**Graduation Requirements**

|  |  |  |
| --- | --- | --- |
|  | 120 Total Hours |  |
|  | 42 Senior Hours |  |
|  | Global Study |  |
|  | Foreign language |  |

**General Education**

|  |  |  |  |
| --- | --- | --- | --- |
|  | English 101 | EN |  |
|  | Communication 101 | CO |  |
|  | Mathematics | MA |  |
|  | Natural Sciences | NS |  |
|  |  |
|  | U.S Traditions | US |  |
|  | Individual and Civic Life | IC |  |
|  | Fine Arts | FA |  |
|  | Humanities | HU |  |
|  | Language in Humanities | LH |  |
|  | Quantitative Reasoning | QR |  |
|  | Science, Math, Technology | ST | **Exempt** |
|  | Social Sciences | SS |  |

**Molecular and Cellular Biology Major CHECKLIST**

Note: S = Senior standing required, M = Major in Biology required

37 hours in Biology courses required; additional hours in Chemistry, Physics, and Math

|  |  |
| --- | --- |
| **Courses outside of Biology** | **Prerequisites** |
| Math 145 Calculus 1 | Vary by course |
| Math 146 Calculus II or Psy or Eco 138 | Vary by course |
| CHE 140 Gen Chem I CHE 141 Gen Chem II | Vary by course |
| CHE 230/231 Organic Chemistry | C or better in CHE 141 |
| CHE 232 Organic Chemistry II CHE 233 lab | C or better in CHE 230 |
| CHE 342 or CHE 242 Biochemistry I | CHE 232 for 342; 230 for 242 |
| PHY 108 or 110 PHY 109 or 111 | Vary by course |

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| **Required Biology Courses** | **Prerequisites** |
| 196 Biological Diversity (4)\* | M |
| 197 Molecular and Cellular Basis of Life (4)\* | M |
| 203 Cell Biology (3) | BSC 196, 197; CHE 110 and 112 or 141 |
| 219 Genetics (3) | BSC 196 and 197 |
| 204 Biological Investigations (1) | M; BSC 196 and 197 |
| 350 Molecular Biology (3) | BSC 203, 219, CHE 230/231, 342 or 242 rec |
| 260 Microbiology (4)\* | BSC 196, 197; CHE 230/231 or concurrent |

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| **MCB electives to total 15 hours: @least two lab courses; no more than 4 hours of bsc 290/299** | **Prerequisites** |
| **Biology elective Courses: 2 courses from** | BSC 203 and 219 |
| 329 Human Genetics (3) | BSC 196 and 197 |
| 343 Introduction to Neurobiology (3) | BSC 203 |
| 345 Introduction to Endocrinology (3) | BSC 203; BSC 219 recommended |
| 346 Developmental Biology (3) | BSC 197 and 203 |
| 351 Cell Signaling and Regulation (3) | BSC 219; CHE 220 or CHE 230-232 |
| 353 Biotechnology Lab 1: DNA (3)\* | BSC 203; CHE 220 or 230-232 recommended |
| 354 Biotechnology Lab II: Cell Biology (3)\* | BSC 203 and 219 |
| 355 Genomics and Bioinformatics (3) | BSC 203 and 260 |
| 361 Microbial Pathogens (4)\* | One from: BSC 201, 203, 212, 219, 260 |
| 365 Bioenergy Plant/Microbe Biology and Environment | BSC 203 |
| 367 Immunology (4)\* | BSC 197, 203, 219 |
| 370 Topics in Molecular and Cellular Biology(3) |  |

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| **Additional Biology elective Courses:** | **Prerequisites** |
| 201 Ecology (4)\* | BSC 196 and 197 |
| 211 Economic Botany (4)\* | BSC 196 or AGR 150, and BSC 197 |
| 212 Principles of Botany (4)\* | BSC 196 and 197 |
| 220 Laboratory in Molecular Genetics and Cell Biology (3) | BSC 203 and either BSC 219 or HSC 260 |
| 280 Conservation of Animal and Plant Biodiversity (3) | BSC 196 and 197 |
| 283 Animal Physiology (4)\* | M; BSC 196/197; CHE 110/112, or CHE 141 |
| 286 Animal Behavior (3) | BSC 196 and 197 |
| 290 Research in Biological Sciences or 299 (variable hours) | Consent of instructor |
| 292 Invertebrate Zoology (4)\* | BSC 196 and 197 |
| 295 Comparative Vertebrate Anatomy (4)\* | BSC 196 and 197 |
| 296 Mammalian Biology (3) | BSC 196 and 197 |
| 301 Entomology (4)\* | BSC 196 and 197; 201 |
| 311 Rainforest Ecology (3)\* | BSC 201; consent instructor |
| 319 Genetics of Behavior (4)\* | BSC 197, 203, 219 |
| 325 Ecological Physiology of Animals (3) | BSC 196 and 197; 45 hours completed |
| 327 Hormones, Brain and Behavior (3) | BSC 283 or 286 |
| 333 Plant Diversity (4)\* | One from: BSC 211, 212, 223 |
| 370A02 Human Pathophysiology | BSC 196/197, BSC 203, 219 or 283 recommended |
| 375 Stream Ecology Lecture (3) | BSC 196, 197; min 45 hours completed |
| 376 Stream Ecology Laboratory (1) | Concurrent registration in BSC 375 |
| 396 Avian Biology (4)\* | BSC 196 and 197 |

\*Must take 2 lab courses from elective list in addition to BSC 196, 197, and 260.