

Elective Course List (Students Entering FA18 & After)

Microbiology electives MUST include 3 MIP electives (2 must include lab component).

To reach 22 credits, additional electives may be chosen from any of the courses on this page not taken elsewhere in the program.*

*A maximum of TWO unique courses, maximum of SIX credits, may be selected from the following: MIP 298, 384, 495, or 498.

◆ Courses that fulfill the formal microbiology laboratory component.

◇ Electives recommended for students planning to apply to a Medical Technology program.

Microbiology Electives

◆	◇	Course	Title	Terms Offered	Prerequisites	Credits
◆		MIP 150	Introduction to Research Methods	F, S	None	3
		MIP 192	Microbiology First Year Seminar	F	None/New freshman only	2
		MIP 298	Introductory Research	F, S, SS	Completion of form with sponsor	variable
		MIP 303	General Microbiology—Honors Recitation	F, S	Participation in Honors Program	1
		MIP 315	Human and Animal Disease	F, S	None	3
		MIP 334	Food Microbiology	S	LIFE 205 or MIP 300	3
◆		MIP 335	Food Microbiology Laboratory	F—odd years	(LIFE 206 or MIP 302) and (MIP 334, may be taken concurrently)	2
◆	◇	MIP 343	Immunology Laboratory	S	MIP 302 and MIP 342 (may be taken concurrently)	2
◆	◇	MIP 352	Medical Microbiology Laboratory	S	MIP 302 and MIP 351, may be taken concurrently	3
		MIP 384	Supervised College Teaching	F, S, SS	Completion of form with sponsor	variable
		MIP 400	Capstones in Microbiology (if not taken as capstone);[See Catalog for complete list; topics rotate]	F, S	MIP 342; MIP 351 or MIP 420--may be taken concurrently	2
◆		MIP 401	Laboratory Research Methods in Microbiology	F, S	MIP 150 and MIP 300 and MIP 302	4
◆	◇	MIP 425	Virology and Cell Culture Laboratory	F	MIP 302 and MIP 420, may be taken concurrently	2
		MIP 432	Microbial Ecology	S—odd years	MIP 300	3
◆		MIP 433	Microbial Ecology Lab	S—odd years	MIP 432, may be taken concurrently (MIP 300) and (BC 351 or BC 401)	1
		MIP 443	Microbial Physiology	S	(MIP 300) and (BC 351, may be taken concurrently, or BC 401, may be taken concurrently)	4
		MIP 450	Microbial Genetics	F	(BZ 110 or LIFE 103) and (MIP 302 or LIFE 206 or BZ 212)	3
◆	◇	MIP/BSPM/BZ 462	Parasitology and Vector Biology	F	None	5
◆		MIP/CBE 480A3	Interdisciplinary Synthetic Biology Lab	Summer	None	3
		MIP 495	Independent Study	F, S, SS	MIP 300; Completion of form with sponsor	variable
		MIP 496	Group Study	F, S	Consent of instructor	variable
		MIP 498	Research (if not taken as capstone)	F, S, SS	Completion of form with sponsor (BC 351 or BC 401) and (BC 463 or MIP 450)	variable
		MIP 530	Advanced Molecular Virology	S—even years	MIP 300	4
		MIP 540	Biosafety in Research Laboratories	F, S	MIP 300	2
◆		MIP 550	Microbial and Molecular Genetics Laboratory	S	MIP 302; MIP 450; instructor consent	4
		MIP 555	Principle and Mechanisms of Disease	F	BMS 300	3
		MIP 563	Biology of Disease Vectors	S—odd years	MIP/BSPM/BZ 462	3
		MIP 570	Functional Genomics	F	MIP 300 and 302; MIP 443 and MIP 450	3
		MIP/BZ 577	Computer Analysis in Population Genetics	F	MIP/BZ 578, may be taken concurrently	2
		MIP/BZ 578	Genetics of Natural Populations	F	(BZ 350 or LIFE 201A or LIFE 201B or SOCR 330) and (STAT 201 or STAT 301 or STAT 307 or ERHS 307)	4

Other Science Electives

◆	◇	Course	Title	Terms Offered	Prerequisites	Credits
		ANEQ 460	Meat Safety	S	Three credits of 100 level chemistry (BC 401 or conc) and (CHEM 246 or CHEM 344 or CHEM 346) and (LIFE 212 and LIFE 203)	2
		BC 404	Comprehensive Biochemistry Lab	F, S		2

	BC 463	Molecular Genetics	F	(BC 401, may be taken conc., or BC 351) and (LIFE 201B or BZ 350)--All with minimum grade of C	3
◇	BMS 300	Prin of Human Physiology	F, S, SS	(BZ 101 or BZ 110 or LIFE 102) and (CHEM 103 or CHEM 107 or CHEM 111)	4
	BMS 301	Human Gross Anatomy	F, S, SS	BZ 110 or LIFE 102	5
	BMS 305	Domestic Animal Gross Anatomy	S	BZ 110 or LIFE 102	4
	BMS 330	Microscopic Anatomy	S	BMS 300 or BMS 360	4
	BMS 325	Cellular Neurobiology	F	BMS 300 or BMS 360	3
	BMS 401	Laboratory Research in Biomedical Sciences	F, S	BMS 300 or BMS 360	4
	BMS 450	Pharmacology	S	BMS 300 or BMS 360	3
	BSPM 302	Applied and General Entomology	F	None	2
	BSPM 462	Parasitology and Vector Biology	F	(BZ 110 or LIFE 103) and (MIP 302 or LIFE 206 or BZ 212)	5
	BZ 220	Introduction to Evolution	F, S, SS	BZ 110 or BZ 120 or LIFE 103	3
	BZ 310	Cell Biology	F, S, SS	"C" in CHEM 245 or CHEM 341; BZ 110 or BZ 120 or LIFE 103	4
	BZ 333	Introductory Mycology	F	BZ 120 or LIFE 103	4
	BZ 346	Population and Evolutionary Genetics	F	(BZ 220) and (MATH 155) and (STAT 301 or STAT 307 or ERHS 307)	3
	BZ 350	Molecular and General Genetics	F, S, SS	(BZ 110 or BZ 120 or LIFE 102) and (STAT 201 or STAT 301 or STAT 307 or ERHS 307, all may be taken concurrently)	4
	BZ 360	Bioinformatics and Genomics	S	BZ 110 or BZ 120 or LIFE 102	3
	BZ 418	Ecology of Infectious Diseases	S	LIFE 320	4
	BZ 462	Parasitology and Vector Biology	F	(BZ 110 or LIFE 103) and (MIP 302 or LIFE 206 or BZ 212)	5
	CHEM 334	Quantitative Analysis Laboratory	F, S	CHEM 114 and CHEM 335 or concurrent	1
	CHEM 335	Quantitative Analysis Laboratory	F, S	CHEM 113 (C or better); CHEM 334 or concurrent	3
	CHEM 343	Modern Organic Chemistry II	F, S, SS	CHEM 245 or CHEM 341 or CHEM 345	3
	ERHS 210	Cancer Biology, Medicine, and Society	F	None	2
	ERHS 220	Environmental Health	F, S	BZ 101 or BZ 104 or BZ 110 or BZ 120 or LIFE 102, all may be taken concurrently	3
	ERHS 320	Environmental Health--Water and Food Safety	F	MIP 300 or concurrent	3
	ERHS 332	Principles of Epidemiology	S	(STAT 301 or STAT 307, may be taken concurrently) and (MIP 300, may be taken conc.)	3
	ERHS 502	Fundamentals of Toxicology	F	BMS 300 or BMS 360; CHEM 245 or CHEM 341 or CHEM 345	3
	ERHS 567	Cell & Molecular Toxicology Techniques	F	None	3
	FTEC 360	Brewing Processes			3
	FTEC 460	Brewing Science and Technology	F, S	CHEM 245; MATH 118; age 21; completion of 60 credits	3
	FTEC 574	Current Issues in Food Safety			2
	HORT 477	Enology--History and Winemaking	F--even years	CHEM 107 and 108 concurrent or CHEM 111 and 112 concurrent	3
	LIFE 103	Biology of Organisms	F, S, SS	LIFE 102	4
	LIFE 201B	Introductory Genetics	S	LIFE 102	3
	LIFE 203	Genetic Mechanisms Lab	S	LIFE 201A or LIFE 201B, may be taken conc.	2
	LIFE 210	Introductory Eukaryotic Cell Biology	F	LIFE 102; CHEM 111, CHEM 112, or concurrent; organic chemistry recommended	3
	LIFE 211	Eukaryotic Cell Biology Honors Recitation	F, S	LIFE 210 or concurrent	1
	LIFE 212	Introductory Cell Biology Laboratory	F, S	CHEM 112; LIFE 210 or concurrent	2
	LIFE 320	Ecology	F,S	BZ 101 or BZ 104 or BZ 110 or BZ 120 or LIFE 102 and MATH 141 or MATH 155 or MATH 160	3
	MATH 155	Calculus for Biological Scientists I (GT-MA1)	F, S, SS	MATH 124 and MATH 125	4
	MATH 160	Calculus for Physical Scientists I (GT-SC1)	F, S, SS	"B" in MATH 124 and MATH 126	4
	OT 215	Medical Terminology	F, S, SS	None	1
	PH 122	General Physics II (GT-SC1)	F, S	PH 121 or PH 141	5
	SOCR 330	Principles of Genetics	F, S, SS	BZ 110 or BZ 120 or LIFE 102	3

	SOCR 455	Soil Microbiology	F	MIP 300 or SOCR 240	3
	SOCR 456	Soil Microbiology Lab	F	SOCR 455 or concurrent	1
	VS 331	Histology	F, S, SS	BMS 230 or BMS 300	4
	VS 333	Domestic Animal Anatomy	F, S, SS	BZ 110 or LIFE 102	4