ETX Emphases: Restricted Electives

Fall - F Winter - W Spring - S Summer - Su

Course ID	Title	Units	Quarter	Pre-Requisites	Notes
Ecotoxicology and Environmental Chemistry					
	Aquatic Toxicology				
BIS 122/122P	Population Biology and Ecology/Advanced Laboratory Topics	3/5	S	BIS 1AB	Course at BML
ESP/GEL 116N	Oceanography	3	W	GEL 1, 2, 16, or 50	
ESP 124	Marine and Coastal Field Ecology	3	Su	Junior Standing; BIS 1B recommended	Course at BML
ESP 151/151L	Limnology/Laboratory	4/3	S	BIS 1B; Junior standing	Alternate years
ESP 155/155L	Wetland Ecology/Laboratory	4/3	F	BIS 2A, ESP 100 or EVE 101 recommended	
ETX 120	Perspectives in Aquatic Toxicology	4	W	CHE 8B, 118B or 128B; BIS 2A	Alternate years
ETX 127	Environmental Stress and Development in Marine Organisms	10	Su	ETX 101 or BIS 102 or BIS 104; ETX 103A or NUT 114 recommended	Course at BML
EVE 112/112L	Biology of Invertebrates/Laboratory	3/2	W	BIS 2BC; EVE 112 and 112L taken concurrently	Alternate years (even)
NPB 141/141P	Physical Adaptation of Marine Organisms/Advanced Laboratory Topics	3/5	S	Upper division standing; consent of instructor	Course at BML
WFC 120/120L	Biology and Conservation of Fishes/Laboratory	2	F	BIS 2ABC; upper division ecology class recommended	
WFC 121	Physiology of Fishes	4	W	Upper division courses in nutrition or physiology or consent of instructor	
WFC 122	Population Dynamics and Estimation	4	S	MAT 16AB; STA 13; upper division course in ecology	
WFC 157	Coastal Ecosystems	4	S	EVE 101 or ESP 100	Alternate years
	Ecology				
ESP 100	General Ecology	4	F	BIS 2ABC; MAT 16AB; STA 13 recommended	
EVE 101	Introduction to Ecology	4	F, W, S, Su	BIS 2ABC; MAT 16ABC	
EVE 104	Community Ecology	4		EVE 101 or ESP 100	Offered irregularly
GEL 130	Non-Renewable Natural Resources	3	F	GEL 1 or 50	Alternate Years
PMI 127	Medical Bacteria and Fungi	5	S	Microbiology course with lab; immunology recommended	

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WFC 122	Population Dynamics and Estimation	4	S	MAT 16AB; STA 13; upper division course in ecology	
WFC 151	Wildlife Ecology	4	F	BIS 2ABC	
WFC 153	Wildlife Ecotoxicology	4		Introductory courses in organic chemistry, ecology, and physiology or consent of instructor	Offered irregularly
WFC 154	Conservation Biology	4	F	EVE 101 or ESP 100	
	Chemical Fate				
ATM/ENG 149	Air Pollution	4	F	MAT 21D and 22B; CHE 2B, ATM 121A ,or ENG 103	
ATM 160	Introduction to Atmospheric Chemistry	4	W	CHE 2B	Alternate years
CHE 100	Environmental Water Chemistry	3	W	CHE 2C	
CHE 107A/B	Physical Chemistry for the Life Sciences	3/3	F/W	CHE 2C; MAT 16C or 21C; one year of college level physics	
CHE 115	Instrumental Analysis	4	F, W	CHE 105 and 110B (may be concurrent) or CHE	
ESM 100	Principles of Hydrologic Science	4	F	CHE 2B; MAT 16B; PHYS 7A or 9A	
ESP/GEL 116N	Oceanography	3	W	GEL 1, 2, 16, or 50	
HYD 134	Aqueous Geochemistry	6	S	CHE 2B	
HYD 141	Physical Hydrology	4	F	PHY 9B; MAT 21B; HYD 100 recommended	
HYD/ENG 144	Groundwater Hydrology	4	F	MAT 16B or 21A; HYD 103 or ENG 103 recommended	
HYD 146	Hydrogeology and Contaminant Transport	5	W	HYD 144 or ECE 144	
MIC 104L	General Microbiology Laboratory	3	F	MIC 102; CHE 8B, 118B, or 129A; consent of instructor	
MIC 105	Microbial Diversity	3	F	MIC 102; BIS 101, 103s or 105 strongly recommended	
SSC 100	Principles of Soil Science	5	F	CHE 2AB; PHY 1AB; BIS 1A; and GEL 50; BIS 1C recommended	
SSC 102	Environmental Soil Chemistry	3	W	CHE 2ABC; SSC 100	
SSC 107	Soil Physics	5	F	SSC 100 and 120 recommended	
SSC 111	Soil Microbiology	4	W	CHE 2C; BIS 1C	
VEN 123	Analysis of Musts and Wines	2	F	CHE 2C and 8B, PLS 21	

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Forensic Science and Regulatory Toxicology					
	Environmental Policy and Management				
ESP 160	The Policy Process	4	S	POL 1; ECN 1A; STA 13	
ESP 161	Environmental Law	4	S	Upper division standing and one course in environmental science or political science recommended	
ESP 164	Ethical Issues in Environmental Policy	3		ESP 160 and 168A; seniors in EPAP or consent of instructor	
ESP 179	Environmental Impact Assessment	4	W	ESP 1	
ETX 135	Health Risk Assessment of Toxicants	3	F	ETX 101; 103A recommended	
ETX 138	Legal Aspects of Environmental Toxicology	3	W	ETX 10 or 101 recommended	
ETX 146	Exposure and Dose Assessment	3	S	ETX 102A; 135 recommended	Alternate years
POL 150	Judicial Politics and Constitutional Interpretation	4		POL 1 recommended	Offered irregularl
PSC 153	Psychology and Law	4	S	PSC 1 and 41; pass one only PSC majors	Alternate years
	Forensic Science				
ANT 153	Human Biological Variation	5	F, W	ANT 1 or BIS 2B recommended	
CHA 101/101	Human Gross Anatomy	4/3	W	BIS 2A, concurrent enrollment in EXB 106L or CHA 101L strongly recommended	Must be taken
CHE 104	Forensic Application of Analytical Chemistry	3	F	CHE 2C	
EME 161	Combustion and the Environment	4	W	EME 106	
ENT 158	Forensic Entomology	3	S	BIS 1B or ENT 100; upper division standing	
ETX 110	Toxic Tragedies and Their Impact on Society	2	W	BIS 10 or consent of instructor	
FPS 161/161	Structure and Properties of Fibers/Textile Chemical Analysis Laboratory	3	f	TXC 6 and CHE 8B	
NPB 101	Systemic Physiology	5	F, W, S	BIS 2A; CHE 2B; PHY 7C strongly recommended	
NPB 101L	Systemic Physiology Laboratory	3	F, W, S	NPB 101	
NPB 168	Neurobiology of Addictive Drugs	4	S	NPB 100 or 101	

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PLB 102	California Floristics	5	S	BIS 2C, PLS 2	
PSC 153	Psychology and Law	4	S	PSC 1 and 41; pass one only PSC majors	Alternate years
	Public Health				
ETX 110	Toxic Tragedies and Their Impact on Society	2	W	BIS 10 or consent of instructor	
ETX 140	Genes and the Environment	3	W	BIS 101 or consent of instructor	Alternate years
FAP 195	Health Care to Underserved Populations	1	W		
GDB 101	Epidemiology	4	W	SAS13, BIS2ABC, STA13/100 or PLS120	
GDB 102	Disease Intervention and Policy	4	S	GDB 101, BIS2ABC, PMI 129Y, VME158	
HIS 109B	Environmental Change, Disease and Public Health	4	F		
IDI 141	Infectious Diseases of Humans	1	F	Introductory knowledge in biology and chemistry recommended	
MMI 130	Medical Mycology	2	W	Course in pathogenic microbiology and consent of instructor	Alternate years
PMI 126/126L	Fundamentals of Immunology/Immunology Laboratory	3/2	W, S	BIS 102 or consent of instructor	
PMI 127	Medical Bacteria and Fungi	5	S	Microbiology course with lab; immunology recommended	
SPH 101	Introduction to Public Health	3	W, S		
SPH 102	Introduction to Human Epidemiology	3	S		
SPH 104	Globalization and Health: Evidence and Policies	3	W		
SPH 105	Health Disparities in the US	2			
SPH 160	General Health Education and Prevention	5	Su	Must be in internship program for Health Education Program	P/NP grading
Molecular and Biomedical Toxicology					
	Biotechnology				
ANG 111	Molecular Biology Laboratory Techniques (Animal Genetics)	4	F	BIS 1C, 101, 102, and 103	

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BIS 101	Genes and Gene Expression	4	F, W, S, Su	BIS 2AB, CHE 8A or 118B or 128A, STA 13, 100, 102, or 130A recommended	
BIS 101D	Genes and Gene Expression Discussion	1	F, W, S	BIS 101 concurrently	
BIS 103	Bioenergetics and Metabolism	3	F, W, S, Su	BIS 102	
BIS 104	Cell Biology	3	F, W, S, Su	BIS 101; BIS 102 or 105	
BIT 160	Principles of Plant Biotechnology	3	W	BIS 2A; BIS 101 or PLS 152	
BIT 161A/B	Genetics and Biotechnology Laboratory/Plant Genetics and Biotechnology Laboratory	6/6	W/S	Consent of instructor; BIS 101 or PLS 152	
BIT 171	Professionalism and Ethics in Genomics and Biotechnology	3	F, W, S	Upper division standing in natural science major	
MCB 121	Advanced Molecular Biology	3	F, W, S	BIS 101 and BIS 102 or 105 or	
MCB 126	Plant Biochemistry	3	W	BIS 103 or 105	
MIC 104L	General Microbiology Laboratory	3	F	MIC 102; CHE 8B, 118B, or 129A;	
MIC 140	Bacterial Physiology	3		BIS 101, 102, 103	Offered irregularly
MIC 150	Genomes of Pathogenic Bacteria	3	S	BIS 101; MIC 102	Offered irregularly
MIC 155L	Bacterial Physiology Laboratory	4		MIC 140 or 150; MIC 102L;	Offered irregularly
MIC 162	General Virology	4	W	BIS 101; BIS 102 or 105	
NPB 101	Systemic Physiology	5	F, W, S	BIS 2A; CHE 2B; PHY 7C strongly recommended	
NPB 101L	Systemic Physiology Laboratory	3	F, W, S	NPB 101	
PLP 140	Agricultural Biotechnology and Public Policy	4	S	BIS 10 recommended	
PLS 152	Plant Genetics	4	F	BIS 2A or consent of instructor	
PMI 126/126L	Fundamentals of Immunology/Immunology Laboratory	3/2	W, S	BIS 102 or consent of instructor	
PMI 127	Medical Bacteria and Fungi	5	S	Microbiology course with lab; immunology recommended	
PMI 128	Biology of Animal Viruses	3	S	BIS 102	

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	Food Toxicology				
ETX 128	Food Toxicology	3	S	BIS 102 and 103	
FST 100 A/101 A	Food Chemistry/Laboratory	4/2	F	CHE 8B; BIS 2A recommended	
FST 100 B/101 B	Food Properties/Laboratory	4/2	W	FST 100A/101A	
FST 103	Physical and Chemical Methods for Food Analysis	4	W	CHE 2C, 8B, BIS 103, FST 100B	
FST 104	Food Microbiology	3	W	BIS 2A and 103; MIC 102 and 103L	
FST 104L	Food Microbiology Laboratory	4	S	BIS 2A and 103	
MIC 104L	General Microbiology Laboratory	3	F	MIC 102; CHE 8B, 118B, or 129A;	
MMI 130	Medical Mycology	2	W	Course in pathogenic microbiology and consent of instructor	Alternate years
NUT 111AY	Introduction to Nutrition and Metabolism	3	W	CHE 8B; NPB 101	
NUT 111B	Recommendations and Standards for Human Nutrition	2	S	CHE 8B; NPB 101; NUT 111AY	
NUT 112	Nutritional Assessment	4	S	ABI 102 and 103 or 101; NUT	
NUT 114	Developmental Nutrition	4	W	ABI 102 and 103; NUT 111AY	
PLB 111	Plant Physiology	3	F	BIS 2ABC; CHE 8B or 118B; PHY 7C; PLB 105 recommended	

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	Medicine				
BIS 101	Genes and Gene Expression	4	F, W, S, Su	BIS 2AB, CHE 8A or 118B or 128A, STA 13, 100, 102, or 130A recommended	
BIS 101D	Genes and Gene Expression Discussion	1	F, W, S	BIS 101 concurrently	
CHA 101/101 L	Human Gross Anatomy	4/3	W	BIS 2A, concurrent enrollment in EXB 106L or CHA 101L strongly recommended	Must be taken concurrently
IDI 141	Infectious Diseases of Humans	1	F	Introductory knowledge in biology and chemistry recommended	
MIC 104L	General Microbiology Laboratory	3	F	MIC 102; CHE 8B, 118B, or 129A; consent of instructor	
NPB 100	Neurobiology	4	F, W, S	BIS 2ABC; PHY 7ABC	
NPB 101	Systemic Physiology	5	F, W, S	BIS 2A; CHE 2B; PHY 7C strongly recommended	
NPB 101L	Systemic Physiology Laboratory	3	F, W, S	NPB 101	
NPB 102	Animal Behavior	3	F, S	BIS 2ABC	
NPB 113	Cardiovascular, Respiratory, and Renal Physiology	4		NPB 101; CHE 8B; PHY 7BC recommended	Offered irregularl
NPB 114	Gastrointestinal Physiology	3	F	NPB 101, BIS 103 or 105 recommended	
NPB 121/121	Physiology of Reproduction/Laboratory	4/1	W	NPB 101	
NPB 140	Principles of Environmental Physiology	3	W	NPB 101; BIS 102 recommended	
NPB 168	Neurobiology of Addictive Drugs	4	S	NPB 100 or 101	
PMI 126/126L	Fundamentals of Immunology/Immunology	3/2	W, S	BIS 102 or consent of instructor	
PMI 127	Medical Bacteria and Fungi	5	S	Microbiology course with lab; immunology recommended	

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	Pharmacology				
BIS 103	Bioenergetics and Metabolism	3	F, W, S, Su	BIS 102	
BIS 104	Cell Biology	3	F, W, S, Su	BIS 101; BIS 102 or 105	
CHA 101/101L	Human Gross Anatomy	4/3	W	BIS 2A, concurrent enrollment in EXB 106L or CHA 101L strongly recommended	Must be taken concurrently
CHE 130 A/B	Pharmaceutical Chemistry	3/3	W/S	CHE 118C or 128C	
EVE 112/112	Biology of Invertebrates/Laboratory	3/2	W	BIS 1B or 2BC; EVE 112 and 112L Concurrently	Alternate years (even)
IDI 141	Infectious Diseases of Humans	1	F	Introductory knowledge in biology and chemistry recommended	
MCB 120L	Molecular Biology and Biochemistry	6	F, W, S	BIS 102 or consent of instructor	
MCB 121	Advanced Molecular Biology	3	F, W, S	BIS 101 and BIS 102 or 105 or ABI 102	
MCB 123	Behavior and Analysis of Enzyme and Receptor Systems	3	F, S	BIS 103	
MIC 104L	General Microbiology Laboratory	3	F	MIC 102; CHE 8B, 118B, or 129A; consent of instructor	
NPB 101	Systemic Physiology	5	F, W, S	BIS 2A; CHE 2B; PHY 7C strongly recommended	
NPB 101L	Systemic Physiology Laboratory	3	F, W, S	NPB 101	
NPB 160	Molecular and Cellular Neurobiology	3		NPB 100; BIS 101; consent of instructor	Offered irregularly
	Veterinary Medicine				
ABI 102	Animal Biochemistry and Metabolism	5	F	CHE 2AB; CHE 8AB or 118AB	Cannot take ABI 102 and BIS 102
ABI 103	Animal Biochemistry and Metabolism	5	W	ABI 102 or BIS 102	Cannot take ABI 103 and BIS 103
ANG 107	Genetics and Animal Breeding	5	F, W	BIS 101	

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ANG 111	Molecular Biology Laboratory Techniques (Animal Genetics)	4	F	BIS 101, 102, 103	
APC 100	Comparative Vertebrate Organology	4	F	BIS 2AB	
MCB 150	Developmental Biology	4	W	BIS 101	
NPB 101	Systemic Physiology	5	F, W, S	BIS 2A; CHE 2B; PHY 7C strongly recommended	
NPB 101L	Systemic Physiology Laboratory	3	F, W, S	NPB 101	
NUT 123	Comparative Animal Nutrition	3	S	ABI 103 or BIS 103	
PMI 126/126L	Fundamentals of Immunology/Immunology Laboratory	3/2	W, S	BIS 102 or consent of instructor	
PMI 127	Medical Bacteria and Fungi	5	S	Microbiology course with lab; immunology recommended	
WFC 153	Wildlife Ecotoxicology	4		Introductory courses in organic chemistry, ecology, and physiology or consent of instructor	Offered irregularly