



St. Xavier's College – Autonomous Mumbai

Syllabus For 4th Semester Courses in Special Course (November 2013 onwards)

Contents:

Theory Syllabus for Courses:

S. SOC.4.STS – Science, Technology and Social Change: Some Issues and Challenges

SYBSc/BSc-IT CFC

Course: STS

Title: Science, Technology and Social Change: Some Issues and Challenges

Learning Objectives:

1. To sensitize the undergraduate science student to the broader social issues which will impact the practitioners of science and technology?
2. To create an understanding of diverse approaches which can help empower and transform societies and vulnerable groups.
3. To develop a questioning mindset which will potentially result in students taking a broader socio-cultural perspective to their involvement with science and technology?

Number of lectures: 45

UNIT 1

Science, Technology and IPR – Pursuing knowledge in an unequal world [9 Lectures]

- a. The meaning and types of intellectual property
- b. Significance of IPR – Socio-cultural, economic, political
- c. Alternative scenarios: Open Source, Copyleft and Public Domain

UNIT 2

ICT and Society

[18 Lectures]

- a. Significance of ICT – It's Role in Social Transformation
- b. Providing access to ICT: Some socio-cultural and technical challenges – The digital divide and its significance
- c. ICT and Empowerment: Some case studies – Factors influencing success and failure

UNIT 3

Biotechnology and Society

[18 Lectures]

- a. Agriculture, Biotechnology and Society: Gains and Hazards
- b. Impact of Biotechnology on Bio-diversity and Social Ramifications.
- c. Bio-medical Research: Priorities and Choices

CIA: Tests / Presentations / Projects.

List of Recommended Reference Books

UNIT 1

1. Sichelman T (2010) Commercializing Patents, Stanford Law Review, Vol. 62, No. 2, pp. 341-413
2. Stiglitz, J.E. (2007) Prizes, Not Patents, *Post-Autistic Economics Review*, issue no. 42, 18, pp. 48-49
3. Suthersanen U, (2006) Utility Models and Innovation in Developing Countries, International Centre for Trade and Sustainable Development (ICTSD)
4. Von Krogh, G & Von Hippel, E. (2003) Special issue on open source software development, *Research Policy* 32 1149–1157

UNIT 2

1. Bagga, R.K, Keniston, K & Mathur R.R. (2005) *The State, IT and Development* SAGE Publications
2. Bauchspies, W.K., Croissant. J & Restivo, S (2006) *Science, Technology, and Society - A Sociological Approach*, Oxford: Blackwell Publishing
3. Best M.L. & Maier S.G. (2007) *Gender, Culture and ICT Use in Rural South India*, *Gender Technology and Development*; 11; 137 DOI: 10.1177/097185240701100201
4. Dutz, M.A. (2007) *Unleashing India's Innovation: The International Bank for Reconstruction and Development / The World Bank*
5. Geoghegan, L, Lever, J & McGimpsey I (2004) *ICT for Social Welfare - A toolkit for managers*, The Policy Press
6. Hanna, N.K. (2010) *Innovation, Technology, and Knowledge Management* Springer Publications
7. Saith, A, Vijayabaskar, M (2005) *ICTs and Indian Economic Development - Economy, Work, Regulation*, SAGE Publications
8. Saith, A, Vijayabaskar, M & Gayathri, V (2008) *ICTs and Indian Social Change - Diffusion, Poverty, Governance*, SAGE Publications India Pvt Ltd
9. Vijayabaskar, M & Gayathri, V (2003) *ICT and Indian Development - Processes, Prognoses, Policies*, *Economic and Political Weekly* June 14, 2003 2360- 2364
10. Steyn, J & Johanson, G (2011) *ICTs and Sustainable Solutions for the Digital Divide: Theory and Perspectives* by IGI Global

UNIT 3

1. Atkinson, P., Glasner, P. & Greenslade H (2007) *New Genetics, New Identities*, Routledge
2. *Asveld, L & Roeser, S (2009) The Ethics of Technological Risk*, Earthscan.
3. Braun, R & Ammann, K (2002) *Biodiversity: The Impact of Biotechnology - Changing Regulation Controlling Risks In Society*, *Encyclopedia of Life Support Systems*. EOLSS Publishers, Oxford.
4. Conrad, P. (2007) *The Medicalization of Society: On the Transformation of Human Conditions into Treatable Disorders*, Baltimore: The Johns Hopkins University Press.
5. Gibson, Johanna (2008) *Patenting Lives : Life Patents, Culture and Development*, Ashgate Publishing Limited
6. Kuppuswamy, C (2009) *The International Legal Governance of the Human Genome*, Routledge
7. Maurer SM, Rai A, Sali A (2004) *Finding Cures for Tropical Diseases: Is Open Source an Answer?* *PLoS Med* 1(3): e56. doi:10.1371/journal.pmed.0010056
8. Wiczorek A. (2003) *Use of Biotechnology in Agriculture— Benefits and Risks - Department of Tropical Plant and Soil Sciences* *Biotechnology*, Published by the College of Tropical Agriculture and Human Resources (CTAHR)