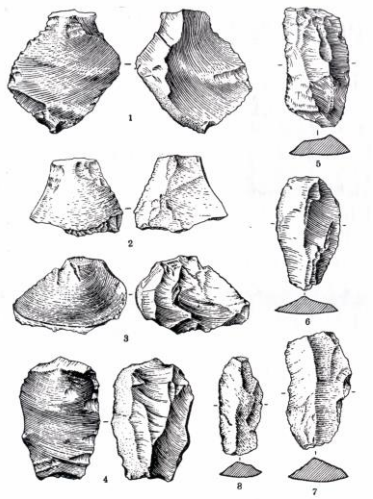
Freshman Seminar FRSEMR 40C:
Ancient Technology – China and Beyond
Spring 2016
http://isites.harvard.edu/course/colgsas-159720/2015/Spring/15538



Room:
Harvard Art Museum 0600

Time:
M 2:30-5:00

Instructor:
Prof. Rowan Flad
Department of Anthropology
576 Peabody Museum
Phone: 495-1966
rflad@fas.harvard.edu

Course Description:

What is technology? How did different technologies develop in Ancient China? This course introduces the concept of technology, especially as it is approached by archaeologists. Through hands on experiences, the practices involved in different technologies are introduced, and the historical contexts of their development in ancient China are considered through readings that are discussed in class. Technologies explored in the class include stone tools and their manufacture, agricultural technologies, technologies of animal husbandry, divination technologies, pottery manufacture, metal production, and more. Students will also have the opportunity to put together a small exhibit in the Harvard Art Museums on Ancient Chinese technology using collections from the Peabody Museum and the Sackler Museum that will be on display for the Seventh International Conference of the Society for East Asian Archaeology, hosted at Harvard in June 2016.

Requirements and Policies:

Students are expected to attend all classes participate in discussion and activities. Readings should be completed prior to the class date on which they are assigned.

Internet resources are not to be used for the research paper and students are expected to do their own work. **Academic dishonesty** of any sort will be referred to and dealt with by the Administrative Board. Please consult the Student Handbook

(http://www.registrar.fas.harvard.edu) for information regarding academic dishonesty. Details concerning academic dishonesty in writing can be found in the "Writing with Sources" pamphlet on-line at http://www.fas.harvard.edu/~expos/sources/.
Students must acknowledge any collaboration and its extent in all submitted work. Collaboration in the completion of examinations is always prohibited. Here is our official collaboration policy, as indicated on the course website:

Discussion and the exchange of ideas are essential to doing academic work. For assignments in this course, you are encouraged to consult with your classmates as you work on assignments. However, after discussions with peers, make sure that any work you submit for evaluation is the result of your own efforts. In the case of written assignments for the course, you should ensure that any written work you submit for evaluation is the result of your own work and writing and that it reflects your own approach to the topic. You must also adhere to standard citation practices in this discipline and properly cite any books, articles, websites, lectures, etc. that have helped you with your work. Web sources are generally not considered peer-reviewed sources of high academic standard and should be used cautiously if at all.

Any student needing academic adjustments or accommodations is requested to present their letter from the Accessible Education Office (AEO) and speak with the professor by the end of the second week of the term. Failure to do so may result in the Course Head's inability to respond in a timely manner. All discussions will remain confidential, although AEO may be consulted to discuss appropriate implementation.

A final paper (35% of the grade) will be written by students about some aspect of the course material. This paper will focus on a specific technology from Ancient China and is limited to approximately 10 pages. Students will give a presentation on the paper topic near the end of the semester (10%), and will also create content for a digital exhibit to be displayed in the Harvard Art Museums on the subject of their paper (15%). The participation portion of the grade (20%) will be based on discussions in class and participation in the museum exhibit preparation. The remaining portion of the grade (20%) will be based on writing assignments about each technological topic covered in the class.

Summary of grad break-down:

Participation:	20%
Writing Assignments:	20%
Research Paper	35%
Presentation	10%
Contribution to Gallery Exhibit	15%

Note on Required Readings:

Parts of the following books will be used in this class, in addition to selected readings:

- Arthur, W. Brian (2009). *The Nature of Technology*. New York: Free Press.

- Miller, Heather M-L. (2007). *Archaeological Approaches to Technology*. Boston: Academic Press.
- Shelach, Gideon (2015). *The Archaeology of Early China: from Prehistory to the Han Dynasty*. Cambridge: Cambridge University Press.

The books will be on reserve at Tozzer Library. Other course readings will be available on the course website. The books will also be available for purchase through the campus bookstore.

Schedule of Classes

Week	Date	Topic	Readings	Location	Assignments
1	1/25	Introduction to Technology – What is Technology? How does technology evolve?		Harvard Art Museums 0600 / Visit Lightbox Gallery	
2	2/1	Discussion of Technology and Early China	Arthur (Chapters 1, 2; pp. 1-44); Miller (Chapters 1, 2; pp. 1-40); Shelach (Chapters 1, 2; pp. 1-17)	Harvard Art Museums 0600	
3	2/8	Stone Tools – The earliest evidence of human technology	Arthur (Chapter 6; pp. 107-130): Miller (Chapter 3; pp. 41-100), Shelach Chapter 2; pp. 19-44)	Harvard Art Museums 0600 / Materials Lab	
	2/15	NO CLASS – Presidents' Day			
4	2/22	Agriculture – Technologies of food production	Arthur (Chapter 9; pp. 167-190); Shelach (Chapter 3; pp. 45-67); Fuller 2009	Harvard Art Museums 0600 / Study Room	Essay 1: How does the perspective of Arthur relate to lithic and agricultural technologies in Ancient China?
5	2/29	Animal Technology - Husbandry / Sacrifice / Divination	Campbell et al. 2011; Flad 2008; Harrison 1954; Yuan and Flad 2005	Harvard Art Museums 0600	
6	3/7	Animal Technology – Foreign Introductions [Guest Dr. Kate Brunson]	Brunson 2015; Killick 2004; Linduff 2003	Harvard Art Museums 0600 / Materials Lab	Essay 2: How do new technologies (new animals, new plants, new crafts) get adopted by

					populations who did not invent them? How does the "Social Constructionist Approach" relate to more traditional approaches to Diffusion (eg. Harrison)
	3/15	NO CLASS – HARVARD HOLIDAY WEEK			
7	3/21	Jade Technology [Guests: Dr. Katherine Eremin / Melissa Moy]	Miller (Chapter 4; pp. 101-166); Shelach (Chapter 6; pp. 127-160); Sax 2004;	Harvard Art Museums 0600 / Materials Lab / Study Room	
8	3/28	Bronze Technology [Guest: Dr. Katherine Eremin / Dr. Francesca Brewer]	Li 2007; Shelach (Chapter 8; pp. 194-226); Bagley 2009	Harvard Art Museums 0600 / Materials Lab / Study Room	
9	4/4	Analyzing Ancient Technology [Guest: Dr. Katherine Eremin / Dr. Francesca Brewer]	Ingold 2001; Liu 2003; Mei et al. 2015	Harvard Art Museums 0600 / Analytical Labs	Essay 3: How did jade and bronze technologies contribute to prestige in early China?
10	4/11	Ceramic Technology: Discussion of NW Chinese Pottery in Museum Collection [Guest: Dr. Ling-yu Hung]	Allard 2001; Hung 2014; Keightley 1987; Wu et al. 2012;	Harvard Art Museums 0600 / Study Room	
11	4/18	Ceramic Manufacture / Ceramic Artifacts [Guest: Dr. Kathy King]	Cui et al. 2015; Lechtman and Steinberg 1979;	TBA: Ceramic Studio OR Materials Lab	Essay 4: How does the "anthropological point of view" of Lechtman and Steinberg affect the way we understand ancient ceramics from China?
12	4/25	Class Presentations		Harvard Art Museums 0600 / Study Room	Final Paper Due on Designated Exam Day

Readings:

Allard, Francis (2001). Mortuary Cermaics and Social Organization in the Dawenkou and Majiayao Cultures. *Journal of Anthropological Archaeology* 3(3-4): 1-22.

Bagley, Robert (2009). Anyang Mold-Making and the Decorated Model. *Artibus Asiae* 69(1).

Brunson, Katherine, He Nu and Dai Xiangming (2015). Sheep, Cattle, and Specialization: New Zooarchaeological Perspectives on the Taosi Longshan. *International journal of Osteoarchaeology*.

Campbell, Roderick B., Zhipeng Li, Yuling He and Jing Yuan (2011). Consumption, exchange and production at the Great Settlement Shang: bone-working at Tiesanlu, Anyang. *Antiquity* 85: 1279-1297.

Chen Xingcan and Magnus Fiskesjö (2004). The Chinese fate of Johan Gunnar Andersson: From Scholar to Scholar. *China before China: Johna Gunnar Andersson, Ding Wenjiang, and the Discovery of China's Prehistory*, edited by M. Fiskesjö and Chen Xingcan. Stockholm: Museum of Far Eastern Antiquities**:** 104-125.

Cui, Yifu, Guanghui Dong, Haiming Li, Ting An, Xinyi Liu, Jian Wang, Hui Wang, Xiaoyan Ren, Xiaobin Li and Fahu Chen (2015). Early ceramic trade in Gansu and Qinghai regions, northwest China: A comparative elemental analysis on sherds of Majiayao culture, Yangshao culture and Qijia culture. *Journal of Archaeological Science: Reports* 3: 65-72.

Falkenhausen, Lothar von (1993). On the Historiographical Orientation of Chinese Archaeology. *Antiquity* 67: 839-849.

Fuller, Dorian Q., Ling Qin, Yunfei Zheng, Zhijun Zhao, Xugao Chen, Leo Aoi Hosoya and Guo-ping Sun (2009). The domestication process and domestication rate in rice. *Science* 323: 1607-1609.

Flad, Rowan K. (2008). Divination and Power: A Multi-regional View of the Development of Oracle Bone Divination in Early China. *Current Anthropology* 49(3): 403-437.

Harrison, H. S. (1954) Discovery, Invention and Diffusion. In *A History of Technology*. Vol. I, edited by C. J. Singer, E. J. Holmyard and A. R. Hall, pp. 58-84. Oxford: Clarendon Press.

Hung, Ling-yu (2014). Emergence of Neolithic Communities on the Northeastern Tibetan Plateau: Evidence from the Zhongri Cultural Sites. *The 'Crescent-Shapted Cultural-Communication Belt': Tong Enzheng's Model in Retrospect - An examination of methodological, theoretical, and material concerns of long-distance interactions in East Asia*, edited by A. Hein. Oxford: Archaeopress. BAR International Series 2679**:** 65-78.

Ingold, T. (2001) Beyond Art and Technology: The Anthropology of Skill. In *Anthropological Perspectives on Technology*, edited by M. B. Schiffer, pp. 17-31. Amerind Foundation, Dragoon, AZ.

Keightley, David N. (1987). Archaeology and Mentality: The Making of China. *Representations* 18: 91-128.

Killick, D. (2004) Social Constructionist Approaches to the Study of Technology. *World Archaeology* 36:571-578.

Lechtman, H. and A. Steinberg (1979) The History of Technology: An Anthropological Point of View. In *The History and Philosophy of Technology*, edited by G. Bugliarello and D. B. Doner, pp. 135-160.

Li, Yung-ti (2007). Co-craft and Multicraft: Section-Mold Casting and the Organization of Craft Production at the Shang Capital of Anyang. *Craft Production in Complex Societies: Multicraft and Producer Perspectives*, edited by I. Shimada. Salt Lake City: University of Utah Press**:** 184-223.

Linduff, Kathryn M. (2003). A walk on the wild side: Late Shang appropriation of horses in China. *Prehistoric steppe adaptation and the horse*, edited by Marsha Levine, C. Renfrew and K. Boyle. Cambridge: McDonald Institute for Archaeological Research**:** 139-162.

Liu Li (2003). "The Products of Minds as Well as of Hands": Production of Prestige Goods in the Neolithic and Early State Periods of China. *Asian Perspectives* 42(1): 1-40.

Mei, Jianjun, Pu Wang, Kunlong Chen, Lu Wang, Yingchen Wang and Yaxiong Liu (2015). Archaeometallurgical studies in China: some recent developments and challenging issues. *Journal of Archaeological Science* 56: 221-232.

Sax, Margaret, Nigel D. Meeks, Carol Michaelson and Andrew D. Middleton (2004). The Identification of Carving Techniques on Chinese Jade. *Journal of Archaeological Science* 31: 1413-1428.

Wu, Xiaohong, Chi Zhang, Paul Goldberg, David Cohen, Yan Pan, Trina Arpin and Ofer Bar-Yosef (2012). Early Pottery at 20,000 Years Ago in Xianrendong Cave, China. *Science* 336(6089): 1696-1700.

Yuan Jing and Rowan K. Flad (2005). New Zooarchaeological Evidence for Changes in Shang Dynasty Animal Sacrifice. *Journal of Anthropological Archaeology* 24(3): 252-270.