

MFCO222 Science, Technology, and Society

Please note: the following is a shortened example of a course outline as it has been taught in past years. As such it is **indicative only**; the assessment and schedule may change. If you require any further information please contact the department: mfco@otago.ac.nz.

Introduction

This paper will introduce students to the foundational questions, themes, ideas, and content developed within the interdisciplinary field known as Science, Technology, and Society (also known as Science and Technology Studies, or in both cases by the shorthand abbreviation ‘STS’). STS explores the complex interaction of science, technology, medicine, and society. It examines how social, political, cultural, and material conditions shape scientific work, and how science, in turn, shapes society. Because of the central role of science, technology, and medicine in driving modern developments, understanding the relationships among science, technology, and society is crucial for understanding the history of humanity and the contemporary world. The paper explores general themes in the field of Science, Technology, and Society as well as specific case studies involving key controversies and debates. The paper does not require as a pre-requisite specialised scientific knowledge, but students will acquire knowledge about the various fields of science and the paper will enhance students’ scientific literacy.

Aims and Objectives

By the end of this paper, students should be able to:

- Critically examine your own assumptions about the relationships among science, technology, medicine, and society.
- Explain developments in science, technology, and medicine in terms of their interactions with social, cultural, environmental, and other issues.
- Have an in-depth knowledge of case studies involving controversies related to the social, cultural, and political dimensions of science, technology, and medicine.
- Demonstrate independent research skills including critical thinking and advanced written communications.
- Develop the ability and competency to critically evaluate and review a range of arguments and positions.

Course assessment

Journals	30%	due: 7 Aug. by 4pm; 4 Sept. by 4pm; 2 Oct. by 4pm.
Tutorial Participation	10%	
Essay	25%	due: Friday, 28 Sept. by 4pm.
Final Exam	35%	

Lecture and tutorial programme

Week	Starting	Lecture/Lecturer	Required Readings	Tutorials
1	9 July	1. Hugh Slotten and others. Topic: Introduction.	“Introduction” in Sal Restivo, editor, <i>Science, Technology, and Society: An Encyclopedia</i> (Oxford: Oxford University Press, 2005), pp. xvi-xxiv.	No Tutorial this week.
		2. Hugh Slotten. Topic: Introduction to Science, Technology, Medicine, and Society.		

2	16 July	3. Susan Heydon. Topic: Medicine, Science, Health, and Society.	Atul Gawande, <i>Being Mortal: Illness, Medicine and What Matters in the End</i> (London: Profile Books, 2015), pp.149-155. And watch Ted Talk by Atul Gawande: https://www.ted.com/talks/atul_gawande_how_do_we_heal_medicine#:t-788908	Tutorial meets this week
		4. Susan Heydon. Topic: Medicine, Science, Health, and Society.		
3	23 July	5. Fabien Medvecky. Topic: Public Understanding of Science/Science Communication.	Alan Irwin and Mike Michael, chapter 2 (“The Public Understanding of Science and Technology: From Cognition to Context”) in <i>Science, Social Theory and Public Knowledge</i> (Maidenhead, UK: Open University Press, 2003).	Tutorial meets this week.
		6. Fabien Medvecky Topic: Public Understanding of Science/Science Communication.		
4	30 July	7. Fabien Medvecky Topic: Expertise and Society.	Sarah J. Whatmore and Catharina Landstrom, “Flood Apprentices: An Exercise in Making Things Public,” <i>Economy and Society</i> 40 (Nov. 2011): 582-610.	Tutorial meets this week.
		8. Fabien Medvecky Topic: Risk Expertise and Society.		
5	6 August	9. Katharine Legun. Topic: Drivers of research: the political and economic world of science.	TBA (To Be Announced).	Tutorial meets this week.
	7 August, by 4pm: First Journal Due (based on readings from weeks 1 through 4).	10. Katharine Legun. Topic: Drivers of research: the political and economic world of science.		
6	13 Aug	11. Hugh Slotten. Topic: Society and Technological Change, and Technological Determinism.	Rudi Volti, <i>Society and Technological Change</i> , 7 th edition (New York: Worth, 2014), pp. 3-18.	Tutorial meets this week.
		12. Hugh Slotten. Topic: Society and Technological Change, and Technological Determinism.		
7	20 Aug	13. Hugh Slotten Case Study: Artificial Intelligence and Society.	Executive Office of the President [USA], National Science and Technology Council Committee on Technology, Preparing for the Future of Artificial Intelligence (October 2016), 48pp.	Tutorial meets this week.
		14. Hugh Slotten Case Study: Artificial Intelligence and Society.		
	Break			
8	3 Sep	15. Hugh Slotten, Case Study: Nanotechnology, “Anticipatory	David H. Guston, “Understanding ‘Anticipatory Governance’,” <i>Social Studies of Science</i> , 44	No Tutorial
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	September by 4pm: Second Journal Due (based on readings from weeks 5 to 7).	Governance,” and Public Participation.	(2014): 218-42.	this week.
		16. Hugh Slotten, Case Study: Nanotechnology and Public Policy.		
9	10 Sep	17. Hamish Spencer. Case Study: Role of Science Advisors in New Zealand.	Sections 1-3 of the <i>National Statement of Science Investment, 2015–2025</i> [New Zealand]. http://www.mbie.govt.nz/info-services/science-innovation/pdf-library/NSSI%20Final%20Document%202015.pdf	Tutorial meets this week.
		18. Hamish Spencer Case Study: Science Outreach to Māori.		
10	17 Sep	19. Hamish Spencer Case Study: Eugenics in New Zealand	Paul, D.B., and H.G. Spencer. 2008, “It’s OK, We’re Not Cousins by Blood’: The Cousin Marriage Controversy in Historical Perspective,” <i>PLoS Biology</i> 6: 2627–30.	Tutorial meets this week.
		20. Hamish Spencer Case Study: Eugenics and Cousin Marriage.		
11	24 Sep	21. Hugh Slotten Case Study: Debates about Global Warming and Public Understanding of Science.	Two chapters from <i>Oxford Handbook of Climate Change and Society</i> (Oxford: Oxford University Press, 2011): Sheila Jasanoff, “Cosmopolitan Knowledge: Climate Science and Global Civic Epistemology”; Susane C. Moser and Lisa Dilling, “Communicating Climate Change: Closing the Science-Action Gap.”	Tutorial meets this week.
	Friday 28 Sept, by 4pm: Essay Due.	22. Hugh Slotten Case Study: Debates about Global Warming and Public Understanding of Science.		
12	1 st Oct	23. Susan Heydon Case Study: Health and Society.	TBA	Tutorial meets this week.
	2 October by 4pm: Third Journal Due (based on readings from weeks 8 through 11).	24. Susan Heydon. Case Study: Pharmacy and Society.		
13	8 Oct	25. Hugh Slotten. Case Study: TBA	TBA	No Tutorial this week.
		26. Review for Final Exam.		