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MEMORANDUM

Attention: Kris Nordgren, Associate Registrar Senate and Academic Services

From: Wade Parkhouse, Vice-Provost and Associate Vice-President Academic

Re: Master of Science in Professional Computer Science Specializations

Date: June 3, 2021

As part of a program audit, the UCIL Office requested a review from the Ministry Advanced Education and Skills Training (AVEST) of the Master of Science in Professional Computer Science to determine if the offered specializations constitute a new degree. The Ministry AVEST determined the specializations in Visual Computing and Cybersecurity do require ministerial approval as new programs.

In order to abide by this determination, these specializations should be immediately removed from the academic calendar and SFU web pages. The Fall 2021 academic calendar program entry for the MSc in Professional Computer Science should be modified to remove the Visual Comptuing and Cybersecutiry specializations and all references to specializations (see attached: Program Change).

Admission to these specializations has been discontinued and students currently enrolled in the Visual Computing specialization have been transferred to the Big Data specialization.

The University Curriculum and Institutional Liaison Office is available for consultation and support on this matter.

C: J Derksen; E. Fiume; K. Verkerk

Calendar Entry Change for Professional Computer Science

FROM	TO
# Professional Computer Science MASTER OF SCIENCE The Master of Science in Professional Computer Science Program engages students in developing deep knowledge and practical skills in specialized areas of computer science. The program trains computational specialists who can construct models, develop algorithms, and write software using state-of-the-art graduate-level knowledge and techniques. Students take instructional and lab courses, in a cohort, and complete a co-op through SFU's co-op program, allowing them to tackle real-world scientific, engineering, and socioeconomic problems and gain valuable project management experiences while expanding their network of industrial contacts. This full-time master's program~~/specializations are~~ suitable for students with a strong aptitude for computer science, or other quantitative fields, such as engineering and mathematics. ## Admission Requirements A student must satisfy the university admission requirements for a Master's program as stated in Section 1.3.6a of the Graduate Admission section of the SFU calendar, and the student must hold a bachelor's degree, or equivalent in computer science or a related field, with a minimum cumulative grade point average	# Professional Computer Science MASTER OF SCIENCE The Master of Science in Professional Computer Science Program engages students in developing deep knowledge and practical skills in specialized areas of computer science. The program trains computational specialists who can construct models, develop algorithms, and write software using state-of-the-art graduate-level knowledge and techniques. Students take instructional and lab courses, in a cohort, and complete a co-op through SFU's co-op program, allowing them to tackle real-world scientific, engineering, and socioeconomic problems and gain valuable project management experiences while expanding their network of industrial contacts. This full-time master's program **is** suitable for students with a strong aptitude for computer science, or other quantitative fields, such as engineering and mathematics. ## Admission Requirements A student must satisfy the university admission requirements for a Master's program as stated in Section 1.3.6a of the Graduate Admission section of the SFU calendar, and the student must hold a bachelor's degree, or equivalent in computer science or a related field, with a minimum cumulative grade point average (GPA) of 3.00 (on a scale of 0.00 - 4.33) or

(GPA) of 3.00 (on a scale of 0.00 - 4.33) or the equivalent. Alternatively, a minimum GPA of 3.33/4.33 on the last 60 credits of undergraduate courses will also meet the GPA requirements for admission to the program. The School's Graduate Admissions Committee may recommend, at its discretion, admission to the Professional Master's program to exceptional students without an undergraduate degree in computer science or a related field. Students who do not meet the minimum university requirements may be recommended as conditional or qualifying students as per Graduate General Regulation (GGR) 1.3.8 or 1.3.9. For further information on conditional or qualifying admission requirements, please contact the Program Coordinator. ## Program Requirements This program consists of course work, co-op, or graduate project, ~~and a choice of specialization~~ for a minimum of 30 units. The program requires students to maintain a minimum 3.0 CGPA throughout their graduate career. Students complete all of CMPT 726 - Machine Learning (3) CMPT 756 - Distributed and Cloud Systems (3)	the equivalent. Alternatively, a minimum GPA of 3.33/4.33 on the last 60 credits of undergraduate courses will also meet the GPA requirements for admission to the program. The School's Graduate Admissions Committee may recommend, at its discretion, admission to the Professional Master's program to exceptional students without an undergraduate degree in computer science or a related field. Students who do not meet the minimum university requirements may be recommended as conditional or qualifying students as per Graduate General Regulation (GGR) 1.3.8 or 1.3.9. For further information on conditional or qualifying admission requirements, please contact the Program Coordinator. ## Program Requirements This program consists of course work, co-op, or graduate project for a minimum of 30 units. The program requires students to maintain a minimum 3.0 CGPA throughout their graduate career. Students complete all of CMPT 726 - Machine Learning (3) CMPT 756 - Distributed and Cloud Systems (3) **CMPT 732 - Programming for Big Data 1 (6)** **CMPT 733 - Programming for Big Data 2 (6)**

and at least two of CMPT 713 – Natural Language Processing (3) CMPT 741 - Data Mining (3) * CMPT 757 - Frontiers of Visual Computing (3) ** CMPT 762 - Computer Vision (3) ** CMPT 764 - Geometric Modelling in Computer Graphics (3) ** CMPT 766 - Computer Animation and Simulation (3) ** CMPT 767 - Visualization (3) CMPT 770 - Parallel and Distributed Computing (3) * CMPT 780 - Computer Security and Ethics (3) *** CMPT 784 - Cyber Risk Assessment and Management (3) *** CMPT 785 - Secure Software Design (3) *** CMPT 786 - Cloud and Network Security (3) *** CMPT 787 - Ethical Hacking (3) *** CMPT 788 - Information Privacy (6) *** CMPT 789 - Applied Cryptography (3) *** CMPT 820 - Multimedia Systems (3) CMPT 822 - Computational Vision (3) ** IAT 814 - Visualization and Visual Analytics (3) STAT 852 - Modern Methods in Applied Statistics (4) and one of CMPT 727 - Statistical Machine Learning (3) CMPT 728 - Deep Learning (3) CMPT 729 - Reinforcement Learning (3) CMPT 763 - Biomedical Computer Vision (3) CMNS 815 - Social Construction of Communication Technologies (5) CMPT 829 - Special Topics in Bioinformatics (3)	and at least two of CMPT 713 – Natural Language Processing (3) CMPT 741 - Data Mining (3) CMPT 757 - Frontiers of Visual Computing (3) CMPT 762 - Computer Vision (3) CMPT 764 - Geometric Modelling in Computer Graphics (3) CMPT 766 - Computer Animation and Simulation (3) CMPT 767 - Visualization (3) CMPT 770 - Parallel and Distributed Computing (3) CMPT 780 - Computer Security and Ethics (3) CMPT 784 - Cyber Risk Assessment and Management (3) CMPT 785 - Secure Software Design (3) CMPT 786 - Cloud and Network Security (3) CMPT 787 - Ethical Hacking (3) CMPT 788 - Information Privacy (6) CMPT 789 - Applied Cryptography (3) CMPT 820 - Multimedia Systems (3) CMPT 822 - Computational Vision (3) IAT 814 - Visualization and Visual Analytics (3) STAT 852 - Modern Methods in Applied Statistics (4) and one of CMPT 727 - Statistical Machine Learning (3) CMPT 728 - Deep Learning (3) CMPT 729 - Reinforcement Learning (3) CMPT 763 - Biomedical Computer Vision (3) CMNS 815 - Social Construction of Communication Technologies (5) CMPT 829 - Special Topics in Bioinformatics (3)

CMPT 886 - Special Topics in Operating Systems (3) CMPT 889 - Special Topics in Interdisciplinary Computing (3) CMPT 980 - Special Topics in Computing Science (3) CMPT 981 - Special Topics in Theoretical Computing Science (3) CMPT 982 - Special Topics in Networks and Systems (3) CMPT 983 - Special Topics in Artificial Intelligence (3) CMPT 984 - Special Topics in Databases, Data Mining, Computational Biology (3) CMPT 985 - Special Topics in Graphics, HCI, Visualization, Vision, Multimedia (3) ** and a minimum of one co-op or graduate project CMPT 626 - Graduate Co-op I (3) CMPT 629 - Graduate Project (3) ~~BIG DATA SPECIALIZATION~~ ~~Students complete all of the above requirements and both of~~ ~~CMPT 732 - Programming for Big Data 1 (6)~~ ~~CMPT 733 - Programming for Big Data 2 (6)~~ ~~or~~ ~~VISUAL COMPUTING SPECIALIZATION~~ ~~Students complete all of the above requirements and both of~~ ~~CMPT 742 - Practices in Visual Computing I (6)~~ ~~CMPT 743 - Practices in Visual Computing II (6)~~	CMPT 886 - Special Topics in Operating Systems (3) CMPT 889 - Special Topics in Interdisciplinary Computing (3) CMPT 980 - Special Topics in Computing Science (3) CMPT 981 - Special Topics in Theoretical Computing Science (3) CMPT 982 - Special Topics in Networks and Systems (3) CMPT 983 - Special Topics in Artificial Intelligence (3) CMPT 984 - Special Topics in Databases, Data Mining, Computational Biology (3) CMPT 985 - Special Topics in Graphics, HCI, Visualization, Vision, Multimedia (3) and a minimum of one co-op or graduate project CMPT 626 - Graduate Co-op I (3) CMPT 629 - Graduate Project (3)

~~or~~

~~CYBERSECURITY SPECIALIZATION~~

~~Students complete all of the above requirements and both of~~

~~CMPT 782 - Cybersecurity Lab I (6)~~
~~CMPT 783 - Cybersecurity Lab II (6)~~

~~* Recommended for students in the Big Data Specialization~~

~~** Recommended for students in the Visual Computing Specialization~~

~~*** Recommended for students in the Cybersecurity Specialization~~

Co-op

All students are required to apply for a co-op. With assistance from the co-op coordinator for this program, students will be expected to find a suitable industry partner. Students may complete one or two terms of co-op. The latter option is in place to satisfy requests from our industrial partners for continuity and to carry out a large-scale project. Students are required to enroll in at least one of the program courses in the term following their co-op.

A co-op is an integral part of this program. However, it is offered on a competitive basis.

In the event that a student is unable to secure a co-op during the summer term, they will be required to go on academic break since no courses will be offered. The student will be able to apply for a co-op in the subsequent term or, if unsuccessful, will be required to undertake additional

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