Advanced Inquiry Program (AIP): Foundations of Inquiry  
Summer Year 1  
Oregon Zoo

**Course Code**: TBD  
**Credits**: 3 Graduate credits, Required as first course in AIP sequence at the Oregon Zoo.  
**Format**: On-Site at AIP Master Institution Oregon Zoo + learning communities on the web  
**Dates**: Multiple Day, face-to-face interactions occur for one week during the summer at the Oregon Zoo. Students join web-based learning communities from April to December on the Dragonfly web platform.

**Instructors:**

Miami University faculties are responsible for each course. Staff at the Oregon Zoo serve as co-facilitators and oversee the on-site interactions.

**Course Description:**

This course will engage participants in exploring the foundations of inquiry-based teaching and learning while gaining a new familiarity with Oregon Zoo as an informal science education setting. Through making observations on zoo grounds, developing comparative questions, devising investigations to answer these questions and communicating results, participants will experience the full process of inquiry and will learn how to guide this process with students. This type of first hand, experiential learning encourages independent and critical thinking, increasing the students’ awareness and concern for the local environment and its inhabitants. We will engage in activities that demonstrate the applications of inquiry in the classroom, on zoo grounds, in the schoolyard and other outdoor settings. We will discuss case studies that illustrate the use of inquiry to improve student learning and engage students as leaders in their communities. Participants will come away with information and techniques for applying inquiry in the classroom and informal education settings, developing inquiry skills in students and assessing inquiry-based learning.
Course Themes:

In this course, participants will:

• Understand the nature of science
• Use models of inquiry in life science
• Learn inquiry process and skills
• Gain teaching strategies for inquiry-based approaches in the classroom
• Develop methods for assessment when using inquiry-based approaches

Learning Resources and Text:

Readings include but are not limited to:


Participants:

This graduate course is open to educators, professionals and community members from all disciplines and settings.

Students taking this course may be Master’s degree students in the Advanced Inquiry Program (AIP) [www.projectDragonfly.org/masters] this course may also include professionals who are not enrolled in the AIP Master’s Program but who wish to enroll in the course for three hours of graduate credit from Miami University.

To enroll in this graduate course, students must have a bachelor’s degree and be 18 years old.
Grading:

The final grade will encompass a student’s participation in the face-to-face and web-based components of the course, including:

- Attendance  25%
- Discussion   25%
- Participation 50%

Course instructors will determine final grades after both the face-to-face and web-based components are complete.
Course Code: TBD  
Credits: 3 Graduate credits, Required  
Format: On-Site at AIP Master Institution Oregon Zoo + learning communities on the web  
Dates: Multiple Day, face-to-face interactions occur for one week during the summer at the Oregon Zoo. Students join web-based learning communities from April to December on the Dragonfly web platform.

Instructors:

Miami University faculties are responsible for each course. Staff at the Oregon Zoo serve as co-facilitators and oversee the on-site interactions.

Course Description:

In this course, participants will explore habitats and adaptations based in the dynamic setting of the Oregon Zoo’s Predators of the Serengeti exhibit. Recently opened in 2010, Predators of the Serengeti was designed to immerse visitors in an inquiry-based learning environment, complete with a downloadable curriculum with suggestions for inquiry investigations both at the Zoo, and in the classroom. Through investigations, zoo tours, group activities and discussion, participants will explore key questions about species diversity and the relationship between species and their habitats. Using the exhibit as a living laboratory, participants will discover the ways in which African Predators, big and small, have adapted to survive in their habitat, and the specific niche they hold in the Serengeti ecosystem. Known for more than just its wildlife, students will also have the opportunity to explore the rich cultural aspects of this region, and the ways local conservation efforts intersect. Although this course will focus on Predators of the Serengeti, students will examine how the scientific concepts regarding predator adaptations and even the threats predators face, can be applied universally.
Course Themes:

In this course, students will:
• Recognize the relationship between species and their habitats, both in captivity and in the wild.
• Be able to identify the role of predators in an ecosystem, both globally and locally.
• Explore the Predators of the Serengeti Exhibit
• Learn about the cultural influence of conservation
• Identify conservation projects happening in the Serengeti
• Have the opportunity to work on curricular development and educational leadership
• Explore the principles of inquiry-based learning

Learning Resources and Text:
Readings include but are not limited to:


Participants:

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To enroll in this graduate course, students must have a bachelor’s degree and be 18 years old.
**Grading:**

The final grade will encompass a student’s participation in the face-to-face and web-based components of the course, including:

- Attendance 15%
- Group Project 25%
- Participation 15%
- Final Project 45%

Course instructors will determine final grades after both the face-to-face and web-based components are complete.
ZooExpedition: Animal Behavior and Evolution in Red Ape Reserve
Fall Year 2
Oregon Zoo

Course Code: TBD
Credits: 3 Graduate credits, Required
Format: On-Site at AIP Master Institution Oregon Zoo + learning communities on the web
Dates: Multiple Day, face-to-face interactions occur for one week during the summer at the Oregon Zoo. Students join web-based learning communities from April to December on the Dragonfly web platform.

Instructors:

Miami University faculties are responsible for each course. Staff at the Oregon Zoo serve as co-facilitators and oversee the on-site interactions.

Course Description:

In this course, students will investigate the forces driving evolution and animal behavior with the Oregon Zoo’s newest exhibit, Red Ape Reserve, as a backdrop. Focusing specifically on Orangutans and other primate species, students will examine the fragile Southeast Asian forest ecosystem, and the different ways these animals have adapted to interact with their environment, both at the zoo and in the wild. Meaning “person of the forest” in Malay, the Orangutan is perfectly adapted to spend its entire life in the tree tops. Students will investigate how the Orangutans’ behavior at Red Ape Reserve, mimics their arboreal behavior in the wild. This course will also uncover the threats facing Orangutans and other wildlife by deforestation, and the current conservation efforts to protect this sensitive ecosystem. This course will also highlight the concept of “environmental enrichment” in regards to providing mental and physical stimulation for captive animals, to illicit natural behaviors. Students will investigate these behaviors by engaging in comparative studies and will be presented with basic research and observation methods to develop their own animal behavior inquiry investigation.

Course Themes:

In this course, students will:
• Comprehend animal classification and evolution
• Gain an understanding of species-specific conservation
• Understand the purpose of environmental enrichment
• Design and implement behavioral studies, using research methods
• Have the opportunity for Curricular development and educational leadership
• Further explore Inquiry-based learning
Learning Resources and Text:
Readings include but are not limited to:


Participants:

This graduate course is open to educators, professionals and community members from all disciplines and settings .

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To enroll in this graduate course, students must have a bachelor’s degree and be 18 years old.
Grading:

The final grade will encompass a student’s participation in the face-to-face and web-based components of the course, including:

- Attendance 15%
- Group Project 25%
- Participation 15%
- Final Project 45%

Course instructors will determine final grades after both the face-to-face and web-based components are complete.
Northwest Wildlife Conservation  
Spring Year 3  
Oregon Zoo

Course Code: TBD  
Credits: 3 Graduate credits, Required  
Format: On-Site at AIP Master Institution Oregon Zoo + learning communities on the web  
Dates: Multiple Day, face-to-face interactions occur for one week during the summer at the Oregon Zoo and correlating field sites. Students join web-based learning communities from April to December on the Dragonfly web platform.

Instructors:

Miami University faculties are responsible for each course. Staff at the Oregon Zoo serve as co-facilitators and oversee the on-site interactions.

Description:

In this course, students will be presented with the fundamental scientific principles associated with Conservation Biology, and the challenges associated with creating and maintaining conservation programs. This course will approach Conservation Biology in a conceptual and applied way focusing on biological diversity, endangered populations and ecosystems. Specifically, this course will ask students to apply these principles to our local Northwest Ecosystem. This course will also investigate the relationship between science and policy, as well as the questions behind conservation values and ethics. The Oregon Zoo is dedicated to the restoration of native Pacific Northwest Species, and is involved in several local conservation projects. As part of this course, students will have the unique opportunity to work in the field with one of the Oregon Zoo’s on-going species recovery programs. Students may choose from one of the following projects:

- Oregon Spotted frog egg mass surveys (weekends in March)
- Western Pond Turtle surveys
- Metro Amphibian surveys (Feb, March, April)
- Condor Observations

During these trips, students will have the opportunity to engage with local conservationist and researchers, and gain first-hand experience in the field to gain a deeper understanding of conservation practices.
Course Themes
During this course, participants will:

- Understand the basic principles of Conservation Biology
- Identify the external factors that influence conservation such as policy and ethics
- Apply conceptual and applied Conservation Biology principles to Northwest Ecosystems
- Achieve a deeper understanding of the Oregon Zoo’s role in local and global conservation efforts
- Gain first-hand field experience
- Develop methods for implementing these scientific concepts in various inquiry-based educational settings.

Learning Resources and Text:
Readings include but are not limited to:


Participants:

This graduate course is open to educators, professionals and community members from all disciplines and settings.

Students taking this course may be Master’s degree students in the Advanced Inquiry Program (AIP) [www.projectDragonfly.org/masters] this course may also include professionals who are not enrolled in the AIP Master’s Program but who wish to enroll in the course for three hours of graduate credit from Miami University.

To enroll in this graduate course, students must have a bachelor’s degree and be 18 years old.

Grading:

The final grade will encompass a student’s participation in the face-to face and web-based components of the course, including:

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<td>Participation</td>
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Course instructors will determine final grades after both the face-to-face and web based components are complete.
Graduate Research
Summer Year 3
Oregon Zoo

Course Code: TBD
Credits: 2 graduate credits
Format: On-Site at AIP Master Institution Oregon Zoo + learning communities on the web
Dates: The schedule and scope of research projects will be determined on a case by case basis by student and Oregon Zoo research instructor. Completion and achievement will be monitored by Oregon Zoo AIP Instructors.

Instructors:

Miami University faculties are responsible for each course. Staff at the Oregon Zoo serve as co-facilitators and oversee the on-site interactions.

Course Description:

In this course, students will pursue their own inquiry project. Students have the opportunity to work on their project independently, or as an intern. To conclude their research, students must produce a written report of their findings, and associated materials.

Potential Subject Areas:

- Educational curriculum development
- Program evaluation
- Exhibit Interpretive evaluation
- Visitor studies
- Animal behavior studies
- Conservation Marketing
- Conservation Research
**Learning Resources and Text**

*Readings include but are not limited to:*


**Participants:**

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To enroll in this graduate course, students must have a bachelor’s degree and be 18 years old.

**Grading:**

The final grade will encompass a student’s participation in the face-to face and web-based components of the course, including:

- Attendance 15%
- Group Project 25%
- Participation 15%
- Final Project 45%

Course instructors will determine final grades after both the face-to-face and web based components are complete.
Summer Lecture Series
Summer Year 3
Oregon Zoo

Course Code: TBD
Credits: 1 graduate credit, optional
Format: On-Site at AIP Master Institution Oregon Zoo
Dates: June – August, as schedule dictates.

Instructors:

This course is lecture format, with a rotating guest speaker each month. Discussion questions will be submitted to Oregon Zoo Staff.

Course Description:

On a rotating schedule, the Oregon Zoo Conservation staff sponsors guests lectures at the Oregon Zoo. Lectures range from issues relating to conservation, research, career exploration and zoo medicine. Speakers range from Zoo Staff to outside community partners. Students who wish to receive one unit of graduate credit, must attend each hour long lecture, and submit discussion questions to their Instructor. Lecture schedule and topics will be distributed.

Participants:

This graduate course is open to educators, professionals and community members from all disciplines and settings.

Students taking this course may be Master’s degree students in the Advanced Inquiry Program (AIP) [www.projectDragonfly.org/masters] this course may also include professionals who are not enrolled in the AIP Master’s Program but who wish to enroll in the course for three hours of graduate credit from Miami University.

To enroll in this graduate course, students must have a bachelor’s degree and be 18 years old.

Grading:

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Butterfly Habitat Restoration
Fall Year 3
Oregon Zoo

Course Code: TBD
Credits: 1 graduate credits, optional
Format: On-Site at AIP Master Institution Oregon Zoo + learning communities on the web
Dates: Oregon Silverspot butterfly habitat restoration happens the first two weekends on October. Students must attend one day of field restoration to receive credit.

Instructors:

Miami University faculties are responsible for each course. Staff at the Oregon Zoo serve as co-facilitators and oversee the on-site interactions.

Course Description:

As part of the Species Recovery Program, the Oregon Zoo has been an integral member in the breeding and rearing of the threatened Oregon Silverspot butterfly since 2000. At one time, this butterfly was found along the coastal headlands of Northern California to Washington. Today, it is only found in a few spots along the Oregon Coast. Along with the Nature Conservancy and Woodland Park Zoo in Seattle, WA, the Oregon Zoo began breeding and rearing these butterflies, with hope that the species would recover in the wild. The Oregon Zoo has reared and released over 5,800 butterfly larvae and pupae since the project first began. This course will give participants the opportunity to take part in this species recovery program, and help restore Silverspot butterfly habitat. Students will visit one of the release sites, and plant violets and nectar flowers, a major food source for the butterflies, to help ensure their survival.

Course Themes:

In this course, students will
• Gain first hand field experience
• Understand the ecological concepts involved in planning species recovery programs
• Explore local ecosystems
Learning Resources and Text
Readings include but are not limited to:


Participants:

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To enroll in this graduate course, students must have a bachelor’s degree and be 18 years old.

Grading:

The final grade will encompass a student’s participation in the face-to-face and web-based components of the course, including:

- Attendance 15%
- Group Project 25%
- Participation 15%
- Final Project 45%

Course instructors will determine final grades after both the face-to-face and web based components are complete.