

Course Content and Outcome Guide for AQS 226

Course Number: AQS 226

Course Title: Biology of Diverse Captive Species

Credit Hours: 2

Lecture Hours: 10

Lecture/Lab Hours: 20

Lab Hours: 0

Course Description

Examines the basic husbandry and system requirements of a broad range of phyla found in public aquariums, research, and other zoological collections. Highlights specialized needs of selected invertebrate and fish species and introduces students to challenges and considerations for reptile, amphibian, avian, and marine mammal husbandry.

Intended Outcomes for Course

1. Understand the basic husbandry requirements of diverse captive species with specialized needs.
2. Discuss the broad taxonomic groups represented in public aquarium collections.
3. Identify high risk stages in the life history of selected species.
4. Determine and describe a suitable habitat for selected species.
5. Prescribe appropriate husbandry protocol for selected species.
6. Relate legislative and husbandry issues to the care of diverse captive species.

Course Activities and Design

The format for this course is a combination of lecture, group discussion, and individual research projects which provide an understanding for the basic husbandry requirements of the diverse taxonomic groups and species with specialized needs within aquarium collections. Instruction will be based at the OCCC Central Campus and will include guest lectures from industry professionals and field trips to local/regional zoological facilities.

Outcome Assessment Strategies

- Written response papers summarizing selected weekly lectures.
- Scheduled quizzes to evaluate knowledge of material presented in lecture and assigned reading.
- Discussion and presentation of primary scientific literature or texts relevant to the life history of species that require highly specialized care and system design for success in captivity.
- Term project in which students develop an exhibit proposal and poster presentation detailing considerations for the husbandry and system requirements for selected organisms.

Course Content (Themes, Concepts, Issues and Skills)

Themes

- Diversity of species within public aquarium, research, and aquaculture practices.
- Husbandry requirements for diverse and unique species within aquarium collections.
- Design and operation of life support systems for diverse and unique species within aquarium collections.
- Habitat requirements for diverse and unique species within aquarium collections.
- Maintenance of diverse and unique invertebrate and vertebrate species in captive environments.
- Regulation impacting the management and care of diverse and unique species in aquarium collections.

Concepts

- Considerations and principles which influence the planning, design, operation, and maintenance of life support systems.
- Care and husbandry of uncommon organisms in public aquarium and captive research settings.
- Changes in physical and biological requirements associated with growth/ageing of organisms.
- Challenges associated with the captive maintenance of species with highly specific habitat, reproductive, and dietary requirements.
- Taxonomic relationships and life history characteristics of diverse captive species groups such as specialized fish and aquatic invertebrates, terrestrial invertebrates, amphibians, reptiles, birds, and mammals.

Issues

- Permitting, collection, and transport of species for display, research, and aquaculture.
- Species-specific variation and requirements for husbandry and life support.
- Successful design of habitats for species or life history stages not previously held in captivity.
- Environmental awareness and conservation of captive and wild aquatic species.

Skills

- Design an exhibit for a species with highly specialized demands.
- Evaluate and summarize primary scientific literature.
- Research life history, habitat, and permitting requirements for selected species.
- Animal observation and behavior identification.
- Effective communication and public presentation.
- Discuss issues in husbandry and exhibit design with leaders and innovators in the industry.

