

III. BIOLOGICAL SCIENCES

Contents

| | |
|--|----|
| 8-Semester Plans | 2 |
| Biology B.S. with Biomedical Concentration..... | 2 |
| Biology B.S. with Cellular Concentration | 3 |
| Biology B.S. with Ecological Concentration | 4 |
| Biology B.S. with General Concentration | 5 |
| Biology B.S. with Organismal Concentration | 6 |
| Biology (B.S.) with Secondary Teaching Certification | 7 |
| Biopsychology B.S. | 8 |
| Environmental Science | 9 |
| Molecular Biology B.S. | 10 |
| Sustainability Studies (B.A.) with Community Development concentration | 11 |

8-Semester Plans

Biology B.S. with Biomedical Concentration

| Course # | Course name | Credits | Course # | Course name | Credits |
|--------------------------|-------------------------------------|--------------|----------------------------|---|--------------|
| First Year – Fall | | | First Year – Spring | | |
| BIOL 160 | Molecular and Cellular Biology | 4 | BIOL 164 | Animal Form/Systematics (J-Term) | 2 |
| CHEM 105 | General Chemistry I | 4 | BIOL 166 | Principles Comparative Physiology | 2 |
| IDFY 101 | First Year Seminar* | 3 | BIOL 162 | Plant Form and Function | 3 |
| COMM 105 | Fundamentals of Oral Communication* | 3 | CHEM 106 | General Chemistry II | 4 |
| WELL 1xx | Wellness Course* | 1 | IDCR 151 | Created and Called for Community* | 3 |
| | | | Varies | 1 st Language* | 3 |
| TOTAL | | 14 | TOTAL | | 17 |
| Sophomore – Fall | | | Sophomore – Spring | | |
| BIOL 260 | Genetics and Development | 4 | BIBL 2xx | Encountering the Bible* | 3 |
| CHEM 309 | Organic Chemistry I | 4 | BIOL 262 | Ecology and Adaptation | 4 |
| ENGL xxx | Literature* | 3 | CHEM 310 | Organic Chemistry II | 4 |
| MATH 108 | Intuitive Calculus | 3 | STAT 269 | Introductory Statistics | 3 |
| Varies | 2 nd Language* | 3 | Varies | 3 rd Language or Cross-Cultural* | 3 |
| TOTAL | | 17 | TOTAL | | 17 |
| Junior – Fall | | | Junior – Spring | | |
| BIOL 385 | Physiology | 4 | BIOL 38x | Microbiology | 4 |
| CHEM 410 | Biochemistry I | 4 | BIOL 393 | Research Methods | 1 |
| PHIL 10x | Philosophy* | 3 | HIST xxx | History* | 3 |
| PHYS 201 | Introduction to Physics | 4 | Varies | Non-Western Studies* | 2-3 |
| | | | Varies | Art, Music, Theatre or Dance* | 3 |
| | | | Varies | Social Science* | 3 |
| TOTAL | | 15 | TOTAL | | 16-17 |
| Senior – Fall | | | Senior – Spring | | |
| BIOL xxx | Biodiversity/Adaptation Elective | 3-4 | BIOL 495 | Natural Sciences Capstone | 3 |
| BIOL xxx | Biomedical Elective | 3-4 | BIOL xxx | Biomedical Elective | 3-4 |
| BIOL 422 | Senior Research | 1-2 | THEO/RELI | Christian Beliefs* | 3 |
| IDS xxx | Ethics/World Views/Pluralism* | 3 | Varies | Elective | 3 |
| Varies | Elective | 3 | Varies | Elective | 3 |
| TOTAL | | 13-16 | TOTAL | | 15-16 |

*QuEST requirement

Students must have a minimum of 17 credits in their concentration. They must also have three 300/400 level lab courses OR two 300/400 level lab courses and one BIOL course with extensive field experience (BIOL 218, 296, or 297) within the major.

Students intending to pursue certain graduate level programs such as medical or veterinary school should also take PHYS 202 Intro to Physics II in the spring of the third year.

Biology B.S. with Cellular Concentration 8 Semester Plan

| Course # | Course name | Credits | Course # | Course name | Credits |
|--------------------------|---|--------------|----------------------------|---|--------------|
| First Year – Fall | | | First Year – Spring | | |
| BIOL 160 | Molecular and Cellular Biology | 4 | BIOL 164 | Animal Form/Systematics (J-Term) | 2 |
| CHEM 105 | General Chemistry I | 4 | BIOL 166 | Principles Comparative Physiology | 2 |
| IDFY 101 | First Year Seminar* | 3 | BIOL 162 | Plant Biology | 3 |
| COMM 105 | Fundamentals of Oral Communication* | 3 | CHEM 106 | General Chemistry II | 4 |
| WELL 1xx | Wellness Course* | 1 | IDCR 151 | Created and Called for Community* | 3 |
| | | | Varies | 1 st Language* | 3 |
| | | TOTAL | | | TOTAL |
| | | 15 | | | 17 |
| Sophomore – Fall | | | Sophomore – Spring | | |
| BIOL 260 | Genetics and Development | 7 | BIOL 262 | Ecology and Adaptation | 4 |
| CHEM 309 | Organic Chemistry I | 4 | CHEM 310 | Organic Chemistry II | 4 |
| ENGL xxx | Literature* | 3 | PHIL 10x | Philosophy* | 3 |
| MATH 108 | Intuitive Calculus | 3 | STAT 269 | Introductory Statistics | 3 |
| | | | Varies | 2 nd Language* | 3 |
| | | TOTAL | | | TOTAL |
| | | 17 | | | 17 |
| Junior – Fall | | | Junior – Spring | | |
| BIBL 2xx | Encountering the Bible* | 3 | BIOL 412 OR BIOL 417 | Cellular Biology OR Molecular Genetics | 4 |
| BIOL 413 | Molecular Biology | 4 | BIOL 393 | Research Methods | 1 |
| PHYS 201 | Intro to Physics I | 4 | HIST xxx | History* | 3 |
| Varies | Social Science* | 3 | Varies | Non-Western Studies* | 2-3 |
| Varies | 3 rd Language OR Cross-Cultural* | 3 | Varies | Art, Music, Theatre or Dance* | 3 |
| | | TOTAL | | | TOTAL |
| | | 17 | | | 13-14 |
| Senior – Fall | | | Senior – Spring | | |
| BIOL xxx | Integrative Elective | 3-4 | BIOL 495 | Natural Sciences Capstone | 3 |
| BIOL xxx | Biodiversity/Adaptation Elective | 3-4 | BIOL xxx | Cellular Biology elective | 1-4 |
| BIOL 422 | Senior Research | 1-2 | THEO/RELI | Christian Beliefs* | 3 |
| IDS xxx | Ethics/World Views/Pluralism* | 3 | Varies | Elective | 3 |
| Varies | Elective | 3 | Varies | Elective | 3 |
| | | TOTAL | | | TOTAL |
| | | 13-16 | | | 13-16 |

*QuEST requirement

Students must have a minimum of 17 credits in their concentration. They must also have three 300/400 level lab courses OR two 300/400 level lab courses and one BIOL course with extensive field experience (BIOL 218, 296, or 297) within the major.

Biology B.S. with Ecological Concentration 8 Semester Plan

| Course # | Course name | Credits | Course # | Course name | Credits |
|--------------------------|-------------------------------------|--------------|----------------------------|--|--------------|
| First Year – Fall | | | First Year – Spring | | |
| BIOL 160 | Molecular and Cellular Biology | 4 | BIOL 164 | Animal Form/Systematics (J-Term) | 2 |
| CHEM 105 | General Chemistry I | 4 | BIOL 166 | Principles Comparative Physiology | 2 |
| IDFY 101 | First Year Seminar* | 3 | BIOL 162 | Plant Biology | 3 |
| COMM 105 | Fundamentals of Oral Communication* | 3 | CHEM 106 | General Chemistry II | 4 |
| WELL 1xx | Wellness Course* | 1 | IDCR 151 | Created and Called for Community* | 3 |
| | | | Varies | 1 st Language* | 3 |
| TOTAL | | 15 | TOTAL | | 17 |
| Sophomore – Fall | | | Sophomore – Spring | | |
| BIOL 260 | Genetics and Development | 4 | BIOL 262 | Ecology and Adaptation | 4 |
| CHEM 309 | Organic Chemistry I | 4 | CHEM 310 | Organic Chemistry II | 4 |
| ENGL xxx | Literature* | 3 | PHIL 10x | Philosophy* | 3 |
| MATH 108 | Intuitive Calculus | 3 | STAT 269 | Introductory Statistics | 3 |
| Varies | 2 nd Language* | 3 | Varies | 3 rd Language or Cross-Cultural* | 3 |
| TOTAL | | 17 | TOTAL | | 17 |
| Junior – Fall | | | Junior – Spring | | |
| BIBL 2xx | Encountering the Bible* | 3 | BIOL 381 or BIOL 382 | Microbiology OR Microbiology for Health Professions | 4 |
| BIOL 2xx | Integrative Biology elective | 3-4 | BIOL 393 | Research Methods | 1 |
| PHYS 201 | Introduction to Physics | 4 | HIST xxx | History* | 3 |
| Varies | Social Science* | 3 | Varies | Non-Western Studies* | 2-3 |
| | | | Varies | Art, Music, Theatre or Dance* | 3 |
| TOTAL | | 13-14 | TOTAL | | 13-14 |
| Senior – Fall | | | Senior – Spring | | |
| BIOL xxx | Biodiversity/Adaptation elective | 4 | BIOL 495 | Natural Sciences Capstone | 3 |
| BIOL xxx | Ecological elective | 3-4 | BIOL xxx | Ecosystems elective | 4 |
| BIOL 422 | Senior Research | 1-2 | THEO/RELI | Christian Beliefs* | 3 |
| IDS xxx | Ethics/World Views/Pluralism* | 3 | Varies | Elective | 3 |
| Varies | Elective | 3 | Varies | Elective | 3 |
| TOTAL | | 14-16 | TOTAL | | 16 |

*QuEST requirement

Students must have a minimum of 17 credits in their concentration. They must also have three 300/400 level lab courses OR two 300/400 level lab courses and one BIOL course with extensive field experience (BIOL 218, 296, or 297) within the major.

Biology B.S. with General Concentration 8 Semester Plan

| Course # | Course name | Credits | Course # | Course name | Credits |
|--------------------------|---|--------------|----------------------------|-------------------------------------|--------------|
| First Year – Fall | | | First Year – Spring | | |
| BIOL 160 | Molecular and Cellular Biology | 4 | BIOL 164 | Animal Form/ Systematics (J-Term) | 2 |
| CHEM 105 | General Chemistry I | 4 | BIOL 166 | Principles Comparative Physiology | 2 |
| IDFY 101 | First Year Seminar* | 3 | BIOL 162 | Plant Biology | 3 |
| COMM 105 | Fundamentals of Oral Communication* | 3 | CHEM 106 | General Chemistry II | 4 |
| WELL 1xx | Wellness Course* | 1 | IDCR 151 | Created and Called for Community* | 3 |
| | | | Varies | 1 st Language* | 3 |
| | | TOTAL | | | TOTAL |
| | | 15 | | | 17 |
| Sophomore – Fall | | | Sophomore – Spring | | |
| BIOL 260 | Genetics and Development | 7 | BIOL 262 | Ecology and Adaptation | 4 |
| CHEM 309 | Organic Chemistry I | 4 | CHEM 310 | Organic Chemistry II | 4 |
| BIBL 2xx | Encountering the Bible* | 3 | PHIL 10x | Philosophy* | 3 |
| MATH 108 | Intuitive Calculus | 3 | STAT 269 | Introductory Statistics | 3 |
| | | | Varies | 2 nd Language* | 3 |
| | | TOTAL | | | TOTAL |
| | | 17 | | | 17 |
| Junior – Fall | | | Junior – Spring | | |
| BIOL xxx | Elective | 3 | BIOL xxx | Cellular/Molecular Biology elective | 4 |
| ENGL xxx | Literature Integrative Biology | 3-4 | BIOL 393 | Research Methods | 1 |
| PHYS 201 | Introduction to Physics | 4 | HIST xxx | History* | 3 |
| Varies | Social Science* | 3 | IDNW xxx | Non-Western Studies* | 2-3 |
| Varies | 3 rd Language OR Cross Cultural* | 3 | Varies | Art, Music, Theatre or Dance* | 3 |
| | | TOTAL | | | TOTAL |
| | | 16-17 | | | 13-14 |
| Senior – Fall | | | Senior – Spring | | |
| BIOL xxx | Biodiversity/Adaptation Elective | 3 | BIOL 495 | Natural Sciences Capstone | 3 |
| BIOL xxx | Biology elective | 3-4 | BIOL xxx | Biology elective | 3-4 |
| BIOL 422 | Senior Research | 1-2 | THEO/RELI | Christian Beliefs* | 3 |
| IDS xxx | Ethics/World Views/Pluralism* | 3 | Varies | Elective | 3 |
| Varies | Elective | 3 | Varies | Elective | 3 |
| | | TOTAL | | | TOTAL |
| | | 13-15 | | | 15-16 |

*QuEST requirement

Students must have a minimum of 17 credits in their concentration. They must also have three 300/400 level lab courses OR two 300/400 level lab courses and one BIOL course with extensive field experience (BIOL 218, 296, or 297) within the major.

Biology B.S. with Organismal Concentration 8 Semester Plan

| Course # | Course name | Credits | Course # | Course name | Credits |
|--------------------------|-------------------------------------|--------------|----------------------------|---|--------------|
| First Year – Fall | | | First Year – Spring | | |
| BIOL 160 | Molecular and Cellular Biology | 4 | BIOL 164 | Animal Form/ Systematics (J-Term) | 2 |
| CHEM 105 | General Chemistry I | 4 | BIOL 166 | Principles Comparative Physiology | 2 |
| IDFY 101 | First Year Seminar* | 3 | BIOL 162 | Plant Biology | 3 |
| COMM 105 | Fundamentals of Oral Communication* | 3 | CHEM 106 | General Chemistry II | 4 |
| WELL 1xx | Wellness Course* | 1 | IDCR 151 | Created and Called for Community* | 3 |
| | | | Varies | 1 st Language* | 3 |
| TOTAL | | 15 | TOTAL | | 17 |
| Sophomore – Fall | | | Sophomore – Spring | | |
| BIOL 260 | Genetics and Development | 4 | BIOL 262 | Ecology and Adaption | 4 |
| CHEM 309 | Organic Chemistry I | 4 | CHEM 310 | Organic Chemistry II | 4 |
| ENGL xxx | Literature* | 3 | PHIL 10x | Philosophy* | 3 |
| MATH 108 | Intuitive Calculus | 3 | STAT 269 | Introductory Statistics | 3 |
| Varies | 2 nd Language* | 3 | Varies | 3 rd Language or Cross-Cultural* | 3 |
| TOTAL | | 17 | TOTAL | | 17 |
| Junior – Fall | | | Junior – Spring | | |
| BIBL 2xx | Encountering the Bible* | 3 | BIOL 38x | Microbiology | 4 |
| BIOL xxx | Integrative Bio. elective | 3-4 | BIOL 393 | Research Methods | 1 |
| PHYS 201 | Introduction to Physics | 4 | HIST xxx | History* | 3 |
| Varies | Social Science* | 3 | Varies | Non-Western Studies* | 2-3 |
| | | | Varies | Art, Music, Theatre or Dance* | 3 |
| TOTAL | | 13-14 | TOTAL | | 13-14 |
| Senior – Fall | | | Senior – Spring | | |
| BIOL xxx | Biodiversity/Adaptation elective | 4 | BIOL 495 | Natural Sciences Capstone | 3 |
| BIOL xxx | Organismal elective | 1-4 | BIOL xxx | Biodiversity/Adaptation elective | 4 |
| BIOL 422 | Senior Research | 1-2 | THEO/RELI | Christian Beliefs* | 3 |
| IDS xxx | Ethics/World Views/Pluralism* | 3 | Varies | Elective | 3 |
| Varies | Elective | 3 | Varies | Elective | 3 |
| TOTAL | | 12-16 | TOTAL | | 16 |

*QuEST requirement

Students must have a minimum of 17 credits in their concentration. They must also have three 300/400 level lab courses OR two 300/400 level lab courses and one BIOL course with extensive field experience (BIOL 218, 296, or 297) within the major.

Biology (B.S.) with Secondary Teaching Certification 8 Semester Plan

| Course # | Course name | Credits | Course # | Course name | Credits |
|---------------------------|--|--------------|----------------------------|---|--------------|
| First Year – Fall | | | First Year – Spring | | |
| BIOL 160 | Molecular and Cellular Biology | 4 | BIOL 164 | Animal Form/ Systematics (J-Term) | 2 |
| CHEM 105 | General Chemistry I | 4 | BIOL 166 | Principles Comparative Physiology | 2 |
| COMM 105 ^a | Fundamentals of Oral Communication* | 3 | BIOL 162 | Plant Biology | 3 |
| IDFY 101 ^a | First Year Seminar* | 3 | CHEM 106 | General Chemistry II | 4 |
| Varies | 1st Language* | 3 | IDCR 151 | Created and Called for Community* | 3 |
| | | | Varies | 2 nd Language* | 3 |
| | | | | Submit the three required security clearances (FBI, Child Abuse, Criminal) by 3/31 to B414. | |
| TOTAL | | 17 | TOTAL | | 17 |
| Sophomore – Fall | | | Sophomore – Spring | | |
| BIOL 260 | Genetics and Development | 4 | BIOL 262 | Ecology and Adaptation | 4 |
| CHEM 204 | Intro to Organic Chemistry | 4 | EDUC 201 | Ed. and American Society | 3 |
| ENGL 122-176 ^a | Literature* | 3 | EDSP 207 ^c | Intro to Special Ed | 3 |
| MATH 108 ^a | Intuitive Calculus | 3 | EDUC 203 ^c | Educational Psychology | 3 |
| Varies | 3 rd Language or Cross Cultural* | 3 | EDUC 210 ^c | Sophomore Field Experience | 0 |
| | | | STAT 269 ^a | Introductory Statistics | 3 |
| | | | WELL 1xx | Wellness Course* | 1 |
| | | | | Submit Teacher Ed. Program application by 3/31 to B414. | |
| TOTAL | | 17 | TOTAL | | 17 |
| Junior – Fall | | | Junior – Spring | | |
| BIOL xxx | Integrative Biology Elective | 3-4 | BIBL 20x | Knowledge of the Bible* | 3 |
| BIOL xxx | Cellular Biology Elective | 4 | EDUC 331 ^{b c} | Instruct. Design & Assessment | 3 |
| PHIL 10x | Philosophy* | 3 | EDSP 307 ^b | Inclusion Practices | 3 |
| PHYS 201 | Intro to Physics I | 4 | EDUC 310 ^{b c} | Junior Field Experience | 0 |
| | | | ENGL 330 ^{b c} | TESOL Methodology | 3 |
| | Submit professional semester app. by 11/1 to B414. | | ESS 201 | Earth and Space Science | 3 |
| | | | SCI 307 | Teaching Lab Sciences in Secondary Education | 1 |
| TOTAL | | 14-15 | TOTAL | | 16 |
| Senior – Fall | | | Senior – Spring | | |
| | <u>Professional Semester</u> | | BIOL 495 | Capstone | 3 |
| BIOL 407 ^{b c} | Secondary Science C&I | 1 | BIOL xxx | Integrative/Botany Elective | 3-4 |
| EDUC xxx ^{b c} | Student Teaching | 8 | HIST 1xx | History* | 3 |
| EDUC 420 ^{b c} | Professional Issues | 2 | THEO/RELI | Christian Beliefs* | 3 |
| | | | Varies | Art, Music, Theatre, or Dance* | 3 |
| TOTAL | | 11 | TOTAL | | 15-16 |

*QuEST requirement

^a Indicates requirement for admission to the TEP

^b Indicates a course that cannot be taken until the student is admitted to the TEP

^c Indicates courses that must be taken concurrently

Biopsychology B.S. 8 Semester Plan

| Course # | Course name | Credits | Course # | Course name | Credits |
|--------------------------|--------------------------------|--------------|----------------------------|--|--------------|
| First Year – Fall | | | First Year – Spring | | |
| BIOL 160** | Molecular and Cellular Biology | 4 | BIOL 164** | Animal Form/Systematics (J-Term) | 2 |
| CHEM 105 | General Chemistry I | 4 | BIOL 166 | Principles Comparative Physiology | 2 |
| IDFY 101 | First Year Seminar* | 3 | CHEM 106 | General Chemistry II | 4 |
| PSYC 099** | Writing for Psychology | 1 | IDCR 151 | Created and Called for Comm.* | 3 |
| PSYC 101 | Introduction to Psychology | 3 | STAT 269 OR MATH xxx | Statistics (recommended) OR Mathematical Science | 3 |
| WELL 1xx | Wellness Course* | 1 | | | |
| TOTAL | | 16 | TOTAL | | 17 |
| Sophomore – Fall | | | Sophomore – Spring | | |
| BIBL 2xx | Encountering the Bible* | 3 | CHEM 310*** | Organic Chemistry II | 4 |
| BIOL 260** | Genetics and Development | 4 | Varies | Language course*/ elective | 3 |
| CHEM 309*** | Organic Chemistry I | 4 | PSYC 209 | Life Span Development | 1 |
| PSYC 204 OR | Cognition OR | 3 | PSYC 272 | Research Methods in Psychology | 3 |
| PSYC 319 | Abnormal Psychology | | Varies | Elective | 3 |
| Varies or | Language course* or | 3 | | | |
| PSYC 271 | Statistics (if MATH xxx taken) | | | | |
| TOTAL | | 17 | TOTAL | | 14 |
| Junior – Fall | | | Junior – Spring | | |
| BIOL 387 | Neuroscience | 3 | BIOL xxx | Biology elective† | 3-4 |
| ENGL xxx | Literature* | 3 | COMM 105 | Fundamentals of Oral Communication* | 3 |
| Varies | Language or Cross-Cultural* | 3 | Varies | Language or Cross-Cultural* | 3 |
| PSYC 350 | Biological Basis of Behavior | 3 | PHIL 10x | Philosophy* | 3 |
| Varies | Elective | 3 | PSYC 351 | Sensation and Perception | 3 |
| TOTAL | | 15 | TOTAL | | 15-16 |
| Senior – Fall | | | Senior – Spring | | |
| BIOL xxx | Biology elective | 3-4 | BIOL/PSYC 495 | Capstone Biology OR Psychology | 3 |
| Varies | Non-Western Studies* | 2-3 | HIST xxx | History* | 3 |
| PSYC 408 | Experimental Psychology | 3 | THEO/RELI | Christian Beliefs* | 3 |
| Varies | Ethics/World Views/Pluralism* | 3 | Varies | Art, Music, Theatre or Dance* | 3 |
| Varies | Elective | 3 | Varies | Elective | 3 |
| TOTAL | | 14-16 | TOTAL | | 15 |

*QuEST requirement

**Students may take BIOL 185, 186, 189 and PSYC 099 in place of BIOL 160, 162, 164, 166 and 260.

*** Students may take CHEM 204 in place of CHEM 309 and 310.

† Needed only if CHEM 204 taken

Environmental Science 8 Semester Plan

| Course # | Course name | Credits | Course # | Course name | Credits |
|--------------------------|---|--------------|----------------------------|---|--------------|
| First Year – Fall | | | First Year – Spring | | |
| BIOL 160 | Molecular and Cellular Biology | 4 | BIOL 164 | Animal Form/Systematics (J-Term) | 2 |
| CHEM 105 | General Chemistry I | 4 | BIOL 166 | Principles Comparative Physiology | 2 |
| IDFY 101 | First Year Seminar* | 3 | BIOL 162 | Plant Biology | 3 |
| WELL 1xx | Wellness* | 1 | CHEM 106 | General Chemistry II | 4 |
| Varies | 1 st Language* | 3 | IDCR 151 | Created and Called for Community* | 3 |
| | | | Varies | 2 nd Language | 3 |
| | | TOTAL | | | TOTAL |
| | | 15 | | | 17 |
| Sophomore – Fall | | | Sophomore – Spring | | |
| GEOL 201 | Foundations of Geology | 4 | BIOL 262 | Ecology & Adaptation | 4 |
| CHEM 204 | Intro to Organic Chemistry | 4 | CHEM 240 | Environmental Chemistry* | 4 |
| ENGL 174 | Literature & the Environment | 3 | GIS 245 | Intro to Geo. Info. Systems | 3 |
| COMM 105 | Fundamentals of Oral Communication* | 3 | STAT 269 | Statistics | 3 |
| ENVS 216 | Envi. Issues/Sust. Sol. (if BIOL 334 not taken) | 3 | Varies | 3 rd Language or Cross-Cultural* | 3 |
| | | TOTAL | | | TOTAL |
| | | 17 | | | 17 |
| Junior – Fall | | | Junior – Spring | | |
| ENVS 315 | Environmental Ethics | 3 | BIOL 3xx | Ornithology or Herpetology | 4 |
| ENVS 270/271 | Environmental Techniques | 2 | HIST 1xx | History* | 3 |
| BIBL 2xx | Encountering the Bible* | 3 | PHIL/RELI | Philosophy/Religion* | 3 |
| THEO/RELI | Christian Beliefs* | 3 | Varies | Arts* | 3 |
| Varies | Elective | 3 | Varies | Elective | 3 |
| | | TOTAL | | | TOTAL |
| | | 14 | | | 16 |
| Senior – Fall | | | Senior – Spring | | |
| BIOL 332 | Plant Taxonomy/Systematics | 4 | ENVS 495 | Environmental and Sustainability Studies Capstone | 3 |
| BIOL 422 OR | Senior Research OR | 1-4 | INTE 391 | Internship (if not taken in Fall) | 1-4 |
| INTE 391 | Internship | | IDCC 260 | Cross-Cultural | 3 |
| IDNW 2xx | Non-Western Studies | 2-3 | BIOL | Plant Ecology (if ENVS 216 not taken) | 4 |
| Varies | Electives | 1-3 | Varies | Elective | 3-5 |
| | | TOTAL | | | TOTAL |
| | | 8-14 | | | 14-19 |

*QuEST requirement

Note 1: All Environmental Science majors must take CHEM 204 and CHEM 240. Those students intending to enter graduate school and whose work will involve a significant amount of chemical emphasis should substitute CHEM 309 and 310 for CHEM 204.

Note 2: All Environmental Science majors are encouraged to complete one course at AuSable Institute. AuSable courses can count only as elective credit. Majors are encouraged to do an internship and/or research experience.

+ Offered fall, odd years only.

++ Offered spring, even years only.

Molecular Biology B.S. 8 Semester Plan

| Course # | Course name | Credits | Course # | Course name | Credits |
|--------------------------|--------------------------------|--------------|----------------------------|---|-----------|
| First Year – Fall | | | First Year – Spring | | |
| BIOL 160 | Molecular and Cellular Biology | 4 | BIOL 164 | Animal Form/Systematics (J-Term) | 2 |
| CHEM 105 | General Chemistry I | 4 | BIOL 166 | Principles Comparative Physiology | 2 |
| IDFY 101 | First Year Seminar* | 3 | BIOL 162 | Plant Biology | 3 |
| WELL 1xx | Wellness Course* | 1 | CHEM 106 | General Chemistry II | 4 |
| Varies | Social Science | 3 | COMM 105 | Fundamentals of Oral Communication* | 3 |
| | | | IDCR 151 | Created and Called for Community* | 3 |
| | | | | | |
| | TOTAL | 15 | | TOTAL | 17 |
| Sophomore – Fall | | | Sophomore – Spring | | |
| BIOL 260 | Genetics and Development | 4 | CHEM 310 | Organic Chemistry II | 4 |
| CHEM 309 | Organic Chemistry I | 4 | BIBL 20x | Encountering the Bible* | 3 |
| MATH 108/111 | Calculus | 3/4 | STAT 269 | Introductory Statistics | 3 |
| IDNW 2xx | Non-Western Studies | 2/3 | Varies | Art, Music, Theatre or Dance* | 3 |
| Varies | 1 st Language | 3 | Varies | 2 nd Language* | 3 |
| | | | | | |
| | TOTAL | 16-18 | | TOTAL | 16 |
| Junior – Fall | | | Junior – Spring | | |
| BIOL 413 | Molecular Biology** | 4 | BIOL 417 | Molecular Genetics** | 4 |
| CHEM 410 | Biochemistry I** | 4 | CHEM 412 | Biochemistry II** | 4 |
| BIOL 385 | Physiology | 4 | HIST 1xx | History* | 3 |
| PHIL/RELI | Philosophy/Religion* | 3 | ENGL xxx | Literature* | 3 |
| | | | Varies | 3 rd Language or Cross-Cultural* | 3 |
| | | | | | |
| | TOTAL | 15 | | TOTAL | 17 |
| Senior – Fall | | | Senior – Spring | | |
| PHYS 201 | Intro to Physics I** | 4 | BIOL 412 | Cell Biology* | 4 |
| THEO/RELI | Christian Beliefs* | 3 | BIOL/CHEM | Biology/Chemistry Elective | 4 |
| Varies | Ethics/World Views/Pluralism* | 3 | BIOL 495 | Natural Science Capstone | 3 |
| Varies | Elective | 3 | PHYS 202 | Intro to Physics II** | 4 |
| Varies | Elective | 3 | | | |
| | | | | | |
| | TOTAL | 16 | | TOTAL | 15 |

*QuEST requirement

**Interchangeable between junior and senior year. Note that BIOL 413 is a pre-requisite for BIOL 417, and that BIOL 417 is only offered every other spring.

Sustainability Studies (B.A.) with Community Development concentration 8-semester Plan

| Course # | Course name | Credits | Course # | Course name | Credits |
|--------------------------|---|--------------|-----------------------------|--|--------------|
| First Year – Fall | | | First Year – Spring | | |
| COMM 105 | Fundamentals of Oral Communication* | 3 | IDCR 151 | Created and Called for Community* | 3 |
| IDFY 101 | First Year Seminar* | 3 | varies | 2 nd Language* | 3 |
| PHIL/RELI | Philosophy/Religion* | 3 | STAT 269 | Statistics or Quest mathematics | 3-4 |
| ENVS 140 | Intro to Ecology & Sustainability** (meets lab sci) | 3 | SOCI 212 | Cultural Anthropology (meets NW) | 3 |
| varies | 1 st Language course* | 3 | HIST 1xx | History* | 3 |
| | | TOTAL | | | TOTAL |
| | | 15 | | | 15-16 |
| Sophomore – Fall | | | Sophomore – Spring | | |
| varies | 3 rd Language or Cross-Cultural* | 3 | Varies | Art, Music, Theatre or Dance* | 3 |
| BIBL 20x | Knowledge of the Bible* | 3 | WELL 1xx | Wellness Course* | 1 |
| Varies | Major Elective (ECON 117, POLI 113, SOCI 315 or STAT 269) | 3 | GIS 245 | Intro to Geographic Information System (alt year) or Major Elective (ECON 117, POLI 113, SOCI 315 or STAT 269) | 3 |
| ENVS 216 | Environmental Issues (meets STW) | 3 | BIOL 162 | Plant Biology | 3 |
| CHEM 103 | Chemical Science | 3 | ENGL 1xx | Literature* (suggested: 174) | 3 |
| | | | Varies | Minor or Free Elective | 2-3 |
| | | TOTAL | | | TOTAL |
| | | 15 | | | 15-16 |
| Junior – Fall | | | Junior – Spring | | |
| ENVS 315 | Environmental Ethics (meets Ethics) | 3 | SOCI 310 | Food, Power and Society (meets social sci) | 3 |
| BIOL 334 | Plant Ecology | 3 | BIOL 335 | Plant Propagation | 3 |
| Varies | Concentration Elective | 3 | GIS 245 | Intro to Geographic Information System (alt year) or Major Elective (ECON 117, POLI 113, SOCI 315 or STAT 269) | 3 |
| varies | Minor or Free Elective | 3 | Varies | Concentration Elective | 3 |
| Varies | Concentration Elective | 3 | varies | Minor or Free Elective | 3 |
| | | TOTAL | | | TOTAL |
| | | 15 | | | 15 |
| Senior – Fall | | | Senior – Spring | | |
| varies | Minor or Free Elective or Study Abroad | 3 | SUST 495 | Environmental Science and Sustainability Capstone | 3 |
| varies | Minor or Free Elective or Study Abroad | 3 | INTE 391 <u>OR</u> SOCI 395 | Internship Practicum | 3 |
| varies | Minor or Free Elective or Study Abroad | 3 | varies | Minor or Free Elective | 3 |
| varies | Minor or Free Elective or Study Abroad | 3 | varies | Minor or Free Elective | 3 |
| varies | Minor or Free Elective or Study Abroad | 3 | varies | Minor or Free Elective | 3 |
| | | TOTAL | | | TOTAL |
| | | 15 | | | 15 |

*QuEST requirement

- ECON 117 and GIS 245 alternate years but BOTH occur in the same spring).
- This does not include your AuSable Institute options of BIOL\AGRIC\GEOG 303- Tropical Agriculture which meets in May term in Costa Rica or BIOL\AGRIC\GEOG 343 International Development and Environmental Sustainability which meets in Washington State mid-July through Mid-August. Financial Aid deadlines for these courses are 12/15 of the winter before, 2/15 and 3/15 of the course year.