THE UNIVERSITY of NEW MEXICO

Major Study Requirements for B.A. or B.S. in Biology with a Concentration in EEOB

(Ecology, Evolution and Organismal Biology)

2014-2015 Faculty Advisors: Drs. Jennifer Rudgers, Seth Newsome and Felisa Smith

Concentration in Ecology, Evolution, and Organismal Biology

Climate change and other pressing environmental problems have led to the increased importance of a solid understanding of Ecology, Evolution, and Organismal Biology (EEOB). The EEOB concentration is intended to provide a depth of understanding at multiple hierarchies of biological organization and expose students to the techniques, methodologies and approaches used by these sub-disciplines. Students develop expertise with the biology of a group of organisms, familiarity with methodologies used in study, expertise with the systematics of classification, and significant hands-on experience in the field or research laboratory. The EEOB concentration is available to students pursuing either the Bachelor of Science or Bachelor of Arts in Biology, and is designed to provide a comprehensive background for students planning to pursue graduate school or seek a career in a governmental agency.

Requirements

			Credit Hours
1. Successful completion of the four-course introductory sequence:			
BIOL 201L	Molecular and Cell Biology		4
BIOL 202L	Genetics		4
BIOL 203 & 203L	Ecology and Evolution and Laboratory		4
BIOL 204 & 204L	Plant and Animal Form and Function and Laboratory		4
		Subtotal	16
2. Successful completion of upper-division courses in *both* Ecology and Evolution:			
BIOL 300	Evolution		3
BIOL 310L	Principles of Ecology		3
		Subtotal	6-7
3. Successful completion of at least one taxonomic based course from the following:			
BIOL 450	General Virology		3
BIOL 463L	Flora of New Mexico		4
BIOL 482L	Parasitology		4
BIOL 484/584	Biology of Fungi		3
BIOL 485L	Entomology		4
BIOL 486L	Ornithology		4
BIOL 487L	Ichthyology		4
BIOL 488L	Herpetology		4
BIOL 489L	Mammalogy		4
		Subtotal	3-4

4. Successful completion of at least one synthetic/comparative taxonomic based course and lab from the following:

BIOL 351	General Microbiology	3
BIOL 360L	General Botany	4
BIOL 371L	Invertebrate Biology	4
BIOL 386L	General Vertebrate Zoology	4
	Subtotal	4

5. Successful completion of at least one statistics course from the following:

PSY 200	Statistical Principles	3
STAT 145	Introduction to Statistics	3
STAT 345	Elements of Mathematical Statistics and Probability Theory	3
STAT 427	Advanced Data Analysis I	3

- OR other course with prior approval from EEOB faculty advisory committee

Subtotal 3

6. Successful completion of at least one course from each of the following 3 clusters:

A) Individual (Genes/Physiology) Cluster

BIOL 401	T: Microbial Genetics	3
BIOL 435L	Animal Physiology	4
BIOL 436L	Phylogenetics	4
BIOL 437	Evolutionary Genetics	3
BIOL 460	Microbial Physiology	3
BIOL 471	Plant Physiological Ecology	3
BIOL 478L	Plant Physiology	4

- OR other course with prior approval from EEOB faculty advisory committee

B) Population (Behavior/Population Biology) Cluster

BIOL 409	T: Conservation Genetics	
BIOL 409	T: Sexual Systems in Animals: Diversity and Evolution	3
BIOL 455	Ethology: Animal Behavior	3
BIOL 491	Population Genetics	3
ANTH 360	Human Behavioral Ecology	3
ANTH 363	Primate Social Behavior	3
ANTH 491	Population Genetics	3

- OR other course with prior approval from EEOB faculty advisory committee

C) Community/Ecosystem Cluster

BIOL 405	Ecosystem Dynamics	
BIOL 409	T: Ecology of Plant Microbe Symbiosis	3
BIOL 480/580	Global Change Biology	3
BIOL 451	Microbial Ecology	3
BIOL 475	Plant Community Ecology	3

BIOL 495	Limnology	3
BIOL 511	Macroecology*	3
BIOL 514	Ecosystem Studies*	3
BIOL 535/EPS 535	Freshwater Ecosystems*	3

- OR other course with prior approval from EEOB faculty advisory committee

Subtotal 9-12

7. Demonstration of significant hands-on experience in the field or research laboratory. Choose one:

BIOL 408L	Bosque Internship	1-4
BIOL 409	T: Ornithological Field Expedition	4
BIOL 461L	Introduction to Tropical Biology	3
BIOL 463L	Flora of New Mexico	4
BIOL 496L	Limnology Laboratory	4
BIOL 499	Undergraduate Problems	1
PSY 465L	Gorilla Observation Laboratory	1-4

OR

- Successful completion of an approved field course offered at UNM or at another accredited institution
- Participation in a NSF REU program at UNM or elsewhere
- Other field experience with prior approval from EEOB faculty advisory committee

Subtotal 0-4

8. Successful completion of at least one interdisciplinary synthetic course:

BIOL 379	Conservation Biology	4
BIOL 419	Topics in Interdisciplinary Science	3
BIOL 445	Biology of Toxins	3
BIOL 470	Biology: Discovery and Innovation	3
BIOL 490	Biology of Infectious Organisms	3
BIOL 492	Introductory Mathematical Biology	3
BIOL 494	Biogeography	3
BIOL 495	Limnology	3
BIOL 518	Evolutionary and Ecological Genomics*	3
BIOL 535/EPS 535	Freshwater Ecosystems*	3
BIOL 558/EPS 558	Geomicrobiology*	3
ANTH 350	Human Biology	3
ANTH 357	Human Origins	3
BIOC 423	Introductory Biochemistry	3
EPS 352	Global Climate Change	3
EPS 439	Paleoclimatology	3

- OR other course with prior approval from EEOB faculty advisory committee

Subtotal 3-4

9. Successful completion of at least one semester of the "Brown Bag" seminar:

BIOL 402 Subtotal 1-2

10. Successful completion of additional Biology courses so that the total number of Biology credit hours is greater than or equal to 48 for the Bachelor of Science or 37 for the Bachelor of Arts.

11. Successful completion of supporting courses in Math, Physics, and Chemistry:

Math: (180 and 181) *or* (162 and 163)
Physics: (151 and 152) *or* (160 and 161)
Chemistry: (121 and 123L and 122 and 124L) *or* (131L and 132L)

PLUS one semester of organic chemistry (**301 and 303L) *or* (212 and 124L)

Subtotal 24-27

*** Graduate courses need faculty approval for undergraduate enrollment.**

THE UNIVERSITY of NEW MEXICO

Plan of Study for BA/BS degree in Biology with EEOB concentration

Please list course and semester completed (C or better)

Student (PRINTED NAME):	UNM ID:

1. Four-course introductory sequence:
   - BIOL 201L
   - BIOL 202L
   - BIOL 203 & 203L
   - BIOL 204 & 204L

2. Ecology and Evolution:
   - BIOL 300
   - BIOL 310L

3. A taxonomic based course:

4. A synthetic/comparative taxonomic based course and lab:

5. A statistics course:

6. A course from each hierarchical cluster:

   a) Individual (Genes/Physiology) Cluster

   b) Population (Behavior/Population Biology) Cluster

   c) Community/Ecosystem Cluster

7. Demonstration of significant hands-on experience in the field or research laboratory:

8. An interdisciplinary synthetic course:

9. At least one semester of the "Brown Bag" seminar:

10. Successful completion of additional Biology courses so that the total number of Biology credit hours is greater than or equal to 48 for the Bachelor of Science or 37 for the Bachelor of Arts.

11. Successful completion of supporting courses in Math, Physics, and Chemistry:

A) Math

B) Physics

C) Chemistry

Signatures:

Student (SIGNATURE) Date

Biology Undergraduate Advisor (PRINT/SIGNATURE) Date

EEOB Faculty Advisor (PRINT/SIGNATURE) Date