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STANFORD UNIVERSITY
DEPARTMENT OF CLASSICS
&
THE SCIENCE, TECHNOLOGY, AND SOCIETY PROGRAM

SCIENCE AND TECHNOLOGY IN ANCIENT EGYPTIAN SOCIETY

CLASSHIS 131/STS 120
WINTER 2005
TTh 12:30-2 PM

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Aims of the course

The course aims to provide an historical perspective on the relationship between technology and society by examining the history material culture of ancient Egypt. With examples drawn from documentary and archaeological sources, we will build an historical case study, covering more than 3,000 years, of the relationship of technology to society, and how technology was embedded within the society. We will also examine the relationship between the power of the state, and the individual to manage, to utilize, and to improve technologies. Egypt provides one of the best case studies form the pre-modern world to answer the question: Where does innovation come from?

Requirements

Science & technology in ancient Egyptian society

Attendance at the lectures will be expected. The grade will be based on a final paper, about twenty pages in length, double-spaced, and conforming to the standards in Kate Turabian, *A Manual for Writers of Term Papers, Theses, and Dissertations*. 6th ed.. Chicago, 1996.

Reading

Textbook: *The British Museum Book of Ancient Egypt*. London, 1992. (= BMB)

Coursepack

Other readings will be handed out in class

Week 1- Technology and society

Tuesday, 4 January General introduction to the course

Thursday, 6 January The wonders of ancient Egypt-mother of all invention?

Reading: Joel Mokyr, "Long-term Economic growth and the history of technology." (Coursepack)

Week 2- Historical and geographical background/Egyptian state & society

Tuesday, 11 January An sketch of ancient Egyptian history

Reading: BMB, pp. 11-56.

Thursday, 13 January Geography

Reading J.R. Harris, "Technology and Materials," in *The Legacy of Egypt*, 2d.ed. Oxford, 1971:83-111 (Coursepack); BMB, pp. 164-191.

Week 3- The technological foundations of ancient Egypt; The conceptions and the organization of knowledge

Tuesday, 18 January The structure of the state

Reading. Michael Mann, The sources of social power, pp. xx-xx (handout)

Thursday, 20 January Egyptian Cosmology Education, Writing & Bureaucracy as technology

Reading: BMB, pp. 118-47

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Week 4- Bureaucracy as technology; Time, weights/measures

Tuesday, 25 January The origins of bureaucracy

Reading: Barry J. Kemp, "The bureaucratic mind," in *Ancient Egypt. Anatomy of a civilization*. London, 1991: Chapter 3 (Coursepack).

Thursday, 27 January Measuring and counting things

Reading: K.N. Chaudhuri, "The structure of time and history," in *Asia before Europe*. Cambridge, 1990:Chapter 4 (Coursepack).

Week 5- Keepers of tradition: scribes & priests

Tuesday, 1 February. The role of priests in society

Reading:TBA

Thursday, 3 February Ancient Egyptian education

Reading:TBA

Week 6- Down on the farm

Tuesday, 8 February Irrigation technology & society

Reading: Karl Butzer, "Irrigation," in *The Oxford Encyclopedia of ancient Egypt*, Oxford. Pp. 183-88.

Thursday, 10 February Farming, transportation

Reading: "A farmer's problems (Heqanakhte, c. 1950 BC)," in John Ray, *Reflections of Osiris. Lives from ancient Egypt*. Oxford. Pp. 23-39 (Coursepack).

Week 7- Stone into power, military & imperialism

Tuesday, 15 February Pyramids, temples and the first genius in the world

Reading: Dieter Arnold, *Building in Egypt:Pharaonic stone masonry*. New York, 1991 (Handout); BMB, pp. 148-63; "Egypt's Leonardo (Imhotep, c. 2650 BC)," in John Ray, *Reflections of Osiris. Lives from ancient Egypt*. Oxford. Pp. 5-22 (Coursepack).

Thursday, 17 February The military and technical innovation

Reading:TBA

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Week 8- Medicine, Mathematics, Astronomy

Tuesday, 22 February Ancient Egyptian Medicine

Reading: J.R. Harris, "Medicine," in *The legacy of ancient Egypt*. Oxford:112-37.
(Handout)

Thursday, 24 February Mathematics & Astronomy

Reading Ronald Wells, "Astronomy in Egypt", in *Astronomy Before the Telescope*
British Museum Press, 1996:28-41.

Week 9-The economy and technical innovation

Tuesday, 1 March The structure of the Egyptian economy

Reading: Barry Kemp, "The birth of economic man," in *Ancient Egypt. Anatomy of a civilization*. London,1989: Chapter 6.

Thursday, 3 March Long term change in the agrarian economy of Egypt

Reading:TBA

Week 10-The Greco-Roman period: Tradition and innovation

Tuesday, 8 March The library of Alexandria

Reading: P.M. Fraser, "Ptolemaic patronage: the Mouseion and library," in *Ptolemaic Alexandria*. Oxford. Pp. 305-35 (Coursepack). For fun, look up Alexander Stille's article in the *New Yorker* May 8, 2000.

Explore an overview here:

http://en.wikipedia.org/wiki/Library_of_Alexandria

Thursday, 10 March Change and continuity in Egypt, or Why does Egypt matter?

Reading: Timothy Champion and Peter Ucko, "Introduction: Egypt ancient and modern," in *The wisdom of Egypt:changing visions through the ages*. London, 2003:1-22.

Final paper due: Friday, 18 March, 12 Noon