



2022-2023

Science, Engineering, and Math (SEM) Division Course Offerings and Prerequisites

\*Note: The quarters indicated are planned offerings for 2022-2023 only. Courses may be canceled, and/or times shifted, so offerings are not guaranteed.

	Course	Title	Quarters Offered*				Prerequisite classes
			Su	F	W	Sp	
<b>Biology, Botany, Nutrition &amp; Natural Science</b>	Biol& 100	Survey of Biology			y	y	Proficiency in Algebra
	Biol 105	Fossils & History of Life			o or hd	o or hd	Proficiency in Algebra
	Biol 110	Ecology				y	Proficiency in Algebra
	Biol 125	Biology in the Field					Proficiency in Algebra
	Biol 140	Marine Biology		y	y		Proficiency in Algebra
	Biol& 160	General Cell Biology	y	y	y	y	Proficiency in Algebra
	Biol& 175	Human Biology w/lab	o	y	y	y	Proficiency in Algebra
	Biol& 221	Evolution, Ecology & Biodiversity		y		y	Chem&161 (minimum grade of C may be taken concurrently), Biol& 160 (minimum grade of C)
	Biol& 222	Cellular & Molecular Biology		y	y		Chem& 161 and Biol& 221 (minimum grade of C)
	Biol& 223	Biology of Organisms			y	y	Biol& 222 and Chem& 162 (minimum grade of C)
	Biol& 241	Human Anatomy & Phys 1	y	y	y	y	Biol& 160 (minimum grade of C) and either Chem& 121 or Chem& 140 (minimum grade of C)
	Biol& 242	Human Anatomy & Phys 2	y	y	y	y	Biol& 241 (minimum grade of C)
	Biol 243	Current Advances in Human A&P					Biol& 242 (minimum grade of C) or Biol& 223 (minimum grade of C)
	Biol& 260	General Microbiology	y	y	y	y	Chem& 121 or higher level chemistry (minimum grade of C) AND either Biol& 160 or Biol& 222 (minimum grade of C); Chem& 131 recommended
	Biol 280	Human Cadavar Prosection				y	Biol& 241 (minimum grade of C); instructor permission.
	Bio 294	Biology Research					Biol& 221 or Biol& 222 or Biol& 242 or Biol& 260. Each with a minimum grade of C or equivalent.
	Bot 101	General Botany		y		y	Proficiency in Algebra
	Bot 179	Special Topics in Botany				y	Proficiency in Algebra
	Nutr& 101	Human Nutrition	o	y	y	y	Recommended Preparation: Chem& 110, Biol& 100, or Biol& 160 (minimum grade of C)
	Nutr 250	Nutrition in Healthcare		y		y	Biol& 160 and CHEM& 121 with a minimum grade of C
Sci 105	Intro Topics in Natural Science					Proficiency in Algebra	
<b>Chemistry</b>	Chem& 110	Chemical Concepts	o	o	o	o	None
	Chem& 121	Intro to Inorganic Chem	o,hd	d,nh	d,nh	d,nh	Proficiency in Algebra
	Chem& 131	Intro to Organic/Biochem	hd	hd	hd	hd	Chem& 121 (minimum grade of C)
	Chem& 140	General Chem Prep w/ Lab	o	hd	hd	hd	Proficiency in Algebra
	Chem& 161	General Chemistry 1		d,hn	d	d	Chem& 140 (minimum grade of C) or Chem& 121 (minimum grade of C) or one year of high school chemistry; and either Math& 141 (minimum grade of C; may be taken concurrently) or Math 147 (minimum grade of C; may be taken concurrently). Students having recently completed a year of high school chem may be able to enroll in Chem& 161. Request a Milestone well before your registration appointment. Demonstration of content mastery may be required.
	Chem& 162	General Chemistry 2	hd		d,hn	d	Chem& 161 (minimum grade of C)
	Chem& 163	General Chemistry 3	d	d		d,hn	Chem& 162 (minimum grade of C)
	Chem& 261	Organic Chemistry 1		d			Chem& 163 (minimum grade of C)
	Chem& 262	Organic Chemistry 2			d		Chem& 261 (minimum grade of C)
Chem& 263	Organic Chemistry 3				d	Chem& 262 (minimum grade of C)	
<b>Environmental Science, Geography, Geology &amp; Oceanography</b>	Envs& 101	Intro to Environmental Sci	y	y	y	y	Proficiency in Algebra
	Envs 105	Climate Change			y	d	Proficiency in Algebra - same class as Geog 210
	Envs 210	Maps, GIS & Environment				d	Proficiency in Algebra
	Geog 205	Physical Geography	o	o	?	o	Proficiency in Algebra - same class as Envs 210
	Geog 210	Maps, GIS & Environment				d	Proficiency in Algebra
	Geol& 101	Intro to Physical Geology		hd	hd	?	Proficiency in Algebra - same class as Bio 105
	Geol 108	Fossils & History of Life			o or hd	o or hd	none
	Geol 179	Special Topics in Geology				d	Proficiency in Algebra
	Ocea& 101	Intro to Oceanography		o	o	o	Proficiency in Algebra - offered as coordinated study with Ocea&101
Ocea 179	Special Topics in Oceanography					Proficiency in Algebra	

<b>Engineering &amp; Computer Science</b>	CS 120	Computer Science Principles		y	y	y	Proficiency in Algebra
	CS 142	Java Programming 1	y	y	y	y	Math& 141 or equivalent assessment (Note: If no prior programming experience, CS 120 recommended.)
	CS 143	Java Programming 2		y	y	y	CS 142 (minimum grade of C)
	Engr& 104	Intro to Engr and Design		y	y	y	Math at the 100 level with minimum grade of C (may be taken concurrently)
	Engr& 114	Engr Graphics/SolidWorks		y	y	y	Math at the 100 level with minimum grade of C (may be taken concurrently)
	Engr 170	Intro to Materials Science				y	Chem& 162 (may be taken concurrently) and Math& 141
	Engr& 204	Electric Circuits				y	Math 238 (may be taken concurrently) and Phys& 222
	Engr& 214	Statics		y			Phys& 221 and Math& 153
	Engr& 215	Dynamics			y		Engr& 214 and Math& 153
	Engr& 224	Thermodynamics				y	Phys& 221, Math& 152 and Chem& 161
Engr& 225	Mechanics of Materials				y	Math& 153 (may be taken concurrently) and Engr& 214	
Engr 240	Applied Numerical Methods			y		Math& 153 required. Math 220 recommended.	
<b>Physics &amp; Astronomy</b>	Astr& 110	The Solar System		y	y	y	None
	Astr& 115	Stars, Galaxies, Cosmos	y	y	y	y	None
	Phys& 114	General Physics 1	y	y	y	y	Math at the 100 level with minimum grade of C (may be taken concurrently). MATH& 141 recommended.
	Phys& 115	General Physics 2	y		y	y	Math at the 100 level with minimum grade of C (may be taken concurrently) and PHYS& 114 with a minimum grade of C. MATH& 141 recommended.
	Phys& 116	General Physics 3				y	Math at the 100 level with minimum grade of C (may be taken concurrently) and PHYS& 114 with a minimum grade of C. MATH& 141 recommended.
	Phys& 221	Engr Physics - Mechanics		y	y	y	Math& 151 or equivalent. (Minimum grade of C.)
	Phys& 222	Engr Physics - E & M		y	y	y	Math& 152 or equivalent, and Phys& 221. (Minimum grade of C for all.)
Phys& 223	Engr Physics - Waves, Optics		y	y	y	Phys& 221 (Minimum grade of C.)	
<b>Math</b>	Math 41	Corequisite for Precalculus	d	d/n/hd/o	d/n/hd/o	d/n/hd/o	Concurrent enrollment in Math& 141.
	Math 46	Corequisite for Statistics	d	d/n/hd/o	d/n/hd/o	d/n/hd/o	Concurrent enrollment in Math& 146.
	Math 40	Corequisite for Intermediate Algebra	d	d/n/hd/o	d/n/hd/o	d/n/hd/o	Concurrent enrollment in Math 95.
	Math 95	Intermediate Algebra	d	d/n/hd/o	d/n/hd/o	d/n/hd/o	Completion of the Directed Self Placement tool; or appropriate placement.
	Math& 107	Math in Society	d	d/hd/o	d/hd/o	d/hd/o	Completion of the Directed Self Placement tool; or appropriate placement. Running Start students must place based on Running Start policies.
	Math &131	Math for Elementary Education 1			d		Completion of the Directed Self Placement tool; or appropriate placement. Running Start students must place based on Running Start policies.
	Math &132	Math for Elementary Education 2				d	Completion of the Directed Self Placement tool; or appropriate placement. Running Start students must place based on Running Start policies.
	Math& 141	Precalculus I	d/o	d/n/hd/o	d/n/hd/o	d/n/hd/o	Completion of the Directed Self Placement tool; or appropriate placement. Running Start students must place based on Running Start policies.
	Math& 142	Precalculus II	d/o	d/n/hd/o	d/n/hd/o	d/n/hd/o	MATH& 141 with a minimum grade of C or appropriate MATH placement.
	Math& 146	Introduction to Statistics	d/o	d/n/hd/o	d/n/hd/o	d/n/hd/o	Completion of the Directed Self Placement tool; or appropriate placement. Running Start students must place based on Running Start policies.
	Math 147	College Algebra for Business & Economic	d	d	d	d	Completion of the Directed Self Placement tool; or appropriate placement. Running Start students must place based on Running Start policies.
	Math& 148	Business Calculus	d	d	d	d	Math147 with a minimum grade of C or appropriate MATH placement and department permission; and knowledge of Excel spreadsheet software including graphing.
	Math& 151	Calculus I	d/o	d/n/hd/o	d/n/hd/o	d/n/hd/o	Math& 142 with a minimum grade of C or appropriate MATH placement and department permission.
	Math& 152	Calculus II	d/o	d/n/hd/o	d/n/hd/o	d/n/hd/o	Math& 151 with a minimum grade of C or appropriate MATH placement and department permission.
	Math& 153	Calculus III	d	d/n/hd/o	d/n/hd/o	yd/n/hd/o	Math& 152 with a minimum grade of C or appropriate MATH placement and department permission.
	Math 220	Linear Algebra		d	d	o	Math& 153 with a minimum grade of C or appropriate MATH placement and department permission.
Math 238	Elements Of Differential Equations	d	o	o	d	Math& 153 with a minimum grade of C or appropriate MATH placement and department permission.	
Math& 254	Calculus IV	o	d	o	d	Math& 153 with a minimum grade of C or appropriate MATH placement and department permission.	

cm - Computer mediated. d = Day section. n = Night section. o = Online section. h = Hybrid Online. hd = Day Hybrid Online. hn = Night Hybrid Online. y = offering planned, format unknown. ? = course may be offered