SFU SIMON FRASER UNIVERSITY	***COMPUTING SCIENCE B.SC. MAJOR - THEORY CONCENTRATION*** ***FALL 2022 GRADUATION PLANNER***

Name: Student ID: Date:

Theoretical computer science focuses on mathematical tools and techniques for the formal analysis of computer algorithms. It provides the mathematical basis for classifying the difficulty of solving problems and for demonstrating the correctness of solutions. The applications of these theoretical techniques have a broad range of applications including quantum computing, cryptography and security.

Year 1	
❒ CMPT 120 Programming 1 ❒ MACM 101 Discrete Math 1 ❒ MATH 151 Calculus 1 OR ❒ MATH 150 Calculus 1 with Review ❒ CMPT 105W CS Writing I (or in 2nd term) ❒ WQB Breadth: _____	❒ CMPT 125 Programming 2 ❒ MATH 152 Calculus 2 ❒ MATH 240 Algebra I: Linear Algebra OR ❒ MATH 232 Applied Linear Algebra ❒ WQB Breadth: _____ ❒ General Elective: _____

Year 2	
❒ CMPT 225 Data Structures and Programming ❒ CMPT 295 Intro to Computer Systems ❒ CMPT 210 Probability and Computing OR ❒ MACM 201 Discrete Mathematics II ❒ WQB Breadth: _____ ❒ General Elective: _____	❒ CMPT 276 Software Engineering ❒ STAT 271 Probability and Statistics for CS OR ❒ STAT 270 Introduction to Probability & Statistics ❒ WQB Breadth: _____ ❒ WQB Breadth: _____ ❒ General Elective: _____

Year 3	
❒ CMPT 307 Data Structures and Algorithms ❒ CMPT 300 Operating Systems ❒ MACM 316 Numerical Analysis ❒ General Elective: _____ ❒ General Elective: _____	❒ CMPT308 Computability and Complexity ❒ CMPT 405 Design and Analysis of Algorithms ❒ MATH 343 Applied Discrete Mathematics ❒ CMPT 376W CS Writing II ❒ General Elective: _____

Year 4	
❒ CMPT 407 Computational Complexity ❒ CMPT 404 Cryptography and Protocols ❒ CMPT 310 Intro to AI OR ❒ CMPT 361 Intro to Computer Graphics ❒ UD General Elective: _____ ❒ General Elective: _____	❒ CMPT 354 Database Systems I OR ❒ CMPT 353 Computational Data Science ❒ CMPT 473 Software Testing, Reliability and Security ❒ CMPT 477 Introduction to Formal Verification ❒ UD General Elective: _____ ❒ General Elective: _____

Other recommended general electives: MATH345 – Intro to Graph Theory, MATH 405 – Discrete Optimization, MATH401 – Intro to Computer Algebra, CMPT409 – Special Topic in Theoretical Computer Science, CMPT417 – Intelligent Systems

WQB Breadth Requirements
6 units of Breadth Social (B-SOC)
6 units of Breadth Humanities (B-HUM)
3 units of Breadth Science (B-SCI)
Refer to: http://www.sfu.ca/ugcr/for_students/wqb_requirements/breadth.html for courses that fulfill these requirements.

This Concentration Planning Form contains a recommended course plan for Computing Science major BSc students to obtain a concentration designation, along with course suggestions to optimize the knowledge and skills upon completion of this concentration, while distributing the difficulty of the course load per term. Other course plans may be possible. This form is not a substitute for the official degree regulations found at www.sfu.ca/students/calendar.html. If there is a question of interpretation or a discrepancy, the University Calendar always takes precedence. For assistance or queries on possible substitutions, ask a FAS advisor to help. The student is ultimately responsible for ensuring that they have met their degree requirements.

CO-OPERATIVE EDUCATION Combines work experience with academic studies—all students are encouraged to apply once they have completed 30 units. Co-op does not count towards academic credits. Co-op is not mandatory; however, three work terms must be successfully completed in order to obtain an undergraduate degree with a co-op designation. For more information about Co-op, please see: http://www.sfu.ca/coop/programs/cmpt/prospective.html.

CMPT 415/416 SPECIAL RESEARCH PROJECTS are courses that may be used for upper division credit. See: https://www.sfu.ca/computing/current-students/undergraduate-students/research.html

FACULTY OF APPLIED SCIENCE RESIDENCY REQUIREMENTS At least two thirds of the total Upper Division (UD) units in the program must have been completed at Simon Fraser University. Please refer to the current SFU calendar for details.

CONTINUATION REQUIREMENTS Students who do not maintain at least a 2.40 CGPA, will be placed on probation by the School of Computing Science. Courses available to probationary students may be limited. Each term, these students must consult an advisor prior to enrollment and must achieve either a term 2.40 GPA or an improved CGPA. Students who fail to do so may be removed from the program.

ADVISING View drop-in advising times here https://booking.cs.sfu.ca/adbooking/calendar.cgi or email asadvise@sfu.ca. Please bring a copy of your advising transcript (download at go.sfu.ca) with you to the advising session.