Name: _____ ID: _____ Date: _____

Students may follow the **Standard Schedule** <u>OR</u> the **Advanced Schedule**. Further details are online.

Students are strongly advised to **follow these schedules as closely as possible** so that prerequisites are met for the following terms. Consequences of deviating from this schedule are the responsibility of the student.

STANDARD SCHEDULE

YEAR 1

TERM 1, FALL	TERM 2, SPRING	SUMMER (Standard Schedule)
☐ **ENSC 151**-4 Intro to software development ☐ **ENSC 100W**-3 Engineering, Science and Society ☐ **ENSC 105W**-3 Process, Form & Conv. in Prof. Genres ☐ **ENSC 120**-2 Intro to Electronics Lab Instruments ☐ **MATH 151**-3 Calculus I (or MATH 150-4)	☐ **ENSC 180-3** Intro to Engineering Analysis ☐ **MATH 152**-3 Calculus II ☐ **MATH 232**-3 Applied Linear Algebra ☐ **PHYS 120**-3 Mechanics & Modern Physics	☐ **CHEM 121-4** General Chemistry & Lab I ☐ **PHYS 121-3** Optics, Electricity, &Magnetism ☐ **MATH 260-3** Intro to Ordinary Differential Equations ☐ Complementary Studies (CMPL) Elective I#

YEAR 2

TERM 3, FALL	SPRING	TERM 4, SUMMER
☐ **ENSC 204**-1 Graphical Communication for Engineering ☐ **ENSC 220**-4 Electric Circuits I ☐ **ENSC 251**-4 Software Design & Analysis for Engineers ☐ **ENSC 252**-4 Fundamentals of Digital Logic and Design ☐ **MATH 251**-3 Calculus III	CO-OP TERM I	☐ **ENSC 225-4** Microelectronics I ☐ **ENSC 254-4** Introduction to Computer Organization ☐ **ENSC 280-4** Engineering Measurements & Data Analysis ☐ **ENSC 320-4** Electric Circuits II ☐ **CMPT 225-3** Data Structures and Programming

YEAR 3

TERM 5, FALL	TERM 6, SPRING	SUMMER
☐ **CMPT 276-3** Introduction to Software Engineering I ☐ **ENSC 324-3** Electronic Devices ☐ **ENSC 351-4** Embedded & Real Time System Software ☐ **ENSC 380-3** Linear Systems ☐ **MACM 201-**3 Discrete Mathematics II	☐ **CMPT 300-3** Operating Systems I ☐ **ENSC 327-4** Communication Networks ☐ **ENSC 350-4** Digital Systems Design ☐ **MACM 316-3** Numerical Analysis I ☐ Engineering Science & Design (ESD) Elective I-4*	CO-OP TERM II

YEAR 4

FALL	TERM 7, SPRING	TERM 8, SUMMER
CO-OP TERM III^	☐ **ENSC 405W-3** Project Documentation, User Interface Design, & Group Dynamics ☐ **ENSC 410-3** The Business of Engineering ☐ Engineering Science & Design (ESD) Elective II-3* ☐ Engineering Science & Design (ESD) Elective III-3* ☐ Complementary Studies (CMPL) Elective II# **Two of the following:** ☐ **ENSC 450-4** VLSI Systems Design ☐ **ENSC 452-4** Digital Systems Design ☐ **ENSC 453-4** Programming for heterogeneous computing systems	☐ **ECON 103-4** Principles of Microeconomics ☐ **ENSC 406-2** Engineering Ethics, Law, & Professional Practice ☐ **ENSC 429-4** Digital Signal Processing ☐ **ENSC 440-3** Capstone Engineering Science Project ☐ Science Elective° ☐ Engineering Science & Design (ESD) Elective IV-3*

ADDITIONAL REQUIREMENTS FOR HONOURS:	GPA REQUIREMENTS:
☐ ENSC 498-1 Engineering Science Thesis Proposal ☐ ENSC 499-9 Engineering Science Undergraduate Thesis ☐ **Minimum** 3.0 CGPA and UDGPA required for degree	☐ **Minimum** 2.0 CGPA and UDGPA required for degree ☐ **Minimum** 2.4 CGPA required for registration in UD courses ☐ **Minimum** 2.2 CGPA required to remain in Engineering

Additional Notes

***ESD Electives** consist of a minimum of 12 units - see the ESD Electives section on the back of this planner.
#**Complimentary Electives** - At least one CMPL Elective should be a B-Hum, and at least one should be from *Central Issues, Methodology & Thought Process list*: http://www.sfu.ca/engineering/current-students/undergraduate-students/requirements-and-policies/electives.html
°**Science Elective** to be chosen from the following list:
https://www.sfu.ca/engineering/current-students/undergraduate-students/requirements-and-policies/science-electives.html
^Please check with your co-op coordinator to confirm that all **co-op requirements** have been met.

Engineering Science and Design (ESD) Electives:

Students in the Computer Engineering option must complete **12 units** of **Engineering Science and Design Electives**, which may include a maximum of <u>two</u> 300-level courses. **At least <u>one</u> of the following course sets must be included:**

ESD ELECTIVES	

☐ CMPT 310-3 Artificial Intelligence Survey
☐ CMPT 475-3 Requirements Engineering <u>OR</u> CMPT 373-3 Software Development Methods
☐ ENSC 427-4 Communication Networks <u>and</u> ENSC 428-4 Digital Communications
☐ **ENSC 450-4** VLSI Systems Design **OR**
    o **ENSC 452**-4 Advanced Digital System Design **OR**
    o **ENSC 453-4** Heterogeneous Computing Systems
        (**whichever has not been taken**)
	☐ CMPT 354-3 Database Systems I **and** CMPT 454-3 Database Systems II
	☐ CMPT 431-3 Distributed Systems
	☐ CMPT 361-3 Introduction to Computer Graphics
	☐ ENSC 386-4 Introduction to Mechanical Design **and** ENSC 383-4 Feedback Control Systems **and** ENSC 488-4 Introduction to Robotics

The remaining engineering science and design units can be fulfilled using courses as below:
1. any ESD course from the above course sets not already taken
2. any ENSC 300 or 400 level course*
3. any of the following approved computing science (CMPT) 300 and/or 400 level electives*:

ADDITIONAL CMPT ELECTIVES		
☐ CMPT 305-3 Computer Simulation & Modelling ☐ CMPT 307-3 Data Structures & Algorithms ☐ CMPT 308-3 Computability & Complexity ☐ CMPT 310-3 Artificial Intelligence Survey ☐ CMPT 354-3 Database Systems I ☐ CMPT 361-3 Introduction to Computer Graphics ☐ CMPT 363-3 User Interface Design ☐ CMPT 370 Information System Design ☐ CMPT 373-3 Software Development Methods ☐ CMPT 375 Mathematical Foundations of Software Technology ☐ CMPT 379-3 Principles of Compiler Design ☐ CMPT 383-3 Comparative Programming Languages ☐ CMPT 384-3 Symbolic Computing ☐ CMPT 404-3 Cryptography and Cryptographic Protocols	☐ CMPT 405-3 Design & Analysis of Computing Algorithms ☐ CMPT 407-3 Computational Complexity ☐ CMPT 408-3 Theory of Computing Networks/Communications ☐ CMPT 409-3 Special Topics in Theoretical Computer Science ☐ CMPT 411-3 Knowledge Representation ☐ CMPT 412-3 Computational Vision ☐ CMPT 414-3 Model-Based Computer Vision ☐ CMPT 417-3 Intelligent Systems ☐ CMPT 418 Computational Cognitive Architecture ☐ CMPT 419-3 Special Topics in Artificial Intelligence ☐ CMPT 431-3 Distributed Systems ☐ CMPT 441-3 Computational Biology ☐ CMPT 454-3 Database Systems II	☐ CMPT 456-3 Information Retrieval & Web Search ☐ CMPT 459-3 Special Topics in Database Systems ☐ CMPT 461-3 Image Synthesis ☐ CMPT 464-3 Geometric Modelling in Comp Graphics ☐ CMPT 466-3 Animation ☐ CMPT 467 Visualization ☐ CMPT 469-3 Special Topics in Computer Graphics ☐ CMPT 470-3 Web-based Information Systems ☐ CMPT 473-3 Software Quality Assurance ☐ CMPT 474-3 Web Systems Architecture ☐ CMPT 475-3 Requirements Engineering ☐ CMPT 477-3 Introduction to Formal Verification

***A maximum of <u>two</u> 300-level courses may be included within the 12 units.** ENSC 412 is intended as a breadth course for Faculty of Environment students. Engineering students may take ENV 412 as a breadth course but cannot take ENSC 412 as an ESD elective.

ENSC Policies	Link
GPA Requirements and Co-op	http://www.sfu.ca/engineering/current-students/undergraduate-students/information-for-new-students.html
Residency Requirements	http://www.sfu.ca/students/calendar/faculties-research/faculty-applied-sciences.html
Complementary (CMPL) Electives	http://www.sfu.ca/engineering/current-students/undergraduate-students/requirements-and-policies/electives.html
Prerequisites and Course Descriptions	http://www.sfu.ca/students/calendar/programs/engineering-science-computer-engineering-option/major/bachelor-of-applied-science.html
Mandatory Co-op	http://www.sfu.ca/engineering/current-students/undergraduate-students/Co-op-and-work-experience.html
WQB Requirements for Engineering Students	http://www.sfu.ca/engineering/current-students/undergraduate-students/requirements-and-policies/wqb-requirements.html
Duplication/Repeats of Courses	http://www.sfu.ca/engineering/current-students/undergraduate-students/requirements-and-policies/repeat-policy.html
Course Sequencing	http://www.sfu.ca/engineering/current-students/undergraduate-students/course-schedule.html