

# ANT 320H – ARCHAEOLOGICAL APPROACHES TO TECHNOLOGY

FALL 2010, Anthropology, University of Toronto, Mississauga

Course Web Page: <http://www.utm.utoronto.ca/~w3hmlmil/320F2010.htm>

Course Blackboard page: <https://portal.utoronto.ca/>

Dr. Heather M.-L. Miller

Office: 208 North Building, UTM

Email: [heather.miller@utoronto.ca](mailto:heather.miller@utoronto.ca)

Phone: UTM: 905-828-3741 (email is better, except for Tuesdays)

Class meeting:

139 North Bldg.

Tuesdays 2-5

Office Hour:

208 North Bldg.

Tuesdays 5-6 and by appointment

## **Course Description and Objectives**

This seminar and lecture course focuses on insight into social and cultural processes provided by the study of ancient and historical technology. It emphasizes the importance for archaeological studies of archaeological, textual, experimental and ethnographic data.

Organization and control of production, style of technology, and the value of objects will be examined. Throughout, social and cultural as well as economic and functional reasons for the development and adoption of new technologies will be discussed.

Technology will be studied both from the perspective of the modern scholar, focusing on the major methods archaeologists and others have used to study technology, and from the perspective of the craftsperson, focusing on production, organization, and consumption for a number of crafts.

Prerequisite: ANT200Y5

Recommended Preparation: ANT204Y5

SCI course

## **Readings**

- (1) Franklin, Ursula, 1999. *The Real World of Technology* (revised edition). Toronto: House of Anansi Press. (Earlier editions are 1990 and 1992, and do not contain the last few chapters.)
- (2) Miller, Heather M.-L., 2007. *Archaeological Approaches to Technology*. Walnut Creek, CA: Left Coast Press (Previously San Diego, CA: Elsevier/Academic Press, same edition but hardback only.)
- (3) PDFs of additional reading selections needed for the class paper will be available on the course Blackboard website, available through your UTOR Portal.

## **Opportunities for Independent Study with Individual Projects in Spring 2011 Term**

Next term, I will be teaching my graduate course, Ancient Technology, at UTM on Tuesday afternoons. This course is part seminar, part lab, and part independent projects. We will do a series of studies of different ancient technologies, and each student will undertake their own replicative or experimental study on a technology of their choice. It is not unusual for projects to result in a conference presentation or even a published paper, with a little additional work. Students who receive a high A mark in ANT320 may apply to take that course as an independent study, and do a special individual project of their own. Please speak to me if you are interested in this option. You cannot be admitted into that course without a high mark in this one.

## **Course Requirements and Grading**

Total of 1000 points = 100%

[1] 10% of the course mark (100 points) will be based on **weekly participation**. This includes class attendance, submission of written questions for class discussion via Blackboard, and critical discussion of readings in class. Students will be assigned as discussion leaders for particular classes/articles and will pose questions, but all students will participate in each week's discussion. (More information to be provided on the Participation handout.) Failure to participate fully in all stages of the discussion process will result in considerable loss of marks. Surprise quizzes on the readings may be given as part of this mark if student participation is low.

[2] 30% (300 points) for a mid-term short-answer and essay test. **Oct. 19 in class.**

[3] 30% (300 points) for a final short-answer and essay exam. **During Finals Week.**

[4] 30% (300 points) for the two parts of the course assignment. Each student will write an essay examining the role of technology in a past society, based on actual experimental and laboratory investigations of bead manufacturing processes in ancient Baluchistan by French and Italian archaeologists. Two steps will be submitted:

(A) Reconstructed production outlines and organizational implications, with supporting evidence for conclusions. 10% (100 points). **Due Nov. 9**

(B) Final essay on implications of production (social, economic, political), well researched and well written. 20% (200 points). **Due Nov. 23**

\*\*\*\*More information on the assignment will be available in the Assignment Handout.\*\*\*\*

**We will be using Turnitin.com**, primarily to make on-time submission easier. Please see the "Course Regulations" below for more information.

## **Course Regulations (1-5 – continued on next page)**

**(1) There are no make-ups for in-class graded work, including participation and tests, except with a doctor's excuse or other university-approved documentation.** Any requests for a make-up must be made by email within 2 days of the missed work; it is the student's responsibility to ensure that this email has been received, based on a confirmation by the instructor. No make-ups will be made more than a week after the original due date except in unusual circumstances. Make-ups for the final exam are conducted through the Registrar.

**(2) Late assignments will lose 10% of the value of the assignment per calendar day, including weekends. 5% will be deducted** for assignments turned in **after the first hour of class on the date due**, even if the assignment is turned in on the due date. It is the student's responsibility to turn in late assignments via Turnitin.com. For paper copies, I am only available at UTM on Tuesdays and some Weds; you will have to come to St. George on Thurs. or Fridays.

**(3) You may work with other students in preparing for class discussion, for exams, and for assignments, but what you submit must be your own work.** You are encouraged to discuss questions together, or share source materials, or recommend readings and web sites. However, I will expect everyone in the class to have a different approach, particularly for their assignments; submitting assignments that are too similar may result in investigation for an academic offense. I also recommend that during exams, you sit far away from students with whom you have studied, in case your essays are similar in approach.

**(4) Please be especially careful to avoid plagiarism, which is a serious academic offence.** Carefully read the section under "Citations" in the Assignment Instructions, once you have this handout. Be sure to cite ideas as well as direct quotations, even if these ideas are paraphrased. All quotes should be either in quotation marks or indented if longer than two sentences.

Written work in which plagiarism is detected will be severely penalized. For more details, see "Academic Honesty" under "General Regulations" and "The Code of Behaviour on Academic Matters" under "Discipline Codes" in the UTM Calendar. It is your responsibility to be familiar with this code, and adhere to it. Be sure to read the link to the information on plagiarism on the web site, <http://www.utoronto.ca/writing/plagsep.html>.

### **(5) Submission of Materials**

You may not submit your assignments to anyone except the instructor, and submissions may ONLY be through Turnitin.com AND/OR by paper copy to the instructor in person. More information is available on the Assignment Instructions Handout.

We will be using Turnitin.com, primarily to make on-time submission easier. You are asked to submit an electronic copy of your assignments at Turnitin.com by the start of class (2 pm) on the dates specified. **In addition**, your assignments must also be submitted as a paper copy at the start of class on the date indicated. In case of discrepancies, the Turnitin.com version of the assignment will be used for marking. Late copies must be submitted through Turnitin.com for a date stamp, to limit the late penalties incurred (see (2) above).

**The class ID number is: 3351939                      The class password is: ANT320**

*“Normally, students will be required to submit their course essays to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site.”*

If you are uncomfortable submitting your essay through Turnitin.com, you may arrange in the first two weeks of class to simply supply a paper copy by the required date and time. In that case, you will have to bring any late assignments to the instructor, at the instructor's convenience, possibly to St. George campus. Emailed assignments will not be accepted.

### **Class Schedule**

<b><u>Week</u></b>	<b><u>Topics</u></b>	<b><u>Readings</u></b> (finish BEFORE class)
Sept. 7	<u>Discussion Themes:</u> Overview and Introduction: Themes in Archaeological/Anthropological Technology What is Technology?  <u>Lithics Demo and Lab:</u> Ground stone bead manufacturing; Organization of Production, Segregation & Segmentation - <i>to be repeated for next few weeks</i>	
Sept. 14	<u>Discussion Themes:</u> <b>Holistic and Prescriptive Technologies; Organization of Production; Social and Political Effects; Compliance</b>	(1) Franklin Prefaces and Ch. 1, 2, 3, 4 (through p 90, plus be sure to check Notes at end)
Sept. 21	<u>Discussion Themes:</u> <b>Social and Political Effects of the Organization of Production; Consumption; Communication Technologies; Innovations; Time and Space</b>	(1) Franklin Ch. 5, 6, 7, 8, 9, 10, Coda (p. 91-180 plus Notes)
Sept. 28	<u>Discussion Themes:</u> <b>(Ancient) Technology – Definitions, Archaeological methods, Analogy</b>  <u>Video:</u> <i>The Dogrib Birchbark Canoe</i>	(1) Miller Chapters 1 and 2 (to p. 40) (2) Vidale and Shar 1991  References: Bleed 2001; Skibo and Shiffer 2001

Oct. 5	<p><b>Discussion Themes: Craft types; Extractive-Reductive Crafts; Stone</b></p> <p><u>Video:</u> <i>Flintknapping with Bruce Bradley.</i></p> <p><u>Demo/Slides:</u> Stone Bead Production in Khambat, India (agates-chipped) and in Peshawar, Pakistan (talc/steatite &amp; lapis-sawn).</p> <p><u>Video:</u> Roux (2000) – demonstration CD</p>	<p>(1) Miller Ch. 3, p. 41-65; review Ch. 2  (2) Vidale 1995  (3) Barthelemy de Saizieu and Bouquillon 1994</p> <p>References for Stone: Kenoyer, Vidale &amp; Bhan 1991, 1994; Roux 2000, Roux <i>et al.</i> 1995 ; Vidale 1995</p>
Oct. 12	<p><b>Discussion Themes: Craft types; Extractive-Reductive Crafts; Fibers and Sculpted Organics; Organization of Production; Skill; Apprenticeship</b></p> <p><u>Video:</u> <i>The Art of Guatemalan Weaving</i>  <i>The World According to Basketry</i></p> <p><u>Demo/Slides:</u> Fibers</p> <p><b>(Mon, Oct 11 is Thanksgiving holiday – going away for Thanksgiving will NOT be an acceptable excuse for missing class – you have a 3–day weekend only)</b></p>	<p>(1) Miller Ch. 3, p. 65-100; Review p. 41-46</p> <p>References for Skill/Apprenticeship: Wendrich 1999: pp. 1-4, 389-394, 419-426; Crown 2001; Roux <i>et al.</i> 1995; Kenoyer <i>et al.</i> 1991; Wake 1999</p>
Oct. 19	<p><b><u>Midterm Test in class</u></b></p>	
Oct. 26	<p><b>Discussion Themes: Craft types; Transformative Crafts/Pyrotechnology; Fired Clay; Vitreous Silicates</b></p> <p><u>Demonstrations &amp; Labs:</u> Clay, Pottery: Processing raw clay; Temper Types; Hand to wheel building pottery; Glazes and Glasses</p> <p><u>Videos:</u> <i>Maria. Indian Pottery Maker of San Ildefonso.</i>  <i>The Potters of Thrapsano</i></p>	<p>(1) Miller, Ch. 4, p. 101-144; Review p. 41-46</p> <p>References: Shah 1985; Sinopoli 2003</p>
Nov. 2	<p><b>Discussion Themes: Craft types; Transformative Crafts/Pyrotechnology; Metals Organization of Production; Researching entire Technological Systems;</b></p> <p><u>Video:</u> <i>Dhokra: The Lost Wax Process in India</i></p> <p><u>Demo:</u> Ashante (West African) Lost Wax Casting</p> <p>Think about the varying methods of organization of craftspeople’s work &amp; the various distribution systems in the readings AND in the videos to date. How might this be applied to your talc bead case?</p>	<p>(1) Miller, Ch. 4, p. 144-166; Review p. 41-46  (2) Miller Ch. 5, p. 167-180</p> <p>References for Production: Arnold 1995; Bleed 2001; Fox 1988; Shah 1985: pp. 15-28; Sinopoli 2003: pp. 13-37; Skibo and Shiffer 2001</p>
Nov. 9	<p><b><u>ASSIGNMENT PART I DUE at start of class</u></b></p> <p><b>Discussion Themes: Innovation &amp; Tradition; Agricultural Technologies Style of Object; Style of Production (Technological style)</b></p>	<p>(1) Miller Ch. 5, p. 180-202</p> <p>References for Innovation: Torrence &amp; van der Leeuw 1989; for Agriculture: Erickson 2006; Foxhall 1998; Reddy 1997; for Style: Hegmon 1992; Hosler 1994; Wake 1999</p>

Nov. 16	<u>Discussion Themes: Value &amp; Status; Material Culture Meanings &amp; Values</u>  <u>Demo:</u> Object Analysis—multiple perspectives	(1) Miller Ch. 6, p. 203-226  References for Value: Csikszentmihalyi 1993; Jones 1990
Nov. 23	<b><u>FINAL ASSIGNMENT DUE at start of class</u></b> <u>Discussion Themes: Ritual Technology; Cross-Craft Perspectives on Technology</u>  <u>Video:</u> <i>Sandpainting: A Navajo Tradition</i> <u>Demo/Slides:</u> Asabano Drums	(1) Miller, Ch. 6, p. 226-236 (2) Miller, Ch. 7, p. 227-245  References for Ritual: Lohmann 2006; McGhee 1977; Shah 1985
Nov. 29	<u>Reading Week – no class</u>	
Dec. 6-17	<u>FINAL EXAM (Date To Be Announced)</u>	

### **Videos Cited**

- The Art of Guatemalan Weaving*. 2000. Produced by Jan Olsen in highland Guatemala in 1999. 30 min. Jan Olsen, 6719 106 St., Edmonton, Alberta T6H 2W1, sabar@compusmart.ab.ca.
- Dhokra: The Lost Wax Process in India*, 1989, produced by David J. Capers in Orissa, India. 26 min.
- The Dogrib Birchbark Canoe (Tliicho K'ielá)*, 1997, Dogrib Divisional Board of Education & Lone Wolf Television Production Services. Chief Jimmy Bruneau Regional High School, Northwest Territories. 29 min.
- Flintknapping with Bruce Bradley*. 1989. Produced by INTERpark, Cortez, CO. ca. 55 min.
- Maria. Indian Pottery Maker of San Ildefonso*. 19xx? US National Park Service. 27 min. (manufacture of handmade pottery from clay collection to firing by Maria Martinez & her son)
- The Potters of Thrapsano: A Modern Workshop with Clues to Ancient Technology*. 1999. Cinegraphic Films. 27 min. (large jar manufacture using a combination of handmade & wheelmade sections, pottery workshop on Crete)
- Sandpainting. A Navajo Tradition*. 19xx? Produced by INTERpark, Cortez, CO. 37 min.
- Wendrich, Willeke. 1999. *The World According to Basketry*. Research School of Asian, African and Amerindian Studies (CNWS), Universiteit Leiden Video ca. 60 min. ISBN 90-5789-035-6

### **Selected References – suggested readings to get you started in library searches**

- Arnold, Jeanne E. 1995. Transportation Innovation and Social Complexity among Maritime Hunter-Gatherer Societies. *American Anthropologist* 97(4):733-747.
- Bleed, Peter. 2001. Artifice Constrained: What Determines Technological Choice? In Michael B. Schiffer (ed), *Anthropological Perspectives on Technology*. Amerind Foundation New World studies series, no. 5. Albuquerque, NM: University of New Mexico Press. Pp. 151-162.
- Barthélémy de Saizieu, Blanche and Anne Bouquillon 1994. Steatite working at Mehrgarh during the Neolithic and Chalcolithic periods: quantitative distribution, characterization of material and manufacturing processes. In: Asko Parpola and Petteri Koskikallio (eds) *South Asian Archaeology 1993*. Helsinki: Suomalainen Tiedeakatemia. Pp. 47-59.
- Crown, Patricia L. 2001. Learning to Make Pottery in the Prehispanic American Southwest. *Journal of Anthropological Research* 57:451-469.
- Csikszentmihalyi, Mihaly. 1993. Why We Need Things, In: Steven Lubar & W. David Kingery (eds), *History From Things: Essays on Material Culture*. Washington DC: Smithsonian Institution Press. Pp. 20-29.
- Erickson, Clark L. 2006. Intensification, Political Economy, and the Farming Community. In Defense of a Bottom-up Perspective of the Past. In: Joyce Marcus & Charles Stanish (eds), *Agricultural Strategies*. Los Angeles: Cotsen Institute of Archaeology Press, UCLA. Pp. 334-363.
- Fox, Christine. 1988. *Asante Brass Casting. Lost-wax casting of gold-weights, ritual vessels and sculptures, with handmade equipment*. Cambridge: African Studies Centre.

- Foxhall, Lin. 1989. Snapping up the Unconsidered Trifles: the Use of Agricultural Residues in Ancient Greek and Roman Farming. *Environmental Archaeology* 1: 35-40.
- Hegmon, Michelle, 1992. Archaeological Research on Style. *Annual Review of Anthropology* 21: 517-536.
- Hosler, Dorothy. 1994. Sound, color and meaning in the metallurgy of Ancient West Mexico. *World Archaeology* 27(1): 100-115.
- Horne, Lee. 1987. The Brasscasters of Dariapur, West Bengal: Artisans in a Changing World. *Expedition* 29(3): 39-46.
- Jones, Mark. 1990. FAKE? The Art of Deception. *BM Magazine. The Journal of the British Museum Society*. Spring 1990, pp. 19-34.
- Kenoyer, Jonathan Mark, Massimo Vidale, and Kuldeep Kumar Bhan. 1991. Contemporary stone beadmaking in Khambhat, India: patterns of craft specialization and organization of production as reflected in the archaeological record. *World Archaeology* 23(1):44-63.
- Kenoyer, Jonathan Mark, Massimo Vidale & Kuldeep K. Bhan. 1994. Carnelian Bead Production in Khambhat, India: An Ethnoarchaeological Study. In B. Allchin (ed) *Living Traditions. Studies in the Ethnoarchaeology of South Asia*. New Delhi: Oxford and IBH Publishing Co. Pp. 281-306.
- Lohmann, Roger Ivar. 2006. Sound of A Woman: Drums, gender and myth among the Asabano of Papua New Guinea. *Material Religion* 3(1): 88-100.
- McGhee, Robert. 1977. Ivory for the Sea Woman: The Symbolic Attributes of a Prehistoric Technology. *Canadian Journal of Archaeology* 1:141-149.
- Reddy, Seetha Narahar. 1997. If the Threshing Floor Could Talk: Integration of Agriculture and Pastoralism during the Late Harappan in Gujarat, India. *Journal of Anthropological Archaeology* 16:162-187.
- Roux, Valentine. 2000. *Cornaline de l'Inde. Des pratiques techniques de Cambay aux techno-systèmes de l'Indus*. Paris: Éditions de la Maison des sciences de l'homme.
- Roux, Valentine, Blandine Bril, and Gilles Dietrich. 1995. Skills and learning difficulties involved in stone knapping: the case of stone-bead knapping in Khambhat, India. *World Archaeology* 27(1):63-87.
- Shah, Haku. 1985. *Votive Terracottas of Gujarat*. Living Traditions of India Series. New York: Mapin International.
- Sinopoli, Carla M. 2003. *The Political Economy of Craft Production. Crafting Empire in South India, c. 1350-1650*. Cambridge: Cambridge University Press. (Read Ch. 2, summary of archaeological approaches to craft specialization)
- Skibo, James M. and Michael B. Shiffer. 2001. Understanding Artifact Variability and Change: A Behavioral Framework. In: Michael B. Schiffer (ed), *Anthropological Perspectives on Technology*. Amerind Foundation New World studies series, no. 5. Albuquerque, NM: University of New Mexico Press. Pp. 139-150.
- Torrence, Robin and Sander E. van der Leeuw. 1989. Introduction: what's new about innovation? In: Sander E. van der Leeuw and Robin Torrence (eds), *What's New? A Closer Look at the Process of Innovation*. London: Unwin Hyman. Pp. 1-15.
- Vidale, Massimo. 1995. Early Beadmakers of the Indus Tradition. The Manufacturing Sequence of Talc Beads at Mehrgarh in the 5th Millennium B.C. *East and West* 45(1-4): 45-80
- Vidale, Massimo and Heather M.-L. Miller, 2000. On the development of Indus technical virtuosity and its relation to social structure. In: Maurizio Taddei and Giuseppe DeMarco (eds), *South Asian Archaeology 1997*. Rome: IsIAO and Istituto Universitario Orientale, Naples. Pp. 115-132.
- Vidale, Massimo and G.M. Shar. 1991. Zahar Muhrow: Soapstone-Cutting in Contemporary Baluchistan and Sind. *Annali (Estratto da Annali dell'Istituto Universitario Orientale di Napoli)* 50(1):61-78.
- Wake, Thomas A. 1999. Exploitation of Tradition: Bone Tool Production and Use at Colony Ross, California. In: Dobres, Marcia-Anne and C. R. Hoffman (eds), *The Social Dynamics of Technology. Practice, Politics, and World Views*. Washington DC: Smithsonian Institution Press. Pp. 186-208.
- Wendrich, Willeke. 1999. *The World According to Basketry. An Ethno-archaeological Interpretation of Basketry Production in Egypt*. Leiden, Netherlands: Research School of Asian, African and Amerindian Studies (CNWS), Universiteit Leiden.