How can we study animal minds and what has been discovered? What kinds of psychological abilities and skills do animals have: Can they think, reason, remember, and count? Construct and use mental maps and images? Do they feel emotions, empathize with, and deceive others? Can they use objects as tools? Are they conscious and self-aware?

Using a comparative approach that will involve a wide range of species (octopuses to humans), this seminar will examine the scientific evidence and theories used to answer these kinds of questions, as well as undertaking a critical assessment of the research methods. This examination will help in describing the variety of mental ‘tools’ found in the toolkits of the animal world and understanding the adaptive roles that particular mental tools play in helping animals meet the challenges of survival in their ecological niches. Although not major topics for this course, historical perspectives and theories on the evolution of animal minds will serve as important contextual elements. In addition, the implications that current scientific views on animal minds have for the ethical treatment of animals and related social issues will be discussed.

SYLLABUS

Course work will consistent of readings, discussions, and weekly written reports on selected research papers on specific topics. For a final project, student will develop their own original experiment for examining some aspect of the mental life of a particular species. This proposal will be presented to the class for critiques and comments. The final assignment will be the submission of a written research proposal for the project based on individual discussions with the instructor and the feedback from the classroom presentation.

Learning Objectives & Skills to be Developed:

- Understand and articulate the major issues and views on animal minds
- Describe and give examples of the important research approaches
- Read and critique scientific studies of various mental abilities and skills
Fall 2016

- Understand the role and value of research
- Critically examine your own beliefs and ideas about animals and their mental capacities
- Develop a research proposal to study an animal mind

**The Course Web Site:** Blackboard

**Readings and Assignments:**

**Textbook:** *Fundamentals of Comparative Cognition* by Sara Shettleworth 2013 [Oxford University Press]

**Assigned readings and related assignments** will be posted on course website. Additional readings for the final research proposal will be the responsibility of the student using literature database search engines and recommendations of the instructor.

**Topics (tentative order and topics may be integrated for particular sessions):**

- Historical Approaches to the Study of Animal Intelligence
- Issues and Problems in Research on Animal Minds
- Basic Cognitive Skills and Ecological Adaptations
- Tool-Using Behaviors
- Numerical Competency: Can Animals Count and Understand Number Concepts?
- The Ecology of Learning and Specialized Cognitive Adaptations
- Memory Processes: Storing, Retrieving and Using Information to Solve Problems
- Complex Concepts and Categories
- Communication Skills
- Social Intelligence
- Nature of Emotional Lives
- Consciousness & Self-Awareness
- Ethical Issues

**General Format:**
Each session will consist of a “lecture”, followed or preceded by a discussion related to the topic under study. Concepts, theories, terms and/or questions for each topic and related readings will be distributed and posted on the course web site. These handouts and your relatively brief written reports on selected readings will be the basis for discussions in class and serve as a summary of key points for each topic.

**Assignments & Requirements (% of final grade):**

- Attendance at all sessions. In addition to the scheduled class meetings, the class will be split into small groups that will meet for ½ hour each week outside of the regular meeting times to discuss research papers and issues. (10%)
• **Prepare** for sessions: Read assigned material and prepare a **Reading Response*** for each assigned research article (see below) (35%)

• **Class participation** (responds to instructor’s questions; asks questions; pays attention; contributes to discussions) (10%)

• **An original research project** for studying the ‘intelligence’ of a particular non-human species will be developed by each student involving individual meetings with the instructor and selected readings. Each individual will prepare and deliver a 15 minute **presentation** to the class on the outline of the research project and share what challenges they encountered in designing the experiment. They will also receive constructive feedback on the study from the class that will help to inform their final paper. (10%)

• Each student will write their own **final paper** on the research project that they have developed. The paper will be a type-written proposal approximately 10 pages in length (9-12 pages) describing a research experiment for examining the intelligent behavior(s) of the group’s chosen species. (35%)

*Reading Response Papers*: For each assigned target reading or set of target readings for a session, you will write a brief summary of the main reading (2-3 pages) using a format that will be provided. In addition, you will generate some questions or ideas about the readings or topic that can be raised in a class discussion. If there is more than one paper assigned, you will provide a brief critical assessment that compares or contrasts the readings’ points or arguments in those readings. Late submissions will have points deducted accordingly.

Response papers are graded on the following criteria:

• **Content** – paper should refer to particular points in readings and related materials, and reference these points in the paper; if appropriate, connect the reading(s) to previous discussions or class materials.

• **Critical Thinking** – demonstrates engagement with the subject matter, examining the issue(s) thoughtfully and generating good questions.

• **Organization and Quality** – well organized; logical and coherent.

**NOTE**: spelling and grammar will **not** be part of the grade; but the ideas presented should be intelligible.