

School of STEM: Expected Course Offerings Summer 2023 – Spring 2024
First-year Courses

Course Code, number, and title	Summer 1	Summer 2	Fall	Spring	Pre-requisites
APSC 120 Introduction to Engineering♦			X		none
APSC 130 Technical Drafting & CAD♦			X	X	Calculus MPT or Pre-calculus 12 or MATH 105 or BMTH 054
APSC 140 Engineering Design♦			X	X	APSC 130, and COMP 106 or COMP 120 as prerequisite with concurrency
ASTR 106 Introduction to Astronomy	X		X	X	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			X		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	X		X		none
BIOL 105 Environmental Biology				X	none
BIOL 109 Introductory Biology *	X		X		none
BIOL 110 General Biology I			X		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		X		X	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			X		Biology 12 or BIOL 104 or BBIO 054 or BIOL 109 or BIOL 110
BIOL 113 Human Anatomy & Physiology II				X	BIOL 112
CHEM 101 Fundamentals of Chemistry			X	X	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			X	X	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	X			X	CHEM 110 (C-); and Precalculus 12 (B) or BMTH 054 (C+) or MATH 105 (C-) or Calculus MPT
CHEM 154 Chemical Principles for Engineers♦			X		Chemistry 12 or CHEM 101 or BCHM 054 with (B) and Math 116 is a prerequisite or co-requisite
COMP 101 Computers and Their Application	X		X	X	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
COMP 106 Programming with Robots			X		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	X		X	X	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♦			X	X	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-)
INTS 110 Making Change: Regional Research and Action	X		X	X	None
MATH 097 Intermediate Algebra	X		X	X	Basic MPT or Pre-calculus 11 with (C+); or Pre-calculus 12 or BMTH 044 with a (C)
MATH 105 Precalculus Mathematics - Modelling Our World	X		X	X	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 and Life Sciences			X	X	Calculus MPT; or Pre-calculus 12 with (B); or MATH 105 with (C-); or BMTH 054 with (C+).] [Note: MATH 108 is equivalent to MATH116]
MATH 109 Calculus II for Business, Social Sciences and Life Sciences				X	MATH 108 or 116 with (C-) (Note: MATH 109 is equivalent to MATH 126)
MATH 116 Calculus I - The Mathematics of Change	X		X	X	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	X		X	X	none
MATH 124 Discrete Mathematics I			X		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	X		X	X	MATH 116 with (C-) (Note: MATH 126 is equivalent to MATH 109)
MATH 139 The Mathematics of Visual Art				X	none
MATH 190 Mathematics for Elementary Teachers			X	X	Basic MPT; or MATH 097; or MATH 091 or BMTH 043 with (B); or MATH 096 with (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 with (C)
PHYS 104 Principles of Physics			X	X	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			X		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				X	Physics 12 or BPHY 053/054 or PHYS 104; and Pre-calculus 12 or BMTH 054 or MATH 105
PHYS 114 Fundamental Physics I			X	X	Physics 12 (B) or BPHY 054 (B) or PHYS 104 (C-); and MATH 116 as a prerequisite or corequisite
PHYS 115 Fundamental Physics II			X	X	PHYS 114 with (C-) and Math 126 is a prerequisite or co-requisite
PHYS 116 Fundamental Physics III			X	X	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
STAT 101 Introduction to Statistics	X		X	X	Basic MPT; or MATH 097; or MATH 091 or BMTH 043 with (C+); or MATH 096 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 with (C)

* BIOL109 replaces BIOL106/107 ** MATH 252 replaces MATH 152 ♦ for Engineering Students

BSc Concentrations: (E) - Environmental Science, (C) - Computational Science, (B) - Biomedical Sciences

Second-year Courses

Course Code, number, and title	Summer 1	Summer 2	Fall	Spring	Pre-requisites
BIOL 200 Genetics (B)			X		BIOL 111 (C-) and CHEM 111 (pass)
BIOL 202 Nutrition	X				BIOL 113 (C-) or BIOL 111 (C-), and Chemistry 11
BIOL 203 Introduction to Microbiology				X	BIOL 111 (C-)
BIOL 208 Ecology (E)				X	BIOL 111 (C-)
BIOL 209 Fundamentals of Physiology (B)	X		X		BIOL 111 (C-)
BIOL 213 Vertebrate Zoology			X		BIOL 111 (C-)
BIOL 214 Cell Biology (B)			X		BIOL 111 (C-); and CHEM 200 or CHEM 211 as a prerequisite or corequisite
BIOL 230 Botany				X	BIOL 111 (C-)
BIOL 241 Pathology I			X		BIOL 113 (C-) or HKIN 191 (C-) or BIOL 111 (A-)
BIOL 242 Pathology II				X	BIOL 240 (C-) or BIOL 241 (C-)
CHEM 204 Structure, Energetics and Spectroscopy (E) (B)				X	CHEM 111 (C-); and MATH 116 or MATH 108 as a prerequisite or corequisite
CHEM 211 Organic Chemistry for the Life Sciences (E) (B)			X		CHEM 111 (C-)
CHEM 215 Biochemistry I: Macromolecular Structure and Function (B)				X	BIOL 214 (C-); and CHEM 211 (C-) or CHEM 201 (C-)
COMP 215 Introduction to Computational Science (C)				X	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				X	MATH 109 (C-) or MATH 126 (C-)
MATH 252 (152) Linear Algebra and Differential Equations ** (C)			X	X	MATH 109 or MATH 126 as a pre or a corequisite
PHYS 200 Thermal Physics and Waves			X		PHYS 111 or 115 with a minimum C- grade and MATH 230 as corequisite / *please speak to instructor about specific prerequisites
PHYS 203 Fluid Mechanics I				X	MATH 109 or MATH 126 as a prerequisite or corequisite
STAT 205 Introduction to Probability and Statistics (C)				X	MATH 109 or MATH 126 as a pre or corequisite

Third & Fourth-year Courses

Course Code, number, and title	Summer 1	Summer 2	Fall	Spring	Pre-requisite
ASTR 300 The Search for Life in the Universe				X	45 credits of 100-level or higher coursework
BIOL 300 Molecular Genetics (B)				X	BIOL 200 (C-)
BIOL 312 Human Physiology I: Brains, hormones and guts (B)			X		BIOL 209 (C-); BIOL 214 (C-); and BIOL 215 (C-) or CHEM 215 (C-)
BIOL 313 Human Physiology II: Blood, Gas and Antibodies (B)	X				BIOL 209 (C-)
BIOL 351 Global Biogeography			X		45 credits of 100-level or higher coursework
BIOL 408 Restoration Ecology (E)	Anticipated offering Summer 1 2024				BIOL 208 (C-)
BIOL 412 Special Topics in Pathophysiology I (B)				X	BIOL 208 (C-) and CHEM 215
CAPS 499 Degree Portfolio				X	90 credits of 100-level or higher coursework including at least one Cap Core Experiential course
CHEM 311 Applications of Spectroscopy (E)			X		CHEM 201 (C-); or CHEM 211 (C-) and CHEM 204 (C-)
CHEM 411 Medicinal Chemistry: Drug Design and Drug Action (B)			X		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# (C)			X	X	45 credits of 100-level or higher coursework including one of the following: COMP 101, COMP 115, or MOPA 209
COMP 330 Data Wrangling: Scripting for Automated Data Processing (C)			X		45 credits of 100-level or higher coursework and one of COMP 115 (A-) or COMP 215
GEOG 355 Urban Ecology	X				45 credits of 100-level or higher coursework
GEOG 435 Energy, Communities and Environmental Change			X		45 credits of 100-level or higher coursework
MATH 336 Applied Graph Theory and Optimization (C)				X	45 credits of 100-level or higher coursework including MATH 124
PHYS 310 Environmental Physics Lab (E)				X	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			X		12 credits of 300-level or higher coursework in designated Science courses from the Faculty of Arts and Sciences
STAT 305 Introduction to Data Science (C)			X		COMP 115 and one of: STAT 101, LBST 201, BADM 210, PSYC 213 OR TOUR 350
STAT 310 Design and Analysis of Experiments (E) (C)				X	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

Spring COMP 301 is a MOPA section

BSc Concentrations: **(E)** - Environmental Science, **(C)** - Computational Science, **(B)** - Biomedical Sciences

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