

# School of STEM Planned Course Offerings - Summer 2024 to Spring 2025 (subject to change)

Department	
Engineering	Physics & Astronomy
Biology	Chemistry
Mathematics & Statistics	Computing & Data Sciences
Other department	

Course Code, number, and title					Pre-requisites
	Summer 1	Summer 2	Fall	Spring	
<b>First-year Courses</b>					
APSC 111 Computer-Aided Design – SolidWorks			✓	✓	Pre-calculus 12 or BMTH 054 or MATH 105 or Calculus MPT
APSC 112 Rapid Prototyping Technology			✓		Pre-calculus 12 or BMTH 054 or MATH 105 or Calculus MPT
APSC 113 Engineering Management for Rapid Prototyping Technology			✓		Pre-calculus 12 or BMTH 054 or MATH 105 or Calculus MPT
APSC 120 Introduction to Engineering ♦			✓		None
APSC 130 Technical Drafting & CAD ♦			✓	✓	Calculus MPT or Pre-calculus 12 or MATH 105 or BMTH 054
APSC 140 Engineering Design ♦			✓	✓	APSC 130, and COMP 106 or COMP 120 as prerequisite with concurrency
ASTR 106 Introduction to Astronomy			✓		Pre-calculus 12 or Principles of Math 12, or Pre-calculus 11 (B), or Principles of Math 11 (B), or Foundations of Mathematics 11 (A), or BMTH 053/054, or MATH 105. MATH 105 may be taken concurrently.
ASTR 107 Introductory Astronomy (Squamish campus only)			✓		Pre-calculus 12 or Principles of Math 12, or Pre-calculus 11 (B), or Principles of Math 11 (B), or Foundations of Mathematics 11(A), or BMTH 053/054, or MATH 105. MATH 105 may be taken concurrently.
ASTR 142 Introduction to Cosmology – The Story of the Universe			✓	✓	Precalculus 12 (pass) or Principles of Math 12 (pass) or Precalculus 11 (B); or Principles of Math 11 (B); or Foundations of Mathematics 11 (A); or MATH 105 (pass). MATH 105 may be taken concurrently.
BIOL 104 Human Biology	✓		✓		None
BIOL 105 Environmental Biology				✓	None
BIOL 109 Introductory Biology *	✓		✓		None * [Note: BIOL 109 replaces BIOL 106/107]
BIOL 110 General Biology I			✓		Chemistry 11 (C+) or CHEM 130 (C+) or BCHM 044 (C+) or Chemistry 12 (C+) or CHEM 101 (C+) or BCHM 054 (C+).]
BIOL 111 General Biology II		✓		✓	BIOL 106 and 107; or BIOL 109 as a prerequisite or corequisite; or BIOL 110 as a prerequisite or corequisite
BIOL 112 Human Anatomy & Physiology I			✓		Biology 12 or BIOL 104 or BBIO 054 or BIOL 109 or BIOL 110
BIOL 113 Human Anatomy & Physiology II				✓	BIOL 112
CHEM 101 Fundamentals of Chemistry			✓	✓	Chemistry 11 or CHEM 030 or CHEM 130 or BCHM 044; and Foundations of Math 11 or Pre-calculus 11 or Pre-calculus 12 or BMTH 054 or MATH 097 or MATH 105 as a pre- or corequisite or Precalculus MPT
CHEM 110 Bonding & Structure			✓	✓	Chemistry 12 (C+) or CHEM 101 (C+) or BCHM 054 (C+); and Precalculus 12 (C+) or BMTH 054 (C-) or MATH 105 (C-) or Calculus MPT
CHEM 111 Chemical Dynamics & Energetics	✓			✓	CHEM 110 (C-); and Precalculus 12 (B) or BMTH 054 (C+) or MATH 105 (C-) or Calculus MPT
CHEM 154 Chemical Principles for Engineers ♦			✓		Chemistry 12 or CHEM 101 or BCHM 054 with (B) and Math 116 is a prerequisite or corequisite
COMP 101 Computers and Their Application	✓		✓	✓	<b>Pre-requisite change in progress.</b> For Summer and Fall 2024: One of the following: Pre-calculus 11, Foundations of Mathematics 11, Workplace Mathematics 11, History of Mathematics 11, Computer Science 11, BMTH 044, BMTH 048, MATH 123 or Precalculus MPT. For Spring 2025: One of the following: As above, or IXD 108 (C-).
COMP 106 Programming with Robots			✓		One of the following: Pre-calculus 11, Foundations of Mathematics 11, Workplace Mathematics 11, Computer Science 11, BMTH 044, BMTH 048, MATH 123, Precalculus MPT, or COMP 101 (B-)
COMP 115 Learn to Code	✓		✓	✓	One of the following: Pre-calculus 11, Foundations of Mathematics 11, Workplace Mathematics 11, Computer Science 11, BMTH 044, BMTH 048, MATH 123, Precalculus MPT, or COMP 101 (B-)
COMP 120 Computing Science for Engineers ♦			✓	✓	One of the following: COMP 106 (C+), COMP 115 (C+), Pre-calculus 12 (A), Foundations of Mathematics 12 (A), Computer Science 12 (A), or MATH 105 (C-)
COMP 165 Introduction to Multimedia and the Internet				✓	<b>Pre-requisite change in progress.</b> For Spring 2025: One of the following: COMP 115 (C-), COMP 101 (A) or IXD 108 (B-)
INTS 110 Making Change: Regional Research and Action	✓			✓	None
MATH 097 Intermediate Algebra	✓		✓	✓	Basic MPT; or Pre-calculus 11 with (C+); or Pre-calculus 12 or BMTH 044 with (C)
MATH 105 Precalculus Mathematics - Modelling Our World	✓		✓	✓	Precalculus MPT; or Pre-calculus 11 with (A); or Pre-calculus 12 with (C+); or MATH 097 or MATH 096 with (C-); or BMTH 044 with (B)
MATH 108 Calculus I for Business, Social Sciences & Life Sciences *	✓		✓	✓	Calculus MPT; or Pre-calculus 12 (B); or MATH 105 (C-); or BMTH 054 (C+). * [Note: MATH 108 is equivalent to MATH116]
MATH 109 Calculus II for Business, Social Sciences & Life Sciences *				✓	MATH 108 or 116 with (C-) * [Note: MATH 109 is equivalent to MATH 126]
MATH 116 Calculus I - The Mathematics of Change	✓		✓	✓	Calculus MPT; or Pre-calculus 12 with (A); or Pre-calculus 12 and Calculus 12 with (B) in each; or MATH 105 with (C-); or BMTH 054 with (B)
MATH 123 Contemporary Mathematics ▲	✓		✓	✓	None; Not intended for science students
MATH 124 Discrete Mathematics I ©			✓	✓	Math Placement Test (MPT) or Precalculus 12 (B) or MATH 108 (C-) or MATH 116 (C-) or MATH 105 (C-) or BMTH 054 (C+)
MATH 126 Calculus II *	✓		✓	✓	MATH 116 with (C-) * [Note: MATH 126 is equivalent to MATH 109]
MATH 139 The Mathematics of Visual Art ▲				✓	None; Not intended for science students
MATH 190 Mathematics for Elementary Teachers ▲			✓	✓	Basic MPT; or MATH 097; or MATH 091 or BMTH 043 (B); or MATH 096 (C-); or BMTH 044 with (C+); or MATH 123 or BMTH 048 or Pre-calculus 11 or Principles of Math 11 or Foundations of Math 11 or Applications of Math 11 (C); Not intended for science students
STAT 101 Introduction to Statistics	✓		✓	✓	Basic MPT; or MATH 097; or MATH 091 or BMTH 043 (C+); or MATH 096 or BMTH 044 (C-); or MATH 123 or BMTH 048 or Pre-calculus 11 or Principles of Math 11 or Foundations of Math 11 or Applications of Math 11 (C)

♦ For Engineering Students    ▲ Not intended for science students

BSc Concentrations: © - Environmental Science, © - Computational Science, © - Biomedical Sciences

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	Summer 1	Summer 2	Fall	Spring	
PHYS 104 Principles of Physics			✓	✓	Pre-calculus 12, or Principles of Math 12, or BMTH 053/054, MATH 105. MATH 105 may be taken concurrently
PHYS 112 Introductory Physics for the Life Sciences I			✓		Physics 12 or BPHY 053/054 or PHYS 104; and Pre-calculus 12 or BMTH 054 or MATH 105
PHYS 113 Introductory Physics for the Life Sciences II				✓	Physics 12 or BPHY 053/054 or PHYS 104; and Pre-calculus 12 or BMTH 054 or MATH 105
PHYS 114 Fundamental Physics I			✓	✓	Physics 12 (B) or BPHY 054 (B) or PHYS 104 (C-); and MATH 116 as a prerequisite or corequisite
PHYS 115 Fundamental Physics II			✓	✓	PHYS 114 with (C-) and Math 126 is a prerequisite or co-requisite
PHYS 116 Fundamental Physics III			✓	✓	PHYS 108, 110 or 114 with (C-) and PHYS 115 is a prerequisite or co-requisite and Math 126 is a prerequisite or co-requisite
<b>Second-year Courses</b>					
BIOL 200 Genetics <sup>ⓑ</sup>			✓		BIOL 111 (C-) and CHEM 111 (pass)
BIOL 202 Nutrition	✓			✓	BIOL 113 (C-) or BIOL 111 (C-), and Chemistry 11
BIOL 203 Introduction to Microbiology				✓	BIOL 111 (C-)
BIOL 208 Ecology <sup>ⓔ</sup>				✓	BIOL 111 (C-)
BIOL 209 Fundamentals of Physiology <sup>ⓑ</sup>	✓		✓		BIOL 111 (C-)
BIOL 212 Invertebrate Zoology			✓		BIOL 111 (C-)
BIOL 214 Cell Biology <sup>ⓑ</sup>			✓		BIOL 111 (C-); and CHEM 200 or CHEM 211 as a prerequisite or corequisite
BIOL 241 Pathology I			✓		BIOL 113 (C-) or HKIN 191 (C-) or BIOL 111 (A-)
BIOL 242 Pathology II				✓	BIOL 240 (C-) or BIOL 241 (C-)
CHEM 204 Structure, Energetics and Spectroscopy <sup>ⓔ</sup> <sup>ⓑ</sup>				✓	CHEM 111 (C-); and MATH 116 or MATH 108 as a prerequisite or corequisite
CHEM 211 Organic Chemistry for the Life Sciences <sup>ⓔ</sup> <sup>ⓑ</sup>			✓		CHEM 111 (C-)
CHEM 215 Biochemistry I: Macromolecular Structure & Function <sup>ⓑ</sup>				✓	BIOL 214 (C-); and CHEM 211 (C-) or CHEM 201 (C-)
COMP 215 Introduction to Computational Science <sup>Ⓒ</sup>				✓	COMP 115 (A-); OR COMP 115(C+) and one of the following: MATH 116 (C-), MATH 108 (C-), or MATH 124 (C-)
MATH 230 Calculus III				✓	MATH 109 (C-) or MATH 126 (C-)
MATH 252 (152) Linear Algebra & Differential Equations * <sup>Ⓒ</sup>			✓	✓	MATH 109 or MATH 126 as a pre or a corequisite * [Note: MATH 252 replaces MATH 152]
STAT 205 Introduction to Probability and Statistics <sup>Ⓒ</sup>				✓	MATH 109 or MATH 126 as a pre or corequisite
<b>Upper-year Courses</b>					
ASTR 300 The Search for Life in the Universe				✓	45 credits of 100-level or higher coursework
BIOL 300 Molecular Genetics <sup>ⓑ</sup>				✓	<b>Pre-requisite change for Spring 2025:</b> BIOL 200 (C-), and one of BIOL 203 (C-) or BIOL 214 (C-)
BIOL 308 Conservation Biology <sup>ⓔ</sup>				✓	BIOL 208 (C-)
BIOL 313 Human Physiology II: Blood, Gas & Antibodies <sup>ⓑ</sup>			✓		<b>Pre-requisite change for Fall 2024:</b> BIOL 209 (C-) and CHEM 215 (C-)
BIOL 314 Advanced Cell Biology <sup>ⓑ</sup>			✓		BIOL 214 (C-); and BIOL 215 (C-) or CHEM 215 (C-)
BIOL 408 Restoration Ecology <sup>ⓔ</sup>	✓		Expected again Summer I, 2025		BIOL 208 (C-)
BIOL 409 Global Change Biology			✓		BIOL 208 (C-) or GEOG 222 (C-)
CAPS 499 Degree Portfolio			✓	✓	90 credits of 100-level or higher coursework including at least one Cap Core Experiential course
CHEM 304 Environmental Chemistry <sup>ⓔ</sup>				✓	CHEM 201 (C-); or CHEM 211 (C-) and CHEM 204 (C-)
CHEM 311 Applications of Spectroscopy <sup>ⓔ</sup>			✓		CHEM 201 (C-); or CHEM 211 (C-) and CHEM 204 (C-)
CHEM 315 Biochemistry II: Metabolism & Bioenergetics <sup>ⓑ</sup>				✓	CHEM 211 (C-) and CHEM 204 (C-), or CHEM 201 (C-); and BIOL 215 (C-) or CHEM 215 (C-)
COMP 301 Computing Technologies in a Digital Culture <sup>Ⓒ</sup>			✓	✓	45 credits of 100-level or higher coursework including one of the following: COMP 101, COMP 115, or MOPA 209
COMP 320 Database Technologies and Applications <sup>Ⓒ</sup>				✓	45 credits of 100-level or higher coursework and COMP 215
COMP 330 Data Wrangling: Scripting for Automated Data Processing <sup>Ⓒ</sup>			✓		45 credits of 100-level or higher coursework and one of COMP 115 (A-) or COMP 215
GEOG 355 Urban Ecology			✓		45 credits of 100-level or higher coursework
PHYS 310 Environmental Physics Lab <sup>ⓔ</sup>				✓	PHYS 210 or PHYS 211; OR STAT 205 and one of: CHEM 200, CHEM 201, CHEM 206, CHEM 211, BIOL 203, BIOL 208, BIOL 214, or BIOL 215
SCI 400 Research Project			✓	✓	<b>Pre-requisite change for Fall 2024 and Spring 2025:</b> 15 credits of 300-level or higher coursework in designated Science courses from the Faculty of Arts and Sciences, including STAT 310 and one of: BIOL 300 (C-), BIOL 408 (C-), CHEM 311 (C-), CHEM 404 (C-), COMP 320 (C-), COMP 330 (C-) or PHYS 310 (C-)
STAT 305 Introduction to Data Science <sup>Ⓒ</sup>			✓		COMP 115 and one of: STAT 101, LBST 201, BADM 210, PSYC 213 OR TOUR 350
STAT 310 Design and Analysis of Experiments <sup>ⓔ</sup> <sup>ⓑ</sup> <sup>Ⓒ</sup>			✓	✓	45 credits of 100-level or higher coursework including COMP 115 and one of STAT 101, STAT 205, LBST 201, BADM 210, PSYC 213, TOUR 350 or KINE 30

**BSc Concentrations:** <sup>ⓔ</sup> - Environmental Science, <sup>Ⓒ</sup> - Computational Science, <sup>ⓑ</sup> - Biomedical Sciences