- Anand Taneja, 'Saintly Visions: Other histories and history's others in the medieval ruins of Delhi' IESHR, 49 (2012).
- Pinto, Desiderios. J. (1989). "The Mystery of the Nizamuddin Dargah: the Account of Pilgrims", in Christian W. Troll, ed., Muslim Shrines in India, Delhi: Oxford University Press, pp. 112-124.

Note: **Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

## GENERIC ELECTIVES (GE-2): Science, Technologies and Humans: Contested Histories

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite of the course |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| **Science, Technologies and Humans: Contested Histories** | **4** | **3** | **1** | **0** | **12th Pass** | **NIL** |

Learning Objectives

The Learning Objectives of this course are as follows:
This course proposes to examine the history of science and technology with respect to social acceptance, economic viability and politics associated with it. While dealing with the history of science and technology this paper challenges the notion of 'modern origins of science in west-ern societies. Human instinct to understand the unknown and the need to predict the future which often ventures into providence has been explored through case studies of astronomy and astrology. The paper analyses the impact of hegemony of colonial science on traditional knowledge systems. It proposes a case study to highlight the highly contested heritage of science. The thin line between military and peaceful use of technology in the capitalist economy also constitutes an important component of this paper. A brief discussion on science and nation making has been introduced to highlight the role of important figures and women in sciences that shaped the nature of scientific development in India.

Learning outcomes

The Learning Outcomes of this course are as follows:
- Critique the prevalent dominant understanding of science and technology.
- Discuss the complex relations between science, technology and society.
- Examine the role of politics associated with scientific and technological developments and its economics in the capitalist economy
- Examine the character of 'dual use' technologies.
- Define various initiatives taken by the government for promotion of science and technology.

SYLLABUS OF GE-2

**Unit 1:** Science, Technology and Society **(12 hours)**

1. Revisiting 'Scientific Revolution'
2. Colonialism and Science

**Unit 2:** Science: Contestation and Exchanges **(16 hours)**

1. Decimal and Zero
2. Hegemony of documentation

**Unit 3:** Economics of Technologies: Questions of Ethics **(16 hours)**

1. Generic Medicines
2. Industrial Disasters

**Unit 4:** Science and nation making (16 hours)

1. Atomic Power
2. Policies and Institutions
3. Homi Jehangir Bhabha, Meghnad Shaha, E. K. Janaki Ammal

**Practical component (if any) - NIL**

**Essential/recommended readings**

**Unit-1:** Science and technology have a very complex relationship with society. Populatanding of 'Science' and 'Technology' will be unpacked to convey the role of colonial power in establishing the hegemony of western knowledge systems. (Teaching Time: 16 hours Approx.)

- Pati, Biswamoy & Harrison, Mark. (2001). Introduction in Biswamoy Pati & Mark Harrison,eds., Health, Medicine and Empire: Perspectives on Colonial India. New Delhi: Ori-ent Longman. pp. 1-24/36.
- मले, गुणाकर. (२००५). भारतीयईतहासमेंर् वज्ञान. र् िल्लीःयात्रीप्रकाशन. (अध्यायःर् वज्ञानऔरसमाज; पष्ठृ ११-29, ज्योर् तषकाआरम्भऔररवकास; पष्ठृ ४१-49, वैर् िकर्गणतकीसमीक्षा; पष्ठृ ५0--66).
- Bernal, J D. (1969). Science in History Vol, I: The Emergence of Science. Middlesex: Penguin Books, pp. 27-57.
- Raj, Kapil. (2017). 'Thinking Without the Scientific Revolution: Global Interactions and the Construction of Knowledge'. Journal of Early Modern History, Vol. 21 (No.5), pp. 445-458.
- IIabib, S Irfan and Raina, Dhruv. (2007). 'Introduction', in S Irfan Habib & Dhruv Raina.(Eds.). Social History of Science in Colonial India. Delhi: Oxford University Press. pp. XII-XL.
- (Revised version published as S Irfan Habib & Dhruv Raina, 'Introduction' in Social History of Science in Colonial India, New Delhi: Oxford University Press, 2007, pp. XII- XL.)
- Kumar, Deepak, Science and the Raj, OUP, 1998 (Introduction).

**Unit-2:** Students will understand the politics associated with appropriation of 'Scientific' her-itage through the case study of the decimal and zero. It will also teach them about the politics of

documentation and its importance during early modern times. (Teaching Time: 16 hours Approx.)

- Nanda, Meera. (2016). 'Nothing that is: Zero's Fleeting Footsteps', in Science in Saffron: Skeptical Essays on History of Science. Delhi: Three Essays Collective. pp. 49-92.
- Grove, Richard. (1996). 'Indigenous Knowledge and the Significance of South-West India for Portuguese and Dutch Constructions of Tropical Nature'. Modern Asian Studies, Vol. 30 (No. 1), pp. 121-143.
- Joseph, George V., A Passage to Infinity: Medieval Indian Mathematics from Kerala and Its Impact, Sage Publication, 2009 (Introduction).

**Unit-3:** This unit will make an attempt to convey that science and technology need to be care-fully historicized in the context of the prevalent political-economy. It will also problematise associated questions of ethics in science. (Teaching Time: 12 hours Approx.)

- Mazumdar, Pradip. (2017). 'The Generic manoeuvre'. Economic and Political Week-ly, Vol. LII (No.35), pp. 22-26.
- Nagaraj, Vijay K. and Raman, Nithya V. (2007). 'Are we prepared for another Bhopal?' in Mahesh Rangarajan, ed., Environmental Issues in India: A Reader. Delhi: Pearson. pp.
- 530-43. (Also available in Hindi)
- Banerjee, Madhulika, Power, Knowledge, Medicine: Ayurvedic Pharmaceuticals at Home and in the World', Hyderabad: Orient Blackswan, 2009 (Introduction).

**Unit-4:** This unit will highlight the role of science in 'nation-making'. It will also examine the role of a few scientists and women; associated institutions and their contribution in nation making. (Teaching Time: 12 hours Approx.)

- Kosambi, D. D. (2016). 'Atomic Energy for India', in Ram Ramaswamy, ed.,
- D.D.Kosambi:Adventures into the unknown: Gurgaon: Three Essays Collective. pp. 59-70.
- Marshal, Eliot. (2007). 'Is the Friendly Atom Poised for a Comeback?' in Mahesh Rangarajan, ed., Environmental Issues in India: A Reader. Delhi: Pearson. pp.544-49. (Also available in Hindi)
- Banerjee, Somaditya. (2016). 'Meghnad Shaha: Physicist and Nationalists'. Physics To-day, Vol.69 (No.8), pp. 39-44.
- Wadia, Spenta R. (2009). 'Homi Jehangir Bhaba and the Tata Institute of Fundamental Research'. Current Science, Vol.96 (No.5), pp. 725-33.
- Krishna, V.V. (2013). 'Science, Technology and Innovation Policy 2013: High on Goals, Low on Commitment'. Economic and Political Weekly, Vol. 48 (No.16), pp. 15-19.
- Damodaran, Vinita. (2013). 'Gender, Race and Science in Twentieth-Century India: E.K. Janaki Ammal and the History of Science.' History of Science, Vol. 51 (No. 3), pp. 283- 307.
- Chattopadhyay, Anjana. (2018). 'Janaki Ammal, Edavaleth Kakkat (1897-1984)', in Women Scientists in India: Lives, Struggles and Achievements, New Delhi: National Book Trust, pp. 170-172.

**Suggestive readings -**

- Bhattacharya, Nandini. (2018). Interrogating the Hegemony of Biomedicine. Economic and Political Weekly, Vol. LIII (No.9), pp. 45-47.
- Chaterjee, Santimay. (1994). 'Meghnad Shaha: The Scientist and the Institution maker.' Indian Journal of History of Science, Vol.29 (No.1), pp. 99-110.

- Habib, Irfan. (2008). Technology in Medieval India. c. 650-1750. New Delhi: Tulika (Also available in Hindi).
- Qaisar, A J. (1982). Indian Response to European Technology and Culture AD 1498-1707, Bombay: Oxford University Press.
- Rahman, Abdur. (1984). Science and Technology in Indian Culture: A Historical Perspective. Delhi: National Institute of Science, Technology & Development Studies Science, Technology and Innovation Policy 2013, Government of India, India. (http://www.dst.gov.in/sites/default/files/STI%20Policy%202013-English.pdf) Available in Hindi Al-so :(http://www.dst.gov.in/sites/default/files/STI%20Policy%202013%20Hindi.pdf).
- Zimmerman, F. (1987). 'Monsoon in Traditional Culture', in Jay S. Fein and Pamela L. Stephens, eds., Monsoon. New York, Chichester, Brisbane, Toronto, Singapore: John Willey & Sons. pp. 51-76.


**FILMS:**

- The Fugitive A movie featuring Harrison Ford.
- The Effects of the Atomic Bomb on Hiroshima and Nagasaki (https://www.youtube.com/watch?v=3wxWNAM8Cso and https://www.youtube.com/watch?v=n7fT6Mur6Gg&list=PLD7F1A06CE1780AD5&index=5)

Note: **Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

## GENERIC ELECTIVES (GE-3): Culture and Everyday Life in India

Credit distribution, Eligibility and Pre-requisites of the Course

| Course title & Code | Credits | Credit distribution of the course | | | Eligibility criteria | Pre-requisite the course |
|---|---|---|---|---|---|---|
| | | Lecture | Tutorial | Practical/ Practice | | |
| Culture and Everyday Life India | 4 | 3 | 1 | 0 | 12th Pass | NIL |

Learning Objectives

The Learning Objectives of this course are as follows:
Our everyday lives are filled with activities so routine and mundane that it hardly seems worth talking about them—getting up, doing daily ablutions, drinking a cup of tea or coffee, performing daily prayers and rituals, getting dressed for workplace, boarding the metro to work, returning home, finding leisure in watching TV, shopping and even planning a holiday. All these sorts of activities are part of our everyday lives, and most people have the same sorts of everyday experiences. At the same time, however, different people across the world have different sorts of every-day lives that are defined by their society. Further, the society itself is defined by peoples' ideas, values, customs, beliefs, and ways of thinking. All these things may be explained as 'culture'. While there are several