DEPAUL | School of Continuing and Professional Studies

Mammalogy
Undergraduate Course Information Guide

Course Number: CCS 320, 4 credits, 10 Weeks
Cross listed Course Number: SNC 320, 4 credits, 10 Weeks
Delivery Formats: Online Async

Course Description

This course will introduce you to the origins, evolution, ecology, and biodiversity of the class Mammalia. Key topics will include mammalian anatomy, classification, genetics, reproduction, thermoregulation, locomotion, behavior, ecology, and conservation. Special emphasis will be on investigating the connections of mammalian evolutionary biology to human health issues including disease, nutrition, physical activity, injury, and overpopulation. Online learning will incorporate readings, discussions, a science 'kit' for hands-on labs, virtual labs using 3D mammals, and computer simulations. Student will also undertake collaborative experimentation and onsite inquiry of mammals at a zoological park, museum, and/or nature reserve.

Learning Outcomes

After completing this course, you will be able to:

• Can analyze and apply information generated from scientific investigations in Mammalogy.

• Can describe, differentiate, and explain form, function, and variation within mammal lineages.

• Can evaluate the role of mammal evolutionary history on human health.

• Can compare and contrast aspects of mammal behavior and ecology.

Learning Outcomes for SNC 223: Liberal Studies Program - Scientific Inquiry (Lab)Domain

• Students will understand how science serves as a mechanism for inquiry into the natural world through hands-on, experience-based investigation.

• Students will understand how science serves as a mechanism for inquiry into the natural world through hands- on, experience- based investigation.

Learning Strategies and Resources

This online asynchronous course is not self-paced and requires a regular time commitment each week throughout the quarter. Students are required to log in to the course at least four times a week so that they can participate in the ongoing course discussions.

Students participate in synchronous presentations and interactions with other students (e.g., Zoom conferences). This course also involves one onsite group laboratory assignment at a zoological park, natural history museum, or natural area. Students are required to coordinate and attend the group activity.

Required Readings

Books and learning materials are available at the DePaul bookstore, at http://depaul-loop.bncollege.com, or through alternative sources.

Clutton-Brock, J., & Wilson, D. E. (2002). Smithsonian handbook: mammals. DK ADULT; 1st edition (March 1, 2002), 400 pp., ISBN-10: 0789484048, ISBN-13: 978-0789484048

Recommended resource (not required):

Vaughan, T. A., J. N. Ryan, and N. J. Czaplewski.2015. mammalogy. 6th ed. Jones & Bartlett, Burlington, Massachusetts, 755 pp. ISBN 978-1-284-03209-3

Additional readings may be available on Electronic Reserve, at the DePaul Library. Login to Ares Course Reserves and select the course. Log in using your Campus Connect User ID and password. You will then get a page listing the courses in which you're enrolled that have readings posted in Ares. Click on the title of this course and the list of our electronic reserve readings will be displayed.

Required Software:

• Excel and PowerPoint

• JR Screen Ruler (or similar) http://www.spadixbd.com/freetools/index.htm

• On Screen Protractor (or similar) https://sourceforge.net/projects/osprotractor/

Laboratory Resources Required:

Owl Pellet Kit
Frog Dissection Simulations
Brain Model
Human 3D Skeletal Model
Access to local Zoo, Museum and/or Natural Area

Video (embedded in course):

Attenborough, D. (Director). (2013). David Attenborough's rise of animals: Triumph of the vertebrates – Episode 2: Rise of Mammals.

Other Resources for Students:

Institutions

Lincoln Park Zoo Mammals, https://www.lpzoo.org/animals/mammals

Field Museum Mammal Collections,

Community

American Society of Mammologists

Animal Diversity Webb (Mammals)

Course Website: The Mammalogy course guide, course learning materials, discussion forums, and additional resource links including supplementary videos are available through the course management system, D2LTM.

Assessment of Student Learning

Distribution of Grade Points

Graded Assignments	Percentage of Final Grade
10 Discussions x 10 pts	10%
5 Regular Lab Reports x 80 pts	40%
1 Group Lab Reports 200 pts	20%
1 Group Lab Presentation 50 pts	5%
1 Research Paper (Final) 100 pts	10%
5 Virtual Fieldtrip Reports x 30 pts	15%

Back to Top

Grading Scale

A = 93 to 100	A- = 90 to 92	B+ = 88 to 89
B = 85 to 87	B- = 80 to 84	C+ = 77 to 79
C = 73 to 76	C- = 69 to 72	D+ = 65 to 68
D = 60 to 64	F = Below 60	INC

Course Schedule

Week or Module Title or Theme	Readings / Learning Activities	Graded Assignments
Week 1, Module 1: General Characteristics and Origin of Mammals	Clutton-Brock p. 1-32 Multimedia: Barn Owls	Online Discussion Lab 1 Mammal identification Lab Research Paper Start
Week 2, Module 2: Mammalian Evolution	Luo, Z. X. (2007). Transformation and diversification in early mammal evolution. Nature, 450(7172), 1011. O'Leary, M., Bloch, J., Flynn, J., Gaudin, T., Giallombardo, A., Giannini, N., . . . Cirranello, A. (2013). The placental mammal ancestor and the post—k-pg radiation of placentals. Science, 339(6120), 662-667. Video: Attenborough, D. (Director). (2013). David Attenborough's rise of animals: Triumph of the vertebrates – Episode 2: Rise of Mammals.	Online Discussion

Week 3, Module 3: Mammalian Biodiversity & Classification	Clutton-Brock p. 52—53 Asher, R. J., & Helgen, K. M. (2010). Nomenclature and placental mammal phylogeny. BMC Evolutionary Biology, 10(1), 102. Video: Virtual Frog Dissection Vertebrate Circulatorium Interactive Human Autopsy	Online Discussion Lab 2 Mammal Anatomy Lab Research Paper Hypothesis and Initial References
Week 4, Module 4: Mammalian Anatomy (Brain)	Toledano, A., Alvarez, M. I., López-Rodríguez, A. B., Toledano-Díaz, A., & Fernández-Verdecia, C. I. (2012). Does Alzheimer's disease exist in all primates? Alzheimer pathology in non-human primates and its pathophysiological implications (I). Neurología (English Edition), 27(6), 354-369.	Online Discussion Lab 3 Mammal Brain and Skull Development Lab Human Origins Biointeractive (Brain and Technology Development) Alzheimer's Disease: Piecing Together the Evidence Brain Museum UW
Week 5, Module 5: Mammal Locomotion	Latimer, Bruce. "The perils of being bipedal." Annals of Biomedical Engineering 33, no. 1 (2005): 3-6. Crockett, C. M., & Ha, R. R. (2010). Data collection in the zoo setting, emphasizing behavior. Wild mammals in captivity: Principles and techniques for zoo management, 386-406. Latimer 2012 Perils of Being Bipedal Video Website: Mammal Locomotion	Online Discussion Lab 6. Group – Mammal Laboratory Start Groups Assigned Start Planning: Options 1-3

Week 6, Module 6: Mammal Metabolism, Feeding and Niches	Avaria-Llautureo, J., Hernández, C. E., Rodríguez-Serrano, E., & Venditti, C. (2019). The decoupled nature of basal metabolic rate and body temperature in endotherm evolution. Nature, 572(7771), 651-654. Schoeninger, M. J. (2012). Palaeoanthropology: The ancestral dinner table. Nature, 487(7405), 42. Mammal Dentition/Skull Dog 3D Mammal feeding, Diversity of Cheek Teeth	Online Discussion Lab 4 Mammal Bipedality Lab LAB 6 Summary of Group Experiment Plans provided to instructor.
Week 7, Module 7: Mammal Behavior	Van Valkenburgh, B., & Wayne, R. K. (2010). Carnivores. Current biology, 20(21), R915-R919. OPTIONAL: Mazel, F., Wüest, R. O., Gueguen, M., Renaud, J., Ficetola, G. F., Lavergne, S., & Thuiller, W. (2017). The geography of ecological niche evolution in mammals. Current Biology, 27(9), 1369-1374. Website: Behavior Based on Form Smithsonian Museum Virtual Trip Floor 1 and Floor 2 (Mammals and Bones) Primate Behavior	Online Discussion
Week 8, Module 8: Mammal Biogeography/Habitats	Clutton-Brock p. 34—42 Davies, T. J., Buckley, L. B., Grenyer, R., & Gittleman, J. L.	Online Discussion

	(2011). The influence of past and present climate on the biogeography of modern mammal diversity. Philosophical Transactions of the Royal Society B: Biological Sciences, 366(1577), 2526-2535. Schrauwen, E. J., & Fouchier, R. A. (2014). Host adaptation and transmission of influenza A viruses in mammals. Emerging microbes & infections, 3(1), 1-10.	Lab 5 Mammal Ecology Lab
Week 9, Module 9: Mammal Genetics	Tarver, J. E., Dos Reis, M., Mirarab, S., Moran, R. J., Parker, S., O'Reilly, J. E., ... & Peterson, K. J. (2016). The interrelationships of placental mammals and the limits of phylogenetic inference. Genome biology and evolution, 8(2), 330-344. Tollis, M., Schiffman, J. D., & Boddy, A. M. (2017). Evolution of cancer suppression as revealed by mammalian comparative genomics. Current opinion in genetics & development, 42, 40-47. DNA Simulation: Simulations: Zoo breeder, Niche Partitioning and DNA Metabarcoding	Online Discussion
Week 10, Module 10: Conserving and Sustaining Mammal Biodiversity	Clutton-Brock p. 44—51 Brum, F. T., Graham, C. H., Costa, G. C., Hedges, S. B., Penone, C., Radeloff, V. C., ... & Davidson, A. D. (2017). Global priorities for conservation across multiple dimensions of mammalian diversity. Proceedings of the National Academy of Sciences, 114(29), 7641-7646.	Online Discussion Research Paper Due Week 11: Group Presentation of Research

	Simulation: CSI Wildlife (Elephant DNA profiling)	

Back to Top

Course Policies

For access to all SCPS and DePaul University academic policies, refer to the following links:

SCPS Student Resources Website

DePaul Student Handbook

The D2L Course Website for this course.

Credit for Prior Learning

Students whose home college is SCPS that have not transferred more than 99 credit hours from community college or exam credit, and have not reached 132 credit hours toward graduation may qualify for prior learning credit. If you have prior knowledge you think may be equivalent to the learning outcomes of a SCPS course, you can contact the Office of Prior Learning Assessment at scpspla@depaul.edu or the PLA website for information on how to submit a proposal to use Prior Learning Assessment (PLA) credit for a nominal fee in lieu of regular tuition as an alternative to completing a course.

Course Syllabus

The official syllabus for this course that includes course dates, instructor information and quarter specific details will be provided by the course instructor by the start of the course and available on the course D2L website.

Course Registration

To find out when this course will be offered next, you can go to the SCPS Registration website for details on how to register for the course.

For information on how this course can apply to your program, contact your academic advisor.

School of Continuing and Professional Studies

Suite 1400, Daley Building, 14 E. Jackson Blvd., Chicago
Website: https://scps.depaul.edu/

Office hours: 9:00 am - 5:00 pm, Monday-Friday.
Telephone: 312-362-8001. General Email: scps@depaul.edu
For Advising Assistance, call (312) 362-5445 or email scpsadvising@depaul.edu

This document was updated 7-1-24.

Back to Top