CENTRAL UNIVERSITY OF RAJASTHAN

Department of Society-Technology Interface
School of Social Sciences

Syllabus-Pre Ph.D. Coursework

Doctor of Philosophy (Ph.D.) Digital Society

Ph.D. Research Programme

(w.e.f. Academic Year 2026-27)

DEPARTMENT OF SOCIETY TECHNOLOGY INTERFACE

Ph.D. Programme in Digital Society (Ph.D. Digital Society)

The Department of Society Technology Interface, School of Social Sciences, offers a Ph.D. Program in Digital Society. The programme focuses on the interdisciplinary research at the intersection of digital technology with society, policy, development and management. Indian society and economy are completely transformed owing to the intrinsic role played by the ICTs. The country is progressing exponentially towards reaping the developmental dividends that arise out of the fast process of digitalisation of society.

The social-cultural-political-economic-policy narratives are completely shaped and consolidated around the uses of digital tools and technologies. Undoubtedly, the country is in the midst of a 'digital society'. Globally, a need is felt around the development of futuristic academic discourses on "what can be" and "what ought to be" of that transformative process. The Ph.D. programme is going to be a rich and rewarding research programme of the department, open to post-graduates from any branch of Social Sciences, Science, Technology, Management, Arts, Commerce, Law or related allied fields. Any JRF candidate in above mentioned fields or any candidate who satisfies the NET/CUET/ University entrance tests will be considered eligible for Ph.D. Programme.

The suggestive list of Ph.D. areas is as follows:

1. ICT and Development
2. Community Informatics
3. Digital Innovations and Entrepreneurship
4. Gender and Digital Ecosystem
5. Digital Technology and Livelihoods
6. Women and Digital Spaces
7. Internet, Society and Economy
8. Digital Divide
9. Digital World Order
10. Digital Marketing, Digital Social Marketing
11. Digital Integrated Marketing Communication
12. Digital Technology and Social Interfaces
13. Information Technology and Regulations
14. Data Privacy and Protection
15. Cyber Space, Law and Society
16. Social Media and Networking
17. Digital Emerging Technology
18. AI for Social Goods
19. Digital Commons
20. Big Data and Algorithm Bias

Eligibility of the candidates

Candidates who hold a valid JRF or who qualify through NET, CUET, or a recognized University Entrance Test are eligible to apply. A minimum of 55% marks or an equivalent grade from a recognized university at the postgraduate level is required. A 5% relaxation in the minimum marks is granted to SC/ST/OBC/PWD/EWS candidates.
Program Objectives

Program Objectives

The coursework in PhD Digital Society would fulfil the following objectives:

1. To develop research skills and interdisciplinary knowledge essential for analysing the complex interplay between digital technologies and societal structures, including their impact on governance, economy, culture, and public policy.
2. To develop critical thinking and ethical skills among scholars who can engage with digital transformations through responsible research practices, with a primary focus on data privacy, intellectual property, and academic integrity.
3. To prepare competent educators and skilled researchers to contribute to academic and public discourse on digital societies through effective teaching, scholarly communication, and knowledge dissemination through quality research.

Program Outcomes

The coursework in PhD Digital Society would fulfil the following outcomes:

1. Develop comprehensive research competencies through methodological training in qualitative, quantitative, and mixed research techniques.
2. Foster critical engagement with emerging digital technologies and their implications for development, governance, and public policy.
3. Encourage examination of socio-economic transformations driven by digital innovations, including digital markets, AI, and data-driven economies.
4. Promote ethical research practices and academic integrity in handling digital data, privacy, and intellectual property.
5. Equip scholars with interdisciplinary theoretical and practical frameworks to critically analyze digital technology's impact on society, politics, economy, and culture.
6. Prepare future educators and researchers to effectively teach, communicate, and contribute to scholarly discourse in digital society studies.

Learning Outcomes

There will be the following learning outcomes of the coursework:

1. Students will critically apply interdisciplinary theories to analyze digital technologies' impacts on social, economic, political, and cultural systems in diverse real-world contexts.
2. Students will design and conduct ethical, rigorous qualitative, quantitative, and mixed-method research to address complex societal issues in a digitalized world.
3. Students will evaluate emerging technologies and ICT policies, interpreting their implications for governance, innovation, digital rights, and socio-economic development.
4. Students will effectively teach, present, and communicate research using modern pedagogical methods and digital tools in academic and professional environments.

Course Design of Ph.D. Digital Society (w.e.f. Academic Year 2025-26)						
Course Code	**Name of the Courses**	**Nature of the Course**	**Credits**	**Evaluation (Weightage %)**		**Hours**
				IA	**ESE**	
8.0 STI 01	Research Methodology	Core	4	40	60	60
8.0 STI 02	Research and Publication Ethics*	Core	2	40	60	30
8.0 STI 03	Pedagogy for Higher Education#	Core	3	40	60	45
	Elective 1	Elective	3	40	60	45
Total Credit			12			

* Research and Publication Ethics: to be offered by the University/MOOC
# Pedagogy for Higher Education: to be offered by the University/MOOC

All Ph.D. scholars, irrespective of discipline, shall be required to train in teaching /education /pedagogy/writing related to their chosen Ph.D. subject during their doctoral period. Ph.D. scholars may also be assigned 4-6 hours per week of teaching/research assistantship for conducting tutorials or laboratory work and evaluations:

Course Code	**Course Title**	**Nature of the Course**
8.0 STI 04	Practice-Based Teaching Skills (non-graded course)	Core

The research scholar has to opt for at least one elective course from the list given below:

List of Electives						
Course Code	**Name of the Courses**	**Nature of the Course**	**Credits**	**Evaluation (Weightage %)**		**Hours**
				IA	**ESE**	
8.0 STI31	ICT and Development	Elective	3	40	60	45
8.0 STI32	Socio-Economic Dimensions of Digital Technology	Elective	3	40	60	45
8.0 STI33	Emerging Digital Technologies	Elective	3	40	60	45
8.0 STI34	Information Communication Technology Policy and Regulation	Elective	3	40	60	45
8.0 STI35	Theories and Practices of Digital Society	Elective	3	40	60	45

DETAILED SYLLABUS

Course Title: **Research Methodology**		Course Code: **8.0 STI 01**		
Teaching Scheme	**Examination Scheme**	Credit: **4**		
Theory: 4 hrs/week	Internal Assessment (CIA I): 20 Marks Internal Assessment (CIA II): 20 Marks End Semester Examination (ESE): 60 Marks	L	T	P
		4	-	-
	Total: 100 Marks			

Course Objective:

1. Understand the philosophical foundations of research methodology.
2. Formulate research problems, objectives, questions, hypotheses.

Course Outcomes: After completion of this course student will be able to:

1. Explain philosophies and traditions of research methodologies. Learn about the nature and application of qualitative research methods in research.
2. Analyze research design, sampling, and research questions. Learn and apply ethical principles of conducting research, including informed consent and ethical data collection practices.
3. Evaluate qualitative data collection procedures such as field observations, formulating interview questions and conducting in-depth interviews, content analysis, and discourse analysis. Learn about quantitative procedures such as sampling methods, confidence intervals in statistics, survey methods, and experimental design.
4. Develop a complete doctoral research proposal and scholarly research paper

Course Content

Unit I: Introduction to Research	**15 Hours**

Introduction to research philosophies and methodologies, The nature and process of research, Research strategies, Research designs, Planning a research project and formulating research questions, Reviewing the literature, Ethics and informed consent. Knowledge creation for societal good rather than mere publication. Research ethics rooted in the Indian Knowledge System

Unit II: Quantitative Research	**15 Hours**

The nature of quantitative research, Sampling, Structured interviewing, Survey methods, Questionnaires, Interview Schedules, asking questions, Structured observation, Content Analysis and Discourse Analysis, Secondary analysis, Quantitative data analysis, SPSS for analysis, chi-square and ANOVA

Unit III: Qualitative Research	**15 Hours**

The nature of qualitative research, Sampling in qualitative research, Field observations, Ethnography and Observations, Participant and non-participant observation, Interviewing in qualitative research, Focused Groups Discussion (FDG), Language in qualitative research, Documents as sources of data, Qualitative data analysis, Computer-assisted qualitative data analysis using NVivo

Unit IV: Mixed Methods Research	**15 Hours**

Breaking down the quantitative/qualitative divide, Mixed methods research: combining quantitative and qualitative research, E-research: Internet research methods, Writing and Publishing

Text Books:

1. Alan Bryman. (2012). Social Research Methods Fourth edition, Oxford University Press
2. Geertz, Clifford (1973). The Interpretation of Cultures. New York: Basic Books Inc.
3. Hine,Christine (2005) Virtual Methods: Issues in Social Science Research on the Internet Oxford; New York: Berg.
4. Jones, Steve (1999). Doing Internet Research: Critical Issues and Methods for Examining the Net. Thousand Oaks, CA: Sage.
5. Markham, Annette and Nancy Baym. (2009) Internet Inquiry: Conversations about Method. Thousand Oaks, CA: Sage.
6. Miles, M. B., & Huberman, A. M. (1994). Qualitative data analysis: An expanded sourcebook. Thousand Oaks, CA: Sage.

Reference Books:

1. Wolcott, H. F. (2002). Sneaky kid and its aftermath: Ethics and intimacy in fieldwork. Walnut Creek, CA: Alta Mira Press. 8. Wolcott, H. F. (1994). Transforming qualitative data: Description, analysis, and interpretation. Thousand Oaks, CA: Sage.
2. Warren, C.A.B. & Karner, Tracy X. (2005). Discovering qualitative methods: Field research, interviews, and analysis. CA: Roxbury Publishing Company

PO-CO Compliance Matrix

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	1	1	2	3	1
CO2	2	2	2	3	2	1
CO3	3	1	3	2	2	2
CO4	2	2	1	1	2	2

*1: Low, 2: Medium, 3: High

<table>
<tr><td colspan="2">Course Title: Research and Publication Ethics</td><td colspan="3">Course Code: 8.0 STI 02</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="3">Credit: 2</td></tr>
<tr><td rowspan="2">Theory: 4 hrs/week</td><td rowspan="2">Internal Assessment (CIA I): 20 Marks
Internal Assessment (CIA II): 20 Marks
End Semester Examination (ESE): 60 Marks</td><td>L</td><td>T</td><td>P</td></tr>
<tr><td>2</td><td>-</td><td>-</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="3"></td></tr>
<tr><td colspan="5">Course Objective:</td></tr>
<tr><td colspan="5">1. Develop a comprehensive understanding of research ethics among students, institutional frameworks, and standards, with a focus on ensuring the verifiability and reproducibility of scientific results, managing personal and sensitive information ethically and legally, and fulfilling the broader societal obligations of research.
2. Cultivate among students the ability to critically identify, analyze, and prevent ethical and legal issues in research practices, including scientific misconduct and questionable research practices, and develop an understanding of personal and peer research conduct in alignment with established ethical standards.</td></tr>
<tr><td colspan="5">Course Outcomes: After completion of this course, students will able to</td></tr>
<tr><td colspan="5">1. Develop a broad overview of research ethics, the institutional arrangement and ethical standards. In-depth understanding of requirements and methods for ensuring the verifiability and reproducibility of scientific results. It will also develop a comprehensive understanding of the scientific, ethical and legal implications of scientific misconduct in the planning, execution or reporting of the research and knowledge of legal and ethical requirements for the acquisition, handling, and storage of personal and sensitive information and awareness of the obligations of research to society.
2. Develop the ability to identify ethical and legal issues and requirements in the conduct of research. Also, understand and discuss causes and means for the prevention of misconduct and questionable research practices and develop the ability to identify research applications outside the intended domain, raising ethical and legal concerns.
3. Enhance competence and ability to reflect on one's own and others' research practice and its adherence to ethical standards.</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="4">Unit I</td><td>15 Hours</td></tr>
<tr><td colspan="5">Introduction to Research, Ethics and Academic Honesty, Ethics in Writing, Academic Integrity: Research Misconduct / Fabrication/Unethical Practices, Academic/Research: Falsification, Manipulation or Tampering of Data</td></tr>
<tr><td colspan="4">Unit II</td><td>15 Hours</td></tr>
<tr><td colspan="5">Literature Review and Proper Use of E-Resources, Using Design thinking Methods to Avoid Plagiarism, Writing Quality Academic Publications: Challenges to avoid plagiarism, Scientific Reading, Cite and Write</td></tr>
<tr><td colspan="4">Unit III</td><td>15 Hours</td></tr>
<tr><td colspan="5">Report writing using popular word processing packages such as MS Word, Open Office, etc., Style Manuals and Bibliographies. Ex. APA, MLA, Chicago, IEEE, Introduction to Reference Management Tools (RMT), Features and Functionalities of Anti-Plagiarism Software</td></tr>
<tr><td colspan="4">Unit IV</td><td>15 Hours</td></tr>
<tr><td colspan="5">Detection of Plagiarism by using Different Online Tools, Agencies and Organisations dealing with plagiarism issues (eg, Retract/Deluze), Plagiarism Policies, Penalties and Consequences</td></tr>
</table>

Text Books:

1. Collste, G., Introduction to Ethics.
2. De Peol & Royakkers 2011, Ethics, Technology and Engineering, 8.3 The Engineer's Responsibility for Safety (pp 223-238)
3. Good research practice, Vetenskapsrådets rapportserie, 3:2011. http://www.vr.se/download/18.3a36c20d133af0c1295800030/1340207445948/Good+Research+Practice+3.2011_webb.pdf

Reference Books:

1. The Menlo Report. Ethical Principles Guiding Information and Communication Technology Research. http://www.caida.org/publications/papers/2012/menlo_report_actual_formatted/menlo_report_actual_formatted.pdf
2. The Uppsala Code of Ethics for Scientists, Journal of Peace Research 4/1984

PO-CO Compliance Matrix						
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	1	1	1	2
CO2	2	3	2	1	1	2
CO3	2	2	3	2	2	2
*1: Low, 2: Medium, 3:High						

Course Title: **ICT and Development**		Course Code: **8.0 STI 31**		
Teaching Scheme	**Examination Scheme**	Credit: **3**		
Theory: 4 hrs/week	Internal Assessment (CIA I): 20 Marks Internal Assessment (CIA II): 20 Marks End Semester Examination(ESE): 60 Marks	L	T	P
		3	-	-
	Total: 100 Marks			

Course Objective:

1. To develop an in-depth understanding of the debates and practices of ICT.
2. To enable students to develop theoretical foundations for ICT and develop critical thinking regarding the implications of ICT.

Course Outcomes: After completion of this course student will able to

1. Explain the debates and practices surrounding the uses of information and communications technology and associated digital technologies in the development discourse.
2. Provide various theoretical and conceptual frameworks underpinning the usage of technology in the development process, drawn from development studies, economics, geography, and political science.
3. Explore local appropriateness, social inclusion, and the range of arguments for and against any ICT for development projects in a variety of contexts.
4. Demonstrate critical thinking in examining the implications of ICT and other digital technological interventions for social development and public sector reforms.

Course Content

Unit I	**15 Hours**

Understanding Development, Uneven Development and the Origins of ICTD, Digital Divide; Indian concepts: Sarvodaya, Antyodaya, Lokasangraha, Gram Swaraj, Trusteeship, Common Service Centres, BharatNet; Indian thinkers on development: Gandhian Socialism, Ambedkar, Lohia, Tagore, Amartya Sen

Unit II	**15 Hours**

Development Theory: Dependency, Modernisation, Structuralism, Socialism, NeoMarxism and Neoliberalism; Critiques of ICTD: Feminist, Postcolonialist, and Poststructuralist Critiques; Development in the Network Society

Unit III	**15 Hours**

ICTs as interventions for social development, MDGs and SDGs, Public Sector Reforms, Value-Chain Disintermediation and e-Commerce

Unit IV	**15 Hours**

Market Creation, Expansion and Inclusion through ICTs, Rural Market Creation; Financial Inclusions and Mobile Money, Knowledge Economies, Technology Entrepreneurship and Innovation, Digital Labour and Development

Text Books:

1. Burrell, J. & Toyama, K. 2009. What Constitutes Good ICTD Research?. Information Technologies & International Development, 5(3): 82-94.
2. Castells, M., 2003. The Rise of the Fourth World in Held, D. and McGrew, A. (Eds). The Global Transformations Reader. Oxford: Blackwell. pp. 430-439
3. Crow, B., Zlatunich, N. & Fulfrost, B. 2009. Mapping Global Inequalities: Beyond Income Inequality to Multi-Dimensional Inequalities. Journal of International Development.
4. Heeks, R. 2002. i-Development not e-Development: Special Issue on ICTs and Development. Journal of International Development, 14(1): 1-11.
5. Heeks, R. 2009. The ICT4D 2.0 Manifesto: Where Next for ICTs and International Development? Manchester: Centre for Development Informatics, Working Paper No. 42 (online resource)

PO-CO Compliance Matrix

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	2	3	1	1	2	2
CO2	2	1	2	1	1	1
CO3	3	1	2	3	3	1
CO4	2	2	1	1	2	1

*1: Low, 2: Medium, 3:High

<table>
<tr><td colspan="2">Course Title: Socio-Economic Dimensions of Digital Technology</td><td colspan="3">Course Code: 8.0 STI 32</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="3">Credit: 3</td></tr>
<tr><td rowspan="2">Theory: 4 hrs/ week</td><td rowspan="2">Internal Assessment (CIA I): 20 Marks
Internal Assessment (CIA II): 20 Marks
End Semester Examination(ESE): 60 Marks</td><td>L</td><td>T</td><td>P</td></tr>
<tr><td>3</td><td>-</td><td>-</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="3"></td></tr>
<tr><td colspan="5">Course Objective:</td></tr>
<tr><td colspan="5">1. To develop a critical understanding of the effects and role of the internet.
2. To build a comprehensive overview of technology and its impact on society.</td></tr>
<tr><td colspan="5"></td></tr>
<tr><td colspan="5">Course Outcomes: After completion of this course student will able to</td></tr>
<tr><td colspan="5">1. To understand the critical role and effect of the Internet in bringing changes in the socioeconomic-political environment.
2. To learn about approaches to understand inter-linkages of ICT, Global Markets and Economy.
3. To critically understand the roles and interfaces of the Internet, Society and Economy.</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="4">Unit I</td><td>15 Hours</td></tr>
<tr><td colspan="5">Introduction: Lessons from the History of the Internet; Understanding of Networked Society; Understanding of the Concept, Characteristics, Nature and Scope of Digital Economy; Macro and Micro Economic Issues in the Digital Economy; IKS Concepts of Arthashastra, Kautilya (Chanakya) related to economic governance policy principles, statecraft, trade regulation, and economic administration</td></tr>
<tr><td colspan="4">Unit II</td><td>15 Hours</td></tr>
<tr><td colspan="5">Policy and Regulations under Digital Economy; Innovation in the Digital Economy; The Internet, Big Data, and Economic Policy; Artificial Intelligence and Prospects of Economic Growth</td></tr>
<tr><td colspan="4">Unit III</td><td>15 Hours</td></tr>
<tr><td colspan="5">Globalization: The Internet and The Cloud; Data Localization and Data Sovereignty; APP Economy: Rules, Policy and Challenges before Societies; Electronic commerce; Threat to Digital Economy</td></tr>
<tr><td colspan="4">Unit IV</td><td>15 Hours</td></tr>
<tr><td colspan="5">Worldwide cases of Digital Economy, Internet Poverty, Digital Divide in Digital Economy, Privacy, Openness, and Transparency under Digital Economy</td></tr>
<tr><td colspan="5">Text Books:</td></tr>
</table>

1. Atkinson, Robert D. and Stephen J. Ezell (2012) Innovation Economics: The Race for Global Advantage, New Haven, CT: Yale University Press.
2. Brynjolfsson, Erik and Adam Saunders (2009) Wired for Information: How Information Technology Is Reshaping the Economy, Cambridge, MA: MIT Press.
3. Castells, Manuel (1996, second edition, 2009). The Rise of the Network Society, The Information Age: Economy, Society and Culture Vol. I. Malden, MA; Oxford, UK: Blackwell.
4. Castells, Manuel (1997, second edition, 2009). The Power of Identity, The Information Age: Economy, Society and Culture Vol. II. Malden, MA; Oxford, UK: Blackwell.
5. Castells, Manuel (1998, second edition, 2010). End of Millennium, The Information Age: Economy, Society and Culture Vol. III. Malden, MA; Oxford, UK: Blackwell.
6. Castells, Manuel (2001) The Internet Galaxy, Oxford: Oxford University Press.
7. David, Paul (2002) "The evolving accidental information super-highway," Oxford Review of Economic Policy 17(2): 159-187. At: http://oxrep.oxfordjournals.org/cgi/content/abstract/17/2/159 Kenney.
8. Don Tapscott (1996) The Digital Economy: promise and peril in the age of networked intelligence, New York : McGraw Hill.

Reference Books

1. Himanen, Pekka (2002) The Hacker Ethic: A Radical Approach to the Philosophy of Business, New York: Random House.
2. Martin and John Zysman (Spring 2016) "The Rise of the Platform Economy," Issues in Science and Technology, 32:3." At http://issues.org/32-3/the-rise-of-the-platformeconomy/.
3. Naughton, John (2014) From Gutenberg to Zuckerberg: Disruptive Innovation in the Age of the Internet, New York: Quercus.
4. Peter Cowhey and Jonathan Aronson (2017) Digital DNA: Disruption and the Challenges for Global Governance, New York, Oxford. Prologue and Chapters 1-4, pp. xi-xxi and 3-93.
5. Peter F. Cowhey and Jonathan D. Aronson, (2009) Transforming Global Information and Communication Markets, Cambridge, MA, MIT Press.

PO-CO Compliance Matrix

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	3	1	2	1
CO2	3	1	1	2	2	1
CO3	1	2	1	2	1	1

*1: Low, 2: Medium, 3:High

Course Title: **Emerging Digital Technologies**				Course Code: **8.0 STI 33**		
Teaching Scheme			**Examination Scheme**	Credit: **3**		
Theory: 4 hrs/ week	Internal Assessment (CIA I): 20 Marks Internal Assessment (CIA II): 20 Marks End Semester Examination(ESE): 60 Marks			L	T	P
				3	-	-
	Total: 100 Marks					

Course Objective:

1. To develop a conceptual understanding of digital technologies and tools.
2. To empower students to apply knowledge of the internet at various levels with a critical understanding of the internet.

Course Outcomes: After completion of this course student will able to

1. Explaining to the students the fundamental concepts of digital technologies and associated technologies.
2. Providing the students with the significance and uses of several networking technologies such as the Internet, World Wide Web and cloud computing.
3. Develop understanding of key elements of computer networking and its usage for digital solutions, which include Internet architecture, layer protocols, client-server architecture, etc.
4. Apply knowledge of Internet-based applications and services, including digital platforms, to sociotechnical problems.

Course Content

Unit I	**15 Hours**
Artificial Intelligence, Internet of Things (IoT) Indian Knowledge System (IKS): Overview of IKS; Concepts of cognition: Buddhi (intellect), Manas (mind), Smriti (memory), Chaitanya (consciousness); Comparison of human intelligence (IKS view) with Artificial Intelligence; Comparison with logical reasoning and rule-based systems in AI	
Unit II	**15 Hours**
Meaning, Importance, Sector-wide Applications, Benefits, Challenges and Risks, Future of IoT, Sectoral Application and Situational analysis of IoT, Blockchain and Cloud Computing, Distributed system, Node, CAP theorem, Network/system types, Centralised vs Decentralised, Contest-driven decentralisation	
Unit III	**15 Hours**
Data Sciences, Cyber Security	
Unit IV	**15 Hours**
Cloud meaning, Cloud Computing meaning, Deployment models, Service models, Characteristics, Cloud computing Planning, Cloud computing technologies, Models, Cybersecurity, 3D printing and Design, Virtual Reality, AR, XR	

Text Books:

1. B. Patel & Lal B. Barik, Internet & Web Technology, Acme Learning Publishers.
2. D. Comer, “The Internet Book”, Pearson Education, 2009.
3. Godbole AS & Kahate A, “Web Technologies”, Tata McGrawHill,2008.
4. Greenlaw R and Hepp E “Fundamentals of Internet and www” 2nd EL, Tata McGrawHill,2007.
5. Ivan Bayross, “HTML, DHTML, JavaScript, Perl CGI”, 3rd Edition, BPB Publications.
6. Jackson, “Web Technologies”, Pearson Education, 2008.
7. M. L. Young,”The Complete Reference to Internet”, Tata McGraw Hill, 2007.
8. Vijay Madisetti, Arshdeep Bahga, İnternet of Things, “A Hands on Approach”, University Press.
9. SRN Reddy, Rachit Thukral and Manasi Mishra, “Introduction to Internet of Things: A Practical Approach”, ETI Labs.
10. Melanie Swan, “Block Chain: Blueprint for a New Economy”, O’Reilly, 2015.
11. Joel Grus, "Data Science from Scratch: First Principles with Python", O'Reilly Media.

Reference Books:

1. Melanie Swan, “Block Chain: Blueprint for a New Economy”, O’Reilly, 2015.
2. Joel Grus, "Data Science from Scratch: First Principles with Python", O'Reilly Media.
3. Saha, S.K., “Introduction to Robotics, 2nd Edition, McGraw-Hill Higher Education, New Delhi, 2014.
4. William Stallings, “Cryptography and Network Security”, Pearson Education/PHI, 2006
5. Saha, S.K., “Introduction to Robotics, 2nd Edition, McGraw-Hill Higher Education, New Delhi, 2014.
6. William Stallings, “Cryptography and Network Security”, Pearson Education/PHI, 2006

PO-CO Compliance Matrix

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	1	2	3	2	1
CO2	1	2	2	1	2	2
CO3	3	2	2	2	3	2
CO4	1	3	1	1	3	1

*1: Low, 2: Medium, 3:High

Course Title: **Information Communication Technology Policy and Regulation**		Course Code: **8.0 STI 34**		
Teaching Scheme	**Examination Scheme**	Credit: **3**		
Theory: 4 hrs/ week	Internal Assessment (CIA I): 20 Marks Internal Assessment (CIA II): 20 Marks End Semester Examination(ESE): 60 Marks	L	T	P
		3	-	-
	Total: 100 Marks			

Course Objective:

1. To enable students to critically understand the telecommunication industry.
2. To develop a comparative perspective among students related to e-governance.

Course Outcomes: After completion of this course student will able to

1. Examine fundamental concepts and key regulatory aspects relating to the telecommunications industry and market.
2. Explain the regulatory and policy implications of telecommunications, the Internet and the IT industry on the technological landscape and industrial development.
3. Provide a historical development of regulatory and policy frameworks from a comparative perspective
4. Demonstrate knowledge of various policy and regulatory issues and concepts surrounding digital technologies, including privacy, security, digital copyright, intellectual property rights, etc.

Course Content

Unit I	**15 Hours**

Dharma-based ethics in digital governance. History and development of the ICT Policy and Regulation; Planning in India and ICT, Policy, Governance and Regulatory Frameworks; Stakeholders and Policy-making Process; Ministry of Electronics and Information Technology; R&D Institutions in ICT; National Knowledge Networks

Unit II	**15 Hours**

Internet Proliferation and Governance; E-Infrastructures; Privacy and security; Content regulation and filtering; Consumer Protection under the Digital Age

Unit III	**15 Hours**

Regulatory Responses to Public Debates on Emerging ICT; Biometrics; Digital copyright, patents; Universal access, universal service and the digital divide; Net Neutrality

Unit IV	**15 Hours**

Government Programmes in India: Aadhar, Digital India, Make-in-India, Skills India, Digital Locker, Digitalization of Socio-economic services; Information Technology Act 2000 (Amendment 2008); National Policy on Electronics 2012; National E-Governance Plan; National Cyber Security Policy 2013; National Policy on Universal Electronic Accessibility; ICT and Economic Development; Private Sector regulation; Public Private Partnership

Text Books:

1. Banzal, S. (2010). Equitable Communication for All: Policies and Regulatory Issues. ITU-APT Foundation, New Delhi.
2. Banzal, S. (2010). Equitable Communication for All: Policies and Regulatory Issues. ITU-APT Foundation, New Delhi.
3. Banzal, S. (2010). Equitable Communication for All: Policies and Regulatory Issues. ITU-APT Foundation, New Delhi.
4. Banzal, S. (2010). Equitable Communication for All: Policies and Regulatory Issues. ITU-APT Foundation, New Delhi.
5. Bedi, K., P. Singh and S. Sandeep (2001) Government@net: New Governance Opportunities for India. New Delhi, Sage Publications.

6. Banzal, S. (2010). Equitable Communication for All: Policies and Regulatory Issues. ITU-APT Foundation, New Delhi.
7. Bedi, K., P. Singh and S. Sandeep (2001) Government@net: New Governance Opportunities for India. New Delhi, Sage Publications. 12
8. Bhatnagar, S. (2000). Enhancing Telecom Access In Rural India: Some Options. Paper presented at India Telecom Conference, Asia-Pacific Research Center, Stanford University.
9. Bhatnagar, S. and R. Schware (2000) Information and Communication Technology in Development: Cases from India. New Delhi, Sage Publications.
10. Chopra, A. (2005). Bridging India's Digital Divide: Some Policy and Technological Options. PhD Thesis University of Hohenheim, Stuttgart, Germany.
11. Chowdhury, S. and Datta, D. (2009). Indian Telecom: Regulation, Spectrum Allocation and Dispute Management. IIMB Management Review.
12. Dasgupta, S., Paul, R., & Fuloria, S. (2011). Factors Affecting Behavioral Intentions towards Mobile Banking Usage: Empirical Evidence from India. Paper presented in conference.
13. Naughton, John A Brief History of the Future: From Radio Days to Internet Years in a Lifetime. 2000. New York: The Overlook Press.
14. Singhal A. and M.E. Rogers (2001) India's Communication Revolution from Bullock Carts to Cyber Nets. New Delhi, Sage Publications.

Reference Books:

1. Venkat Subramanian, K. Approach paper on "India development as knowledge society", Planning Commission, New Delhi.
2. Zittrain, Jonathan The Future of the Internet - And How to Stop It. 2008. New Haven: Yale University Press.
3. Blackman, Colin. and Srivastava, Lara. (2011). Telecommunications Regulation Handbook, 10th Anniversary Ed., The International Bank for Reconstruction and Development / The World Bank, InfoDev, and The International Telecommunication Union.
4. Rajaraman, V. (2012). History of Computing in India: 1955-2010. IEEE Computer Society.

PO-CO Compliance Matrix

	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	1	1	2	1
CO2	2	2	3	1	2	3
CO3	3	2	1	1	2	1
CO4	2	1	1	2	1	1

*1: Low, 2: Medium, 3:High

Course Title: **Theories and Practices of Digital Society**		Course Code: **8.0 STI 35**		
Teaching Scheme	**Examination Scheme**	Credit: **3**		
Theory: 4 hrs/ week	Internal Assessment (CIA I): 20 Marks Internal Assessment (CIA II): 20 Marks End Semester Examination(ESE): 60 Marks	L	T	P
		3	-	-
	Total: 100 Marks			

Course Objective:

1. To analyze and critically evaluate key theoretical frameworks, debates, and concepts related to the study of technology across various social science disciplines.
2. To demonstrate an in-depth understanding of the relationship between technological developments and their social implications.

Course Outcomes: After completion of this course student will able to

1. Explain theoretical insights, current discourses and key concepts relating to the study of technology within several social science disciplines, including communications studies, sociology, anthropology and political science.
2. Provide understanding of the linkages between problems associated with technology and their interpretation and manifestation in the wider social context.
3. Apply critical thinking using theories relating to technological determinism, social construction, materiality and neutrality that address the society-technology relationship.
4. Develop scientific perspectives around the historical evolution of technologies and their social relevance.

Course Content

Unit I	**15 Hours**

Information Technology and Society: An Introduction; Social Shaping of Technology, Society, Knowledge and Technology in Ancient India, Knowledge transmission in Gurukul and ancient university systems

Unit II	**15 Hours**

Theories of Society and the Internet; Actor-Network Theory; Theories of Political Economy, Digital Collectives and Digital Commons; Theories of Development, Empowerment and Capabilities; Theories of Information Systems-Management, Strategic Management, Project Management, Systems Theory; PESTLE, Log frame

Unit III	**15 Hours**

Globalization and Domestication; Mobile Phones, the Internet, and Perpetual Contact; The Presentation of Self Online; Social Implications of Online Data

Unit IV	**15 Hours**

Work & Economic Life Online; Microblogging among New and Old Media; The Internet and Democracy; The Knowledge Society

Text Books:

1. Bimber, Bruce (2003). Information and American Democracy: Technology in the Evolution of Political Power. Cambridge: Cambridge University Press.
2. Boyd, Danah (204). It's Complicated: the social lives of networked teens. New Haven: Yale University Press.
3. Castells, Manuel (2009), Communication Power, Oxford: Oxford University Press.

PO-CO Compliance Matrix						
	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	1	2	2	1	1
CO2	2	2	1	1	2	1
CO3	1	1	2	2	3	3
CO4	2	2	1	1	1	2
*1: Low, 2: Medium, 3:High						