

PROFESSIONAL SCIENCE MASTER'S IN NATURAL SCIENCES – ZOO, AQUARIUM, AND ANIMAL SHELTER MANAGEMENT SPECIALIZATION

The Professional Science Master's (PSM) in Natural Sciences – Zoo, Aquarium, and Animal Shelter Management Specialization is a unique opportunity to blend business skills and applied science with a specific focus on helping animal organizations. Our two-year Professional Science Master's degree program focuses on experiential learning and development of skills in addition to academic learning.

The PSM in Natural Sciences, Zoo, Aquarium, and Animal Shelter Management Specialization is an affiliated Professional Science Master's (PSM) degree. Affiliation is administered by the Commission on Affiliation of PSM Programs (<https://www.professionalsciencemasters.org/>) (formerly named PSM National Office) to ensure a strong and distinctive PSM brand. The PSM is designed for students who are seeking a graduate degree in science or mathematics and understand the need for developing workplace skills valued by top employers.

Students interested in graduate work should refer to the Graduate and Professional Bulletin (<https://catalog.colostate.edu/general-catalog/graduate-bulletin/>).

Learning Objectives

Upon successful completion of this program, students will be able to:

1. Compare and contrast biological aspects of different animals kept in captivity and how this affects their care, diet and behavior evaluation and assessment of welfare.
2. Apply critical thinking in solving animal-related issues, including how ethical dilemmas relate to animal organizations.
3. Analyze and develop their approach to leadership in animal organizations, including managing human capital, communication, conflict resolution and how their personal characteristics affect their leadership style.
4. Innovate and apply techniques in marketing, fundraising, donor cultivation, grant writing, non-profit accounting and finance to benefit animal organizations.



Requirements Effective Fall 2024

Code	Title	Credits
NSCI 579/VS 579	Applied Animal Behavior	4
NSCI 601	PSM Ethics for Animal Professionals	1
NSCI 611	Leadership in Animal Organizations	3
NSCI 621	Workplace Wellness - Animal Organizations	3
NSCI 631	Non-Profit Marketing and Community Relations	3
NSCI 641	Fiscal Management for Animal Welfare Leaders	2
NSCI 651	Non-Profit Fund Development and Grant Writing	3
NSCI 688A	PSM Capstone: Preparation	2
NSCI 688B	PSM Capstone: Proposal Writing	2
NSCI 688C	PSM Capstone: Project	1
NSCI 688D	PSM Capstone: Support for Deliverable and Job Search	2
NSCI 688E	PSM Capstone: Completion	3
NSCI 693A	Graduate Seminar: Zoo, Aquarium, and Animal Shelter Management	4
Select one course from the following:		2-3
ANEQ 322	Pet Nutrition	
ANEQ 323	Zoo Nutrition	
ANEQ 522	Animal Metabolism	
Professional skills electives (select from the list below with approval of advisor)		8-9
Program Total Credits:		43-45

A minimum of 43 credits are required to complete this program.

Professional Skills Electives

Code	Title	Credits
Aquarium		
BZ 415	Marine Biology	4
BZ 515	Physiological Ecology of Marine Vertebrates	3
FW 300	Biology and Diversity of Fishes	2
FW 405	Fish Physiology	3
FW 540	Fisheries Ecology	3

Behavior			ANEQ 345	Principles of Nutrition: Equine Applications	3
ANEQ 315	Equine Behavior	2	ANEQ 720	Nutritional Energetics	3
ANTH 370	Primates	3	ANEQ 725	Rumen Metabolism	3
ANTH 375	Evolution of Primate Behavior	3	NR 367	Concepts in Vertebrate Nutrition	3
BMS 325	Cellular Neurobiology	3	Management		
BMS 505/NB 505	Neuronal Circuits, Systems and Behavior	3	BUS 500	Foundations for Business Impact	2
BZ 430	Animal Behavior and Conservation	3	BUS 614	Accounting Concepts	2
BZ 433	Behavioral Genetics	3	BUS 615	Managerial Accounting	2
BZ 479/VS 479	Biology and Behavior of Dogs	3	FIN 305	Fundamentals of Finance	3
BZ 505	Cognitive Ecology	3	MKT 370	Digital Marketing	3
BZ 535	Behavioral and Cognitive Ecology	3	NR 401	Techniques in Public Relations	2
PSY 600E	Advanced Psychology: Animal Learning	3	NR 501	Leadership and Public Communications	3
Breeding/Reproduction			NR 535	Action for Sustainable Behavior	3
ANEQ 310	Animal Reproduction	3	NR 555	Preparation of Grant Proposals	2
ANEQ 312	Animal Ultrasonography	2	NRRT 460	Tourism Event and Conference Planning	3
ANEQ 328	Foundations in Animal Genetics	3	NRRT 471	Starting and Managing Tourism Enterprise	3
ANEQ 330	Principles of Animal Breeding	3	Requirements for All Graduate Degrees		
ANEQ 334	Principles of Equine Genetics	3	For more information, please visit Requirements for All Graduate Degrees (https://catalog.colostate.edu/general-catalog/graduate-bulletin/graduate-study/procedures-requirements-all-degrees/) in the Graduate and Professional Bulletin (https://catalog.colostate.edu/general-catalog/graduate-bulletin/).		
BMS 521	Comparative Reproductive Physiology	3	Summary of Procedures for the Master's and Doctoral Degrees		
BMS 640	Reproductive Physiology and Endocrinology	4	NOTE: Each semester the Graduate School publishes a schedule of deadlines. Deadlines are available on the Graduate School website (https://graduateschool.colostate.edu/deadline-dates/). Students should consult this schedule whenever they approach important steps in their careers.		
BMS 642	Research Techniques for Gametes and Embryos	1	Forms (https://graduateschool.colostate.edu/forms/) are available online.		
Comparative Physiology/Taxonomy					
BZ 329	Herpetology	4			
BZ 330	Mammalogy	4			
BZ 335	Ornithology	4			
BZ 401	Comparative Animal Physiology	3			
FW 300	Biology and Diversity of Fishes	2			
Companion Animal					
ANEQ 322	Pet Nutrition	2			
BZ 479/VS 479	Biology and Behavior of Dogs	3			
SOWK 550	Animal Assisted Therapy and Human-Animal Bond	3			
Education and Human Dimensions					
EDRM 707	Quantitative Data Collection Methods/Analysis	3			
EDRM 708	Narrative Inquiry	3			
EDRM 711	Ethnographic Research	3			
NRRT 505	Environmental Education History and Theory	3			
NRRT 506	Methods in Environmental Education Research	3			
NRRT 507	Environmental Education Planning	3			
NRRT 508	Current Issues in Environmental Education	3			
Habitat Design					
HORT 331	Landscape Design	2			
LAND 365	Landscape Contract Drawing and Specifications	3			
LAND 366	Landscape Design Expression	4			
Nutrition					
ANEQ 322	Pet Nutrition	2			
ANEQ 323	Zoo Nutrition	2			

9a. Reapplication for Graduation (online)	Failure to graduate requires Reapplication for Graduation (online) for the next time term for which you are applying
10. Submit thesis or dissertation to committee	At least two weeks prior to the examination or at the discretion of the graduate committee
11. Final examination	Refer to published deadlines from the Graduate School Website
12. Report of final examination (GS Form 24)	Within two working days after results are known; refer to published deadlines from the Graduate School website
13. Submit a signed Thesis/ Dissertation Submission Form (GS Form 30) to the Graduate School and Submit the Survey of Earned Doctorates (Ph.D. only) prior to submitting the electronic thesis/ dissertation	Refer to published deadlines from the Graduate School website.
14. Submit the thesis/dissertation electronically	Refer to published deadlines from the Graduate School website
15. Graduation	Ceremony information is available from the Graduate School website