

**MAMMALOLOGY - BIO. 525**  
**Spring, 2005**

As stated in the Catalog, completion of the English Placement Test and Writing Competency requirements is a prerequisite for all upper division biology courses. The specific prerequisite for this course is Principles of Organismal Biology (Bio 201B). These requirements do not apply to graduate students enrolled in the course.

This course is an overview that explores various aspects of mammalian biology. Although natural history, ecology, evolutionary history, cellular level functions, etc. will be mentioned, *the organismic level is the primary focus of this course*. Rather than covering any subject in great depth, the course provides a basic, broad understanding of Mammalia. The lectures deal with topics such as the origin and zoogeography of mammals, their basic reproductive biology, temperature and water regulation, social systems, locomotion, etc. The labs concentrate very heavily on the systematics, classification, and identification of mammals, although topical subjects such as specimen preparation, reproduction, and locomotion are included.

There are three non-comprehensive lecture exams and three non-comprehensive lab exams. The lecture exams are short answer and essay. Copies of old lecture exams are in this manual. Lab exams consist of 50 questions concerning mostly taxonomic identifications. Keys of your own design are *required* for lab exams *for taxonomic identifications only (not for anatomy, etc.)*. Either a term paper on a subject approved by the instructor, a lecture delivered to the class, or the mounting of 10 mammal skins of at least 6 different species must be completed by each student. The mounting option includes the trapping and preparation of skins, unless specimens are available from other sources. The papers and skins may be turned in any time during the semester, but *must* be submitted by **5pm, Friday, May 6**. *Five points (from 75) will be deducted for each day that your paper or skins are late. No exceptions.*

The lecture portion of the course is worth 50% of the final grade (each lecture exam = 1/6 = 100 pts.) and the lab portion and term paper or museum mounts are worth 50% (each lab exam and the term paper/museum mounts = 1/8 = 75 pts.). Percentages rather than grades are given for individual exams. There are 600 possible points for the course. No extra credit points are given (except perhaps a point or two on a lab exam). The lowest final percentages for A-, B-, C-, etc. will start at 90%, 80%, 70%, etc., but may be adjusted a few points downward depending upon how the entire class performs. If you do poorly on early exams, but show dramatic improvement and you are within a point or two of the next highest grade, the higher grade will be given. *Nota bene*: Poor attendance indicates a lack of interest in doing well in the course.

There will be two *required* Friday overnight trips for live-trapping, one to Anza-Borrego Desert and one to Santa Margarita Field Station (near Temecula). *You must attend both of these trips. No exceptions. Failure to do so without an excused absence (very rare) will result in the loss of one-half a grade from the your final grade (e.g., a B becomes a B-) for each trip missed.*

MAMMALOLOGY, Archibald, J. D., 2003. Aztec Shops. (These are bound lecture outlines, lab handouts, etc.)

TEXT: Vaughan, T. A. et al. 2000. Mammalogy, 4th ed., W. B. Saunders Co.

LAB MANUAL: Martin, R. E. et al. 2001. A Manual of Mammalogy, 3rd ed., McGraw-Hill.

OPTIONAL BOOKS: Lawlor, T. E. 1979. Handbook to the Orders and Families of Living Mammals, 2nd ed., Mad River Press, and Ingles, L. G. 1965. Mammals of the Pacific States, Stanford.

Lecture & Lab LS269, MW 1-4:40pm.

Instructor: David Archibald: M & W 11-12 or by appointment. On M & W mornings I may be in the vertebrate collections (LS257) or in the classroom, (LS 269) preparing the lab for that day.

The administration requires the inclusion of the following: "This course requires students to participate in field trips, research, or studies that include course work that will be performed off-campus. Participation in such activities may result in accidents or personal injury. Students participating in the event are aware of these risks, and agree to hold harmless San Diego State University, the State of California, the Trustees of the California State University and Colleges and its officers, employees, and agents against all claims, demands, suits, judgements, expenses and costs of any kind on account of their participation in the activities."

**MAMMALOLOGY - BIO. 525**  
**Lecture Schedule - Spring, 2005**

Day	Date	Lecture Topic	Pages in Vaughn et al.* & chapters in Martin et al.
M	01/24	Introduction, Mammalian Grade: Soft Anatomy	p.8-22
W	01/26	Mammalian Grade: Hard Anatomy	p.22-34; ch.2, 3, 6
M	01/31	Systematics: Taxonomy and Phylogenetic Reconstruction	p.2-6, p.58-63
W	02/02	Synapsida & the origin of Mammaliaformes	p.36-57
M	02/07	Origin of Mammalia & the tribosphenic molar	"
W	02/09	Early mammals & placental radiation	p.102-105
<b>M</b>	<b>02/14</b>	<b>LECTURE EXAM 1</b>	
W	02/16	Zoogeographic Principles	p.528-547; ch.1
M	02/21	Zoogeography: Gondwana & getting to Australia	
W	02/23	Zoogeography: The Great American Faunal Interchange	p.547-552
M	02/28	Hair, Mammary Glands, & Cranial Adornments	p.12-16; ch.4 & 5
<b>W</b>	<b>03/02</b>	<b>No Lecture - LAB EXAM 1</b>	
M	03/07	Reproductive Anatomy and Variations	p.334-340
W	03/09	Reproductive Strategies I	p.341-363
M	03/14	Reproductive Strategies II	"
<b>W</b>	<b>03/16</b>	<b>LECTURE EXAM 2</b>	
M	03/21	Temperature Regulation I	p.364-367, p.380-388
W	03/23	Temperature Regulation II	p.367-380
M	03/28	Spring Break	
W	03/30	Spring Break	
M	04/04	Water Regulation	p.394-403
W	04/06	Echolocation	p.404-427
F-Sat	4/8-4/9	Required fieldtrip to Anza-Borrego Desert	
M	04/11	Conservation Genetics of Mammals, Guest Lecture, Dr. Oliver Ryder, CRES (San Diego Zoo)	
<b>W</b>	<b>04/13</b>	<b>No Lecture - LAB EXAM 2</b>	
M	04/18	Student presentations and/or †“Life of Mammals”	
W	04/20	Locomotion: Mechanics	p.390-394
M	04/25	Locomotion: Adaptations	ch. 7
W	04/27	Student presentations and/or †“Life of Mammals”	
F-Sat	4/29-4/30	Required fieldtrip to Santa Margarita Field Station	
M	05/02	Social Systems I	p.450-474
W	05/04	Social Systems II	"
M	05/09	Student presentations and/or †“Life of Mammals”	
<b>W</b>	<b>05/11</b>	<b>No Lecture - LAB EXAM 3</b>	"

\* Some pages and chapters repeated for various lectures and for various labs.

**LECTURE FINAL: WEDNESDAY, MAY 18, 1:00-3:00 PM, LS 2269.**

**Term paper or specimens are due no later than 5pm, Friday, May 6.** *Five points (from 75) will be deducted for each day that your paper or skins are late. No exceptions.*

†We will view parts of David Attenborough's 2003 8.3 hour "Life of Mammals" as we have time in lab or near the end of the semester as time permits.

**MAMMALOLOGY - BIO. 525**  
**Lab Schedule - Spring, 2005**

Day	Date	Lab Topic	Chapters in Martin et al. pages Vaughn et al.*
M	01/24	Soft Anatomy & Hard Anatomy	ch.2, 3, 7; p.8-22, p.22-34
W	01/26	Hard Anatomy	"
M	01/31	Specimen Preparation (Read chapters <b>BEFORE</b> this lab.)	ch.29 & 31
W	02/02	Dentition	ch.3
M	02/07	Monotremes and Marsupials	ch.9,10,11; p.64-71, p.72-101
W	02/09	Marsupials	ch.11; p.72-101
<b>M</b>	<b>02/14</b>	<b>No formal lab - LECTURE EXAM 1</b>	
W	02/16	Afrotheria (Tenrecoidea, Macroscelidea, Tubulidentata, Hyracoidea, Sirenia, and Proboscidea), Xenarthra, Lipotyphla	ch. 12, 17, 21, 24, 25, p.106-134, 246-259, 332-333
M	02/21	Afrotheria (Tenrecoidea, Macroscelidea, Tubulidentata, Hyracoidea, Sirenia, and Proboscidea), Xenarthra, Lipotyphla	"
W	02/23	Scandentia, Dermoptera, and Primates	ch. 13, 15, 16, p.136-138, 176-196
M	02/28	Primates and Lab Review	"
<b>W</b>	<b>03/02</b>	<b>LAB EXAM 1</b>	
M	03/07	Lagomorpha and Rodentia	ch.22, 23, p. 292-325, 327-331
W	03/09	Rodentia	"
M	03/14	Rodentia	"
<b>W</b>	<b>03/16</b>	<b>No formal lab - LECTURE EXAM 2</b>	
M	03/21	Rodentia	"
W	03/23	Rodentia	"
M	03/28	Spring Break	
W	03/30	Spring Break	
M	04/04	Chiroptera	ch.14, p.108-109, 113-122, 138-174
W	04/06	Chiroptera	"
F-Sat	4/8-4/9	Required fieldtrip to Anza-Borrego Desert	"
M	04/11	Chiroptera and Lab Review	"
<b>W</b>	<b>04/13</b>	<b>No Lecture - LAB EXAM 2</b>	
M	04/18	Pholidota and Carnivora	ch.18, 19, p.134-135, 200-224
W	04/20	Carnivora	"
M	04/25	Locomotory Adaptations	ch.7
W	04/27	Artiodactyla (including Cetacea)	ch.20, 27, p.226-244, 272-290
F-Sat	4/29-4/30	Required fieldtrip to Santa Margarita Field Station	
M	05/02	Artiodactyla (including Cetacea)	
W	05/04	Perissodactyla	"
M	05/09	Lab Review	ch. 26, 260-270
<b>W</b>	<b>05/11</b>	<b>LAB EXAM 3</b>	

\* Some chapters and pages repeated for various lectures and for various labs.

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