Department of Society-Technology Interface

School of Social Sciences

INDUCTION BOOKLET

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

Two-Year Post Graduate Programme
(Academic Year 2021-22)

Central University of Rajasthan

NH-8, Bandar Sindri, Kishangarh

District Ajmer-305817, Rajasthan

Learning Outcomes-based Curriculum Framework (LOCF) and Syllabus
For
Master of Science (M.Sc.) in Digital Society
Two-Year Post Graduate Programme

About the Programme

The Central University of Rajasthan in collaboration with International Institute of Information Technology – Bangalore (IIIT-B) started the Two-year Masters Programme (M.Sc) in Digital Society with effect from Academic Year 2018-19, similar to the one being offered at IIITB. The programme introduces to the students from diverse educational backgrounds the academic inter-linkages between the two advanced streams of knowledge- Science and Technology and Social Sciences for better career opportunities and staying competitive.

Students' intake in the Programme: 20

Programme Objectives

The Two Years Masters in Digital Society would fulfil the following objectives:

- To help the students to appreciate and understand the digitization ideas, tools and technologies from the perspectives of society at large.
- To enable students to think innovative and generate ICT based solutions intended to address developmental deficits and challenges in the society.
- To help the society to find out ways of strengthening system mainly to counter the laggards performances in the social and economic sectors of the economy.
- To engage in evidenced-based policy-making process and advocates for deployment of digital technologies for the effective policy-implementation process.
- To promote and enrich interdisciplinary research on the digital society by interlinking ICT and Social Sciences.

Learning Outcomes:

The students, after completing the two years of the coursework in the programmes, are expected to draw the following learning outcomes:

1. Interdisciplinary skills in understanding the interlinkages of the fundamental concepts, principles and processes drawn from various disciplines of social sciences (Public Policy, Sociology, Political Science, Social Works, Development Studies, Governance Studies, Economics and Management) and Science and Technology (Computer Science, Big Data Analytics, etc.).
2. Apply quantitative and qualitative methodologies in order to assess the strong relationship between application of digital technologies, including information and communications technology (ICT), and developmental problems that the

country faces today; and apply those relevant knowledge and skills to seek technological solutions to diverse socio-economic problems.

3. Use discipline-specific competencies relevant to academia and industry, generic skills and global aptitude, including knowledge and skills that enable students to undertake further studies in the field of Digital Society or a related field, and work in the industry, academia or civil society organizations.
4. Undertake hands on lab work and field surveys and other relevant approaches which develop problem solving abilities required for successful career in IT and non-IT industry, teaching, research organizations, consultancies, civil society organizations, etc.
5. Recognize and appreciate the importance of digital technologies and their application in academic, industrial, social, economic and environmental contexts.
6. Application knowledge that creates different types of professionals in the field of Digital Society and related areas of specialisation with policy-driven, data-driven and design-driven applications;

Academic Entry Requirements

- The Two Years Masters in Digital Society is open to candidates with a Graduate degree (Three Years) in any disciplines from recognized University possessing minimum of 55% marks. Those expecting to graduate by June-July may also apply. The Graduate Degree may be in any of the following areas: Sciences, Social Sciences, Arts and Humanities, Computer Sciences, and Engineering.

Admission Process

- Applicants must pay a non-refundable application fee as decided by the University in time to time for applying to Masters Programme in CURAJ through CUCET. This will be conducted through CUCET examination.
- The CUCET examination will test numerical / quantitative, analytical, and verbal abilities, as well as design, social, and information technology awareness.
- The selection process includes the entrance examination of CUCET score and the personal interview (if required by the University) for the induction of students to the Master's Programme.
- Other scores (if applicable) as suggested by IIIT-B for the admission will be considered for the admitting students to the programme. However this is subject to approval of University.
- The admission criteria, tuition fees and other fees for the programme will be administered by rules and regulations as approved by the academic / administrative bodies of the University.
- The fees structures for the Programme will be at par with the fees structures applicable in M.Sc in Big Data Analytics.
- A student admitted to one institute will be governed by all the rules and regulations existing at that institute.

- In case of the vacant seats in the Programme, both IIIT-B and CURAJ will explore the filling of the vacant seats through CUCET.

Instructions

- The medium of instruction is English and determined by the Ordinances of the University.

Students Exchange Programme

Under the programme, there is an opportunity for exchange of students enrolled at CURAJ as well as in the M.Sc (Digital Society) Programme in IIIT-B. Such an exchange may happen during First /Second year of the respective Programmes and should confirm to the academic requirements of their respective institutions. In such case, the Institution where a student goes on exchange shall transfer the credit/grade earned by the student to that Institute (Host Institute) where the student was admitted to for appropriate consideration for the award of the Degree. In such case of student exchange programme, the expenses in all respects have to be borne by the concerned student opting for student exchange opportunities.

Assessment

The Assessment mode of the Two –Year Masters Programme is determined by the Evaluation process of the University (as per the Ordinance of the University). However in the case of student exchange from CURAJ to IIIT-B and vice-versa, the Assessment rules and regulations of the respective institution will apply.

Career Opportunities:

Digitalization is shaping almost all aspects of our professional and working lives. Career opportunities include work as internet researcher, digital media researcher, software development professional, digital consultants, ICT consultants, policy experts, etc. Students passing out from the programme will be working in ICT industries, research organization, private companies, public sector, consultancy services industry, and international organization and also in non-governmental organization. Both the Institutes will conduct combined Placement activities as per the Placement Rules exiting at the respective Institutions.

Pedagogy

The Two Years Masters programme in Digital Society will consist of Four Semesters and students seeking Master's Degree have to earn required credits from total 92 credits in the course of two years. The followings will be the pedagogy for the Two Years Master's Programme in Digital Society:

- A two weeks preparatory programme (Remedial Training) on Introduction to Digital Society.
- Core Courses and Electives.
- ICT-Lab based learning in first three Semester of the Programme
- Project-based learning.
- Dissertation and Internship.

Department of Society Technology Interface
Central University of Rajasthan

LEARNING OUTCOMES-BASED CURRICULUM FRAMEWORK (LOCF) FOR TWO YEAR MASTER OF SCIENCE (M.SC) IN DIGITAL SOCIETY

PROGRAMME OBJECTIVES: (1) To impart subject knowledge and academic and professional skills relating to the interdisciplinary field of 'Digital Society' and provide scientific rigour to conduct academic research in areas having social relevance; (2) To create practitioners and researchers who are trained in an interdisciplinary setting and are equipped with a multi-dimensional approach towards ever growing knowledge-based society and today's information age.

S.N		Outcome-1:	Outcome-2	Outcome-3	Outcome-4	Outcome-5	Outcome-6
	Learning Outcomes	To enhance the interdisciplinary understanding and skills of interlinking various disciplines of Social Sciences and Science and Technology (Computer Science, Big Data Analytics, etc.).	To apply quantitative and qualitative methodologies in order to assess the strong positive relationship between application of digital technologies including ICT, and developmental problems and seek technological (digital) solutions.	To develop the discipline-specific competencies relevant to academia and industry, generic skills and global aptitude, including knowledge and skills that enable students to undertake further studies in the field of Digital Society or a related field, and work in the industry, academia or civil society organizations in order to enhance the digitalisation empowerment of society.	To undertake hands-on lab work and field surveys by using the relevant available approaches to develop problem- solving abilities within the students for successful career in IT and non-IT industry, teaching, research organizations, consultancies, civil society organizations, etc.	To recognize and appreciate the importance of digital technologies and their application in academic, industrial, social, economic and environmental contexts.	To enhance the application knowledge that creates different types of professionals in the field of Digital Society and related areas of specialisation with policy-driven, data-driven and design-driven applications
	Competencies and Skills	Disciplinary Knowledge;	Disciplinary Knowledge;	Disciplinary Knowledge;	Disciplinary Knowledge;	Disciplinary Knowledge;	Disciplinary Knowledge;

		Analytical, Reasoning, Research Skills, Critical Thinking, Team Works, Reflective Thinking, Self-directed learning, Multicultural competence, Moral and Ethical awareness, Leadership, Lifelong Learning.	Analytical, Reasoning, Critical Thinking, Problem Solving Approach, Research Skills.	Analytical, Reasoning, Critical Thinking, Problem Solving Approach, Research Skills, Team Works, Leadership, Multicultural competence.	Analytical, Reasoning, Critical Thinking, Problem Solving Approach, Research Skills, Team Works, Leadership, Multicultural competence.	Analytical, Reasoning, Research Skills, Critical Thinking, Team Works, Reflective Thinking, Self-directed learning, Multicultural competence, Moral and Ethical awareness, Leadership.	Analytical, Reasoning, Research Skills, Critical Thinking, Team Works, Reflective Thinking, Self-directed learning, Multicultural competence, Moral and Ethical awareness, Leadership.
1.	STI 401: Quantitative Techniques	√		√	√	√	
2.	STI 402: Public Policy Paradigms and Practices		√		√	√	√
3.	STI 403: Media, Culture and Society	√	√	√		√	
4.	STI 404: Macroeconomics	√	√	√	√		
5.	STI 405: Information Technology (IT) and Society	√	√	√	√	√	√
6.	STI 481: ICT-Lab/Workshop– Programming Concepts	√	√	√	√	√	√
7.	STI 482: Digital Society: Case Studies	√	√	√	√		√
8.	STI 411: Information Communication Technology	√	√	√	√	√	√

	Policy and Regulation						
9.	STI 412: Emerging Digital Technologies	√	√	√	√		√
10.	STI 413: Digital Media	√	√	√	√	√	√
11.	STI 414: Law and Digital Society	√	√	√	√		√
12.	STI 431: Elective I (Department Elective)	√	√	√		√	
13.	STI 483: ICT-Lab/Workshop– Programming Concepts		√	√	√	√	√
14.	STI 484: Seminar / Term Paper / Case Study	√	√	√	√	√	√
15.	STI 501: Society, Networks and Social Networks	√		√	√	√	√
16.	STI 532: Elective II (Departmental Elective)	√	√	√	√		√
17.	STI 533: Elective III (Departmental Elective)	√	√	√	√		√
18.	STI 534: Elective IV (Departmental Elective)	√	√	√	√	√	√
19.	STI 535: Elective V (Other Departmental Elective)	√	√		√		√
20.	STI 585: Data Analysis Lab: R	√	√	√	√	√	√
21.	STI 586: Spatial Data Infrastructure Lab	√	√		√	√	√
22.	STI 536: Elective VI (Other Departmental Elective)	√	√	√			√
23.	STI 511: Dissertation	√	√	√	√	√	√

Course Design of M.Sc in Digital Society for Academic Year 2021-22			
Course Code	**Name of the Courses**	**Nature of the Course**	**Credits**
First Semester (I)			
STI 401*	Quantitative Techniques	C	4
STI 402*	Public Policy Paradigms and Practices	C	4
STI 403*	Media, Culture and Society	C	4
STI 404*	Macroeconomics	C	4
STI 405	Information Technology (IT) and Society	C	4
STI 481	ICT-Lab/ Workshop – Programming Concepts	SEC	2
STI 482	Digital Society: Case Studies	AEC	2
Total Credits			24
Second Semester (II)			
STI 411	Information Communication Technology Policy and Regulation	C	4
STI 412**	Emerging Digital Technologies	C	4
STI 413	Digital Media	C	4
STI 414**	Law and Digital Society	C	4
STI 431	Elective I	E	4
STI 483	ICT Lab and Workshop-Programming Concepts	SEC	2
STI 484	Seminar / Term Paper / Case Study	AEC	2
Total Credits			24
Third Semester (III)			
STI501	Society, Network and Social Networks	C	4
STI532	Elective II	E	4
STI533	Elective III	E	4
STI534	Elective IV	E	4
STI535	Elective V	OE	4
STI585	Data Analysis Lab: R	SEC	2
STI586	Spatial Data Infrastructure Lab	SEC	2
Total Credits			24
Fourth Semester (IV)***			
STI536	Elective -VI	OE	4
STI511	Dissertation	C	16
		Total Credits	20
		Total Credits for M.Sc in Digital Society	92

*The following courses of the First Semester would be courses from other allied academic departments: STI401: Quantitative Techniques (MBA); STI 402: Public Policy Paradigms and Practices (PPLG); STI 403: Media, Culture and Society (CMS); STI 404: Macro Economics (Dept of Economics).

** STI 412 STI 414 have been renamed as “Emerging Digital Technologies” & “Law and Digital Society” as against the previously approved paper STI 402: Recent Trends in Information Technology: Internet, Web, Mobile, & Cloud Technology and STI 409: Cyber Law

*** Students who will be opting for Internship in any outside organization, they need to complete whole 20 Credits for Dissertation in the Fourth Semester. In this case the Dissertation will be 20 Credits. In case, the students not undertaking Internship in any external agencies in the last Semester, he has to opt Elective VI (4 Credits) in other Departments and write Dissertation of 16 Credits under the supervision of the Department Faculty Members.

Courses	Credits
Core	60
Electives	20
SEC	8
AEC	4

C: Core Courses ; E: Elective (Dept.); OE: Other Dept. Elective; SEC: Skill Enhancement Course; AEC: Ability Enhancement Course

List of Tentative Electives

Department Electives:

1. **Politics and Information Society**
2. Economy and Information Society
3. Business & Information Society
4. Digital Marketing
5. E-Commerce
6. Innovation and Entrepreneurship in Digital Society
7. Internet, Society and Economy
8. **Privacy in the Digital Age**
9. **ICT and Development**
10. Management Information System (MIS)
11. Cultural Informatics
12. Spatial Data Infrastructures
13. Project Management Appraisal
14. **Big Data and Public Policy**

Indicative Electives from Other Department:

1. Big Data Analysis (BDA)
2. Python and Java (BDA)
3. Digital Humanities (Linguistics)
4. Management Principles and Organization Behaviours (Management)
5. Project Planning and Control (Management)
6. Science of Climate and Climate Change (Atmospheric Sciences)
7. Fundamental of Atmosphere, Law and Ocean (Atmospheric Sciences)
8. E-Governance (PPLG)
9. Impact Evaluation (PPLG)

Table 1: Overview of the IIIT- Bangalore Curriculum

Program Orientation (2 weeks, 2 courses, 0 credits)	**Course Code**
Programming Foundations (Satisfactory/Unsatisfactory) Social Science Foundations (Satisfactory/Unsatisfactory)	
Term 1 (15 weeks, 18 credits, 5 core courses)	
Digital Components of a Connected Society (4)	DT 102
Application Development for a Connected Society [2](2)	DT 107
Human Computer Interaction (4)	DT 108
Research Methods (Quantitative and Qualitative) (4) - *new*	DT 109
Technology and Society (4)	HSS 104 A
Term 2 (15 weeks, 16 credits, 3 core courses, 1 elective)	
Technology in Development (4)	
ICT Policy and Regulation (4)	
Social Complexity and Systems Thinking (4)	
Elective I (4)	
Term 3 (15 weeks, 16 credits, 4 electives)	
Electives II, III, IV & V (4x4)	
Term 4 (26 weeks, 16 credits)	
Thesis/Internship (16)	
Total Credits 66	

Course Code and Course Name	STI 401: Quantitative Techniques
Semester	Semester I
Course Type	Core Course-1
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Description

The objective of the course is to equip the student with basic quantitative tools required to perform the role as a manager. This will enable him to do analytical evaluation and arrive at logical conclusions & inferences to the decisions.

Course Content

1. Unit – I: Decision Theory, 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.
2. Unit II: Linear Programming, Problem formulation and graphical methods of solution, Simplex method, Elementary ideas about duality, Sensitivity Analysis, Integer Programming and Goal Programming.
3. Unit III: Transportation Model, North West Corner Rule, Stepping Stone Method, VAM, MODI, Application of Transportation Model, Assignment Models, Transshipment and Routing Problems
4. Unit IV: Waiting line, Characteristics, Single and multiple channel models, business application of waiting lines, , Simulation for business, Monte Carlo method and application of simulation in business situations.
5. Unit V: PERT & CPM, Network construction and analysis, Critical path, Time-cost trade off, Crash activity analysis, Planning and scheduling, Project costs, Controlling project costs
6. Case studies based on above-mentioned curriculum

Learning Outcomes

- Explaining quantitative methodology to the students with practical understanding of applying same so that they can use the tools to address problem solving in real world.
- Apply critical thinking of statistical techniques in understanding various issues associated with public policy and management.

Text Book / References

1. Anderson, Sweeney and Williams, An Introduction to Management Science
2. Vohra, N.D. Quantitative Techniques in Management, 3rd Edition, Tata McGraw Hill
3. Taha, H.A., An introduction to Operation Management
4. Tulsian and Pandey, Quantitative Techniques, Pearson Education
5. Sharma J. K., Operations Research

Course Code and Course Name	STI 402: Public Policy Paradigms and Practices
Semester	Semester I
Course Type	Core Course-2
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Description

Public policy making constitutes the core of politics and government in any nation. As the governments are called upon to perform a wide array of functions, the policy making process has acquired considerable complexity. Policy analysis finds an important place in other social science disciplines. This course aims at familiarizing the students with the key concepts and theories of public policy.

Course Content

1. Policy Analysis: Meaning and Scope, Rise of Public Policy as a Discipline.
2. Meta and Meso Analysis of Public Policy
3. Putting Policy as Public Agenda, Policy-makers and their environment, Policy formation: problems, agendas and formation, Policy impact, evaluation and change.
4. Analytical Framework: Classical, Neo-Classical, Marxist, Neo-Marxists, Keynesian Perspective, Welfare Economics, Institutional Economics, Behavioral Economics,
5. Stages Approach to Policy process: Theoretical Narratives of Policy Cycle, General Systems Analysis, Social Fabric Matrix
6. Rationality in policy-making. Contributions of Weber, Simon and Public Choice theorists: Rationale Choice Theory, Public Choice Theory, Maslow's Theory, Cost-Benefit Analysis
7. Pluralist approach and role of institutions: Pluralism, Institutionalism, New Institutionalism, Complexity
8. Policy paradox- determining policy objectives equity and justice: Ideologies and institutional constraint, Translating Theory into practice, Exclusion and inclusion in public policy
9. **Case studies** based on above-mentioned curriculum

Learning Outcomes

- To understand why policy issues arise to the government to act upon.
- To discuss how different actors play their role in shaping and influencing the policy process.
- To examine how policy problems and issues are defined, formulated and implemented.

Text Book / References

1. Anderson, James E (2004) Public Policy making, Houghton, New York
2. Bochel, HughandDuncan,Sue 2007 Making Policy in Theory and Practice, The policy Press, Great Britain
3. Brewer, G., and deLeon, P. (1983).The Foundations of Policy Analysis. Monterey, Cal.: Brooks.
4. Guy Peters, 2015, Advanced Introduction to Public Policy, Edward Elgar Publishing House. Cheltenham, U.K.
5. Parsons, Wayne, 2005, Public Policy: An Introduction to the Theory and Practice of Policy Analysis, Edward Elgar Publishing Ltd. Cheltenham, U.K.

Course Code and Course Name	STI 403: Media, Culture and Society
Semester	Semester I
Course Type	Core Course-3
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Description

This course will introduce the students to the proper understanding and inter-relationship between Media, Society and Culture . It will describe the foundations and dimensions of civilization. It will develop an understanding of various contemporary issues and the media.

Course Content

1. Introduction to Media and Society: Mass Media and Society; Meaning, forms and functions of Media; Understanding Society, Social structure, Socialization and Social Relations.
2. Media, Culture and Society: Brief history of civilizations; Ideas of India, Discovery of India; Mass Communication and Culture; Information Technology and Society.
3. Media Audiences: Media Audience – Meaning and types; Public Opinion, News Framing and Agenda Setting; Media and Concepts of Public Sphere.
4. 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.
5. Practical assignment: paper presentation, analysis and discussions, communication skill development.

Learning Outcomes

- Students will be able to identify the relation between media and society;
- Analyze and explain various dimension of media and its role;
- and understand the effects of mass communication on society, audiences and people.

Text Book / References

1. Media Society by David Croteauand 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- - blacklwell, 2009.
4. Oommen, T.K. (2007) "Knowledge and Society: Situating Sociology and Social Anthropology". New Delhi: OUP
5. Rege, Sharmila (2003) "Sociology of Gender: The Challenge of Feminist Sociological Knowledge". New Delhi: Sage
6. Singh, Yogendra (2004) "Ideology and Theory in Indian Sociology". Jaipur: Rawat.
7. Graeme Burton, Media and society critical perspective, Rawat Publication, Jaipur, 2005
8. J. Nehru, chapter on 'Discovery of India' from Discovery of India, Penguin books
9. Agnes, Flavia, 'Transgressing Boundaries of Gender and Identity', Economic and Political Weekly September 7, 2002

Course Code and Course Name	STI 404: Macroeconomics
Semester	Semester I
Course Type	Core Course-4
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Description

The course seeks to develop an understanding of the rationale for public policies and means of assessing them using the logic and tools of microeconomics. The topics emphasized include basic concepts of macro-economic concepts.

Course Content

1. Module-1 Basic Concepts:- Macroeconomic Variable- Stocks and Flows, Macroeconomic relationships, Micro assumptions of macroeconomics, Problem of Aggregation: Macroeconomic Equilibrium, Flow equilibrium and Stock equilibrium, Full equilibrium. National Income Accounts, Flow of Funds Accounts and Input-Output Accounts, Concept of Wealth and Price Indices
2. Module-2 Determination of Income and Employment:- Models of Income and Employment Determination: An Overview, Walrasian interpretation of Keynesian unemployment- Patinkin, Clower, Leijonhufuud, New Keynesian Interpretation, PostKeynesian Interpretation-Sidney Weintraub, Paul Davidson, Kalecki and Minsky, New Classical Economics.
3. Module-3 Money and Inflation:- Demand for Money- Friedman, Baumol, Tobin, Patinkin's Real Balance Effect, Issues regarding endogenous and exogenous supply of money, R.B.I.'s Approach to Supply of Money Demand-Pull and Cost-Push Inflation, Phillips Curve Controversy, Natural Rate of Unemployment, Adaptive expectation and Rational expectation models, Lessons from the Indian Economy.
4. Module-4 Consumption Function and Investment Function:- 6 Life Cycle Hypothesis, Permanent Income Hypothesis, Random Walk Hypothesis, Classical Theory of Investment, Keynesian Theory of Investment, Accelerator, Neo-Classical and New Classical Theories of Investment.

Learning Outcomes

- To enhance the understanding of macro-economic concepts for the larger understanding of the policy problems.
- To develop the case-study methods through the application of economic data and analysis to gauge the gravity of policy problems.
- To enhance discipline specific competencies relevant to academicia, industry, and generic skills.

Text Book / References

1. Jonathan Gruber, Public Finance and Public Policy (Worth Publishers, 2009).
2. Charles Wheelan and Burton G. Malkiel, Naked Economics: Undressing the Dismal Science (Norton, 2003).
3. Kenneth A. Shepsle, Analyzing Politics: Rationality, Behavior, and Institutions (W.W. Norton, 2010),
4. Dornbusch, Fischer and Startz, Macroeconomics, McGraw Hill, 11th edition, 2010.
5. N. Gregory Mankiw. Macroeconomics, Worth Publishers, 7th edition, 2010.
6. Olivier Blanchard, Macroeconomics, Pearson Education, Inc., 5th edition, 2009.
7. Charles I. Jones, Introduction to Economic Growth, W.W. Norton & Company, 2nd edition, 2002.
8. Errol. D'Souza, Macroeconomics, Pearson Education, 2009.
9. Robert J. Gordon, Macroeconomics, Prentice-Hall India Limited, 2011.

Course Code and Course Name	STI 405: Information Technology and Society
Semester	Semester I
Course Type	Core Course-5
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Description

This course will provide an overview of the major findings to date within several social science disciplines, including communication studies, sociology, anthropology and political science. The course will also introduce the different social science disciplines and theories that address the social implications of Internet and related information and communication technologies. Through this course, students will have a thorough understanding of the main perspectives and key findings about the social implications of the Internet and other ICT technologies.

Course Content

1. Information Technology and Society: An Introduction
2. Social Shaping of Technology
3. Theories of Society and the Internet
4. Globalization and Domestication
5. Mobile Phones, the Internet, and Perpetual Contact
6. The Presentation of Self Online
7. Social Implications of Online Data
8. Work & Economic Life Online
9. Microblogging among New and Old Media
10. The Internet and Democracy
11. The Knowledge Society

Learning Outcomes

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

Text Book / References

1. Bimber, Bruce (2003) Information and American Democracy: Technology in the Evolution of Political Power. Cambridge: Cambridge University Press.
2. Boyd, Danah (204) It's Complicated: the social lives of networked teens. New Haven: Yale University Press.
3. Castells, Manuel (2009), Communication Power, Oxford: Oxford University Press.
4. Donner, Jonathan (2015) After Access: Inclusion, Development, and a More Mobile Internet, Cambridge: MIT Press.
5. Dutton, William (2013), Handbook of Internet Studies, Oxford University Press
6. Graham, Mark & Dutton, William (2014) Society and the Internet. Oxford: Oxford University Press.

Course Code and Course Name	STI 481: ICT-Lab / Workshop: Programming Concepts
Semester	Semester I
Course Type	Skill Enhancement Course -1
Credits	2
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Description

The purpose of this course is to familiarize the student with the variety of approaches for processing pre-collected data, a technique colloquially referred to as "data analyzing". Analyzing involves filtering, shaping, and preparing data for analysis. This course covers the application of Python programming to the fields of behavioural and social sciences as ass as building blocks of computers and the Web.

Course Content

1. Input / Output / Storage of data as a file.
2. Text processing and regular expressions
3. Shaping data using iPython
4. Unicode, Datetime, Geojson and other special formats
5. Training of STATA/SPSS software

Learning Outcomes

- Explain basic theoretical concepts of programming applicable for data analysis in social science related fields.
- Provide analytical techniques and tools for data filtering, storing, and preparing data for analysis.
- Apply some of the statistical software packages to analyse data related to social science disciplines.
- Explore text processing and other social media sentimental analysis for policy purposes.

Text Book / References

1. McKinney, W. (2013). Python for Data Analysis. Sebastopol, CA. O"Reilly Media. Bird, S., E. Klein & E. Loper. Natural Language Processing with Python. Sebastopol, CA. O Reilly Media.

Course Code and Course Name	STI 482: Digital Society: Case Studies
Semester	Semester I
Course Type	Ability Enhancement Course-1
Credits	2
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

The students are required to develop various case studies addressing one or many problems of digitalisation process, data-driven society, digital inclusion, digital divide, and ICT Policy and Regulation

Course Content

1. Know Case studies as a Research Method
2. Designing Case Studies
3. Reporting to collect case study evidences
4. Collecting case study evidences
5. Analysing case study evidences
6. Reporting case studies

Students will develop various case study pertaining to digital society in India and defends its relevance in modern-day society.

Learning Outcomes

- The Case Study exam is essentially a virtual business role play. Therefore, students need to understand their role within the case study exam in order to produce a good answer, demonstrating knowledge and applying skills from across the syllabus.

Text Book / References

1. Alexander L. George (2005), Case Studies and Theory Development in the Social Sciences.
2. Robert Yin (2014), Case Study Research : Design and Methods

Course Code and Course Name	STI 411: Information Communication Technology Policy and Regulation
Semester	Semester II
Course Type	Core Course-6
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

The pace of technological change and innovation in the use of information and communication technologies (ICTs) poses significant challenges for policy-makers 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. 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. In particular, 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 Content

1. History and development of the ICT Policy and Regulation
2. Planning in India and ICT
3. Policy, Governance and Regulatory Frameworks
4. Stakeholders and Policy-making Process; Ministry of Electronics and Information Technology; R& D Institutions in ICT; National Knowledge Networks
5. Internet Proliferation and Governance; E-Infrastructures
6. Privacy and security
7. Content regulation and filtering
8. Consumer Protection under Digital age
9. Regulatory Responses to Public Debates on Emerging ICTs
10. Biometrics
11. Digital copyright, patents
12. Universal access, universal service and the digital divide, Net Neutrality
13. Government Programmes in India: Aadhar, Digital India, Make-in-India, Skills India, Digital Locker, Digitalisation of Socio-economic services
14. 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.
15. ICT and Economic Development; Private Sector regulation; Public Private Partnership

Learning Outcomes

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

Text Book / References

1. Banzal, S. (2010). Equitable Communication for All: Polices and Regulatory Issues. ITU-APT Foundation, New Delhi.

2. Bedi, K., P. Singh and S. Sandeep (2001) Government@net: New Governance 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 Center, 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, Spectrum Allocation and Dispute Management. IIMB Management Review.
7. Dasgupta, S., Paul, R., & Fuloria, S. (2011). Factors Affecting Behavioral Intentions towards Mobile Banking Usage: Empirical Evidence from India. Paper presented in conference.
8. Naughton, John A Brief History of the Future: From Radio Days to Internet Years in a Lifetime. 2000. New York: The Overlook Press.
9. Singhal A. and M.E. Rogers (2001) India's Communication Revolution from Bullock Carts to Cyber Nets. New Delhi, Sage Publications.
10. Venkat subramanian, K. Approach paper on "India development as knowledge society", Planning Commission, New Delhi.
11. Zittrain, Jonathan The Future of the Internet - And How to Stop It. 2008. New Haven: Yale University Press.
12. 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.
13. Rajaraman, V. (2012). History of Computing in India: 1955-2010. IEEE Computer Society.

Course Code and Course Name	STI 412: Emerging Digital Technologies
Semester	Semester II
Course Type	Core Course-7
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-
Course Outline	
Building on the fundamentals of the technologies, the course will explores the uses and significances emerging digital technologies in modern day life and theory and practical aspect of the digital technologies will be learnt.	
Course Content	
1. Artificial Intelligence 2. Internet of Things (IoT) 3. Blockchain 4. Cloud Computing 5. Data Sciences 6. Cyber Security 7. 3D Printing and Design 8. Virtual Reality (VR)	

Learning Outcomes
• Explaining the students about 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. • Develop understanding of key elements of computer networking and its usage for digital solutions which include Internet architecture, layer protocols, client-server architecture, etc. • Apply knowledge of Internet based applications and services, including digital platforms, to socio-technical problems.
Text Book / References
1. B. Patel & Lal B. Barik, " Internet & Web Technology ", Acme Learning Publishers 2. D. Comer, "The Internet Book", Pearson Education, 2009. 3. Godbole AS & Kahate A, "Web Technologies", Tata McGrawHill,2008. 4. Greenlaw R and Hepp E "Fundamentals of Internet and www" 2nd EL, Tata McGrawHill,2007. 5. Ivan Bayross, "HTML, DHTML, JavaScript, Perl CGI", 3rd Edition, BPB Publications. 6. Jackson, "Web Technologies", Pearson Education, 2008. **7.** M. L. Young,"The Complete reference to Internet", Tata McGraw Hill, 2007. **8.** Vijay Madisetti, Arshdeep Bahga, Ïnternet of Things, "A Hands on Approach", University Press **9.** SRN Reddy, Rachit Thukral and Manasi Mishra, "Introduction to Internet of Things: A practical Approach", ETI Labs. **10.** Melanie Swan, "Block Chain: Blueprint for a New Economy", O'Reilly, 2015. **11.** Joel Grus, "Data Science from Scratch: First Principles with Python", O'Reilly Media **12.** Saha, S.K., "Introduction to Robotics, 2nd Edition, McGraw-Hill Higher Education, New Delhi, 2014. **13.** William Stallings, "Cryptography and Network Security", Pearson Education/PHI, 2006

Course Code and Course Name	STI 413: Digital Media
Semester	Semester II
Course Type	Core Course-8
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-
Course Outline	
The students will explore the basic concepts of new media as well as the role of digital media technologies play in society. Besides, the course will help the students to understand the impacts of new media on communication today.	
Course Content	
1. Overview of online Communication & Internet : Meaning and definition, Features of Online Communication ; Characteristics of internet, Networking, ISP and browsers, Types of websites, Video conferencing, Webcasting, social networking, blogging and micro-blogging ; History of New Media Unit 2. New Media: Digital media and communication, ICT; Information Society, New World Information Order and E-governance; Media Convergence; Emerging Trends: Mobile Technology, Social Media & Web 2.0 Network theory; Public sphere; Wikipedia	

3. 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
4. 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 need to submit soft news stories for websites or open individual blogs as a part of project.

Learning Outcomes

- Explain the basic concepts of digital and new media and its historical development in the Indian context.
- Examine the role of digital media technologies on the contemporary society and the impact of new media on communications strategies.
- Explore the changing nature of media communications and journalism, digital content and communications, social networking, micro-blogging, etc.
- Apply digital media and associated technologies for creating online news portals, online blogs, podcasting, etc.

Text Book / References

1. LA Lievrouw, S Livingstone, Handbook of new media: Social shaping and consequences of ICTs, Sage 2002
2. Martin Lister, New Media: A Critical introduction, Routledge, 2009
3. Flew. Terry, New Media: An Introduction, Oxford Higher Education, 3rd, 2007
4. Wendy Hui Kyong Chun, Thomas Keenan, 'New media, Old Media, A history and Theory reader, Routledge, 2006
5. Carolina McCarthy, Facebook: Our targeted ads aren't creepy , The Social-CNET news, June 18, 2009
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

Course Code and Course Name	STI 414: Law and Digital Society
Semester	Semester II
Course Type	Core Course-9
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

This course will introduce legality aspect of the increasing use if ICT in all walks of life. ICT is universally applicable and unbridled growth of technology has raised many legal issues that need to be answered in the existing legal frameworks. With growing dependency, new threats to network and information security have emerged and there is ever-growing vulnerability to Cyber Crime. The paper introduces the students on cyber law frameworks both from India and international perspectives.

Course Content

1. Introduction: Digitization and its Impact in Society; Need for cyber law; Cyber Jurisprudence at International and Indian Level
2. International perspectives of Cyber Law: UN & International Telecommunication

Union (ITU) Initiatives ; Budapest Convention on Cybercrime; Asia-Pacific Economic Cooperation (APEC) ; Organization for Economic Co-operation and Development (OECD); World Bank; Commonwealth of Nations

3. Human Rights Perspectives of Cyber law: Freedom of Speech and Expression in Cyberspace; Right to Access Cyberspace; Access to Internet; Right to Privacy; Right to Data Protection.
4. Cyber Crimes & Legal Framework: Hacking; Digital Forgery; Cyber Stalking/Harassment; Cyber Pornography; Identity Theft & Fraud; Cyber terrorism; Cyber Defamation; Different offences under IT Act, 2000
5. Dispute Resolution and Legal Jurisprudence on Cyberspace in India; Examination of various cases

Learning Outcomes

- Explain legal aspects of cyber law and jurisprudence and their implications in an unbridled growth of digital technologies.
- Provide dispute resolution and legal jurisprudence on cyberspace in the Indian context, with various case examinations.
- Examine international and national perspectives of cyber law and its dimensions for several human rights and civil liberties such as right to privacy, right to data protection, etc.
- Apply legal frameworks relating to cyber law to examine different cybercrimes and threats such as hacking, digital forgery, cyber stalking/harassment, identity theft and fraud, etc. with concrete case studies.

Text Book / References

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. S. R. Bhansali, Information Technology Act, 2000, University Book House Pvt. Ltd., Jaipur (2003).
7. Vasu Deva, Cyber Crimes and Law Enforcement, Commonwealth Publishers, New Delhi, (2003).

Course Code and Course Name	STI 431: Elective I
Semester	Semester II
Course Type	Elective -1
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

The students need to select one Departmental Elective offered by the Faculty Members. List is given

Course Content

Learning Outcomes

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Text Book / References

•	
Course Code and Course Name	STI 483: ICT-Lab /Workshop – Programming Concepts
Semester	Semester II
Course Type	Skill Enhancement Course-2
Credits	2
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

The students are required to submit one project using Pythons and other statistical software addressing one or many problems of digital society.

Course Content

1. Introduction to Big Data and Hadoop
2. Hadoop Distributed File System
3. MapReduce
4. SQOOP
5. Pig
6. Hive
7. Hadoop HA
8. Mapreduce 2 or YARN

Learning Outcomes

- Demonstrate abilities to use programming language skills such as Python and R to make a project that addresses problems in digitalised society.
- Write a project report that describes research problem, skills of programming languages for data analysis, and application to real life issues.

Text Book / References

1. McKinney, W. (2013). Python for Data Analysis. Sebastopol, CA. O"Reilly Media.
2. Bird, S., E. Klein & E. Loper. Natural Language Processing with Python. Sebastopol, CA. O Reilly Media.
3. White, Tom. (2015). Hadoop: The Definitive Guide. Shroff Publishers & Distributers Private Limited.
4. Grover, Mark, Malaska, Ted, Seidman, Jonathan, & Shapira, Gwen (2015). Hadoop Application Architectures. O'Reilly Media Inc.

Course Code and Course Name	STI 484: Seminar / Term Paper / Case Study
Semester	Semester II
Course Type	Ability Enhancement Course-2
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

Students will be presenting one Seminar on any aspects of contemporary topics pertaining to digitalisation, ICT Policy and Regulations before Faculty Members (Jury) and other students. Besides, The student need to submit one Term Paper and Case study.

Course Content

1. One Seminar (20 Marks)
2. One Term Paper (20 Marks)

3. One Case Study (60 Marks)
Learning Outcomes
• Learning the soft skills to present before large audiences about the finding of their research. • Learning the conduct of independent research on any topic of contemporary relevance. • Preparing students to write dissertation in the last semester
Text Book / References
1. Robert Jolles (1993) How to Run Seminars & Workshops: Presentation Skills for Consultants, Trainers and Teachers

Course Code and Course Name	STI 501: Society, Networks and Social Networks
Semester	Semester III
Course Type	Core Course-10
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-
Course Outline	
Society is now increasingly being networked as per the new ICT technologies. Online platforms such as Facebook, Twitter, WhatsAap, Skype are changing the relationship between groups, segments of the society. The course will familiarize students with the state of network science as a paradigm comprising multidisciplinary approaches to the analysis of relational data. Students will be able to read introductory network metrics and understand how these measures speak to theories of human behavior as well as put together an original piece of analysis using network data. Students will also learn basic data capture and analysis techniques that can enable them to begin, if not complete, a full social network analysis study.	
Course Content	
1. The concepts of Networks and Social Networks; The Sources of Social Power 2. Culture of Connectivity: Engineering Sociality in a culture of connectivity 3. Rise of the Network Society; Googlisation and Networks 4. Models of Network Structures 5. Network Analysis: Some Basic Principles 6. Network Theory and Social Structures 7. Network Theory and Organisation Theory 8. Networks and Privacy 9. Networks, Politics and Anonymity 10. Network Theory and the NET 11. Networks Effects	
Learning Outcomes	
• Explain key concepts and principles of social theories regarding social relationships and networks. • Learn applications of importing, visualising and transforming real world network data. • Apply various models and techniques of social network analysis using empirical social dataset and case studies.	
Text Book / References	
1. Barnes, J.A (1972), Social Networks, in Addison-Wesley Module in Anthropology, 26:1-29.	

2. Borgatti, Stephen P. Everett, Martin G. Johnson, Jeffrey C. (2013) Analyzing Social Networks. 2013. Thousand Oaks, CA: Sage.
3. Burt, Ronald (1980), Innovation as a Structural Interests: Rethinking the Impact of Network Position on Innovation Adoption, Social Networks, 2 (4): 327-355.
4. Burt, Ronald (1980), Models of Network Structures, Annual Review of Sociology, 6: 79-141.

Course Code and Course Name	STI 532: Elective II
Semester	Semester III
Course Type	Elective Course-2
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-
Course Outline	
The students need to select one Departmental Elective offered by the Faculty Members. List is given	
Course Content	
See the Elective Content offered by Department	
Learning Outcomes	
• See the Elective Content offered by Department	
Text Book / References	
• See the Elective Content offered by Department	

Course Code and Course Name	STI 533: Elective III
Semester	Semester III
Course Type	Elective Course-3
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-
Course Outline	
The students need to select one Departmental Elective offered by the Faculty Members. List is given	
Course Content	
See the Elective Content offered by Department	
Learning Outcomes	
• See the Elective Content offered by Department	
Text Book / References	
• See the Elective Content offered by Department	

Course Code and Course Name	STI 534: Elective IV
Semester	Semester III
Course Type	Elective Course-4
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-
Course Outline	
The students need to select one Departmental Elective offered by the Faculty Members. List is given	
Course Content	
See the Elective Content offered by Department	
Learning Outcomes	
• See the Elective Content offered by Department	
Text Book / References	
• See the Elective Content offered by Department	

Course Code and Course Name	STI 535: Other Department Elective I
Semester	Semester III
Course Type	Other Department Elective Course-I
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-
Course Outline	
The students need to select one paper from other Department offered by their Faculty Members. List is given	
Course Content	
See the Elective Content offered by Department	
Learning Outcomes	
• See the Elective Content offered by Department	
Text Book / References	
• See the Elective Content offered by Department	

Course Code and Course Name	STI 535: Other Department Elective I
Semester	Semester III
Course Type	Other Department Elective Course-2
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-
Course Outline	
The students need to select one paper from other Department offered by their Faculty	

Members. List is given
Course Content
See the Elective Content offered by Department
Learning Outcomes
• See the Elective Content offered by Department
Text Book / References
• See the Elective Content offered by Department

Course Code and Course Name	STI 585: Data Analysis Lab: R
Semester	Semester III
Course Type	Skill Enhancement Course -3
Credits	2
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

This course aims to equip students with the data analysis techniques that take the advantage of recent developments in computational power and analytical skills within the discipline of social sciences. This course also seeks to leverage the growing availability of large volumes of data in public domain relevant for social science research and policy analysis. The main focus of this course is to use data-driven approach to socially relevant issues with the help of various data analysis types and techniques using open source statistical software called R. The course extensively works on actual data available in online sources using fundamental analytical and mining techniques in R and come up with socially relevant findings.

Course Content

1. Introduction to basic fundamentals, installation and use of R and its functions
2. Overview of data analysis and its components
    a. Introduction to basic statistical techniques using R
    b. Introduction to fundamentals of Data Mining principles and their Applications
3. Data Preparation and Exploration
    a. Data identification and data import from online sources
    b. Types of variables, sorting, ordering of data
    c. Functions and matrix operations, logical operators
    d. Visualization Techniques
4. Data Analysis using basic quantitative techniques
    a. Univariate, Bivariate statistical tests and interpretation
    b. ANOVA and other statistical tests for different hypotheses
5. Supervised Learning Methods
    a. Multiple Linear Regression
    b. Logistic Regression
    c. Classification analysis & Regression Trees
    d. Dimension reduction techniques
6. Performance Metrics and Analysis
    a. Performance Metrics for Prediction and Classification
7. Unsupervised Learning Methods
    a. Cluster analysis
    b. Association rules
8. Data-driven project using socially relevant topics

Learning Outcomes

- Use of statistical software called R for the purpose of social sciences and business data

- Apply fundamental techniques of data handling and analysis using R
- Understand the relevance and application of data analysis in social sciences using basic predictive analysis and mining techniques
- Explain evidence-based and data-driven approach to socially relevant research and policies.

Text Book / References

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

Course Code and Course Name	STI 586: Spatial Data Infrastructure Lab
Semester	Semester III
Course Type	Skill Enhancement Course -4
Credits	2
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

Spatial data infrastructure is now widely recognized as an important aspect in the growing information society. It provides the tool for continents, countries, regions and local governments to better organize, plan and manage their natural, cultural and economic resources. Through this course, the student will also learn the application of SDI technologies.

Course Content

1. Overview of Arcgis: Arcmap, Arccatalog and ArctoolBox
2. 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
3. Spatial Data Input: Vector Data Formats with File Extensions. Scanning, On-Screen Digitization, Editing, Topology Creation, Line and Area Measurements, Data Attribution
4. 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
5. Georeferencing Data: Coordinate Systems, Datum Conversions, Map Projections, Types, Storing- Viewing Projection Information
6. Working with Layers in Arcmap: Building Templates, Classification, Displaying Qualitative and quantitative Values, Labeling Features and Map Creation
7. GPS: GPS Survey, Data Import, Processing and Mapping

Learning Outcomes

- Understand the geospatial meta-data standard contents and geodata clearing houses.
- Learn about and gain experience in the technology for distributing geographical information using the Internet

Text Book / References

1. Chang, K. T. (2008): Introduction to Geographic Information Systems, Avenue of the

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

Course Code and Course Name	STI 536: Other Department Elective II
Semester	Semester IV
Course Type	Other Department Elective Course-II
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-
Course Outline	
The students need to select one paper from other Department offered by their Faculty Members. List is given	
Course Content	
See the Elective Content offered by Department	
Learning Outcomes	
• See the Elective Content offered by Department	
Text Book / References	
• See the Elective Content offered by Department	

Course Code and Course Name	STI 511: Dissertation
Semester	Semester IV
Course Type	Core Course-11
Credits	16
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-
Course Outline	
-	
Course Content	
-	
Learning Outcomes	
• Conduct internship at various external organizations and/or companies for a period of one semester • Write dissertation or thesis based on the internship carried out at the external organization under the supervision of faculty members and external mentorship. • Demonstrate thesis writing skills that include problems identification during the internship, research design and methodology, field survey, analytical capabilities using dataset, results and real life application.	
Text Book / References	
-	

Lists of Electives

Course Code and Course Name	Project Management and Evaluation
Semester	Semester II
Course Type	Elective
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

This paper provides the opportunity to students to develop a systematic understanding of key skills and concepts essential to effective project management. By examining the Project Cycle using real projects, students learn techniques and tools – needs assessment, stakeholder analysis, strategic design, logical framework, monitoring and evaluation, proposal and report writing, budgeting – used in formulating and managing projects for desired impact, while gaining knowledge of and advancing actual project work. By course end, students will also be familiar with aid and development work, its language and terminology, and different project structures, implementation practices, and strategies to address potential conflicts and obstacles. This course will also introduce the students to different elements of complexity inherent in social and sociotechnical systems. Students will be introduced to different systems thinking methodologies, which will be considered useful to model and manage complex socio-technical systems.

Course Content

1. Introduction to Project Management, and the Project Cycle
2. Needs Assessment – Concept Mapping
3. Needs Assessment Tools, Methodologies, Stakeholder Analysis
4. Project Design and The Logical Framework
5. Monitoring and Evaluation: Framework Analysis (World Bank, DFID, UNDP, and other established frameworks)
6. Introduction to Socio-technical Systems
7. Grant Proposal Writing
8. Project Management in Local Government, Innovation in Project Management
9. Ethics and Project Management

Learning Outcomes

- Identify and explore different theoretical concepts of project management and evaluation.
- Explain key components of social/socio-technical system and their interrelationships.
- Apply systems thinking concepts, in general, and soft systems methodology, in particular, to model social/socio-technical complexity.
- Examine diverse perspectives while framing engineering and management challenges and approaches, particularly those related to requirements engineering and project management in large/complex projects involving digital technologies.
- Demonstrate capabilities to draft requirement specifications and system design documents leading to RFPs.

Text Book / References

1. Jack Meredith, Samuel J. Mantel Jr. (2017). Project Management- A Managerial Approach- John Welly and Sons
2. Nicholas, John M. (2012). Project Management for business and Technology, Prentice Hall of India Pvt. Ltd.
3. Ludwij, Ernest E. (1974). Applied Project Mgt. for the Process Industries, Gulf Publishing Co.; Houston.

4. Mattoo, PK. (1978). Project formulation in developing countries. The Macmillan Co. of India Ltd.
5. Clifton, David S. & Fyffe, David E. Project Feasibility Analysis. (1977). A guide to profitable New Ventlar. John Wiley & Sons.
6. Jackson, Michael, C. (2003). Systems Thinking: Creative Holism for Managers. John Wiley & Sons.

Course Code and Course Name	ICT and Development
Semester	Semester II
Course Type	Elective
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

This course will introduce students to the debates and practices surrounding the uses of Information and Communication Technologies (ICTs) in Developmental process in the Global South. It will draw on 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. This course will 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 Content

1. Uneven Development and the Origins of ICTD: Unevenness in development; Digital divides.
2. Development Theory: Dependency, modernisation, structuralism, socialism, neoMarxism and neoliberalism
3. Critiques of ICTD: Feminist, postcolonialist, and poststructuralist critiques
4. Development in the Network Society: Digital divides, Value chain disintermediation and e-commerce
5. ICTs as interventions for social development: The study of MDGs and SDG
6. ICTs as interventions for social development, Public Sector Reforms
7. Market creation, expansion and inclusion through ICTs, Rural Market Creations; Financial Inclusions and Mobile Money
8. Knowledge economies, technology entrepreneurship and innovation
9. Digital labour and Development

Learning Outcomes

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

Text Book / References

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.
4. Heeks, R. 2002. i-Development not e-Development: Special Issue on ICTs and Development. Journal of International Development, 14(1): 1-11.
5. Heeks, R. 2009. The ICT4D 2.0 Manifesto: Where Next for ICTs and International Development? Manchester: Centre for Development Informatics, Working Paper No. 42 (online resource).

Course Code and Course Name	Spatial Data Infrastructure: Policy, Structure and Operation
Semester	Semester III
Course Type	Elective
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

Spatial data infrastructure is now widely recognized as an important aspect in the growing information society. It provides the tool for continents, countries, regions and local governments to better organize, plan and manage their natural, cultural and economic resources. The student will learn the SDI policy, Structure and Operation in India. Through this course, the student will also learn the application of GIS technologies.

Course Content

1. Introduction to Spatial Data Infrastructure: Background, History, Scope and Significance; Meta-data standard contents
2. Introduction to Geographical Information Services: Techniques, Process and Practices
3. GIS and its application in National Development
4. SDI in India: Policy, Organisation, Data, Technologies, Standards, Delivery Mechanisms, Financial and Human Resources
5. The Study of Institutions: NSDI, SDI, National Resource Information Systems (Dept. of Space), National Map Policy; Digital Cartographic Database (Survey of India), National Resources Data Management System (Dept of Science & Technology) and other initiatives through GSI, FSI, NATMO etc.
6. Governance issues of SDI in India; SDI in Socio-Economic Development of the country
7. Technology for geodata publishing using the Internet such as Geography Markup Language, Web Map Server, Web Feature Server.

Learning Outcomes

- Explain the theoretical concepts, policy and governance aspects of the term 'Spatial Data Infrastructures.
- Understand the geospatial meta-data standard contents and geodata clearing houses.
- Explore how spatial data infrastructure is organized in India and internationally, including discussion about geodata plan and policy.
- Learn about and gain experience in the technology for distributing geographical information using the Internet.

Text Book / References

1. Bishr, Y. (1998). Overcoming the Semantic and Other Barriers to GIS Interoperability, International Journal of Geographical Information Science, 12 (4): 299–314.
2. Budhathoki, N.R. and Z.N. Budić (2007). "Expanding Spatial Data Infrastructure Knowledge Base in Research and Theory," in Harlan Onsrud (Ed). Advancing Spatial Data Infrastructure Concepts. California: ESRI Press.
3. de Man, W.H.E. (2000). Institutionalisation of Geographic Information Technologies: Unifying Concept?, Cartography and Geographic Information Science, 27 (2): 139–152.
4. de Man, W.H.E. (2006). Understanding SDI: Complexity and Institutionalization, International Journal of Geographical Information Science, 20 (3): 329–343
5. DST (2005). National Map Policy. New Delhi: Department of Science and Technology, Government of India, at: http://dst.gov.in/, (accessed 13 July 2005).
6. Enemark, S. and I. Williamson (2004). Capacity Building in Land Administration: A Conceptual Approach, Survey Review, 39 (294): 639–650.
7. Feeney, M.E.F. (2003). "SDIs and Decision Support", in Ian Williamson, Abbas Rajabifard, and Mary-Ellen F. Feeney (Eds.). Developing Spatial Data Infrastructures: From Concept to Reality. Boca Raton: CRC Press, pp. 195– 210.
8. Georgiadou, Y. and R. Groot (2002). Policy Development and Capacity Building for Geo-Information Provision: A Global Goods Perspective, GIS@development: The monthly magazine on geographic information science, 6 (7): 33–40.
9. Georgiadou, Y., S.K. Puri and S. Sahay (2005). Towards a Potential Research Agenda to Guide the Implementation of Spatial Data Infrastructures: A Case Study from India, International Journal of Geographical Information Science, 19(10): 1113–1130.

Course Code and Course Name	Management Information System
Semester	Semester III
Course Type	Elective
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

The course is designed to help the students to understand management information system (MIS), their uses and management in any organization.

Course Content

1. Organisations and Information Systems
2. Concepts of Management Information Systems
3. Information Systems and Management Strategy
4. Electronic Commerce, Electronic Business, Electronic Governance
5. Managing Information Systems
6. Ethical and Social Issues and MIS
7. Information Technology Infrastructure and Choices
8. Networking and Telecommunication
9. Information Systems Security and Control
10. Information Systems Development and Project Management
11. Managing Data Resources
12. Business Process Integration and Enterprise Systems
13. Decision Support Systems
14. ICT for Development and E-Governance
15. The Society of the Internet
16. Open Source Software

Learning Outcomes
• Learn the concepts of management information system and their impact on business organizations. • Explain the technologies involved in management information systems, including hardware, software, networking and databases. • Understand the application of various sub-systems and organizing principles in the development of information systems. • Write a project report that explains the design and development of information systems using real life scenarios.
Text Book / References
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 the Information Age, McGraw Hill, 2005. 9th edition, 2013. 5. James O Brien, Management Information Systems – Managing Information Technology in the Ebusiness 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. 8. L. M. Prasad : Management Information Systems (Sultan Chand) Management Information Systems – Dr Sahil Raj – Pearson Publications 9. Management Information Systems – Girdhar Joshi – Oxford Publications 10. Management Information Systems – Hitesh Gupta – International Book House Ltd 11. Management Information Systems – M.Jaiswal & M.Mittal – Oxford Publications 12. MIS a Conceptual Framework by Davis and Olson 13. Rahul de, MIS in Business, Government and Society, Wiley India Pvt Ltd, 2012 14. Raplh Stair and George Reynolds, Information Systems, Cengage Learning, 10th Edition, 15. Raymond McLeod and Jr. George P. Schell, Management Information Systems, Pearson Education, 2007. 16. Robert Schultheis and Mary Summer, Management Information Systems – The Managers View, Tata McGraw Hill, 2008. **17.** Turban, McLean and Wetherbe, Information Technology for Management – Transforming Organizations in the Digital Economy, John Wiley, 6th Edition, 2008.

Course Code and Course Name	Digital Marketing
Semester	Semester III
Course Type	Elective Course
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-
Course Outline	
The Digital Marketing module enables learners to harness the power of Digital Marketing as a core driver of the marketing strategy for any organization. Understanding the principles of Digital Marketing able to distinguish how it differs from traditional marketing. The course objectives are as follows: • To examine timely concerns at the intersection of marketing and internet technology • To have idea about increase customer value through digital media	

Course Content

1. Unit-I Digital marketing complain planning: Role of digital marketing within the marketing mix, principles of digital marketing campaigns, supporting hardwire platforms available and the implications of technological advancements in digital marketing campaign, digital media channels and techniques: search marketing, email marketing, social media and viral marketing, online and display advertising.
2. Unit-II Understanding Digital Marketing Activities : Digital marketing communication mix, search engine optimization (SEO), marketing implications of banner Ads and mobile Ads, online public relation activities, affiliate sites and networks, Online social customer service.
3. Unit-III Monitoring Digital Marketing Activities : Role of marketing research in monitoring digital marketing, measuring digital influence, evaluating customer satisfaction and involvement in digital media, tracking studies, web analytics tools, monitoring visitor and content interactions
4. Unit-IV E-Marketing Strategy and Issues: Analysing 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.
5. Case Studies based on above curriculum

Learning Outcomes

This course is designed to make the students familiar with the basic fundamentals and concept of digital marketing. This paper shall prepare students to learn and acquire necessary digital marketing skills required for day to day organization application.

Text Book / References

1. Charlesworth, A. (2014). Digital marketing: A practical approach. Routledge.
2. Chaffey, D., & Ellis-Chadwick, F. (2019). Digital marketing. Pearson UK.
3. Frost, R. D., & Strauss, J. (2016). E-marketing. Routledge.
4. Laudon, K. C., & Traver, C. G. (2016). E-commerce: business, technology, society.
5. Ryan, D. (2016). Understanding digital marketing: marketing strategies for engaging the digital generation. Kogan Page Publishers.

Course Code and Course Name	Privacy in the Digital Age
Semester	Semester III
Course Type	Elective Course
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

Privacy is becoming ever more important in today's context due to the extensive digitization of various dimensions of our lives. Technological advancements have intensified our capacity to create, collect, disseminate, and analyse digital information. Digital businesses thrive on leveraging our personal information to track preferences, identify potential clients and provide better services. Governments collect and analyze personal information to improve service provision and in the name of national security. While personal information may well be utilized to improve customer/citizen services, increase revenues, and lower business costs, it can also be easily misused and lead to violations of privacy. Important legal, regulatory, and ethical issues have emerged, prompting the need for an urgent and consistent response by societies awash in digitized data. This course seeks to highlight some of these concerns and their implications for students of Information Technology. It will do so by providing an overview of the technology, economics, business, regulatory, and socio-political dimensions of personal information and privacy.

Course Content

1. A brief history of Privacy
2. Definition and Taxonomy of Privacy
   Individuals, Enterprises, Communities and Societies, Meta Data Privacy, Information Privacy
3. Technologies of Privacy
4. Economics of Privacy
5. Economics of Information Security
6. Privacy by design and privacy ethics
7. Societal dimensions of privacy design
8. Privacy regulatory regimes across geographies
9. Privacy in different domains
   Privacy in IoT/ Healthcare

Case Studies based on above curriculum

Learning Outcomes

- Understand the history and evolution of privacy
- Explain technological evolution in the area of private information collection, distribution and analysis
- Learn the day-to-day use cases of privacy violation of digital footprints of individuals
- Learn the economics and value of information and markets for information
- Understand regulatory and legal dimensions of privacy and the societal response to privacy
- Apply technical approaches to managing and protecting privacy

Text Book / References

1. Lepore, Jill. (2013). "The Prism. Privacy in an age of publicity." Annals of Surveillance. The New Yorker, June 24.
2. Samuel D. Warren, Louis D. Brandeis. 1890. "The Right to Privacy." Harvard Law Review, Vol. 4(5), pp. 193-220.
3. Daniel J. Solove, A Taxonomy of Privacy, 154 U. Pa. L. Rev. 477 (2006).
4. Gunes Acar, Christian Eubank, Steven Englehardt, Marc Juarez, Arvind Narayanan, and Claudia Diaz. 2014. The Web Never Forgets: Persistent Tracking Mechanisms in the Wild. In Proceedings of the 2014 ACM SIGSAC Conference on Computer and Communications Security (CCS '14).
5. Arvind Narayanan and Vitaly Shmatikov (2010) Myths and fallacies of "Personally Identifiable Information". Communications of the ACM 53, 6 (June 2010).
6. Jessica Su, Ansh Shukla, Sharad Goel, and Arvind Narayanan. (2017) De-anonymizing Web Browsing Data with Social Networks. In Proceedings of the 26th International Conference on World Wide Web (WWW '17).
7. Ashwin Machanavajjhala and Daniel Kifer (2015) Designing statistical privacy for your data. Communications of the ACM 58, 3 (February 2015).
8. Acquisti, A., John, L. K., & Loewenstein, G. (2013). What is privacy worth?. The Journal of Legal Studies, 42(2), 249-274.
9. Acquisti, A., Taylor, C., & Wagman, L. (2016). The economics of privacy. Journal of Economic Literature, 54(2), 442-92.
10. Anderson, R., & Moore, T. (2006). The economics of information security. Science, 314(5799), 610-613.
11. Arora, A., Krishnan, R., Nandkumar, A., Telang, R., & Yang, Y. (2004, May). Impact of vulnerability disclosure and patch availability-an empirical analysis. In Third Workshop on the Economics of Information Security (Vol. 24, pp. 1268-1287).
12. Madden, M., Gilman, M., Levy, K., & Marwick, A. E. (2017). "Privacy, poverty and big data: A matrix of vulnerabilities for poor Americans." Washington University Law Review, 95(1), 53–125.
13. Marwick, A. E., & boyd, d. (2018). "Understanding Privacy at the Margins – Introduction." Special Section on Privacy at the Margins, International Journal of Communication, 12.

14. Levy, K. & Barocos, S. (2018). "Refractive Surveillance: Monitoring Customers to Manage Workers." Special Section on Privacy at the Margins. International Journal of Communication, 12, 1166-1188.

Course Code and Course Name	Big Data and Public Policy
Semester	Semester III
Course Type	Elective Course
Credits	4
Course Branch	M.Sc. in Digital Society
Grading Scheme	Internal exam I (20 marks) + Internal exam II (20 marks) + Final exam (60 marks)
Pre-Requisites (where applicable, specify exact course names)	-

Course Outline

The objective of the course is to familiarize students with big data analysis as a tool for addressing substantive research questions. The course begins with a basic introduction to big data and discusses what the analysis of these data entails, as well as associated technical, conceptual and ethical challenges. Strength and limitations of big data research are discussed in depth using real-world examples. Students then engage in case study exercises in which small groups of students develop and present a big data concept for a specific real-world case. This includes practical exercises to familiarize students with the format of big data. It also provides a first hands-on experience in handling and analyzing large, complex data structures.

Course Content

1. Introduction – What is Big Data? Handling and Processing Big Data, Methodological Challenges and Problems, Epistemology of Big Data, Ethics of Big Data
2. The Big Data and Public Policy: Inter-relationship and Challenges, Case Studies, Data Protection Policy and Law, Open Data
3. Policy, Politics and Governance in Digital Era: Digital Government, Development of E-Governance, E-Democracy, Digital Citizenship, E-Parliament,, E-Rulemaking, Digital Nation State.
4. Case Study Analysis: The Analysis of CMIE, Census, NFHS, NSS, Employment Data and other Economic Data Sets like RBI Data, India Public Finance Statistics.
5. Use of GIS and Spatial Analysis for Public Policy

Learning Outcomes

- To enhance interdisciplinary understanding with Big-Data.
- To understand the use of Big-Data in policy making process.
- To recognize and appreciate the importance of Big-Data and their application in academic, industrial, social, economic and environmental context.

Text Book / References

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. Dutcher, Jenna. (2014). What is Big Data? UC Berkeley Data Science Blog.
5. Press, Gil. (2014). 12 Big Data Definitions: What's Yours? Forbes Blog.
6. Manovich, Lev. (2012). Trending: The Promises and the Challenges of Big Social Data.Debates in the Digital Humanities, edited by Matthew K. Gold.The University of Minnesota Press.
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8. Bollier, David (2010).The Promise and Peril of Big Data.The Aspen Institute Communications and Society Program.
9. Cate, Fred H. (2014). The Big Data Debate. Science 346(6211): 818-818.
10. Lazer, David, Ryan Kennedy, Gary King, and Alessandro Vespignani. (2014). The Parable of Google Flu: Traps in Big Data Analysis. Science 343(6176): 1203-1205.
11. Lazer, David. (2015). The Rise of the Social Algorithm. Science 348(6239): 1090-1091.
12. Ulfelder, Jay. (2015). The Myth of Comprehensive Data. Blog Post.