Sheridan | Office of the President

June 10, 2020

The Honourable Ross Romano
Minister of Colleges and Universities
c/o the Universities Unit
315 Front Street West,16th Floor
Toronto, ON M7A 0B8

Dear Minister Romano,

It is my pleasure to submit Sheridan's proposal for Renewal of Ministerial Consent for the Honours Bachelor of Applied Information Sciences (Information Systems Security), consistent with the 2018 Post Secondary Education Quality Assessment Board (PEQAB) Manual for Ontario Colleges.

We look forward to working with PEQAB and the Ministry through the consent renewal process.

Sincerely,

Janet Morrison, PhD
President and Vice-Chancellor

Brampton | Mississauga | Oakville

The Sheridan College Institute of Technology and Advanced Learning
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RENEWAL OF MINISTERIAL CONSENT (EXPEDITED)

Honours Bachelor of Applied Information Sciences (Information Systems Security)

FACULTY OF APPLIED SCIENCE AND TECHNOLOGY
Thursday, June 25th 2020

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Full Legal Name of the Organization:
Sheridan College Institute of Technology and Advanced Learning

Organization URL:
http://www.sheridancollege.ca

Location of Program:
Trafalgar Campus
1430 Trafalgar Road, Oakville, Ontario L6H 2L1

Contact Information:

Person(s) Responsible for the Submission

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Section 1: Program Abstract

Current Approved:

The Honours Bachelor or Applied Information Sciences (Information Systems Security) degree provides students with a critical understanding of the complex and integrated Information and Communication Technology (ICT) security issues in today's workplace.

The curriculum develops industry-ready professionals with a strong, applied, technical expertise in operating systems/architecture, programming, mathematics, networking and database and other computer science/engineering related disciplines. They have an informed understanding of resource protection, the ability to take action, to develop and implement policy and to administer and audit security systems. Students develop the ability to analyze, design and implement security and threat auditing procedures. They develop expertise in digital forensics and data recovery, malicious software analysis, penetration testing, secure software development practices, applied cryptology and implementation of cryptographic protocols. They also acquire experience and skills in web-based applications security design and implementation. Graduates display an understanding, acceptance, and application of the highest levels of professional code of conduct, ethical principles and respect for law and protection of privacy of individuals. Lastly, graduates display an ongoing commitment to update and stay current in the field of information systems security.

This baccalaureate program includes an 8-month paid internship to hone students' technical expertise and professional skills.

Graduates of the HBAISc (ISS) program consistently demonstrate the ability to employ their expertise in professions such as: system security analysts, database/network security analysts, security vulnerability analysts, identity management practitioners, digital forensics, security assessment and auditing, digital evidence experts, IS security managers, information security consultants and similar IS security and IT related positions.

Proposed:

The Honours Bachelor of Information Sciences (Cyber Security) degree provides students with a critical understanding of the complex and integrated Information and Communication Technology (ICT) security issues in today's workplace.

The curriculum develops industry-ready professionals with a strong, applied, technical expertise in operating systems/architecture, programming, mathematics, networking and database and other computer science/engineering related disciplines. They have an informed understanding of resource protection, the ability to take action, to develop and implement policy and to administer and audit security systems. Students develop the ability to analyze, design and implement security and threat auditing procedures.

They develop expertise in digital forensics and data recovery, malicious software analysis, penetration testing, secure software development practices, applied cryptology and implementation of cryptographic protocols. They also acquire experience and skills in web-based applications security design and implementation. Graduates display an understanding, acceptance, and application of the highest levels of professional code of conduct, ethical principles and respect for law and protection of privacy of individuals.

Collaboration with industry, through work-integrated learning and applied research, prepares graduates for numerous exciting job opportunities in the rapidly growing field of cyber security such as: system security analysts, database/network security analysts, security vulnerability analysts, identity management practitioners, digital forensics, security assessment and auditing, digital evidence experts, IS security managers, information security consultants and similar IS security and IT related positions.

Program Delivery
All core courses in the program are normally delivered Face-To-Face (F2F) but can be delivered online, while breadth electives are delivered using multiple modalities including F2F, hybrid and online. Students in the program do possess the technical skills that are necessary in an online environment. The selection of delivery methods is driven by curriculum. All core courses tend to have an experiential component that may require access to physical and/or virtual hardware. These delivery methods are consistent with industry and student needs.

Students appreciate the availability of breadth electives in online and hybrid formats, which offer flexibility to take courses during break semesters and their internship. The flexibility of F2F or online delivery for core courses offers the same flexibility and meets the needs of the students and the needs of the program.

The total program credits are 163, with 2282 program hours. The program also includes a mandatory 28 week/8 month (840 hours) paid internship work term to hone students' technical expertise and professional skills.

Section 2: Course Schedule 2 (Proposed)

Course Title	Core Hrs.	Noncore Hrs.	Core Cr.	Noncore Cr.	Pre- & Co-Requisite	Highest Qualification earned & disc. of study
Yr 1 Semester 1						
INFO10111 Introduction to Cyber Security	3		3			1. Masters of Science -Information Assurance 2. Ph.D. Computer Science
PROG12974 Intro to Programming (Python)	6		4			1. Masters of Science -Information Assurance 2. Pd.D. Computer Science 3. Ph.D. Computer Science
MATH14998 Computer Math 1	4		4			1. M. Sc. Mathematics 2. PhD, Electrical Engineering-Telecommunications 3. Masters of Applied Science in Computer & Electrical Engineering 4. M.Sc in Mathematics and Statistics
TELE16048 Intro to Communication Networks	3		3			1. Doctorate, Computer Science & Masters-Computer Science 2. Ph.D. System Science 3. PhD Engineering Systems and Computing 4. PhD Communication Networks
SYST18713 Intro to Unix Operating Systems	3		3			1. Master of Engineering in Internetworking 2. Ph.D. Computer Science 3. Ph.D. Computer Science
ENGL17889GD Composition and Rhetoric		3		3		N/A
Yr 1 Semester 2						
INFO40025 Information Age Ethics	3		3		N/A	1. Master, Info. Technology Security / Ph.D. Computer Science Student (in progress) 2. Master of Science in Information Systems and Technology 3. Master of Management and Professional Accounting
PROG23199 Intermediate Programming (Python)	4		3		PROG12974	1. Masters of Science -Information Assurance 2. Pd.D. Computer Science 3. Ph.D. Computer Science
MATH24178 Computer Math 2	4		4		MATH14998	1. M. Sc. Information Systems 2. M. Sc. Mathematics

Course Title	Core Hrs.	Noncore Hrs.	Core Cr.	Noncore Cr.	Pre- & Co-Requisite	Highest Qualification earned & disc. of study
						3. Ph.D. Applied Mathematics 4. M.Sc in Mathematics and Statistics
SYST##### Linux Systems Administration	3		3			1. Masters of Science -Information Assurance 2. Ph.D. Computer Science
DBAS14444 Structured Database Modeling	3		3			1. Ph.D. Computer Engineering 2. Master of Computer Applications
Breadth Elective		3		3		N/A
Yr 2 Semester 3						
INFO16529 Security Threats & Risk Assessment	3		3			1. Master, Info. Technology Security / Ph.D. Computer Science Student (in progress) 2. Master of Computer Applications
PROG36859 Advanced Programming (C/C++)	4		3		PROG#####	1. Masters of Science -Information Assurance 2. Pd.D. Computer Science 3. Ph.D. Computer Science
MATH26367 Statistical Methods	3		3		MATH24178	1. Ph.D. Philosophy 2. Ph.D. Computer Engineering
TELE29599 Internetworking	3		3		TELE16048	1. Master of Engineering in Internetworking 2. Ph.D. System Science 3. Ph.D. Computing and Information Engineering 4. PhD Communication Networks
SYST27198 CPU Architecture & Assembly Programming Language	6		4		MATH24178	1. Ph.D. Faculty of Medicine
Breadth Elective		3		3		N/A
Yr 2 Semester 4						
PROG43431 Multi-tier Programming	4		3		PROG##### (Intermediate Programming)	1. Ph.D. Computer Engineering 2. Ph.D. Faculty of Medicine
TELE30004	3		3		TELE29599	1. Master of Engineering in Internetworking

Course Title	Core Hrs.	Noncore Hrs.	Core Cr.	Noncore Cr.	Pre- & Co-Requisite	Highest Qualification earned & disc. of study
Network & Distributed Systems Security						
INFO37721 Information Systems Forensics and Investigation	3		3		SYST#####	1. Master, Info. Technology Security / Ph.D. Computer Science Student (in progress) 2. MEng Computer Networks 3. PhD Computer Science
DBAS17370 Database Implementations & Management	3		3		DBAS14444	1. Master of Computer Applications
PROG20025 Algorithm Development and Data Structures	6		4		MATH24178 & PROG##### (Advanced Programming)	1. Ph.D. Computer Engineering 2. Doctor of Philosophy Computing & Information Science
Breadth Elective		3		3		N/A
Yr 3 Semester 5						
SYST45713 Software Engineering & Secure Development	4		3		PROG43431	1. Master of Computer Applications 2. M.Sc. Computer Science
INFO33921 Intro to Cryptology	4		4		MATH24178	1. M. Sc. Mathematics 2. Ph.D. Electrical, Electronics & Systems Engineering
INFO##### Windows Administration	3		3		INFO37721	1. Master of Computer Applications 2. Masters of Science Computer Science 3. Ph.D. Electrical, Electronics & Systems Engineering
DBAS35738 Database Security	3		3		DBAS17370	1. Master of Computer Applications 2. Ph.D. Electrical, Electronics & Systems Engineering
SYST44288 Operating Systems Design & Systems Programming	4		3		SYST27198 & PROG##### (Advanced Programming)	1. Masters of Science -Information Assurance 2. Ph.D. Computer Science
Breadth Elective		3		3		N/A

Course Title	Core Hrs.	Noncore Hrs.	Core Cr.	Noncore Cr.	Pre- & Co-Requisite	Highest Qualification earned & disc. of study
Yr 3 Semester 6						
INFO30004 Information Systems Security Auditing	3		3		INFO16529	1. Master, Info. Technology Security / Ph.D. Computer Science Student (in progress) 2. Masters in Engineering Computer Networks
COWT10023 Cooperative Education Forum		1		1		N/A
MATH36206 Advanced Cryptology	4		4		INFO33921	1. Ph.D. Computer Engineering 2. M.Sc. Mathematics
INFO46206 Information Systems Intrusion Detection and Prevention	4		3		TELE30004	1. Master of Engineering in Internetworking 2. PhD Communication Networks
INFO39207 Adv. Info. Systems Forensics & Elec. Discovery	3		3		INFO#####	1. Masters of Science -Information Assurance 2. Master, Info. Technology Security / Ph.D. Computer Science Student (in progress) 3. MEng Computer Networks
PROG##### Reverse Engineering & Exploit Dev	3		3			1. Masters of Science -Information Assurance 2. PhD, Electrical Engineering-Telecommunications
SYST##### Cloud &SDN						1. Masters of Science -Information Assurance 2. Ph.D. Computer Science
Breadth Elective		3		3		N/A
COWT 18889- Internship						
Yr 4 Semester 7						
INFO36206 ISS Graduation Project (Phase 1)	4		4		COWT18889	1. Masters of Science -Information Assurance 2. PhD, Electrical Engineering-Telecommunications
SYST44998 Wireless Security	3		3		TELE30004	1. PhD, Electrical Engineering-Telecommunications 2. Ph.D. System Science 3. Master, Info. Technology Security / Ph.D. Computer Science Student

Course Title	Core Hrs.	Noncore Hrs.	Core Cr.	Noncore Cr.	Pre- & Co-Requisite	Highest Qualification earned & disc. of study
INFO43921 Malicious Code; Design and Defense	3		3			1. Masters of Science -Information Assurance
MATH##### Data Analytics and AI/ML						1. M. Sc. Information Systems 2. M. Sc. Mathematics 3. Ph.D. Applied Mathematics 4. M.Sc in Mathematics and Statistics
Breadth Elective		3		3		N/A
Yr 4 Semester 8						
INFO49402 ISS Graduation Project (Phase 2)	6		6		INFO36206	1. Masters of Science -Information Assurance
INFO40587 Ethical Hacking	3		3		INFO30004 & INFO39207	1. Masters of Science -Information Assurance
INFO40051 Advanced Topics in Information Security	3		3			1. Masters of Science -Information Assurance
Breadth Elective		3		3		N/A
Subtotal Course Hours and Credits	A_1 131	B_1 25	A_2 119	B_2 25		
Total Program Hours and Credits	$A_1 + B_1$ Hours 156		$A_2 + B_2$ Credits 144			
%total credits Core	83%					
%total credits non-core	17%					