CENTRAL UNIVERSITY OF RAJASTHAN

Department of Society-Technology Interface

School of Social Sciences

INDUCTION BOOKLET

&

SYLLABUS

Master of Science (M.Sc.) in Digital Society

Two-Year Post Graduate Programme
(w.e.f. Academic Year 2026-27)

NH-8, Bandar Sindri, Kishangarh
District Ajmer-305817, Rajasthan

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BACKGROUND

Considering curricular reforms as essential tools for achieving meaningful learning outcomes, the Department of Society Technology Interface at the Central University of Rajasthan has systematically revised its postgraduate programs. This revision aligns with the principles of the National Education Policy (NEP) 2020 and the UGC Quality Mandate for Higher Education Institutions (2021).

The revision process began with the adoption of a "Comprehensive Roadmap for Implementing NEP-2020", which outlined key policy features, an action plan with defined responsibilities, and an indicative timeline for major academic reforms. A series of webinars, workshops, and discussions were organized to sensitize and train faculty members about the vital aspects of NEP, empowering them to revise curriculum in line with its vision.

The updated curriculum aims to nurture holistic, creative and well-rounded individuals equipped with 21st-century skills vital for societal progress. In particular, it emphasizes interdisciplinary learning, research orientation and flexibility to meet the diverse needs of learners in the evolving digital age.

In alignment with the broader educational transformation under NEP, the National Credit Framework (NCrF) has also been incorporated. The curriculum ensures credit uniformity, mobility, and the accumulation of learning achievements across academic, vocational, and experiential learning. This facilitates a seamless academic journey, supports multiple entry-exit options, and promotes the development of a Skill and Research Portfolio for every learner. Students can also earn credits through online platforms, internships, and skill development programs, further enhancing their academic and professional profiles.

To ensure continuous quality improvement and adaptability, the University has decided to review and update the curriculum annually, incorporating feedback from all stakeholders and integrating new developments in the discipline.

INTRODUCTION ABOUT THE DSTI DEPARTMENT

The Department of Society–Technology Interface (DSTI) at the Central University of Rajasthan explores the dynamic intersections of Science & Technology and the Social Sciences. It focuses on understanding how digitalization, big data, and ICTs shape society, economy, culture, and policy. The Department prepares students for research, policy engagement, and diverse careers in today's rapidly evolving digital era.

PREAMBLE

The Department of Society–Technology Interface (DSTI) at the Central University of Rajasthan has been established to address the growing intersections between Science & Technology and the Social Sciences. It seeks to prepare students from diverse educational backgrounds to understand and respond to the challenges and opportunities of a rapidly digitalizing society. Digitalization today is shaping every aspect of social, cultural, political, and economic life. As India advances into a data-driven era, the ability to interpret and apply digital tools, big data, and analytics has become essential. The Department fosters interdisciplinary learning that equips students to critically analyze the transformative role of digital technologies while generating innovative ICT-based solutions for developmental needs. DSTI also emphasizes evidence-based research and policy engagement, aiming to strengthen social and economic systems through informed use of technology. Its postgraduate programmes, M.Sc. in Digital Society, provide unique opportunities to explore the impact of digitalization while cultivating skills relevant to careers in research, ICT industries, consultancy, policy, and development sectors.

NAME OF THE PROGRAMME

Master of Science in Digital Society

About the Programme

The Central University of Rajasthan started the Two-year Master's Programme (M.Sc.) in Digital Society with effect from Academic Year 2018-19 in the Department of Society-Technology Interface (DSTI). The programme introduces the students to diverse educational backgrounds and the academic inter-linkages between the two advanced streams of knowledge- Science & Technology and Social Sciences for better career opportunities and staying competitive.

Students' intake in the Programme: 15

OBJECTIVES OF THE PROGRAM

1. To develop students' capacity to critically analyse and engage with digital technologies and their social implications.
2. To foster innovation and problem-solving through ICT-based solutions.
3. To build interdisciplinary competence and research acumen in the context of social science and its interplay with technology.

DURATION OF THE PROGRAMME

Four semesters in two years

ADMISSION PROCEDURE

The admission to this programme shall be through Central Universities Common Entrance Test (CUCET) to be conducted on an all-India basis.

ELIGIBILITY OF THE CANDIDATES

Applicants must hold a Bachelor's Degree in any discipline with a minimum aggregate of 55% marks or an equivalent grade from a recognized university. SC/ST/OBC/PWD candidates are eligible for up to 5% relaxation in the minimum marks requirement.

GRADUATES ATTRIBUTES

Following the completion of Master's degree of science in Digital Society programme, students will acquire

1. **Disciplinary Knowledge**
   Demonstrate in-depth understanding of concepts, theories, and frameworks at the interface of digital technologies and social sciences.
2. **Critical Thinking**
   Apply logical reasoning, analytical abilities, and problem-solving skills to examine complex issues in digital society.
3. **Digital and Data Literacy**
   Effectively use digital tools, programming, statistical software, GIS, big data, and emerging technologies to analyze and address socio-technical challenges.
4. **Ethical and Social Responsibility**
   Recognize and uphold principles of ethics, inclusivity, sustainability, equity, and digital rights in personal, professional, and societal contexts.
5. **Employability and Professional Readiness**
   Develop professional competencies, practical skills, and domain-specific expertise that prepare graduates for careers in academia, industry, public policy, civil society, and development sectors.
6. **Innovation and Entrepreneurship**
   Cultivate creativity, design thinking, and entrepreneurial orientation to develop digital innovations that address societal and economic challenges.

7. **Leadership and Teamwork**
   Work effectively in interdisciplinary teams, exercise leadership in collaborative settings, and contribute to collective decision-making.
8. **Lifelong Learning and Global Outlook**
   Engage in independent and continuous learning, adapt to evolving digital transformations, and work effectively in multicultural, global, and digitally networked environments

QUALIFICATION DESCRIPTORS

Upon successfully completing the program, students are awarded an M.Sc. degree in Digital Society. They will possess the knowledge and skills required to critically engage with digital technologies and their impact on society. The holistic learning experience in the department provides a strong foundation for careers in academia, research, industry, policy, and civil society organizations.

Graduates can pursue careers as faculty members in higher education institutions after qualifying in NET/NET-JRF, where they can contribute to teaching and research in the interdisciplinary domain of Digital Society. Students with research interests may also advance their academic journey by enrolling in Ph.D. programs in Digital Society or related fields after clearing NET/NET-JRF. Additionally, the program equips students with the competencies needed to work in think tanks, NGOs, consultancies, and digital industries that address emerging socio-economic challenges.

PROGRAM LEARNING OUTCOMES

Upon successful completion of the M.Sc. Digital Society Program, students will be able to:

1. **Integrate Knowledge of Technology and Society**: Apply interdisciplinary concepts from social sciences and digital technologies to analyze transformations in governance, economy, and culture.

2. **Design ICT-based Solutions**: Develop innovative digital tools and interventions to address developmental deficits and societal challenges.

3. **Conduct Evidence-based Research**: Demonstrate the ability to plan, execute, and report research on digitalization, policy impacts, and technology-society interactions using appropriate methodologies.

4. **Evaluate Digital Policies and Practices**: Critically assess ICT policies, e-governance initiatives, and digital transformation strategies for effectiveness and inclusivity.

5. **Promote Social Inclusion and Equity**: Use digital technologies to strengthen systems that

counter socio-economic inequalities and bridge digital divides.

6. **Demonstrate Professional Ethics and Responsibility**: Practice digital innovation with sensitivity to ethics, data privacy, diversity, and sustainability in professional and research contexts.

7. **Communicate Effectively Across Disciplines**: Present digital society insights, research findings, and solutions to academic, professional, and community audiences with clarity.

8. **Contribute to Policy and Community Development**: Apply ICT knowledge and skills to participate in policymaking, consultancy, and community-based digital initiatives at local, national, and global levels.

PROGRAM OUTCOMES

PO 1 – Disciplinary Knowledge

Graduates will demonstrate comprehensive knowledge of theories, concepts, and practices at the intersection of digital technologies, society, and governance.

PO 2 – Critical Thinking and Problem-Solving

Graduates will develop analytical and problem-solving skills to critically evaluate socio-technical issues and propose innovative digital solutions.

PO 3 – Research and Inquiry

Graduates will acquire the ability to design and conduct research using appropriate qualitative, quantitative, and computational methods to generate evidence-based insights.

PO 4 – Ethics and Social Responsibility

Graduates will recognize and uphold ethical principles, inclusivity, sustainability, and digital rights while addressing challenges of privacy, equity, and social justice in digital society.

PO 5 – Communication and Professional Skills

Graduates will be able to effectively communicate ideas, use digital tools, and demonstrate professional skills suitable for careers in academia, industry, public policy, and development sectors.

PO 6 – Innovation and Lifelong Learning

Graduates will cultivate creativity, entrepreneurial orientation, and adaptability, enabling them to engage in continuous learning and contribute to evolving digital transformations.

PROGRAM SPECIFIC OUTCOMES

PSO 1 – Socio-Technical Foundations

Graduates will be able to integrate theories and perspectives from social sciences, technology studies, and digital media to critically understand the interplay between digital technologies, culture, politics, economy, and society.

PSO 2 – Policy, Law and Governance

Graduates will demonstrate the ability to analyze, evaluate, and design digital policies, legal frameworks, and regulatory mechanisms addressing issues of privacy, cyber law, ICT for development, digital rights, and governance in the digital era.

PSO 3 – Research and Analytical Skills

Graduates will acquire methodological, quantitative, and qualitative skills to design and conduct independent research, analyze big and small data, and apply social network analysis, GIS, and other tools for evidence-based decision making.

PSO 4 – Innovation and Entrepreneurship

Graduates will be able to conceptualize, design, and implement digital innovations and entrepreneurial solutions that address societal challenges, promote inclusivity, and contribute to socio-economic transformation.

PSO 5 – Ethical and Inclusive Digital Practices

Graduates will critically assess the ethical, legal, and social implications of emerging digital technologies, ensuring inclusivity, equity, and sustainability in digital society practices and interventions.

PSO 6 – Applied Professional Competence

Graduates will develop practical competencies in programming, digital communication, strategic management, digital marketing, and archiving, enabling them to contribute effectively to academia, industry, development sectors, and policy-making bodies.

MULTIPLE ENTRY AND EXIT SYSTEM

Exit - 1: After one year

The degree to be awarded after one year is Post Graduation Diploma in Digital Society with 40 credits.

Knowledge	Skills to be acquired	Employability
Comprehensive understanding of the foundations of digital technologies and their societal impact; basic grounding in ICT, data, and digital governance; awareness of digital divides, ethics, and inclusion.	Ability to analyze social issues using digital tools; competence in applying ICT solutions in governance and development; communication skills to bridge social and technological perspectives.	Eligible for roles such as ICT project assistants, digital outreach coordinators, and policy support staff in government, NGOs, and development agencies; opportunities in grassroots-level ICT facilitation and consultancy.

Exit - 2: After two years

Degrees can be awarded only after successful completion of two years of academics in Digital Society, and will be called as MSc. in Digital Society with 80 credits.

Knowledge	Skills to be acquired	Employability
Advanced understanding of the interplay between digital technologies and social processes; strong grounding in ICT policies, e-governance models, and data ethics; orientation towards research in digital inclusion and sustainability.	Ability to conduct independent research on digital transformations; proficiency in data analysis, ICT policy evaluation, and digital intervention design; leadership skills in project and program management.	Eligible for positions as digital policy analysts, ICT consultants, e-governance professionals, and researchers; career opportunities in academia, think tanks, government, and international organizations; scope to establish ICT-enabled social enterprises.

Entry - 1: After one year of PG Diploma in Digital Society

Students with PG Diploma in Digital Society (or equivalent diploma in ICT & Society-related fields society-related fields) from a recognised institution can get themselves admitted for Post Graduation Program in Digital Society.

Knowledge	Skills required	Eligibility
Students are expected to possess strong foundations in digital systems, societal issues, and governance frameworks, with prior knowledge of ICT for development and digital inclusion challenges.	Demonstrated ability to apply digital tools for social research and interventions; skills in communication, project management, and ICT applications in governance and development sectors.	• Postgraduate Diploma in Digital Society (or equivalent diploma in ICT & Society-related fields society-related fields) from a recognized university or institution. • The students should have gained 40 credits in his/her first year/ Diploma. • Admission would be granted on the available vacant seats which will be declared every year. • Vacancy will be filled as per the reservation policy of Government of India. • An equivalence committee recommendation will be required for lateral entry admission.

COURSE MAPPING

Mapping of the Programme Specific Outcome and Core Courses.

PSO	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
PSO -1	√	√	√	√	√		√	√	√	√	√	√
PSO- 2	√	√		√		√	√		√			√
PSO- 3			√			√		√		√		
PSO-4	√	√	√	√	√	√		√	√	√	√	√
PSO-5	√				√			√		√		
PSO-6		√	√		√		√		√		√	√

S.NO	Course Code	Name of the Courses	Nature of the Course	Credits
1	6.0STI01	Quantitative Techniques	C	4
2	6.0STI02	Public Policy in the Digital Age	C	4
3	6.0STI03	Digital Media, Culture and Society	C	4
4	6.0STI04	Information Technology and Society	C	4
5	6.0STI05	Emerging Digital Technologies	C	4
6	6.0STI06	Research Methodology	C	4
7	6.0STI07	Law and Digital Society	C	4

8	6.0STI08	ICT & Development	C	4
9	6.5STI01	Society, Network and Social Networks	C	4
10	6.5STI02	Digital Marketing	C	4
11	6.5STI03	Privacy in the Digital Age	C	4
12	6.5STI04	Digital Innovations and Entrepreneurship	C	4

EVALUATION

Continuous Internal assessment (CIA): The theoretical courses will be assessed based on any or all of the following-written tests, assignments, presentations and regularity in the class. Assessment of the practical courses will be based on any or all of the following: regularity, practical records, procedure of the techniques taught, viva, etc. The dissertation will be assessed based on the regular interaction with the supervisor, regular presentation of work, completion of assigned tasks, thesis submission, viva etc. The internal evaluation will be carried out throughout the term and it will comprise 40% of the final grade. Participation of students in quiz, seminar, workshop, games, yoga and other extra-curricular activities will be promoted and facilitated by the department.

End Semester Examination (ESE): The theoretical courses will be assessed based on a written exam, which may be essay type or short notes. This will cover the entire syllabus. Assessment of the practical courses will be based on performing and/or description of experiments, maintaining of the practical records, viva etc. The dissertation will be assessed based on the thesis reported, viva etc. The end of semester examination comprises 60% of the final grade. Both internal and end semester evaluations will be in offline mode only.

COURSE STRUCTURE

Department of Society-Technology Interface
Course Structure: M.Sc. Digital Society Programme (w.e.f. Academic Year 2025-26)

Course Code	Name of the Courses	Nature of the Course	Credits	Hours
	First Semester (I)			
6.0STI01	Quantitative Techniques	C	4	4
6.0STI02	Public Policy in the Digital Age	C	4	4
6.0STI03	Digital Media, Culture and Society	C	4	4
6.0STI04	Information Technology and Society	C	4	4
Students can choose ***courses from GE*** offered by DSTI (or) other Departments (or) MOOC courses as per availability and approval.				
6.0STI81	ICT-Lab/ Workshop –Programming Concepts	GE/SEC/MOOC	2	4
	Digital Society: Sector-wide Analysis	GE/SEC/MOOC	2	4
Total Credits			**20**	
	Second Semester (II)			
6.0STI05	Emerging Digital Technologies	C	4	4
6.0STI06	Research Methodology	C	4	4
6.0STI07	Law and Digital Society	C	4	4
6.0STI08	ICT & Development	C	4	4
Students can choose any **one *course from DSE/GE/MOOC*** offered by DSTI (which will be GE for other Departments)				
	Elective 1	DSE	4	4
Total Credits			**20**	
	Third Semester (III)			
6.5STI01	Society, Network and Social Networks	C	4	4
6.5STI02	Digital Marketing	C	4	4
Students can choose any **two *courses from DSE*** offered by DSTI (which will be GE for other Departments as per availability and approval).				
	Elective 1	DSE	4	4
	Elective 2	DSE	4	4
Students can choose *courses from GE* offered by DSTI (or) other Departments (or) MOOC courses as per availability and approval.				
6.5STI81	Data Analysis Lab: R	GE/SEC/MOOC	1	2
6.5STI82	ICT-Lab/Workshop-Programming Concepts	GE/AEC/MOOC	1	2
6.5STI83	Summer Internship Project#	AEC	2	
Total Credits			**20**	
	Fourth Semester (IV)			
6.5STI03	Privacy in the Digital Age	C	4	4
6.5STI04	Digital Innovations and Entrepreneurship	C	4	4
Students can choose any **two *courses from DSE*** offered by DSTI (which will be GE for other Departments as per availability and approval).				
	Elective 1	DSE	4	4
	Elective 2	DSE	4	4
6.5STI84	Dissertation (Experience Learning)$	AEC	4	
		Total Credits	**20**	
		Total Credits for M.Sc. in Digital Society	**80**	

Nature of Course	**I Semester**	**II Semester**	**III Semester**	**IV Semester**	**Total Credits**
Core (60%)	16	16	8	8	48
DSE (25%)	-	4	8	8	20
GE/MOOC/ SEC/AEC (15%)	4	-	4	4	12
	20	20	20	20	80

C- Core Courses; DSE- Discipline-Specific Elective; GE- General Elective; SEC- Skill Enhancement Course; AEC: Ability Enhancement Course

Note:

 # Summer Internship Project (SIP) (6.5STI83) is mandatory, and students need to complete the 2 Credits for SIP in the third semester. The student will undergo the summer internship after the completion of second semester and before the commencement of the third semester.

*$ Dissertation (*6.5STI84*) of 4 Credits in fourth semester is compulsory and to be completed under the supervision of the Department Faculty Supervisor.*

List of Tentative Electives

Departmental Electives

Second Semester

Course Code	Name of the Courses	Nature of the Course	Credits	Hours
6.0STI31	Digital Politics	DSE/GE	4	4
6.0STI32	Management & Behavioural Practices in Digital Age	DSE/GE	4	4
6.0STI33	Digital for Commons and Collective Action	DSE/GE	4	4
6.0STI34	Information Communication Technology Policy and Regulation	DSE/GE	4	4
6.0STI35	Management Information System	DSE/GE/MOOC	4	4
6.0STI36	GIS / Remote Sensing / Spatial Data Infrastructure	DSE/GE/MOOC	2	4
6.0STI37	Indian Knowledge System and Digital Society	DSE/GE	4	4

Third Semester

Course Code	Name of the Courses	Nature of the Course	Credits	Hours
6.5STI31	Big Data and Public Policy	DSE/GE	4	4
6.5STI32	Science, Technology and Society	DSE/GE	4	4
6.5STI33	Internet, Society, Economy	DSE/GE	4	4

Fourth Semester

Course Code	Name of the Courses	Nature of the Course	Credits	Hours
6.5STI40	Gender and Digital Spaces	DSE/GE	4	4
6.5STI41	Digital Innovations and Socio-Economic Changes	DSE/GE	4	4
6.5STI42	Strategic Management in Digital Era	DSE/GE	4	4
6.5STI43	Digital Archiving and Revitalising Indian Knowledge Traditions	DSE/GE	4	4

GE/MOOC*/SEC

1. Management Information System
2. GIS/Remote Sensing/Spatial Data Infrastructure
3. Data Analysis Lab: R
4. ICT Lab and Workshop - Programming Concepts

NOTE:

*Students can choose any course offered by other Departments or a MOOC course as per availability and approval.
#Department will suggest a list of Courses from MOOC for the student to opt from SWAYAM/NPTEL/ another approved platform.

DETAILED SYLLABUS

First Semester (I)

Course Title: Quantitative Techniques		Course Code: **6.0STI01**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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 Prerequisites: Student must have knowledge of

1. Student must have completed Bachelor's Degree
2. Aptitude and skills in quantitative analysis

Course Objective:

1. Understand the quantitative tools required to perform the role as a manager.
2. Apply analytical evaluation and arrive at logical conclusions & inferences to the decisions.

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

1. Illustrate all formulae covered in the syllabus.
2. Apply relationships using direct and inverse proportion, simple graphs, linear and quadratic equations.
3. Analyze different types of problems related to business operations
4. Assess quantitative techniques to solve problems related to business operations

Course Content

Unit I	**15 Hours**

Decision Theory:Concept of Anvikshiki in decision making, Decision making under uncertainty, Criterion of Maximin and minimax, Decision making under risk, Bayesian approach, Criterion of Maximum likelihood, Decision Tree-Applications.Decision making in a Competitive Situation-Game Theory, Types of Games, Two person zero sum games, Mixed strategy and Method of solution.

Unit II	**15 Hours**

Transportation Model, North West Corner Rule, Stepping Stone Method, VAM, MODI, Application of Transportation Model, Assignment Models, Hungarian method of assignment, Application of Assignment model

Unit III	**15 Hours**

PERT & CPM, Network construction and analysis, Critical path, Time-cost trade off, Crash activity analysis, Planning and scheduling, Project costs, Controlling project costs.

Unit IV	**15 Hours**

Linear Programming, Problem formulation and graphical methods of solution, Simplex method, Elementary ideas about duality, Sensitivity Analysis, Integer Programming and Goal Programming. Simulation for business, Monte Carlo method and application of simulation in business situations. Queuing theory, Characteristics, Business application of waiting lines

Text Books:

1. Anderson, Sweeney and Williams, An Introduction to Management Science
2. Vohra, N.D. Quantitative Techniques in Management, 3rd Edition, Tata McGraw Hill

Reference Books:

1. Taha, H.A., An Introduction to Operations Management
2. Tulsian and Pandey, Quantitative Techniques, Pearson Education
3. Sharma J. K., Operations Research

e-Resources

https://www.coursera.org/courses?query=quantitative%20methods

Topics for Project Based Learning

Simulation, Queuing Theory

PO-CO-PSO Compliance Matrix												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	1	2	2	0	0	3	0	0	0
CO2	2	3	1	1	1	2	0	0	3	0	0	0
CO3	2	1	2	1	1	1	0	0	3	0	0	0
CO4	3	2	3	2	3	3	0	0	3	0	0	0

Course Title: **Public Policy in the Digital Age**		Course Code: **6.0STI02**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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 Pre-requisites:

Course Objective: This course will enable the student to:

1. Understand the foundational concepts, stages, and actors involved in public policy formulation and implementation.
2. Analyze the transformations in public policy approaches in response to digital technologies and data-driven governance.
3. Evaluate digital tools and their role in policy delivery, governance efficiency, and public service access.
4. Assess ethical, legal, and regulatory challenges posed by AI, algorithms, and surveillance in policy environments.
5. Examine national and global case studies that reflect the convergence of technology and public policy.

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

CO1: Demonstrate a nuanced understanding of public policy frameworks and the roles of various actors.

CO2: Apply theoretical approaches to analyze the digital transformation in public policymaking.

CO3: Evaluate policy tools such as e-Governance, digital infrastructure, and online platforms in public service delivery.

CO4: Analyze legal, ethical, and regulatory concerns in digital policy environments.

CO5: Design or critique digital-age policy interventions using real-life case studies and tools.

Course Content

Unit I: Foundations of Public Policy	**15 Hours**

Policy (*Niti*) as *Dharma*- Normative Foundations in ancient Bharat; Understanding Public Policy: Definitions, Scope, and Characteristics; Stages of Policy Cycle: Agenda Setting, Formulation, Adoption, Implementation, Evaluation; Theoretical Approaches: System Theory: David Easton, Almond and Powell; Actors in Public Policy: Government, Bureaucracy, Political Parties, Civil Society, and Media

Unit II: Digital Age and Policy Formulation	**15 Hours**

The Rise of the Digital State: Big Data, AI, and Predictive Governance Generative AI in Public PolicyE-Participation and Crowd-sourced Policymaking, Role of Social Media in Agenda Setting and Opinion Shaping

Unit III: Digital Tools and Policy Implementation	**15 Hours**

E-Governance and Service Delivery Mechanisms Digital Public Infrastructure: Aadhaar, UPI, Digital Public Goods Surveillance, Privacy, and Regulation of Technology Use Challenges of Digital Divide and Inclusion in Policy Execution

Unit IV: Policy Evaluation, Regulation and Adjudication in the Digital Age	**15 Hours**

Digital Tools for Monitoring and Impact Assessment, Algorithmic Accountability and Transparency in Evaluation Regulation of Platforms: Competition, Content Moderation, and AI Ethics, Role of Judiciary and Regulatory Bodies in Digital Policy Oversight

Text Books:

1. Dye, T. R. (2013). *Understanding Public Policy*. Pearson Education.
2. Peters, B. G. (2020). *Advanced Introduction to Public Policy*. Edward Elgar Publishing.
3. Margetts, H., et al. (2017). *Digital Era Governance: IT Corporations, the State, and E-Government*. Oxford University Press.

Reference Books:

1. Dunleavy, P., et al. (2006). *Digital Era Governance*. Oxford University Press.
2. Kettunen, P., & Kallio, J. (2020). *The Impact of Digitalization on Public Policy*. Springer.
3. Bhatnagar, S. (2018). *Information Technology and Public Service Delivery*. SAGE Publications
4.

e-Resources

1. MyGov India
2. Digital India Official Portal
3. NITI Aayog - AI Strategy
4. World Bank e-Government Indicators
5. OECD Digital Government Studies
6. United Nations E-Government Survey

Topics for Project Based Learning:

1. **Design a Crowd sourced Policy Platform**: Prototype an app/platform to involve citizens in agenda setting.
2. **Digital Inclusion Audit**: A field study-based analysis of how e-governance platforms are accessed in rural or marginalized communities.
3. **Case Study Analysis**: Evaluate platforms like Aarogya Setu or MyGov through parameters such as transparency, participation, and effectiveness.
4. **Mock Policy Drafting Exercise**: Draft a public policy using principles of digital ethics, algorithmic fairness, and data privacy (e.g., AI in education or healthcare).
5. **Comparative Study**: Analyze the governance models of India with other countries in implementing digital public infrastructure.

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	1	2	2	2	1	0	3	0	0	3	0
CO2	2	2	1	3	2	3	0	3	0	0	3	0
CO3	2	2	2	1	3	1	0	3	0	0	3	0
CO4	2	1	1	1	2	1	0	3	0	0	3	0
CO5	2	3	3	1	2	1	0	3	0	0	3	0

Course Title: Digital Media, Culture and Society		Course Code: **6.0STI03**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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 Prerequisites: Student must have knowledge of:

1. Must possess critical and comprehensive thinking.
2. Basic understanding of the concepts of new media as well as the role digital media technologies play in society and shaping the culture.

Course Objective:

1. To provide students the understanding about the interrelationships between Digital Media, Culture and Society. It will describe the foundations and dimensions of social processes while developing an understanding of various contemporary issues and the media.
2. To help students explore the concepts around new media as well as the role digital media technologies play in society. Besides, the course will help the students to understand the impacts of new media on communication today.

Course Outcomes: After completion of this course, students will able to:

1. Explain the relation between digital media, culture, and society;
2. Analyse the dimensions of digital media and its role.
3. Explain the effects of digital communication on society, audiences, and people.
4. Demonstrate the ability to use digital media tools for blogging, podcasting, online news writing, microblogging, and web-based communication.
5. Develop digital content (news portal/blog/podcast/social media campaign) integrating ethical standards and communication strategies.
6. Demonstrate sensitivity toward issues of gender justice, social inclusion, cultural diversity, and democratic participation in media representation.

Course Content

Unit I: Introduction- Digital Media, Culture, and Society (DMCS) — **15 Hours**

- Introduction to Digital Media and Society: Mass Media and Society: Meaning, forms and functions of Media
- Digital Media, Understanding Society, Social Structure, Socialization, Gender and Social Relations
- DMCS and IKS: Communication as *Samskriti & Samvada;* Indian Knowledge Foundations-*Samskriti, Samvada, Lok Sangraha, Sabha & Parishad, Shravana-Manana-Nididhyasana;* Folk Media, Storytelling; Knowledge as *Sarva-Jana Hitaya* (for all)- The Indian Concepts: *Jnana Parampar, Guru-Shishya digital shift, Vasudhaiva Kutumbakam, knowledge networks (Ashrams, Gurukuls)*

Unit II : Internet & Networking — **15 Hours**

- Overview of Online Communication & the Internet: Meaning and definition, Features of Online Communication
- New Media: Meaning, scope, characteristics, and application
- Networking, ISP, and Browsers, Types of Websites, Video Conferencing, Webcasting, Social Networking, Blogging and Microblogging

Unit III: Media Ecology and Media Audiences — **15 Hours**

- Media Audience: Public Opinion, News Framing and Agenda Setting
- Media and Concepts of Public Sphere, News Framing, Mediatization, McLuhan's Optimism, Postman's Pessimism, Technological Determinism, Technology Momentum, Social Constructionism, Media's Materiality

Unit IV: New Media and Emerging Trends in Digital Media — **15 Hours**

- ICT and Information Society, New World Information Order and E-governance
- Media Convergence, Emerging Trends: Mobile Technology, Social-Media & Web 2.0 Network Theory, Public Sphere, Digital Commons-Wikipedia

Text Books:

1. Media Society by David Croteau and William Hoynes
2. Media and society in the twentieth century: a historical introduction—2003; Lyn Gorman and David McLean, Oxford: Blackwell Publishing
3. Media and Society into the 21st Century—Lyn, Gorman and Mclean David Willey-Blackwell, 2009
4. Oommen, T.K. "Knowledge and Society: Situating Sociology and Social Anthropology". New Delhi: OUP, 2007
5. LA Lievrouw, S Livingstone, Handbook of new media: Social shaping and consequences of ICTs, Sage 2002
6. Martin Lister, New Media: A Critical Introduction, Routledge, 2009
7. Flew. Terry, New Media: An Introduction, Oxford Higher Education, 3rd, 2007
8. Wendy Hui Kyong Chun, Thomas Keenan, 'New media, Old Media, A history and Theory Reader', Routledge, 2006
9. Carolina McCarthy, Facebook: Our targeted ads aren't creepy, The Social-CNETnews, June 18, 2009

Reference Books:

1. Rege, Sharmila, "Sociology of Gender: The Challenge of Feminist Sociological Knowledge". New Delhi: Sage, 2003
2. Singh, Yogendra, "Ideology and Theory in Indian Sociology". Jaipur: Rawat, 2004
3. Graeme Burton, Media and Society: A Critical Perspective, Rawat Publication, Jaipur, 2005
4. J. Nehru, chapter on 'Discovery of India' from Discovery of India, Penguin Books
5. Agnes, Flavia, 'Transgressing Boundaries of Gender and Identity', Economic and Political Weekly September 7, 2002
6. Levinson, Paul, New New Media, Allyn & Bacon, 2nd, 2012
7. Lev Manovich, The language of New Media, MIT Press, 2001
8. Ronal Dewolk, Introduction to Online Journalism, Allyn & Bacon
9. John Vernon Pavlik, New Media Technology, Allyn & Bacon
10. Michael M. Mirabito, New Communication Technologies: Application

Topics for Project Based Learning

Presentations, analysis and discussions, communication skill development on:

1. **Media Content:** Contemporary caste dynamism: caste movements, caste violence and media; gender and media, women's movement in India, gender and question of honour; Media, Religious identity and contemporary politics
2. **Content Journalism:** Traditional vs Online Journalism-difference in news consumption; Selection of news content, presentation of news; Online News Writing & Editing, News Portals, Blogs, Chat, Video, Podcasting, live casting and mobile communication
3. **Laws and Ethics:** Cyber Crimes & Security: Types and case studies; WikiLeaks; Cyber Laws & Ethics, Internet censorship in India, Comparison between America and India. The student needs to submit soft news stories for websites or open individual blogs as a part of project

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	3	3	3	2	3	0	0	0	3	0
CO2	3	2	3	3	3	2	3	0		0	3	0
CO3	3	3	3	2	2	1	3	0	0	0	3	0
CO4	3	3	3	3	3	2	3	0	0	0	3	0
CO5	3	3	3	2	3	3	3	0	0	0	3	0
CO6	2	3	2	3	2	2	3	0	0	0	3	0

<table>
<tr><td colspan="3">Course Title: Information Technology and Society</td><td colspan="3">Course Code: 6.0STI04</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="3">Credit: 04</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>4</td><td>-</td><td>-</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="3"></td></tr>
<tr><td colspan="6">Course Prerequisites: Student must have knowledge of
1. Must possess comprehensive thinking
2. Basic understanding of the social implications of the Internet and related information and communication technologies.</td></tr>
<tr><td colspan="6">Course Objective:
1. This course provides an overview of major findings within social science disciplines including communication studies, sociology, anthropology and political science. It introduces theoretical approaches addressing the social implications of Internet and ICTs. The course integrates perspectives from the Indian Knowledge System (IKS) to understand indigenous models of knowledge production, communication networks, ethics, governance, and technology–society relationships.</td></tr>
<tr><td colspan="6">Course Outcomes: After completion of this course, student will able to
1. Explain theoretical insights, key concepts and current discourses relating to technology within social science disciplines and Indian Knowledge traditions.
2. Analyze linkages between technological developments and their wider social, cultural, ethical, and civilizational contexts including Indian perspectives.
3. Apply critical thinking using theories such as technological determinism, social construction, materiality, neutrality, and indigenous knowledge frameworks.
4. Develop scientific and civilizational perspectives on the historical evolution of technologies, including contributions from Indian Knowledge Systems and their relevance in the digital age.</td></tr>
<tr><td colspan="6">Course Content</td></tr>
<tr><td colspan="5">Unit I</td><td>15 Hours</td></tr>
<tr><td colspan="6">Information Technology and Society: An Introduction, Social Shaping of Technology, Theories of Society and the Internet, Globalization and Domestication, Indian Knowledge Traditions and Knowledge Transmission Systems (oral traditions, Gurukul system, community-based knowledge networks)</td></tr>
<tr><td colspan="5">Unit II</td><td>15 Hours</td></tr>
<tr><td colspan="6">Mobile Phones, the Internet, and Perpetual Contact, The Presentation of Self Online, Social Implications of Online Data</td></tr>
<tr><td colspan="5">Unit III</td><td>15 Hours</td></tr>
<tr><td colspan="6">Work & Economic Life Online Microblogging among New and Old Media</td></tr>
<tr><td colspan="5">Unit IV</td><td>15 Hours</td></tr>
<tr><td colspan="6">The Internet and Democracy: The Knowledge Society, Indian Knowledge System (IKS) and Digital Society.
AI, Governance, and Society: AI in governance (e-governance, smart cities), AI for social good (education,</td></tr>
</table>

healthcare, sustainability)

Text Books:

1. Bimber, Bruce (2003). Information and American Democracy: Technology in the Evolution of Political Power. Cambridge: Cambridge University Press.
2. Boyd, Danah (2004). It's Complicated: the social lives of networked teens. New Haven: Yale University Press.
3. Castells, Manuel (2009), Communication Power, Oxford: Oxford University Press.

Reference Books:

1. Donner, Jonathan (2015). After Access: Inclusion, Development, and a More Mobile Internet, Cambridge: MIT Press.
2. Dutton, William (2013), Handbook of Internet Studies, Oxford University Press
3. Graham, Mark & Dutton, William (2014) Society and the Internet. Oxford: Oxford University Press.

E-Resources :

1. http://eprints.lse.ac.uk/28638/
2. Information Technology and Society: A Reader Edited by Nick Heap, Ray Thomas, Geoff Einon, Robin Mason and Hughic Mackay

Topics for Project Based Learning

1. Case Studies based on Digital Technology, Comparative study of Western Knowledge Society and Bharatiya Knowledge Traditions.

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	1	3	3	3	1	0	0	3	0
CO2	3	2	3	2	2	3	3	1	0	0	3	0
CO3	3	2	3	3	2	2	3	1	0	0	3	0
CO4	2	3	2	3	2	3	3	1	0	0	3	0

<table>
<tr><td colspan="2">Course Title: ICT-Lab / Workshop: Programming Concepts</td><td colspan="3">Course Code: 6.0STI81</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="3">Credit: 02</td></tr>
<tr><td rowspan="2">Practical: 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>-</td><td>-</td><td>4</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="3"></td></tr>
<tr><td></td><td></td><td colspan="3"></td></tr>
<tr><td colspan="5">Course Prerequisites Student must have knowledge of</td></tr>
<tr><td colspan="5">1. Student must have completed Bachelor’s Degree
2. Aptitude and skills in quantitative analysis</td></tr>
<tr><td colspan="5">Course Objective:</td></tr>
<tr><td colspan="5">1. To equip the student with basic quantitative tools in SPSS required to perform the role as a manager.
2. To enable the student to do analytical evaluation and arrive at logical conclusions & inferences to the decisions using SPSS.
3. To take help of quantitative techniques in SPSS to solve problems related to business and research.</td></tr>
<tr><td colspan="5">Course Outcomes: After completion of this course student will able to</td></tr>
<tr><td colspan="5">1. Apply concepts of programming applicable for data analysis in social science related fields.
2. Examine analytical techniques and tools for data filtering, storing, and preparing data for analysis.
3. Apply statistical software packages to analyse data related to social science disciplines.
4. Evaluate text processing and other social media sentiment analysis for policy purposes.</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="4">SPSS: Introduction, Installation, Hands-on practice of tools used in SPSS Variable View: Name, Type, Width, Decimal, Label, Values, Missing, Columns, Align, Measures, Role. Data View: Columns, Row, Variables</td><td></td></tr>
<tr><td colspan="4">Unit II</td><td>15 Hours</td></tr>
<tr><td colspan="4">File: Input / Output / Storage of data as a file. Text/Numeric/Syntax processing and regular expressions</td><td></td></tr>
<tr><td colspan="4">Unit III</td><td>15 Hours</td></tr>
<tr><td colspan="4">Analyze function: Descriptive analytics, Frequencies, Compare means Graphs: Chart builder</td><td></td></tr>
<tr><td colspan="4">Unit IV</td><td>15 Hours</td></tr>
<tr><td colspan="4">Python: Variables, Operator, Data Type, IDE for Python, User input & Type casting in python, shaping data using Python</td><td></td></tr>
<tr><td colspan="5">Text Books:
McKinney, W. (2013). Python for Data Analysis. Sebastopol, CA. O‟Reilly Media.</td></tr>
<tr><td colspan="5">Reference Books:</td></tr>
<tr><td colspan="5">Bird, S., E. Klein & E. Loper. Natural Language Processing with Python. Sebastopol, CA. O Reilly Media</td></tr>
<tr><td colspan="5">e-Resources</td></tr>
<tr><td colspan="5">https://www.coursera.org/courses?query</td></tr>
<tr><td colspan="5">Topics for Project Based Learning</td></tr>
<tr><td colspan="5">Descriptive analysis, Frequency analysis</td></tr>
</table>

PO-CO-PSO Compliance Matrix												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	1	2	2	0	0	3	0	0	3
CO2	2	3	1	1	1	2	0	0	3	0	0	3
CO3	2	1	2	1	2	1	0	0	3	0	0	3
CO4	3	2	3	2	3	3	0	0	3	0	0	3

Course Title: Digital Society Sector-wide Analysis		Course Code: **6.0STI82**		
Teaching Scheme	**Examination Scheme**	Credit: **02**		
Practical: 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 Prerequisites: Student must have knowledge of

1. Must possess critical and comprehensive thinking
2. Skill in dealing with practical/theoretical problems and challenges related to situations
3. Knowledge of analytical and technical writing skills

Course Objective:

1. To provide insights to the students regarding case-based learning and addressing digital inclusion in various sectors in the society.

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

1. Analyse various case studies addressing one or many problems of digitalisation process, data-driven society, digital inclusion, digital divide, and ICT Policy and Regulation
2. Demonstrate case-based problem-solving skills.
3. Develop case studies pertaining to digital society in India and defend its relevance in modern-day society.

Course Content

Unit I: Understanding Case Development and Analysis — **15 Hours**

- Knowing case studies as a Research Method
- Designing Case Studies
- Methods for collecting case study evidence
- Techniques for analysing case study data

Unit II: The Case Reporting and Presentation — **15 Hours**

- Writing and reporting case study findings
- Interpreting case study outcomes
- Communicating case study insights to stakeholders
- Case presentation and discussion techniques

Unit III: Sector-wide Case Writing — **15 Hours**

Development of case studies related to digital society, including:

- Social and environmental/ecological issues
- Digital economy and economic transformation
- E-business ecosystem
- Digital transition in rural farm, non-farm, and off-farm sectors
- Role of Farmer Producer Organizations (FPOs), cooperatives, and community institutions

Unit IV: Sector-wide Case Analysis — **15 Hours**

Analysis of digital society cases focusing on:

- Social and environmental/ecological challenges
- Economic and digital transformation issues
- E-business ecosystem dynamics
- Digital transition in rural farm, non-farm, and off-farm sectors
- Impact on FPOs, cooperatives, and local development systems

Text Books:

1. Alexander L. George (2005), Case Studies and Theory Development in the Social Sciences.
2. Robert Yin (2014), Case Study Research: Design and Methods
3. Robert Jolles (1993). How to Run Seminars & Workshops: Presentation Skills for Consultants, Trainers and Teachers

Topics for Project-Based Learning:

- Designing a Digital Transformation Case Study
- Case Study Research on a Local Digital Initiative
- Case Report Writing Project
- Stakeholder Impact Analysis; Comparative Sector Analysis; Sustainability and Scalability Analysis

PO-CO-PSO Compliance Matrix												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	1	3	1	1	2	2	0	0	3	0	0	3
CO2	2	2	1	1	2	2	0	0	3	0	0	3
CO3	1	1	3	2	1	1	0	0	3	0	0	3

Second Semester (II)

<table>
<tr><td colspan="3">Course Title: Emerging Digital Technologies</td><td colspan="3">Course Code: 6.0STI05</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="3">Credit: 04</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>4</td><td>-</td><td>-</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="3"></td></tr>
<tr><td></td><td></td><td colspan="3"></td></tr>
<tr><td colspan="6">Course Prerequisites: Student must have knowledge of
1. Basics understanding on emerging digital technologies in modern day life</td></tr>
<tr><td colspan="6">Course Objective:
1. Building on the fundamentals of the technologies, the course will explore the uses and significance of emerging digital technologies in modern day life and theory and practical aspects of the digital technologies will be learnt.</td></tr>
<tr><td colspan="6">Course Outcomes: After completion of this course student will able to
1. Explain the fundamental concepts of digital technologies and associated technologies. Providing the students about the significance and uses of several networking technologies such as the Internet, World Wide Web and cloud computing.
2. Develop understanding of key elements of computer networking and its usage for digital solutions which include Internet architecture, layer protocols, client-server architecture, etc.
3. Apply knowledge of Internet based applications and services, including digital platforms, to socio-technical problems</td></tr>
<tr><td colspan="6">Course Content</td></tr>
<tr><td colspan="5">Unit I: Artificial Intelligence:</td><td>15 Hours</td></tr>
<tr><td colspan="6">Understanding AI, Key Concepts in AI, Machine Learning: Supervised, unsupervised, and reinforcement learning, Philosophy of AI, The History of Artificial Intelligence-Phases of AI, Application of AI, Risks and Benefits of AI, Governance and Regulation for AI, AI concerns, Ethical Considerations in AI, Challenges and Future Directions, Responsible and Ethical AI Practices.
Indian Knowledge System (IKS) and the 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</td></tr>
<tr><td colspan="5">Unit II: Internet of Things (IoT)</td><td>15 Hours</td></tr>
<tr><td colspan="6">Meaning, Importance, Sector-wide Applications, Benefits, Challenges and Risks, Future of IoT, Student Project-Sectoral Application and Situational analysis of IoT</td></tr>
<tr><td colspan="5">Unit III: Blockchain</td><td>15 Hours</td></tr>
<tr><td colspan="6">Meaning, Characteristics, Distributed system, Node, CAP theorem, Network/system types, Centralised vs Decentralised, Contest driven decentralisation</td></tr>
<tr><td colspan="5">Unit IV: Cloud Computing & Data Sciences</td><td>15 Hours</td></tr>
<tr><td colspan="6">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</td></tr>
<tr><td colspan="6">Text Books:</td></tr>
<tr><td colspan="6">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, TataMcGrawHill,2007.
5. Ivan Bayross, “HTML, DHTML, JavaScript, Perl CGI”, 3rd Edition, BPB Publications.
6. Jackson, “Web Technologies”, Pearson Education, 2008.</td></tr>
</table>

Reference Books:

1. M. L. Young,"The Complete reference to the Internet", Tata McGraw Hill, 2007.
2. Vijay Madisetti, Arshdeep Bahga, Ïnternet of Things, "A Hands- on Approach", University Press
3. SRN Reddy, Rachit Thukral and Manasi Mishra, "Introduction to Internet ofThings: A Practical Approach", ETI Labs.
4. Melanie Swan, "Block Chain: Blueprint for a New Economy", O'Reilly, 2015.
5. Joel Grus, "Data Science from Scratch: First Principles with Python", O'Reilly Media
6. Saha, S.K., "Introduction to Robotics, 2nd Edition, McGraw-Hill Higher Education, New Delhi, 2014.
7. William Stallings, "Cryptography and Network Security", Pearson Education/PHI,

Topics for Project Based Learning

Projects Development on AI, IoT, Cloud Computing, AR-VR-XR, Blockchain

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	3	1	1	1	2	0	0	0	3	0	3
CO2	3	1	2	3	1	1	0	0	0	3	0	3
CO3	1	2	3	1	2	1	0	0	0	3	0	3

Course Title: Research Methodology		Course Code: **6.0STI06**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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			

CoursePrerequisites: Student must have knowledge of

1. Student must have completed Bachelor's Degree
2. Aptitude and skills in quantitative and qualitative analysis, research aptitude

Course Objective:

1. To practice research techniques and their applications in decision-making.
2. To analyze social problems and the use of research as a problem-solving tool.
3. To encompass the understanding and application of appropriate research designs, data analysis, and report writing.

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

1. Explain of various kinds of research, objectives of doing research, research process, research designs and sampling
2. Demonstrate qualitative research techniques
3. Analyze measurement scaling as well as the quantitative data analysis
4. Assess data analysis and hypotheses testing procedures

Course Content

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

Introduction to Research: Concept of Anusandhana in Indian knowledge traditions, Research process, and problem formulation and statement of research objectives, deductive and inductive theory, Importance of literature review. Measurement: Concept of measurement- what is measured? Levels of measurement nominal, Ordinal, Interval, Ratio. Problem Identification & Formulation - Research Question - Investigation Question, Hypotheses - Qualities of a good Hypothesis Null Hypothesis & Alternative Hypotheses. Research Design: Steps involved in a research design. Exploratory research, Descriptive research, Causal research, experimental designs, types of errors affecting research design.

Unit II : Sampling and Data Collection — **15 Hours**

Sampling and sampling distribution- Meaning, Steps in the Sampling process, Types of Sampling - Probability and non-probability Sampling Techniques. Data collection: Primary and Secondary data – Sources, Data collection Methods: Observations, Survey, Interview and Questionnaire design, Qualitative Techniques of data collection.

Unit III : Measures of Central Tendency — **15 Hours**

Mean, Median, Mode, Measures of dispersion mean deviation and standard deviation. Binomial, Poisson and Normal distributions- their characteristics and applications. Measures of Variation: Skewness, Moments and Kurtosis. Data analysis: Qualitative vs Quantitative data analyses, Hypothesis testing, Parametric test: t–test, Z test, ANOVA, Correlation & regression Analysis, Non-parametric test: chi-square test.

Unit IV : Report Design	**15 Hours**
Research report, Contents of the report, need of executive summary – chapterization, contents of chapter, report writing, report format, Ethics in research.	
Text Books:	
Business Research Methods- Donald Cooper & Pamela Schindler, TMGH, 9th edition. Business Research Methods- Alan Bryman & Emma Bell, Oxford University Press.	
Reference Books:	
Research Methodology- C. R. Kothari Select references from the Internet	
e-Resources	
https://www.coursera.org/courses?query	
Topics for Project Based Learning	
Systematic Literature Review, Bibliography Coupling, Keyword Occurrence	

PO-CO-PSO Compliance Matrix												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	3	3	2	3	0	0	3	0	0	0
CO2	1	2	2	3	3	3	0	0	3	0	0	0
CO3	3	3	3	2	3	3	0	0	3	0	0	0
CO4	2	2	3	2	3	2	0	0	3	0	0	0

<table>
<tr><td colspan="3">Course Title: Law and Digital Society</td><td colspan="4">Course Code: 6.0STI07</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="4">Credit: 04</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 colspan="2">P</td></tr>
<tr><td>4</td><td>-</td><td colspan="2">-</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="4"></td></tr>
<tr><td colspan="6">CoursePrerequisites:</td></tr>
<tr><td colspan="6">1. Student must have completed Bachelor’s Degree
2. Aptitude and skills in quantitative and qualitative analysis, research aptitude</td></tr>
<tr><td colspan="6">Course Objective: This course will enable the student to:</td></tr>
<tr><td colspan="6">1. Explain the legal challenges arising from the digitization of society.
2. Describe and apply national and international cyber law frameworks to digital contexts.
3. Analyze the rights and duties of digital citizens within legal and constitutional frameworks.
4. Examine and evaluate major forms of cybercrime and related enforcement mechanisms.
5. Develop reasoned legal arguments through the study of cyber jurisprudence and case law.</td></tr>
<tr><td colspan="6">Course Outcomes: After completion of this course student will able to:</td></tr>
<tr><td colspan="6">1. Demonstrate understanding of cyber law concepts and their relevance in a digital society.
2. Critically evaluate legal instruments related to data protection, privacy, and cybercrime.
3. Compare Indian cyber law frameworks with international practices.
4. Analyze legal cases involving cyber offences and digital rights.
5. Develop policy-oriented and research-based solutions to legal issues in cyberspace.</td></tr>
<tr><td colspan="6">Course Content</td></tr>
<tr><td colspan="5">Unit I: Foundations of Digital Society and Cyber Jurisprudence</td><td>15 Hours</td></tr>
<tr><td colspan="6">Normative Foundations of Law: Dharma, Nyaya, and Ethical Regulation in the Digital Age; ICT and Societal Transformation; The Necessity of Cyber Law in the Digital Age; Meaning of Cyber Jurisprudence; Overview of Indian Legal Frameworks: Information Technology Act, 2000 (with Amendments), DPDP Act 2023</td></tr>
<tr><td colspan="5">Unit II: Global Legal Frameworks and Comparative Cyber Law</td><td>15 Hours</td></tr>
<tr><td colspan="6">International Organizations and Cyber Governance: United Nations; International Telecommunication Union (ITU); Treaties and Conventions: Budapest Convention on Cybercrime; APEC Privacy Framework; OECD; Comparative Overview: India, EU (GDPR), and U.S. Cyber Law Models</td></tr>
<tr><td colspan="5">Unit III: Rights and Liberties in Cyberspace</td><td>15 Hours</td></tr>
<tr><td colspan="6">Digital Human Rights: Concept and Evolution; Freedom of Speech and Expression in Cyberspace; Right to Internet Access as a Fundamental Right; Right to Privacy and Surveillance Debates; Role of Judiciary in Safeguarding Digital Rights in India and Abroad</td></tr>
<tr><td colspan="5">Unit IV: Cybercrimes, Liability and Dispute Resolution</td><td>15 Hours</td></tr>
<tr><td colspan="6">Understanding Cybercrimes: Hacking and Unauthorized Access; Cyber-stalking and Online Harassment; Cyber Pornography and Child Protection; Identity Theft, Fraud, and Phishing; Cyber-terrorism and Hate Speech; Digital Forgery and Cyber Defamation Cyber Law Enforcement Mechanisms in India; Online Dispute Resolution (ODR) Mechanisms and Emerging Trends</td></tr>
<tr><td colspan="6">Text Books:</td></tr>
<tr><td colspan="6">1. Chris Reed & John Angel, Computer Law, OUP, New York, (2007).
2. Justice Yatindra Singh, Cyber Laws, Universal Law Publishing Co, New Delhi, (2012).
3. Verma S, K, Mittal Raman, Legal Dimensions of Cyber Space, Indian Law Institute,New Delhi, (2004)
4. Jonthan Rosenoer, Cyber Law, Springer, New York, (1997).
5. Sudhir Naib, The Information Technology Act, 2005: A Handbook, OUP, New York,(2011)
6. Vasu Deva, Cyber Crimes and Law Enforcement, Commonwealth Publishers, New</td></tr>
</table>

Reference Books

1. Duggal, P. (2022). Cyber Law: An Exhaustive Section-wise Commentary on the Information Technology Act. Universal Law Publishing.
2. Solove, D. J., & Schwartz, P. M. (2021). Information Privacy Law. Aspen Publishers.
3. DPDP Act 2023
4. S. R. Bhansali, Information Technology Act, 2000, University Book House Pvt. Ltd., Jaipur (2003).

e-Resources

1. Ministry of Electronics and Information Technology (MeitY), India
   https://www.meity.gov.in
2. Indian Computer Emergency Response Team (CERT-In)
   https://www.cert-in.org.in
3. Budapest Convention on Cybercrime
   https://www.coe.int/en/web/cybercrime
4. Internet Governance Forum (UN)
   https://www.intgovforum.org
5. OECD Digital Economy Papers
   https://www.oecd.org/sti/ieconomy/digital-economy-papers.htm
6. Electronic Frontier Foundation (EFF)
   https://www.eff.org

Topics for Project Based Learning:

1. Comparative Analysis of GDPR and India's Proposed Data Protection Law
2. Judicial Trends on Right to Internet Access in Indian and Global Context
3. Digital Surveillance vs. Privacy: Legal and Ethical Dimensions
4. Cybercrime Against Women and Children: Challenges and Legal Remedies
5. Effectiveness of the IT Act, 2000 in Tackling Modern-Day Cyber Threats
6. Regulation of Social Media Platforms: Content Moderation vs. Free Speech
7. Blockchain, Smart Contracts, and Legal Recognition in India
8. International Cooperation in Cybercrime Investigations
9. Fake News and Deepfakes: Legal Gaps and Solutions
10. Role of Artificial Intelligence in Digital Forensics and Legal Systems

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	1	3	2	0	3	0	0	3	0
CO2	2	2	1	2	1	3	0	3	0	0	3	0
CO3	2	2	2	3	1	2	0	3	0	0	3	0
CO4	2	3	2	1	1	2	0	3	0	0	3	0
CO5	3	2	2	1	3	2	0	3	0	0	3	0

Course Title: ICT and Development		Course Code: **6.0STI08**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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 Prerequisites: Student must have knowledge of:

1. Must have the basic understanding of narratives, processes, and approaches of socio-economic and environmental development.
2. Basic knowledge of ICT/digital technology interfaces with society.

Course Objectives:

1. To introduce students to the debates and practices surrounding the uses of Information and Communication Technologies (ICTs) in the Developmental process in the Global South.
2. To draw on the resources from Anthropology, Development Studies, Economics, Geography, and History in order to examine the theoretical and conceptual frameworks that underpin development as a practice, as a subject of research, and as a discourse.
3. To provide an opportunity to reflect on local appropriateness, social inclusion, and the range of arguments for and against any ICT for development project in a variety of contexts.

Course Outcomes: After the completion of this course, the student will be 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: Introduction to Development and ICT — **15 Hours**

- Understanding the perspectives, approaches and interrelationship of Development and ICT
- Uneven Development and the Origins of ICTD: Unevenness in development
- Digital Divide, e-development, and i-development
- Indian concepts: Sarvodaya, Antyodaya, Lokasangraha, Gram Swaraj, Trusteeship
- Digital divide in India, Rural–Urban–Rurban, Common Service Centres, BharatNet

Unit II : Development Theories — **15 Hours**

- Dependency Theory, Modernisation Theory, Structuralism, Socialism, Neo-Marxism and Neoliberalism Critiques of ICTD: Feminist, Postcolonialist, and Poststructuralist Critiques
- Indian thinkers on development: Gandhian Socialism, Ambedkar, Lohia, Tagore, Amartya Sen

Unit III : ICTs as Interventions for Social Development — **15 Hours**

- Millennium Development Goals (MDGs), Sustainable Development Goals (SDGs) and ICT/Digital
- ICTs as interventions for social development
- ICT as Social Interventions: Digital India, Aadhaar-DBT, UPI, SWAYAM, eSanjeevani, AgriTech

Unit IV : ICT&D: The Digital Spaces for Economy and Work	**15 Hours**

- Value chain disintermediation and e-commerce
- Digital Labour and Development
- Financial Inclusions, Fintech and Mobile Money
- Market creation, expansion and inclusion through ICTs, Rural Market Creations
- Knowledge Economies, Technology Entrepreneurship, and Innovation
- Gig economy, MSME digitization, Open Network for Digital Commerce (ONDC), eNAM
- Startups, Rural Entrepreneurship, and the Digital Swadeshi Model

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, 21:10511065.

Reference Books:

1. Heeks, R. 2002. i-Development not e-Development: Special Issue on ICTs and Development. Journal of International Development, 14(1): 1- 11.
2. 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).

e-Resources:

- **https://www.worldbank.org**
- **https://hdr.undp.org/**
- **https://www.itu.int/en/Pages/default.aspx**

Topics for Project Based Learning:

- ICT and Farmer Producer Organizations (FPOs)
- Digital Agriculture Case Study
- ICT in Education (EdTech Analysis)
- ICT and Healthcare (Telemedicine Case Study)
- Digital Gender Divide Study
- ICT and Social Movements
- E-Commerce and MSMEs
- Platform Economy & Gig Workers
- Digital Start-up Ecosystem in India
- ICT for Environmental Sustainability
- ICT for Climate Awareness
- ICT and Disaster Management
- Data Privacy and Cyber Security Case Study
- Digital Surveillance and Democracy
- Internet Censorship and Digital Rights
- AI and Development Ethics

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	3	3	3	3	0	3	0	0	3	0
CO2	3	2	3	3	3	2	0	3	0	0	3	0
CO3	3	3	3	2	3	3	0	3	0	0	3	0
CO4	3	3	3	3	3	3	0	3	0	0	3	0

Third Semester (III)

<table>
<tr><td colspan="2">Course Title: Society, Networks and Social Networks</td><td colspan="3">Course Code: 6.5STI01</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="3">Credit: 04</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>4</td><td>-</td><td>-</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="3"></td></tr>
<tr><td></td><td></td><td colspan="3"></td></tr>
<tr><td colspan="5">Course Prerequisites: Student must have knowledge of
1. Must possess comprehensive thinking
2. Skill in dealing with practical/theoretical problems and challenges related to social networks
3. Knowledge systematic skills</td></tr>
<tr><td colspan="5">Course Objective:
1. To provide insights to students regarding social networks, their theoretical foundations, structural models, analytical techniques, and socio-political implications. The course integrates perspectives from the Indian Knowledge System (IKS) to understand indigenous social structures, community networks, ethical governance, and relational worldviews.</td></tr>
<tr><td colspan="5">Course Outcomes: After completion of this course, student will able to
1. Explain key concepts and principles of social theories regarding social relationships and networks, including traditional Indian community-based network systems.
2. Apply tools for importing, visualizing and transforming real-world network data while interpreting socio-cultural contexts.
3. Apply various models and techniques of social network analysis using empirical datasets, integrating ethical and civilizational perspectives from Indian Knowledge Systems.
4. Critically examine privacy, power, governance and digital network structures through contemporary theories and Indian ethical frameworks (Dharma, collective welfare, community responsibility).</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="4">Unit I : Introduction</td><td>15 Hours</td></tr>
<tr><td colspan="5">The concepts of Networks and Social Networks; The Sources of Social Power, Culture of Connectivity: Engineering Sociality in a culture of connectivity, Traditional Indian Social Networks</td></tr>
<tr><td colspan="4">Unit II : Rise of the Network Society</td><td>15 Hours</td></tr>
<tr><td colspan="5">Googlisation and Networks, Models of Network Structures,
AI in Network Expansion: Role of AI in shaping global digital ecosystems</td></tr>
<tr><td colspan="4">Unit III : Network Analysis</td><td>15 Hours</td></tr>
<tr><td colspan="5">Network Analysis: Some Basic Principles, Network Theory and Social Structures, Network Theory and Organisation Theory, Scope, Applications.</td></tr>
<tr><td colspan="4">Unit IV : Privacy and Security</td><td>15 Hours</td></tr>
<tr><td colspan="5">Networks and Privacy, Networks, Politics and Anonymity, Network Theory and the NET, Networks Effects, Indian Knowledge System (IKS) and Network Ethics,</td></tr>
</table>

Text Books:

1. Barnes, J.A. (1972), Social Networks, in Addison-Wesley Module in Anthropology, 26:1-29.
2. Borgatti, Stephen P., Everett, Martin G., and Johnson, Jeffrey C. (2013). Analysing Social Networks. 2013. Thousand Oaks, CA: Sage.

References:

1. Burt, Ronald (1980), Innovation as a Structural Interests: Rethinking the Impact of Network Position on Innovation Adoption, Social Networks, 2 (4): 327-355
2. Burt, Ronald (1980), Models of Network Structures, Annual Review of Sociology, 6:79-141

Topics for Project Based Learning

- Social Network Analysis of a Classroom or University Group
- Organizational Network Study: Communication Flow in an Institution

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	1	2	3	1	3	0	0	0
CO2	3	2	3	3	2	2	3	1	3	0	0	0
CO3	2	3	3	2	2	3	3	1	3	0	0	0
CO4	2	2	2	3	1	3	3	1	3	0	0	0

Course Title: Digital Marketing		Course Code: **6.5STI02**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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			

CoursePrerequisites: Student must have knowledge of

1. Student must have completed Bachelor's Degree
2. Aptitude and skills in quantitative analysis

Course Objective:

1. Understand digital marketing techniques and their applications in decision-making.
2. To analyze marketing problems and the use of digital marketing as a problem-solving tool.
3. Evaluate the intersection of marketing and internet technology.
4. Develop idea of increasing customer value through digital marketing and major aspects related to digital marketing strategy

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

1. Explain the strategic marketing planning process in organizations and link it with the use of digital marketing.
2. Illustrate the use of SEO, PPC and Display ads in framing the digital marketing strategies.
3. Apply tools like Social Media marketing, E-mail marketing and Mobile marketing in getting strategic advantage over competitors.
4. Design ways of firms engage customers and measure the results of the strategic digital marketing efforts.

Course Content

Unit I	**15 Hours**

Marketing as relationship building, reflected in community-centric Indian knowledge systems, Concepts and Evolution of Digital Marketing, Difference between Digital Marketing and Traditional Marketing, Objectives & Components of Digital Marketing, Digital Marketing Mix, Digital Marketing Tools.

Unit II	**15 Hours**

Principles of digital marketing campaigns, Supporting hardware platforms available and the implications of technological advancements in digital marketing campaigns, Digital media channels and techniques: Search marketing, Email marketing, Social media and Viral marketing, Online & display advertising.

Unit III	**15 Hours**

Digital marketing communication mix, Search Engine Optimisation (SEO), Marketing implications of Banner Ads and Mobile Ads, Online public relation activities, Affiliate sites & networks, Online social customer service

Unit IV	**15 Hours**

Need of Digital Marketing Strategy, Understanding the Digital Consumers, Building an effective Website, Content marketing, Online PR, Affiliate marketing and Strategic Partnerships. Analyzing trends of internet marketing in India, Determining target markets, E-branding, Retailing Vs. E-tailing, B2B E-commerce, Social & Ethical issues related to E-commerce.

Text Books

Ryan Damian and Jones Calvin, (2009), Understanding Digital Marketing, Kogan Page Limited Kenneth C. Laudon and Carol Guercio Traver, (2011), E-Commerce: Business, Technology, Society, 7th edition, Pearson/Prentice Hall. Judy Strauss and Raymond Frost, (2012), E-Marketing, 6th edition, Pearson.

Reference Books:

1. Jaiswal S (2012), Doing Business on the Internet E-Commerce: Electronic Communication for Business, Galgotia Publications Pvt. Ltd.
2. P.T. Joseph S.J. (2012), E-Commerce: An Indian perspective, 4th Edition, PHI

e-Resources

https://www.coursera.org/courses?query
Topics for Project Based Learning
SEO, Social Media Marketing

PO-CO-PSO Compliance Matrix												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	2	3	1	1	1	2	0	0	0	3	0	3
CO2	3	1	2	3	1	1	0	0	0	3	0	3
CO3	1	2	3	1	2	1	0	0	0	3	0	3
CO4	3	1	2	2	1	3	0	0	0	3	0	3

Course Title: Data Analysis Lab-R		Course Code: **6.5STI81**		
Teaching Scheme	**Examination Scheme**	Credit: **01**		
Practical: 2 hrs/ week	Internal Assessment (CIA I): 20 Marks Internal Assessment (CIA II): 20 Marks End Semester Examination(ESE): 60 Marks	L	T	P
		-	-	2
	Total: 100 Marks			

CoursePrerequisites: Student must have knowledge of

1. Must possess computing skills
2. Skill in dealing with practical/theoretical problems and challenges related to statistical packages
3. Knowledge analytical skills

Course Objective:

1. This course aims to equip students with the data analysis techniques that take advantage of recent developments in computational power and analytical skills within the discipline of social sciences.

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

1. Use of statistical software called R for the purpose of social sciences and business data.
2. Apply fundamental techniques of data handling and analysis using R
3. Understand the relevance and application of data analysis in social sciences using basic predictive analysis and mining techniques
4. Explain evidence-based and data-driven approach to socially relevant research and policies.

Course Content

Unit I	**8 Hours**

Introduction to R and Data Fundamentals
Basic concepts of data and data analysis, Introduction to R environment, Installation and setup of R and RStudio, Basic R operations and syntax, Data types and variables in R, Basic functions and operators in R, Importing data from files and online sources.

Unit II	**8 Hours**

Data Preparation and Visualization:
Data cleaning and preprocessing, Sorting and ordering of data, Handling missing values, Vectors, matrices, and basic data structures, Logical operations in R, Introduction to data visualization, Basic plots (bar chart, histogram, scatter plot, box plot).

Unit III	**7 Hours**

Statistical Analysis and Data Mining Basics
Introduction to statistical analysis, Univariate and bivariate analysis, Correlation and hypothesis testing, ANOVA and basic statistical tests, Fundamentals of data mining concepts, Applications of data mining in real-world problems.

Unit IV	**7 Hours**

Machine Learning and Performance Evaluation:
Introduction to supervised learning: Linear Regression, Logistic Regression, Classification and Regression Trees; Introduction to unsupervised learning: Clustering, Association rules, Dimension reduction techniques (basic idea), Performance metrics (accuracy, precision, recall, etc.), Mini project using real-world/social dataset

Text Books

1. Introduction to Statistics and Data Analysis - With Exercises, Solutions and Applications in R By Christian Heumann, Michael Schomaker and Shalabh, Springer, 2016
2. A Beginner's Guide to R (Use R) By Alain F. Zuur, Elena N. Ieno, Erik H.W.G. Meesters, Springer 2009

Reference Books:

Business Analytics: The Science of Data-Driven Decision Making By U Dinesh Kumar, Wiley, 2017

PO-CO-PSO Compliance Matrix												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	1	2	3	1	3	0	0	0
CO2	3	2	3	3	2	2	3	1	3	0	0	0
CO3	2	3	3	2	2	3	3	1	3	0	0	0
CO4	2	2	2	3	1	3	3	1	3	0	0	0

<table>
<tr><td colspan="2">Course Title: ICT-Lab /Workshop –Programming Concepts</td><td colspan="3">Course Code: 6.5STI82</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="3">Credit: 01</td></tr>
<tr><td rowspan="2">Practical: 2 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>-</td><td>-</td><td>2</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="3"></td></tr>
<tr><td></td><td></td><td colspan="3"></td></tr>
<tr><td colspan="5">CoursePrerequisites: Student must have knowledge of</td></tr>
<tr><td colspan="5">1.Must possess analytical thinking
2.Skill in dealing with practical problems and challenges related to programming
3.Knowledge of coding and data analytics</td></tr>
<tr><td colspan="5">Course Objective:</td></tr>
<tr><td colspan="5">1. Understand Big data and its analytics in the real world.
2. Work on Hadoop.
3. Develop applications in Hadoop</td></tr>
<tr><td colspan="5">Course Outcomes: After completion of this course student will able to</td></tr>
<tr><td colspan="5">1. Demonstrate abilities to use programming language skills such as Python to make a project that addresses problems in digitalised society.
2. Write a project report that describes research problems, skills of programming languages for data analysis, and application to real life issues.</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="4">Unit I</td><td>8 Hours</td></tr>
<tr><td colspan="5">Introduction: Big Data and Hadoop: Hadoop architecture, versioning, single node and multinode Hadoop, Hadoop commands, Hadoop daemons.</td></tr>
<tr><td colspan="4">Unit II</td><td>8 Hours</td></tr>
<tr><td colspan="5">MapReduce: Map Reduce: Framework, developing Map reduce program, Map reduce programs in local and pseudo-distributed mode, illustrations.</td></tr>
<tr><td colspan="4">Unit III</td><td>7 Hours</td></tr>
<tr><td colspan="5">Hive: Installation, data types, and illustrations, Spark and NoSQL.</td></tr>
<tr><td colspan="4">Unit IV</td><td>7 Hours</td></tr>
<tr><td colspan="5">Sqoop: Installation, importing, and exporting data, commands, and illustrations. Pig: Installation, commands, illustration.</td></tr>
<tr><td colspan="5">Text Books</td></tr>
<tr><td colspan="5">1. Chuck Lam, “Hadoop in Action”, Dreamtech Press, 2020.
2. Tom White, “Hadoop: The definitive guide”, O'Reilly, 3rd Edition, 2009.</td></tr>
<tr><td colspan="5">Reference Books:</td></tr>
<tr><td colspan="5">1. Jimmy Lin and Chris Dyer, “Data Intensive Text Processing with Map Reduce”, Morgan and Claypool, Publishers, 2010.</td></tr>
</table>

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	1	2	3	1	3	0	0	0
CO2	3	2	3	3	2	2	3	1	3	0	0	0
CO3	2	3	3	2	2	3	3	1	3	0	0	0
CO4	2	2	2	3	1	3	3	1	3	0	0	0

Fourth Semester (IV)

<table>
<tr><td colspan="2">Course Title: Privacy in Digital Age</td><td colspan="4">Course Code: 6.5STI03</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="4">Credit: 04</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 colspan="2">P</td></tr>
<tr><td>4</td><td>-</td><td colspan="2">-</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="4"></td></tr>
<tr><td colspan="6">CoursePrerequisites:</td></tr>
<tr><td colspan="6">Course Objective: This course will enable the student to:</td></tr>
<tr><td colspan="6">1. Explain the concept of privacy and its evolution in the digital age.
2. Describe and interpret global and national privacy frameworks, legislations, and landmark case laws.
3. Analyze and evaluate technological challenges to privacy in the context of AI, Big Data, IoT, and surveillance capitalism.
4. Examine the ethical, social, and policy dimensions of privacy in contemporary society.
5. Develop research-oriented perspectives and propose solutions to emerging privacy debates.</td></tr>
<tr><td colspan="6">Course Outcomes: After completion of this course student will able to:</td></tr>
<tr><td colspan="6">1. Theoretically define and critically analyse the concept of privacy.
2. Understand the impact of emerging technologies on privacy.
3. Critically evaluate legal and regulatory frameworks across jurisdictions.
4. Develop policy-oriented and technology-driven solutions to privacy challenges.
5. Undertake independent research projects related to privacy rights and data protection.</td></tr>
<tr><td colspan="6">Course Content</td></tr>
<tr><td colspan="5">Unit I: Concept and Evolution of Privacy</td><td>15 Hours</td></tr>
<tr><td colspan="6">Concept of Inner-Self and personal dignity in ancient Bhartiya texts; Historical development of privacy as a right: Privacy Theories: Solove’s Taxonomy, Privacy as a human right: UN Declaration and Indian perspectives</td></tr>
<tr><td colspan="5">Unit II: Legal and Regulatory Frameworks</td><td>15 Hours</td></tr>
<tr><td colspan="6">Privacy laws and constitutional frameworks (focus on India, EU, US), The Right to be Forgotten, India's Data Protection Act and critical analysis, Sector-specific privacy regulations: healthcare, finance, telecom</td></tr>
<tr><td colspan="5">Unit III: Technology, Data, and Privacy Challenges</td><td>15 Hours</td></tr>
<tr><td colspan="6">Big Data Analytics and Personal Data, Surveillance technologies (CCTV, biometrics, facial recognition), Social media and digital footprint, Internet of Things (IoT) and ubiquitous data collection, Artificial Intelligence and profiling, Cyber-security threats to privacy, Corporate data practices and surveillance capitalism</td></tr>
<tr><td colspan="5">Unit IV: Ethics, Policy, and Future of Privacy</td><td>15 Hours</td></tr>
<tr><td colspan="6">Privacy vs. Security debate, Ethics of data collection, consent, and autonomy, Privacy by Design principles Future of Privacy: predictive privacy harms and techno-legal challenges, Building a culture of privacy and awareness: Policy recommendation</td></tr>
<tr><td colspan="6">Text Books:</td></tr>
<tr><td colspan="6">1. Solove, D. J. (2008). Understanding Privacy. Harvard University Press.
2. Regan, P. M. (2015). Privacy, Surveillance, and Public Trust. Palgrave Macmillan.</td></tr>
<tr><td colspan="6">Reference Books:</td></tr>
<tr><td colspan="6">1. Zuboff, S. (2019). The Age of Surveillance Capitalism. Public Affairs.
2. Nissenbaum, H. (2010). Privacy in Context: Technology, Policy, and the Integrity of Social Life. Stanford University Press.
3. Bennett, C. J., & Raab, C. D. (2006). The Governance of Privacy: Policy Instruments in Global Perspective. MIT Press.
4. Westin, A. F. (1967). Privacy and Freedom. Ig Publishing.
5. Cate, F. H. (1997). Privacy in the Information Age. Brookings Institution Press.</td></tr>
</table>

e-Resources

1. UNESCO Privacy Guidelines (https://unesdoc.unesco.org)
2. Stanford Encyclopedia of Philosophy – Privacy (https://plato.stanford.edu/entries/privacy/)

Topics for Project Based Learning:

1. Comparative study of GDPR and India's Data Protection Law.
2. Case study analysis of Puttaswamy case and Facebook–Cambridge Analytica data scandal.
3. Impact assessment of surveillance technologies on marginalized communities.
4. Policy brief: Designing a privacy framework for emerging technologies like IoT.
5. Research paper: Ethical dilemmas in AI-driven personalization.Field study: Awareness of digital privacy rights among university students.
6. Mock Drafting Exercise: Draft a Privacy Policy for a hypothetical tech startup.

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	1	1	2	0	3	0	0	3	0
CO2	1	3	2	3	1	2	0	3	0	0	3	0
CO3	2	1	2	2	1	1	0	3	0	0	3	0
CO4	2	2	1	2	2	2	0	3	0	0	3	0
CO5	3	1	2	2	2	1	0	3	0	0	3	0

<table>
<tr><td colspan="2">Course Title: Digital Innovations and Entrepreneurship</td><td colspan="3">Course Code: 6.5STI104</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="3">Credit: 04</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>4</td><td>-</td><td>-</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="3"></td></tr>
<tr><td colspan="5">Course Prerequisites: Student must have knowledge of
1. Ability to analyse and solve problems critically. Understanding of how to approach challenges and find innovative solutions.
2. Basic understanding of digital technologies and their impact on society.</td></tr>
<tr><td colspan="5">Course Objective:
1. To develop an entrepreneurial mindset focused on digital innovation, enabling students to identify and create digital business opportunities. The course integrates perspectives from the Indian Knowledge System (IKS) to understand indigenous innovation traditions, ethical entrepreneurship, sustainable enterprise models, and community-centered economic thinking.</td></tr>
<tr><td colspan="5">Course Outcomes: After completion of this course, student will able to
1. Understand and apply digital innovation concepts in entrepreneurship, integrating national innovation systems and indigenous knowledge frameworks.
2. Design, evaluate and pitch innovative digital solutions addressing real-world problems using ethical, sustainable and culturally grounded approaches inspired by Indian Knowledge Systems.
3. Critically analyze legal, ethical and governance frameworks of digital entrepreneurship through contemporary innovation theories and Indian civilizational perspectives (Dharma, trusteeship, social responsibility).</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="4">Unit I : Introduction</td><td>15 Hours</td></tr>
<tr><td colspan="5">Introduction to Digital Innovation and Entrepreneurship, Understanding Innovation in the Digital Age, Digital Economy Innovation Enhancing Factor; Entrepreneur Role; Research & Development; Technological Development; Infrastructure Facilities; Linkage Capability; Government Support; Human & Financial Capital; Firm Size & Age; Organization Culture or Climate; Market Orientation, Innovation in Indian Knowledge Traditions</td></tr>
<tr><td colspan="4">Unit II : Entrepreneurial Mindsets & Opportunities</td><td>15 Hours</td></tr>
<tr><td colspan="5">Connecting the Dots; Drive, Courage, Comfort Zones, Risk Models, Fear, Failure, Inspiration, Motivation, Regrets, Kindness, Productivity, Performance.
AI and Entrepreneurial Mindset:
● Using AI tools for idea generation and validation
● AI for productivity (automation, workflow optimization)
● Human-AI collaboration in entrepreneurship</td></tr>
</table>

Unit III :Understanding Digital Society	**15 Hours**
Overview of Digital Transformation; Impact of technology on society and business; Digital trends and their implications; Assessing the feasibility of digital business ideas	
Unit IV : Legal and Ethical Considerations	**15 Hours**
Intellectual property rights; Privacy and data protection; Ethical considerations in digital entrepreneurship, Indian Knowledge System (IKS) and Entrepreneurship Ethics.	

Text Books:

1. Lundvall, B-Å. (ed.) (1992). National Innovation Systems: Towards a Theory of Innovation and Interactive Learning, Pinter, London.
2. Drucker, P., & Maciariello, J. (2014). Innovation and entrepreneurship. Routledge.
3. Reis, E. (2011). The lean startup. New York: Crown Business, 27, 2016-2020.
4. Masters, B., & Thiel, P. (2014). Zero to One: Notes on Startups, or How to the Future. Random House.
5. Christensen, C. M. (2013). The innovator's dilemma: when new technologies cause great firms to fail. Harvard Business Review Press

References:

1. B. Godin (2002), The Rise of Innovation Surveys: Measuring a Fuzzy Concept, Project on the History and Sociology of STI Statistics, Paper no. 16.
2. B. Godin (2008), Innovation: the History of a Category, Working Paper No. 1, Project on the Intellectual History of Innovation, Montreal: INRS. 62 p.
3. B. Godin (2009), National Innovation System (II): Industrialists and the Origins of an Idea, Working Paper no. 4, Project on the Intellectual History of Innovation, Montreal : INRS.
4. B. Godin (2013), The Unintended Consequences of Innovation Studies, Paper prepared for a communication presented at "Policy Implications due to Unintended Consequences of Innovation", Special Track at EU-SPRI, Madrid, 10-12 April 2013.
5. B. Godin (2014), The Vocabulary of Innovation: A Lexicon, Project on the Intellectual History of Innovation, Paper no. 20, Montreal: INRS. 64p. Paper presented at the 2nd CASTI Workshop, Agder, Norway, October 20, 2014.
6. Garcia, R. and Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: a literature review. The Journal of Product Innovation Management. 19: 110-132.
7. Geels, F.W. (2005). Technological transitions and system innovations. Cheltenham: Edward Elgar Publishing

Topics for Project Based Learning

Case studies of successful digital innovations

PO-CO-PSO Compliance Matrix												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	3	3	2	2	3	1	0	0	3	1	3
CO2	3	3	3	3	2	3	1	0	0	3	1	3
CO3	2	2	3	3	1	3	1	0	0	3	1	3

Departmental Electives

Second Semester (II)

<table>
<tr><td colspan="2">Course Title: Digital Politics</td><td colspan="3">Course Code: 6.0STI31</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="3">Credit: 04</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>4</td><td>-</td><td>-</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="3"></td></tr>
<tr><td colspan="5">Course Prerequisites:</td></tr>
<tr><td colspan="5"></td></tr>
<tr><td colspan="5">Course Objective: This course will enable the student to:</td></tr>
<tr><td colspan="5">1. Explain the key concepts and theoretical foundations of digital politics.
2. Analyze and evaluate the impact of ICTs on democratic politics and assess whether these technologies reinforce, transform, or undermine traditional models of political representation and communication.</td></tr>
<tr><td colspan="5">Course Outcomes: After completion of this course student will able to:</td></tr>
<tr><td colspan="5">1. Describe the key terms related to digital politics.
2. Understand how ICTs transform the political landscape through their use by political actors
3. Examine how the political and digital are intertwined in today’s world.
4. Analyze some of the key and timely political issues through the lens of digital politics.</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="4">Unit I: Introduction</td><td>20 Hours</td></tr>
<tr><td colspan="5">The Digital and the Political: The Changing Landscape of Politics; Democracy and the Internet; Government and digital governance. The Governing of the Digital World - State, Human and Algorithmic Bias; Cyber-security and cyber threats in International relations; Rajadharma and Ethical Governance in the Digital State</td></tr>
<tr><td colspan="4">Unit II: Mobilizing for democracy in the digital age</td><td>12 Hours</td></tr>
<tr><td colspan="5">Online political participation, Digital activism, Electoral campaigning and ICTs: Data-driven campaigning</td></tr>
<tr><td colspan="4">Unit III: Polarization and digital populism</td><td>13 Hours</td></tr>
<tr><td colspan="5">Social Media in Democratic and Authoritarian States: Digital repression and surveillance.</td></tr>
<tr><td colspan="4">Unit IV: Digital media and collective action</td><td>15 Hours</td></tr>
<tr><td colspan="5">Online Hate speech; Disinformation, misinformation and fake news</td></tr>
<tr><td colspan="5">Text Books:</td></tr>
<tr><td colspan="5">1. Chadwick, A. (2006) Internet Politics: States, Citizens and New Communication Technologies. Oxford: Oxford University Press.
2. Jungherr, A., Rivero, G. and Gayo-Avello, D.(2020): Retooling Politics: How Digital Media Are Shaping Democracy. Cambridge: Cambridge University Press
3. Phil Howard (2015) Pax Technica: How the Internet of Things May Set Us Free or Lock Us Up. New York: Yale University Press.
4. Vaccari, C. and Valeriani, A. (2021) Outside the Bubble Social Media and Political Participation in Western Democracies. Oxford: Oxford University Press.
5. Chris Bail (2020) Breaking the Social Media Prism: How to Make Our Platforms Less Polarizing. Princeton, NJ: Princeton University Press
6. Chadwick, A. (2017) The Hybrid Media System Politics and Power. Oxford: Oxford University Press
7. Anduiza, E. Jensen, M.J. and Jorba, L.(2012). Digital media and political engagement worldwide. Cambridge: Cambridge University Press
8. Napoli, P.M. (2019). Social Media and the Public Interest: Media Regulation in the Disinformation Age. New York: Columbia University Press.</td></tr>
</table>

Reference Books

1. Benkler, Y., Faris, R., & Roberts, H. (2018). Network Propaganda: Manipulation, Disinformation, and Radicalization in American Politics. Oxford University Press.
2. Bradshaw, S., & Howard, P. N. (2020). The Global Disinformation Order: 2020 Global Inventory of Organized Social Media Manipulation. Oxford Internet Institute.
3. Couldry, N., & Mejias, U. A. (2019). The Costs of Connection: How Data Is Colonizing Human Life and Appropriating It for Capitalism. Stanford University Press.
4. Hintz, A., Dencik, L., & Wahl-Jorgensen, K. (2018). Digital Citizenship in a Datafied Society. Polity Press.
5. Milan, S. (2013). Social Movements and Their Technologies: Wiring Social Change. Palgrave Macmillan.
6. Tucker, Joshua A., Yannis Theocharis, Margaret E. Roberts, and Pablo Barber´ a. "From liberation to turmoil: Social media and democracy".Journal of Democracy 28, no. 4 (2017): 46-59.

e-Resources

1. Internet Governance Forum (UN): https://www.intgovforum.org/
2. Brookings Institution Reports on Digital Policy and Governance: https://www.brookings.edu/topic/technology-innovation/
3. Digital Democracy Project – Centre for International Governance Innovation (CIGI): https://www.cigionline.org
4. Documentary: The Digital Nations (PBS Production, 2010)

Topics for Project Based Learning:

1. Investigating algorithmic bias in AI-based public services.
2. Cybersecurity and India's foreign policy: A critical review post-2020.
3. Digital activism and protest cultures: A comparative study of Shaheen Bagh and #BlackLivesMatter.
4. Data-driven electioneering: Ethical dilemmas and legal frameworks in Indian elections.
5. Twitter politics and digital populism in Latin America and South Asia: A cross-country analysis.
6. Digital authoritarianism: Surveillance tools used by governments during protests.
7. Anatomy of a viral fake news story: Tracing misinformation through digital forensics.
8. Hate speech regulation on social media platforms: A comparative legal study.

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	2	1	3	3	0	0	3	0
CO2	2	3	2	3	2	2	3	3	0	0	3	0
CO3	2	2	3	2	2	3	3	3	0	0	3	0
CO4	3	2	2	3	3	2	3	3	0	0	3	0

Course Title: Management & Behavioural Practices in Digital Age		Course Code: **6.0STI32**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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			

CoursePrerequisites: Student must have knowledge of

1. Comprehensive skills
2. Skill in dealing with practical/theoretical problems and challenges related to behavioural practices
3. Basic awareness of management and behavioural theories

Course Objective:

1. The course aims to examine the dynamics of business decision making and demonstrate the ability to identify, describe and apply the essential business concepts, theories and practices.

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

1. Explain the principles of management that organisations make and have an ability to engage in strategic planning in the digital age.
2. Illustrate the concepts, and functions of management associated with organisation in the digital age.
3. Apply knowledge gained in basic courses to the formulation and implementation of foundation and factors of individual behaviour from holistic and multi-functional perspectives in the digital age.
4. Analyze and evaluate critically real-life decision-making techniques and digital transformation in employees' behavior at organizational level in the digital age.

Course Content

Unit I : Introduction: Management in Digital age — **15 Hours**

Concept of Prabandha in Indian thought, Management in digital age: Introduction, definition of management, functions, levels, managerial roles, skills for managers, evolution of management thought: Scientific, Behavioral and Modern School of Thought (Bureaucratic Thought excluded), Fayol's fourteen principles of management, Case Studies based on above curriculum . Planning and Organizing in Digital age Planning: Nature of planning, planning process, objectives, MBO. Organizing: Organization structure, formal and informal organizations, principles Types of Organization: Functional, divisional, geographical, customer based and matrix organizations, virtual organizations, Case Studies based on above curriculum.

Unit II : Leading and Controlling in Digital age — **15 Hours**

Leadership, Leadership theories, Authority, delegating, decentralization – difference of Power and authority –Authority of use – Distinguishing decentralization Responsibility- Characteristics – purpose and objectives of direction, interpretation, significance.Controlling – Process control, group dynamics –definition, importance and types, factors influencing control effectiveness, Case Studies based on above curriculum

Unit III : OB and Foundation of Individual Behavior in Digital age — **15 Hours**

Organizational Behavior: Introduction, definition, contributing disciplines of OB Individual behavior: Ability; Personality- Big five and MBTI; Attitude Perception: Process of perception, factors influencing perception, Errors in Perception. Motivation: Meaning, theories of motivation-Classical theory: Maslow's needs theory, Mc Gregor's X and Y Theory, Herzberg's two factor theory, Process Theory: Vrooms' Expectancy Theory, Adam's Equity Theory, Case Studies based on above curriculum

Unit IV : Group Behaviour in Digital age — **15 Hours**

Definition, types, formation of groups. Conflict: Meaning, types, process, conflict resolution. Techniques in group decision making: Brainstorming, Delphi and Nominal, Case Studies based on above curriculum Organisational change in Digital age Organizational change: meaning, importance; Lewin's Force Field analysis model, Resistance to Change- Overcoming Resistance to Change, Work stress and its management, Case Studies based on above curriculum

Text Books:

1. H Koontz (2010) Essentials of Management-Koontz, 8/e, McGraw Hill

2. Luthans, F. (2011). Organizational Behaviour (12th).Mc-Graw Hill International.
3. Mullins, L.J. Management and Organizational Behaviour. Pearson Education.
4. Hillriegel, S. Fundamentals of Organizational Behaviour. Cengage Learning.
5. Management: Text and Cases-VSP Rao, Excel Books
6. Management Theory & Practice Text & Cases – Subba Rao P & Hima Bindu, Himalaya Publication.

e-Resources

1. https://www.coursera.org/courses?query

Topics for Project Based Learning

Planning, organizing, Principles of management

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	2	2	3	0	0	3	0	3
CO2	2	3	2	2	2	2	3	0	0	3	0	3
CO3	2	2	3	2	3	2	3	0	0	3	0	3
CO4	3	2	2	3	2	3	3	0	0	3	0	3

Course Title: Digital for Commons and Collective Action		Course Code: **6.0STI33**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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 Prerequisites: Student must have knowledge of

1. Must be motivated and enthusiastic about commons and collective action.
2. Must have a basic understanding about socio-economic and environmental changes and challenges in society.
3. Must possess comprehensive and critical thinking.

Course Objective:

1. To develop an understanding about the concepts of commons, collective action, and interlinkages with digital.
2. To learn about the nuances of economic, social, political, and digital challenges in the global south and the need to focus on commons and collective action in the changing times.
3. To explore the theoretical perspectives and frameworks related to commons, its management, and collective action.
4. To analyse the practical experiences and case studies in the areas of commons, collective action, and digital.

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

1. Demonstrate a comprehensive understanding of commons, collective action, and digital.
2. Apply theoretical perspectives and frameworks to analyse commons-related issues.
3. Critically analyse and assess the factors, challenges, and opportunities in the management of commons and in the process of collective action, factoring in digital.
4. Formulate strategies for sustainable common governance and effective collective action.

Course Content

Unit I: Understanding Commons — **15 Hours**

- Introduction to Commons, Understanding Commons: Definition, Physical Commons and New Commons, Public and Private Goods, Common Pool Resources and Club Goods, Characteristics of Common Pool Resources
- Issues and Challenges in Managing Common Pool Resources, Theories Related to Commons (Olson, Ostrom, Robert Wade, etc.)
- Alternatives to Tragedy of Commons (Local to Global Paradigms)
- Gram Sabha & Panchayat Commons, Devrai/Sacred Groves Tradition, Dharma-based Resource Ethics, Aparigraha (Non-possessiveness), Lokasangraha (Collective Welfare), Shreni (Guild) Systems, Jal–Jungle–Zameen Traditions

Unit II: The Commons—Perspectives, Frameworks, Approaches and Vocabulary — **15 Hours**

- Historical Perspectives on Commons Management
- Elinor Ostrom's Common Pool Resource (CPR) Framework
- Ostrom's Design Principles for Sustainable Governance of Commons, Challenges and Alternatives for Commons Governance
- Understanding the Vocabulary of Commons (FES)
- Institutional Analysis of Commons
- Social-Ecological Systems Approach; Economic Perspectives on Commons
- Participatory Approaches to Commons Management, Legal and Policy Considerations
- Community-based Commons Conservation Models, ‘Shamlat’

Unit III: Dimensions of Collective Action — **15 Hours**

- Understanding Collective Action
- Logic, Role and Models: Mancur Olson's Collective Action Theory

- Game theory, The Prisoner's Dilemma and Collective Action
- Collective Action Dimensions: Cooperation, Conflict, Collective Responsibility, Agency
- Challenges and Limitations of Collective Action
- Community Organizing and Mobilization Strategies
- Analyzing Historical, Social Movements of Collective Action and Contemporary Collective Action Initiatives, Political economy of Collective Action

Unit IV: Digital for Commons and Collective Action **15 Hours**

- Digital innovations for strengthening collective action and common management
- Leveraging online platforms for community engagement and resource sharing
- Geospatial Data, GIS, and Remote Sensing Technologies for Commons
- Digital Applications for Collaborative Decision-Making in Managing Commons
- Case Studies and Video Documentaries on successful Commons Management using Digital Tools
- FES-India Observatory, Digital Tools developed by the Foundation for Ecological Security:
    - *Groundwater Monitoring Tool*
    - *Composite Landscape Assessment & Restoration Tool (CLART)*
    - *Crop Water Budgeting (CWB)*
    - *Integrated Forest Management Toolkit (IFMT)*
    - *Common Land Mapping (CLM)*
    - *GIS Enabled Entitlement Tracking System (GEET)*
    - *Indian Biodiversity Information System (IBIS)*

Reference Book/Reading List:

1. Elinor Ostrom. (1990). Governing the Commons: The Evolution of Institutions for Collective Action. Cambridge University Press.
2. Garrett Hardin. (1968). The Tragedy of the Commons. Science, 162(3859), 1243-1248. [DOI: 10.1126/science.162.3859.1243]
3. Olson, M. (1965). The Logic of Collective Action: Public Goods and the Theory of Groups. Harvard University Press.
4. Narveson, J. (2002). Collective Responsibility. The Journal of Ethics, 6(2), 179–198. http://www.jstor.org/stable/25115724
5. FES. (2011). Vocabulary of Commons. Foundation for Ecological Security.
6. Videos on Commons, Commons in action, animation on Commons
7. FES Land for Life video on Commons

Topics for Project Based Learning

1. Commons, Digital, and Local-Global Issues
2. Digital for Local Commons—Orans, Gochar and the Community Participation
3. Indigenous Knowledge System (IKS) on Commons
4. Women in Managing Commons with Digital
5. Digital, Global Commons, Climate Change, and International Cooperation
6. Commons, Digital and Sustainable Development Goals (SDGs)
7. Digital Ecosystems for Common-Pool Resource Management in the Global Context
8. Role of Digital Technology in Managing Global Commons
9. Case studies on the Intersection of Commons and Global Issues, Management of Commons through Digital

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	2	2	3	3	0	0	3	3
CO2	2	3	2	3	2	2	3	3	0	0	3	3
CO3	2	2	3	2	3	3	3	3	0	0	3	3
CO4	3	2	2	3	2	3	3	3	0	0	3	3

Course Title: Information Communication Technology Policy and Regulation		Course Code: **6.0STI34**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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			

CoursePrerequisites: Student must have knowledge of

1. Must possess comprehensive thinking
2. Basic understanding of the underlying technology and policy contexts and theories of ICT policy.

Course Objective:

1. The pace of technological change and innovation in the use of information and communication technologies (ICTs) poses significant challenges for policymakers across a variety of issues, whilst regulation and policy will, in turn, shape the range of choices that can be made about the use, design and development of ICTs.
2. Informed academic study of the network of networks that comprise the Internet must, therefore, be firmly grounded in a sophisticated understanding of the underlying technology and policy contexts in which these networks are embedded. Valuable insights are to be gained by studying policy debates relating to the Internet in the broader context of ICT policy more generally, such that continuity and change can be observed.

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 in a comparative perspective.
4. Demonstrate the 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 : Introduction	**15 Hours**

History and development of the ICT Policy and Regulation, Governance and Regulatory Frameworks: Ministry of Electronics and Information Technology; R&D Institutions in ICT; Internet Proliferation and Governance; E-Infrastructures, National Knowledge Networks.

Unit II : Privacy and security	**15 Hours**

Content Regulation and Filtering, Consumer Protection under Digital Age, Regulatory Responses to Public Debates on Emerging ICTs, Biometrics, Digital Copyright, Patents, Universal Access, Universal Service and the Digital Divide Net Neutrality.

Unit III: Government Programmes in India	**15 Hours**

Aadhar, Digital India, Make in India, Skills India, Digital Locker, and Digitalisation of Socio-economic Services. Act and Policy: Information Technology Act 2000 (Amendment 2008); National Policy on Electronics 2012;

National E- Governance Plan; National Security Policy 2013; National Policy on Universal Electronic Accessibility.

Unit IV : ICT and Economic Development	**15 Hours**

Private Sector regulation; Public Private Partnership, ICT, Swadeshi Innovation and Self-Reliance.
AI and Economic Development: AI and employment: opportunities vs displacement
AI for inclusive development (agriculture, rural economy, fintech).

Text Books:

1. Banzal, S. (2010). Equitable Communication for All: Policies and Regulatory Issues. ITU-APT Foundation, New Delhi.
2. Bedi, K., P. Singh, and S. Sandeep (2001). Government@net: New Opportunities for India. New Delhi, Sage Publications.
3. Bhatnagar, S. (2000). Enhancing Telecom Access in Rural India: Some Options. Paper presented at India Telecom Conference, Asia-Pacific Research Centre, Stanford University.
4. Bhatnagar, S. and R. Schware (2000) Information and Communication Technology in Development: Cases from India. New Delhi, Sage Publications.
5. Chopra, A. (2005). Bridging India's Digital Divide: Some Policy and Technological Options. PhD Thesis, University of Hohenheim, Stuttgart, Germany.
6. Chowdhury, S. and Datta, D. (2009). Indian Telecom: Regulation, Allocation and Dispute Management. IIMB Management Review.

References:

1. Dasgupta, S., Paul, R., & Fuloria, S. (2011). Factors Affecting Behavioural Intentions Towards Mobile Banking Usage: Empirical Evidence from India. Paper presented at the conference.
2. Naughton, John A Brief History of the Future: From Radio Days to Internet Years in a Lifetime. 2000. New York: The Overlook Press.
3. Singhal A. and M.E. Rogers (2001) India's Communication Revolution from Bullock Carts to Cyber Nets. New Delhi, Sage Publications.
4. Venkat Subramanian, K. Approach paper on "India development as knowledge society", Planning Commission, New Delhi.
5. Zittrain, Jonathan The Future of the Internet – And How to Stop It. 2008. NewHaven: Yale University Press.
6. 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.
7. Rajaraman, V. (2012). History of Computing in India: 1955-2010. IEEE Computer Society.

Topics for Project Based Learning

1. How Digital India is changing daily life
2. Use of AI in agriculture in India
3. Benefits and risks of Aadhaar
4. Digital services used by students: A survey

PO-CO-PSO Compliance Matrix												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	2	2	3	3	0	0	3	0
CO2	2	3	2	3	2	2	3	3	0	0	3	0
CO3	2	2	3	2	2	2	3	3	0	0	3	0
CO4	3	2	2	3	3	3	3	3	0	0	3	0

<table>
<tr><td colspan="2">Course Title: Management Information System</td><td colspan="3">Course Code: 6.0STI35</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="3">Credit: 04</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>4</td><td>-</td><td>-</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="3"></td></tr>
<tr><td></td><td></td><td colspan="3"></td></tr>
<tr><td colspan="5">CoursePrerequisites: Student must have knowledge of</td></tr>
<tr><td colspan="5">1. Must possess critical and analytical thinking.
2. Appreciation for information technology-based management systems for better organizational functions.</td></tr>
<tr><td colspan="5">Course Objective:</td></tr>
<tr><td colspan="5">1. To help the students to understand management information systems (MIS).
2. To make them learn about the uses and management in any organization through MIS.</td></tr>
<tr><td colspan="5"></td></tr>
<tr><td colspan="5">Course Outcomes: After completion of this course, students will be able to:</td></tr>
<tr><td colspan="5">1. Analyse the concepts of management information systems and their impact on business organizations.
2. Explain the technologies involved in management information systems, including hardware, software, networking, and databases.
3. Demonstrate the application of various sub-systems and organizing principles in the development of information systems.
4. Develop a project report that explains the design and development of information systems using real life scenarios.</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">Organisations and Information Systems, Concepts of Management Information Systems, Information Systems and Management Strategy</td></tr>
<tr><td colspan="4">Unit II</td><td>15 Hours</td></tr>
<tr><td colspan="5">Electronic Commerce, Electronic Business, Electronic Governance, Managing Information Systems, Ethical and Social Issues and MIS</td></tr>
<tr><td colspan="4">Unit III</td><td>15 Hours</td></tr>
<tr><td colspan="5">Information Technology Infrastructure and Choices, Networking and Telecommunication, Information Systems Security and Control, Information Systems Development and Project Management, Managing Data Resources, Business Process Integration and Enterprise Systems</td></tr>
<tr><td colspan="4">Unit IV</td><td>15 Hours</td></tr>
<tr><td colspan="5">Decision Support Systems, ICT for Development and E-Governance, The Society of the Internet, Open Source Software</td></tr>
<tr><td colspan="5">Text Books:</td></tr>
<tr><td colspan="5">1. Gordon Davis, Management Information System: Conceptual Foundations, Structure and Development, Tata McGraw Hill, 21st Reprint 2008.
2. Analysis and Design of Information Systems by James Senn
3. Ashok Arora & Bhatia: Management Information Systems (Excel)
4. Haag, Cummings and Mc Cubbrey, Management Information Systems for theInformation Age, McGraw Hill, 2005. 9th edition, 2013.
5. James O Brien, Management Information Systems – Managing InformationTechnology in the E Business enterprise, Tata McGraw Hill, 2004.
6. Jessup & Valacich: Information Systems Today (Prentice Hall India)
7. Kenneth C. Laudon and Jane Price Laudon, Management Information Systems –Managing the digital firm, PHI Learning Pearson Education,PHI, Asia, 2012.</td></tr>
</table>

8. L. M. Prasad: Management Information Systems (Sultan Chand) Management Information Systems – Dr Sahil Raj – Pearson Publications

Reference Books:

1. Management Information Systems – Girdhar Joshi – Oxford Publications
2. Management Information Systems – Hitesh Gupta – International Book House Ltd
3. Management Information Systems – M.Jaiswal & M.Mittal – Oxford Publications
4. MIS a Conceptual Framework by Davis and Olson
5. Rahul de, MIS in Business, Government and Society, Wiley India Pvt Ltd, 2012
6. Ralph Stair and George Reynolds, Information Systems, Cengage Learning, 10th Edition,
7. Raymond McLeod and Jr. George P. Schell, Management Information Systems,Pearson Education, 2007.
8. Robert Schultheis and Mary Summer, Management Information Systems – TheManagers View, Tata McGraw Hill, 2008.
9. Turban, McLean and Wetherbe, Information Technology for Management–Transforming Organizations in the Digital Economy, John Wiley, 6th Edition, 2008.

e-Resources:

https://ebooks.inflibnet.ac.in/lisp1/chapter/chapter-1/
https://www.egov4dev.org/success/case/

Topics for Project Based Learning:

- Analyze, design, or prototype a web portal for citizen services
- Develop a Decision Support System for Local Government Planning
- Develop MIS for E-Business or E-Commerce Operations

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	2	2	3	0	0	3	0	3
CO2	2	3	2	2	2	2	3	0	0	3	0	3
CO3	2	2	3	2	2	3	3	0	0	3	0	3
CO4	3	2	2	3	2	3	3	0	0	3	0	3

Course Title: Spatial Data Infrastructure/ GIS/ Remote Sensing		Course Code: **6.0STI36**		
Teaching Scheme	**Examination Scheme**	Credit: **02**		
Theory: 2 hrs/ week	Internal Assessment (CIA I): 20 Marks Internal Assessment (CIA II): 20 Marks End Semester Examination(ESE): 60 Marks	L	T	P
		-	-	2
	Total: 100 Marks			

Course Prerequisites: Student must have knowledge of

1. Basic knowledge of Geographic Information Systems, its processes and applications.

Course Objective:

1. To learn the Spatial data infrastructure, which is widely recognized as an important aspect in the growing information society.
2. To provide the opportunity to enhance knowledge and skills regarding the SDI tool for continents, countries, regions and local governments to better organize, plan and manage their natural, cultural and economic resources.
3. To make students learn the SDI policy, structure and operation in India.
4. To impart learning on the application of GIS technologies.

Course Outcomes: The students will be able to:

1. Explain the theoretical concepts, policy and governance aspects of the term ‘SpatialData Infrastructures
2. Analyse the geospatial meta-data standard contents and geodata clearing houses.
3. Explore how spatial data infrastructure is organized in India and internationally, including discussion about geodata plan and policy.
4. Exhibit the experience in the technology for distributing geographical information using the Internet.

Unit I : Introduction	**15 Hours**

Overview of Arcgis: Arcmap, Arccatalog and ArctoolBox , Attribute Data Input Creation of Schema, Tables, Data Definition, and Data Input, Data Updating, Queries on Tables, Simple-Complex Query with Two or More Tables Using SQL. Queries Using Union, Intersection, Join Etc Operations. Use of MS-Excel and MS Access

Unit II : Spatial Data Input:	**15 Hours**

Vector Data Formats with File Extensions. Scanning, On Screen Digitization, Editing, Topology Creation, Line and Area Measurements, Data Attribution , Geodatabase in Arccatalog and Arcmap: Feature Dataset, Feature Classes, Import of Data, Spatial Data Formats, Shape/Coverage Files and Layers, Data Frames, Maps, Managing TOC

Unit III : Georeferencing Data	**15 Hours**

Coordinate Systems, Datum Conversions, Map Projections, Types, Storing- Viewing Projection Information , Working with Layers in Arcmap: Building Templates, Classification, Displaying Qualitative and quantitative Values, Labeling Features and Map CreationO etc

Unit IV : GPS	**15 Hours**

GPS Survey, Data Import, Processing and Mapping

Text Books:

1. Chang, K. T. (2008): Introduction to Geographic Information Systems, Avenue of the 30 Americas, McGraw-Hill, New York
2. Environmental Systems Research Institute, Inc. (1998): Understanding GIS: The ARC/INFO Method, ESRI Press, Redland
3. Ahmed, E. L., Rabbany (2002): Introduction to Global Positioning System, Artech House, Boston
4. Kresse, W. and Danko, D. (2002): Springer Handbook of Geographic Information, Springer Drecht, London
5. Bao, J., Tsui, Y. (2005): Fundamentals of Global Positioning System Receivers, John Wiley Sons, Inc., Hoboken

Topics for Project Based Learning:

- Land Use–Land Cover (LULC) Mapping and Spatial Analysis
- Urban Infrastructure Mapping Using GPS and ArcGIS
- Environmental Risk Assessment Using Spatial Analysis

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	2	2	0	3	3	0	0	3
CO2	2	3	2	2	2	2	0	3	3	0	0	3
CO3	2	2	3	2	2	3	0	3	3	0	0	3
CO4	3	2	2	3	2	3	0	3	3	0	0	3

Course Title: **Indian Knowledge Systems and Digital Society**		Course Code: **6.0STI37**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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 foundational concepts, evolution, and frameworks of Indian Knowledge Systems (IKS).
2. Analyze the philosophical and epistemological bases of IKS and their relevance to the digital age.
3. Critically assess the impact of digital transformation on the preservation and propagation of IKS.
4. Evaluate case studies where IKS has been adapted using digital tools.
5. Engage in interdisciplinary and comparative approaches to knowledge, bridging ancient traditions with modern technology.

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

1. Demonstrate deep understanding of the Indian Knowledge Systems and their contemporary relevance.
2. Critically analyze the opportunities and challenges posed by the digital era for traditional knowledge.
3. Innovatively apply digital technologies to preserve, promote, and adapt IKS to current global needs.
4. Design digital projects rooted in IKS for social, environmental, and technological sustainability.
5. Promote interdisciplinary approaches merging tradition and technology.

Course Content

Unit 1: Foundations of Indian Knowledge Systems (IKS)	**15 Hours**

Origin, nature and Philosophical Foundations of IKS: Vedic, Buddhist, Jain and Indigenous Traditions
Key domains of IKS: Ayurveda, Yoga, Astronomy, Metallurgy, Agriculture, Ethics; Traditional methods of knowledge transmission: Gurukul, oral traditions, manuscripts; Concept of “Knowledge” (Vidya) in Indian traditions vs. modern epistemology

Unit 2: Understanding Digital Society	**15 Hours**

Features of Digital Society, Conceptual understanding of "information society" and "knowledge economy"; Digital ethics and challenges: Data privacy, digital divides, algorithmic bias; Opportunities and threats to indigenous cultures in a digital world Policies and initiatives: Digital India, BharatNet, Indigenous digitization projects

Unit 3: Synergy of IKS and Digital Society	**15 Hours**

Concept and Challenges of Digitizing IKS, Manuscript Digitization Projects in India, Community-Based Preservation Approaches, Legal and Ethical Issues Case Studies

Unit 4: Digital Innovation and the Future of IKS	**15 Hours**

Digital Revival of Traditional Practices, Integration of Traditional Ecological Knowledge (TEK) with Technology, Startups in IKS; Policy and Institutional Support for IKS-Digital Synergy Case Studies

Reference Books:

1. Mahadevan,B. (Ed.) (2022). Indian Knowledge Systems: Concepts and Applications. New Delhi: PHI Learning
2. Jha, A. (2024). Traditional Knowledge System In India. New Delhi: Atlantic.
3. Housley, W., Edwards, A., Beneito-Montagut, R., & Fitzgerald, R. (2023). The SAGE handbook of digital society. (Vols. 1-0). SAGE Publications Ltd, https://doi.org/10.4135/9781529783193
4. S. Ranganathan (Ed.) (2020). Reawakening the Indian Knowledge Systems through Digital Platforms. Bangalore: Vyoma Linguistic Labs Foundation.
5. Choudhury, A., Roychowdhury, S., Singh, B.K., Singh, T.P. (2022). Introduction to Digital Society: An Overview. In: Choudhury, A., Singh, T.P., Biswas, A., Anand, M. (eds) Evolution of Digitized Societies Through Advanced Technologies. Advanced Technologies and Societal Change. Springer, Singapore.

6. Manuel Castells (2010). *The Rise of the Network Society (Information Age Series).* Wiley-Blackwell.
7. Peter Drucker (1993). *Post-Capitalist Society.* Harper Business.

PO-CO-PSO Compliance Matrix												
CO1	3	2	2	2	2	2	3	0	0	0	3	3
CO2	2	3	2	3	2	2	3	0	0	0	3	3
CO3	2	2	3	2	2	3	3	0	0	0	3	3
CO4	2	2	2	3	3	3	3	0	0	0	3	3
CO5	3	3	2	2	3	2	3	0	0	0	3	3

Third Semester (III)

<table>
<tr><td colspan="2">Course Title: Big Data and Public Policy</td><td colspan="3">Course Code: 6.5STI31</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="3">Credit: 04</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>4</td><td>-</td><td>-</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="3"></td></tr>
<tr><td colspan="5">CoursePrerequisites:</td></tr>
<tr><td colspan="5">1. Must have studied the basics of data and public policy formulation.</td></tr>
<tr><td colspan="5">Course Objective: This course will enable the student to:</td></tr>
<tr><td colspan="5">1. Understand the conceptual and methodological underpinnings of Big Data.</td></tr>
<tr><td colspan="5">2. Explore the application of Big Data in public policy formulation and evaluation.</td></tr>
<tr><td colspan="5">3. Examine ethical, legal, and political dimensions of data governance.</td></tr>
<tr><td colspan="5">4. Develop data analytical skills with exposure to real-world data sets for public policy analysis.</td></tr>
<tr><td colspan="5">5. Engage in interdisciplinary learning by integrating public administration, technology, and data science.</td></tr>
<tr><td colspan="5">Course Outcomes: After completion of this course student will able to:</td></tr>
<tr><td colspan="5">1. Comprehend the theoretical framework and epistemology of Big Data.
2. Critically evaluate the role of Big Data in shaping public policy.
3. Apply data tools (including GIS, Census data, economic indicators) to real-life policy challenges
4. Analyse governance mechanisms in the digital age and understand emerging issues like data protection, e-democracy, and digital citizenship.
5. Conduct policy-relevant research using large datasets and present insights effectively.</td></tr>
<tr><td colspan="5">Course Content</td></tr>
<tr><td colspan="4">Unit I: Foundations of Big Data and Policy</td><td>15 Hours</td></tr>
<tr><td colspan="5">Introduction: Meaning, Scope, Scale, and Significance; Structured vs. Unstructured Data, Handling and Processing Big Data; Methodological Challenges: Representation, Bias Epistemology of Big Data: Datafication and its Influence on Policy Knowledge.</td></tr>
<tr><td colspan="4">Unit II: Big Data and Public Policy Interface</td><td>15 Hours</td></tr>
<tr><td colspan="5">The Interrelationship between Big Data and Policy-making Challenges: Data Silos, Fragmentation, Technocracy, Data Colonialism Open Data Movement in India: RTI, National Data Sharing & Accessibility Policy</td></tr>
<tr><td colspan="4">Unit III: Governance in the Digital Era</td><td>15 Hours</td></tr>
<tr><td colspan="5">Digital Government and E-Governance: Evolution and Future, Digital Citizenship and Social Inclusion, E-Parliament, E-Rulemaking, and Policy Transparency, AI and Algorithmic Governance in Bureaucracy;
Digital Nation-State and Issues of Sovereignty</td></tr>
<tr><td colspan="4">Unit IV: Applied Data and Spatial Tools in Public Policy</td><td>15 Hours</td></tr>
<tr><td colspan="5">Introduction to Large-Scale Data Repositories: CMIE, Census, NFHS, NSS, RBI, IndiaStat
Use of GIS and Spatial Analysis for Public Policy</td></tr>
<tr><td colspan="5">Text Books:</td></tr>
<tr><td colspan="5">1. Matthew J. Salganik. (2017). Bit by Bit: Social Research in the Digital Age. Princeton University Press.
2. Cathy O'Neil. (2016). Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy. Penguin Books.
3. Rob Kitchin. (2014). The Data Revolution: Big Data, Open Data, Data Infrastructures and Their Consequences. SAGE Publications.
4. Mayer-Schönberger, V., & Cukier, K. (2013). Big Data: A Revolution That Will Transform How We Live, Work, and Think. Houghton Mifflin Harcourt.</td></tr>
</table>

Reference Books:

1. Kitchin, R. & Lauriault, T. (2015). Data and the City. Routledge.
2. Taylor, L., Floridi, L., & van der Sloot, B. (Eds.). (2017). Group Privacy: New Challenges of Data Technologies. Springer.
3. Desrosières, A. (1998). The Politics of Large Numbers: A History of Statistical Reasoning. Harvard University Press.

e-Resources

1. Government of India Open Data Platform: https://data.gov.in
2. World Bank Open Data: https://data.worldbank.org
3. IndiaStat: https://www.indiastat.com
4. CMIE Economic Outlook: https://www.cmie.com
5. Google Dataset Search: https://datasetsearch.research.google.com
6. Geospatial Data Portal (Bhuvan): https://bhuvan.nrsc.gov.in

Topics for Project Based Learning:

1. Digital Governance Audit: Analyze the performance and public outreach of a state/national e-Governance scheme using real-time data.
2. Spatial Analysis Project: Use GIS tools to map environmental risks or public service accessibility in urban/rural regions.
3. Policy Impact Evaluation Using CMIE or NFHS Data: Conduct a mini-research study evaluating impact of a welfare policy.
4. Ethics Casebook: Document and critically analyze real-world ethical dilemmas in the use of Big Data by government agencies
5. Case Studies: Aadhar, Digital Health, Real-time PDS Monitoring, Education Dashboards

PO-CO-PSO Compliance Matrix

CO1	3	2	2	2	2	2	3	3	3	0	0	3
CO2	2	3	2	3	2	2	3	3	3	0	0	3
CO3	2	2	3	2	2	3	3	3	3	0	0	3
CO4	3	2	2	3	3	2	3	3	3	0	0	3
CO5	2	3	3	2	2	3	3	3	3	0	0	3

Course Title: Internet Society and Economy		Course Code: **6.5STI33**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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 Prerequisites: Student must have knowledge of

1. Must have studied Information Technology and Society course (STI 404)
2. Appreciation of the interfaces of internet, society, and economy

Course Objective:

1. To examine how the emergence and evolution of the Internet, alongside a number of significant changes in the technological and political-economic environment, have transformed both the economy and societies at large.
2. To understand the new terms of competition in the information and communication technology (ICT) industries on a global scale.
3. To discuss the social history of the Internet, followed by an analysis of the emergence of a global information economy and the role of ICTs in global markets.

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

1. Explain the critical role of the Internet and ICT in transforming socio-economic and political environments at national and global levels.
2. Analyze the interlinkages between ICT, global markets, and the digital economy using appropriate theoretical and policy frameworks.
3. Evaluate the evolving interfaces between the Internet, society, governance, and economic systems, with reference to development, inclusion, and sustainability.
4. Assess the ethical, regulatory, and social implications of digital technologies and demonstrate responsible digital citizenship.

Course Content

Unit I : Introduction **15 Hours**

Lessons from the History of the Internet; Understanding of Networked Society, the Concept, Characteristics, Nature and Scope of Digital Economy; IKS-*Artha, Dharma, Vasudhaiva Kutumbakam, Rajdharm, Swadeshi*

Unit II : Digital Economy **15 Hours**

Macro and Micro Economic Issues in Digital Economy, Policy and Regulations under Digital Economy, Innovation in the Digital Economy

Unit III : Digital Technology and Society **15 Hours**

The Internet, Big Data, and Economic Policy, Artificial Intelligence and Prospects of Economic Growth, Globalization: The Internet and The Cloud

Unit IV : Data, Policies and E-Commerce **15 Hours**

Data Localisation and Data Sovereignty, APP Economy: Rules, Policy and Challenges before Societies, Electronic commerce. Issues of Digital Economy : Threat to Digital Economy, World-wide cases of Digital Economy, Internet Poverty Dimensions of Internet-Society-Economy, Digital Divide in Digital Economy, Privacy, Openness, and Transparency under Digital Economy, Case Studies as Suggested by Instructor

Text Books:

1. Abbate, Jane (1999) Inventing the Internet, Cambridge, MA: MIT Press, pp. 43-146.
2. Arora, Payal (2019), The Next Billion Users : Digital Life beyond the West. Cambridge: Harvard University Press
3. Atkinson, Robert D. and Stephen J. Ezell (2012) Innovation Economics: The Race for Global Advantage, New Haven, CT: Yale University Press.
4. Brynjolfsson, Erik and Adam Saunders (2009) Wired for Information: How Information Technology Is Reshaping the Economy, Cambridge, MA: MIT Press.
5. Castells, Manuel (1996, second edition, 2009). The Rise of the Network Society, TheInformation Age: Economy, Society and Culture Vol. I. Malden, MA; Oxford, UK: Blackwell.
6. Castells, Manuel (1997, second edition, 2009). The Power of Identity, The Information Age: Economy,

Society and Culture Vol. II. Malden, MA; Oxford, UK: Blackwell.
7. Castells, Manuel (1998, second edition, 2010). End of Millennium, The Information Age: Economy, Society and Culture Vol. III. Malden MA; Oxford, UK: Blackwell.
8. Castells, Manuel (2001) The Internet Galaxy, Oxford: Oxford University Press.

Reference Books:

1. David, Paul (2002) "The evolving accidental information super-highway," Oxford Review of Economic
2. Don Tapscott (1996) The Digital Economy : promise and peril in the age of networked intelligence, New York : McGraw Hill
3. Himanen, Pekka (2002) The Hacker Ethic: A Radical Approach to the Philosophy ofBusiness, New York: Random House
4. 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/
5. Naughton, John (2014) From Gutenberg to Zuckerberg: Disruptive Innovation in the Age of the Internet. New York: Quercus.
6. 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.
7. Peter F. Cowhey and Jonathan D. Aronson, (2009) Transforming Global Information and Communication Markets, Cambridge, MA, MIT Press.

e-Resources

- https://www.meity.gov.in/
- https://hdr.undp.org/
- https://www.oecd.org/en/topics/digital.html
- https://www.itu.int/itu-d/sites/statistics/
- https://www.worldbank.org/ext/en/development-topics

Topics for Project-Based Learning:

- Analyse the impact of Internet on socio-economic development.
- Study the relationship between ICT infrastructure and global markets (e-commerce, fintech, and the gig economy).
- Evaluate the efficiency and inclusiveness of a selected e-governance initiative (e.g., digital public services, online grievance portals).
- Assess how access to ICT influences gender, rural-urban, or income-based digital inequalities

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	2	2	3	3	0	0	3	0
CO2	2	3	2	3	2	2	3	3	0	0	3	0
CO3	2	2	3	2	3	3	3	3	0	0	3	0
CO4	2	3	2	3	2	2	3	3	0	0	3	0

<table>
<tr><td colspan="3">Course Title: Science, Technology and Society (STS) Studies</td><td colspan="3">Course Code: 6.5STI32</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="3">Credit: 04</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>4</td><td>-</td><td>-</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="3"></td></tr>
<tr><td colspan="6">Course Prerequisites: Student must have knowledge of</td></tr>
<tr><td colspan="6">1. Appreciation for interdisciplinary approaches and the ability to engage in collaborative discussions and presentations.</td></tr>
<tr><td colspan="6">Course Objective:</td></tr>
<tr><td colspan="6">1. The course introduces the interdisciplinary field of research, Science, Technology and Society (STS) Studies, to the students.
2. The interface between science, technology and society will be looked into from a range of theoretical perspectives.</td></tr>
<tr><td colspan="6">Course Outcomes: After completion of this course, student will able to</td></tr>
<tr><td colspan="6">1. Students will gain a broad and interdisciplinary knowledge base by integrating insights from science, technology, and social sciences. This holistic approach encourages students to appreciate the interconnectedness of these fields.
2. The interdisciplinary nature of STS studies encourages students to develop problem-solving abilities. They will be better equipped to address complex issues that arise at the intersection of science, technology, and society.</td></tr>
<tr><td colspan="6">Course Content</td></tr>
<tr><td colspan="5">Unit I</td><td>15 Hours</td></tr>
<tr><td colspan="6">Introduction to STS, The Development of Modern Science and the Birth of the Sociology of Science, AI and the Evolution of Science: AI as a new paradigm in scientific research (data-driven science), Indian Knowledge Traditions and Early Scientific Thought.</td></tr>
<tr><td colspan="5">Unit II</td><td>15 Hours</td></tr>
<tr><td colspan="6">Perspectives in STS Studies, Social Shaping of Technology, Social Construction of Technology, Critical Theory of Technology, Actor Network Theory, Transition in Socio-Technical Systems: Multi-Level Perspective.</td></tr>
<tr><td colspan="5">Unit III</td><td>15 Hours</td></tr>
<tr><td colspan="6">Gender and Technology: Feminist perspective of Technology, The Unnaturalness of Science and Technology, The Public Understanding of Science.</td></tr>
<tr><td colspan="5">Unit IV</td><td>15 Hours</td></tr>
<tr><td colspan="6">Science and Technology Policy Analysis, Historical Evolution and changing agendas in S&T Policy.</td></tr>
<tr><td colspan="6">Text Books:</td></tr>
<tr><td colspan="6">1. Barnes, J.A. (1972), Social Networks, in Addison-Wesley Module in Anthropology, 26:1-29.
2. Borgatti, Stephen P., Everett, Martin G., and Johnson, Jeffrey C. (2013). Analysing Social Networks. 2013. Thousand Oaks, CA: Sage.
3. Bucchi, M. (2004). Science in society: An introduction to social studies of science. Routledge.</td></tr>
<tr><td colspan="6">References:</td></tr>
</table>

1. Keller, Evelyn Fox and Longino, Helen E. (eds.). 1996. Feminism and Science. Oxford: Oxford University Press.
2. Knorr Cetina, Karin 1981. The Manufacture of Knowledge: An Essay on the Constructivist and Contextual Nature of Science. Oxford: Pergamon Press.
3. Kuhn, Thomas S. 1970 (1962). The Structure of Scientific Revolutions. Chicago: University of Chicago Press (revised second edition).
4. Latour, B. 1992. "Where Are the Missing Masses? The Sociology of a Few Mundane Artefacts," in W.E. Bijker and J. Law, eds., Shaping Technology/Building Society. Cambridge, MA: MIT Press, pp. 225-258.
5. Latour, B. 2005. Reassembling the Social: An Introduction to Actor–Network Theory, Oxford, New York: Oxford University Press.
6. Martin, Emily 1991. "The Egg and the Sperm: How Science has Constructed a Romance based on Stereotypical Male-Female Roles", Signs 16 (3): 485–501
7. Merton, Robert. 1973. The Sociology of Science: Theoretical and Empirical Investigations. Chicago: University of Chicago Press.
8. Sismondo, S. (2011). *An introduction to science and technology studies*. John Wiley & Sons.
9. Woolgar, Steve. 1988. Science, the Very Idea. London: Tavistock.
10. Wynne, Brian. 1996. "Misunderstood Misunderstandings: Social Identities and Public Uptake of Science", Public Understanding of Science 1(3): 281–304.
11. Zilzel, Edgar. 1942. "The Sociological Roots of Science", American Journal of Sociology 47: 544–62. Republished in Social Studies of Science 30/6, December (2000): 935–49.
12. Ziman, John. 2000. Real Science. Cambridge: Cambridge University Press.

Topics for Project Based Learning

1. Science, Technology and Everyday Life
2. AI and Society
3. Technology, Inequality and Inclusion
4. Science, Technology and Policy in India

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	3	3	2	2	3	3	0	0	0	3	0
CO2	2	2	3	3	3	3	3	0	0	0	3	0

Fourth Semester (IV)

Course Title: Gender and Digital Spaces		Course Code: **6.5STI40**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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 Prerequisites: Students must have knowledge of:

1. Must be motivated and enthusiastic around Gender and Digital Spaces.
2. Must have a basic understanding about the interfaces of gender with socio-economic and environmental changes and the nuances in society.
3. Must possess comprehensive and critical thinking.
4. Successful completion of the first/second/third semester of Masters program in any discipline.

Course Objective:

1. To develop an understanding about the concepts of gender and digital spaces and their intersection with digital technology, which shapes and is shaped by gender dynamics.
2. To explore through theoretical analysis, case studies, gender frameworks, and hands-on topics such as gender biases in technology, digital divides, online harassment, feminist perspectives on technology, and the role of women in the digital spaces.
3. To equip students with a critical understanding of the complex relationships between gender, technology, and society.

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

1. Explain key concepts of gender, digital spaces, and digital technologies, and describe their intersections within contemporary social contexts.
2. Apply relevant theoretical perspectives and interdisciplinary frameworks to analyze gender issues emerging within digital environments.
3. Critically evaluate the complex relationships between gender, technology, and society by examining power structures, representation, inclusion, and exclusion in digital spaces.
4. Integrate insights from sociology, media studies, cultural studies, and technology studies to assess digital practices through lenses of equity, justice, and ethical responsibility.

Course Content

Unit I: Introduction to Gender and Digital Spaces	**15 Hours**

Definitions and key concepts of gender and the digital spaces; Historical overview of gender roles around (digital) technology landscape; Intersectional approach to gender and digital spaces: analyse the complex interactions between different axes of identity and power; *Shakti* (Sacred Feminine Power), Feminine principle as creative energy (*Prakriti*), *Devi* traditions as symbolic empowerment

Unit II : Gender based Digital Divides and Access	**15 Hours**

Understanding gendered digital divides locally and globally, Access barriers and their impact on women and marginalised groups, Initiatives promoting digital inclusivity

Unit III : Perspectives and Approaches on Gender and Digital Spaces	**15 Hours**

Perspectives, Methodologies and Cases: Feminist Political Economy, The Social Relations Approach, Techno-feminism, Feminist theories and critiques of technology, Frameworks, Approaches and Models around Gender and Digital Spaces, Frameworks and Models: Naila Kabeer's Resources-Agency-Achievement' Model, Sen's Capability Approach, Gender Planning Framework, Gender and Development (GAD) Approach; Gender Mainstreaming

Unit IV : Gender-Based Violence and Legal-Policy Responses	**15 Hours**

Understanding online harassment and its gendered nature, Impact of gender-based violence in digital spaces, Legal and policy responses to online gender-based violence. Meaningful Internet and Gender, Emerging technologies and their gender implications, Ethical considerations in digital feminist practices, Critical reflection on the future of gender and digital technology

Reference Books:

1. Citron, D. K. (2014). Hate crimes in cyberspace. Harvard University Press. DOI: 10.4159/9780674369114
2. De Lauretis, T. (2014). Technologies of gender: Essays on theory, film, and fiction. Palgrave Macmillan. DOI: 10.1057/9781137349087
3. Ducros, H. B., & Lang, S. (Eds.). (2019). Digital feminisms: Transnational activism in German protest cultures. University of Illinois Press. https://www.jstor.org/stable/10.5406/j.ctvndvqkx James, M. (2017). Digital citizenship and surveillance society. Springer. DOI: 10.1007/978-3-319-67901-1
4. Joyce, M. (Ed.). (2010). Digital activism decoded: The new mechanics of change. International Debate Education Association. https://www.idea.int/publications/catalogue/digital-activism-decoded-new-mechanics-change
5. Kabeer, N. (1999). Resources, Agency, Achievements: Reflections on the Measurement of Women's Empowerment. Development and Change. Vol. 30, 435-464. https://onlinelibrary.wiley.com/doi/epdf/10.1111/1467-7660.00125
6. Moser, C. O. N., & Clark, F. C. (1995). Gender planning and development: Theory, practice and training. Routledge. DOI: 10.4324/9780203450915 Nakamura, L., & Chow-White, P. (2012). Race after the internet. Routledge. DOI: 10.4324/9780203076982
7. Noble, S. U. (2018). Algorithms of oppression: How search engines reinforce racism. NYU Press. DOI: 10.2307/j.ctt1pwtj2d O'Neil, C. (2016). Weapons of math destruction: How big data increases inequality and threatens democracy. Crown.
8. Pao, E. (2017). Reset: My fight for inclusion and lasting change. Spiegel & Grau. https://www.penguinrandomhouse.com/books/549218/reset-by-ellen-pao/ Penny, L. (2015). Cybersexism: Sex, gender and power on the internet. Bloomsbury Publishing. DOI: 10.5040/9781501310790
9. Perez, C. C. (2019). Invisible women: Data bias in a world designed for men. Vintage. DOI: 10.2307/j.ctvs32cpc Sen, A. (1999). Development as freedom. DOI: 10.1080/00220388.1999.10543874
10. Shevinsky, E. (Ed.). (2015). Lean out: The truth about women, power, and the workplace. OR Books. https://www.orbooks.com/catalog/lean-out/ Wajcman, J. (2019). Feminist perspectives on technology. Policy Press.

Wodak, R., & Lazar, S. (Eds.). (2019). Digital gender divide or technological divide? Gendered aspects of digital divides. Palgrave Macmillan. DOI: 10.1007/978-3-319-95546-5_1

11. Zuboff, S. (2019). The age of surveillance capitalism: The fight for a human future at the new frontier of power. Public Affairs. https://www.publicaffairsbooks.com/titles/shoshana-zuboff/the-age-of-surveillance-capitalism/9781610395694/

e-Resources:

- https://www.unwomen.org/en
- https://www.itu.int/itu-d/sites/statistics/
- https://www.unesco.org/en
- https://www.apc.org/en
- https://www.oecd.org/en/topics/digital.html

Topics for Project-Based Learning:

- Reframing women in tech not as beneficiaries but as knowledge producers
- Gender Biases in Technology: Analysis of gender biases in algorithms and AI, Case studies on biased design and its implications, Strategies for addressing and mitigating biases, Women in the Technology Industry: Analysis of gender representation in the tech industry, Barriers and challenges faced by women in tech, Strategies for promoting gender diversity and inclusion in tech
- Digital Literacy and Empowerment, Feminist Internet Governance, Digital Inclusion and Access, Gender-sensitive Technology Design, Feminist methodologies in tech design and research, Case studies of feminist tech projects and innovations, Case studies of digital platforms for gender empowerment.
- Digital Activism, Future Trends and Critical Reflections, Role of digital technology in feminist activism

PO-CO-PSO Compliance Matrix												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	2	2	3	0	0	0	3	0
CO2	2	3	2	3	2	2	3	0	0	0	3	0
CO3	2	3	3	2	2	3	3	0	0	0	3	0
CO4	3	2	2	3	3	2	3	0	0	0	3	0

<table>
<tr><td colspan="2">Course Title: Digital Innovations and Socio-Economic Changes</td><td colspan="3">Course Code: 6.5STI141</td></tr>
<tr><td>Teaching Scheme</td><td>Examination Scheme</td><td colspan="3">Credit: 04</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>4</td><td>-</td><td>-</td></tr>
<tr><td></td><td>Total: 100 Marks</td><td colspan="3"></td></tr>
<tr><td></td><td></td><td colspan="3"></td></tr>
<tr><td colspan="5">Course Prerequisites: Student must have knowledge of
1. Basic Understanding of Innovation Concepts
2. Appreciation for interdisciplinary approaches and the ability to engage in collaborative discussions and presentations.</td></tr>
<tr><td colspan="5">Course Objective:
1. To understand the meaning of innovation and its relevance for the development of digital society.
2. To critically analyse the understanding of innovations from various perspectives and look into various nuances of innovations.</td></tr>
<tr><td colspan="5">Course Outcomes: After completion of this course student will able to
1. Understanding of innovation and current debates in the field of innovation studies.
2. Comprehensive understanding of how innovation intersects with the digital society, encompassing both technological advancements and the broader societal implications of digital transformation.</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">Conceptualizing digital innovation, innovation, meaning and nuances of innovation, origin, characteristics, Innovation in Ancient Indian Knowledge Traditions, Concept of Nava (newness) and creativity in Indian philosophical thought.</td></tr>
<tr><td colspan="4">Unit II</td><td>15 Hours</td></tr>
<tr><td colspan="5">Systemic understanding of innovation, current theoretical debate in the field of innovation studies, system theory of innovations, pros and cons, different systems of innovations, advantages and disadvantages of centric models of innovation, and innovation system approaches: national system of innovation, sectoral system of innovation, and regional innovation system.</td></tr>
<tr><td colspan="4">Unit III</td><td>15 Hours</td></tr>
<tr><td colspan="5">Innovation and its impact in digital society, innovation and its role in the digital society, policy implications of innovation, Societal implications of AI-driven innovation (inequality, access, digital divide).</td></tr>
<tr><td colspan="4">Unit IV</td><td>15 Hours</td></tr>
<tr><td colspan="5">Regulatory and policy considerations related to digital innovation, including issues like digital rights, cybersecurity, and the balance between fostering innovation and ensuring ethical standards.</td></tr>
<tr><td colspan="5">Text Books:
1. B. Godin (2015), Innovation Contested – The Idea of Innovation Over the Centuries. London: Routledge, 2015.
2. Fagerberg, Jan, David C. Mowery, and Richard R. Nelson (2006). Oxford Handbook of Innovation. OUP.
3. Geels, F.W. (2005). Technological transitions and system innovations. Cheltenham: Edward Elgar</td></tr>
</table>

Publishing.
4. Von Hippel, E. (1988). Sources of Innovation. Oxford University Press.
5. Shavinina, L.V. (2003). The International Handbook on Innovation. Elsevier.

References:

1. Garcia, R. and Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: a literature review. The Journal of Product Innovation, Management. 19: 110-132.
2. Maxim Kotsemir, Alexander Abroskin, Meissner Dirk. (2013). Innovation concepts and typology – an evolutionary discussion. Science, Technology and Innovation WP BRP 05/STI/2013.
3. Maxim Kotsemir, Dirk Meissner (2013). Conceptualising the Innovation Process – Trends and Outlook. Science, Technology and Innovation WP BRP 10/STI/2013
4. Smits, R.E.H.M. (2002), Innovation studies in the 21st century, Technological Forecasting and Social Change 69 861-883

Topics for Project Based Learning

Seminar and Field Visits (Walkshops)

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	3	2	2	3	0	0	0	3	0	3
CO2	2	3	2	3	2	3	0	0	0	3	0	3

Course Title: Strategic Management in Digital Era		Course Code: **6.5STI42**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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 Prerequisites: Student must have knowledge of

1. Student must have completed Bachelor's Degree
2. Aptitude and skills in quantitative and qualitative analysis

Course Objective:

1. Understand strategic management techniques and their applications in decision-making in digital era.
2. Apply strategic management as a problem-solving tool in digital age.
3. Analyze various concepts at the intersection of strategic management and internet technology.
4. Develop idea about increasing customer value through strategic management and major aspects related to strategy in digital era.

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

1. Explain the strategic decisions that organisations make and have an ability to engage in strategic planning as required in digital age.
2. Apply the basic concepts, principles and practices associated with strategy formulation and implementation.
3. Evaluate formulation and implementation of strategy in digital age from holistic and multi-functional perspectives.
4. Design critically real-life company situations and develop creative solutions, using a strategic management perspective.

Course Content

Unit I	**15 Hours**

Concept of Yukti in Indian thought. Introduction to Digitalisation in Strategic Management, Evolution of Strategic Management: Classical vs. Digital Era, Roles of Digitalisation in Strategy, Strategic decision making: Approaches & Process, Digital Business Models and Ecosystems, Business policy: Nature, Objectives and importance of business policy.Case studies: Amazon, Google, Reliance Jio, Tesla

Unit II	**15 Hours**

Strategy formulation in Digital Context: Company's vision, mission, objectives & goals; Environmental and organizational appraisal, Impact of Digitalization on Industry Structures (Porter's 5 Forces in digital context) Strategic alternatives and choice; Types of strategies; Business ethics and corporate strategy, Concept of value chain and competitive advantage. Relevant Case studies. Capstone Project: Digital Strategy Design for a real-world company/sector

Unit III	**15 Hours**

Digitalisation in Strategic Analysis: Digital Transformation Roadmaps, Digital Value Chain, SWOT Analysis, BCG Matrix, GE- Nine Cell, Industry Analysis, Experience Curve, Impact Matrix. Case Studies: Netflix, Uber, BYJU's, Microsoft.

Unit IV	**15 Hours**
Strategy implementation in digital context: Strategic Control & Performance Metrics (KPIs, OKRs, Digital Dashboards), Corporate Governance & Ethics in Digital Strategy, Designing organizational structure and activating strategies; Matching structure and corporate strategy, Structural, Behavioural and Functional implementation. Strategy Evaluation: Strategic evaluation and Control, Strategic and Operational Control; Techniques of evaluation and control. Case Studies: Infosys, Apple, Flipkart, TCS	
Text Books:	
1. Jauch & Glueek, Business Policy and Strategic Management 2. Thampson A.A. and Stickland AJ, Strategic Management- Concept and cases 3. Michael Porter, Competitive Advantage of Nations.	
Reference Books:	
1. Azhar Kazmi, Business Policy and Strategic Management 2. Kenneth, A. Andrews, Concepts of corporate Strategy 3. Melvin J. Stanford, Management Policy 4. John A. Pearce II and R.B.Robinson, Strategic Management - Strategy Formulation and Implementation	
e-Resources	
https://www.coursera.org/courses?query	
Topics for Project Based Learning	
1.Analyzing Digital Business Models and Ecosystems, 2 Redesigning Vision, Mission, and Competitive Advantage in Digital Era, 3.Applying Strategic Analysis Tools in Digital Business, 4.Designing Strategic Control Systems in the Digital Age	

PO-CO-PSO Compliance Matrix												
CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	2	2	3	0	0	3	0	3
CO2	2	3	2	2	2	2	3	0	0	3	0	3
CO3	2	2	3	2	3	2	3	0	0	3	0	3
CO4	3	2	2	3	2	3	3	0	0	3	0	3

Course Title: **Digital Archiving and Revitalizing Indian Knowledge Traditions**		Course Code:**6.5STI43**		
Teaching Scheme	**Examination Scheme**	Credit: **04**		
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 Pre-requisites: Student may have :

1. Interest in cultural heritage studies, digital tools and indigenous traditions.

Course Objective:

1. Explain and apply methods and tools of digital archiving relevant to Indian Knowledge Systems (IKS).
2. Describe and analyze metadata standards and indigenous classification systems for traditional knowledge.
3. Examine the role of digital archives in community empowerment and cultural revitalization.
4. Develop a critical understanding of inclusive and participatory archiving practices.

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

CO1: Demonstrate understanding of digital archiving processes and standards.

CO2: Critically assess existing digital archives of Indian traditions.

CO3: Develop inclusive, ethical frameworks for community-driven digital archiving.

CO4: Contribute to digital preservation and outreach initiatives in heritage domains.

Course Content

Unit 1: **Introduction to Archiving and IKS**	**15 Hours**

The philosophy and significance of archiving in Indian traditions Oral vs. textual knowledge and their preservation challenges.

Unit 2: Tools, Platforms and Metadata in Digital Archiving	**15 Hours**

Digitization processes: Scanning, OCR, encoding (TEI/XML) and preservationMetadata standards: Dublin Core, CIDOC-CRM, Indigenous Ontologies Archival software and platforms: DSpace, Mukurtu, Omeka.

Unit 3: Revitalization and Community Participation	**15 Hours**

Participatory archiving and living heritage models, Integrating IKS archives into education and public policy Designing culturally rooted digital exhibits, apps and storymaps.

Unit 4: Challenges in Digital Archiving of IKS	**15 Hours**

Intellectual Property Rights (IPR) and indigenous data sovereignty; Risks of re-contextualization, misinterpretation and de-sacralization in digital formats; Democratizing access: addressing digital divides, language barriers and infrastructural inequities.

Reference Books:

1. Smith, L. T. (2012). *Decolonizing Methodologies: Research and Indigenous Peoples*. Zed Books.
2. Walter, M., Kukutai, T., Carroll, S.R., & Rodriguez-Lonebear, D. (Eds.). (2020). Indigenous Data Sovereignty and Policy (1st ed.). Routledge. https://doi.org/10.4324/9780429273957
3. Ramesh C. Gaur. “Preservation and access to Indian manuscripts: A knowledge base of Indian cultural heritage resources for academic libraries”; ICAL 2009–Vision and roles of the future academic libraries

4. Reports from IGNCA, TKDL, and NDLI
5. Selected research papers from Journal of Archival Organization and Digital Humanities Quarterly

Topics for Project Based Learning

1. National Digital Library of India (NDLI)
2. Indira Gandhi National Centre for the Arts (IGNCA)
3. TKDL (Traditional Knowledge Digital Library)
4. People's Archive of Rural India (PARI)
5. Bhasha Research and Documentation Centre

PO-CO-PSO Compliance Matrix

CO	PO1	PO2	PO3	PO4	PO5	PO6	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	3	2	2	2	2	2	3	0	0	0	3	3
CO2	2	3	2	3	2	2	3	0	0	0	3	3
CO3	2	2	3	2	3	3	3	0	0	0	3	3
CO4	3	2	2	3	2	3	3	0	0	0	3	3