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Professor Edith Hillan
Vice-Provost, Academic
Simcoe Hall, Room 221

Dear Edith:

Attached please find a proposal for a new Major (Co-operative) Program in Computer Science that we would like to publish in our 2006-2007 academic calendar. The proposal was approved by the UTSC Academic Committee at its meeting on December 6, 2005 and it has been reviewed by the Tri-Campus decanal committee.

Rationale

The Specialist Co-op program in Computer Science at UTSC has been offered to students since 1988. It has a well-established reputation among students and employers in the GTA. At present it must be taken in conjunction with a Specialist Program in Computer Science. In most other disciplines, the Co-op program can be taken together with a double Major. We propose now to extend the program to students enrolled in the Major Program in Computer Science.

The Department of Computer and Mathematical Sciences has included in its 'Stepping Up' plan the goal of broadening the background of Computer Science students. The field of Computer Science itself has discovered connections with many disciplines, some in quite unexpected areas; thus, it has become of considerable value to Computer Science students to have a broader education.

In recent years employers too have become interested in students with a broader education which complements their program in Computer Science, for example some knowledge of Statistics or Biology. So Co-op students with a double Major may sometimes be at an advantage over students in a Specialist program. Co-op policy will require students to consult with their Supervisor of Studies before selecting the second Major. At present we expect a Co-op Major program in Computer Science to attract a dozen students annually.

Admission Requirements and Evaluation

The admission requirements will be the same as for students following a Specialist program, as will be the CGPA required each year to remain in the program. Prior to the first work term, a Major and a Specialist student will have the same Computer Science, Mathematics and Statistics course background. There will be little difference prior to the second work term as well. For the third work term employers are mainly interested in the

experience students have gained in prior terms.

As in all Co-op programs, students will be required to submit a report at the end of each work term. This report will be evaluated by the Supervisor of Studies. Students must also undergo two employer evaluations during each work term.

Resources

The Arts and Science Co-op Office at UTSC has built up extensive contacts with employers for Computer Science students over the past 18 years. At present there are more placements available than can be filled by students enrolled in the Specialist programs. There are 6 full-time research-stream faculty and 6 full-time teaching stream faculty, as well as 2 part-time lecturers, in Computer Science at UTSC. Several of them have contacts with local employers which have strengthened the Co-op program over the years. In short there will be no additional resources or physical facilities required for this extension to the existing Computer Science Co-op program.

Learning Outcomes

1) Students completing this program will have a solid foundation in Computer Science and in a complementary field.
2) They will have a broad interdisciplinary education, which is increasingly an advantage in Computer Science.
3) They will gain experience in industry applying what they have been studying. This will give enrichment and depth to their education.
4) The work terms provide an opportunity for students to integrate their second Major with Computer Science.
5) Students will improve their communication skills, both oral and written during the work terms. Computer Science students often are weak here.
6) Students will learn how to write resumes, do interviews and find jobs. This is one of the main attractions of Co-op programs.

In summary, we are enthusiastic about this new Co-op program and hope that the Academic Priorities and Planning Committee will share our view of the merits of the program and will concur with our recommendation that this Major be implemented effective 2006-2007.

Sincerely,

A. C. Dyer for J. Freedman

Jonathan Freedman
Acting Vice-Principal (Academic) and Dean

UNIVERSITY OF TORONTO AT SCARBOROUGH
2006/2007 New Programs and Program Changes: Executive Summary

NEW PROGRAM

Major (Co-operative) Program in Computer Science

In order to provide students with more flexibility, UTSC proposes introducing a co-operative version of the Major Program in Computer Science. (A co-operative version of the specialist program has existed for many years.) The academic requirements will be the same as the requirements for the non-co-operative version of the Major Program in Computer Science and, in addition, students will be required to complete three four-month work terms and maintain a cumulative grade point average of at least 2.5 throughout their degree.

The Major (Co-operative) Program in Computer Science which will lead to a B.Sc. will be available as part of an Honours degree only and will have to be combined with another major program, pre-approved by the Computer Science program supervisor. It will be a limited enrolment program with an expected intake per year of 5-10 students.

The specific course requirements (8.0 FCEs) are as follows:

A-level courses

CSCA08H	Introduction to Computer Programming
CSCA48H	Introduction to Computer Science
CSCA65H	Mathematical Expression and Reasoning for Computer Science
MATA23H	Linear Algebra I
MATA30H	Calculus I
MATA37H	Calculus II for Mathematical Sciences

B-level courses

CSCB07H	Software Design
CSCB36H	Introduction to the Theory of Computation
CSCB58H	Computer Organization
CSCB63H	Design and Analysis of Data Structures
MATB24H	Linear Algebra II
STAB52H	Introduction to Probability Theory

Elective courses, all levels

One of (additional courses in the practice of computing):

CSCC09H	Programming on the Web
CSCC24H	Principles of Programming Languages
CSCC40H	Analysis and Design of Information Systems
CSCC43H	Introduction to Databases
CSCC69H	Operating Systems
CSCC85H	Microprocessor Systems
CSCD18H	Computer Graphics
CSC454H	The Business of Software

One of (additional courses in scientific computing):

CSCC36H	Numerical Methods
CSCC50H	Numerical Algebra and Optimization

One of (additional courses in the theory of computing):

CSCC63H	Computability and Computational Complexity
CSCC73H	Algorithm Design and Analysis
CSC448H	Formal Languages and Automata
CSC465H	Formal Methods in Software Design

One of (additional courses in mathematics):

MATB41H	Techniques of the Calculus of Several Variables I
MATB61H	Linear Programming and Optimization
MATC09H	Introduction to Mathematical Logic
MATC32H	Graph Theory and Algorithms for its Applications
MATC16H	Coding Theory and Cryptography
MATC44H	Introduction to Combinatorics