

BACHELOR OF ENGINEERING (BEng) SOFTWARE ENGINEERING **BIG DATA STREAM**

NAME STUDENT#

2024-2025

			alendars before enrolling into courses: nic-calendar#/programs			
			COURSES	CREDITS EARNED	GRADE	
First Year Courses						
		SC/CHEM 1100 4.00	Chemistry and Materials Science for Engineers			
		LE/EECS 1011 3.00	Computational Thinking Through Mechatronics			
		LE/EECS 1021 3.00	Object Oriented Programming from Sensors to Actuators			
		LE/EECS 1028 3.00	Discrete Mathematics for Engineers			
		LE/ENG 1101 4.00	Renaissance Engineer 1: Ethics, Communication and Problem Solving			
		LE/ENG 1102 4.00	Renaissance Engineer 2: Engineering Design Principles			
		SC/MATH 1013 3.00	Applied Calculus I			
		SC/MATH 1014 3.00	Applied Calculus II			
		SC/MATH 1025 3.00	Applied Linear Algebra			
		SC/PHYS 1800 3.00	Engineering Mechanics			
		SC/PHYS 1801 3.00	Electricity, Magnetism and Optics for Engineers			
		Second Year Courses				
		SC/MATH 1090 3.00	Introduction to Logic for Computer Science			
		LE/EECS 2101 3.00	Fundamentals of Data Structures			
		LE/EECS 2021 4.00	Computer Organization			
		LE/EECS 2030 3.00	Advanced Object Oriented Programming			
		LE/EECS 2032 4.00	Introduction to Embedded Systems			
		LE/EECS 2200 3.00	Electrical Circuits			
		LE/EECS 2311 3.00	Software Development Project			
		LE/ENG 2001 3.00	Engineering Projects: Management, Economics & Safety			
		LE/ENG 2003 3.00	Effective Engineering Communication			
		SC/MATH 2015 3.00	Applied Multivariate and Vector Calculus			
		SC/MATH 2930 3.00	Introduction to Probability and Statistics			
		SC/PHYS 2020 3.00	Electricity and Magnetism			
		SC/PHYS 2211 1.00	Experimental Electromagnetism			
		Notes	'			
			BEng, Software Engineering, Big Data Stream	Page	1 of 2	

Third Year Courses						
		LE/EECS 3101 3.00	Design and Analysis of Algorithms			
		LE/EECS 3201 4.00	Digital Logic Design			
Big Data Stream		LE/EECS 3421 3.0	Introduction to Database Systems			
		LE/EECS 3216 3.00	Digital Systems Engineering: Modeling, Implementation and Validation			
		LE/EECS 3221 3.00	Operating System Fundamentals			
		LE/EECS 3311 3.00	Software Design			
		LE/EECS 3342 3.00	System Specification and Refinement			
		LE/ENG 3000 3.00	Professional Engineering Practice			
		LE/ESSE 2210 3.00	Engineering and the Environment			
At least 3.00 additional credits from SC/BIOL 1000 3.00, SC/BIOL 1001 3.00, SC/CHEM 1001 3.00, SC/CHEM 2011 3.00, LE/ESSE 1011 3.00, LE/ESSE 1012 3.00, SC/PHYS 1070 3.00 (or SC/PHYS 1470 3.00), SC/PHYS 2010 3.00, SC/PHYS 2040 3.00, SC/PHYS 2060 3.00, HH/GH 1001 3.00, HH/GH 1002 3.00						
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Complementary Studies (6.00 credits)						
		Fourth Year Courses				
		LE/EECS 4312 3.00	Software Engineering Requirements			
		LE/EECS 4313 3.00	Software Engineering Testing			
		LE/EECS 4314 3.00	Advanced Software Engineering			
		LE/EECS 4315 3.00	Mission-Critical Systems			
		LE/EECS 4413 3.00	Building E-Commerce Systems			
Big Data Stream		LE/EECS 3405 3.00	Fundamentals of Machine Learning			
Big Data Stream		LE/EECS 4412 3.0	Data Mining			
Big Data Stream		LE/EECS 4415 3.0	Big Data Systems			
Big Data Stream		LE/EECS 4411 3.0 or LE/EECS 4414 3.0	Database Management Systems or Information Networks			
		LE/ENG 4000 6.00	Engineering Project			
Complementary Studies (6.00 credits)						
TOTAL CGPA (minimum cum	ulative	GPA of 5.00 (C+) required	to graduate with an Honours degree)			
EECS GPA Prerequisite: Most 2000-, 3000-, and 4000-level EECS courses require a cumulative GPA or 4.5 or better over all EECS major courses in addition to other course-specific prerequisites. "Major" courses are all EECS courses with second digit other than 5 and include LE/EECS 1028 3.00 (cross-listed to: SC/MATH 1028 3.00) and LE/EECS 1019 3.00 (cross-listed to: SC/MATH 1028 3.00).						
Participation in Co-op is highly recommended, but is not a degree requirement.						
Notes						
			BEng, Software Engineering, Big Data Stream	Page	2 of 2	

Complementary Studies - BEng General Education

Essentials

- You need to pass a total of 12 credits to satisfy this requirement
- These credits are typically completed throughout **second, third, and fourth year**
- You need to pass at least 3 credits from approved humanities/social science subject areas
- The remaining 9 credits must be completed from the humanities/social science subject areas listed on page 1 or the specified courses listed on page 2
- If you wish, you may complete all 12 credits in the approved humanities/social science subject areas

Restrictions & Reminders

- Unless specified with an asterisk (*), Faculty of Science (SC) courses and courses cross-listed to
 Faculty of Science, do not count towards the humanities/social science component
 (e.g. AP/HIST 2810 3.00 History of Modern Science is cross-listed to SC/STS 2010 3.00 and
 therefore does not count towards Complementary Studies)
- Courses with a focus on math or statistics **do not** count (e.g. MODR 1650)
- PHIL 2100 3.00 Introduction to Logic does not count.

Approved Humanities/Social Science Subject Areas:

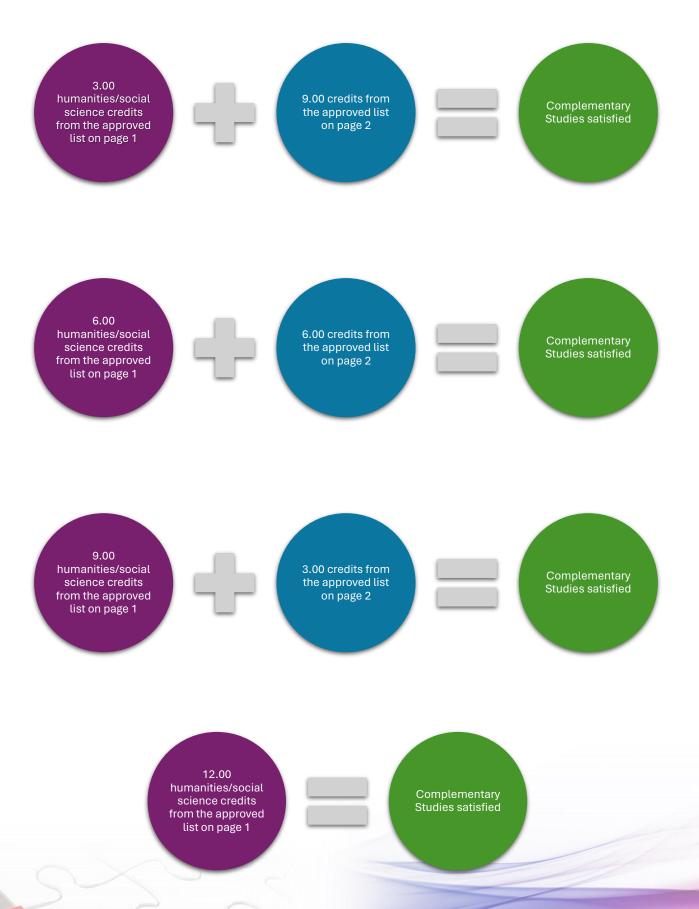
English (EN) Gender & Women's Studies (GWST) History (HIST)	Indigenous Studies (INDG) Linguistics (LING, LIN)	Philosophy (PHIL) Political Science (POLS) Religious Studies (RLST)
Studies (HREQ) Humanities (HUMA)	(MODR) Multicultural and Indigenous Studies (MIST)	Social Science (SOSC) Sociology (SOCI) Writing (WRIT)
Modern Greek (GKM) English as a Second Language (ESL) French as a Second Language (FSL) French (FR, FRAN)	German (GR) Hebrew (HEB)Hindi (HND) Italian (IT) Jamaican Creole (JC) Japanese (JP)	Korean (KOR) Latin (LA) Persian (PERS) Portuguese (POR) Spanish (SP) Swahili (SWAH)
	Human Rights and Equity Studies (HREQ) Humanities (HUMA) Modern Greek (GKM) English as a Second Language (ESL) French as a Second Language (FSL)	Human Rights and Equity Studies (HREQ) Humanities (HUMA) Multicultural and Indigenous Studies (MIST) Modern Greek (GKM) English as a Second Language (ESL) French as a Second Italian (IT) Language (FSL) Jamaican Creole (JC)

The remaining 9 credits must be completed from the humanities/social science subject areas listed on page 1 or the specified courses listed below:

AP/ADMS 1000 3.00	EU/ENVS 3230 3.00	EU/GEOG 2110 3.00	FA/THEA 1500 6.00
AP/ADMS 1010 3.00	EU/ENVS 3320 3.00	EU/GEOG 2220 3.00	FA/THEA1520 3.00
AP/DEMS 1701 3.00	EU/ENVS 3340 3.00	EU/GEOG 2310 6.00	FA/THEA 1900 3.00
AP/DEMS 2700 3.00	EU/ENVS 3410 3.00	EU/GEOG 3070 3.00	FA/THEA 2060 3.00
AP/DEMS 3706 3.00	EU/ENVS 3420 3.00	EU/GEOG 3150 3.00	FA/YSDN 1900 3.00
AP/DEMS 3707 3.00	EU/ENVS 3430 3.00	EU/GEOG 3230 3.00	HH/IHST 1020 6.00
AP/DEMS 3708 3.00	EU/ENVS 3505 3.00	FA/ARTH 1900 3.00	HH/PSYC1010 6.00
AP/DLLL 1000 6.00	EU/ENVS 3520 3.00	FA/ARTH 2350 3.00	LE/TECL1000 3.00
AP/ECON 1000 3.00	EU/ENVS 3740 3.00	FA/ARTH 2390 3.00	LE/TECL3033 3.00
AP/ECON 1010 3.00	EU/ENVS 4011 3.00	FA/ARTH 2620 3.00	LE/TECL 3099 3.00
AP/HUMA 3226 3.00*	EU/ENVS 4140 3.00	FA/CMA 1401 6.00	LW/LAW 3591 3.00
AP/LLS 1000 6.00	EU/ENVS 4161 3.00	FA/CMA 1701 3.00	SB/ENTR 3400 3.00
AP/PPAS 2110 3.00	EU/ENVS 4210 3.00	FA/CMA 1900 3.00	SB/ENTR 3600 3.00
AP/PPAS 2200 3.00	EU/ENVS 4220 3.00	FA/CMA 2401 6.00	SB/ENTR 4500 3.00
AP/PPAS 3000 3.00	EU/ENVS 4225 3.00	FA/DANC 1340 3.00	SC/BC 3010 3.00
AP/PPAS 3120 3.00	EU/ENVS 4230 3.00	FA/DANC 1900 3.00	SC/STS 1411 3.00
AP/PPAS 3122 3.00	EU/ENVS 4400 3.00	FA/DANC 2340 3.00	SC/STS 2110 3.00*
AP/PPAS 3135 3.00	EU/ENVS 4401 3.00	FA/DATT 1900 3.00	SC/STS 2210 3.00
AP/PPAS 3136 3.00	EU/ENVS4402 3.00	FA/MUSI 1500 6.00	SC/STS 2222 3.00
AP/PPAS 3190 6.00	EU/ENVS4420 3.00	FA/MUSI 1510 3.00	SC/STS 2333 3.00
EU/ENVS 3122 3.00	EU/ENVS4430 3.00	FA/MUSI 1520 6.00	SC/STS 2411 3.00
EU/ENVS 3130 3.00	EU/ENVS4440 3.00	FA/MUSI 1530 3.00	SC/STS 3170 3.00*
EU/ENVS 3150 3.00	EU/ENVS4442 3.00	FA/MUSI 1540 6.00	SC/STS 3500 3.00
EU/ENVS 3151 3.00	EU/ENVS4446 3.00	FA/MUSI 1550 6.00	SC/STS 3561 3.00*
EU/ENVS 3160 3.00	EU/ENVS4520 3.00	FA/MUSI 1556 3.00	SC/STS 3600 3.00
EU/ENVS 3170 3.00	EU/ENVS4523 3.00	FA/MUSI 1580 6.00	SC/STS 3725 3.00*
EU/ENVS 3222 3.00	EU/ENVS4800Q 3.00	FA/MUSI 1900 3.00	SC/STS 3726 3.00
EU/ENVS 3226 3.00	EU/GEOG1000 6.00	FA/MUSI 2520 6.00	SC/STS 3765 3.00
			SC/STS 3790 3.00

^{*}AP/HUMA 3226 3.00, SC/STS 2110 3.00, SC/STS 3170 3.00, SC/STS 3561 3.00, and SC/STS 3725 3.00 count as approved humanities/social science credits.

The following sample combinations demonstrate how complementary studies can be satisfied:



Page 3 of 3
Lassonde Academic Advising
calendars.students.yorku.ca/faculty/lassonde-school-of-engineering