

Lakehead University Faculty of Science and Environmental Studies

REQUEST REPORT

Request Tracking Number: 2013-SCI-2718 Request Title: HBScCompSciCoop Update

> Request Effective Date: F-W 2014-15 Request Status: In Workflow Request can't be split

Request Contents

Туре		Title
1.	New Version of a Degree	Honours BSc (Computer Science) Co-operative Program

Request History

Workflow Step	Workflow Action	User	Change Made	Comments	Date
Initiator	Approved	Maurice Benson	Yes	Submitted to workflow	10/25/2013
Dean and Faculty Council Review Stage	Approved	Christina Maenpaa	No	The proposed change was approved by the SES Faculty Council on October 15, 2013. Dr. Dean approves the changes.	10/25/2013
Optional Dean-Social Sciences and Humanities	Approved	Gillian Siddall	No	Approved.	11/16/2013

Supporting Documents

File Name	Uploaded By	Upload Date	Size
SocialScienceSignatureofAppr oval.pdf	Maurice Benson	10/25/2013	2.36 MB

Supporting Documents Audit Trail

File Name User Date Action
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SocialScienceSignatureofAppr oval.pdf	Maurice Benson	10/25/2013	Uploaded
ovalipai			

Notes

Date	User	Note
10/25/2013	Maurice Benson	Update our first year arts requirements due to Philosophy changes

1.	New Version of a Degree	HBSC.COMP.CP - Honours BSc (Computer Science) Co-operative Program
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Justification

The Philosophy Department changed its old PHIL1100 into two half courses. We listed the old PHIL1100 as one of our first year arts electives. Our new first arts elective list includes all first year philosophy courses (all of which have a writing component, our main criteria). The new arrangement is more flexible in that a mixing is now possible between the English and Philosophy half courses on the list.

Degree Details

CURRENT VERSION	PROPOSED VERSION
HBSC.COMP.CP - Honours BSc (Computer Science)	HBSC.COMP.CP - Honours BSc (Computer Science)
Co-operative Program	Co-operative Program
Start Term: Fall 2013	Start Term: Fall 2013 <i>F-W</i> 2014-15
End Term: No Specified End Date	End Term: No Specified End Date

Required Information			
CURRENT VERSION	PROPOSED VERSION		
Institution Unit	Institution Unit		
Faculty of Science and Environmental Studies	Faculty of Science and Environmental Studies		
Degree Type	Degree Type		
HBSC	HBSC		
Major	Major		
COMP	COMP		
Minor	Minor		
Specialization	Specialization		
Rationale	Rationale		
#2012-SCI-417 Split PHYS 1101. Associated	#2012-SCI-417 Split PHYS 1101. Associated		
program changes for Department of Computer	program changes for Department of Computer		
Science not included in original proposal. Authorized	Science not included in original proposal. Authorized		
to change by 19June2013 e-mail from M. Benson and	to change by 19June2013 e-mail from M. Benson and		
verbal approval from Registrar.	verbal approval from Registrar.inc		
Requirements	Requirements		
There are three options in this program, Business,	There are three options in this program, Business,		
Scientific and Hardware. Students must choose one	Scientific and Hardware. Students must choose one		
at the time of initial registration. For help in making	at the time of initial registration. For help in making		
this choice, contact the Chair of the Department.	this choice, contact the Chair of the Department.		
Note:	Note:		
Students in this program are required to take at least	Students in this program are required to take at least		
5 FCEs outside the Departments of Computer	5 FCEs outside the Departments of Computer		
Science and Mathematical Sciences.	Science and Mathematical Sciences.		
(a) Business Option	(a) Business Option		

Fourth Year (Fall and Winter): (a) Computer Science 4411, 4433 and 4453 (b) Business 4253 or 4273	Departmental approval must be obtained at the time of registration (co-operative) by all students at or beyond the third year level.
Departmental approval must be obtained at the time of registration (co-operative) by all students at or beyond the third year level.	Third Year (Spring/Summer): Formal work period assignment (Computer Science 3992)
Third Year (Spring/Summer): Formal work period assignment (Computer Science 3992)	Third Year (Winter): Formal work period assignment (Computer Science 3990)
(c) Mathematics 3332 Third Year (Winter): Formal work period assignment (Computer Science 3990)	Third Year (Fall): (a) Computer Science 3413, 3415, 3473 (b) Business 3213 (c) Mathematics 3332
Third Year (Fall): (a) Computer Science 3413, 3415, 3473 (b) Business 3213	Second Year (Spring/Summer): Optional formal work period assignment (Computer Science 2990)
Second Year (Spring/Summer): Optional formal work period assignment (Computer Science 2990)	Note: Students interested in the Physics selections from the list of electives should take Mathematics 2131 and Physics 2211.
Note: Students interested in the Physics selections from the list of electives should take Mathematics 2131 and Physics 2211.	(d) Sociology 2455 (e) One half-course elective Note:
 (a) Mathematics 2255, 2275 (b) Computer Science 2412, 2453, 2476 and 2477 (c) Business 2012 and 2033 (d) Sociology 2455 (e) One half-course elective 	Second Year (Fall and Winter): (a) Mathematics 2255, 2275 (b) Computer Science 2412, 2453, 2476 and 2477 (c) Business 2012 and 2033
First Year (Spring/Summer): At the discretion of the Chair of the Department, some students may have the opportunity of a formal work period assignment (Computer Science 1990). Second Year (Fall and Winter):	First Year (Spring/Summer): At the discretion of the Chair of the Department, some students may have the opportunity of a formal work period assignment (Computer Science 1990).
First Year (Fall and Winter): (a) Mathematics 1171, 1172, 1271 and 1272; Computer Science 1411, 1431 (b) One FCE elective in Humanities or Social Sciences chosen from: History 1100, Philosophy 1100, or any combination of English 1011, 1031, 1111, 1112 (c) Business 1511, 1512	First Year (Fall and Winter): (a) Mathematics 1171, 1172, 1271 and 1272; Computer Science 1411, 1431 (b) One FCE elective in Humanities or Social Sciences chosen from: History 1100, Philosophy 1100, or any combination of 1110, 1111, 1117, 1118, 1119, 1571, 1573, English 1011, 1031, 1111, 1112 (c) Business 1511, 1512
Year-to-year continuation in the program requires an average of at least 70% in all Computer Science courses, and satisfactory completion of the work period assignments.	Year-to-year continuation in the program requires an average of at least 70% in all Computer Science courses, and satisfactory completion of the work period assignments.

(c) Mathematics 3334	Fourth Year (Fall and Winter):
(d) One FCE from List of Program Electives below (e) Three half-course electives	 (a) Computer Science 4411, 4433 and 4453 (b) Business 4253 or 4273 (c) Mathematics 3334 (d) One FCE from List of Program Electives below
Fourth Year (Spring/Summer): Formal work period assignment (Computer Science 4990)	(e) Three half-course electives
Departmental approval must be obtained at the time of registration (co-operative) by all students at or beyond the third year level.	Fourth Year (Spring/Summer): Formal work period assignment (Computer Science 4990)
Fifth Year (Fall): Formal work period assignment (Computer Science 4992)	Departmental approval must be obtained at the time of registration (co-operative) by all students at or beyond the third year level.
Fifth Year (Winter): (a) Computer Science 4413 and either Computer Science 4431 or 4432	Fifth Year (Fall): Formal work period assignment (Computer Science 4992)
 (b) One half-course elective from List of Mathematics Electives for Computer Science (c) One half-course elective from List of Program Electives below (d) One half-course elective 	Fifth Year (Winter): (a) Computer Science 4413 and either Computer Science 4431 or 4432 (b) One half-course elective from List of Mathematics
(b) Science Option	Electives for Computer Science (c) One half-course elective from List of Program Electives below (d) One half-course elective
Year-to-year continuation in the program requires an average of at least 70% in all Computer Science courses, and satisfactory completion of the work period assignments.	(b) Science Option
First Year (Fall and Winter): (a) Mathematics 1171, 1172, 1271 and 1272; Computer Science 1411, 1431 (b) One FCE elective in Humanities or Social	Year-to-year continuation in the program requires an average of at least 70% in all Computer Science courses, and satisfactory completion of the work period assignments.
Sciences chosen from: History 1100, Philosophy 1100, or any combination of English 1011, 1031, 1111, 1112 (c) Physics 1211 and Physics 1212, or one FCE electives (not from Computer Science or Mathematics) approved by the Department	First Year (Fall and Winter): (a) Mathematics 1171, 1172, 1271 and 1272; Computer Science 1411, 1431 (b) One FCE elective in Humanities or Social Sciences chosen from: History 1100, Philosophy 1100, or any combination of 1110, 1111, 1117, 1118,
First Year (Spring/Summer): At the discretion of the Chair of the Department, some students may have the opportunity of a formal work period assignment (Computer Science 1990).	<i>1119, 1571, 1573,</i> English 1011, 1031, 1111, 1112 (c) Physics 1211 and Physics 1212, or one FCE electives (not from Computer Science or Mathematics) approved by the Department
Second Year (Fall and Winter): (a) Mathematics 2111, 2255 and 2275 (b) Computer Science 2412, 2453, 2476 and 2477 (c) Sociology 2455 (d) One FCE electives	First Year (Spring/Summer): At the discretion of the Chair of the Department, some students may have the opportunity of a formal work period assignment (Computer Science 1990).
Note: Students interested in the Physics selections from the list of electives should take Mathematics 2131 and Physics 2211.	Second Year (Fall and Winter): (a) Mathematics 2111, 2255 and 2275 (b) Computer Science 2412, 2453, 2476 and 2477 (c) Sociology 2455

Printed:	4.40/0040
(c) Hardware Option Year-to-year continuation in the program requires an average of at least 70% in all Computer Science courses, and satisfactory completion of the work	Fifth Year (Winter): (a) Computer Science 4413, 4451 and either Computer Science 4431 or 4432
Fifth Year (Winter): (a) Computer Science 4413, 4451 and either Computer Science 4431 or 4432 (b) One half-course from List of Program Electives below (c) One half-course elective	Departmental approval must be obtained at the time of registration (co-operative) by all students at or beyond the third year level. Fifth Year (Fall): Formal work period assignment (Computer Science 4992)
Fifth Year (Fall): Formal work period assignment (Computer Science 4992)	Fourth Year (Spring/Summer): Formal work period assignment (Computer Science 4990)
Departmental approval must be obtained at the time of registration (co-operative) by all students at or beyond the third year level.	 (c) One half-course elective from List of Mathematics Electives for Computer Science (d) Three half-courses from List of Program Electives below (e) One FCE electives
(e) One FCE electives Fourth Year (Spring/Summer): Formal work period assignment (Computer Science 4990)	Fourth Year (Fall and Winter): (a) Computer Science 4411, 4433 and 4453 (b) Mathematics 3334
 (a) Computer Science 4411, 4433 and 4433 (b) Mathematics 3334 (c) One half-course elective from List of Mathematics Electives for Computer Science (d) Three half-courses from List of Program Electives below 	Departmental approval must be obtained at the time of registration (co-operative) by all students at or beyond the third year level.
Fourth Year (Fall and Winter): (a) Computer Science 4411, 4433 and 4453	Third Year (Spring/Summer): Formal work period assignment (Computer Science 3992)
Formal work period assignment (Computer Science 3992) Departmental approval must be obtained at the time of registration (co-operative) by all students at or beyond the third year level.	Third Year (Winter): Formal work period assignment (Computer Science 3990)
Third Year (Winter): Formal work period assignment (Computer Science 3990) Third Year (Spring/Summer):	Third Year (Fall): (a) Computer Science 3413, 3415, 3473 (b) Mathematics 3332 (c) One half-course elective
Third Year (Fall): (a) Computer Science 3413, 3415, 3473 (b) Mathematics 3332 (c) One half-course elective	Faculty of Business Administration. Second Year (Spring/Summer): Optional formal work period assignment (Computer Science 2990)
Second Year (Spring/Summer): Optional formal work period assignment (Computer Science 2990)	Students interested in the Physics selections from the list of electives should take Mathematics 2131 and Physics 2211. Science option students interested in expanding their business background may take Business 1511, 1512, or another Business course with permission of the Executive of Business Administration
Science option students interested in expanding their business background may take Business 1511, 1512, or another Business course with permission of the Faculty of Business Administration.	(d) One FCE electives Note:

period assignments.	 (b) One half-course from List of Program Electives below (c) One half-course elective
First Year (Fall and Winter): (a) Mathematics 1171 and 1172; Computer Science 1411, 1431; Physics 1211, 1212	(c) Hardware Option
 (b) Mathematics 1271, 1272 or Chemistry 1110, 1130 (c) One FCE elective in Humanities or Social Sciences chosen from: History 1100, Philosophy 1100, or any combination of English 1011, 1031, 1111, 1112 	Year-to-year continuation in the program requires an average of at least 70% in all Computer Science courses, and satisfactory completion of the work period assignments.
First Year (Spring/Summer): At the discretion of the Chair of the Department, some students may have the opportunity of a formal work period assignment (Computer Science 1990).	First Year (Fall and Winter): (a) Mathematics 1171 and 1172; Computer Science 1411, 1431; Physics 1211, 1212 (b) Mathematics 1271, 1272 or Chemistry 1110, 1130 (c) One FCE elective in Humanities or Social
Second Year (Fall and Winter): (a) Mathematics 2111 and 2131 (b) Computer Science 2412, 2453, 2476 and 2477 (c) Physics 2211, 2311, 2331, 2332	Sciences chosen from: History 1100, Philosophy 1100, or any combination of 1110, 1111, 1117, 1118, 1119, 1571, 1573, English 1011, 1031, 1111, 1112
Second Year (Spring/Summer): Optional formal work period assignment (Computer Science 2990)	First Year (Spring/Summer): At the discretion of the Chair of the Department, some students may have the opportunity of a formal work period assignment (Computer Science 1990).
Third Year (Fall): (a) Mathematics 2255 (b) Computer Science 3415, 3473 (c) Physics 3231 (d) Sociology 2455	Second Year (Fall and Winter): (a) Mathematics 2111 and 2131 (b) Computer Science 2412, 2453, 2476 and 2477 (c) Physics 2211, 2311, 2331, 2332
Third Year (Winter): Formal work period assignment (Computer Science 3990)	Second Year (Spring/Summer): Optional formal work period assignment (Computer Science 2990)
Third Year (Spring/Summer): Formal work period assignment (Computer Science 3992) Departmental approval must be obtained at the time of registration (co-operative) by all students at or beyond the third year level.	Third Year (Fall): (a) Mathematics 2255 (b) Computer Science 3415, 3473 (c) Physics 3231 (d) Sociology 2455
Fourth Year (Fall): (a) Computer Science 4411 and a half-course Computer Science elective	Third Year (Winter): Formal work period assignment (Computer Science 3990)
(b) Physics 3211 and a half-course Physics elective (c) One half-course elective	Third Year (Spring/Summer): Formal work period assignment (Computer Science 3992)
Fourth Year (Winter): (a) Mathematics 2275 (b) Computer Science 4475 and a half-course Computer Science elective (c) Physics 3611 (d) One half-course elective	Departmental approval must be obtained at the time of registration (co-operative) by all students at or beyond the third year level.
	1/18/2013

Fourth Year (Spring/Summer): Formal work period assignment (Computer Science 4990)	Fourth Year (Fall): (a) Computer Science 4411 and a half-course Computer Science elective (b) Physics 3211 and a half-course Physics elective (c) One half-course elective
Departmental approval must be obtained at the time of registration (co-operative) by all students at or beyond the third year level.	Fourth Year (Winter): (a) Mathematics 2275 (b) Computer Science 4475 and a half-course Computer Science elective
Fifth Year (Fall): Formal work period assignment (Computer Science 4992)	(c) Physics 3611 (d) One half-course elective
Fifth Year (Winter): (a) Computer Science 4453 and one half-course Computer Science elective	Fourth Year (Spring/Summer): Formal work period assignment (Computer Science 4990)
(b) Physics 3311 (c) Two half-course electives	Departmental approval must be obtained at the time of registration (co-operative) by all students at or beyond the third year level.
BSc (Physics) Students wishing to complete the requirements for a BSc in Physics following the HBSc (Computer Science) Hardware Option program must complete Chemistry 1110/1130 and Physics 2111 and 3113 and have a total of at least 6 FCEs in Physics.	Fifth Year (Fall): Formal work period assignment (Computer Science 4992)
List of Program Electives	Fifth Year (Winter): (a) Computer Science 4453 and one half-course Computer Science elective (b) Physics 3311 (c) Two half-course electives
Applied Mathematics: Mathematics 3331 - Optimization Mathematics 3333 - Operations Research Mathematics 3373 - Combinatorics and Graph Theory	BSc (Physics) Students wishing to complete the requirements for a BSc in Physics following the HBSc (Computer
Computer Science: Computer Science 4451 - Theory of Computing Computer Science 4471 - Computer Graphics Computer Science 4475 - Topics in Artificial Intelligence	Science) Hardware Option program must complete Chemistry 1110/1130 and Physics 2111 and 3113 and have a total of at least 6 FCEs in Physics.
Computer Science 4476 - Cryptography and Network Security Computer Science 4478 - Games Design Patterns Computer Science 4479 - Reading and Research in	List of Program Electives
Computer Science Numerical Analysis:	Applied Mathematics: Mathematics 3331 - Optimization Mathematics 3333 - Operations Research Mathematics 3373 - Combinatorics and Graph Theory
Mathematics 3351 - Applied Numerical Methods Mathematics 3371 - Computational Linear Algebra and Numerical Approximation I	Computer Science: Computer Science 4451 - Theory of Computing Computer Science 4471 - Computer Graphics
Physics: Physics 2211 - Intermediate Electricity and Magnetism Physics 3231 - Introductory Electronics	Computer Science 4475 - Topics in Artificial Intelligence Computer Science 4476 - Cryptography and Network Security
Physics 3611 - Computer Acquisition and Control Engineering (with permission of the instructor):	Computer Science 4478 - Games Design Patterns Computer Science 4479 - Reading and Research in Computer Science
Engineering 4559 - Signal Processing for Software Engineers	

List of Mathematics Electives for Computer Mathematics 3211 - Differential Equations Mathematics 3231 - Vector Calculus Mathematics 3333 - Operations Research Mathematics 3337 - Computational Linear Algebra and Numerical Approximation I Mathematics 3373 - Combinatorics and Graph Theory Apprenticeship This option Is available for the first year Computer Science Computer Science Students and qualified Students Wow wish to gain on-the-job training in Computer Science students (as the optional Students Wow wish to gain on-the-job training in Computer Science. Itternship This splications of Grampture Science students and qualified Computer Science. Mathematics 3373 - Computational Linear Algebra Mathematics 3373 - Computer Science students and charging the specific of the first year Computer Science students and charging the specific of the first year Computer Science 1990 (signet science 1990), 4992 (Winter, Sping/Summer, Fall). Phyleications must be made through the Office of Admissions and Resenret and Computer Science 1990 (signet scigne and medpen texplored and the specific and t	List of Mathematics 3251 - Applied Numerical Methods Mathematics 3371 - Computational Linear Algebra and Numerical Approximation I Mathematics 3331 - Linear Programming and Applications Mathematics 3331 - Linear Programming and Applications 3331 - Applied Numerical Methods Mathematics 3331 - Linear Programming and Applications 3331 - Computational Linear Algebra and Numerical Approximation 1 Mathematics 3331 - Computational Linear Algebra and Numerical Approximation 1 Mathematics 3337 - Combinatorics and Graph Theory Apprenticeship and Internship Options Apprenticeship Computer Science 1990 is offered throughout the year as an entry level work term for Computer Science students and qualified students who wish to gain on-the-job training in Computer Science 2003 (Sigue Cor Algebra and Numerical Approximation 1 Internship This option offers an extended work term (normally 8 months) for senior level students (Fourth or Fifth Year). This is suitable for the first year Computer Science Co-op students (and qualified students who wish to gain extensive and in-depth experience in applications on the exploration will be carefully examined by the Department and Career and Co-operative Education Services. The acceptance of a student in these options depends highly on the demands from the employers as well as the students academic qualifications and communication skills.		
Apprenticeship and Internship OptionsScienceApprenticeship This option is available for the first year Computer Science C-op students (as the optional Spring/Summer work term). Computer Science 1990 is offered throughout the year as an entry level work term for Computer Science students and qualified students who wish to gain on-the-job training in Computer Science.Mathematics 3331 - Uector Calculus Mathematics 3331 - Applied Numerical Methods Mathematics 3373 - Computational Linear Algebra and Numerical Approximation 1 Mathematics 3373 - Computational Linear Algebra and Numerical Approximation 1 Mathematics 3373 - Combinatorics and Graph TheoryInternship This option offers an extended work term (normally 8 months) for senior level students (Fourth or Fith Year). This is suitable for Computer Science students from the gainements for Admission to Undergraduate Degree Programs. The application will be carefully examined by the Department and Career and Co-operative Education Services. The acceptance of a student in these options depends highly on the demands from the employers as well as the students' academic qualifications and communication skills.Applications must be made through the Office of Admission to Undergraduate Degree Programs. The application will be carefully examined by the Department and Career and Co-operative Education Services. The acceptance of a student in these options depends highly on the demands from the employers as well as the student's academic qualifications and communication skills.Internship This option offers an extended work term (normally 8 months) for senior level students (Fourth or Fith Yean). This is guitable for Computer Science 1990 is offered throughout the year as an entry level work term for Computer Science 1990 is offered throughout the year	Apprenticeship and Internship Options Science Apprenticeship This option is available for the first year Computer Science Co-op students (as the optional Spring/Summer work term). Computer Science 1990 is offered throughout the year as an entry level work term for Computer Science students and qualified students who wish to gain on-the-job training in Computer Science. Mathematics 3331 - Linear Programming and Applications Internship Mathematics 3333 - Operations Research Mathematics 3337 - Computational Linear Algebra and Numerical Approximation 1 Internship Mathematics 3337 - Combinatorics and Graph Theory Internship Mathematics 3373 - Combinatorics and Graph Theory Internship Mathematics 3373 - Combinatorics and Graph Theory Internship Mathematics 3373 - Combinatorics and Graph Theory Apprenticeship and Internship Options Apprenticeship Applications must be made through the Office of Admissions and Recruitment as detailed in the Requirements for Admission to Undergraduate Degree Programs. The application will be carefully examined by the Department and Career and Co-operative Education Services. The acceptance of a student in these options depends highly on the demands from the employers as well as the student's academic qualifications and communication skills. Internship This option offers an extended work terms are made of two or more consecutive work terms are made of two or more consecutive work terms conce students in these options depends highly on the demands from the employers as well as the student's academic qualificatio	Science Mathematics 2111 - Differential Equations Mathematics 2131 - Vector Calculus Mathematics 3331 - Linear Programming and Applications Mathematics 3333 - Operations Research Mathematics 3351 - Applied Numerical Methods Mathematics 3371 - Computational Linear Algebra and Numerical Approximation I	Mathematics 3351 - Applied Numerical Methods Mathematics 3371 - Computational Linear Algebra and Numerical Approximation I Physics: Physics 2211 - Intermediate Electricity and Magnetism Physics 3231 - Introductory Electronics Physics 3611 - Computer Acquisition and Control Engineering (with permission of the instructor): Engineering 4559 - Signal Processing for Software
 This option is available for the first year Computer Science Co-op students (as the optional Spring/Summer work term). Computer Science 1990 is offered throughout the year as an entry level work term for Computer Science students and qualified tudents who wish to gain on-the-job training in Computer Science. Internship This option offers an extended work term (normally 8 months) for senior level students (Fourth or Fifth Year). This is suitable for Computer Science students who wish to gain extensive and in-depth experience in applications and Recruitment as detailed in the Requirements for Admission to Undergraduate Degree Programs. The application skills. Applications and communication skills. Mathematics 2131 - Vector Calculus Mathematics 3331 - Linear Programming and Applications and Numerical Methods Mathematics 3331 - Applied Numerical Methods Mathematics 3371 - Computant Science Approximation 1 Mathematics 2373 - Combinatorics and Graph Theory Internship This option offers an extended work term (normally 8 months) for senior level students and qualified students who wish to gain on-the-job training in Computer Science 1990 is offered throughout the year as an entry level work term for Computer Science 1990 is offered throughout the year as an entry level work term for Computer Science 1990 is offered throughout the year as an entry level work term for Computer Science Sudents and qualified students who wish to gain extensive and in-depth experience in applications and communication skills. Applications must be made through the student's academic qualifications and communication skills. Applications and communication skills. Applications must be made through the define the student in these options depends highly on the demands from the employers as well as the student's academic qualifications and communication skills. Applications the employer as a well as the student's academic qualified students	 This option is available for the first year Computer Science Co-op students (as the optional Spring/Summer work term). Computer Science 1990 is offered throughout the year as an entry level work term for Computer Science students and qualified students who wish to gain on-the-job training in Computer Science. Internship This option offers an extended work term (normally 8 months) for senior level students (Fourth or Fifth Year). This is suitable for Computer Science students are made of two or more consecutive work terms are made of two or more consecutive work terms computer Science 3990, 3992 (or 4990), 4992 (Winter, Spring/Summer, Fall). Applications must be made through the Office of Admissions and Recruitment as detailed in the Requirements for Admission to Undergraduate Degree Programs. The application will be carefully examined by the Department and Career and Co-operative Education Services. The acceptance of a student in these options depends highly on the demands from the employers as well as the student's academic qualifications and communication skills. Mathematics 3331 - Linear Programming and Applications Mathematics 3333 - Operations Research Mathematics 3371 - Computational Linear Algebra and Numerical Approximation I Mathematics 3373 - Combinatorics and Graph Theory Apprenticeship and Internship Options Apprenticeship Applications must be made through the Office of Admissions and Recruitment as detailed in the Requirements for Admission to Undergraduate Degree Programs. The application will be carefully examined by the Department and Career and Co-operative Education Services. The acceptance of a student in these options depends highly on the demands from the employers as well as the student's academic qualifications and communication skills. Mathematics 3371 - Computer Science Students who wish to gain extensive and in-depth experience in applications of Computer Science. The work terms are made of two or more con	Apprenticeship and Internship Options	
This option offers an extended work term (normally 8 months) for senior level students (Fourth or Fifth Year). This is suitable for Computer Science students who wish to gain extensive and in-depth experience in applications of Computer Science. The work terms Computer Science 3990, 3992 (or 4990), 4992 (Winter, Spring/Summer, Fall). Applications must be made through the Office of Admissions and Recruitment as detailed in the Requirements for Admission to Undergraduate Degree Programs. The application will be carefully examined by the Department and Career and Co-operative Education Services. The acceptance of a student in these options depends highly on the demands from the employers as well as the student's academic qualifications and communication skills.	This option offers an extended work term (normally 8 months) for senior level students (Fourth or Fifth Year). This is suitable for Computer Science students who wish to gain extensive and in-depth experience in applications of Computer Science. The work terms Computer Science 3990, 3992 (or 4990), 4992 (Winter, Spring/Summer, Fall). Applications must be made through the Office of Admissions and Recruitment as detailed in the Requirements for Admission to Undergraduate Degree Programs. The application will be carefully examined by the Department and Career and Co-operative Education Services. The acceptance of a student in these options depends highly on the demands from the employers as well as the student's academic qualifications and communication skills.	This option is available for the first year Computer Science Co-op students (as the optional Spring/Summer work term). Computer Science 1990 is offered throughout the year as an entry level work term for Computer Science students and qualified students who wish to gain on-the-job training in	Mathematics 2131 - Vector Calculus Mathematics 3331 - Linear Programming and Applications Mathematics 3333 - Operations Research Mathematics 3351 - Applied Numerical Methods Mathematics 3371 - Computational Linear Algebra and Numerical Approximation I
	Admissions and Recruitment as detailed in the Requirements for Admission to Undergraduate Degree Programs. The application will be carefully	This option offers an extended work term (normally 8 months) for senior level students (Fourth or Fifth Year). This is suitable for Computer Science students who wish to gain extensive and in-depth experience in applications of Computer Science. The work terms are made of two or more consecutive work terms Computer Science 3990, 3992 (or 4990), 4992 (Winter, Spring/Summer, Fall).	 Apprenticeship This option is available for the first year Computer Science Co-op students (as the optional Spring/Summer work term). Computer Science 1990 is offered throughout the year as an entry level work term for Computer Science students and qualified students who wish to gain on-the-job training in Computer Science. Internship This option offers an extended work term (normally 8 months) for senior level students (Fourth or Fifth Year). This is suitable for Computer Science students who wish to gain extensive and in-depth experience in applications of Computer Science. The work terms are made of two or more consecutive work terms Computer Science 3990, 3992 (or 4990), 4992 (Winter, Spring/Summer, Fall). Applications must be made through the Office of Admissions and Recruitment as detailed in the Requirements for Admission to Undergraduate Degree Programs. The application will be carefully

academic qualification's and communication skills.		a student in these options depends highly on the demands from the employers as well as the student's academic qualifications and communication skills.
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Budgetary Considerations		
CURRENT VERSION	PROPOSED VERSION	
Student Enrolment	Student Enrolment No. It is just an update to reflect changes from Philosophy.	
Student Enrolment Other Units	Student Enrolment Other Units No. It is just an update to reflect changes from Philosophy.	
Additional Resources	Additional Resources No. It is just an update to reflect changes from Philosophy.	
Teaching Loads	Teaching Loads No. It is just an update to reflect changes from Philosophy.	
TeachingSupport Services	TeachingSupport Services No. It is just an update to reflect changes from Philosophy.	
Outside Support	Outside Support No. It is just an update to reflect changes from Philosophy.	