

**RECORD OF PROGRESS****Zoology BS – SANTA FE** (for students entering Fall 2007 or after)**DEPARTMENT OF BIOLOGICAL SCIENCES**

These sheets are for advisement & tracking progress only. Official degree requirements can be found in the College Catalog.

Name: \_\_\_\_\_

Date of Graduation from SUNY-Oswego : Year \_\_\_\_\_ May \_\_\_\_\_ Aug \_\_\_\_\_ Dec \_\_\_\_\_

Date to Begin Coursework at Santa Fe: Year \_\_\_\_\_ May \_\_\_\_\_ Aug \_\_\_\_\_ Dec \_\_\_\_\_

Degree Program: ZooBA (230) \_\_\_ ZooBS (235) X**College-wide Degree Requirements:**

- \_\_\_ Overall cumulative average at least 2.0
- \_\_\_ Cumulative average in major at least (include cognate courses) 2.0
- \_\_\_ Minimum of half of major at Oswego (38-40 hours)
- \_\_\_ BA: maximum of 48 hours in one discipline (Note: Bio and Zoo are **not** separate disciplines)
- \_\_\_ Minimum of 60 hours at a four-year institution
- \_\_\_ Minimum of 30 hours at SUNY Oswego
- \_\_\_ Minimum of 42 hours of upper division courses (numbered 300 or higher & does not include any hours from 2 yr. colleges.)
- \_\_\_ Minimum total of 122 hours

**General Education Requirements (GE2000):** see newspaper for approved courses**Basic Skills:**

- \_\_\_ Writing Eng 102 (1 course or waiver)
- \_\_\_ Computer Literacy (1 course or waiver)
- \_\_\_ Critical Thinking (1 course or waiver)

**Foreign Language:** satisfied by high school study of another language through Regents level 4; high school study of two other languages (through level 2 in each); CLEP exam; or completion of a 102-level college language course or equivalent

\_\_\_ (approved course #1) \_\_\_\_\_ (approved course #2)

**Knowledge Foundations:**

- \_\_\_ Fine & Performing Arts (1 approved course)
- \_\_\_ Humanities (1 approved course)
- \_\_\_ Mathematics (1 approved course, e.g. Math 179, Math 210)

Natural sciences: Students in the Biological Sciences are exempt from this requirement

Social & Behavioral Sciences (2 approved courses from 2 disciplines)

\_\_\_ (approved course # 1) \_\_\_\_\_ (approved course # 2)

**America & the Western Heritage:**

- \_\_\_ American History (1 approved course)
- \_\_\_ Western Civilization (1 approved course)

**Human Diversity:**

- \_\_\_ Tolerance & Intolerance in the U.S. (1 approved course)
- \_\_\_ Non-Western Civilizations (1 approved course)

**Intellectual Issues: Must be taken at SUNY Oswego.**

- \_\_\_ Explorations in the Natural Sciences (1 approved course e.g. Bio 303, Bio 341, Bio 363, Bio 400)
- \_\_\_ Cultures & Civilizations OR Self & Society (1 approved course)

**Expository writing:** 5 approved courses (see pages 4 & 5)**1. Introductory Level** (e.g. Bio 120) \_\_\_\_\_**2. Writing to Learn** (At least two courses must be from list of approved courses; see page 4).

Course # 1 \_\_\_\_\_ course #2 \_\_\_\_\_ course #3 \_\_\_\_\_

3. Advanced Level Course (**one course, see pages 4 & 5**) \_\_\_\_\_

## ZOOLOGY BS REQUIREMENTS

### **A. Core Requirements:** required for all zoology majors

**15 credits**

___ Bio 110 Biology Seminar	1	___ Bio 316 Genetics Lab	1
___ Bio 120 Mol. & Cellular Found.	4	___ Bio 425 Evolution	3
___ Bio 315 Genetics	3	___ Bio 492 Research	3

### **B. Zoology Electives**

**29 Credits**

#### **1. Four courses from the following: 12-16**

___ Bio 325 Behavioral Biology	4	___ Zoo 373 Embryology	4
___ *Bio 492 Research	3	___ Zoo 374 Field Ornithology	3
___ Zoo 330 Invertebrate Zoology	4	___ Zoo 375 Entomology	3
___ Zoo 340 Vertebrate Zoology	4	___ Zoo 376 Ornithology	3
___ Zoo 360 Animal Physiology	4	___ Zoo 384 Mammalogy	4
___ Zoo 370 Comparative Anatomy	4	___ Zoo 440 Ichthyology	3

#### **2. One of the following: 3**

___ Bio 310 Microbiology	3
___ Bio 340 Plant Kingdom	3

#### **3. Free Electives in Department 10-14**

With advisement select courses from the unused Biology and Zoology courses. The free electives and area electives must total **29 credits**. Please see list of Biological Science courses on page 4.

### **C. Cognates**

**33-35 Credits**

#### **1. Take both:**

- \_\_\_ Che 111 General Chemistry I
- \_\_\_ Che 212 General Chemistry II

#### **2. One of the following Chem sequences:**

- a. \_\_\_ Che 331 Organic Chemistry I
- \_\_\_ Che 332 Organic Chemistry II
- b. \_\_\_ Che 230/230L Intro Org Chem+Lab
- \_\_\_ Che 360/360L Intro Biochem + Lab

#### **3. One of the following Physics Sequences:**

- a. \_\_\_ Phy 111 & 212 College Physics I&II
- b. \_\_\_ Phy 112 & 213 General Physics I&II

#### **4. Math courses:**

- a. \_\_\_ Mat 179 Measuring life
- \_\_\_ and either Mat 120 or Mat 210
- b. And one additional math from:
- \_\_\_ Mat 210, Mat 220, or Mat 258

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#### **Notes:**

\*A single Bio 492 course cannot be used to fulfill multiple requirements. A Bio 492 used for a Zoology Elective must be an approved Zoology topic and is in addition to the Bio 492 used as a core requirement

## Recommended Coursework by Year with Comments:

### This sequence of coursework assumes the following:

- that the incoming student has fulfilled language requirements in High School.
- that the incoming student is prepared for Che 111 in the first semester.
- that the incoming student is prepared for Mat 120 in the first semester.

Students following this sequence will fulfill college requirement of 42 hours of Upper Division coursework **IF** one of the three courses marked "UD?" are taken at the upper level (300 or higher), or if at least one internship is completed.

### Freshman Year

<u>FALL SEMESTER</u>		<u>SPRING SEMESTER</u>	
Bio 110	1	Bio 120	4
Che 111	4	Che 212	4
Am History	3	Psy 100	3
Com 210	3	Csc 101	3
Mat 120	3	Eng 102	3
Total		Total	
14		17	

A career awareness zoo internship (GST 303) is recommended during the summer between the freshman and sophomore years. This will enable the student to experience first-hand the careers in zoo settings. This is 3 credits of upper division elective.

Student should Apply to Santa Fe at the end of their freshman or beginning of their sophomore year to assure entry during the desired semester (May entry in odd years, Jan or Aug entry in even years).

### Sophomore Year

<u>FALL SEMESTER</u>		<u>SPRING SEMESTER</u>	
Bio 315	3	Zoo 340	4
Bio 316	1	Bio325	4
Che 230/230L	4	Chem 360/360L	4
Mat179	3	Tolerance and Intolerance	3      UD?
Humanities	3		
F&P Arts	3		
Total		Total	
17		15	

During the junior year, the student should apply to graduate from SUNY-Oswego in 2 years (after expected completion of Santa Fe program). Student should request senior check list and list in progress and additional coursework sections, indicating which course will be at Oswego, and which will be at Santa Fe. Student should complete Off-Campus Study form for all classes to be taken at Santa Fe to fulfill Oswego requirements.

### Junior Year

<u>FALL SEMESTER</u>		<u>SPRING SEMESTER</u>	
Zoo 330	4	Bio 492	3
Bio 425	3	Zoo Elective	3-4
Bio 310 or Bio 340	3	Western Civ	3      UD?
Int Issues	3	Int Issues	3
Non-Western Civ	3      UD?	Social And Behavior (not Psy)	3
Total		Total	
16		15-16	

A zoo internship (Zoo 498) is recommended during the summer between junior year at Oswego and the start of the Santa Fe program. This will give the student additional experience, including research in a zoo settings. This is 3 credits of upper division elective.

### Courses required for the Oswego BS to be taken at Santa Fe:

Physics I and Physics II (at Santa Fe these are PHYS 2053/2503L and PHYS 2054/2054L)  
Free Department Electives to total (with others at Oswego) 29 credits.

As presented above, 15-19 will be earned at Oswego leaving 10-14 to be completed at Santa Fe. These credits will be earned as part of the Santa Fe program's 47 hours of Career Education Requirements (PAZ courses).

### Department of Biological Sciences Majors' Courses

**Note: Many courses are not taught every semester – see college catalog and “Course Bulletin”**

Course	Hrs	Lab?	Writing Level	Oral Comm. Level	Title
Bio 110	1				Biology Seminar
Bio 120	4	✓	1	1	Molecular & Cellular Foundations
Bio 289	3	✓	2	2	Computer Applications in Biology
Bio 300	3	✓			Field Natural History
Bio 301	3		2	2	Topics in Modern Biology
Bio 303	3		2	2	Conservation...Non-human Primates
Bio 309	3		2		Cell Physiology
Bio 310	3	✓	2	2	Microbiology
Bio 315	3				Genetics
Bio 316	1	✓	2		Laboratory in Genetics
Bio 320	3	✓	2		Introductory Ecology
Bio 325	3	✓	2	2	Behavioral Biology
Bio 340	3	✓	2	2	Plant Kingdom
Bio 341	3		2	2	Plants and Society
Bio 345	3	✓			Trees and Shrubs
Bio 356	3	✓			Local Flora
Bio 357	3	✓	2	2	Plant Systematics
Bio 358	3	✓	2	2	Plant Ecology
Bio 360	4	✓	2		Animal physiology
Bio 363	3				Great Lakes Environmental Issues
Bio 370	3	✓	2		Animal Kingdom
Bio 388	3	✓	3	3	Field Herpetology
Bio 399	1-6	**	3*		Independent Study
Bio 400	3		3	2	Current Issues in Envir & Pop Biology
Bio 420	?	✓	?	?	Wetlands Ecology
Bio 425	3		3	2	Evolution
Bio 439	3		3		Molecular Biology
Bio 440	4	✓	2		Developmental Biology of Plants
Bio 460	3		2	2	Conservation Biology
Bio 492	3		3	3	Research
Bio 497	6	**	3	3	Senior Honors Thesis
Bio 498	1-12	**	3*		Internship in Biology
Bio 499	1-6	**	3*		Independent Study
Zoo 305	4	✓			Human Anatomy and Physiology I
Zoo 306	4	✓			Human Anatomy and Physiology II
Zoo 330	4	✓	2		Invertebrate Zoology
Zoo 340	4	✓	2	2	Vertebrate Zoology
Zoo 360	4	✓	2		Animal Physiology
Zoo 370	4	✓	2	2	Comparative Anatomy
Zoo 373	4	✓	2	2	Embryology
Zoo 375	3	✓			Entomology
Zoo 376	3	✓			Ornithology
Zoo 384	4	✓	2	2	Mammalogy
Zoo 385	3	✓			Field Mammalogy
Zoo 399	1-3	**	3*		Independent Study
Zoo 405	3	✓	2		Limnology
Zoo 440	3	✓	2		Ichthyology
Zoo 498	1-12	**	3*		Internship in Zoology
Zoo 499	1-6	**	3*		Independent Study

\*May satisfy level 3 with advisor's approval

\*\*Depends on nature of course or project

**Biology Research Courses:** (others may also be available)

Course	Hrs	Lab?	Level 3 Writing	Level 3 Oral Com.	Title
Bio 492	3	✓	✓	✓	Aquatic Ecology
Bio 492	3	✓	✓	✓	Behavioral Biology
Bio 492	3	✓	✓	✓	Biotechnology
Bio 492	3	✓	✓	✓	Conservation Genetics
Bio 492	3	✓	✓	✓	Field Ecology
Bio 492	3	✓	✓	✓	Field Herpetology
Bio 492	3	✓	✓	✓	Molecular Genetics
Bio 492	3	✓	✓	✓	Plant Physiology
Bio 492	3	✓	✓	✓	Pollution & Plant Development
Bio 492	3	✓	✓	✓	Toxic Algal Blooms
Bio 492	3	✓	✓	✓	Zoo Data Analysis

**Cognate Courses**

Course	Hrs	Title
Che 111	4	General Chemistry I
Che 212	4	General Chemistry II
Che 230	3	Introductory Organic Chemistry
Che 230L	1	Introductory Organic Chemistry Lab
Che 331	4	Organic Chemistry I
Che 332	4	Organic Chemistry II
Che 360	3	Introductory Biochemistry
Che 360L	1	Introductory Biochemistry Lab
Phy 111	4	College Physics I
Phy 112		General Physics I
Phy 212	4	College Physics II
Phy 213		General Physics II
Mat 120	3	Precalculus
Mat 179	3	Measuring Life (Statistics for Biological Science Majors)
Mat 210	4	Calculus I
Mat 220	4	Calculus II
Mat 258	3	Introduction to Statistics B

## GENERAL ADVISEMENT POINTS

1. **General education** (apply to GE2000 only).  
Students coming with a BA/BS degree are waived from general education requirements.  
Students with AA, AS, and AAS degree from another SUNY College are covered by articulation and will only be waived of:
  1. Computer literacy (via infusion).
  2. Critical thinking (via infusion).
  3. The second course of Social & behavioral sciences.
  4. The lower-division component of the writing plan.  
Foreign language satisfied by one college semester course i.e. level 101 (or high school equivalent – three years through Regents exam).
  5. Exempt from lower division component of the writing plan.
2. MAX100/101 do not count toward graduation credit hours.
3. AP Biology: A grade of 4 or 5 on the AP exam for Biology will count as either Bio 120 or 4 hours of free electives in the major, by advisement.
4. A score of 50 or above on the CLEP biology exam will result in 4 credit hours being awarded, and will satisfy Bio101 (non-majors, knowledge foundations course)
5. Upper division credits: satisfied by any 300-level major or non-major courses from Oswego or from a 4-year college.
6. A course may count towards GPA only if taken at Oswego. Transfer credits do not count towards students' GPA no matter where they come from.
7. Low grade (D and below) in courses taken at Oswego can be *eliminated* from a student's GPA if these courses were repeated off campus. However the new earned grade cannot be used in tabulating a student's GPA.
8. Courses with 'D' grades (including transferred courses) are accepted to satisfy a major requirement.
9. Advisors can override the registrar office's evaluation of the transfer credits in the major. Advisors should send a note to the registrar of any changes no later than the beginning of a transfer student's second semester.
10. No course satisfying the American History requirement will at the same time satisfy the Tolerance & Intolerance requirement.
11. For independent studies students need to complete a minimum of 60 hrs of college work and a GPA of 3.0 in the discipline.
12. For internships students need to complete at least 60 hrs of college work and a GPA of 2.5 for Bio majors and 2.75 for Zoo majors.
13. To graduate with Honors in Biological Sciences a student needs: 1) A 3.2 GPA in the major and a 3.2 GPA overall and 2) A 6 credit hour Senior Honors Thesis (BIO 497). For both BA and BS degrees, this will be included in the degree credit hour requirements. BIO 497 will substitute for the requirement for BIO 492 in the undergraduate degrees.