

SIMON FRASER UNIVERSITY

MEMORANDUM

To: Senate

From: Senate Committee on
Undergraduate Studies

Subject: School of Engineering Science -
Program Change

Date: October 21, 1986

Action undertaken by the Senate Committee on Undergraduate Studies at its meeting of October 21, 1986 gives rise to the following motion:

MOTION:

"That Senate approve and recommend approval to the Board of Governors, as set forth in S.86-54, the proposed

Industrial Internship requirement"

SIMON FRASER UNIVERSITY

MEMORANDUM

To..... R. Heath, Registrar.....

From..... J. Blanchet, Secretary to the
..... Faculty of Applied Sciences Undergraduate
..... Studies Committee.....

Subject..... Engineering Science Curriculum
..... Revisions. (ASU. 86-5).....

Date..... October 17/86.....

The attached submission from the School of Engineering Science with regard to the Industrial Internship requirement has the approval of the Faculty of Applied Sciences Undergraduate Studies Committee.

Would you please place this item on the next agenda of the Senate Committee on Undergraduate Studies.

J. Blanchet

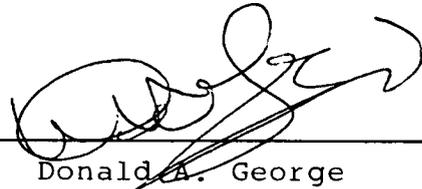
SIMON FRASER UNIVERSITY

MEMORANDUM

To... Mr. R. Heath, Registrar & Secretary to the Senate Committee on Undergraduate Studies.....	From... Dr. D.A. George, Director.....School of Engineering Science..
Subject... Engineering Science Calendar... Revisions	Date... October 16, 1986.....

The School of Engineering Science intends to require three semesters of work instead of one as a requirement for graduation. These changes are reflected in the attached new calendar description.

The calendar wording has also been changed to show the start of the second phase of our program (Core B).



Donald A. George

The B.A.Sc. Program in Engineering Science

Students who study Engineering Science develop skills in systems design along with a high level of scientific knowledge. The program is demanding and is aimed at the superior student. The goal of the program is to produce well educated, innovative engineer/scientists who have entrepreneurial skills and attitudes and who are oriented to the new technologies. Entry to the program is on a competitive basis and once admitted to Engineering Science, students must maintain a cumulative grade point average of 3.0 ('B') to remain in the program.

To obtain the degree, students undertake a basic core program of pure, applied and engineering sciences followed by studies in a specialized option.

The School of Engineering Science began offering courses in September, 1983. The overall plan for the School is to have three major areas of concentration. They are:

Core A - Computing, microelectronics and communications.

Core B - Industrial automation, control and robotics and computer-aided design and manufacturing.

Core C - Chemical and biochemical processing and biotechnology.

At present, Core A is fully operational and the first students have just been enrolled in Core B. Core C will be phased in over the next few years.

In all Engineering Science courses, computers receive major emphasis as tools for learning, conceptualization, design and analysis. Built into the program are courses on social impacts of technology, finance, management, design methods and entrepreneurship intended to complement scientific studies. A special, integrated communications course taken throughout the eight academic semesters ensures that all S.F.U. Engineering Science graduates have the communication skills necessary to be effective as engineers.

Industrial Internship

Every student in the Engineering Science program must complete an internship involving at least three work semesters and a thesis project. This results in a combination of work in an appropriate industrial or research setting with study in the chosen option. Intensive specialized study is coupled with a project under the direction of a practicing engineer or scientist.

Typically, following the sixth academic semester, the student will be placed in a job appropriate to his/her stated interests and will work on a major project associated with the job. In the fall semester of the fourth year, the student will take courses to help complete work on that project and prepare a formal thesis proposal. The thesis is to be written in the final semester of the program when the student will be taking classes part-time and working part-time on the thesis project. When appropriate, other patterns of work and study can be adopted.

The School also offers the opportunity to participate in additional work semesters throughout the program to give students further valuable experience and the chance to investigate their career choices. The internships will be administered through the School Internship Co-ordinator whose responsibility is to find and maintain appropriate work placements.

Requirements for the Bachelor of Applied Science Degree

1. A minimum of 160 semester hours credit in basic science, general studies, engineering science, specialized engineering and science, plus project and laboratory work.
2. A Graduation Grade Point Average of at least 3.0 calculated on the required 160 semester hours, or on the 80 semester hours of upper division credit.
3. Completion of an internship. This consists of three semesters of practical experience in an appropriate industrial or research setting during which intensive study in a concentration is combined with a project under the direction of a practicing engineer or scientist. The internship may take place within the University but in most cases the work site will be remote from the university and the supervisor will be a member of the external organization.

ENSC 498-3 Engineering Science Thesis Proposal is normally taken during the seventh academic semester. ENSC 498-3 must be completed before graduation. During ENSC 499-9 the student engages in supervised study and practical work in research, development or advanced engineering. A project thesis based on this activity must be submitted.

4. A specialized program of study must be completed in one of six options: Electronics Engineering, Computer Engineering, Engineering Physics, Biomedical Engineering, Robotics & Control Engineering and Manufacturing Systems Engineering. These are listed below on a semester-by-semester basis although there is no strict requirement to follow the sequence of these typical programs. However, any semester's registration less than 15 semester hours must be approved by the Director and students departing from these sequences must be careful about scheduling and prerequisite problems they may face in subsequent semesters.