspects of the) digital post- and pre-processing (eg. sensor calibration, compensation, linearization, filtering).

- f. Cover software techniques that address the data acquisition and control issues -- in particular, for "embedded controller" applications.
- g. Contain a large group project (== 50% of marks, 4-person groups) that applies items a-f. This project provides the technical component for ENSC 105-1 (project documentaton and management).

4. Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty	None
Staff	None
Library	\$500 for reference copies of course and supplementary texts
Audio Visual	None
Space	None
Equipment	\$1000 for initial stock of transducers, \$500/offering for expendables

5. Approval

Date: 7 June 1991 July 13 '91 October 29/91

JK Coers [Signature] AR Blackman
 Department Chair Dean Chair SCUS

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

CHANGES TO TYPICAL SCHEDULES

Common Core: Changes as a result of revisions to ENSC 280.

Biomedical Engineering Option:

1. Replacement of KIN 100 with KIN 205 because 205 is a prerequisite course for future KIN electives.
2. Reordering of courses which results from the replacement of KIN. 100 with KIN. 205.
3. Updating of Biomedical "notes".
See attachment (2)

Program Revisions - Engineering Science

In the program requirements for each of the Options, the "Note" appended to each of the Engineering Science electives should be revised as follows:

From:

With permission, one or more directed studies or special project laboratory courses may be chosen in this elective category.

To:

With permission a directed study or special project laboratory course may be chosen in this elective category but typically, no more than two will be approved for this purpose.

Course Revisions - Engineering Science

The following sentences should be added to the course descriptions:

ENSC 400/401/402

Typically, no more than a total of two directed study and special project laboratory courses will be approved as Engineering Science electives as set out in the program requirements. Upon completion of a directed study course, the student must submit a copy of the "deliverables" to the chair of the undergraduate curriculum committee.

ENSC 491/492/493/494

Typically, no more than a total of two directed study and special project laboratory courses will be approved as Engineering Science electives as set out in the program requirements. Upon completion of a special project laboratory course, the student must submit a copy of the "deliverables" to the chair of the undergraduate curriculum committee.

Rationale for these changes:

The requirement for submission of a copy of the "deliverables" has been added to ensure the School has a record of course work undertaken in directed study and special project laboratory courses for purposes of accreditation, and to ensure that work undertaken meets the requirements of the original project proposal. A limit has been imposed because we do not want students fulfilling all their Engineering Science elective requirements with directed studies courses.

ENGINEERING SCIENCE COMMON CORE**CURRENT VERSION****COURSES AND TYPICAL SCHEDULE****Semester One**

- CHEM 102-3 General Chemistry I for Physical Sciences
 CHEM 115-2 General Chemistry Laboratory I
 Cmpl I-3 first complementary studies elective
 *CMPT 101-4 Introduction to High Level Programming Language
 *ENSC 101-0 Engineering Communications I
 *MATH 151-3 Calculus I
 *PHYS 120-3 Physics I

(18 semester hours credit)**Semester Two**

- CHEM 103-3 General Chemistry II for Physical Sciences
 *CMPT 105-3 Fundamental Concepts of Computing
 *ENSC 102-1 Engineering Communications II
 *ENSC 125-5 Basic Electronics Engineering
 *MATH 152-3 Calculus II
 *PHYS 121-3 Physics II
 *PHYS 131-2 General Physics Laboratory

(20 semester hours credit)**Semester Three**

- Cmpl II-3 second complementary studies elective
 *CMPT 290-3 Introduction to Digital Circuit Design
 *ENSC 103-1 Engineering Communications III
 *ENSC 222-5 Electronic Design I
 *MATH 251-3 Calculus III
 MATH 310-3 Introduction to Ordinary Differential Equations⁽³⁾
 *Scie I-3 first science elective⁽²⁾

(21 semester hours credit)**Semester Four**

- *CMPT 201-4 Data and Program Organization
 ECON 200-3 Principles of Economics I - Microeconomic Principles
 *ENSC 104-1 Engineering Communications IV
 *ENSC 280-4 Linear Systems I
 MACM 316-3 Numerical Analysis I⁽¹⁾
 *MATH 232-3 Elementary Linear Algebra
 *STAT 270-3 Introduction to Probability and Statistics

(21 semester hours credit)

*Course which should be taken at this point in the program (consequences of deviations from this schedule are the responsibility of the student).

- (1) ~~Students in Engineering Physics should replace one of these courses with MATH 252-3. All students may apply to the Director for permission to take alternate mathematics courses.~~
- (2) For Electronics Engineering and Engineering Physics, PHYS 221-3 is a required prerequisite and should be taken here. For Automation Engineering, MATH 262-4 should be taken here. Students in Biomedical Engineering and Computer Engineering students must select an approved basic science course.

~~Replaced by (2) on Version B (see over)~~

ENGINEERING SCIENCE COMMON CORE

COURSES AND TYPICAL SCHEDULE

Semester One

- CHEM 102-3 General Chemistry I for Physical Sciences
- CHEM 115-2 General Chemistry Laboratory I
- Cmpl I-3 first complementary studies elective
- *CMPT 101-4 Introduction to High Level Programming Language
- *ENSC 101-0 Engineering Communications I
- *MATH 151-3 Calculus I
- *PHYS 120-3 Physics I

(18 semester hours credit)

Semester Two

- CHEM 103-3 General Chemistry II for Physical Sciences
- *CMPT 105-3 Fundamental Concepts of Computing
- *ENSC 102-1 Engineering Communications II
- *ENSC 125-5 Basic Electronics Engineering
- *MATH 152-3 Calculus II
- *PHYS 121-3 Physics II
- *PHYS 131-2 General Physics Laboratory

(20 semester hours credit)

Semester Three

- Cmpl II-3 second complementary studies elective
- *CMPT 290-3 Introduction to Digital Circuit Design
- *ENSC 103-1 Engineering Communications III
- *ENSC 222-5 Electronic Design I
- *MATH 251-3 Calculus III
- *MATH 310-3 Introduction to Ordinary Differential Equations
- *Scie I-3 first science elective⁽¹⁾

Notation deleted. This course required in all options as prereq. for ENSC 280.

(21 semester hours credit)

Star added

Semester Four

- *CMPT 201-4 Data and Program Organization
- ECON 200-3 Principles of Economics I - Microeconomic Principles
- *ENSC 104-1 Engineering Communications IV
- *ENSC 280-4 Linear Systems I
- MACM 316-3 Numerical Analysis I⁽²⁾
- *MATH 232-3 Elementary Linear Algebra
- *STAT 270-3 Introduction to Probability and Statistics

(21 semester hours credit)

*Course which should be taken at this point in the program (consequences of deviations from this schedule are the responsibility of the student).

(1) For Electronics Engineering and Engineering Physics, PHYS 221-3 is a required prerequisite and should be taken here. For Automation Engineering, MATH 262-4 should be taken here. Students in Biomedical Engineering should refer to note (4) under the Biomedical Engineering Option description and Computer Engineering students must select an approved basic science course.

(2) Students in Engineering Physics should replace this course with MATH 252-3.

ENGINEERING SCIENCE COMMON CORE**BIOMEDICAL ENGINEERING OPTION**
(proposed changes)**COURSES AND TYPICAL SCHEDULE****Semester One**

- CHEM 102-3 General Chemistry I for Physical Sciences
- CHEM 115-2 General Chemistry Laboratory I
- Cmpl I-3 first complementary studies elective
- *CMPT 101-4 Introduction to High Level Programming Language
- *ENSC 101-0 Engineering Communications I
- *MATH 151-3 Calculus I
- *PHYS 120-3 Physics I

(18 semester hours credit)**Semester Two**

- CHEM 103-3 General Chemistry II for Physical Sciences
- *CMPT 105-3 Fundamental Concepts of Computing
- *ENSC 102-1 Engineering Communications II
- *ENSC 125-5 Basic Electronics Engineering
- *MATH 152-3 Calculus II
- *PHYS 121-3 Physics II
- *PHYS 131-2 General Physics Laboratory

(20 semester hours credit)**Semester Three**

- Cmpl II-3 second complementary studies elective
- *CMPT 290-3 Introduction to Digital Circuit Design
- *ENSC 103-1 Engineering Communications III
- *ENSC 222-5 Electronic Design I
- *MATH 251-3 Calculus III
- *MATH 310-3 Introduction to Ordinary Differential Equations
- *Scie I-3 first science elective⁽¹⁾

(21 semester hours credit)**Semester Four**

- *CMPT 201-4 Data and Program Organization
- ECON 200-3 Principles of Economics I - Microeconomic Principles
- *ENSC 104-1 Engineering Communications IV
- *ENSC 280-4 Linear Systems I
- MACM 316-3 Numerical Analysis I⁽²⁾
- *MATH 232-3 Elementary Linear Algebra
- *STAT 270-3 Introduction to Probability and Statistics

(21 semester hours credit)

*Course which should be taken at this point in the program (consequences of deviations from this schedule are the responsibility of the student).

- (1) For Electronics Engineering and Engineering Physics, PHYS 221-3 is a required prerequisite and should be taken here. For Automation Engineering, MATH 262-4 should be taken here. Students in Biomedical Engineering should refer to note (4) under the Biomedical Engineering Option description and Computer Engineering students must select an approved basic science course.
- (2) Students in Engineering Physics should replace this course with MATH 252-3.

.../2 (p.t.o)

7.

BIOMEDICAL ENGINEERING (ELECTRONICS)

COURSES AND TYPICAL SCHEDULE

Semester Five

- *BISC 101-4 Introduction to Biology
- Cmpl III-3 third complementary studies elective
- *CMPT 390-3 Digital Circuits and Systems
- *CMPT 391-4 Microcomputer Hardware Workshop
- *ENSC 105-1 Engineering Communications V
- *ENSC 382-4 Linear Systems II

(19 semester hours credit)

Semester Six

- BISC 102-4 Introduction to Biology
- Cmpl IV-3 fourth complementary studies elective
- *ENSC 106-1 Engineering Communications VI
- ENSC 301-3 Engineering Economics
- *ENSC 327-4 Communication Systems
- *ENSC 385-4 Real-Time Systems
- *KIN 205-3 Introduction to Human Physiology

(22 semester hours credit)

Semester Seven

- Ensc I-4 first Engineering Science elective⁽³⁾
- *ENSC 107-1 Engineering Communications VII
- *ENSC 300-3 Engineering Design and Management
- *ENSC 321-4 Electronic Design II
- *ENSC 451-1 Seminar in Biomedical Engineering⁽⁵⁾
- ENSC 498-3 Engineering Science Thesis Proposal
- Scie II-3 second science elective⁽⁴⁾

(19 semester hours credit)

Semester Eight

- Ensc II-4 second Engineering Science elective⁽³⁾
- ENSC 108-0 Engineering Communications VIII
- ENSC 499-9 Engineering Science Undergraduate Thesis
- Ensc III-4 third Engineering Science elective⁽³⁾
- Scie III-3 third science elective⁽⁴⁾

(20 semester hours credit)

TOTAL 160 semester hours credit

(3) Chosen from:

ENSC 423-4	ENSC 429-4	ENSC 439-4	CMPT 495-3
ENSC 425-4	ENSC 435-4	ENSC 453-4	CMPT 496-3
ENSC 426-4	ENSC 436-4	ENSC 480-4	
ENSC 428-4	ENSC 438-4	ENSC 485-4	

With permission, one or more Directed Studies or Special Project Laboratory courses may be chosen in this category. Typically, no more than a total of two directed studies or special project laboratories will be approved.

- (4) An approved course in a basic, applied or mathematical science of which at least two must be from the following:
- | | |
|---|--|
| KIN. 305-3 Human Physiology I | KIN. 407-3 Human Physiology Laboratory |
| KIN. 306-3 Human Physiology II | KIN. 442-3 Biomedical Systems |
| KIN. 401-4 Mechanics of Human Movement | KIN. 480-3 Human Factors in Working Environments |
| KIN. 402-4 Mechanical Properties of Tissues | |

Students should note that the prerequisites for several of these courses are not provided in the Biomedical Engineering program. Other sections of this Calendar and, if necessary, the School of Kinesiology should be consulted by students interested in KIN. 305, 306, 407, 442 and 480.

- (5) will not be given every year; students should take at the earliest opportunity.

8.

1. Revision to Calendar Entry: General Studies.

FROM (page 63 of the 1991-92 Calendar)	
<p>General Studies - This section of the program is made up of non-technical courses intended to broaden the student's education and develop an awareness of general social, economic and managerial factors which affect engineering and scientific work. All units of the engineering communication course must be completed. One course must deal with the interaction of science and technology with society. The other complementary studies courses may also deal with this subject or may be chosen from the areas of administration, arts, humanities or social sciences. Particular course requirements are:</p>	
	semester hours
ENSC 101 to ENSC 108 Engineering Communications	6
ENSC 300 Engineering Design & Management	3
ENSC 301 Engineering Economics	3
ECON 200 Principles of Economics (I) Microeconomic Principles	3
A course dealing with the interaction between society and technology and a course sequence in complementary studies	<u>12</u>
	27
Possible sequences of courses in complementary studies include three courses in one of the following streams:	
Marketing and Small Business	
BUS 344-3 Industrial Marketing	
BUS 393-3 Commercial Law	
BUS 446-4 Marketing Strategy	
BUS 477-4 Seminar in Small Business Administration	
Human Resource Management	
BUS 372-3 Micro Perspectives on Organizations	
BUS 374-3 Macro Perspectives on Organizations	
BUS 428-3 Management Information Systems II	
BUS 481-3 Personnel Management I: Manpower Planning and Staffing Decisions	
Students may also develop their own sequences of complementary studies courses. Permission must be obtained from the appropriate department, school or faculty to register in these courses, and their selection must be approved by the School of Engineering Science.	

TO	
<p>General Studies - This section of the program is made up of non-technical courses intended to broaden the student's education and develop an awareness of general social, economic and managerial factors which affect engineering and scientific work. All units of the engineering communication course must be completed. In complementary studies at least one course must deal with the interaction of science and technology with society and at least one course must deal with some of the central issues, methodologies and thought processes of the humanities and social sciences. The other complementary studies courses may also deal with these subjects or may be chosen from the areas of business, arts, humanities and social sciences. A list of eligible courses is available from the School. Permission may be required from the appropriate department, school or faculty to register in some of these courses. All elective choices are subject to approval by the Office of the Director. Particular course requirements are:</p>	
	semester hours
ENSC 101 to ENSC 108 Engineering Communications	6
ENSC 300 Engineering Design & Management	3
ENSC 301 Engineering Economics	3
ECON 200 Principles of Economics (I) Microeconomic Principles	3
One course dealing with the interaction between society and technology	3
One course in humanities/social sciences	3
Other complementary studies courses	6
	==
	27

Rationale for Change to Calendar Entry: General Studies

This editorial revision has been made to more clearly reflect the Canadian Accreditation Board criterion that the curriculum should contain "subject matter that deals with some of the central issues, methodologies and thought processes of the humanities and social sciences at a challenging level". A copy of the student hand-out is attached *for information only* (not for inclusion in the calendar).

2. Revised Engineering Physics Option

FROM		TO	
Current Engineering Courses		Proposed Engineering Courses	
ENSC 125-5	Basic Elec Eng	ENSC 125-5	Basic Elec Eng
ENSC 222-5	Electronic Design I	ENSC 222-5	Electronic Design I
ENSC 280-5	Linear Systems I	ENSC 280-4	Linear Systems I
ENSC 301-3	Eng Economics	ENSC 301-3	Eng Economics
ENSC 382-4	Linear Systems II	ENSC 382-4	Linear Systems II
ENSC 327-4	Communication Systems	ENSC 327-4	Communication Systems
ELEC I-4	Eng Elective	ELEC I-4	Eng Elective
ELEC II-4	Eng Elective	ELEC II-4	Eng Elective
ENSC 300-3	Eng Des & Managmt	ENSC 300-3	Eng Des & Managmt
ENSC 321-4	Electronic Design II	ENSC 321-4	Electronic Design II
ENSC 495-1	Microel Fabrication	ENSC 453-4	Semiconductor Device Eng
ENSC 498-3	Thesis Proposal	ENSC 498-3	Thesis Proposal
ELEC III-4	Eng Elective	ENSC 370-4	Transducers & Embedded Sys
ENSC 499-9	Thesis	ENSC 499-9	Thesis
Current Physics Courses		Proposed Physics Courses	
PHYS 120-3	Physics I	PHYS 120-3	Physics I
PHYS 121-3	Physics II	PHYS 121-3	Physics II
PHYS 131-2	Gen Phys Lab B	PHYS 131-2	Gen Phys Lab B
PHYS 221-3	Int E&M (SCIE I-3)	PHYS 221-3	Int E&M (SCIE I-3)
PHYS 211-3	Intermed Mechanics	PHYS 211-3	Intermed Mechanics
PHYS 324-3	Electromagnetics	PHYS 233-2	Intro Phys Lab A New
PHYS 344-3	Thermal Physics	PHYS 324-3	Electromagnetics
PHYS 355-3	Optics	PHYS 344-3	Thermal Physics
PHYS 385-3	Quantum Physics	PHYS 355-3	Optics
SCIE II-3	Sci Elective	PHYS 385-3	Quantum Physics
SCIE III-3	Sci Elective	PHYS 332-3	Int Lab - Optics New
		PHYS 345-3	Stat Physics New
		PHYS 384-3	Mathematical Phys New
		PHYS 365-3	Semicond Device Phys New
		SCIE II-3	Sci Elective
Current Computing Courses		Proposed Computing Courses	
CMPT 101-4	High Level Prog	CMPT 101-4	High Level Prog
CMPT 105-3	Concepts of Computing	CMPT 105-3	Concepts of Computing
CMPT 290-3	Int Digital Systems	CMPT 290-3	Int Digital Systems
CMPT 201-4	Data Prog Organ		
CMPT 390-3	Dig Circuits & Systems		
CMPT 391-3	Micro Comp Workshop		
Current Mathematics Courses		Proposed Mathematics Courses	
MATH 151-3	Calculus I	MATH 151-3	Calculus I
MATH 152-3	Calculus II	MATH 152-3	Calculus II
MATH 251-3	Calculus III	MATH 251-3	Calculus III
MATH 310-3	Ord Diff Eqns	MATH 310-3	Ord Diff Eqns
MACM 316-3	Numerical Analysis I	MATH 232-3	Linear Algebra
MATH 252-3	Vector Calculus	MATH 252-3	Vector Calculus
MATH 270-3	Prob & Stats	MATH 270-3	Prob & Stats
Current Comp Studies Courses		Proposed Comp Studies Courses	
COMP I-3	Comp Stud I	COMP I-3	Comp Stud I
COMP II-3	Comp Stud II	COMP II-3	Comp Stud II
ECON 200-3	Prin of Economics I	ECON 200-3	Prin of Economics I
COMP III-3	Comp Stud III	COMP III-3	Comp Stud III
COMP IV-3	Comp Stud IV		

Rationale for Revised Engineering Physics Option

- To ensure engineering physics graduates have sufficient background so that they can do graduate studies in either engineering or physics. Also, the graduates of the program will have a background that is in better accord with the expectations of prospective employers.
- To make the program more compatible with engineering physics programs at other major Canadian universities such as McMaster and the Universities of Toronto and British Columbia.
- Changes have been made in response to suggestions and comments from engineering science students and engineering and physics faculty.
- To develop a coherent sequencing of the courses in both engineering and science.

The course schedule for the proposed revised curriculum is shown below; see also pages 4A.4 and 4B.4

ENGINEERING PHYSICS PROPOSAL (5 July 1991)			
1. CHEM 102-3 CHEM 115-2 Cmpl I-3 CMPT 101-4 ENSC 101-0 MATH 151-3 PHYS 120-3	General Chemistry I for Physical Sciences General Chemistry Laboratory I first complementary studies elective Intro to High Level Programming Language Engineering Communications I Calculus I Physics I	2. CHEM 103-3 CMPT 105-3 ENSC 102-1 ENSC 125-5 MATH 152-3 PHYS 121-3 PHYS 131-2	General Chemistry II for Physical Sciences Fundamental Concepts of Computing Engineering Communications II Basic Electronics Engineering Calculus II Physics II General Physics Laboratory
Total Credits: 18		Total Credits: 20	
3. Cmpl II-3 CMPT 290-3 ENSC 103-1 ENSC 222-5 MATH 251-3 MATH 310-3 PHYS 221-3	second complementary studies elective Introduction to Digital Circuit Design Engineering Communications III Electronic Design I Calculus III Intro to Ordinary Differential Equations Intermediate Electricity & Magnetism	4. ECON 200-3 ENSC 104-1 ENSC 280-4 MATH 232-3 MATH 252-3 PHYS 211-3 STAT 270-3 <i>PHYS 211-3 and MATH 252-3 replace CMPT 201-4 and MACM 316-3</i>	Principles of Economics I Engineering Communications IV Linear Systems I Elementary Linear Algebra Vector Calculus Intermediate Mechanics Introduction to Probability and Statistics
Total Credits: 21		Total Credits: 20	
5. ENSC 105-1 ENSC 321-4 ENSC 370-4 ENSC 382-4 PHYS 233-2 PHYS 344-3 PHYS 385-3 <i>ENSC 321-4, ENSC 370, PHYS 233-2, PHYS 344-3 and PHYS 385-3 replace Cmpl III-3, CMPT 390-3, CMPT 391-3, ENSC 301-3 & PHYS 211-3</i>	Engineering Communications V Electronic Design II Transducers and Embedded Systems Linear Systems II Introductory Physics Laboratory A Thermal Physics Quantum Physics	6. ENSC 106-1 ENSC 327-4 PHYS 324-3 PHYS 332-3 PHYS 345-3 PHYS 355-3 PHYS 384-3 <i>PHYS 332-3, PHYS 345-3, PHYS 384-3 replace Cmpl IV-3, PHYS 344-3 and PHYS 385-3</i>	Engineering Communications VI Communication Systems Electromagnetics Intermediate Laboratory Statistical Physics Optics Mathematical Physics
Total Credits: 21		Total Credits: 20	
7. Ensc I-4 ENSC 107-1 ENSC 300-3 ENSC 301-3 ENSC 498-3 PHYS 365-3 Scie I-3 <i>ENSC 301-3, PHYS 365-3 & Scie I-3 replace Ensc II-4, ENSC 321-4 and ENSC 495-1</i>	first Engineering Science elective Engineering Communications VII Engineering Design and Management Engineering Economics Engineering Science Thesis Proposal Semiconductor Device Physics second science elective	8. Cmpl III-3 Ensc II-4 ENSC 108-0 ENSC 453-4 ENSC 499-9 <i>ENSC 453-4, Cmpl III-3, Ensc II-4 replace Scie II-3, Scie III-3, Ensc III-4</i>	third complementary studies elective second Engineering Science elective Engineering Communications VIII Semiconductor Device Engineering Engineering Science Undergraduate Thesis
Total Credits: 20		Total Credits: 20	

3. Automation Engineering Option - removal of a complementary studies elective.

Rationale:

To accommodate the proposed new course, ENSC 370-4 Transducers and Embedded Systems (see FAS-UCC paper #91-4), a complementary studies elective has been removed from semester 5. This change had the least effect on the accreditation criteria for this option. For the revised typical schedule for this option, see page 4B.7 of the attached.

4. Revised Typical Schedules

We have revised the typical schedules from the attached 4A.1-7 to the attached 4B.1-7.

Rationale:

Each of the schedules must be revised due to changes and new courses proposed in FAS-UCC paper #91-4 and the current paper. The revised typical schedules for all options follow.

Please note that in relation to the changes we proposed in FAS-UCC paper #91-4 about ENSC 400/401/402 and ENSC 491/492/493/494 we have replaced the sentence

"With permission, one or more Directed Studies or Special Project Laboratory courses may be chosen in this elective category."

with

"With permission, a directed study or special project laboratory course may be chosen in this elective category but, typically, no more than two will be approved for this purpose."

ENGINEERING SCIENCE COMMON CORE

FROM: 4A.1

COURSES AND TYPICAL SCHEDULE

Semester One

CHEM 102-3	General Chemistry I	
CHEM 115-2	General Chemistry Laboratory I	
Cmpl I-3	first complementary studies elective	
*CMPT 101-4	Introduction to High Level Programming Language	
*ENSC 101-0	Engineering Communications I	
*MATH 151-3	Calculus I	
*PHYS 120-3	Physics I	18 semester hours credit

Semester Two

CHEM 103-3	General Chemistry II for Physical Sciences	
*CMPT 105-3	Fundamental Concepts of Computing	
*ENSC 102-1	Engineering Communications II	
*ENSC 125-5	Basic Electronics Engineering	
*MATH 152-3	Calculus II	
*PHYS 121-3	Physics II	
*PHYS 131-2	General Physics Laboratory	20 semester hours credit

Semester Three

Cmpl II-3	second complementary studies elective	
*CMPT 290-3	Introduction to Digital Circuit Design	
*ENSC 103-1	Engineering Communications III	
*ENSC 222-5	Electronic Design I	
*MATH 251-3	Calculus III	
MATH 310-3	Introduction to Ordinary Differential Equations ⁽¹⁾	
*Scie I-3	first science elective ⁽²⁾	21 semester hours credit

Semester Four

*CMPT 201-4	Data and Program Organization	
ECON 200-3	Principles of Economics I - Microeconomic Principles	
*ENSC 104-1	Engineering Communications IV	
*ENSC 280-5	Linear Systems I	
MACM 316-3	Numerical Analysis I ⁽¹⁾	
*MATH 232-3	Elementary Linear Algebra	
*STAT 270-3	Introduction to Probability & Statistics	22 semester hours credit

* course which should be taken at this point in the program (consequences of deviations from this schedule are the responsibility of the student).

(1) Students in Engineering Physics should replace one of these courses with MATH 252-3. All students may apply to the Director for permission to take alternate mathematics courses.

(2) For Electronics Engineering and Engineering Physics, PHYS 221-3 is a required prerequisite and should be taken here. For Automation Engineering, MATH 262-4 should be taken here. Students in Biomedical Engineering and Computer Engineering must select an approved basic science course.

ENGINEERING SCIENCE COMMON CORE

TO: 4B.1

COURSES AND TYPICAL SCHEDULE

Semester One

- CHEM 102-3 General Chemistry I for Physical Sciences
- CHEM 115-2 General Chemistry Laboratory I
- Cmpl I-3 first complementary studies elective
- *CMPT 101-4 Introduction to High Level Programming Language
- *ENSC 101-0 Engineering Communications I
- *MATH 151-3 Calculus I
- *PHYS 120-3 Physics I

18 semester hours credit

Semester Two

- CHEM 103-3 General Chemistry II for Physical Sciences
- *CMPT 105-3 Fundamental Concepts of Computing
- *ENSC 102-1 Engineering Communications II
- *ENSC 125-5 Basic Electronics Engineering
- *MATH 152-3 Calculus II
- *PHYS 121-3 Physics II
- *PHYS 131-2 General Physics Laboratory

20 semester hours credit

Semester Three

- Cmpl II-3 second complementary studies elective
- *CMPT 290-3 Introduction to Digital Circuit Design
- *ENSC 103-1 Engineering Communications III
- *ENSC 222-5 Electronic Design I
- *MATH 251-3 Calculus III
- *MATH 310-3 Introduction to Ordinary Differential Equations
- *Scie I-3 first science elective⁽¹⁾

21 semester hours credit

Semester Four

- *CMPT 201-4 Data and Program Organization⁽²⁾
- ECON 200-3 Principles of Economics I - Microeconomic Principles
- *ENSC 104-1 Engineering Communications IV
- *ENSC 280-4 Linear Systems I
- MACM 316-3 Numerical Analysis I⁽²⁾
- *MATH 232-3 Elementary Linear Algebra
- *STAT 270-3 Introduction to Probability and Statistics

21 semester hours credit

*Course which should be taken at this point in the program (consequences of deviations from this schedule are the responsibility of the student).

- (1) For Electronics Engineering and Engineering Physics, PHYS 221-3 is a required prerequisite and should be taken here. For Automation Engineering, MATH 262-4 should be taken here. Students in Biomedical Engineering should refer to note (4) under the Biomedical Engineering Option description and Computer Engineering students must select an approved basic science course.
- (2) Students in Engineering Physics should replace these courses with MATH 252-3 and PHYS 211-3.

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ELECTRONICS ENGINEERING

FROM: 4A.2

COURSES AND TYPICAL SCHEDULE

Semester Five

- Cmpl III-3 third complementary studies elective
- Cmpt I-3 first Computing Science elective
- *CMPT 390-3 Digital Circuits and Systems
- *CMPT 391-3 Microcomputer Hardware Workshop
- *ENSC 105-1 Engineering Communications V
- *ENSC 382-4 Linear Systems II
- MATH 252-3 Vector Calculus

20 semester hours credit

Semester Six

- Cmpt II-3 second Computing Science elective
- *ENSC 106-1 Engineering Communications VI
- ENSC 301-3 Engineering Economics
- *ENSC 327-4 Communication Systems
- *ENSC 385-4 Real-Time Systems
- *PHYS 324-3 Electromagnetics
- Scie II-3 second science elective⁽³⁾

21 semester hours credit

Semester Seven

- Ensc I-4 first Engineering Science elective⁽⁴⁾
- Ensc II-4 second Engineering Science elective⁽⁴⁾
- *ENSC 107-1 Engineering Communications VII
- *ENSC 300-3 Engineering Design and Management
- *ENSC 321-4 Electronic Design II
- ENSC 498-3 Engineering Science Thesis Proposal
- Scie III-3 third science elective⁽³⁾

22 semester hours credit

Semester Eight

- Cmpl IV-3 fourth complementary studies elective
- Ensc III-4 third Engineering Science elective⁽⁴⁾
- ENSC 108-0 Engineering Communications VIII
- ENSC 499-9 Engineering Science Undergraduate Thesis

16 semester hours credit

TOTAL 160 semester hours credit

(3) an approved course in a basic, applied or mathematical science

(4) chosen from:

ENSC 423-4	ENSC 429-4	ENSC 439-4	CMPT 495-3
ENSC 425-4	ENSC 435-4	ENSC 453-4	CMPT 496-3
ENSC 426-4	ENSC 436-4	ENSC 480-4	
ENSC 428-4	ENSC 438-4	ENSC 485-4	

With permission, one or more Directed Studies or Special Project Laboratory courses may be chosen in this elective category.

15.

ELECTRONICS ENGINEERING

TO: 4B.2

COURSES AND TYPICAL SCHEDULE

Semester Five

- Cmpl III-3 third complementary studies elective
- Cmpt I-3 first Computing Science elective
- *CMPT 390-3 Digital Circuits and Systems
- *CMPT 391-4 Computer Design Workshop
- *ENSC 105-1 Engineering Communications V
- *ENSC 382-4 Linear Systems II
- MATH 252-3 Vector Calculus

21 semester hours credit

Semester Six

- Cmpt II-3 second Computing Science elective
- *ENSC 106-1 Engineering Communications VI
- ENSC 301-3 Engineering Economics
- *ENSC 327-4 Communication Systems
- *ENSC 385-4 Real-Time Systems
- *PHYS 324-3 Electromagnetics
- Scie II-3 second science elective⁽³⁾

21 semester hours credit

Semester Seven

- Ensc I-4 first Engineering Science elective⁽⁴⁾
- Ensc II-4 second Engineering Science elective⁽⁴⁾
- *ENSC 107-1 Engineering Communications VII
- *ENSC 300-3 Engineering Design and Management
- *ENSC 321-4 Electronic Design II
- ENSC 498-3 Engineering Science Thesis Proposal
- Scie III-3 third science elective⁽³⁾

22 semester hours credit

Semester Eight

- Cmpl IV-3 fourth complementary studies elective
- Ensc III-4 third Engineering Science elective⁽⁴⁾
- ENSC 108-0 Engineering Communications VIII
- ENSC 499-9 Engineering Science Undergraduate Thesis

16 semester hours credit

TOTAL 160 semester hours credit

(3) an approved course in a basic, applied or mathematical science

(4) chosen from:

ENSC 423-4	ENSC 429-4	ENSC 439-4	ENSC 495-4
ENSC 425-4	ENSC 435-4	ENSC 453-4	CMPT 495-3
ENSC 426-4	ENSC 436-4	ENSC 480-4	CMPT 496-3
ENSC 428-4	ENSC 438-4	ENSC 485-4	

With permission, a directed study or special project laboratory course may be chosen in this category but, typically, no more than two will be approved for this purpose.

16

COMPUTER ENGINEERING

FROM: 4A.5

COURSES AND TYPICAL SCHEDULE

Semester Five

- Cmpl III-3 third complementary studies elective
- Cmpt I-3 first Computing Science elective⁽⁵⁾
- *CMPT 205-3 Introduction to Formal Topics in Computing Science
- *CMPT 390-3 Digital Circuits and Systems
- *CMPT 391-3 Microcomputer Hardware Workshop
- *ENSC 105-1 Engineering Communications V
- *ENSC 382-4 Linear Systems II

20 semester hours credit

Semester Six

- Cmpt II-3 second Computing Science elective⁽⁵⁾
- *CMPT 400-3 Hardware Architecture
- *ENSC 106-1 Engineering Communications VI
- ENSC 301-3 Engineering Economics
- *ENSC 327-4 Communication Systems
- *ENSC 385-4 Real-Time Systems
- Scie II-3 second science elective⁽³⁾

21 semester hours credit

Semester Seven

- *CMPT 300-3 Operating Systems I
- Enc I-4 first Engineering Science elective⁽⁴⁾
- Enc II-4 second Engineering Science elective⁽⁴⁾
- *ENSC 107-1 Engineering Communications VII
- *ENSC 300-3 Engineering Design and Management
- *ENSC 321-4 Electronic Design II
- ENSC 498-3 Engineering Science Thesis Proposal

22 semester hours credit

Semester Eight

- Cmpl IV-3 fourth complementary studies elective
- ENSC 108-0 Engineering Communications VIII
- *ENSC 429-4 Discrete Time Systems
- ENSC 499-9 Engineering Science Undergraduate Thesis

16 semester hours credit

TOTAL 160 semester hours credit

(3) An approved course in a basic, applied or mathematical science

(4) Chosen from:

ENSC 423-4	ENSC 429-4	ENSC 439-4	CMPT 495-3
ENSC 425-4	ENSC 435-4	ENSC 453-4	CMPT 496-3
ENSC 426-4	ENSC 436-4	ENSC 480-4	
ENSC 428-4	ENSC 438-4	ENSC 485-4	

With permission, one or more Directed Studies or Special Project Laboratory courses may be chosen in this elective category.

(5) In addition to CMPT or MATH courses, as appropriate, students may elect from:

- MACM 401-3 Switching Theory and Logical Design
- MACM 402-3 Automata and Formal Languages

COMPUTER ENGINEERING

TO: 4B.5

COURSES AND TYPICAL SCHEDULE

Semester Five

- Cmpl III-3 third complementary studies elective
- Cmpt I-3 first Computing Science elective⁽⁵⁾
- *CMPT 205-3 Introduction to Formal Topics in Computing Science
- *CMPT 390-3 Digital Circuits and Systems
- *CMPT 391-4 Computer Design Workshop
- *ENSC 105-1 Engineering Communications V
- *ENSC 382-4 Linear Systems II

21 semester hours credit

Semester Six

- Cmpt II-3 second Computing Science elective⁽⁵⁾
- *CMPT 400-3 Hardware Architecture
- *ENSC 106-1 Engineering Communications VI
- ENSC 301-3 Engineering Economics
- *ENSC 327-4 Communication Systems
- *ENSC 385-4 Real-Time Systems
- Scie II-3 second science elective⁽³⁾

21 semester hours credit

Semester Seven

- *CMPT 300-3 Operating Systems I
- Ensc I-4 first Engineering Science elective⁽⁴⁾
- Ensc II-4 second Engineering Science elective⁽⁴⁾
- *ENSC 107-1 Engineering Communications VII
- *ENSC 300-3 Engineering Design and Management
- *ENSC 321-4 Electronic Design II
- ENSC 498-3 Engineering Science Thesis Proposal

22 semester hours credit

Semester Eight

- Cmpl IV-3 fourth complementary studies elective
- ENSC 108-0 Engineering Communications VIII
- *ENSC 429-4 Discrete Time Systems
- ENSC 499-9 Engineering Science Undergraduate Thesis

16 semester hours credit

TOTAL 160 semester hours credit

(3) An approved course in a basic, applied or mathematical science

(4) Chosen from:

ENSC 423-4	ENSC 429-4	ENSC 439-4	ENSC 495-4
ENSC 425-4	ENSC 435-4	ENSC 453-4	CMPT 495-3
ENSC 426-4	ENSC 436-4	ENSC 480-4	CMPT 496-3
ENSC 428-4	ENSC 438-4	ENSC 485-4	

With permission, a directed study or special project laboratory course may be chosen in this category but, typically, no more than two will be approved for this purpose.

(5) In addition to CMPT or MATH courses, as appropriate, students may elect from:

- MACM 401-3 Switching Theory and Logical Design
- MACM 402-3 Automata and Formal Languages

18.

ENGINEERING PHYSICS (ELECTRONICS)

FROM: 4A.4

COURSES AND TYPICAL SCHEDULE

Semester Five

- Cmpl III-3 third complementary studies elective
- *CMPT 390-3 Digital Circuits and Systems
- *CMPT 391-3 Microcomputer Hardware Workshop
- *ENSC 105-1 Engineering Communications V
- ENSC 301-3 Engineering Economics
- *ENSC 382-4 Linear Systems II
- *PHYS 211-3 Intermediate Mechanics

20 semester hours credit

Semester Six

- Cmpl IV-3 fourth complementary studies elective
- *ENSC 106-1 Engineering Communications VI
- *ENSC 327-4 Communication Systems
- *PHYS 324-3 Electromagnetics
- *PHYS 344-3 Thermal Physics
- *PHYS 355-3 Optics
- *PHYS 385-3 Quantum Physics

20 semester hours credit

Semester Seven

- Ensc I-4 first Engineering Science elective⁽³⁾
- Ensc II-4 second Engineering Science elective⁽³⁾
- *ENSC 107-1 Engineering Communications VII
- *ENSC 300-3 Engineering Design and Management
- *ENSC 321-4 Electronic Design II
- *ENSC 495-1 Introduction to Microelectronic Fabrication
- ENSC 498-3 Engineering Science Thesis Proposal

20 semester hours credit

Semester Eight

- Ensc III-4 third Engineering Science elective⁽³⁾
- ENSC 108-0 Engineering Communications VIII
- ENSC 499-9 Engineering Science Undergraduate Thesis
- Scie II-3 second science elective⁽⁴⁾
- Scie III-3 third science elective⁽⁴⁾

19 semester hours credit

TOTAL 160 semester hours credit

(3) Chosen from:

- | | | | |
|------------|------------|------------|------------|
| ENSC 423-4 | ENSC 429-4 | ENSC 439-4 | CMPT 495-3 |
| ENSC 425-4 | ENSC 435-4 | ENSC 453-4 | CMPT 496-3 |
| ENSC 426-4 | ENSC 436-4 | ENSC 480-4 | |
| ENSC 428-4 | ENSC 438-4 | ENSC 485-4 | |

With permission, one or more Directed Studies or Special Project Laboratory courses may be chosen in this elective category.

(4) Chosen from: PHYS 365-3, PHYS 455-3, PHYS 465-3

ENGINEERING PHYSICS (ELECTRONICS)

TO: 4B.4

COURSES AND TYPICAL SCHEDULE

Semester Five

- *ENSC 105-1 Engineering Communications V
- ENSC 321-4 Electronic Design II
- ENSC 370-4 Transducers and Embedded Systems
- *ENSC 382-4 Linear Systems II
- *PHYS 233-2 Introductory Physics Laboratory A
- *PHYS 344-3 Thermal Physics
- *PHYS 385-3 Quantum Physics

21 semester hours credit

Semester Six

- *ENSC 106-1 Engineering Communications VI
- *ENSC 327-4 Communication Systems
- *PHYS 324-3 Electromagnetics
- PHYS 332-3 Intermediate Laboratory
- PHYS 345-3 Statistical Physics
- *PHYS 355-3 Optics
- *PHYS 384-3 Mathematical Physics

20 semester hours credit

Semester Seven

- Ensc 1-4 first Engineering Science elective⁽³⁾
- *ENSC 107-1 Engineering Communications VII
- *ENSC 300-3 Engineering Design and Management
- ENSC 301-3 Engineering Economics
- ENSC 498-3 Engineering Science Thesis Proposal
- *PHYS 365-3 Semiconductor Device Physics
- Scie II-3 second science elective⁽⁴⁾

20 semester hours credit

Semester Eight

- Cmpl III-3 third complementary studies elective
- Ensc II-4 second Engineering Science elective⁽³⁾
- ENSC 108-0 Engineering Communications VIII
- *ENSC 453-4 Semiconductor Device Engineering
- ENSC 499-9 Engineering Science Undergraduate Thesis

20 semester hours credit

TOTAL 160 semester hours credit

- (3) Chosen from:
- | | | |
|------------|------------|------------|
| ENSC 330-4 | ENSC 426-4 | ENSC 495-4 |
| ENSC 423-4 | ENSC 429-4 | |
| ENSC 425-4 | ENSC 485-4 | |

With permission, a directed study or special project laboratory course may be chosen in this category but, typically, no more than two will be approved for this purpose.

- (4) Chosen from: PHYS 415-3, PHYS 455-3, PHYS 465-3

Note: Students should consult the Engineering Physics Committee for advice on selecting electives.

20

COURSES AND TYPICAL SCHEDULE

Semester Five

BISC 101-4	Introduction to Biology	
*CMPT 390-3	Digital Circuits and Systems	
*CMPT 391-3	Microcomputer Hardware Workshop	
*ENSC 105-1	Engineering Communications V	
*ENSC 382-4	Linear Systems II	
KIN. 105-3	Fundamentals of Human Structure and Function	18 semester hours credit

Semester Six

BISC 102-4	Introduction to Biology	
Cmpl III-3	third complementary studies elective	
*ENSC 106-1	Engineering Communications VI	
ENSC 301-3	Engineering Economics	
*ENSC 327-4	Communication Systems	
*ENSC 385-4	Real-Time Systems	
Scie II-3	second science elective ⁽³⁾	22 semester hours credit

Semester Seven

Ensc I-4	first Engineering Science elective ⁽⁴⁾	
*ENSC 107-1	Engineering Communications VII	
*ENSC 300-3	Engineering Design and Management	
*ENSC 321-4	Electronic Design II	
*ENSC 451-1	Seminar in Biomedical Engineering ⁽⁵⁾	
ENSC 498-3	Engineering Science Thesis Proposal	
Scie III-3	third science elective ⁽³⁾	19 semester hours credit

Semester Eight

Cmpl IV-3	fourth complementary studies elective	
Ensc II-4	second Engineering Science elective ⁽⁴⁾	
Ensc III-4	second Engineering Science elective ⁽⁴⁾	
ENSC 108-0	Engineering Communications VIII	
ENSC 499-9	Engineering Science Undergraduate Thesis	20 semester hours credit
		TOTAL 160 semester hours credit

(3) an approved course in a basic, applied or mathematical science of which at least two must be from the following:

- KIN. 305-3 Human Physiology I
- KIN. 306-3 Human Physiology II
- KIN. 401-4 Mechanics of Human Movement
- KIN. 402-4 Mechanical Properties of Tissues
- KIN. 407-3 Human Physiology Laboratory
- KIN. 442-3 Biomedical Systems
- KIN. 480-3 Human Factors in Working Environments

Students should note that the prerequisites for several of these courses are not provided in the Biomedical Engineering program. Other sections of this Calendar and, if necessary, the School of Kinesiology should be consulted by students interested in KIN. 305, 306 and 407.

(4) Chosen from:

- | | | | |
|------------|------------|------------|------------|
| ENSC 423-4 | ENSC 429-4 | ENSC 439-4 | CMPT 495-3 |
| ENSC 425-4 | ENSC 435-4 | ENSC 453-4 | CMPT 496-3 |
| ENSC 426-4 | ENSC 436-4 | ENSC 480-4 | |
| ENSC 428-4 | ENSC 438-4 | ENSC 485-4 | |

With permission, one or more Directed Studies or Special Project Laboratory courses may be chosen in this category.

(5) Will not be given every year; students should take at the earliest opportunity.

21.

BIOMEDICAL ENGINEERING (ELECTRONICS)

TO: 4B.6

COURSES AND TYPICAL SCHEDULE

Semester Five

- *BISC 101-4 Introduction to Biology
- Cmpl III-3 third complementary studies elective
- *CMPT 390-3 Digital Circuits and Systems
- *CMPT 391-4 Computer Design Workshop
- *ENSC 105-1 Engineering Communications V
- *ENSC 382-4 Linear Systems II

19 semester hours credit

Semester Six

- BISC 102-4 Introduction to Biology
- Cmpl IV-3 fourth complementary studies elective
- *ENSC 106-1 Engineering Communications VI
- ENSC 301-3 Engineering Economics
- *ENSC 327-4 Communication Systems
- *ENSC 385-4 Real-Time Systems
- *KIN 205-3 Introduction to Human Physiology

22 semester hours credit

Semester Seven

- Ensc I-4 first Engineering Science elective⁽³⁾
- *ENSC 107-1 Engineering Communications VII
- *ENSC 300-3 Engineering Design and Management
- *ENSC 321-4 Electronic Design II
- *ENSC 451-1 Seminar in Biomedical Engineering⁽⁴⁾
- ENSC 498-3 Engineering Science Thesis Proposal
- Scie II-3 second science elective⁽⁵⁾

19 semester hours credit

Semester Eight

- Ensc II-4 second Engineering Science elective⁽³⁾
- Ensc III-4 third Engineering Science elective⁽³⁾
- ENSC 108-0 Engineering Communications VIII
- ENSC 499-9 Engineering Science Undergraduate Thesis
- Scie III-3 third science elective⁽⁵⁾

20 semester hours credit

TOTAL 160 semester hours credit

(3) Chosen from:

ENSC 423-4	ENSC 429-4	ENSC 439-4	ENSC 495-4
ENSC 425-4	ENSC 435-4	ENSC 453-4	CMPT 495-3
ENSC 426-4	ENSC 436-4	ENSC 480-4	CMPT 496-3
ENSC 428-4	ENSC 438-4	ENSC 485-4	

With permission, a directed study or special project laboratory course may be chosen in this category but, typically, no more than two will be approved for this purpose.

(4) Will not be given every year; students should take at the earliest opportunity.

(5) An approved course in a basic, applied or mathematical science of which at least two must be from the following:

KIN. 305-3 Human Physiology I	KIN. 407-3 Human Physiology Laboratory
KIN. 306-3 Human Physiology II	KIN. 442-3 Biomedical Systems
KIN. 401-4 Mechanics of Human Movement	KIN. 480-3 Human Factors in Working Environments
KIN. 402-4 Mechanical Properties of Tissues	

Students should note that the prerequisites for several of these courses are not provided in the Biomedical Engineering program. Other sections of this Calendar and, if necessary, the School of Kinesiology should be consulted by students interested in KIN. 305, 306, 407, 442 and 480.

COURSES AND TYPICAL SCHEDULE

Semester Five

- Cmpl III-3 third complementary studies elective
- CMPT 305-3 Computer Simulation & Modelling
- *ENSC 105-1 Engineering Communication V
- ENSC 301-3 Engineering Economics
- *ENSC 330-4 Engineering Materials
- *ENSC 382-4 Linear Systems II
- STAT 330-3 Linear Models in Applied Statistics

21 semester hours credit

Semester Six

- *ENSC 106-1 Engineering Communications VI
- *ENSC 385-4 Real Time Systems
- *ENSC 436-4 Manufacturing Processes
- *ENSC 480-4 Industrial Engineering
- PHYS 344-3 Thermal Physics
- Scie II-3 second science elective⁽³⁾

19 semester hours credit

Semester Seven

- Ensc I-4 first Engineering Science elective⁽⁴⁾
- *ENSC 107-1 Engineering Communications VII
- *ENSC 300-3 Engineering Design and Management
- *ENSC 423-4 Modern Control Theory
- *ENSC 439-4 Computer Aided Design & Manufacturing
- ENSC 498-3 Engineering Science Thesis Proposal

19 semester hours credit

Semester Eight

- Cmpl IV-3 fourth complementary studies elective
- Ensc II-4 second Engineering Science elective⁽⁴⁾
- Ensc III-4 third Engineering Science elective⁽⁴⁾
- ENSC 108-0 Engineering Communications VIII
- ENSC 499-9 Engineering Science Undergraduate Thesis

20 semester hours credit

TOTAL 160 semester hours credit

(3) An approved course in a basic, applied or mathematical science.

(4) Chosen from: ENSC 429-4 ENSC 460-4
 ENSC 435-4 ENSC 485-4
 ENSC 438-4 CMPT 351-3

With permission, one or more Directed Studies or Special Project Laboratory courses may be chosen in this category.

AUTOMATION ENGINEERING

TO: 4B.7

COURSES AND TYPICAL SCHEDULE

Semester Five

- CMPT 305-3 Computer Simulation & Modelling
- *ENSC 105-1 Engineering Communication V
- ENSC 301-3 Engineering Economics
- *ENSC 330-4 Engineering Materials
- *ENSC 370-4 Transducers and Embedded Systems
- *ENSC 382-4 Linear Systems II
- STAT 330-3 Linear Models in Applied Statistics

22 semester hours credit

Semester Six

- *ENSC 106-1 Engineering Communications VI
- *ENSC 385-4 Real Time Systems
- *ENSC 436-4 Manufacturing Processes
- *ENSC 480-4 Industrial Engineering
- PHYS 344-3 Thermal Physics
- Scie II-3 second science elective⁽³⁾

19 semester hours credit

Semester Seven

- Ensc I-4 first Engineering Science elective⁽⁴⁾
- *ENSC 107-1 Engineering Communications VII
- *ENSC 300-3 Engineering Design and Management
- *ENSC 423-4 Modern Control Theory
- *ENSC 439-4 Computer Aided Design & Manufacturing
- ENSC 498-3 Engineering Science Thesis Proposal

19 semester hours credit

Semester Eight

- Cmpl III-3 third complementary studies elective
- Ensc II-4 second Engineering Science elective⁽⁴⁾
- Ensc III-4 third Engineering Science elective⁽⁴⁾
- ENSC 108-0 Engineering Communications VIII
- ENSC 499-9 Engineering Science Undergraduate Thesis

20 semester hours credit

TOTAL 160 semester hours credit

(3) An approved course in a basic, applied or mathematical science.

(4) Chosen from: ENSC 429-4 ENSC 460-4
 ENSC 435-4 ENSC 485-4
 ENSC 438-4 CMPT 351-3

With permission, a directed study or special project laboratory course may be chosen in this category but, typically, no more than two will be approved for this purpose.

24.

**School of Kinesiology
Curriculum Changes**

SCUS References: SCUS 91-11; SCUS 91-59
SCAP Reference: SCAP 91-35d

New Course:
KIN 453-0 Practicum V

and
Curriculum Revisions

For Information:

Acting under delegated authority, SCUS has approved revisions to the following courses as detailed in SCUS 91-11:

KIN 105	Change in prerequisite statement
KIN 343	Change of prerequisite
KIN 367	Change of prerequisite
KIN 426	Change of prerequisite

To: Faculty of Applied Sciences
Undergraduate Curriculum
Committee

From: Craig Asmundson
UCC Chairperson
School of Kinesiology

Subject: Calendar Changes Accepted
At FAS UCC Meeting On
June 19

Date: June 20/91

C. C. Asmundson

#1. **Proposal:** Change chemistry prerequisites for Kinesiology majors.
Current chemistry prerequisites are as follows:

CHEM 104-3	General Chemistry I for Life Sciences
CHEM 105-3	General Chemistry II for Life Sciences
CHEM 115-2	General Chemistry Laboratory I
CHEM 118-2	General Chemistry Laboratory for Life Sciences
CHEM 251-3	Organic Chemistry I
CHEM 256-2	Organic Chemistry Laboratory I
Total = 15 credit hours	

Change chemistry prerequisites to:

CHEM 102-3*	General Chemistry I
CHEM 115-2	General Chemistry Laboratory I

plus a minimum of 10 semester hours selected from:

CHEM 105-3	General Chemistry II for Life Sciences
CHEM 118-2	General Chemistry Laboratory for Life Sciences
CHEM 150-3*	Organic Chemistry I
CHEM 155-2*	Organic Chemistry Laboratory I
CHEM 250-3*	Organic Chemistry II
CHEM 255-2*	Organic Chemistry Laboratory II

Total required credit hours = 15

* The Chemistry Department has rearranged some of their courses and changed course numbers, effective September 1991.

Justification:

1. The proposed changes give students more flexibility. Students interested in applying for medical school will now be able to take second level organic chemistry courses as part of their chemistry prerequisites for their Kinesiology major. Furthermore, the option taking more organic chemistry will better prepare students for upper levels courses in biochemistry and molecular biology.
2. Our chemistry prerequisites have always been the same as the prerequisites for students in the Department of Biological Sciences.

The Department of Biological Sciences has changed their chemistry prerequisites as described above, effective September 1991.

3. The Chemistry Department thinks that these changes in chemistry prerequisites for majors in Biological Sciences and Kinesiology are a good idea.

- #2. **Proposal:** Change the "Suggested Course Pathway for Kinesiology Majors" which is shown on page 67 of the new 1991-1992 Calendar. Please refer to the attached pages.

Justification: Many students find the current course pathway to be confusing and to be too rigid.

- #3. **Proposal:** For prerequisites for Kinesiology 105, Fundamentals of Human Structure and Function, remove the sentence that states "KIN 205 may not be taken in lieu of KIN 105."

Justification: Kinesiology 105 is required course for Minors in Kinesiology and Health and Fitness Certificate students. It doesn't have science prerequisites as does Kinesiology 205 and it is an easier course. If a Minor or Certificate student wants to take Kin 205 instead of Kin 105 (which is a very low probability), he/she should be allowed to do it.

- #4. **Proposal:** Change prerequisites for Kinesiology 343 from Kin 142, 143 and 205 to Kin 105, 142, and 143.

Justification: This change will allow students in the Health and Fitness Certificate Program and students in the proposed Health and Physical Education Specialization Program to take this course.

- #5. **Proposal:** Change prerequisites for Kinesiology 367 from "at least 30 hours of undergraduate course credit" to "at least 60 hours of undergraduate course credit"

Justification: The content and academic requirements of this course are such that students should be in their third year of university studies before taking this course.

- #6. **Proposal:** Change prerequisites for Kinesiology 426 from "Kin 326; 60 credit hours" to "Kin 326"

Justification: Requiring 60 credit hours is redundant because a student has to have a minimum of 60 credit hours to enroll in Kines. 326.

SUGGESTED COURSE PATHWAY FOR KINESIOLOGY MAJORS

YEAR I

- *BISC 101-4
- *BISC 102-4

- *CHEM 102-3
- *CHEM 115-2
- *5 credit hours of specified Chemistry electives

- *KIN 142-3

- *MATH 154-3
- *MATH 155-3

- *PHYS 101-3

YEAR II

- *BISC 201-3

- *5 CREDIT HOURS OF SPECIFIED CHEMISTRY ELECTIVES

- *KIN 203-3 OR CMPT 103-3
- *KIN 205-3
- *KIN 351-0 - Co-op (refer to regulations)

- *PHYS 102-3
- *PHYS 130-2

YEAR III

- *KIN 305-3
- *KIN 306-3
- *KIN 326-3
- KIN 303-3
- KIN 320-3
- KIN 336-3
- KIN 341-3
- KIN 343-3
- KIN 352-0 (Co-op)
- KIN 367-3
- KIN 375-3
- UPPER LEVELS FROM OTHER DISCIPLINES
- KIN 451-0 (Co-op)

NOTE: SOME 400 LEVEL KINESIOLOGY COURSES CAN BE TAKEN DURING YEAR III

YEAR IV

- *KIN 401-4
- *KIN 407-3

- KIN 402-4
- KIN 410-3
- KIN 415-3
- KIN 420-3
- KIN 421-3
- KIN 422-3
- KIN 430-3
- KIN 431-3
- KIN 441-3
- KIN 442-3
- KIN 452-0 (Co-op)
- KIN 460-3
- KIN 461-3
- KIN 467-3
- KIN 480-3
- KIN 485-4
- KIN 496-3
- KIN 498-3
- KIN 499-15

Before taking Year III courses you should have finished all lower level required courses, i.e., 55 credits.

ADDITIONAL COURSES WHICH MAY BE TAKEN DURING YEAR 1 & YEAR 2: KIN 110, 140, 141, 143, 220, 241, lower level electives from other departments.

TOTAL CUMULATIVE CREDITS: APPROX. 30

TOTAL CUMULATIVE CREDITS: APPROX. 60

TOTAL CUMULATIVE CREDITS: APPROX. 90

TOTAL CUMULATIVE CREDITS: APPROX. 120

*REQUIRED COURSES

**To: Faculty of Applied Sciences
Undergraduate Curriculum
Committee**

**From: Craig Asmundson
UCC Chairperson
School of Kinesiology**

**Subject: Approval of New Co-op
Course - Kinesiology 453**

Date: October 21/91

Rationale For Kinesiology 453: Practicum V

Co-op students are required to complete four work terms in order to qualify for their co-op degree. However, often students wish to experience a fifth work term in either a new area not previously available to them or in an extension of a position previously held. This option is open to students in other disciplines and is frequently exercised particularly in a slow full-time job market, or in an instance where more experience is desired. This also provides co-op employers with access to a small group of more senior students who are able to perform at a different level. This costs the university no additional resources, yet provides students and employers with broader choices and greater opportunities.

SENATE COMMITTEE ON UNDERGRADUATE STUDIES

NEW COURSE PROPOSAL FORM

Calendar Information

Department: Kinesiology

Abbreviation Code: KIN Course Number: 453

Credit Hours: 0 Vector: _____

Title of Course: Practicum V

Calendar Description of Course: The 5th semester of work experience.

It is available to Co-operative Education students. Prerequisites: Students must apply to the Kinesiology Co-op co-ordinator at least 1 semester in advance. They will normally have completed kin 452.

Nature of Course 5th (optimal) practicum

Prerequisites (or special instructions):

kin 351, 352, 451, 452

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

Scheduling

How frequently will the course be offered? every semester

Semester in which the course will first be offered? Spring '92

Which of your present faculty would be available to make the proposed offering possible? JOHNSTON, Co-op Co-ordinator

Objectives of the Course

To provide students with an optimal 5th work term in Kinesiology (as is available to students in other disciplines w/ Computing Sci.)

Budgetary and Space Requirements (for information only)

What additional resources will be required in the following areas:

Faculty

Staff

Library

Audio Visual

Space

Equipment

Approval

Date: Oct. 22, 1991

Oct 22/91

October 29/91

[Signature]
Department Chairman

[Signature]
Dean

[Signature]
Chairman, SCUS