Ancient Mummies and New Technologies:  
The History and Science Behind Ancient Egyptian Sacred Animal Cults

Instructor  
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Course Description:  
Did you know that ancient Egyptians not only mummified people but also animals? In fact, millions of mummies of dogs, cats, birds, even crocodiles, shrews, and fish were manufactured as part of the sacred animal cults, which flourished in ancient Egypt for more than a thousand years. This immersive learning course incorporates radiology, paleontology, comparative anatomy, archeology, and ancient history to introduce you to the interdisciplinary approach Egyptologists follow to better understand this complex religious phenomenon, so that students will not only learn about ancient Egypt, but also about museum collection management, ornithology, medical imaging, and 3D printing.

We will start our investigation with a brief introduction of ancient Egyptian religion and of the motivations behind the development of animal worship. After learning the basics of the hieroglyphic writing system, we will also read the inscriptions that Egyptian worshippers dedicated to sacred animals such as the Apis bull and the ibis of Thoth. Once we have established the historical context for our research, we will focus on the various ways modern technology, in particular 3D imaging and printing, can be integrated into the study of ancient artifacts.

Students will have the opportunity to catch a glimpse underneath the wrappings of bird mummies held in the Oriental institute Museum Collection which have lain unexamined since the 19th century. We will review CT scan images of several mummified bundles, and then use the scans to render the remains lying within the wrappings with a 3D printer so that we can handle and analyze them, thereby adding to the store of knowledge about these artifacts and experiencing firsthand the joys and challenges of research.

Schedule  
The class will run from 9am to 4pm with an hour break for lunch, Monday through Friday.

Location:  
Oriental Institute  
1155 E. 58th Street  
Room 208

Required Text (Available at the Oriental Institute Museum store):  
- Salima Ikram (Ed.). Divine Creatures – Animal Mummies in Ancient Egypt. 2005  
- Additional material will be provided on Chalk (chalk.uchicago.edu)

Grading:  
- Participation is crucial for this course. You will be expected to have your homework ready every day, to both ask and answer questions, as well as to comment on the various topics, which will be covered during the course. You will all be asked to lead one discussion on the assigned primary sources.
- At the end of the first two weeks, there will be a quiz (short answers and multiple choice questions) on the material, both from lectures and readings, covered up to that point.
The course will end with a presentation of your research projects. You will be asked to both write and present the results of your research conducted on a theme related to sacred animal cults and their study, which you wish to explore further. Research topics can range from the presentation of a specific cult site or sacred animal to an in-depth study of the various tools available to Egyptologists to learn more about these cults. I expect the paper to be 7 to 10 pages long, double spaced, with standard margins and fonts. It will be due on Friday of Week 3. Additionally, on this final day of the course, you will share your research with the class in a 10-15 minute presentation.

**Highlights of Week 1:**
Introduction to ancient Egypt:

- Presentation of the field of Egyptology
- Brief review of ancient Egyptian history
- Introduction to the Egyptian hieroglyphic system
- Ancient Egyptians’ view of the animal world and its impact on the religious system

Visit of the Oriental Institute Museum, with special emphasis on its Egyptian collection

Quiz #1

**Highlights of Week 2:**
Mummy studies:

- Why did the Egyptians mummify their dead relatives and animals?
- History of the study of Egyptian mummies
- Modern technology and mummies
  - Medical imaging – X-Ray and CT scanning
  - 3D imaging
  - 3D printing

Viewing of the animal mummies held in the Oriental Institute Museum

Visit of the Field Museum of Natural History’s Egyptian galleries

Guest lectures of specialists in radiology, 3D imaging and 3D printing

Quiz #2

**Highlights of Week 3:**
Virtual examination of bird mummies from the Oriental Institute Museum

- Analysis of the CT scans of bird mummies
  - Identification of the contents
  - If relevant, identification of the type(s) of birds inside each mummy
- If possible, 3D printing of the mummies’ contents

Research presentations and papers