

**SUMMARY OF REQUIREMENTS
FOR ZOO TECHNOLOGY STUDENTS**

Name _____

(November, 1998)

Soc. Sec. No. _____

Date of graduation from Oswego: Year _____ May ____ Aug ____ Dec ____

Date to Begin Coursework at Santa Fe: Year _____ May ____ Aug ____ Dec ____

Degree Program: BA Bio (035) ___ BS Bio (040) ___ BA Zoo (230) ___ BS Zoo (235) X**College-wide Degree Requirements:**

Overall cumulative average at least 2.0 ____
 Cumulative average in major at least 2.0 ____ (include cognate courses)
 Minimum of half of major at Oswego ____
 BA: maximum of 48 hours in one discipline ____
 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) ____
 Minimum total of 122 hours ____

General Education Requirements:**Basic Skills:**

_____ Writing: Eng 102 (or waiver)
 _____ Computer Literacy: CSC 101
 _____ Com 210? Critical Thinking (1 course)

Knowledge Foundations (see newspaper for approved single courses and combinations):**Social and Behavioral Sciences** (3 hrs in each of two different areas)

Psych 100 _____ First approved course Area Psychology _____
 _____ Second approved course Area _____

_____ **Humanities** (3 hrs in each of two different areas, or 6 hours in a modern languages sequence, intermediate or higher level)

_____ **Foreign Language** Language _____

Fine and Performing Arts (3 hrs - one course)

_____ **Math 179 Math** (1 course) (Mat 210, Mat 179)

American and Western Heritage

_____ American History (1 Approved course)
 _____ Western Civilization (1 Approved Course)

Human Diversity one from each of two areas [Select courses from list in newspaper]

_____ Tolerance and Intolerance in the U.S.
 _____ Global, International, Geographic Awareness

Intellectual Issues One 3 hr course from each of the following areas

_____ Cultures and Civilizations or Self and Society
 _____ Explorations in the Natural Sciences

Advanced Expository Writing (5 courses) see next pages for approved courses

Introductory level writing course in Biology (satisfied by Biology 111)
 _____ Bio 111

Writing to Learn (at least two must be from the list of approved courses for the Biology or Zoology major)

_____ GST 303 i. _____ Bio 392 ii. _____ Zoo or Bio 498 iii.

Advanced Level Course

_____ Zoo 490

Zoo Technology students need to take as many upper division courses as possible in the General Education area, and as many "double dips" (courses that fulfill more than one requirement) as possible. Recommended courses:

HIS 212 (Humanities and Human Diversity) This is the only double dip I found for the new Gen. Ed.

Required courses are in Plain font; Recommended courses are in italics.

Zoo Technology Requirements

ZOOLOGY DEGREE REQUIREMENTS

Core Requirements--required of all Zoology majors

Bio 111 _____
 Bio 212 _____
 Bio 315 _____
 Zoo 320 _____ or Zoo 380 _____
 Zoo 321 _____
 Zoo 490 _____ Track 2 -- Zoo 330 _____ and Zoo 340 _____

Elective Requirements

1. Zoology BS--Eighteen hrs of electives

2. **[Optional]** Nine hrs (BS) of appropriate courses (i. e., pertain closely to student's career objectives) from other departments may be applied with advisor's approval toward requirements for the major if those courses are not also used to meet cognate requirements:

BS: 1. GST 303 recommended 2. _____ 3. _____

Electives [† indicates a lab course]

†Zoo 305 _____	Bio 301 _____
†Zoo 306 _____	Bio 309 _____
†Zoo 330 _____	†Bio 310 _____
†Zoo 340 _____	Bio 320 _____
†Zoo 370 _____	Bio 325 <u>recommended</u>
†Zoo 373 _____	†Bio 340 _____
Zoo 380 _____	Bio 341 _____
Zoo 382 _____	†Bio 357 _____
†Zoo 384 _____	Bio 370 _____ if take neither Zoo 330 nor Zoo 340
Zoo 399 _____	Bio 377 _____
†Zoo 405 _____	Bio 400 _____
†Zoo 440 _____	†Bio 440 _____
Zoo 497 _____	†Bio 392 <u>Zoo Biology recommended</u>
Zoo 498 _____	Bio 399 _____
	†Bio 492 _____
	Bio 498 <u>Internship at a Zoo or Aquarium recommended</u>
	Bio 499 _____

* can be taken for elective credit if not used for Track requirements

Cognate Requirements--Zoology BS

Che 111 _____ and Che 212 _____
 Che 230/230L _____ and Che 360/360L _____ **or** Che 331 _____ and Che 332 _____
 Phy 111 _____ and Phy 212 _____
 Mat 158 _____ and Mat 258 _____ **or** Mat 210 _____ and Mat 220 _____

Forms to Complete:

It usually takes 3 years to complete Oswego's requirements for graduation.
 The most difficult of these is the 42 hours of upper level courses. Students can't get any of these at Santa Fe

Freshman Year: Fill out Application to Santa Fe Program, starting in 3 years

Junior Year:

File with Registrar to graduate in 2 years

Request Senior check list

Go over Senior check list with advisor, and indicate which Santa Fe courses will fulfill which Oswego requirements

Fill out **Off-Campus Study Approval Form**, indicating which courses will be taken at Santa Fe to fulfill remaining requirements at Oswego.

Internships

Perhaps the most important consideration for zoos in hiring people is **experience**. Some zoos will hire people who have only a High School education if they have had experience working in a zoo before. There are two ways that a person with no experience working in a zoo can get some experience:

- Volunteer Work
- Internships

Some students will already have had one or both of these experiences before coming to Oswego. Students who go to Santa Fe will have two years of hands-on experience as part of their program there. Students who decide to complete their degree at Oswego without going to Santa Fe, and are still interested in working in a zoo should consider the possibility of doing an internship at a zoo or an aquarium.

Zoo Internships:

- Give students valuable experience working in a zoo or aquarium
- Allow students to decide whether zoo work is really what they want to do
- Allow students to prove their abilities in a work environment
- Allow students to make contact with people who can write them letters of recommendation for zoo jobs after graduation

How to Set Up an Internship:

Oswego college's office of Experience Based Education is located in 228 Swetman (x2151). Paul Roodin is the Director of the program, and Michelle Firnstein is assistant director. Terry Bouffard and Debbie Diment are the secretaries. Students should first attend an orientation workshop for internships, where requirements for internships and application process will be explained. Workshops are offered approximately twice a week, and the schedule can be picked up in 228 Swetman. At the workshop, students will be given an application packet. The application process includes the following steps:

- Students must locate and contact a zoo, aquarium, or other facility where they would like to do an internship. The office of Experience Based Education maintains a file on places and contact people where students have done internships in the past. Dr. Chepko-Sade (137 Piez) also has a file on zoos and aquaria where internships are possible.
- The student applies to the zoo, aquarium, or facility in which they are interested.
- Once accepted, the student makes an appointment with their internship facility to discuss what will be expected of them. This will depend on the student's interests and the needs of the facility providing the internship. Few internships pay, but some paying jobs can be done as internships, provided the facility is willing to do the paper work and the student carries out the academic work and has a faculty sponsor. The supervisor at the internship facility develops a written list of job responsibilities which becomes part of the student's Learning Agreement.
- **A list of job responsibilities:** This is part of Oswego's application packet, and must be filled out with the person in charge of internships at the place where the student will be working.
- **Faculty Sponsor:** Students must find a faculty member who is willing to sponsor their internship, and work with them in designing the internship and in evaluation their papers.
- **Learning Agreement:** The student and faculty sponsor design a set of learning objectives that the student would like to get out of the internship. These can vary from learning particular job skills to deciding whether they want to go into this line of work.
- **Evaluation Criteria:** The student and faculty sponsor develop a specific set of criteria by which the internship will be evaluated. Three of these are required:
 - The student must write a Topic paper
 - The student must write a Final Summary Paper
 - The Site Supervisor must write an evaluation of the student's performance

BIOLOGY DEPARTMENT COURSES

Note: many courses are not taught every semester--see college catalog and "newspaper"

Course	Hrs	Lab?	Credit toward		Title
			major?		
Bio 101	4	yes	no		General biology
Bio 111	4	yes	yes		College biology I
Bio 200	3	no	no		Environmental and population biology
Bio 208	3	no	no		Biology of sex
Bio 212	4	yes	yes		College biology II
Bio 300	3	yes	yes		Field Natural History
Bio 301	3	no	yes		Topics in modern biology
Bio 309	3	no	yes		Cell physiology
Bio 310	3	yes	yes		Microbiology
Bio 315	3	no	yes		Genetics
Bio 320	3	no	yes		Introductory ecology
Bio 325	3	no	yes		Behavioral biology
Bio 340	3	yes	yes		Plant kingdom
Bio 341	3	no	yes		Plants and Society
Bio 345	3	yes	yes		Trees and shrubs
Bio 357	3	yes	yes		Plant systematics and local flora
Bio 358	3	yes	yes		Plant ecology
Bio 370	3	yes	yes*		Animal kingdom
Bio 377	3	no	yes		Biology of marine organisms
Bio 388	3	yes	yes		Field Herpetology
Bio 399	1-6	**	yes		Independent study
Bio 400	3	no	yes		+Current issues in environmental and population biology
Bio 425	3	no	yes		Organic evolution
Bio 440	4	yes	yes		+Developmental biology of Plants
Bio 497	6	**	yes		Senior honors thesis
Bio 498	1-12	**	yes		Internship in biology
Bio 499	1-6	**	yes		Independent study

Zoo 203	3	no	no		Human body and the natural world
Zoo 302	3	no	no		Human genetics
Zoo 305	4	yes	yes		Human anatomy and physiology I (formerly Zoo 280)
Zoo 306	4	yes	yes		Human anatomy and physiology II (formerly Zoo 281)
Zoo 320	3	no	yes		General physiology
Zoo 321	1	yes	yes		General physiology laboratory
Zoo 330	4	yes	yes		Invertebrate zoology
Zoo 340	4	yes	yes		Vertebrate zoology
Zoo 370	4	yes	yes		Comparative anatomy
Zoo 373	4	yes	yes		Embryology
Zoo 380	3	no	yes		Physiological Ecology
Zoo 382	3	no	yes		Endocrinology
Zoo 384	4	yes	yes		Mammalogy
Zoo 399	1-3	**	yes		Independent study
Zoo 405	3	yes	yes		Limnology
Zoo 440	3	yes	yes		Ichthyology
Zoo 490	3	no	yes		+Seminar
Zoo 497	3-6	**	yes		Problems in zoology
Zoo 498	1-12	**	yes		Internship in zoology
Zoo 499	1-6	**	yes		Independent Study

* not open to those who have completed Zoo 330 or 340

**depends on nature of course or project

+ includes credit for upper division expository writing requirement

Biology Problems courses: (others may be available also)

<u>Course</u>	<u>Hrs</u>	<u>Lab?</u>	<u>Credit toward major?</u>	<u>Title</u>
Bio 392	3	yes	yes	+Behavioral biology
Bio 392	3	yes	yes	Computers in Biology
Bio 392	3	yes	yes	+Constructing Phylogenetic Trees
Bio 392	3	yes	yes	Ecological tech.
Bio 392	3	yes	yes	+Field Herpetology
Bio 392	3	yes	yes	+Instrument. & meth.
Bio 392	3	yes	yes	+Molecular Genetics
Bio 392	3	yes	yes	+Organic Evolution
Bio 392	3	yes	yes	+Plant Physiology
Bio 392	3	yes	yes	+Zoo Biology
Bio 492	3	yes	yes	+Animal ecology
Bio 492	3	yes	yes	+Aquatic biology
Bio 492	3	no	yes	+Behavioral ecology
Bio 492	3	yes	yes	+Biochem genetics
Bio 492	3	yes	yes	+Biology of birds
Bio 492	3	yes	yes	+Microbiology
Bio 492	3	yes	yes	+Pollut. & plant dev
Bio 492	3	no	yes	+Zoo data analysis

* not open to those who have completed Zoo 330 or 340

**depends on nature of course or project

+ includes credit for upper division expository writing requirement

Recommended Coursework by year:

Freshman Year (0-26 Semester Hours earned)**FALL SEMESTER**

Course	Semester	Course	Semester Hours
Biology 112	4	Biology 213	4
American History	3	English 102	3
Foreign Language	3	Psychology 100	3
Western Civilizations	<u>3</u>	Communications 210 (Critical Thinking)	3
Total	13	Total	13

SPRING SEMESTER

Summer between Freshman and Sophomore year: *GST 303 Career Awareness – Zoo Internship 3 3

Sophomore Year (27-56 Semester Hours earned)**FALL SEMESTER**

Course	Semester Hours
Chemistry 111	4
Intellectual Issues	3
Soc. Behavioral Sci.	3
Math 158 (or 210)	3
Biology 289	<u>3</u>
Human Diversity	<u>3</u>
Total	16

SPRING SEMESTER

Course	Semester Hours
Chemistry 212	4
Zoology 340	4
Humanities Knowledge Foundations	3
Math 258 (or 220)	3
Intellectual Issues	<u>3</u>
Total	17

Junior Year (57-86 Semester Hours earned)**FALL SEMESTER**

Course	Semester Hours
Chemistry 331 (or 230/230L)	4
Zoology 330	4
Biology 315	3
Total	16

SPRING SEMESTER

Course	Semester Hours
Biology 392 (Zoo Biology)*	3
Zoology 380	3
Zoology 321	1
Chemistry 332 (or360/360L)	4
Zoology 490	<u>3</u>
Total	15

Summer between Junior year and Santa Fe

Zoo 498 Zoo Internship* 3 3

Total Upper Division Credits 38 (34)

An additional 4-8 hours of Gen. Ed. Must be Upper Division

* These courses are not required for the Zoo Technology Program at Santa Fe. They do fulfill Oswego's General Education Writing requirement within the major, and they are upper division. They may be substituted with other upper division writing courses within the major.

Courses to be taken at Santa Fe:

College Physics I and II {PHYS 2053 (with 2053 Lab) and PHYS 2054 (with 2054 Lab)}
 Zoology Electives to total 18 or more, counting those taken at Oswego (students take 52 hours at Santa Fe)
 These courses can be indicated generically on the Off-Campus Approval Form e.g. "PAZ-----, 6 credits"

Course Sequence:

Many of the courses above can be taken in any order. This recommended sequence is designed to avoid taking too many labs in any one semester, while fulfilling the Zoology BS requirements and the General Education requirements for graduation at SUNY Oswego.