Technology, a word derived from Greek *techne* meaning art or craft, encompasses an enormous range of human activities. The common feature of those activities is that they are consciously intended to improve the quality of human life in the material realm. At one end technology blends into science, though the latter also involves many topics that are abstract or speculative and not oriented toward the betterment of life. At the other end technology blends into custom and folklore insofar as many human practices are grounded more in the maintenance of traditional ways of life than in conscious efforts to improve the quality of life.

Islamic doctrines sometimes relate directly to scientific endeavors, for instance when astronomers ponder ways to calculate the direction of the *qibla*. Technology has fewer direct connections with Islam as a religion. Nevertheless, the aggregate of all the technologies in use in a given society lend a distinctive character to that society. Technologies affect the organization of labor, the appearance of people and landscapes, the movement and exchange of goods, and the rhythms of daily life.

This course defines “Islamic technology” as the set of arts and crafts that impart a distinctive atmosphere to the predominantly Muslim societies of the Middle East and North Africa. It will concentrate on a group of technologies that contribute strongly to the particular qualities associated with life in the pre-modern Muslim world.

Since many examples of traditional Islamic technology are still to be found in the area, the hope is that we will be able to make one or two field-trips to examine some of these. Lectures will be supplemented by visual examples.

**Requirements:**
* Regular Attendance of Class, Interest in Material & Active Participation (10%)
* Midterm (20%)
* Final Examination (40%)
* Submission of **two 5 page** papers on the topic of your choice (30%)
  (One should be submitted before the midterm and the other should be submitted before the final exam. You may if you wish substitute this for ONE final term paper of 10-15 pages due before the end of semester. However, I strongly recommend that if you are not a history major and if you do not have any experience writing papers that you opt for the two 5 pages papers instead.)
Required Books:

* Ahmad Y. al-Hassan and Donald R. Hill, *Islamic Technology: An Illustrated History* (out-of-print!!! Available on Reserve at Jafet)
* Reader of photo-copied selections from Ghali Copy Center on Jandak Street
* Richard Bulliet, *Camel and the Wheel* (Malik’s Bookstore)
* Orhan Pamuk, *White Castle*

Introduction: Does Technology Determine History?
• Merrit Roe Smith, *Does Technology Drive History?* (Reader)
• Arnold Pacey, *Technology in World Civilization* (Reader)

1. Overview of Islamic Technology & Pre-Islamic Heritage:
• Hassan & Hill, Ch. 1
• Ibn Khaldun, *al-Muqaddimah*, “Crafts, etc.” (Reader)

2. Water-Control
• Hassan & Hill, Ch. 2 (partial: pp. 37-55) & Ch. 3 (partial: pp. 80-91)
• Hans Wulff, *Traditional Crafts of Persia*, pp. 245-259 (Reader)
• Thomas Glick, *Irrigation and Hydraulic Technology* (Reader)
• Thomas Glick, *Irrigation & Society in Medieval Valencia*, (Reader)

3. Agriculture, Food Processing, Food Storage, & Revolution
• Hassan & Hill, Ch. 8
• Hans Wulff, *Traditional Crafts of Persia*, pp. 260-302 (Reader)
• Andrew Watson, *Agricultural Innovation in the Early Islamic World* (Reader)

4. Pottery, Ceramic, Tiles, & Glass
• Hassan & Hill, Ch. 6 (partial: pp. 151-170)
• Hans Wulff, *Traditional Crafts of Persia*, pp. 136-171 (Reader)
• A. Lane, *Early Islamic Pottery & Late Islamic Pottery* (Reader)

5. Construction & Urban Design
• Hassan & Hill, Ch. 3 (partial: 73-80)
• Wulff, pp. 102-135 (Reader)
• Hourani & Stern, *The Islamic City* (Reader)
• Gülru Necipoğlu, *The Topkapi Scroll* (Reader)
• David King, “Astronomical Alignments in Medieval Islamic Architecture” (Reader)
• Bulliet, Ch. 8

6. Transportation-1: Overland
• Bulliet, Chs. 1, 4, 7
7. Mining & Metallurgy
• Hassan & Hill, Chs. 9
• Wulff, pp. 1-55 (Reader)

8. Warfare & Military Manuals
• Hassan & Hill, Chs. 4
• N. Belaiew, “Damascene Steel,” Journal of the Iron and Steel Institute, Vol. 97 (Reader)
• Islamic Swords, ed. Karen Pinto (Reader)
• Medieval Muslim Horsemanship: A Fourteenth-Century Arabic Cavalry Manual (Reader)
• Guilmartin, Galleys and Gunpowder (Reader)

9. Clocks, Instruments, & Automata
• Hassan & Hill, Ch. 2 (partial: pp. 55-71)
Donald Hill, Arabic Water-clocks (Reader)
al-Jazari’s, Book of Knowledge of Ingenious Devices (Reader)
David King, “Mikat: Astronomical Timekeeping” (Reader)

10. Finding One’s Way: Stars & Astrolabes, Maps & Routes
George Saliba: Arabic Astronomy (Reader)
David King: “Sacred Direction in Islam” (Reader)
David King: “Qibla Charts, Qibla Maps, and Related Instruments” (Reader)
David King: World-Maps for Finding the Direction and Distance to Mecca: Innovation and Tradition in Islamic Science, (Reader)
Karen Pinto, “Islamic Cartography”
Sample illustrations of Ka‘ba tile maps
Sample illustrations and text from al-Sufi

Readings: Hasan & Hill, Ch. 5
Hourani, Arab Seafaring (Reader)
Svat Soucek, “Islamic Charting in the Mediterranean”

12. Paper
Readings: Hassan & Hill, Ch. 7 (partial)
Jonathan Bloom, Paper before Print (Reader)
Ettinghausen, Arab Art, sample illustrations

13. Books, Inks, Pigments, & Binding
Hassan & Hill, Ch. 7
Hans Wulff, Traditional Crafts of Persia (Reader)
Martin Levy, “Traditional Arabic Bookmaking …” (Reader)

14. Cloth, Soap, & Perfume
Hassan & Hill, Ch. 6
15. Luxuries: Coffee, Sugar, and Qat
Hassan & Hill, Ch. 8 (Partial)
Ralph Hattox, *Coffee & Coffee Houses* (selections)
Borsch, “Sugar…”
Varisco, “Qat…”

16. Conclusion: Engineers, Artisans, Guilds, & E-W Rivalry
Hassan & Hill, Ch. 10
Lapidus, (selections)
Orhan Pamuk, *White Castle*