

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 | |

ETX Emphases: Restricted Electives

| <u>Course ID</u> | <u>Title</u> | <u>Units</u> | <u>Quarter</u> | <u>Pre-Requisites</u> | <u>Notes</u> |
|----------------------|--|--------------|----------------|---|---------------------|
| 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 | |

ETX Emphases: Restricted Electives

| Course ID | Title | Units | Quarter | Pre-Requisites | Notes |
|---|---|-------|---------|--|--------------------|
| 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 | |

ETX Emphases: Restricted Electives

| <u>Course ID</u> | <u>Title</u> | <u>Units</u> | <u>Quarter</u> | <u>Pre-Requisites</u> | <u>Notes</u> |
|--|---|--------------|----------------|---|-----------------|
| 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 126/126 | 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 | |

ETX Emphases: Restricted Electives

| | | | | | |
|--------------|---|-----|----------------|--|---------------------|
| 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 | |

ETX Emphases: Restricted Electives

| <u>Course ID</u> | <u>Title</u> | <u>Units</u> | <u>Quarter</u> | <u>Pre-Requisites</u> | <u>Notes</u> |
|------------------|---|--------------|----------------|---|-----------------|
| | 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 | |

ETX Emphases: Restricted Electives

| <u>Course ID</u> | <u>Title</u> | <u>Units</u> | <u>Quarter</u> | <u>Pre-Requisites</u> | <u>Notes</u> |
|------------------|---|--------------|----------------|--|----------------------------|
| | 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 101/101L | 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 irregularly |
| NPB 114 | Gastrointestinal Physiology | 3 | F | NPB 101, BIS 103 or 105 recommended | |
| NPB 121/121L | 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 | |

ETX Emphases: Restricted Electives

| <u>Course ID</u> | <u>Title</u> | <u>Units</u> | <u>Quarter</u> | <u>Pre-Requisites</u> | <u>Notes</u> |
|----------------------------|--|--------------|----------------|--|---------------------------------|
| 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 101/101 | 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 | |

ETX Emphases: Restricted Electives

| <u>Course ID</u> | <u>Title</u> | <u>Units</u> | <u>Quarter</u> | <u>Pre-Requisites</u> | <u>Notes</u> |
|------------------|---|--------------|----------------|---|---------------------|
| 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 126/126 | 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 |