HM 216 Science, Technology, Society

HSS Core (3-0-0-3)

Autumn 2022

Course Placement: HM 216 is a Core Course for the Second Year (Semester 3) of the BTech ICT program.

Course Format: 3 hours of lectures each week.

Pre-requisites: PC110: Language and Literature; HM 106: Approaches to Indian Society

Course Content

This course is designed to encourage students to understand, explore and analyse ways in which science and technology relate to society. Science and Technology Studies (STS) is a growing field of study around the world that seeks to understand how science and technology shape human lives and livelihoods, and how society and culture, in turn, shape the development of science and technology.

Objectives and Outcomes

STS seeks to provide insights into the deep relationship between science and technology and such basic categories of social thought as race, gender, class, the environment, democracy and development, and human rights, by focusing attention on science and technology as social institutions. This course, in other words, intends to introduce students to some of the key philosophical, sociological and historical approaches towards understanding the workings of science and technology in our times. By the end of the course, it is expected that students will have the conceptual tools and vocabulary to think about the meanings of science and technology in varied social, political and cultural contexts. They will be able to generate critical discussion around the impact of STS on their received ideas about science, and reflect upon their own professional goals and practice going forward.

Course Structure

The course will be organized around four units, consisting of class lectures, discussion, and presentations. The first unit will map the broad field of STS. Students will be introduced to some of the historical and sociological approaches to the understanding of science and technology. They will be introduced to the ideas and works of some of the key thinkers and writers in this field and the nature of contemporary debate on the subjects raised by them. In these lectures we will explore basic questions about what modern science is, the relationship between science and technology, and the role of historical, sociological and anthropological studies of science and technology in helping us think about these questions.

Following this broad introduction to STS in Unit One, in Units Two and Three, students will be introduced to debates on science and technology in the Indian context. Class lectures and reading

in Unit Two will focus on the structural impacts of colonialism, developmental planning and liberalization on the growth and development of Indian scientific and technological endeavours in different domains, especially public health.

Unit Three will focus specifically on the lives and questions raised by women in the fields of science and technology in post-liberalization India. Together, these units will allow us to analyse the contemporary moment, and explore frameworks that seek to make sense of it.

In Unit Four, students will be encouraged to take up the theoretical questions raised in Units One to Three, and pursue a short research study as a Group Project. The focus this year will be on the gendered worlds of science and technology, where we will look into the different ways in which social relations shape these fields and their questions.

Details of specific topics and process of study will be provided in time, along with appropriate material in the form of e-resources, books, articles, talks etc. These will be kept in a common repository that can be accessed by all.

Class Organization

The entire class will be randomly broken up into groups of 15 students on an average, and a student assigned to a group will remain in it throughout the semester. The group leader (either elected or a volunteer) must provide the name, ID numbers and e-mail addresses of all members by the second week of the course. It will also be their responsibility to interface with the faculty on behalf of the group, and to make sure that the assigned tasks are undertaken efficiently and on time. TAs for the course will coordinate all Group related issues.

Course Material

All the relevant reading material will be made available in a Google Drive Folder for the class. The following books will be the basic texts for the course:

- Sismondo, Sergio. *An Introduction to Science and Technology Studies*. 2nd ed. Wiley-Blackwell, 2010.

- Arnold, David. Science, Technology and Medicine in Colonial India. The New Cambridge History of India, vol 3, no. 5. Cambridge University Press, 2000.

Evaluation

Evaluation will be based on in-class presentations, group project and an end-semester exam. 10% of your final marks will come from class presentations, 50% from the group project, and 40% from the end-semester examination.

Participation points: Students with more than 85% attendance will receive an extra 5 marks, to be added to their total at the end of the course. Participation in class discussion— by asking relevant questions and/or making helpful observations— will also be considered for additional

marks to be awarded in consultation with the TAs at the end of the course. This will be purely at the discretion of the instructor.

Honour Code: Academic dishonesty, cheating, plagiarism— any kind of deceit— will not be tolerated, and will result in a zero for the assignment. All ideas and words that you did not generate yourself must be cited in your papers. In extreme cases, I reserve the right to assign a failing grade for the course or a specific assignment if you are caught cheating, or inappropriately copying-and-pasting content from external sources without acknowledgment.

P1	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	**P8**	**P9**	**P10**	**P11**	**P12**
			X		**X**	**X**	**X**	**X**	**X**		**X**

UNITS	DESCRIPTION	LECTURES
I	**Introduction: STS as a Field of Study**	15
	Conventional Views of Science + relationship between Science & Technology; Sociology and Philosophy of Science; Kuhn's Challenge	
	Practicing Science & Technology: Social contexts and hierarchies; Histories of Doing as Histories of Technology: Scientists and Engineers	
	Contemporary theoretical frames: Actor-Network Theory (ANT) and Feminist STS	
	Public participation in Science and Ideas of Expertise: some examples from the Euro-American world	
II	**History of Science in South Asia: Colonial roots**	12
	Knowledge, expertise and colonial power: the Asiatic Society of Bengal, the demands of bureaucracy (Indian Medical Service)	
	Indian scientists in a colonial world: global networks and local connections; Indian work in Geology, Botany and Chemistry	
	Colonial Medicine: controlling populations and disease; South Asian systems of medicine encounter Western medicine	
	'Marginal Disease': the story of Kala Azar in India— Caste, class, gender in the field of health; colonial and national responses to questions of public health	
III	**Focus: Engendering Science & Technology**	8
	The Lab and the World: women scientists, the social dimensions of technology, gatekeeping	

	‘Tech professionals’ and the new middle class: aspiration and global divisions of labour; body work	
IV	**Group Projects + Presentations**	5