BACHELOR OF ARTS IN BIOLOGY

BIOLOGY-SCIENCE TECHNOLOGY & SOCIETY DOUBLE MAJOR

Total Minimum Credits: 128

All biology and cognate courses require grades of C or better.

YEAR 1

Fall Semester		Cr.	Spring Semester		Cr.
HUM 101	English I	3	STS 101	Found of Science, Tech, Society	3
Math 111	Calculus I	4	Hum 102	English Composition II	3
Chem 125	General Chemistry I	3	Math 105	Probability and Statistics	3
BNFO 135	Bioinformatics I	3	Chem 124	General Chemistry Laboratory	1
BIOL 200	Concepts in Biology	4	Chem 126	General Chemistry II	3
Frsh Sem	Freshman Seminar	0	R120:201/202	Foundations of Cell/Molec	4
		17			17

YEAR 2

Fall Semester		Cr.	Spring Semester		Cr.
Phys 111	Physics I	3	Phys 121	Physics II	3
Phys 111A	Physics I Laboratory	1	Phys 121A	Physics II Laboratory	1
BIOL 205/206	Foundation of Ecol/Evol	4	Chem 244/244A	Organic Chemistry II & Lab	5
Chem 243	Organic Chemistry I	3	STS 258	Tech, Soc & Culture: Global View	3
STS 257	Tech, Soc & Culture: American View	3	Elective	BIO/STS Course[1] ≺ Focus 1 ≻	3
GUR Elective	Physical Education	1	GUR Elective	Physical Education	1
		15			16

YEAR 3

Fall Semester		Cr.	Spring Semester		Cr.
STS 304	Writing about STS	3	STS 301	Independent Study	1
Phil 355	Philosophy of Science	3	STS 307	Research Methods in STS	3
Elective	BIO/STS Course ≺ Focus 2 ≻	3	STS 310	Technology and Human Values	3
Biology Elective	Cluster Elective - Functional Org	4	Elective	BIO/STS Course ≺ Focus 3 ≻	3
Biology Elective	Cluster Elective - Ecol/Evol	3	Elective	BIO/STS Course ≺ Focus 4 ≻	3
			Biology Elective	Bio Laboratory Elective[2]	4
		16			17

YEAR 4

Fall Semester		Cr.	Spring Semester		Cr.
Mgmt 390	Principles of Management	3	HSS 408	Humanities Senior Seminar	3
STS 490	Project and Seminar I	3	STS 491	Project and Seminar II	3
Elective	BIO/STS Course ≺ Focus 5 ≻	3	Elective	BIO/STS Course ≺ Focus 6 ≻	3
Biology Elective	Cluster Elective - Molec/Cell	3	Elective	Biology Elective	3
Biology Elective	Bio Laboratory Elective[2]	3	Elective	Biology Elective	3
		15			15

Total Credits: 128

Biology Credits: 35 ~ STS Credits: 34

[1] BIO/STS Electives: Six courses: Focus Courses approved by the Director of the STS program, Prof. Robert Friedman.

[2] BIO Laboratory Electives: *7 credits minimum:* Choice of one 4 credit laboratory and one 3 or 4 credit laboratory.

BACHELOR OF ARTS IN BIOLOGY

BIOLOGY-SCIENCE TECHNOLOGY & SOCIETY DOUBLE MAJOR

Total Minimum Credits: 128

All biology and cognate courses require grades of C or better.

REQUIRED CORE BIOLOGY COURSES ~ 12 Credits * REQUIRED CORE STS COURSES ~ 28 Credits

- ❑ R120/BIOL 200 Concepts in Biology* (4cr) **Effective from Fall 2011*
- ❑ R120:201 Foundations of Cell & Molecular Biology Lecture (3cr)
- ❑ R120:202 Foundations of Cell & Molecular Biology Lab (1cr)
- ❑ BIOL 205 Foundations of Ecology & Evolution Lecture (3cr)
- ❑ BIOL 206 Foundations of Ecology & Evolution Lab (1cr)

- ❑ STS 101 Found of Science, Tech, Society (3cr)
- ❑ STS 257 Tech, Soc & Culture: American View (3cr)
- ❑ STS 258 Tech, Soc & Culture: Global View (3cr)
- ❑ STS 304 Writing about STS (3cr)
- ❑ Phil 355 Philosophy of Science (3cr)
- ❑ STS 301 Independent Study (1cr)
- ❑ STS 307 Research Methods in STS (3cr)
- ❑ STS 310 Technology and Human Values (3cr)
- ❑ STS 490 Project and Seminar I (3cr)
- ❑ STS 491 Project and Seminar II (3cr)

CONCEPT CLUSTER BIOLOGY COURSES ~ 10 Credits

*Double Majors must complete **one course from each** of the following **three** concept cluster elective categories:*

- ❑ **Ecological and Evolutionary Framework** (3cr)
  - Evolution (BIOL 222)
  - Ecology (R120:280)
  - Animal Behavior (R120:282)
  - Plant Ecology (R120:370)

- ❑ **Molecular and Cellular Mechanisms** (3cr)
  - Genetics (R120:352)
  - Cell Biology (R120:355)
  - Molecular Biology (R120:356)
  - Biochemistry (R120:360)

- ❑ **The Functional Organism** (4cr)
  - Plant Kingdom (R120:211)
  - Biology of Seed Plants (R120:230)
  - Plant Physiology (R120:330)
  - General Microbiology (R120:335)
  - Mammalian Physiology (R120:340)
  - Developmental Biology & Lab (R120:342/343)

BIO LABORATORY/FIELD EXPERIENCE ~ 7 Credits

*Majors must complete **at least one 4-credit lab** in this category:*

- ❑ **Four Credit Laboratories** (4cr)
  - Plant Kingdom (R120:211)
  - Biology of Invertebrates (R120:227)
  - Biology of Seed Plants (R120:230)
  - Comparative Vertebrate Anatomy (R120:285)
  - Taxonomy of Vascular Plants (R120:311)
  - Mycology (R120:313)
  - Animal Parasites & Parasitology Lab (R120:325/326)

Four Credit Laboratories (cont.)
- Plant Physiology (R120:330)
- General Microbiology (R120:335)
- Mammalian Physiology (R120:340)
- Developmental Biology & Lab (R120:342/343)
- Microanatomy of Tissues (R120:405)
- Plant Growth and Development (R120:430)
- Cell Physiology and Imaging (BIOL 451)

- ❑ **Three Credit Laboratories** (3cr)
  - Ecology of Birds (R120:328)
  - Field Plant Ecology (R120:371)
  - Field Ecology (R120:380)

Three Credit Laboratories (cont.)
- Field Animal Ecology (R120:381)
- Analytical Field Ecology (BIOL 475)
- Tropical Field Ecology (R120:485) - [2cr]

BIOLOGY-STS ELECTIVES ~ 12 Credits [6 Biology & 6 STS Elective Credits]

Double Majors may use the biology courses listed below to complete the Biology-STS Focus Elective Requirements, once approved by Director of STS.

- Insects and Human Society (BIOL 225)
- Neurobiology (BIOL/R120:346)
- Human Ecology (R120:365)
- Physiology and Medicine (Math 371)
- Population Biology (Math 372)
- Introduction to Math Biology (Math 373)
- Biological Ultrastructure (R120:403)
- Light & Elect Microscope (R120:404)
- Biological Invasions (R120:422)
- Computational Neuroscience (Math 430)
- Immunology (R120:443)
- Endocrinology (R120:445)
- Cellular and Systems Neuroscience (Biol 447)
- Cell Physiology & Imaging (Biol 451)
- Cellular Biophysics (R120:451) - [4 cr]
- Molecular Biotechnology (R120:452) -[4 cr]
- Molecular Cell Biology (R120:455)
- Ecological Physiology (R120:471)
- Systems Ecology (R120:487)
- Problems in Biology (BIOL 491/492) - [6cr max]