MASTER OF SCIENCE IN SOCIAL DATA SCIENCE AND POLICY (SODASP)

SYLLABUS

2025 Admission onwards

CURRICULUM

	Course Code	Course Title	LTP	Cr		Course Code	Course Title	LTP	Cr
	Semester I					**Semester II**			
	25SDS501	Introduction to Data & Society		4		25SDS511	Policy & Design Thinking		4
	25SDS502	Economics for Public Policy		4		25SDS512	Field Immersion for Inclusive Policy Making		3
	25SDS503	Programming for Data Science		4		25SDS513	Research Methods for Policy Studies II		4
	25SDS504	Research Methods for Policy Studies I		4		25SDS514	Foundations of AI & Data Science		4
	25AVP501	Mastery Over Mind		2			Specialization I		3
	25SDS505	Academic Writing & Communication		3			*Amrita Values Program	1 0 0	1
						22ADM501	Glimpses of Indian Culture		P/F
		Total		**21**			**Total**		**19**
	Course Code	**Course Title**	**LTP**	**Cr**		**Course Code**	**Course Title**	**LTP**	**Cr**
	Semester III					**Semester IV**			
	25SDS601	Behavioral Economics and Public Policy		4		25SDS699	Major Project/Dissertation		14
	25SDS602	Machine Learning & AI for Social Data Science		4			Specialization III		3
	25SDS603	Sustainable Community Development		3			Open Elective		3
		Specialization II		3					
	25SDS698	Internship		4					
		Open Elective		3					
		Total		**21**			**Total**		**20**
TOTAL-81									

Specializations

	Course Code	Course Title	LTP	Cr		Course Code	Course Title	LTP	Cr
	SPECIALIZATION: ECONOMIC POLICY					**SPECIALIZATION: HEALTH POLICY**			
	25SDS531	Foundations of Development Policy		3		25SDS551	Health Policy and Systems Research (HPSR)		3
	25SDS532	Intervention Design and Impact Evaluation		3		25SDS552	Health Economics		3
	25SDS533	Advanced Topics in Economic Modelling and Policy		3		25SDS553	Epidemiology and Biostatistics		3
	SPECIALIZATION: GENDER POLICY					**SPECIALIZATION: EDUCATION POLICY**			
	25SDS541	Gender and Development		3		25SDS561	Education for Sustainable Development (SWAYAM)		3
	25SDS542	Gender Policy and Legislations in India		3		OPEN ELECTIVES			
	25SDS543	Critical Masculinities and Gender Equality		3		25OEL641	Social Welfare Policy & Administration		3
						25OEL642	Science, Technology, & Society Interactions		3

**Amrita Value Programme			
22ADM502	Vedanta in day-to-day life	1-0-0	1
22AVP506	Message of Swami Vivekananda	1-0-0	1
22AVP508	Indian Arts and Literature	1-0-0	1
22AVP510	Appreciation of Kerala Mural Arts Forms	1-0-0	1
22AVP501	Message of Śrī Mātā Amritanandamayi Devi	1-0-0	1
22AVP502	Insights from the Ramayana	1-0-0	1
22AVP503	Insights from the Mahabharata	1-0-0	1
22AVP504	Insights from the Upanishads	1-0-0	1
22AVP505	Insights from Bhagavad Gita	1-0-0	1
22AVP512	Ancient Indian Science and Technology	1-0-0	1
22AVP507	Great Spiritual Teachers of India	1-0-0	1
22AVP509	Yoga and Meditation 1	1-0-0	1

SYLLABUS

PROGRAM & PROGRAM SPECIFIC OUTCOMES (POs & PSOs)

Program Outcomes (POs)	
PO1	Scientific Knowledge and Training: Gain and apply knowledge of basic and applied scientific and analytical fundamentals within a social lens, leading to a deeper understanding of Data Sciences and Policy.
PO2	Data Science & Policy for society: Apply reasoning through the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional scientific practice.
PO3	Sustainability and society: Understand the impact of data science and policy within societal and environmental contexts, and demonstrate the knowledge, and need for sustainable development.
PO4	Ethics and Values: Apply ethical principles and commit to professional ethics and responsibilities and norms of scientific practice.
PO5	Numerical and Data Analysis: Numerical analysis, interpretation of data, and organised representation of the information to provide valid conclusions.
PO6	Scientific Communication: Communicate scientific content effectively with peers, educators, science community, and with society at large.
PO7	Individual and teamwork: Think critically and work independently, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO8	Life-long learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of scientific and technological changes for up-to-date research and teaching methods.
Program Specific Outcomes (PSOs)	
PSO1	Acquire conceptual understanding of fundamental principles of Data Science which enables them to gain insight into the potential applications of the field.
PSO2	Acquire conceptual understanding of fundamental principles of Indian and Global Policy which enables them to gain insight into the potential applications of the field.
PSO3	Explore advanced areas in Data Science and provide them with the necessary subject knowledge to pursue a career in IT industries, Government, NGO sector, research institutes as well as academia.
PSO4	Provide knowledge about the state-of-the-art techniques, methodologies, best practices and design and develop Data Science based solutions to complex problems related to society and sustainable development.
PSO5	Establish the culture of independent learning, innovative research and productive teamwork.

SEMESTER 1

Introduction to Data and Society

Semester: 1	**Hours of Instruction/ Week: 4**
Course Code: 25SDS501	**Number of Credits: 4**
	Total hrs: 60

Prerequisite: NA

Summary: This course introduces students to the emerging field of sociology of data science, exploring how digital and computational methods transform social inquiry. It examines the sociotechnical construction of data and the role of datafication in shaping knowledge and wisdom, as well as the implications of data-driven practices for power, inequality, and social change. The course combines classical sociological theories with contemporary concerns in the digital divide, data governance, and ethics. Through case studies and hands-on exercises, students will develop a critical and applied understanding of how data is embedded in social processes and institutions, and how it can be collected, collated and interpreted.

Course Objectives:

1. To examine the theoretical underpinnings of data science as a sociotechnical system shaped by human, institutional, and technological factors
2. To gain a basic understanding of socially relevant data, including its meanings and applications
3. To apply mixed-methods approaches, integrating sociological insight into data-driven research and design
4. To develop ethical and contextual considerations when working with data in social contexts, through case studies on governance and development

Course Outcomes:

CO1: Students can demonstrate knowledge of foundational sociological concepts and their relevance to data-driven societies

CO2: Students can analyse data through critical lenses, to assess its ethical and political implications

CO3: Students can understand contemporary issues in social science, addressing theoretical and practical challenges.

CO4: Students can apply sociological perspectives to assess the ethical and political implications of algorithmic systems

CO5: Students can evaluate real-world applications of data, using sociological theories and frameworks

Skills:

- Students will develop sociologically informed critical thinking about digital technologies and their impacts, embedded in algorithms, datasets, and digital infrastructure
- Students will translate sociological insights into responsible data practices and design recommendations working with data in diverse contexts

Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	**X**	-	-	-	-	-	-	-
CO2	-	-	-	X	-	-	-	-
CO3	-	**X**	-	-	-	-	-	-
CO4	X	-	-	-	-	-	-	-
CO5	**X**	-	-	-	-	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	X	-	-	-	-
CO2	X	-	-	-	-
CO3	X	-	-	-	-
CO4	-	X	-	-	-
CO5	-	-	-	X	-

Syllabus:

- Unit I – **Emergence of social data science**: Key characteristics, concepts and perspectives; social systems and digital infrastructure; introduction to sociotechnical systems
- Unit II – **Social Construction of Data:** Data and Society interactions; Datafication and Sociological perspectives; System and Systems thinking approach; Social Network theory and role of data
- Unit III – **Data, Power, and Inequality:** Digital labour, automation and platform governance; Bias in datasets and algorithmic discrimination; Data justice and feminist critiques of data science
- Unit IV – **Mixed Methods in Social Data Science:** Qualitative and Quantitative approaches; Participatory and inclusive data practices; sectoral and thematic Case studies related to governance, development and inclusion
- Unit V – **Responsible and Ethical Data Science**: Ethical frameworks: fairness, accountability, transparency; Regulatory landscapes: privacy, consent, data sovereignty; Data ethics labs and ethical impact assessments

Core Textbooks and Papers

- Schäfer, M. T., & van Es, K. (Eds.). (2017). The datafied society: Studying culture through data. Amsterdam University Press.
- Kitchin, R. (2023). Data and society: A critical introduction. Sage Publications.
- Stone, D. (2020). Counting: How we use numbers to decide what matters. Liveright Publishing.
- Easley, D., & Kleinberg, J. (2010). Networks, crowds, and markets: Reasoning about a highly connected world. Cambridge University Press
- Meadows, D. H. (2008). Thinking in systems: A primer. Chelsea Green Publishing.

Reference Books (Additional):

- Haraway, D. J. (1991). A cyborg manifesto: Science, technology, and socialist-feminism in the late twentieth century. In D. J. Haraway, Simians, cyborgs, and women: The reinvention of nature (pp. 149–181). Routledge.
- Latour, B. (2005). Reassembling the Social: An Introduction to Actor-Network-Theory. Oxford University Press.
- Amoore, L. (2020). Cloud Ethics: Algorithms and the Attributes of Ourselves and Others. Duke University Press.
- Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	30	
*Continuous Assessment (CA)	30	
End Semester		40

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Economics for Public Policy

Semester: 1	**Hours of Instruction/ Week: 4**
Course Code: 25SDS502	**Number of Credits: 4**
	Total hrs: 60

Prerequisite: NA

Summary: This course teaches students to apply economic theory to current social and economic problems and formulate relevant recommendations for public policy. It emphasizes the understanding of analytical tools and models that can be applied in a wide variety of contexts. The course covers key topics in micro- and macroeconomics and explores how governments can address market failure, smooth out the business cycle and foster economic growth in the long-run. The students will learn to apply relevant tools and frameworks at each stage of economic analysis for public policy, including data collection, model estimation, policy design and impact analysis. The course prepares students to be able to critically evaluate the economic policies promulgated by governments and other institutions, form their own judgments and design public policy options in an evolving global context.

Course Objectives:

1. Understand relevant economic theories and apply them in them in a policy formulation context.
2. Understand when the government should intervene in the economy and what tools and policy options are applicable in different situations.
3. Analyze strengths and weaknesses of policy options in addressing the range of problems the government faces.
4. Explain and estimate the effects of government interventions on economic and social outcomes in the short- and long-run.
5. Be familiar with the process of policy-making and the tools available to policy-makers.

Course Outcomes:

CO1: Apply economic concepts in a rigorous way to formulate public policy recommendations and communicate them to a wider audience.

CO2: Evaluate the relevance of alternative economic theories for analyzing policy issues over a range of subject areas, such as taxation, government purchases, healthcare and education, science and technology etc.

CO3: Present a structured argument and economic rationale for government intervention in a given policy area, addressing relevant financial challenges of the public policy option.

CO4: Apply methods of cost-benefit and cost effectiveness analysis to identify the policy option with the greatest social net benefit, and therefore the greatest efficiency.

CO5: Assess trade-offs and synergies between different public policy instruments to achieve short-run and long-run goals of economic development.

Skills:

- Critical thinking: students will develop critical thinking skills to assess the strengths, weaknesses, and unintended consequences of various policy interventions.
- Communication: students will enhance their ability to communicate complex economic concepts and policy recommendations clearly and persuasively to policymakers, stakeholders, and the general public.

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	-	-	-	-	-	X	-	-
CO2	X	-	-	-	-	-	-	-
CO3	-	**X**	-	-	-	-	-	-
CO4	-	-	-	-	X	-	-	-
CO5	**X**	-	-	-	-	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	X	-	-	-	-
CO2	-	X	-	-	-
CO3	-	X	-	-	-
CO4	-	-	-	X	-
CO5	-	-	-	X	-

Syllabus:

- Unit I - **Introduction to economics for public policy**. Foundations and models. Supply and demand. Price-setting. Competition and welfare. Market structures. Opportunity cost, scarcity and choice. Efficiency and equity. Market failure. Externalities and public goods. Public policy to address market failure. Taxation and income distribution.
- Unit II - **Models of rational choice and the optimization paradigm**. Consumer theory: preferences, utility, budget constraints, and utility maximization. Producer theory: production functions, cost minimization, and profit maximization. Labor-leisure trade-offs and household decision-making. Market demand and supply aggregation. Applications to policy-relevant microeconomic behaviour.
- Unit III – **Managing the National Economy in the Short-Run** – Foundations of macroeconomic analysis: models, frameworks and data. Measuring growth, unemployment and inflation. Business cycle theory. Monetary and fiscal policy. Money, banks and the role of the Central Bank. Monetary Policy.
- Unit IV – **Long-Run Economic Growth** – Determinants of economic growth in the long-run. New Keynesian and neoclassical models of economic growth. Endogenous growth models and growth policies.
- Unit V – **International Economy** – Foreign exchange market and exchange rates. International financial system. Trade policy. Tariffs and non-tariff barriers.

Textbooks and Papers:

Hubbard, R. G., & O'Brien, A. P. (2020). Economics. 8th edition, Pearson Education.

Mankiw, N. G. (2022). Macroeconomics. 11th edition, Macmillan Learning.

Varian, H. R. (2016). Intermediate Microeconomics with Calculus: A Modern Approach: Ninth International Student Edition. WW Norton & Company.

Reference Books:

Bellinger, W. K. (2015). The economic analysis of public policy. Routledge.

Coyle, D. (2020). Markets, state, and people: Economics for public policy. Princeton University Press.

Dunn, W. N. (2015). Public policy analysis. routledge.

Hausman, D., McPherson, M., & Satz, D. (2016). Economic analysis, moral philosophy, and public policy. Cambridge University Press.

Mankiw, N. G., & Taylor, M. P. (2020). Economics. Cengage Learning EMEA.

Moss, D. A. (2014). A concise guide to macroeconomics: what managers, executives, and students need to know. Harvard Business Press.

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	30	
*Continuous Assessment (CA)	30	
End Semester		40

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Programming for Data Science

Semester: 1	**Hours of Instruction/ Week: 4**
Course Code: 25SDS503	**Number of Credits: 4**
	Total hrs: 60

Course Description:

Programming for Social Data Science is a gentle introduction to programming concepts that are paramount to data science in general, and to social data science in particular. Students learn how to read and understand existing code, as well as to write and debug their own code. Basic computing algorithms are introduced, implemented, and their computational cost is being assessed. Essential programming concepts like object-oriented programming, and primitive and compound data types are also introduced. Students learn the R and Python programming language, which have grown to become the most popular among social scientists for numerous good reasons.

The focus of the course is on analyzing data and generating reproducible research through the use of the programming language R and version control software. Topics include coding concepts (e.g., data structures, control structures, functions, etc.), data visualization, data wrangling and cleaning, exploratory data analysis, etc. Major emphasis is placed on a pragmatic understanding of core principles of programming and packaged implementations of methods.

Course Objectives:

1. Understanding about the approaches to solving Social Problems with Data
2. Understand the application of programming in Social Data Science
3. Define and understand variables and use sets, loops and conditional statements
4. Implement and use functions and operate on files to read

Course Outcomes:

CO1: Develop an understanding of fundamental programming constructs such as data types, variables, operators, conditional statements, loops, and user-defined functions using a high-level programming language (Python).
CO2: Build practical skills in file handling techniques for reading, writing, and managing structured data formats (e.g., CSV, JSON), and working with tabular data using libraries like pandas and numpy.
CO3: Apply data wrangling operations such as filtering, grouping, summarizing, and cleaning to prepare real-world datasets for exploratory analysis and policy research.
CO4: Create clear, ethical, and visually effective data visualizations using libraries such as matplotlib or ggplot, including static and interactive visual representations of numerical and geographic data.
CO5: Interpret basic descriptive statistics and visual summaries to communicate insights drawn from raw data, particularly in social and policy contexts.

Skills:

- Structured thinking: students will learn to structure their thinking to approach social problems from a data science perspective, and take organized steps towards a conclusion.
- Scientific communication: students will enhance their ability for verbal and written communication of statistical output as well as its interpretation and broader implications.

Program outcome PO - Course Outcomes CO Mapping

	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO8
CO1	**X**	-	-	-	-	-	-	-
CO2	-	X	-	-	-	-	-	-
CO3	-	-	-	-	X	-	-	-
CO4	-	-	-	-	-	X	-	-
CO5	-	-	X	-	-	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	X	-	-	-	-
CO2	-	X	-	-	-
CO3	-	-	-	X	-
CO4	-	-	-	-	X

Syllabus:

- Unit I—Elementary Programming—Data Types and Typecasting. Operators (comparison, arithmetic, and logical), variables, constants. Conditional statements. Loops, conditions, and control statements. [8 hrs]
- Unit II– Data Structures & functions: Data structures (e.g., lists, tuples, sets, and dictionaries). Functions. [7 hrs]
- Unit III – File Handling – Loading CSV, JSON data; Read and Write data, Handling headers, Datatypes, Pandas, Numpy, Dataframes [10 hrs]
- Unit IV—Data wrangling and descriptive analysis—Filter, select, apply, order, sort. Data manipulations—grouping and summarizing data. Tidying datasets (e.g., data cleaning techniques and handling missing data). [10 hrs]
- Unit V – Data visualization – Ethics considerations. using ggplot or Matplotlib. Graphs, plots, configurations. Histograms, bar plots, scatterplots, and interactive visualizations. Visualizing geographical data. Visual integrity (Tufte's principles), labeling and clarity [15 hrs]

Textbooks and Papers:

Wickham, H., Çetinkaya-Rundel, M., & Grolemund, G. (2023). R for Data science. 2nd edition. O'Reilly Media. https://r4ds.hadley.nz/

Nelli, F. (2023). Python Data Analytics. 3rd edition. Apress Berkeley, CA.

Reference Books:

1. Introduction to R for Social Scientists - A Tidy Programming Approach https://www.routledge.com/Introduction-to-R-for-Social-Scientists-A-Tidy-Programming-Approach/Kennedy-Waggoner/p/book/9780367460723
2. Python for Social Scientists https://gawron.sdsu.edu/python_for_ss/
3. Core Python Programming https://www.udemy.com/course/core-python-3-and-oop-course-for-absolute-beginners/

Evaluation Pattern

Assessment	Internal	External

Programming assignments	25	
Student presentations & Class participation	20	
Attendance	5	
End Semester		50

Research Methods for Policy Studies – I

Semester: 1	**Hours of Instruction/ Week: 4**
Course Code: 25SDS504	**Number of Credits: 4**
	Total hrs: 60

Prerequisite: NA

Summary: This course introduces students to the key issues of the research process in social sciences, including measurement, reliability and validity, internal research design validity, and generalizability. This course is focused on quantitative (as well as the basics of qualitative) research methods and includes a brief introduction to the stages of research design in the policy context, followed by the exploratory data analysis, basics of probability theory, statistical inference, as well as a simple and multiple linear regression as part of a broader strategy of causal analysis. The course equips students with the skills and knowledge necessary to prepare a policy-relevant research project using rigorous empirical research methods.

Course Objectives:

1. Develop skills and methods to engage in independent empirical research, including the ability to design a study, collect data, and analyze materials and formulate policy recommendations.
2. Learn the key concepts of social science research and understand how to execute different research approaches in practice.
3. Become familiar with how to read, interpret, write, and present quantitative research.
4. Better understand the limits of formal, numerical, quantitative, or analytical reasoning and discuss the potential for the abuse of numerical arguments.
5. Apply different approaches to estimating relationships between measured constructs, including simple and multiple linear models, non-linear models, and correctly interpret significance tests for estimated coefficients.

Course Outcomes:

CO1: Students will develop the ability to critically evaluate quantitative information, identify appropriate statistical techniques for various research questions, and make informed decisions and policy recommendations based on quantitative data analysis.

CO2: Students will demonstrate proficiency in using statistical methods to analyze data, including descriptive statistics, inferential statistics, and multivariate analysis techniques.

CO3: Students will gain a solid understanding of probability theory, including concepts such as probability distributions, random variables, and probability models, to analyze uncertain outcomes and make probabilistic predictions.

CO4: Students will learn regression analysis techniques and develop the ability to build, interpret, and evaluate regression models to analyze relationships between variables and make predictions.

CO5: Students will understand the basics of qualitative data collection techniques, such as interviews, focus groups, participant observation, and understand the strengths and limitations of each method.

Skills:

- Critical thinking and interpretation of results: students will develop critical thinking skills to evaluate the validity and reliability of quantitative research findings, interpret statistical results accurately, and communicate findings effectively to diverse audiences.
- Problem-solving and adaptability: students will develop strong problem-solving skills and adaptability by confronting and addressing challenges inherent in quantitative and qualitative research.

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	-	X	-	-	-	-	-	-
CO2	X	-	-	-	-	-	-	-
CO3	-		-	-	X	-	-	-
CO4	-	-	-	-	X	-	-	-
CO5	X	-	-	-	-	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	X	-	-	-	-
CO2	-	-	-	X	-
CO3	X	-	-	-	-
CO4	X	-	-	-	-
CO5	-	-	-	X	-

Syllabus:

- Unit I – **Introduction to policy and research design** – Elements of research design. Selection of a research approach. Theories, research questions and hypotheses. Measurement, validity, and reliability. Research ethics.

- Unit II – **Foundations of qualitative research** – Data collection, organization, and representation. Interviews and focus groups. Conducting observations. Survey research and questionnaire design. Practices of interpretation. Writing as interpretation.

- Unit III – **Foundations of exploratory data analysis**. Descriptive statistics. Frequency distributions. Mean, variance, standard deviation, skewness, and kurtosis. Measures of position. Correlation coefficient. Visualizing relationships between variables.

- Unit IV – **Statistical inference**. Probability useful for statistics. A survey of probability concepts. Random variables and functions of random variables. Discrete and continuous probability distributions. Sampling methods and the Central Limit Theorem. Estimation and confidence intervals. Choosing an appropriate sample size. Hypothesis testing.

- Unit V – **Regression analysis.** Simple linear regression. Linear model assumptions. Properties of the least squares estimator. Gauss-Markov Theorem. Testing and confidence intervals. Multiple linear regression. Inferences in multiple linear regression. Omitted variable bias. Multicollinearity. Heteroskedasticity. Dummy variables. Interaction Terms. Polynomials and logarithms. Advanced regression topics. Robust regression. Semi-parametric and non-parametric regression. Nonlinear regression: logit and probit models.

Textbooks and Papers:

Gujarati, D. N. (2021). Essentials of econometrics. Sage Publications.

Wooldridge, J. (2008) Introductory Econometrics. New York: South-Western. 4th edition.

Creswell, John W. (2002) Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. 2nd ed. Thousand Oaks, CA: Sage.

Reference Books:

Singleton, Royce A., and Bruce C. Straits (2004). Approaches to Social Research. 4th ed. New York, NY: Oxford University Press.

Freedman, D., Pisani, R., & Purves, R. (1998). Statistics. 4rd Edition. New York: Norton.

Andrew, Gelman and Jennifer Hill (2006). Data Analysis Using Regression and Multilevel/Hierarchical Models. Cambridge University Press.

Gill, Jeff. (2006) Essential Mathematics for Political and Social Research. 1st Edition. 2nd printing. New York: Cambridge University Press.

Simon, Carl and Blume, Lawrence (1994). Mathematics for Economists. New York: Norton.

Cleveland, William S. (1993) Visualizing Data. Summit, NJ: Hobart Press.

Tufte, Edward (2001). The Visual Display of Quantitative Information, 2nd Edition. Cheshire, CN: Graphics Press.

Weiss, Robert S. (1995). Learning from Strangers: The Art and Method of Qualitative Interview Studies. New York, NY: Free Press, 1995..

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	30	
*Continuous Assessment (CA)	30	
End Semester		40

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Mastery Over Mind (MAOM)

Semester: 1	**Hours of Instruction/ Week:**
Course Code: 25AVP501	**Number of Credits: 2**
	Total hrs: 30

Prerequisite: NA

Summary: Master Over the Mind (MAOM) is an Amrita initiative to implement schemes and organize university-wide programs to enhance health and wellbeing of all faculty, staff, and students (UN SDG -3). This program as part of our efforts for sustainable stress reduction gives an introduction to immediate and long-term benefits and equips every attendee to manage stressful emotions and anxiety facilitating inner peace and harmony.

With a meditation technique offered by Amrita Chancellor and world-renowned humanitarian and spiritual leader, Sri Mata Amritanandamayi Devi (Amma), this course has been planned to be offered to all students of all campuses of AMRITA, starting off with all first years, wherein one hour per week is completely dedicated for guided practical meditation session and one hour on the theory aspects of MAOM. The theory section comprises lecture hours within a structured syllabus and will include invited guest lecture series from eminent personalities from diverse fields of excellence. This course will enhance the understanding of experiential learning based on the university's mission: "Education for Life along with Education for Living", and is aimed to allow learners to realize and rediscover the infinite potential of one's true Being and the fulfillment of life's goals.

Course Objectives:

1. To be able to describe what meditation is and to understand its health benefits (CO1)
2. To understand the causes of stress and how meditation improves well-being (CO2)
3. To understand the science of meditation. (CO3)
4. To learn and practice MA OM meditation in daily life. (CO4)
5. To understand the application of meditation to improve communication and relationships. (CO5)
6. To be able to understand the power of meditation in compassion-driven action. (CO6)

Course Outcomes:

CO1: To be able to describe what meditation is and to understand its health benefits (CO1)

CO2: To understand the causes of stress and how meditation improves well-being (CO2)

CO3: To understand the science of meditation. (CO3)

CO4: To learn and practice MA OM meditation in daily life. (CO4)

CO5: To understand the application of meditation to improve communication and relationships. (CO5)

CO6: To be able to understand the power of meditation in compassion-driven action. (CO6)

Skills:

- Control over mind and emotions

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	-	-	-	-	-	-	X	X
CO2	-	-	-	-	-	-	X	X
CO3	-	-	-	-	-	-	X	X
CO4	-	-	-	-	-	-	X	X

CO5	-	-	-	-	-	-	X	X
CO6	-	-	-	-	-	-	X	X

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	-	-	X
CO2	-	-	-	-	X
CO3	-	-	-	-	X
CO4	-	-	-	-	X
CO5	-	-	-	-	X
CO6	-	-	-	-	X

Syllabus:

- Unit I – A: Importance of meditation. How does meditation help to overcome obstacles in life. B: Understand how meditation works. Understand how meditation helps in improving physical and mental health. Understand how meditation helps in the development of personality
- Unit II – Causes of Stress and How Meditation Improves Well-being: A: Learn how to prepare for meditation. Understand the aids that can help in effectively practicing meditation. Understand the role of sleep, physical activity, and a balanced diet in supporting meditation. B: Causes of Stress. The problem of not being relaxed. Effects of stress on health. How meditation helps to relieve stress. Basics of stress management at home and the workplace.
- Unit III – The Science of Meditation: A: A preliminary understanding of the Science of meditation. What can modern science tell us about this tradition-based method? B: How meditation helps humanity according to what we know from scientific research
- Unit IV – Improving Communication and Relationships: How meditation and mindfulness influence interpersonal communication. The role of meditation in improving relationship quality in the family, at the university and in the workplace.
- Unit V – Meditation and Compassion-driven Action: Understand how meditation can help to motivate compassion-driven action.
- Unit VI – Practicing MA OM Meditation in Daily Life: Guided Meditation Sessions following scripts provided (Level One to Level Five) during meditation sessions

Textbooks and Papers:

- Allen, Cynthia (2020) The Potential Health Benefits of Meditation
- Sharma, Hari (2022) Meditation: Process and Effects
- Mayo Clinic Staff (2022, April 29). Meditation: A Simple, Fast Way to Reduce Stress.
- Seppala E (2022, June 30th Unexpected Ways Meditation Improves Relationships a Lot. Psychology Today
- Schindler, S., & Friese, M. (2022). The relation of mindfulness and prosocial behavior: What do we (not) know?. Current Opinion in Psychology, 44, 151-156.
- Amritam Gamaya (2022). Mata Amritanandamayi Mission Trust.

Evaluation Pattern:

Assessment	Internal	External
*Continuous Assessment (CA): Reflective journal, Group activities, Class participation	80	
End Semester		20

Academic Writing & Communication

Semester: 1	**Hours of Instruction/ Week: 3**
Course Code: 25SDS505	**Number of Credits:3**
	Total hrs: 45

Prerequisite: NA

Summary: This course focuses on two elements. In the Writing component, the course covers the various stages of composition of an academic piece, including close reading of sources, summary, citation and reference, identifying rhetorical aspects in a text or flaws in reasoning, developing an argument, finding and using textual evidence, organising ideas effectively, compiling and referencing bibliographic material, avoiding plagiarism, and finally, strategies for revision. In the Communication component, the course focuses on covers the many facets of delivering effective presentations, such as organization and structure, modes of delivery, effective linking, choice of terminology, and interaction with an audience.

Course Objectives:

1. To apply and compare knowledge and understanding of at least two themes within Social Data Science.
2. To write a nuanced and critical thesis statement or problem question, and to be able to answer this question in the body of the essay, using logical structure and clear argumentation.
3. To learn careful reading techniques, develop the skill to analyse and summarize the main argument of a text in a critical and nuanced manner.
4. To conduct library research, gather and assess academic sources, and acknowledge academic work by others by referencing sources in accordance with recognised academic citation protocol.
5. To deliver a structured and coherent presentation about an academic research topic and engage and interact with their audience effectively.
6. To learn to give meaningful peer-feedback and offer constructive criticism

Course Outcomes:

CO1: Students will be able to apply and compare knowledge and understanding of at least two themes within Social Data Science.

CO2: Students will be able to write a nuanced and critical thesis statement or problem question, and can answer this question in the body of their essay, using a logical structure and clear argumentation.

CO3: Students will learn careful reading techniques, learn to analyse and summarize the main argument of a text in a critical and nuanced manner, and gain an understanding the current literature on social data science.

CO4: Students will get an understanding of the research area in social science that can leverage data sciences.

CO5: Students will have an understanding of the process pipeline from data collation to modelling and forecasting through the careful reading of literature on social data science.

Skills:

- Structured Writing: students will learn assess writings about social problems from a data science perspective and write themselves about these topics.
- Scientific Communication: students will enhance their ability for verbal communication about social data science issues

Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2		PO3	PO4	PO5	PO6	PO7	PO8
CO1	**X**	**-**		**-**	**-**	**-**	-	-	-
CO2	**-**	**-**		**X**	**-**	**X-**	-	-	-
CO3	**-**	**X**		**-**	**-**	**-**	-	-	-
CO4	**-**	**-**		**-**	**-**	**-**	-	-	-
CO5	**X**	**-**		**-**	**-**	**-**	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	**X**	**-**	**-**	**-**	**-**
CO2	**-**	**X-**	**-**	**-**	**-**
CO3	**-**	**-**	**X-**	**-**	**-**
CO4	**-**	**-**	**-**	**-**	**X-**
CO5	-	-	-	-	-

Syllabus:

- Unit 1: Online Library Tutorial. 12 hours
- Unit 2: Critical reflection of introductory article, including all relevant references in academic style (Chicago Manual of Style for example) format. 12 hours
- Unit 3: Outline of arguments for essay, including all relevant references in in academic style format. 12 hours
- Unit 4: Final Essay. 12 hours
- Unit 5: Final Presentation. 12 hours

Textbooks and Papers:

- Gopen, G. D., & Swan, J. A. (1990). The science of scientific writing. *American scientist*, 78(6), 550-558.
- Katz, M. J. (2009). *From research to manuscript: A guide to scientific writing*. Springer Science & Business Media.
- Peat, J., Elliott, E., Baur, L., & Keena, V. (2013). *Scientific writing: easy when you know how*. John Wiley & Sons.
- Guilford, W. H. (2001). Teaching peer review and the process of scientific writing. *Advances in physiology education*, 25(3), 167-175.

Evaluation Pattern

Assessment	Internal	External
Final Presentation (Unit 5)	20% each	
Units	15% each Unit 1-3	
End Semester (Final Essay, Unit 4)		30%
Attendance	5%	

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

SEMESTER 2

Field Immersion for Inclusive Policy Making

Semester: 2	**Hours of Instruction/ Week:**
Course Code: 25SDS512	**Number of Credits: 3**
	Total hrs: 45

Prerequisite: NA

Summary: Field Immersion for Inclusive Policy Making is a field-based experiential learning course designed to help students understand the lived realities of marginalized communities and apply participatory approaches to inform public policy. Conducted in rural or tribal settings, the course enables students to engage directly with community members, local institutions, and governance structures. Using tools such as Participatory Rural Appraisal (PRA), Rapid Rural Appraisal (RRA), and social mapping, students identify community needs, co-design interventions, and gather context-specific data. The course emphasizes ethical engagement, inclusive planning, and the integration of qualitative and mixed-methods data collection within a social data science framework. Through critical reflection, collaborative problem-solving, and stakeholder interaction, students develop field-based insights that are translated into structured reports and policy briefs. This immersive experience fosters leadership, empathy, and practical skills for evidence-based, people-centered policymaking, making it a foundational component of the MSc Social Data Science and Policy programme.

Course Objectives:

1. To introduce the concepts and ethics of immersive fieldwork and explore its relevance in understanding local governance, community structures, and public policy formulation.
2. To enable students to engage with rural and tribal communities through participatory methods such as PRA, RRA, and social mapping for co-creating knowledge.
3. To develop students' competencies in planning and executing field-based interventions, including needs assessments, community awareness activities, and stakeholder consultations.
4. To build practical skills in collecting, organizing, and interpreting qualitative and mixed-methods data relevant to social development and policy planning.
5. To enhance students' abilities to reflect critically on field experiences and translate community insights into evidence-based reports, action proposals, or policy briefs.

Course Outcomes:

CO1: Demonstrate an understanding of immersive field engagement and the socio-cultural dynamics of rural and tribal communities.
CO2: Apply participatory tools and techniques such as PRA, RRA, and stakeholder analysis to co-design interventions with communities.
CO3: Plan and implement need-based community programmes and activities using field-based evidence and collaborative approaches.
CO4: Collect, document, and analyze qualitative and mixed-methods data to inform policy-relevant insights.
CO5: Develop and present structured field reports and policy briefs that translate community experiences into actionable recommendations for public policy.

Skills Developed:

- Field data collection and community engagement
- Participatory rural appraisal (PRA) and social mapping
- Needs assessment and baseline surveys
- Stakeholder analysis and report writing
- Policy framing from ground-level evidence

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	-	X	-	-	-	-	-	-
CO2	X	-	-	-	-	-	-	-
CO3	-	-	X	-	-	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	-	X	-
CO2	-	-	-	-	X
CO3	-	X	-	-	-
CO4	-	-	X	-	-
CO5	-	x	-	-	X

Syllabus:

Unit I: Foundations of Field Immersion and Community Engagement (9 hrs)

- Introduction to field immersion: objectives, ethical considerations, and guiding principles
- Understanding the role of fieldwork in public policy formulation
- Overview of participatory and community-based research approaches
- Role of social data science in rural and tribal contexts

Unit II: Community Familiarization and Site Planning (9 hrs)

- Site selection and logistics in consultation with faculty
- Rapport building with communities and identifying key stakeholders
- Understanding community systems, institutions, and governance
- Framing objectives and customizing field immersion plans

Unit III: Participatory Planning and Intervention Design (12 hrs)

- Participatory tools: PRA and RRA methods (e.g., transect walks, social mapping, seasonal calendars)
- Identifying community needs and co-creating interventions
- Designing programmes with clear objectives, budgets, and stakeholder engagement strategies
- Drafting action plans and planning logistics for execution

Unit IV: Field Implementation and Data Collection (12 hrs)

- Conducting field-based surveys, interviews, and FGDs
- Implementing awareness drives, street plays, health and education initiatives
- Recording observations: field diaries, digital mapping, photography, community logs
- Ethical issues in data collection and working with vulnerable groups

Unit V: Analysis, Reporting, and Policy Recommendations (12 hrs)

- Structured reflection on field experiences and self-assessment
- Drafting analytical field reports and use of data in community profiles
- Developing a community action proposal or policy memo
- Final presentation and peer-to-peer knowledge exchange

Textbooks and Papers:

- Chambers, R. (1997). *Whose Reality Counts? Putting the First Last*. ITDG Publishing
- Mukherjee, N. (2002). *Participatory Rural Appraisal: Methodology and Applications*. Concept
- UNICEF (2019). *Ethical Research Involving Children Toolkit*

- Jerven, M. (2013). *Poor Numbers: How We Are Misled by African Development Statistics*. Cornell University Press
- Narayan, D. (2000). *Voices of the Poor: Crying Out for Change*. World Bank
- Bamberger, M., Rao, V., & Woolcock, M. (2010). *Using Mixed Methods in Monitoring and Evaluation*. World Bank

Evaluation Pattern:

Assessment	Internal	External
*Continuous Assessment (CA)	50	
Final Report and Policy Memo		50

*CA - Field diary reviews, presentations, stakeholder interaction reflections, and participation.

Policy & Design Thinking

Semester: 2	**Hours of Instruction/ Week: 3**
Course Code: 25SDS511	**Number of Credits: 4**
	Total hrs: 45

Prerequisite: NA

Summary: This course introduces students to the principles of design thinking and their application in the field of public policy, incorporating foundational concepts of public policy making, stakeholder engagement, and problem-solving in governance. Emphasis is placed on co-production and user-centered approaches to public policy design. It equips students with analytical and creative tools to formulate evidence-informed, citizen-responsive, and context-sensitive policies in complex multi-stakeholder environments. The course also explores the fundamentals of public policy, its definition, stages, actors, and types, to ground students' efforts in policy design and governance frameworks.

Course Objectives:

1. To gain a basic understanding of the principles and concepts of co-production and design thinking in the context of public policy.
2. To develop a critical understanding of how to apply design thinking methodologies to policy challenges.
3. To understand how to evaluate the effectiveness of design thinking in addressing complex policy issues.
4. To gain knowledge and tools to collaborate effectively in interdisciplinary teams to co-create innovative policy solutions.
5. To be able to communicate policy ideas and proposals effectively using various forms of media.

Course Outcomes:

CO1: Develop a mindset necessary for effective design thinking, such as divergent and convergent thinking, empathetic thinking, ethnographic approach, adaptive policymaking, etc.

CO2: Apply tools of design thinking to formulate policy solutions to complex societal challenges. CO3:

CO3: Interpret and advocate for design thinking in a team or organizational context.

CO4: Evaluate policy impact and show how research can be translated into policy action.

CO5: Develop ways to improve decision-making and policy analysis, based on the principles of design thinking.

Skills:

- Students will gain the ability to understand and analyze complex governance systems to identify leverage points for policy intervention
- Students will have proficiency in conducting stakeholder analysis and needs assessment in policy contexts
- Students will be developing skills in stakeholder engagement to ensure the effective implementation of policy interventions

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	-	X	-	-	-	-	-	-
CO2	-	X	-	-	-	-	-	-
CO3	-	-	-	-	-	X	-	-
CO4	-	-	X	-	-	-	-	-
CO5	-	-	-	-	-	-	X	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	-	X	-
CO2	-	X	-	-	-
CO3	X	-	-	-	
CO4	-	-	-	-	X
CO5	-	-	X	-	-

Syllabus:

- Unit I – **Fundamentals of Public Policy** – definitions, scope and significance; the policy cycle; Typology of public policies: distributive, regulatory, redistributive, and constituent; Key actors in policy making; linkages between public policy and design thinking
- Unit II – **Introduction to Design Thinking**. History & fundamentals. Relevance of design thinking in public policy. Participatory design and co-production. Public policy frameworks and participatory design. Rationale and ethical dimension of co-production**.**
- Unit III – **Policy experimentation and adaptive policymaking**. Policy Implementation and Scaling. Overcoming barriers to policy implementation. Scaling policy solutions effectively; Monitoring, evaluation and Impact Analysis.
- Unit IV – **Multi-Stakeholder Engagement**. Co-design and co-production in public policy. Engaging stakeholders and building partnerships. Managing conflicts and facilitating consensus. Public-private partnerships.
- Unit V – **Communication and Storytelling in Policy Design**. Crafting compelling policy narratives. Presenting policy ideas and proposals effectively.

Textbooks and Papers:

- Bason, C. (2016). Design for policy. Routledge
- Cairney, P. (2019). *Understanding Public Policy: Theories and Issues*. Red Globe Press.
- Dye, T. R. (2013). Understanding Public Policy (14th ed.). Pearson.
- Chakrabarti, R., & Sanyal, K. (2017). *Public policy in India*. Oxford University Press.
- Moore, M. H. (1995). Creating Public Value: Strategic Management in Government. Harvard University Press.
- Stone, D. (2012). *Policy paradox: The art of political decision making* (3rd ed.). W. W. Norton & Company.
- OECD. (2001). *Citizens as partners: OECD handbook on information, consultation and public participation in policymaking*. OECD Publishing.

Reference Books:

- Ansell, C., & Gash, A. (2008). Collaborative Governance in Theory and Practice. Journal of Public Administration Research and Theory, 18(4), 543-571.
- Maheshwari, S. R. (2001). *Public administration in India: The higher civil service*. Oxford University Press.
- Bason, C. (2010), *Leading Public Sector Innovation: Co-creating for a Better Society.* Policy Press.
- Brown, T. and J. Wyatt (2010), "Design Thinking for social innovation", in *Stanford Social Innovation Review*, Winter, pp.30-37.
- Mintrom, M., & Luetjens, J. (2016). Design Thinking in Policymaking Processes: Opportunities and Challenges. Australian Journal of Public Administration, 75(3), 391-402.
- Jones, M. D., McBeth, M. K., & Shanahan, E. A. (Eds.). (2014). *The science of stories: Applications of the narrative policy framework in public policy analysis*. Palgrave Macmillan.
- Pitroda, S. (2021). *Redesign the world: A global call to action*. Penguin Random House India.

Evaluation Pattern:

Assessment	Inter nal	External

Midterm Exam	30	
*Continuous Assessment (CA)	20	
End Semester		50

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Research Methods for Policy Studies – II

Semester: 2	**Hours of Instruction/ Week: 4**
Course Code: 25SDS513	**Number of Credits: 4**
	Total hrs: 60

Prerequisite: Research Methods for Policy Studies – I

Summary: This course introduces students to qualitative and mixed-methods research and the ways it can contribute to the development of credible insights for policymaking. The course will begin by examining the foundational principles of qualitative research, including epistemological considerations and ethical dimensions. Students will then explore a range of qualitative data collection techniques, such as interviews, focus groups, participant observation, and ethnography, learning how to select and apply these methods effectively in different research contexts. Central to the course is the integration of qualitative and quantitative approaches within the mixed methods framework to generate robust evidence for policy recommendations. Throughout the course, students will engage with contemporary debates and challenges in qualitative research, including issues of validity, reliability, and researcher reflexivity. They will also have the opportunity to reflect on their own research practice and enhance their ability to communicate research findings to diverse stakeholders. By the end of the course, students will be equipped with the tools and skills necessary to conduct rigorous research and contribute to evidence-based policymaking in a variety of contexts.

Course Objectives:

1. To gain a basic understanding of the theoretical, historical, and philosophical traditions of qualitative research.
2. To understand how to identify research questions and other rationale for doing a qualitative study.
3. Become familiar with key issues of conducting qualitative and mixed-methods research such as gaining access to research sites, forms of interactions with research subjects, and research ethics.
4. Learn to conduct independent qualitative and mixed-methods research, including the ability to design a study, collect, analyze and interpret data, formulate policy recommendations.
5. Evaluate the implications of different strategies of reporting methods and findings for the quality of the reports.

Course Outcomes:

CO1: Students will develop a comprehensive understanding of various qualitative research paradigms, including phenomenology, grounded theory, ethnography, along with their underlying philosophical assumptions and methodologies.

CO2: Students will acquire proficiency in a wide range of qualitative data collection techniques, such as interviews, focus groups, participant observation, and document analysis, and understand how to select and apply appropriate methods based on research questions and contexts.

CO3: Students will understand the principles of mixed-methods research design and learn how to effectively combine qualitative and quantitative data collection, analysis, and interpretation.

CO4: Students will develop advanced skills in analyzing qualitative data, including techniques for coding, categorizing, and interpreting textual and visual data.

CO5: Students will understand the ethical considerations inherent in qualitative and mixed-methods research, including issues related to informed consent, confidentiality, power dynamics, and researcher reflexivity.

Skills:

- Analytical skills: students will develop advanced analytical skills through the examination and interpretation of qualitative and mixed-methods research findings.
- Effective communication and presentation skills: students will enhance their ability to communicate complex ideas and research findings effectively to diverse audiences.

Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X	-	-	-	-	-	-	-
CO2	-	X	-	-	-	-	-	-
CO3	X	-	-	-	-	-	-	-
CO4	-	-	-	-	X	-	-	-
CO5	-	-	-	X	-	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	X	-	-	-	-
CO2	X	-	-	-	-
CO3	-	-	-	-	X
CO4	-	-	-	X	-
CO5	X	-	-	-	-

Syllabus:

- Unit I – **Introduction to Qualitative Research Methods** – The Researcher as a multicultural subject. History and research traditions. Conceptions of self and the other. The ethics and politics of research. Theoretical paradigms and perspectives. Positivism, postpositivism. Interpretivism, constructivism, hermeneutics. Feminism. Critical theory and marxist models. Cultural studies models. Post-colonialism.

- Unit II – **Research Strategies** – Ethnography, participant observation, performance ethnography. Phenomenology, ethnomethodology. Grounded theory. Life history. Historical method. Action and applied research. Clinical research.

- Unit III – **Methods of Collection and Analysis** – Observation. Artifacts, documents, and records. Visual methods. Autoethnography. Data management methods. Textual analysis. Applied ethnography. Interviewing. Focus groups and expert/elite interviews. Narrative analysis. Approaches to coding and thematic analysis.

- Unit IV – **Practices of Interpretation and Evaluation** – Criteria for judging adequacy. Practices and politics of interpretation. Writing as interpretation. Policy analysis. Evaluation traditions. Applied research.

- Unit V – **Mixed-methods research** – Core mixed methods designs. Collecting data in mixed methods research. Analyzing and interpreting data. Writing and evaluating mixed-methods research.

Textbooks and Papers:

Lofland, J., Snow, D., Anderson, L., & Lofland, L. H. (2022). Analyzing social settings: A guide to qualitative observation and analysis. Waveland Press.

Lindlof, T. R., & Taylor, B. C. (2011). Qualitative communication research methods (3rd ed.). Thousand Oaks, CA: Sage.

Creswell, J. W., & Clark, V. P. (2011). Mixed methods research. SAGE Publications.

Barley, S. R. (2015). Confessions of a mad ethnographer. Handbook of Qualitative Organizational Research: Innovative Pathways and Methods, 465-75.

Eisenberg, E. M., Murphy, A. G., Sutcliffe, K., Wears, R., Schenkel, S., Perry, S., & Vanderhoef, M. (2005). Communication in emergency medicine: Implications for patient safety. Communication Monographs, 72 (4), 390-413.

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. Qualitative Health Research, 15(9),

1277-1288.

Denzin, N. K., & Lincoln, Y. S. (2005). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), Handbook of qualitative research (3rd ed., pp. 1-32). Thousand Oaks, CA: Sage.

Reference Books:

Weiss, Robert S. Learning from Strangers: The Art and Method of Qualitative Interview Studies. The Free Press: New York, NY

Peterson, B. (2017).Thematic Analysis/Interpretive thematic analysis. In C. R. Scott & L. K. Lewis (Eds.). The international encyclopedia of organizational communication. Hoboken, NJ: John Wiley & Sons.

Wolcott, H. F. (1994). Transforming qualitative data: Description, analysis, and interpretation. Thousand Oaks, CA: Sage.

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	30	
*Continuous Assessment (CA)	20	
End Semester		50

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Foundations of AI & Data Science

Semester: 2	**Hours of Instruction/ Week: 4**
Course Code: 25SDS514	**Number of Credits: 4**
	Total hrs: 60

Prerequisite: Programming for Social Data Science - I

Summary: This course is a continuation of Programming for Social Data Science I and introduces students to the core principles, tools, and reasoning approaches in data science, with a specific focus on social and policy-relevant applications. It emphasizes exploratory data analysis (EDA), statistical thinking, introductory modeling paradigms, and data modeling practices essential for understanding and working with real-world datasets.

Given that much of social/policy data is text—reports, tweets, interviews, news, etc.—the course also includes foundational exposure to natural language processing (NLP), enabling students to interpret unstructured data as they embark on learning data science. A strong ethical framework is interwoven throughout the course to ensure students critically engage with issues of fairness, transparency, and accountability in data-driven decision-making. By integrating conceptual theory with applied analysis, the course prepares students to contribute meaningfully to data-informed governance, policy evaluation, and social research.

Course Objectives:

1. Understanding the approaches to utilizing qualitative data for shaping social science theories and hypotheses
2. Understand the application of qualitative programming in Social Data Science
3. Define and understand basic procedures for the preparation, cleaning, and analyzing of qualitative data
4. Implement and use functions and operate on qualitative files to read

Course Outcomes:

CO1: Perform exploratory data analysis and apply statistical reasoning to summarize and interpret social or administrative datasets.
CO2: Explain foundational modeling paradigms, including supervised, unsupervised, and reinforcement learning.
CO3: Analyze classical models such as regression and clustering to support decision-making in policy contexts.
CO4: Design data storage models or schemas like ER diagrams and apply standardization principles (like normalization) to structure social data effectively.
CO5: Learn and apply basic NLP tasks, including preprocessing, to extract insights from unstructured text.
CO6: Evaluate the ethical implications of data-driven systems in relation to bias, privacy, and responsible use.

Skills:

- Structured thinking: students will learn to structure sets of qualitative data concerning a social problem in an empirical, reproducible way, that allows for a reliable conclusion.
- Scientific communication: students will enhance their ability to summarize large quantities of written or auditive data, incorporating broader patterns as well as specific exemplary excerpts in order to communicate meaningful conclusions.

Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	**X**	-	-	-	-	-	-	-
CO2	-	X	-	-	-	-	-	-

CO3	-	-	-	-	X	-	-	-
CO4	-	-	-	-	-	X	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	X	-	-	-	-
CO2	-	X	-	-	-
CO3	-	-	-	X	-
CO4	-	-	-	-	X

Syllabus:

- Unit I—**Exploratory Data Analysis (EDA) and Statistical Thinking**—Central tendency, dispersion, distributions; Sampling, hypothesis testing, correlation; Missing data handling and data cleaning principles; Correlations and Heat Maps, Missing data: mechanisms and strategies [10 hrs]
- Unit II – **Introductory Modeling Paradigms** – What is a model? Understanding abstraction and representation; Supervised, Unsupervised, and Reinforcement Learning (conceptual overview); Components of a learning system: input features, labels, and loss functions. Overfitting vs underfitting; bias-variance tradeoff; The role of modeling in decision-making (prediction vs inference); Curse of Dimensionality and dimensionality reduction (PCA) [15 hrs]
- Unit III—**Model Evaluation**—Use of models in policy cases: binary classification (e.g., loan eligibility), grouping (e.g., livelihood clusters); Model evaluation metrics: accuracy, precision, recall, F1-score, Regression metrics; Interpreting models for policy impact; Ethics - Transparency, accountability, and reproducibility [6 hrs]
- Unit IV—**Data Modeling and Storage Models**—Entity-Relationship (ER) modeling: entities, attributes, relationships; Cardinality, integrity constraints, composite and derived attributes; Mapping ER diagrams to logical schemas; Basics of normalization (1NF, 2NF, 3NF); Graph models; Network Models [15 hrs]
- Unit V—**Foundations of NLP**—Text preprocessing: tokenization, stopword removal, stemming; Representing text: Bag-of-Words, TF-IDF; Introduction to word embeddings (Word2Vec – conceptual); Applied tasks: sentiment analysis, basic topic modeling (LDA); Concepts of Large Language Models and prompt engineering; [10 hrs]

Reference Books:

1. Python for Social Scientists https://gawron.sdsu.edu/python_for_ss/
2. Core Python Programming https://www.udemy.com/course/core-python-3-and-oop-course-for-absolute-beginners/
3. Cioffi-Revilla, C. (2014). Introduction to computational social science. Springer Verlag London Limited. https://link.springer.com/content/pdf/10.1007/978-3-319-50131-4.pdf
4. VanderPlas, J. (2016). Python data science handbook: Essential tools for working with data. " O'Reilly Media, Inc."
5. Nadkarni, P. M., Ohno-Machado, L., & Chapman, W. W. (2011). Natural language processing: an introduction. Journal of the American Medical Informatics Association, 18(5), 544-551.

References:

1. Burke, Moira, and Robert Kraut. "Using Facebook after losing a job: Differential benefits of strong and weak ties." In Proceedings of the 2013 conference on Computer supported cooperative work, pp. 1419-1430. 2013.
2. Jakesch, Maurice, Advait Bhat, Daniel Buschek, Lior Zalmanson, and Mor Naaman. "Co-writing with opinionated language models affects users' views." In Proceedings of the 2023 CHI conference on human factors in computing systems, pp. 1-15. 2023.
3. Ziems, Caleb, et al. "Can large language models transform computational social science?." Computational Linguistics 50.1 (2024): 237-291.

4. Chang, Ray M., Robert J. Kauffman, and YoungOk Kwon. "Understanding the paradigm shift to computational social science in the presence of big data." Decision support systems 63 (2014): 67-80.
5. Chandrasekharan, Eshwar, Umashanthi Pavalanathan, Anirudh Srinivasan, Adam Glynn, Jacob Eisenstein, and Eric Gilbert. "You can't stay here: The efficacy of reddit's 2015 ban examined through hate speech." Proceedings of the ACM on human-computer interaction 1, no. CSCW (2017): 1-22.

Evaluation Pattern:

Assessment	Internal	External
Midterm Evaluation	25	
Continuous Assessments (theory + lab)	15	
Capstone Project	20	
End Semester		40

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Vedanta in day-to-day life

Semester: 2	**Hours of Instruction/ Week:**
Course Code: 22ADM502	**Number of Credits: 1**
	Total hrs: 15

Prerequisite: NA

Summary: Amrita University's Amrita Values Programme (AVP), is a new initiative to give exposure to students about richness and beauty of Indian way of life. India is a country where history, culture, art, aesthetics, cuisine and nature exhibit more diversity than nearly anywhere else in the world. Amrita Values Programmes emphasize on making students familiar with the rich tapestry of Indian life, culture, arts, science and heritage which has historically drawn people from all over the world.

Course Objectives:

1. To give exposure to students about richness and beauty of Indian way of life
2. To appreciate Indian history, culture, art, aesthetics, cuisine and nature
3. To make students familiar with the rich tapestry of Indian life, culture, arts, science and heritage

Course Outcomes:

CO1: Students appreciate Indian history

CO2: Students appreciate Indian culture

CO3: Students appreciate Indian art

CO4: Students appreciate Indian aesthetics & cuisine

CO5: Students appreciate Indian natural environments

Skills:

- Critical thinking
- National pride & identity

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	-	-	-	-	-	-	-	X
CO2	-	-	-	-	-	-	-	X
CO3	-	-	-	-	-	-	-	X
CO4	-	-	-	-	-	-	-	X
CO5	-	-	-	-	-	-	-	X

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	-	-	X
CO2	-	-	-	-	X
CO3	-	-	-	-	X
CO4	-	-	-	-	X
CO5	-	-	-	-	X

Syllabus:

Courses offered under the framework of Amrita Values Program:

Art of Living through Amma

Amma's messages can be put to action in our life through pragmatism and attuning of our thought process in a positive and creative manner. Every single word Amma speaks and the guidance received in on matters which we consider as trivial are rich in content and touches the very inner being of our personality. Life gets enriched by Amma's guidance and She teaches us the art of exemplary life skills where we become witness to all the happenings around us, still keeping the balance of the mind.

Insights from the Ramayana

Historical significance of Ramayana, the first Epic in the world – Influence of Ramayana on Indian values and culture – Storyline of Ramayana – Study of leading characters in Ramayana – Influence of Ramayana outside India – Misinterpretation of Ramayana by Colonial powers and its impact on Indian life - Relevance of Ramayana for modern times.

Insights from the Mahabharata

Historical significance of Mahabharata, the largest Epic in the world – Influence of Mahabharata on Indian values and culture – Storyline of Mahabharata – Study of leading characters in Mahabharata – Kurukshetra War and its significance – Importance of Dharma in society – Message of the Bhagavad Gita - Relevance of Mahabharata for modern times.

Insights from the Upanishads

Introduction: Shruti versus Smrti - Overview of the four Vedas and ten Principal Upanishads - The central problems of the Upanishads – Ultimate reality – the nature of Atman - the different modes of consciousness - Sanatana Dharma and its uniqueness - The Upanishads and Indian Culture – Relevance of Upanishads for modern times – A few Upanishad Personalities: Nachiketas, Satyakama Jabala, Aruni, Shvetaketu.

Insights from Bhagavad Gita

Introduction to Bhagavad Gita – Brief storyline of Mahabharata - Context of Kurukshetra War – The anguish of Arjuna – Counsel by Sri. Krishna – Key teachings of the Bhagavad Gita – Karma Yoga, Jnana Yoga and Bhakti Yoga - Theory of Karma and Reincarnation – Concept of Dharma – Idea of the Self and Realisation of the Self – Qualities of a Realised person - Concept of Avatar - Relevance of Mahabharata for modern times.

Swami Vivekananda and his Message

Brief Sketch of Swami Vivekananda's Life – Meeting with Guru – Disciplining of Narendra - Travel across India - Inspiring Life incidents – Address at the Parliament of Religions – Travel in United States and Europe – Return and reception India – Message to Indians about our duties to the nation.

Great Spiritual Teachers of India

Sri Rama, Sri Krishna, Sri Buddha, Adi Shankaracharya, Sri Ramanujacharya, Sri Madhvacharya, Sri Ramakrishna Paramahamsa, Swami Vivekananda, Sri Ramana Maharshi, Mata Amritanandamayi Devi

Indian Arts and Literature:

The aim of this course is to present the rich literature and culture of Ancient India and help students appreciate their deep influence on Indian Life - Vedic culture, primary source of Indian Culture – Brief introduction and appreciation of a few of

the art forms of India - Arts, Music, Dance, Theatre, Paintings, Sculpture and architecture – the wonder language, Sanskrit and ancient Indian Literature

Importance of Yoga and Meditation in Life:

The objective of the course is to provide practical training in YOGA ASANAS with a sound theoretical base and theory classes on selected verses of Patanjali's Yoga Sutra and Ashtanga Yoga. The coverage also includes the effect of yoga on integrated personality development.

Appreciation of Kerala's Mural Art Forms:

A mural is any piece of artwork painted or applied directly on a wall, ceiling or other large permanent surface. In the contemporary scenario Mural painting is not restricted to the permanent structures and are being done even on canvas. A distinguishing characteristic of mural painting is that the architectural elements of the given space are harmoniously incorporated into the picture. Kerala mural paintings are the frescos depicting mythology and legends, which are drawn on the walls of temples and churches in South India, principally in Kerala. Ancient temples, churches and places in Kerala, South India, display an abounding tradition of mural paintings mostly dating back between the 9th to 12th centuries CE when this form of art enjoyed Royal patronage. Learning Mural painting through the theory and practice workshop is the objective of this course.

Practicing Organic Farming

Life and nature are closely linked through the healthy practices of society for maintaining sustainability. When modern technological knowhow on microorganisms is applied in farming using the traditional practices we can avoid damage to the environment. The course will train the youth on modern practices of organic farming. Amma says "we have to return this land to the coming generations without allowing even the slightest damage to happen to it". Putting this philosophy to practice will bring about an awakening and enthusiasm in all to strive for good health and to restore the harmony in nature"

Ancient Indian Science and Technology

Science and technology in ancient and medieval India covered all the major branches of human knowledge and activities, including mathematics, astronomy, physics, chemistry, medical science and surgery, fine arts, mechanical, civil engineering, architecture, shipbuilding and navigation. Ancient India was a land of sages, saints and seers as well as a land of scholars and scientists. The course gives an awareness on India's contribution to science and technology.

Evaluation Pattern: Pass/Fail

SEMESTER 3

Sustainable Community Development

Semester: 3	**Hours of Instruction/ Week:**
Course Code: 25SDS603	**Number of Credits: 3**
	Total hrs: 60

Prerequisite: NA

Summary: This course explores the principles, processes, and practices of Sustainable Community Development (SCD), with a critical lens on inclusivity, systems thinking, and human development. Anchored in the UN Sustainable Development Goals (SDGs), the course highlights how communities, governments, civil society, and international institutions co-create development strategies to address social inequities. Emphasis is placed on gender, caste, and class dimensions of marginalization, the role of participatory governance, and data-driven policy planning in the Indian and global contexts..

Course Objectives:

1. Understand core principles and components of sustainable community development within the SDG framework.
2. Equip students with a critical understanding of Equity, inclusion and intersectionality, to examine exclusion and discrimination at community level.
3. Examine the evolution and role of local, national, and international policies as well as institutions in promoting community sustainability.
4. Analyze community based approaches and strategies for development, through case studies, global development indices, and participatory models.

Course Outcomes:

CO1: Demonstrate an understanding of the core principles, concepts, and components of sustainable community development and their application within the SDG framework.

CO2: Analyze the impact of intersecting inequalities on marginalized communities and propose participatory, community-based strategies to enhance social inclusion and sustainability.

CO3: Examine the impact of social inequalities—based on gender, caste, class, tribe, and disability—on community sustainability and access to resources.

CO4: Evaluate the roles and interlinkages of key stakeholders and institutions—local, national, and international—in advancing inclusive development.

CO5: Critically assess public policies and flagship schemes using development indicators and propose community-centric strategies for localizing SDGs.

Skills:

- Understand historical context of policy
- Map policies to SDGs

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	-	X	-	-	-	-	-	-
CO2	X	-	-	-	-	-	-	-
CO3	-	-	X	-	-	-	-	-
CO4	-	-	-	X	X	X	-	-

CO5	-	X	-	-	-	X	-	X

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	X	-	-	-
CO2	X	-	-	-	-
CO3	-	X	-	-	-
CO4	-	X	-	-	-
CO5	-	X	-	-	-

Syllabus:

Unit I - Foundations of Sustainable Community Development

- Concept, characteristics, and importance of community,
- Community Capitals Framework (natural, human, social, cultural, political, financial, built.
- Introduction to the UN SDGs: evolution, relevance, interlinkages, and LSDGs (Case studies and Best practices)
- Participatory approaches to inclusion (e.g., social audits, Gram Sabhas)

Unit II - Institutions and Governance in Sustainable Development

- Indian Stakeholder mapping: PRIs, SHGs, NGOs, Cooperatives, State & Central ministries, CSR,
- National missions: Jal Jeevan Mission, DAY-NRLM, National Health Mission, Mission Vatsalya, SBM
- Global Stakeholder mapping: Global institutions: UNDP, UNEP, World Bank, ILO, FAO, UN Women.
- Introduction to Human Development Indices (HDI, MPI, Gender Gap Index, SDG India Index)

Unit III - Inequality and Intersectionality

- Principles of equity and resilience,
- Social exclusion and intersectionality: gender, caste, tribe, class, disability
- Impact of environmental degradation, urbanization, and climate change on vulnerable groups,
- Role of community knowledge and co-production, Community-based care models for youth, elderly, women, and children

Unit IV - Policy Analysis and Community-Centric Planning

- Indian Five-Year Plans (retrospective mapping to SDGs),
- Key national frameworks: NITI Aayog's Strategy for New India @75, Vision 2047, Evaluation of flagship schemes (MGNREGA, PMAY-G, NHM, PDS Reforms, etc.)
- Budgeting for SDGs.

Textbooks Papers, Reference Books:

1. UNDP (2024). Human Development Report 2023-24: Breaking the Gridlock: Reimagining Cooperation in a Polarized World. New York: UNDP.
2. Monkelbaan, J. (2019). Governance for the Sustainable Development Goals. Springer. https://doi.org/10.1007/978-981-13-0475-0
3. Reynolds, M., Blackmore, C., Ison, R., Shah, R., & Wedlock, E. (2018). The Role of Systems Thinking in Implementing SDGs. World Sustainability Series.
4. Flora, C. & Flora, J. (2013). Rural Communities: Legacy + Change. Westview Press.
5. NITI Aayog (2023). SDG India Index and Dashboard 2023-24.
6. United Nations DESA (2023). Localizing the SDGs: Tools for Community-Led Planning.
7. Thomas, G. (2010). Community Organization: Management for Community Development. IGNOU.
8. Seema (2013). A Historical Analysis of Women Development in India. International Journal of Scientific Engineering and Research, 1(3), 111-116.

9. Planning Commission & NITI Aayog archives (1950-present): Five-Year Plans and Strategy Documents.

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	20	
*Continuous Assessment (CA)	20	
End Semester		60

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Behavioral Economics & Public Policy

Semester: 3	**Hours of Instruction/ Week: 3**
Course Code: 25SDS601	**Number of Credits: 4**
	Total hrs: 45

Prerequisite: Economics for Public Policy

Summary: The course aims to familiarize students with recent advances in psychology and economics and teach them to apply behavioral insights to design better solutions to societal challenges. It focuses on a rigorous application of experimental methodology in various social contexts and shows how the resulting findings can be used to advance policy in such areas as health, education, energy, etc. Behavioral economics deviates from the standard assumption of the economic theory that individuals are rational and self-seeking. Key findings in the field identify ways in which economic agents can systematically behave irrationally or prosocially. These behavioral insights enable us to design "choice architecture", which nudges individuals to make better decisions and enhance their well-being. At the same time, public policy instruments can be used to transform social preferences to foster higher cooperation, long-term orientation and sustainable economic practices in a society. This course prepares students to understand cutting edge research in the field of behavioral sciences, apply these insights to improve social policy and communicate their ideas in a succinct and compelling way to government agencies, non-profit organizations, and a wider audience.

Course Objectives:

1. Become familiar with cutting-edge research in behavioral economics, public policy, cognitive and social psychology, and other social sciences.
2. Gain deeper understanding of factors that drive individual behavior and learn to devise incentives for behavioral change.
3. Interpret empirical results from academic research papers for a policy audience.
4. Learn behavioral approaches to improving the effectiveness of social interventions and programs across a range of diverse fields.
5. Apply insights from behavioral economics to policy design.

Course Outcomes:

CO1: Design behavioral policy interventions and devise empirical strategies for testing them.

CO2: Critically discuss nudging approaches to policy making, including ethical issues involved.

CO3: Evaluate the scope and directions for policy interventions aimed at transforming social preferences.

CO4: Summarize the current status of the behavior-proofing of the policies in India and across the world.

CO5: Learn to apply the principles of game theory and interpret incentives of economic agents in various situations of social cooperation.

Skills:

- Psychological empathy: through studying human behavior, students will cultivate empathy for individuals' decision-making processes, leading to more compassionate and people-centered policy solutions.
- Interdisciplinary collaboration: students will collaborate across disciplines such as psychology, sociology, and economics, gaining a holistic understanding of human behavior and its implications for public policy.

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X	-	-	-	-	-	-	-

CO2	-	-	-	X	-	-	-	-
CO3		X	-	-	-	-	-	-
CO4	X	-	-	-	-	-	-	-
CO5	X	-	-	-	-	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	X	-	-	-	-
CO2	-	-	-	X	-
CO3	-	-	X	-	-
CO4	-	X	-	-	-
CO5	-	X	-	-	-

Syllabus:

- Unit I – **Intro to Prospect Theory** – Rational decision making: standard vs behavioral approach. Heuristics and biases. Empirical methods for behavioral economics. Field and lab experiments. Econometrics review. Qualitative methods.

- Unit II – **Static and Dynamic Models of Individual Decision-Making** – Loss aversion, reference points, status quo. The endowment effect. Present bias and commitment devices. Multiple selves models and their applications to temptation, self-control, procrastination.

- Unit III – **Applications of Behavioral Economics to Public Policy –** Architecture of choice and the nudging Debate. Mental accounting, nudging and applications to savings, microfinance, health, and education.

- Unit IV – **Prosocial Preferences and Motivation** – Intrinsic vs. extrinsic motivation. Prosocial preferences and altruistic capital. Policies for the accumulation of altruistic capital.

- Unit V – **Behavioral Game Theory** – Behavioral theories of collective decision making: inequity aversion, fairness, reciprocity, guilt aversion, etc. Experimental evidence.

Textbooks and Papers:

Thaler, Richard H., and Cass R. Sunstein (2021). Nudge: The Final Edition. Yale University Press.
Ashraf, N., Bandiera, O. and Jack, B.K. (2014). "No margin, no mission? A field experiment on incentives for public service delivery." Journal of Public Economics 120 (December): 1-17
Ashraf, N., Camerer, C. F. and Loewenstein, G. (2005). "Adam Smith, Behavioral Economist." Journal of Economic Perspectives 19(3): 131–145.
Kamenica, E. (2012). "Behavioral Economics and Psychology of Incentives." Annual Review of Economics 4(1): 427–452.

Reference Books:

Ariely D. (2010) Predictably Irrational, Revised and Expanded Edition: The Hidden Forces That Shape Our Decisions. New York: Harper Perennial.
Congdon, W. J., Kling, J. R., & Mullainathan, S. (2011). Policy and choice: Public finance through the lens of behavioral economics. Brookings Institution Press
Kahneman, D. (2013) Thinking, Fast and Slow. New York: Farrar, Strausand.

Mullainathan, S., Eldar, S. (2013) Scarcity: Why Having Too Little Means so Much. New York: Times Books, Henry Holt and Company.

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	30	
*Continuous Assessment (CA)	30	
End Semester		40

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Machine Learning & AI for Social Data Science

Semester: 3	**Hours of Instruction/ Week: 4**
Course Code: 25SDS602	**Number of Credits: 4**
	Total hrs: 60

Prerequisite: Programming for Social Data Science I & II, Research Methods for Policy Studies I & II.

Summary: This course introduces students to the foundational concepts, models, and systems of modern artificial intelligence with a particular focus on machine learning and data mining techniques relevant to social science and public policy. Students will explore a range of learning paradigms (supervised, unsupervised), understand how machines identify patterns in data, and gain exposure to contemporary advances in AI including large language models and responsible AI frameworks.

Emphasis is placed on the application of algorithms to policy-relevant problems such as citizen feedback analysis, social clustering, fraud detection, and knowledge discovery. The course integrates ethical reasoning and explainability throughout, ensuring that students not only understand how models function but also how to evaluate and interpret their impact in socially responsible ways.

Course Objectives:

1. Understand the fundamentals of machine learning methods.
2. Describe the statistical theory behind widely used supervised and unsupervised machine learning methods.
3. Explain the variety of machine learning methods available for social science research.
4. Identify appropriate machine learning methods to address a variety of research questions.
5. Learn how to design, train, and deploy machine-learning models to produce insights relevant for addressing societal challenges.

Course Outcomes:

CO1: Explain foundational concepts and subdomains of learning paradigms and Artificial Intelligence (AI) with relevance to social science and policy applications.

CO2: Apply supervised and unsupervised learning algorithms to analyze structured datasets and derive meaningful policy insights.

CO3: Implement data mining techniques to discover associations, patterns, or anomalies in real-world social or administrative data.

CO4: Interpret the structure and conceptual logic of advanced models like neural networks, transformer models, and large language models.

CO5: Evaluate model performance using standard metrics and justify the choice of modeling techniques in context-specific scenarios.

CO6: Assess the ethical, legal, and societal implications of AI systems, particularly regarding bias, transparency, and accountability.

Skills:

- Data-driven decision-making: through practical application of machine learning techniques, students will acquire the skill to leverage data effectively for evidence-based decision-making in social research and policy formulation, enhancing their capacity to address complex societal challenges.
- Ethical reasoning: students will develop ethical reasoning skills, enabling them to navigate and address ethical dilemmas inherent in the use of machine learning algorithms within social research, thus promoting responsible and ethical use of data-driven methodologies for societal benefit.

Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X	-	-	-	-	-	-	-
CO2	-	X	-	-	-	-	-	-
CO3	-	-	-	X	-	-	-	-
CO4	-	-	-	-	X	-	-	-
CO5	-	X	-	-	-	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	X	-	-	-	-
CO2	X	-	-	-	-
CO3	X	-	-	-	-
CO4	-	-	X	-	-
CO5	-	-	-	X	-

Syllabus:

- Unit I—**Supervised Learning Algorithms**—Regression and Classification Models; Learning Paradigms in Machine Learning; Decision Trees, Random Forest, Support Vector Machines, Naive Bayes, and k-Nearest Neighbors; Metrics: confusion matrix, ROC-AUC, precision-recall curves [15 hrs]
- Unit II—**Unsupervised Learning and Pattern Discovery** —Hierarchical clustering, DBSCAN; Dimensionality reduction: PCA, t-SNE; Topic modeling (LDA) revisited; Evaluation metrics [8 hrs]
- Unit III—**Data Mining: Techniques and Applications** —Useful for discovering co-occurrence or emerging needs in schemes, complaint analysis, and monitoring systems: Association Rule Mining (Apriori algorithm), Market-basket style analysis of citizen complaints; Orange tool [8 hrs]
- Unit III—**Artificial Intelligence and Sub-domains** —AI vs ML vs Data Science; Overview of Major Sub-domains: Machine Learning, Natural Language Processing (NLP), Computer Vision, Expert Systems, Social Network Analysis (SNA), Planning & Optimization, Knowledge Representation & Reasoning, Ethics and Responsible AI, Generative AI; Applications relevant to policy [6 hrs]
- Unit V—**Advances of LLMs**—Introduction to neural networks and deep learning (conceptual); Transformer models, transfer learning; Prompt engineering; LLM fine-tuning: Use cases in policy [6 hrs]
- Unit VI—**Ethical AI and Interpretability**—Black-box risk and transparency; Explainability techniques: SHAP, LIME (conceptual); Bias, fairness, and accountability in social algorithms; Global frameworks; [10 hrs]

Textbooks and Papers:

Cioffi-Revilla, C. (2014). Introduction to computational social science. Springer Verlag London Limited. https://link.springer.com/content/pdf/10.1007/978-3-319-50131-4.pdf

James, G., Witten, D., Hastie, T., & Tibshirani, R. (2013). An introduction to statistical learning (Vol. 112, No. 1). New York: springer. https://link.springer.com/book/10.1007/978-3-031-38747-0

Géron, Aurélien. Hands-on machine learning with Scikit-Learn, Keras, and TensorFlow: Concepts, tools, and techniques to build intelligent systems. " O'Reilly Media, Inc.", 2022.

Rajaraman, Anand, and Jeffrey D. Ullman. Mining of massive datasets. Autoedicion, 2011. https://biblioteca.unisced.edu.mz/handle/123456789/2674

Russell, S. J., & Norvig, P. (2016). Artificial intelligence: a modern approach. Pearson. https://people.engr.tamu.edu/guni/csce625/slides/AI.pdf

References:

Ziems, Caleb, et al. "Can large language models transform computational social science?." Computational Linguistics 50.1 (2024): 237-291.

Chang, Ray M., Robert J. Kauffman, and YoungOk Kwon. "Understanding the paradigm shift to computational social science in the presence of big data." Decision support systems 63 (2014): 67-80.

Chandrasekharan, Eshwar, Umashanthi Pavalanathan, Anirudh Srinivasan, Adam Glynn, Jacob Eisenstein, and Eric Gilbert. "You can't stay here: The efficacy of reddit's 2015 ban examined through hate speech." Proceedings of the ACM on human-computer interaction 1, no. CSCW (2017): 1-22.

Evaluation Pattern:

Assessment	Internal	External
Midterm Evaluation	25	
Continuous Assessments (theory + lab)	15	
Capstone Project	20	
End Semester	30	10

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

SPECIALIZATION: ECONOMIC POLICY

Foundations of Development Policy

Semester: 2	**Hours of Instruction/ Week: 3**
Course Code: 25SDS531	**Number of Credits: 3**
	Total hrs: 45

Prerequisite: Economics for Public Policy, Research Methods for Policy Studies I&II

Summary: The cause aims to introduce students to the main issues of development economics in the context of policy formulation. The course is focused on the issues of economic growth, poverty, and inequality and covers a set of analytical tools and frameworks that are applicable to a wide variety of developmental issues. The students will be exposed to modern empirical methods of impact evaluation such as multivariate regression, regression discontinuity design, instrumental variables, randomized control trials and others. In this course we will initially approach these questions from a "macro" perspective and later introduce a "microeconomic" view of the problems. The course prepares students to critically evaluate the scope and direction of policy interventions and formulate their own recommendations on alleviating the root causes and consequences of poverty as well as other pressing developmental issues.

Course Objectives:

1. To provide students with a comprehensive understanding of major theories and paradigms in development economics and policy.
2. To explore the role of structural factors such as institutions, governance, geography, and historical legacies in shaping development outcomes.
3. To equip students with the tools and methodologies necessary to evaluate the impact of development policies on poverty alleviation, inequality reduction, and sustainable development.
4. To highlight the social and environmental dimensions of development, including issues related to gender equality, environmental sustainability, and social justice.
5. To foster students' ability to design innovative and contextually appropriate development policies that address the multidimensional challenges of poverty and underdevelopment.

Course Outcomes:

CO1: Students will demonstrate a deep understanding of key development theories and their relevance to contemporary development challenges.

CO2: Students will be able to conduct rigorous policy analysis, identifying the strengths, weaknesses, and potential unintended consequences of development policies.

CO3: Students will demonstrate proficiency in conducting empirical research on development issues, including data collection, analysis, and interpretation.

CO4: Students will gain cross-cultural awareness and sensitivity to the diverse social, economic, and cultural contexts in which development policies are implemented.

CO5:Students will effectively communicate complex development concepts and policy recommendations to diverse stakeholders, including policymakers, practitioners, and local communities.

Skills:

- Students will develop critical thinking skills, enabling them to evaluate development policies from multiple perspectives and engage in informed policy debates.
- Students will develop ethical decision-making skills, considering the ethical implications of development policies and prioritizing approaches that promote social justice, human rights, and environmental sustainability.
- Students will develop the ability to generate innovative solutions to complex development challenges,

thinking beyond conventional approaches and paradigms.

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	X	-	-	-	-	-	-	-
CO2	-	X	-	-	-	-	-	-
CO3	-	-	-	-	X	-	-	-
CO4	-	-	X	-	-	-	-	-
CO5	-	-	-	-	-	X	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	X	-	-	-	-
CO2	X	-	-	-	-
CO3	-	X	-	-	-
CO4	-	-	-	X	-
CO5	-	-	-	-	X

Syllabus:

- Unit I – **Introduction to Development Policy and Measurement**. Indicators of growth, development and poverty. Historical trends in income, poverty and inequality. Overview of development challenges: poverty traps, institutional failures, coordination problems.
- Unit II – **Methodological Foundations of Development Microeconomics**. Role of evidence and experimentation in policy. The counterfactual problem and selection bias. Randomized Control Trials (RCTs) and quasi-experimental methods. Needs assessment, process evaluation, and cost-benefit analysis. Ethics, external validity, and scaling challenges in field experiments.
- Unit III – **Development Microeconomics**: Human Capital, Health, and Entrepreneurship. Education demand, returns, and constraints. Nutrition, health productivity, and the capacity curve. Behavioral and informational barriers to uptake of preventive healthcare interventions. Entrepreneurship and heterogeneity in returns: identifying who benefits most from credit and training programs.
- Unit IV – **Development Macroeconomics**: Growth, Structural Change, and Industrial Policy. Coordination failures and multiple equilibria. Structuralist and neo-structuralist models. Import substitution and export orientation. The Washington Consensus and its critique. Strategies and tools of industrial policy. Product space analysis. Growth identification and facilitation framework.
- Unit V – **Political Economy and Structural Determinants of Development**. Deep determinants: geography, institutions and culture. Evaluating institutions: efficiency vs. fairness. A model of institutional power and distribution. Institutional change and reform. Growth and inequality: theoretical models and empirical findings. Social mobility.

Textbooks and Papers:

Banerjee, A. V., & Duflo, E. (2011). Poor economics: A radical rethinking of the way to fight global poverty. PublicAffairs Store.
Todaro, M. P., & Smith, S. C. (2020). Economic development. Pearson UK.
Ray, D. (1998). Development economics. Princeton University Press.
Kaushik Basu. (2003). Analytical Development Economics: The Less Developed Economy Revisited. The MIT Press.

Acemoglu, D. (2009). Introduction to modern economic growth. Princeton, N.J.
Deaton, A. (1992). "Household saving in LDCs: Credit markets, insurance and welfare", Scandinavian Journal of Economics.
Deaton, A. (1991). "Saving and Liquidity Constraints." Econometrica.
Banerjee, A., & Mullainathan, S. (2010). "The shape of temptation: Implications for the economic lives of the poor" (No. w15973). National Bureau of Economic Research.
Genicot, G., & Ray, D. (2003). "Group formation in risk-sharing arrangements." The Review of Economic Studies, 70(1), 87-113.
Besley, T., & Coate, S. (1995). "Group lending, repayment incentives and social collateral." Journal of Development Economics, 46(1), 1-18.
Greenwood, J., J. M. Sanchez, et al. (2013) "Quantifying the Impact of Financial Development on Economic Development." Review of Economic Dynamics 16, no. 1: 194–215.
Allen, R. (2017). "Absolute Poverty: When Necessity Displaces Desire." American Economic Review 107(12): 3690-3721.
Jones, C., and P. Klenow. (2016). "Beyond GDP: Welfare Across Countries and Time." American Economic Review 106: 2426-2457.
Mankiw, N.G., D. Romer, and D. Weil. (1992). "A Contribution to the Empirics of Economic Growth." Quarterly Journal of Economics 107(2): 407-437.

Reference Books:

Bardhan, Pranab and Christopher Udry. Development Microeconomics. Oxford: Oxford University Press, 1999.

Banerjee, Abhijit, Roland Benabou and Dilip Mookherjee (Editors), Understanding Poverty, Oxford: Oxford University Press, 2006.

Banerjee & Duflo (2019). Good Economics for Hard Times.

Collins, D., Morduch, J., Rutherford, S., & Ruthven, O. (2009). Portfolios of the poor: how the world's poor live on $2 a day. Princeton University Press.

Deaton, A. (1997). The analysis of household surveys: a microeconometric approach to development policy. World Bank Publications.

Karlan, D. S., & Appel, J. (2011). More than good intentions. New York: Dutton.

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	30	
*Continuous Assessment (CA)	30	
End Semester		40

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Intervention Design and Impact Evaluation

Semester: 3	**Hours of Instruction/ Week: 3**
Course Code: 25SDS532	**Number of Credits: 3**
	Total hrs: 45

Prerequisite: Research Methods I & II, Foundations of Development Policy

Summary: This applied course guides you from a policy idea all the way to an impact study: you will learn to craft a theory of change that maps assumptions to measurable outcomes, weigh the trade-offs among randomised, quasi-experimental, non-experimental and mixed-methods designs to choose an evaluation approach that fits real-world constraints and the research questions, and build an implementation-monitoring plan that keeps a pulse on fidelity and context while data are collected. Along the way we cover instrument design, piloting, ethics, transparency, core analytical techniques, and clear policy reporting, so that by the end you can chart a defensible evaluation strategy, supervise reliable fieldwork, interpret results, and communicate evidence to decision-makers.

Course Objectives:

1. To enable students to translate policy problems into rigorous theories of change, mapping assumptions, activities, outputs, outcomes, and measurable indicators.
2. To develop the capacity to select and justify the most appropriate evaluation design—randomized, quasi-experimental, non-experimental, or mixed methods—and to produce defensible sampling and power calculations.
3. To train students to design, pilot, and refine quantitative and qualitative measurement instruments, supported by transparent data-management, ethics, and documentation protocols.
4. To build competence in constructing and executing field-monitoring and quality-control systems that track implementation fidelity, contextual shifts, and data accuracy.
5. To equip students with the skills to clean, analyze, and interpret impact-evaluation data; conduct robustness checks; and translate findings into concise, decision-oriented communications.
6. To integrate all of the above competencies in a capstone project that delivers a complete evaluation blueprint—including theory of change, design and power specifications, monitoring plan, instruments, and policy pitch—ready for stakeholder review.

Course Outcomes:

CO1: Ability to develop a rigorous theory-of-change map that links activities, outputs, outcomes, and measurable indicators for a real-world intervention.

CO2: Ability to select and justify the most appropriate evaluation design—RCT, quasi-experimental, non-experimental, or mixed methods—and to produce a defensible sampling and power plan within ethical, practical, and budget constraints.

CO3: Capacity to design, pilot, and refine quantitative and qualitative measurement instruments, complemented by transparent data-management and documentation protocols.

CO4: Capacity to implement a field monitoring and quality-control plan that tracks implementation fidelity, contextual shifts, and data accuracy throughout the study.

CO5: Ability to clean and analyze evaluation data, perform robustness checks, and translate findings into concise briefs and presentations for policy decision-makers.

CO6: Capacity to integrate all components—theory of change, design and power specifications, monitoring plan, instruments, and policy pitch—into a complete evaluation blueprint ready for stakeholder review.

Skills:

● **Theory-of-Change Mapping:** Ability to translate policy problems into causal pathways with clearly specified assumptions, indicators, and testable hypotheses.

● **Evaluation Design & Power Analysis:** Capacity to compare experimental, quasi-experimental, and mixed-methods designs and to calculate sample sizes and minimum-detectable effects under real-world constraints.

● **Measurement & Instrumentation:** Skill in crafting, piloting, and refining quantitative surveys and qualitative

modules, accompanied by transparent data-management and ethics protocols.

● **Field Monitoring & Quality Control:** Competence in designing and executing implementation-fidelity checks, context tracking, and real-time data-quality assurance for multi-site studies.

● **Impact Analysis & Evidence Communication:** Ability to clean and analyze evaluation data, run robustness checks, and convert technical findings into concise, decision-oriented briefs and presentations for stakeholders.

Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9
CO1	**X**	-	-	-	-	-	-	-	-
CO2	-	-	**X**	-	-	-	-	-	-
CO3	-	**X**	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-
CO5	**X**	-	-	-	-	-	-	-	-
C06	-	-	-	X	-	-	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	
CO1	X	-	-	-	-	-	-	-	-	-	-
CO2	-	X	-	-	-	-	-	-	-	-	-
CO3	-	-	X	-	-	-	-	-	-	-	-
CO4	X	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	X	-	-	-	-	-	-	-
C06	-	-	-	X	-	-	-	-	-	-	-

Syllabus:

- **Unit I – From Idea to Theory of Change –** Framing the problem and objectives. Mapping assumptions, activities, outputs, and outcomes. Defining key indicators.
- **Unit II – Choosing an Evaluation Strategy –** Comparing RCTs, quasi-experimental, non-experimental, and mixed-methods designs. Practical, ethical, and budget trade-offs. Basics of sampling and power.
- **Unit III – Measurement & Instrumentation –** Designing surveys and administrative-data tools. Piloting and revision. Incorporating qualitative modules. Data management and transparency protocols.
- **Unit IV – Implementation Monitoring & Field Management –** Building a monitoring plan linked to the theory of change. Tracking fidelity and context. Quality-control procedures and field-team supervision.

- **Unit V – Analysis, Interpretation & Reporting –** Cleaning and documenting data. Estimating impacts with the chosen method. Robustness checks. Translating findings into concise briefs and presentations for decision-makers.
- **Unit VI — Capstone project —** Based on a proposed project idea, students code sign a full evaluation blueprint: theory-of-change, monitoring plan, design and power specifications, instruments, and a concise policy pitch.

Textbooks and Papers:

Gerber, A. S., & Green, D. P. (2012). Field experiments: Design, analysis, and interpretation. W. W. Norton & Company.

Banerjee, A. V., & Duflo, E. (Eds.). (2017). Handbook of field experiments (Vol. 1). North-Holland.

Karlan, D., & Appel, J. (2016). Failing in the field: What we can learn when field research goes wrong. Princeton University Press.

Leeuw, F., & Vaessen, J. (2009). Impact evaluations and development: NONIE guidance on impact evaluation. Network of Networks for Impact Evaluation (NONIE).

Gertler, P. J., Martinez, S., Premand, P., Rawlings, L. B., & Vermeersch, C. M. J. (2016). Impact evaluation in practice (2nd ed.). World Bank. https://doi.org/10.1596/978-1-4648-0779-4

Reference Books:

Glennerster, R., & Takavarasha, K. (2013). Running randomized evaluations: A practical guide. Princeton University Press.

Stoecker, R. (2013). Research methods for community change: A project-based approach (2nd ed.). SAGE Publications. [1]

United Nations Evaluation Group. (2013). Impact evaluations: UNEG guidance document. United Nations. [2]

Whetten, D. A. (1989). What constitutes a theoretical contribution? Academy of Management Review, 14(4), 490–495. https://doi.org/10.5465/amr.1989.4308371

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	20	
*Continuous Assessment (CA)	30	
End Semester		50

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Advanced Topics in Economic Modelling and Policy

Semester IV Course	**Hours of Instruction/ week – 3**
Code:25SDS533	**No. of Credits – 3**
	Total – 45 hrs

Prerequisite: Research Methods I & II, Economics for Public Policy

Summary: This course offers an introduction to contemporary empirical and theoretical tools used in economic research and policy analysis. Through selected readings and guided discussions, students explore frontier work in macro-, institutional, and international economics and examine how influential papers are structured and argued. The aim is to help participants: understand the motivation and methods behind current studies, gain practical experience with key modelling and identification techniques, and practise communicating research insights to policy-oriented audiences. While the course highlights advanced approaches, the emphasis is on developing a working familiarity rather than full mastery, giving students a foundation they can build on in their own research projects.

Course Objectives:

1. To introduce students to the goals, instruments, and transmission mechanisms of modern monetary policy, with an emphasis on emerging techniques such as heterogeneous-agent DSGE models.
2. To explore how cultural norms and institutional structures influence economic development and long-run growth trajectories.
3. To build analytical skills in causal inference using econometric techniques, with a focus on identifying and addressing endogeneity.
4. To understand key frameworks for analyzing innovation, the role of national innovation systems, and methods for evaluating the impact of innovation policies.
5. To familiarize students with foundational and contemporary models of international trade and finance, and the institutional context of global economic integration.

Course Outcomes:

CO1: Analyze and interpret the goals, instruments, and distributional impacts of modern monetary policy using both traditional and heterogeneous-agent macroeconomic models.
CO2: Evaluate the role of cultural norms and institutional structures in shaping long-term economic development using theoretical and empirical frameworks.
CO3: Identify causal relationships in economic data and critically assess applied econometric research.
CO4: Assess national innovation systems and evaluate innovation policy using appropriate theoretical frameworks and empirical indicators.
CO5: Interpret international trade and finance dynamics using classical and modern models, and assess the role of global institutions and shocks in shaping open-economy outcomes.

Skills:

- Macroeconomic Modelling: Ability to critically evaluate modern central banking models, including DSGE frameworks, to assess monetary policy and its distributional consequences.
  Institutional Analysis: Skills to evaluate how cultural norms and institutional arrangements impact economic performance across contexts.

Econometric Inference: Capacity to use causal inference techniques to conduct and critique applied economic research.

- Innovation Policy Evaluation: Capacity to assess technological change, national innovation systems, and the effectiveness of related policy interventions.
- International Policy Analysis: Competence in analyzing trade models, exchange-rate dynamics, and the influence of global institutions on national economic policy.

Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9		
CO1	**X**	-	-	-	-	-	-	-	-		
CO2	-	-	**X**	-	-	-	-	-	-		
CO3	-	**X**	-	-	-	-	-	-	-		
CO4	-	-	-	-	-	-	-	-	-		
CO5	**X**	-	-	-	-	-	-	-	-		

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6	PSO7	PSO8	PSO9	PSO10	
CO1	-	-	X	-	-	-	-	-	-	-	-
CO2	-	X	-	-	-	-	-	-	-	-	-
CO3	-	X	-	-	-	-	-	-	-	-	-
CO4	X	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	X	-	-	-	-	-	-	-

Syllabus:

- **Unit I – Modern Monetary Policy & Central Banking –** Overview of monetary policy goals and tools. Main channels of transmission. Forecasting with quarterly projection models for policy decisions. Frontier topics: heterogenous-agent DSGE and distributional effects of monetary policy.
- **Unit II – Culture, Institutions & Economic Development –** How cultural norms and institutional arrangements influence long-run growth. Concepts, measurement challenges and broad empirical strategies. Contemporary modelling approaches and current debates.
- **Unit III – Applied Econometric Analysis & Instrumental-Variable Methods** – Essentials of causal inference and endogeneity. Instrumental-variable techniques and diagnostics. Guided walk-through of an influential study applying econometric techniques, focused on its framing, structure, argument flow and writing choices.
- **Unit IV – Innovation and Technological Change -** Theories of Innovation and Technological Change; National Innovation Systems and Developmental States; Measuring Innovation and Evaluating Policy Impact
- **Unit V – International Economics –** Core ideas in trade, finance and open-economy macro. Gains from trade: Ricardian, Heckscher–Ohlin and New Trade models. Exchange-rate issues, global shocks and the role of international institutions. Emerging topics in economic integration.

Textbooks and Papers:

Krugman, P. R. (2008). *International economics: Theory and policy, 8/E*. Pearson Education India.
Nelson, R. R. (1987). Understanding technical change as an evolutionary process: Inside the black box. In *The political economy of science, technology and innovation*.

Lundvall, B. Å. (1992). *National systems of innovation: Towards a theory of innovation and interactive learning*. Pinter.
Rosenberg, N. (1982). *Inside the black box: Technology and economics*. Cambridge University Press.
Enke, B. (2019). Kinship, cooperation, and the evolution of moral systems. *The Quarterly Journal of Economics, 134*(2), 953–1019. https://doi.org/10.1093/qje/qjz001
Algan, Y., & Cahuc, P. (2014). Trust, growth, and well-being: New evidence and policy implications. In P. Aghion & S. N. Durlauf (Eds.), *Handbook of Economic Growth* (Vol. 2, pp. 49–120). Elsevier.
Acemoglu, D., & Robinson, J. A. (2021). Culture, institutions and social equilibria: A framework. *NBER Working Paper No. 28832*.
Henrich, J. (2020). *The weirdest people in the world: How the West became psychologically peculiar and particularly prosperous*. Penguin UK.
Giuliano, P., & Nunn, N. (2018). Ancestral characteristics of modern populations. *Economic History of Developing Regions, 33*(1), 1–17. https://doi.org/10.1080/20780389.2018.1435267
Belke, A., & Polleit, T. (2010). *Monetary economics in globalised financial markets* (Ch. 6). Springer Science & Business Media.
Blanchard, O. J., & Fischer, S. (1989). *Lectures on macroeconomics*. MIT Press.
Cecchetti, S. G., & Schoenholtz, K. L. (2017). *Money, banking, and financial markets* (4th ed., Chs. 20–21). McGraw-Hill Education.
Campante, F. R., Sturzenegger, F., & Velasco, A. (2021). *Advanced macroeconomics: An easy guide*. Princeton University Press.
Galí, J. (2008). *Monetary policy, inflation, and the business cycle: An introduction to the New Keynesian framework*. Princeton University Press.

Reference Books:

Romer, D. (2019). *Advanced macroeconomics* (5th ed.). McGraw-Hill Education.
Greene, W. H. (2000). Econometric analysis 4th edition. *International edition, New Jersey: Prentice Hall*, 201-215.
Angrist, J. D., & Pischke, J. S. (2009). *Mostly harmless econometrics: An empiricist's companion*. Princeton university press.

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	30	
*Continuous Assessment (CA)	20	
End Semester		50

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

SPECIALIZATION: GENDER POLICY

Gender and Development

Semester: 2	**Hours of Instruction/ Week:**
Course Code: 25SDS541	**Number of Credits: 3**
	Total hrs: 45

Prerequisite: NA

Summary: The Gender and Development course provides a comprehensive exploration of the intersection between gender dynamics and development processes. Through an interdisciplinary lens, students delve into the fundamental concepts, theories, and historical perspectives shaping gender roles, inequalities, and power structures globally. The course equips students with the tools and methodologies for conducting gender analysis, enabling them to critically evaluate development projects and policies through a gender-sensitive lens.

Course Objectives:

1. Understand the Conceptual Foundations
2. Examine Key Concepts and Theoretical Frameworks
3. Gain proficiency in employing gender analysis frameworks to assess the differential impacts of development policies and projects on diverse gender groups.
4. Investigate the gendered division of labor across formal and informal sectors, discerning the challenges and opportunities for women's economic empowerment.
5. Investigate Gender and Environment for Sustainable Development

Course Outcomes:

CO1: Students can define fundamental concepts and theories related to gender and development,
CO2: Students grasp the complexities of gender roles, patriarchy, and gender inequality within various socio-cultural contexts.
CO3: Identify Critically evaluate different theoretical frameworks, such as feminist perspectives and intersectionality, to comprehend the multifaceted nature of gender issues.
CO4: Apply gender analysis frameworks to deconstruct development projects and policies, discerning their differential impacts on various gender groups.
CO5: Recognize the significance of gender mainstreaming and gender integration strategies in promoting gender equality within development interventions.

Skills:

- Reading philosophical and sociological texts
- Self-reflection

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	-	-	X	-	-	-	-	-
CO2	-	-	X	-	-	-	-	-
CO3	-	-	-	X	-	-	-	-

CO4	-	-	-	X	-	-	-	-
CO5	-	X	-	-	-	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	-	-	X
CO2	-	-	-	-	X
CO3	-	-	-	-	X
CO4	-	-	-	X	-
CO5	-	X	-	-	-

Syllabus:

- Unit I – Introduction to Gender and Development: Understanding Gender: Definitions, Concepts, and Theories, Historical Perspectives on Gender and Development Key Concepts: Patriarchy, Gender Roles, Gender Inequality, Theoretical Frameworks: Feminist Perspectives, Intersectionality.

- Unit II – Gender Analysis Frameworks: Introduction to Gender Analysis, Gender Mainstreaming vs. Gender Integration, Tools and Methods for Gender Analysis, Applying Gender Analysis to Development Projects and Policies, Case Studies: Gender Analysis in Practice.

- Unit III – Gender, Work, and Economic Development: Gender Division of Labor: Formal and Informal Sectors, Women's Economic Empowerment: Challenges and Opportunities, Gender Wage Gap and Employment Discrimination, Microfinance and Women's Entrepreneurship Sustainable Livelihoods Approaches and Gender.

- Unit IV – Gender, Health, and Education: Gender Disparities in Health: Access, Utilization, and Outcomes, Reproductive Health and Rights, Gender-Based Violence: Impacts on Health and Development, Gender and Education: Access, Quality, and Gender Parity, Gender-responsive Health and Education Policies and Programs.

- Unit V – Gender, Environment, and Sustainable Development: Gender and Environmental Degradation, Climate Change and Gender Vulnerabilities, Women's Role in Natural Resource Management and Conservation, Gender-responsive Approaches to Sustainable Development Goals (SDGs), Mainstreaming Gender in Environmental Policies and Projects.

Textbooks, Papers, Reference Books:

- "Gender and Development: A Practical Guide" by Caroline Moser and Fiona Clark
- "Gender, Development and Globalization: Economics as if All People Mattered" by Lourdes Benería, Gunseli Berik, and Maria S. Floro
- "Gender and Development" by Janet Momsen
- Selected journal articles, policy briefs, and reports related to each unit's topic.
- Online resources from reputable organizations such as UN Women, World Bank, and WHO.

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	20	
*Continuous Assessment (CA)	20	
End Semester		60

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Gender Policy and Legislations in India

Semester: 3	**Hours of Instruction/ Week:**
Course Code: 25SDS542	**Number of Credits: 3**
	Total hrs: 45

Prerequisite: NA

Summary: Gender Policy and Legislation in India provides a comprehensive overview of the legal and policy frameworks addressing gender issues in India. Through five units, students will explore the historical evolution of gender policies, constitutional provisions for gender equality, women's empowerment initiatives, laws addressing gender-based violence, and emerging issues in the field. By the end of the course, students will gain an understanding of the complexities of gender policy implementation and the challenges and opportunities for advancing gender equality in India..

Course Objectives:

1. Understand the historical evolution of gender policies and legislation in India
2. Analyze the constitutional provisions related to gender equality and women's rights in India, including fundamental rights and directive principles
3. Evaluate landmark judgments and legal mechanisms aimed at addressing gender-based discrimination and violence in India's judicial system.
4. Examine the role of government bodies, NGOs, and civil society organizations in formulating, implementing, and monitoring gender policies and legislation.
5. Explore emerging issues such as intersectionality, transgender rights, and gender-based cyber harassment, and evaluate policy responses to address these challenges

Course Outcomes:

CO1: Demonstrate a comprehensive understanding of the historical evolution, constitutional provisions, and key legal frameworks pertaining to gender policy and legislation in India.

CO2: Develop analytical skills to critically evaluate landmark judgments, legal mechanisms, and policy initiatives aimed at addressing gender-based discrimination.

CO3: assess the effectiveness and impact of national policies and programs for women's empowerment and development.

CO4: identify emerging issues such as intersectionality, transgender rights, and gender-based cyber harassment, and propose policy solutions.

CO5: recognize opportunities for policy reform and advocacy in advancing gender equality and women's rights in India, and develop strategies for meaningful engagement with government bodies, civil society organizations, and other stakeholders to effect positive change.

Skills:

- Critically analyse and comprehend
- Self-reflection

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8

CO1	-	-	X	-	-	-	-	-
CO2	-	-	X	-	-	-	-	-
CO3	-	-	-	X	-	-	-	-
CO4	-	-	-	X	-	-	-	-
CO5	-	X	-	-	-	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	-	-	X
CO2	-	-	-	-	X
CO3	-	-	-	-	X
CO4	-	-	-	X	-
CO5	-	X	-	-	-

Syllabus:

- Unit I – Introduction to Gender Policy and Legislation: Understanding Gender: Understanding Gender: Concepts, Definitions, and Terminologies, Overview of Gender Policy and Legislation Framework in India, Historical Perspectives: Evolution of Gender Policies and Laws, Key Actors and Institutions: Government Bodies, NGOs, Civil Society, Challenges and Gaps in Gender Policy Implementation

- Unit II – Constitutional Framework and Gender Rights: Constitutional Provisions for Gender Equality: Fundamental Rights and Directive Principles, Landmark Judgments on Gender Equality and Women's Rights, Gender Equality and Right to Equality: Case Studies, Role of National Human Rights Commission and State Human Rights Commissions, Legal Mechanisms for Addressing Gender-Based Discrimination and Violence.

- Unit III – Women's Empowerment and Development Policies: National Policy for Empowerment of Women, Gender Mainstreaming in Development Programs and Policies, Women's Health and Reproductive Rights Policies, Women's Economic Empowerment: Employment, Entrepreneurship, and Financial Inclusion, Reservation Policies and Affirmative Action for Women: Quotas in Panchayats and Urban Local Bodies.

- Unit IV – Gender-Based Violence: Laws and Interventions: Legal Framework for Addressing Gender-Based Violence: Domestic Violence Act, Sexual Harassment at Workplace Act, Criminal Laws and Amendments related to Rape, Dowry, Acid Attacks, and Honor Killings, Support Systems for Survivors of Gender-Based Violence: Shelters, Helplines, Legal Aid, Role of Law Enforcement Agencies and Judiciary in Combating Gender-Based Violence,Prevention Strategies: Education, Awareness Campaigns, Community Interventions.

- Unit V – Emerging Issues and Future Directions: Intersectionality and Multiple Forms of Discrimination: Caste, Class, Religion, Disability, Transgender Rights and Legal Recognition: Transgender Persons (Protection of Rights) Act, Emerging Policy Responses to Gender and Technology: Cyber Harassment, Online Abuse, Sustainable Development Goals (SDGs) and Gender Equality: Progress and ChallengesFuture Directions in Gender Policy and Legislation: Opportunities for Reform and Advocacy

Textbooks, Papers, Reference Books:

- "Gender Justice, Citizenship and Development" by Maitrayee Mukhopadhyay and Navsharan Singh
- "Gender and Law in India: Critical Essays" edited by Kalpana Kannabiran and Ranbir Singh
- "Women and Law in India: An Omnibus" edited by Kalpana Kannabiran and Others
- "Gender Inequality in India: Perspectives from Social Science Research" by Nandini Deo and B. L. Ramakrishna
- "Gender, Rights and Development: A Global Sourcebook" edited by Caroline Sweetman
- "Gender and Politics in India" by Nivedita Menon
- "Engendering Law: Essays in Honour of Lotika Sarkar" edited by Amita Dhanda and Archana Parashar
- "The Gendered Terrain of Disaster: Through Women's Eyes" edited by Enarson and Chakrabarti
- "Mapping Gendered Violence: Narratives, Political Tensions, and the Public Sphere" edited by Sunita Chakravarty and Tanika Sarkar

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	20	
*Continuous Assessment (CA)	20	
End Semester		60

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Critical Masculinities and Gender Equality

Semester: 4	**Hours of Instruction/ Week:**
Course Code: 25SDS543	**Number of Credits: 3**
	Total hrs: 45

Prerequisite: NA

Summary: This course offers a comprehensive exploration of critical perspectives on masculinities and their implications for achieving gender equality policies. Through interdisciplinary approaches drawing from sociology, psychology, cultural studies, and feminist theory, students will examine the social construction of masculinity, its intersections with race, class, sexuality, and other dimensions of identity, and its impact on individual lives, government policies, and societal structures. Emphasis will be placed on the Indian context and critically evaluating traditional notions of masculinity, understanding power dynamics in gender relations, and developing strategies for promoting gender justice and equality.

Course Objectives:

1. Analyze the social construction of masculinity and its historical and cultural variations.
2. Critically assess the intersections of masculinity with race, class, sexuality, and other social categories.
3. Examine the role of masculinities in perpetuating gender inequalities and oppressive systems.
4. Explore feminist theories and methodologies for studying masculinities and gender relations.
5. Evaluate representations of masculinity in media, literature, and popular culture.
6. Understand the impacts of toxic masculinity on individuals and communities.
7. Investigate the potential for transformative masculinities and alternative models of gender identity.
8. Develop strategies in policy and intervention for promoting gender equality and challenging patriarchal structures.

Course Outcomes:

CO1: Students can define the various forms of masculinity and how this impacts social life

CO2: Students grasp the historical and cultural perspectives of gender norms

CO3: Identify intersections of masculinity with race, class, and sexuality and links with violence

CO4: Become familiar with strategies to engage men & boys to promote gender equality

CO5: Understand how critical masculinities can play a supportive role in gender policies

Skills:

- Reading philosophical and sociological texts
- Self-reflection

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	-	-	X	-	-	-	-	-
CO2	-	-	X	-	-	-	-	-
CO3	-	-	-	X	-	-	-	-
CO4	-	-	-	X	-	-	-	-
CO5	-	X	-	-	-	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	-	-	-	X

CO2	-	-	-	-	X
CO3	-	-	-	-	X
CO4	-	-	-	X	-
CO5	-	X	-	-	-

Syllabus:

- Unit I – Introduction to Critical Masculinities: Hegemonic Masculinity and Power Dynamics; Feminist Perspectives on Masculinities
- Unit II – Representations of Masculinity in Media and Culture: Media representations of masculinity; Gender stereotypes in advertising and popular culture; Alternative representations and counter-narratives.
- Unit III – Masculinities and Violence: Toxic Masculinity and Its Consequences; Intersections of masculinity with violence against women, LGBTQ+ individuals, and other marginalized groups; Masculinities and Health
- Unit IV – Transformative Masculinities and Allyship: Models of transformative and inclusive masculinities; Allyship and solidarity in the pursuit of gender equality; Strategies for Change

Textbooks, Papers, Reference Books:

- Banerjee, S. (2005). Make me a man!: Masculinity, Hinduism, and Nationalism in India. Albany; State University of New York Press.
- Basu, J., Samanta, M., Basu, S., & Bhattacharya, M. (2018). Gender and Mental Health: Masculinity, Femininity, Modernity and Daily Hassles as Predictors of Subjective Well-Being. In G. Misra (Ed.), Psychosocial Interventions for Health and Well-Being (pp. 313–333). New Delhi; Springer India. https://doi.org/10.1007/978-81-322-3782-2
- Coley, C., Gressel, C.M., Bhavani, R.R. (2021). Transforming MENtalities: Gender equality and masculinities in India. UNESCO New Delhi. https://unesdoc.unesco.org/ark:/48223/pf0000377859.locale=en
- Connell, R. W. (2005). Masculinities (2nd ed.). Los Angeles; University of California Press.
- Gottzén, L., Mellström, U., & Shefer, T. (Eds.). (2019). Routledge international handbook of masculinity studies. Routledge.
- Kimmel, M., Hearn, J., & Connel, R. W. (Eds.). (2005). Handbook of Studies on Men and Masculinities. London; Sage Publications, Inc.
- Lang, J., Greig, A., & Connell, R. (2008). The Role of Men and Boys in Achieving Gender Equality. In Women 2000 and Beyond. United Nations Division for the Advancement of Women, DESA.
- Osella, C., & Osella, F. (2006). Men and Masculinities in South India. London; Anthem Press.
- Sudkämper, A. (2019). Men's Support for Gender Equality. University of Exeter.

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	20	
*Continuous Assessment (CA)	20	
End Semester		60

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

SPECIALIZATION: HEALTH POLICY

Health Policy and Systems Research (HPSR)

Semester: 2	**Hours of Instruction/ Week: 3**
Course Code: 25SDS551	**Number of Credits: 3**
	Total hrs: 45

Prerequisite: NA

Summary: Health Policy and Systems Research (HPSR) focuses on understanding and improving health systems and policies through rigorous research and analysis. This course introduces students to the methodologies and theoretical frameworks used in HPSR, emphasizing the importance of evidence-based policy-making. Students will explore topics such as health system governance, policy development, and implementation, and the role of stakeholders in shaping health outcomes. The course aims to prepare students to critically evaluate health policies and contribute to the design of effective health interventions.

Course Objectives:

1. Highlight the Fundamental Elements of Effective Health Systems and the Significance of Collaboration Among the Six Core Health System Structures
2. Differentiate Among Various Health Funding Mechanisms with Real-World Illustrations
3. Explain the Distinctions Among Health System Components/Operations, Funding Strategies, and Their Influence on Individuals' Health Care Utilization Pattern
4. Understanding Governance and Priority Setting in Health Systems
5. Exploring Global Approaches to Determining Health Priorities
6. Recognizing Challenges in Effective Health System Governance
7. Assessing the Effectiveness of Health Systems:

Course Outcomes:

CO1: Understand the the Fundamental Elements of Effective Health Systems and the Significance of Collaboration Among the Six Core Health System Structures

CO2:Differentiate Among Various Health Funding Mechanisms with Real-World Illustration

CO3: Explain the Distinctions Among Health System Components/Operations, Funding Strategies, and Their Influence on Individuals' Health Care Utilization Pattern

CO4: Understanding Governance and Priority Setting in Health Systems while Exploring Global Approaches to Determining Health Priorities

CO5:Recognizing Challenges in Effective Health System Governance, Assessing the Effectiveness of Health Systems:

Skills:

- Critical Analysis: Students will hone their ability to critically evaluate the advantages, disadvantages, and potential unforeseen outcomes of diverse policy measures.
- Effective Communication: Students will improve their skills in articulately and convincingly conveying intricate concepts related to health systems and policy suggestions to decision-makers, interested parties, and the wider community.
- Informed Decision-Making and Evaluation of Health Systems and Alternative Policies: This involves developing a deeper understanding and application of strategies for making informed decisions and assessing the impact of health systems and varying policy options.

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	**X**	-	-	-	-	-	-	-
CO2		**X**	**-**	-	-	-	-	-
CO3	-	-	-	-	-	**X**	-	-
CO4	**X**	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	**X**	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	X	-	-	-
CO2	-	X	-	-	-
CO3	-	X	-	-	-
CO4	-	-	-	X	-
CO5	-	-	-	X	-

Syllabus:

Unit I: Introduction to HPSR– Overview of Health Policy analysis, Overview of Health Systems analysis, Concepts, Elements, Key characteristics, Interrelationships, Goals, Boundaries of what HPSR entails, WHO building blocks framework

Unit II: Conceptual Frameworks for HPSR - Integration of targeted health interventions into health systems, Decision making perspective, Accountability and governance issues, Role of trust in health systems, Financing models, Policies and Decision Making

Unit III: Performance assessment - Performance assessment tools, Equity and development priorities, impact assessment, decision making between policies,

Unit IV: Conducting HPSR - Identifying issues and framing research questions in the context of HPSR , Designing a study, Research Quality, Ethical considerations

Unit V: Systems thinking and Public Health - Characteristics of systems, Appraising systems, feedback loops, Emergence, Cascading effects of health policies.

Unit VI: Reading Empirical Research - Cross-sectional studies, Case-studies,Impact Evaluation, Policy and System change temporally, Action research, Cross national analysis, Ethnographic studies

Suggested Readings:

1. Carrin, G., & Carrin, Guy. (2009). *Health systems policy, finance, and organization* (1st edition). Academic Press.
2. Gilson, L., & World Health Organization. (2012). Health policy and systems research: a methodology reader/edited by Lucy Gilson. In *Health policy and systems research: a methodology reader/edited by Lucy Gilson*.
3. 1. Newell B, Tan DT, Proust K. Systems Thinking for Health System Improvement. In: Martins JoM, Pathmanathan I, Tan DT, Lim SC, Allotey P, eds. *Systems Thinking Analyses for Health Policy and Systems Development: A Malaysian*

Case Study. Cambridge University Press; 2021:17-30.
4. Perić N, Hofmarcher-Holzhacker MM, Simon J. Health system performance assessment landscape at the EU level: a structured synthesis of actors and actions. Arch Public Health. 2017 Jan 30;75:5
5. Tashobya, C.K., da Silveira, V.C., Ssengooba, F. *et al.* Health systems performance assessment in low-income countries: learning from international experiences. *Global Health* 10, 5 (2014).
6. Derick W Brinkerhoff, Thomas J Bossert, Health governance: principal–agent linkages and health system strengthening, *Health Policy and Planning*, Volume 29, Issue 6, September 2014, Pages 685–693
7. Derick W Brinkerhoff, Thomas J Bossert, Health governance: principal–agent linkages and health system strengthening, *Health Policy and Planning*, Volume 29, Issue 6, September 2014, Pages 685–693
8. Szlezák NA, Bloom BR, Jamison DT, Keusch GT, Michaud CM, Moon S, et al. (2010) The Global Health System: Actors, Norms, and Expectations in Transition. PLoS Med 7(1): e1000183.

Further Case studies/Journal Paper will be suggested as per the direction of discussion

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	20	
*Continuous Assessment (CA)	40	
End Semester		40

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Health Economics

Semester: 3	**Hours of Instruction/ Week: 3**
Course Code:25SDS552	**Number of Credits: 3**
	Total hrs: 45

Prerequisite: 24SDS551 Health Policy & Systems Research

Summary: This course provides an overview of health economics, exploring the economic behavior of individuals and institutions within the healthcare system. Students will learn about the principles of supply and demand, cost-benefit analysis, and the financial incentives that drive healthcare decision-making. The course aims to equip students with the tools to analyze healthcare policies, understand the economic impacts of health interventions, and address issues such as healthcare financing, insurance, and the allocation of resources in both public and private sectors

Course Objectives:

1. Analyze Health Care Demand and Supply: Demonstrate a thorough understanding of the Grossman model and its implications for health care demand. Analyze the factors influencing the supply of health care, including the labor market for physicians and the role of hospitals. Evaluate the causes and consequences of socioeconomic disparities in health.
2. Apply Health Technology Assessment Techniques: Develop proficiency in conducting and interpreting various health economic evaluation methods, including cost-effectiveness analysis, cost-benefit analysis, and cost-utility analysis. Calculate and interpret the Incremental Cost-Effectiveness Ratio (ICER). Critically assess the ethical considerations in health technology assessment and resource allocation decisions.
3. Evaluate Information Economics in Healthcare: Analyze the economics of health insurance, including the demand for insurance and the concepts of moral hazard and adverse selection. Apply theoretical models such as Akerlof's Market for Lemons and the Rothschild-Stiglitz Model to real-world health insurance markets. Evaluate the implications of information asymmetry in healthcare.
4. Compare and Contrast Global Health Systems: Demonstrate a comprehensive understanding of major global health care models, including the Beveridge Model, Bismarck Model, and American Model. Analyze the structure, financing, and performance of the Indian healthcare system. Evaluate the strengths and weaknesses of different health care systems in addressing population health needs and economic efficiency.
5. Apply Behavioral Economics to Health: Understand and apply concepts from behavioral economics, particularly Prospect Theory, to health-related decision-making. Analyze time inconsistency in health behaviors and its implications for health policy. Evaluate the effectiveness of behavioral economic interventions in improving health outcomes.
6. Assess Public Health Economics and Economic Epidemiology: Analyze health externalities and their impact on public health policy. Demonstrate understanding of economic epidemiology and its applications in predicting and controlling disease spread. Evaluate the economic rationale for public health interventions and their potential impact on population health and healthcare costs.

Course Outcomes:

CO1: Students can analyze the determinants of health care demand and supply using economic frameworks, including the Grossman model, and evaluate labor market dynamics in the health sector.

CO2: Students can apply economic evaluation tools such as cost-effectiveness analysis and incremental cost-effectiveness ratio (ICER) to assess health technologies, while critically examining the ethical implications of resource allocation decisions.

CO3: Students can examine the role of information asymmetry in health insurance markets through theoretical models (e.g., Akerlof, Rothschild-Stiglitz) and assess how adverse selection and moral

hazard impact health outcomes.

CO4: Students can compare the institutional structures, financing mechanisms, and outcomes of diverse global health care systems, including India, and evaluate their implications for equity and efficiency in population health.

CO5: Students can utilize concepts from behavioral economics (e.g., time inconsistency, Prospect Theory) to interpret health-related decision-making and propose interventions aimed at improving health behaviors and policy outcomes

Skills:

- Apply economic reasoning to assess health care demand, supply, insurance behavior, and disparities using foundational and advanced models.
- Conduct and interpret health economic evaluations, including cost-effectiveness and cost-utility analyses, to inform policy and resource allocation.
- Analyze global health systems and public health interventions through the lens of equity, efficiency, and ethical decision-making.
- Integrate insights from behavioral economics and information economics to design evidence-based, context-sensitive health policies and interventions.

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	**X**						X	
CO2	X		**X**			X	X	
CO3	X				X			X
CO4		X		X			X	X
CO5		X	X					X

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	X			X	
CO2		X	X		
CO3	X		X		X
CO4		X		X	
CO5	X		X		X

Syllabus:

Unit I: **DEMAND FOR HEALTH AND HEALTH CARE and SUPPLY OF HEALTH CARE**, The Grossman Model, Socioeconomic Disparities in Health, The Labor Market for Physicians, Hospitals

Unit II: **Health Technology Assessmen**t- Incremental Cost effectiveness ratio, Cost-benefit analysis, Cost-Utility Analysis, Cost of Illness studies, Ethical Considerations

Unit III: **Information Economics**- Demand for Insurance, Moral Hazard, Akerlof's Market for Lemons, The Rothschild-Stiglitz Model, Adverse Selection in Real Markets

Unit IV: **Health Policy Globally** -Beveridge Model, Bismarck Model, American Model, Indian Healthcare system

Unit V: **Behavioural Health Economics** - Prospect Theory, Time inconsistency and Health, Public Health Economics - Health Externalities, Economic Epidemiology

Suggested Readings:

1. Bhattacharya, J., Hyde, T., & Tu, P. (2014). Health economics. Bloomsbury Publishing.
2. Sloan, F. A., & Hsieh, C. R. (2017). Health economics. Mit Press.
3. https://www.nlm.nih.gov/nichsr/hta101/ta10103.html
4. Kadri, A. M. (2019). IAPSM's Textbook of Community Medicine. Jaypee Brothers Medical Publishers.

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	20	
*Continuous Assessment (CA)	40	
End Semester		40

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Epidemiology & Biostatistics

Semester: 4	**Hours of Instruction/ Week: 3**
Course Code:25SDS553	**Number of Credits: 3**
	Total hrs: 45

Prerequisite: 24SDS551 Health Policy & Systems Research

Summary: This foundational course covers the essential concepts of epidemiology and biostatistics, providing students with the skills to investigate and interpret the distribution and determinants of health and disease in populations. Students will learn about study design, data collection, and statistical analysis techniques used in public health research. The course emphasizes the application of these methods to real-world health problems, enabling students to critically assess epidemiological studies and use biostatistical tools to inform public health decision-making.

Course Objectives

1. Understand and apply key epidemiological concepts including disease frequency, association, and causal inference in population health contexts.
2. Develop and critically assess appropriate study designs to investigate public health questions, with attention to bias, confounding, and effect modification.
3. Utilize foundational and advanced biostatistical techniques for data analysis, including hypothesis testing, regression models, and survival analysis.
4. Evaluate diagnostic and screening tools using quantitative measures such as sensitivity, specificity, and predictive values in public health practice.
5. Interpret, synthesize, and communicate epidemiological and statistical findings effectively for public health research, policy, and intervention.

Course Outcomes (COs)

CO1: Demonstrate the ability to apply core epidemiological measures and causal reasoning to assess population health using surveillance and registry data.

CO2: Design and evaluate epidemiological studies (descriptive, analytical, and experimental), accounting for bias, confounding, and effect modification.

CO3: Apply statistical analysis techniques including regression models and survival analysis to interpret real-world public health data.

CO4: Assess the validity and utility of diagnostic and screening tests using statistical criteria and explain their implications for clinical and public health practice.

CO5: Critically synthesize evidence from epidemiological literature and communicate findings to diverse audiences for public health action.

Skills:

- Epidemiological Reasoning: Ability to apply concepts such as incidence, prevalence, risk, and causal inference to assess health patterns and determinants in populations.
- Study Design and Appraisal: Competence in designing, evaluating, and critiquing epidemiological studies using appropriate methodologies and understanding sources of bias and confounding.
- Biostatistical Analysis: Proficiency in applying statistical techniques (e.g., regression, hypothesis

testing, survival analysis) to analyze and interpret health data.

- Evidence Synthesis and Communication: Skills to critically appraise scientific literature and effectively communicate findings to scientific and policy audiences in support of public health decision-making.

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	x	x	x	x	x	x		x
CO2	x	x			x	x	x	
CO3			x	x	x	x	x	x
CO4	x	x	x	x				
CO5	x	x	x			x		x

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	x	x			x
CO2		x	x	x	x
CO3	x		x	x	
CO4	x	x		x	x
CO5	x	x	x		

Syllabus:

Unit I: Foundations of Epidemiology

- Introduction to Epidemiology: Definition, Scope, and Historical Context
- Measures of Disease Frequency: Incidence, Prevalence, and Mortality Rates
- Measures of Association: Relative Risk, Odds Ratio, and Attributable Risk
- Causality in Epidemiology: Bradford Hill Criteria and Causal Inference
- Sources of Epidemiological Data: Surveillance Systems and Health Registries

Unit II: Study Designs in Epidemiology

- Overview of Epidemiological Study Designs
- Descriptive Studies: Ecological Studies and Cross-sectional Studies
- Analytical Studies: Cohort Studies and Case-Control Studies
- Experimental Studies: Randomized Controlled Trials
- Bias, Confounding, and Effect Modification in Epidemiological Studies

Unit III: Foundations of Biostatistics

- Introduction to Biostatistics: Role in Public Health and Epidemiology
- Descriptive Statistics: Measures of Central Tendency and Dispersion
- Probability Distributions: Normal, Binomial, and Poisson Distributions
- Sampling Methods and Sample Size Calculation
- Hypothesis Testing and Confidence Intervals

Unit IV: Statistical Analysis Techniques

- t-tests and Analysis of Variance (ANOVA)
- Chi-square Tests and Fisher's Exact Test
- Correlation and Simple Linear Regression
- Multiple Linear Regression and Logistic Regression
- Survival Analysis: Kaplan-Meier Curves and Cox Proportional Hazards Model

Unit V: Applications in Public Health

- Screening and Diagnostic Tests: Sensitivity, Specificity, and Predictive Values
- Outbreak Investigation: Steps and Statistical Methods
- Clinical Trials: Design, Conduct, and Interpretation
- Systematic Reviews and Meta-analysisSuggested **Readings:**

Suggested Readings:

Gordis, L. (2014). Epidemiology (5th ed.). Elsevier Saunders.

Rothman, K. J., Greenland, S., & Lash, T. L. (2008). Modern Epidemiology (3rd ed.). Lippincott Williams & Wilkins.

Centers for Disease Control and Prevention. (2012). Principles of Epidemiology in Public Health Practice (3rd ed.).

Szklo, M., & Nieto, F. J. (2019). Epidemiology: Beyond the Basics (4th ed.). Jones & Bartlett Learning.

Hennekens, C. H., & Buring, J. E. (1987). Epidemiology in Medicine. Lippincott Williams & Wilkins.

Grimes, D. A., & Schulz, K. F. (2002). An overview of clinical research: the lay of the land. The Lancet, 359(9300), 57-61.

Rosner, B. (2015). Fundamentals of Biostatistics (8th ed.). Cengage Learning.

Pagano, M., & Gauvreau, K. (2018). Principles of Biostatistics (2nd ed.). CRC Press.

Dawson, B., & Trapp, R. G. (2004). Basic & Clinical Biostatistics (4th ed.). Lange Medical Books/McGraw-Hill.

Daniel, W. W., & Cross, C. L. (2018). Biostatistics: A Foundation for Analysis in the Health Sciences (11th ed.). Wiley.

Vittinghoff, E., Glidden, D. V., Shiboski, S. C., & McCulloch, C. E. (2012). Regression Methods in Biostatistics: Linear, Logistic, Survival, and Repeated Measures Models (2nd ed.). Springer.

Kleinbaum, D. G., & Klein, M. (2012). Survival Analysis: A Self-Learning Text (3rd ed.). Springer.

Fletcher, R. H., Fletcher, S. W., & Fletcher, G. S. (2014). Clinical Epidemiology: The Essentials (5th ed.). Lippincott Williams & Wilkins.

Gregg, M. B. (2008). Field Epidemiology (3rd ed.). Oxford University Press.

Higgins, J. P. T., & Green, S. (Eds.). (2011). Cochrane Handbook for Systematic Reviews of Interventions (Version 5.1.0). The Cochrane Collaboration.

Guyatt, G., Rennie, D., Meade, M. O., & Cook, D. J. (2015). Users' Guides to the Medical Literature: A Manual for Evidence-Based Clinical Practice (3rd ed.). McGraw-Hill Education.

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	20	
*Continuous Assessment (CA)	40	
End Semester		40

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

OPEN ELECTIVES

Social Welfare Policy & Administration

Semester:	**Hours of Instruction/ Week:**
Course Code: 25OEL641	**Number of Credits: 3**
	Total hrs: 45

Prerequisite: NA

Summary: An introduction to social welfare administration course can cover a variety of topics, including:

1. The history, principles, and fundamental concepts of social welfare policy
2. The development and impact of social policies, and their role in shaping society
3. The principles, policies, and practices involved in managing social welfare programs and organizations
4. Knowledge on management processes and basic skills to handle administrative matters in social care organizations

Course Objectives:

1. To prepare students for possible work within non-profit administration and social welfare policies.
2. Students gain an understanding of social issues and needs of various populations.
3. Students gain an understanding of social welfare administration, NGO/CSO engagement, NGO/CSO administration and its various applications.

Course Outcomes:

CO1: Knowledge of the fundamentals of non-profit administration and social welfare policies.

CO2: Insight into social issues and needs of various populations.

CO3: Knowledge of the fundamentals of social welfare administration,

CO4: Knowledge of the fundamentals of NGO/CSO engagement, NGO/CSO administration and its various applications.

Skills:

- NGO and social welfare administration
- NGO/CSO engagement strategies

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	-	X	-	-	-	-	-	-
CO2	-	-	X	-	-	-	-	-
CO3	-	-	-	-	-	X	-	-
CO4	-	-	-	-	-	-	X	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	X	-	-	-
CO2	-	X	-	-	-
CO3	-	-	-	-	X
CO4	-	-	-	-	X

Syllabus:

- Unit I – Social Welfare Policy: Concept, meaning, definition, need, evolution, constitutional base, sources and instrument. Approaches to social policy; unified, integrated and sectoral. Social welfare; Meaning, concept and importance, evolution of social welfare in India.
- Unit II – Social Welfare Policies and Programmes for Various Populations: Scheduled sastes (SCs) and schedule tribes (STs), other backward classes (OBCs), religious and linguistic minorities, women, children, older persons and persons with disabilities (PWDs), transgender, mentally Ill persons, refuges, substance abuse, internally displaced persons (IDP) and project affected persons (PAPs).
- Unit III – Social Welfare Administration: Definition, meaning, concepts, scope, task, functions, skills, principles and areas. Evolution of social welfare administration in India. Administrative setup & functions; centre level, state level, & local level.
- Unit IV – Non State Organizations (NSO)/Civil Society Organizations (CSOs): History and evolution of CSO in the World & India. Type of VOs: Legal Status of VOs / CSOs; salient features of societies registration act, 1860: State acts related to voluntary organizations. Indian Trust Act 1882. Organizational Structure: National Policy on Voluntary Sector - 2007. Problems and challenges in administration of Voluntary organization
- Unit V – Administration of NSOs/CSOs: Office administration, reporting and preparation of annual reports; Financial administration. Resource mobilization: Fund Raising. Income Tax Act Sections 12A, 35AC, 80G & 80 GGA; Foreign Contribution Regulation Act (FCRA) 2010. Need for effective implementation of FCRA provisions and challenges for government and VOs

Textbooks, Papers, Reference Books:

- Bhattacharya Sanjay. (2006) Social Work Administration and Development. New Delhi, Rawat.
- Chowdhry Paul D. (2006) Social Welfare Administration. Delhi, Atma Ram & sons.
- Goel, S.L. & Jain, R.K. (1988) Social Welfare Administration, Vol. I & II. New Delhi, Deep and Deep.
- Sachdeva D R. (2007) Social Welfare Administration in India. Allahabad, KitabMahal.

Evaluation Pattern:

Assessment	Internal	External
Midterm Exam	30	
*Continuous Assessment (CA)	20	
End Semester		50

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

Science, Technology, & Society Interactions

Semester:	**Hours of Instruction/ Week:**
Course Code: 25OEL642	**Number of Credits: 3**
	Total hrs: 45

Prerequisite: NA

Summary: Science and technology have become all pervasive force influencing almost every aspect of our daily life. The present course focuses on the increasing complexities of the interrelationship between science, technology and society. Science and technology policy of the twenty -first century is faced by challenges like emerging technology, globalization and the environmental movement.

Some of the notions like objectivity, rationality, skepticism, systematic investigation, scientific temper require an understanding of how science emerged as a social institution, what role S&T plays in our society and how socioeconomic structure influences the character of modern science. This course will familiarize undergraduate students about the basic concepts and perspectives on science and technology and explore the emergence and growth of modern science and technology in India. The course will discuss issues concerning both functional and dysfunctional aspects of the impact of science and technology on society and vice versa

Course Objectives:

1. Gain understanding on the basic concepts and perspectives on science and technology
2. Gain insights into science and technology in India.
3. Become familiar with the structure of Scientific Research & Development Organizations

Course Outcomes:

CO1: Grasp basic concepts and perspectives on science and technology

CO2: Understand science and tech within the Indian Context

CO3: Understand the structure of scientific R&D organizations

CO4: Understand the impact and role of science on policy

Skills:

- Critical thinking
- Understanding the connections between science and society

-Program outcome PO - Course Outcomes CO Mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
CO1	-	-	-	-	-	X	-	-
CO2	-	-	-	-	-	X	-	-
CO3	-	-	-	-	-	X	-	-
CO4	-	X	-	-	-	-	-	-

Program Specific Outcomes PSO - Course Objectives - Mapping

	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	-	X	-	-	-
CO2	-	X	-	-	-
CO3	-	X	-	-	-
CO4	-	X	-	-	-

Syllabus:

- Unit I – Basic concepts and perspectives: Concept of Science: Nature of scientific knowledge. Scientific method, demarcation between science and non science, Critique of modern science: scientific temper vs. humanistic temper. Emergence of modern science: Role of Scientists. Institutionalization and professionalization of science.
- Unit II – Science, Technology and Culture: Science, Technological Change and Development; Science and Politics; Public Understanding of Science and Technology; Science and Religion; Science and Ethics & Social Responsibility
- Unit III – Science and Technology in India: Development of Science in India: Pre-colonial Science; Colonial science and response of Indian Scientists; Origin and growth of scientific institutions and societies in India; Science in Post- Independent India: Role of political and scientific elites in the development of Science and Technology, Emergence of Scientific community in India
- Unit IV – Structure of Scientific Research & Development Organizations: Evolution of S&T Policy; Science and Technology in Globalized world: Challenges and opportunities of emerging technologies like Information technology and Bio-technology. TRIPS; Patent Laws and Indigenous Knowledge. Consequences and Implications.

Textbooks, Papers, Reference Books:

1. Barber, Bernard (1953.) Science and Social Order. London: George Allen & Unwin. Chapter 1 "The Nature of Science: The Place of Rationality in Human Society" pp.7-22. Chapter X , "The social Control of Science". pp.207-237.
2. Ben-David, Joseph, (1965), The Scientists Role in Society: a comparative study. Englewood Cliff, Print ice-Hall.
3. Campbell, Norman, (1952). What is Science? London: Dover.
4. Crother, T.G. (1967) Science in Modern Society. Boston: The Cresset Press
5. Desai, Pranav N.(2005) "Challenges of Agro-Biotechnologies, Intellectual Property Rights and Globalization" , Asian Biotechnology and Development Review, Vol.7.(2)
6. Gailard, J., Krishna, V.V. and Waast, (1997), Scientific Communities in the Developing Countries. New Delhi: Sage Publication. Chapter1& 3
7. Haldane, J.B.S., (1965) Science and Indian Culture.Culcutta.New Age Publisher Kothari, D.S. (1974) Science and Man, Newdelhi: Indian Publication.
8. Kumar, Deepak (1995), Science and the Raj 1857-1905, NewDelhi, Oxford Uni,Press
9. Merton, Robert K. (1968). Social Theory and Social Structure. New Delhi: Amerind Publication. Chapter XVII, "Science and the social Order" pp. 591-603., Chapter, XVIII "Democratic Social Structure and Science". Pp.604-615.
10. Mack, Arien (ed.) (1997). Technology and the Rest of Culture. Columbus; Ohio University Press.Chapter.2, "Social Context of Technology" pp.5-24.Chapter, 11, "Technology and Culture" pp. 177-184.
11. Nandy, Ashis(ed.) (1988). Science, Hegemony and Violence: A Requiem for Modernity, Tokyo: Tokyo University Press.
12. Patnaik, Binay Kumar (1992). The Scientific Temper: An Empirical Study. Jaipur: Rawat Publiction
13. Rose, Hilary and Rose, Steven (1977) Science and Society. Harmondsworth: Penguin Books. Snow,C.P. (1969), Two Culture: A Second Look. London: Cambridge University Press.

Optional Reading Lists:

1. Abrol, Dinesh(2004)"Science and Technology: Current Imperatives." Social Scientists, 32(78):76-84.
2. Adams, Robert McC (1997) "Social Context of Technology" in Mack, Arien(ed) Technology and the Rest of Culture. Columbus: Ohio University Press, 5-22.
3. Adhikari, Kamini, (1987) "Science Society and The Indian Transformation," Philosophy and

4. Social Action, Vol.XII, no.1-4, pp33-56.
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9. Biswas, S.K. 2000 "Do Science and technology have a future in India". MAINSTREAM, annual (23 December) :103-104.
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11. Chattopadhyay,D.P.(ed)(1982) Studies in the History of Science in India, New Delhi: Editorial Enterprises.
12. Chattopadhyaya,D.P.(2000), Science Values and Ethics" Science and Culture.Vol,66,no.3- 4.pp101-109.
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16. Goonatilke, Susantha, (1999) Towards a Global Science: Mining Civilizational Knowledge. NewDelhi: Vistaar Pub.
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18. Jagtenberg, Tom (1983). The Social Construction of Science : A Comparative Study of Global Direction of Research ,Evolution and Legitimation. Dordrecht; D. Reidel Publication.Chapter 2 "What is science".pp12-40.
19. Migration in the Context of Brain Gain &Brain Drain in India'. Science, Technology& Society, 2(2). PP. 347-89.
20. Krishna, V.V.(2001). "Reflection on the Changing Status of Academic Science in India". INTERNATIONAL SOCIAL SCIENCE JOURNAL 169 (June) 231-246.
21. Mashelker, R.A.(2004)"National Building through Science and Technology: A Developing World Perspectives". Man & Development. 26(3) September 27-46.
22. Merton,R.K.(1970) Sociology of Science. New York: Harper and Row.
23. Minsky, Marvin (1997) "Technology and Culture" in Mack, Arien (ed.) Technology and the Rest of Culture. Columbus: Ohio University Press, 177-184.
24. Oberai,J.P.S. (1979) Science and Culture. New Delhi: Oxford University Press.
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26. Pal, Yash (1996) " Science in Culture and the Good Society.'MAINSTREAM Annual (December,14):15-19.
27. Polanyi, Michael (1969.) "Growth of Science in Society". Minerva,Vol.5(4)
28. Singh, Baldev (ed.) (1986) Jawaharlal Nehru on Science. New Delhi: Nehru Memorial Museum and library.
29. Visvanathan, Shiv (1997) Carnival for Science Essays on Science, Technology and Development. Delhi: Oxford University Press. Chapter 1, "A carnival for Science" .pp1-14, Chapter 4, Modern Medicine and its Non-Modern Critics: A Study in Discourse. pp 94-145.
30. Ziman,J. M.(1968), Public Knowledge: An Essay Concerning the Social Dimension of Science, Cambridge: Cambridge Uni. Press.

Evaluation Pattern:

Assessment	Internal	External
Midterm Exams (2)	30	
*Continuous Assessment (CA)	20	
End Semester		50

*CA - Can be Quizzes, Assignment, Projects, and Reports, and Seminar

25AVP501 MASTERY OVER MIND 1-0-2-2

PG SYLLABUS

COURSE OBECTIVES

Master Over the Mind (MAOM) is an Amrita initiative to implement schemes and organize university-wide programs to enhance health and wellbeing of all faculty, staff, and students (UN SDG -3). This program as part of our efforts for sustainable stress reduction introduces immediate and long-term benefits and equips every attendee to manage stressful emotions and anxiety facilitating inner peace and harmony. With a meditation technique offered by Amrita Chancellor and world-renowned humanitarian and spiritual leader, Sri Mata Amritanandamayi Devi (Amma), this course has been planned to be offered to all students of all campuses of AMRITA, starting off with all first years, wherein one hour per week is completely dedicated for guided practical meditation session and one hour on the theory aspects of MAOM. The theory section comprises lecture hours within a structured syllabus and will include invited guest lecture series from eminent personalities from diverse fields of excellence. This course will enhance the understanding of experiential learning based on university's mission: "Education for Life along with Education for Living" and is aimed to allow learners to realize and rediscover the infinite potential of one's true Being and the fulfilment of life's goals.

COURSE OUTCOME

After successful completion of the course, students will be able to:	
S.No.	**Course Outcomes**
1.	Understand the scientific benefits of meditation. (CO1)
2.	Explain the science behind meditation and its effects on physical and mental well-being (CO2).
3.	Understand the meditation techniques to cultivate emotional intelligence and improve relationships (CO3).
4.	Learn and practice MAOM meditation in daily life (CO4).
5.	To apply the effect of meditation to compassion-driven action (CO5)

Syllabus:

Scientific benefits of Meditation (CO1)

Scientific benefits of meditation, exploring its effects on physical and mental wellbeing.

Learn about the different types of meditation practices, the essential elements of meditation, and the empirical evidence supporting its benefits.

Video resource-Swami Atmanandamrita Puri

Science Behind Meditation (CO2)

A: A preliminary understanding of the Science of meditation. What can modern science tell us about this tradition-based method?

B: How meditation helps humanity according to what we know from scientific research

Reading 1: Does Meditation Aid Brain and Mental Health (Dr Shyam Diwakar)

Reading 2: 'Science and Spirituality.' Chapter 85 in Amritam Gamaya (2022). Mata Amritanandamayi Mission Trust.

Role of Meditation in Emotional intelligence (CO3)

Learn how meditation practices can enhance self-awareness, self-regulation, motivation, empathy, and social skills, leading to improved relationships and decision-making. Improve communication, emotional intelligence, and interpersonal skills. Logical and analytical reasoning

Practicing MA OM Meditation in Daily Life (CO4)

Guided Meditation Sessions following scripts provided (Level One to Level Five)

Reading 1: MA OM and White Flower Meditation: A Brief Note (Swami Atmananda Puri)

Reading 2: 'Live in the Present Moment.' Chapter 71 in Amritam Gamaya (2022). Mata Amritanandamayi Mission Trust.

Meditation and Compassion-driven Action (CO5)

Understand how meditation can help to motivate compassion-driven action.

GLIMPSES OF INDIAN CULTURE

P/F

22ADM501: GLIMPSES OF INDIAN CULTURE

A. Prerequisite: nil

B. Nature of Course: Theory

C. Course Objectives:

- The course "Glimpses of Indian Culture" aims to provide students with a comprehensive understanding of various aspects of Indian culture, with a focus on its spiritual, philosophical, and religious dimensions.
- Through an exploration of the chapters from the provided book, students will gain insights into the foundational principles, practices, and symbols that shape the diverse cultural landscape of India
- Aligned with the Indian Knowledge Systems (IKS) framework outlined in the National Education Policy, this course serves as an introduction to the vast reservoir of wisdom and knowledge rooted in Indian heritage.
- By engaging with the chapters in the book, students will develop a holistic appreciation for the rich tapestry of Indian culture, spanning from its philosophical underpinnings to its artistic expressions, rituals, and societal values.
- This course aims to cultivate cultural sensitivity, critical thinking, and a deeper understanding of the diverse spiritual and cultural traditions that have shaped India's identity over millennia.

D. Course Outcomes: After successful completion of the course, Students will be able to:

CO	Course Outcomes	Knowledge level [Bloom's Taxonomy]
CO01	**Recall key concepts and terms associated with Sanatana Dharma, scriptures, and core cultural elements of India.** Statement: Demonstrate the ability to remember essential terms, concepts, and principles discussed in the chapters on Sanatana Dharma, scriptures, and cultural aspects.	Remembering
CO02	**Explain the concepts of Īśvara, Guru Tattva, Avatara Tattva, and the Theory of Karma as foundational elements of Indian cultural philosophy.** Statement: Understand the profound meanings of Īśvara, Guru, Avatara, and Karma, elucidating their importance in shaping Indian cultural thought.	Understanding
CO03	**Apply the knowledge of Purusharthas, Sanyasa, and Yajna to analyze real-life ethical and spiritual scenarios.** Statement: Utilize insights from Purusharthas, Sanyasa, and Yajna to navigate ethical dilemmas and make informed decisions**.**	Applying
CO04	**Analyze the symbolism in cultural practices, Nataraja iconography, and temple architecture.** Statement: Deconstruct the layers of symbolism in various cultural aspects, including Nataraja representation and temple architecture, unraveling their deep meanings.	Analyzing
CO05	**Evaluate the significance of temples as cradles of culture and explore alternative systems in India's cultural landscape.** Statement: Assess the role of temples in preserving cultural heritage and critically examine the diversity of cultural and spiritual systems in India.	Evaluating

CO06	**Develop projects or presentations that highlight the essence of Sanatana Dharma, sadhana, and the cultural significance of symbols.** Statement: Create expressive projects that capture the essence of Sanatana Dharma, convey the practices of sadhana, and portray the cultural meanings of symbols.	Creating

POs Programme Outcomes	**COs**
PO1: Engineering Knowledge **PO2: Problem Analysis** **PO3: Design/Development of Solutions** **PO4: Conduct Investigations of complex problems** **PO5: Modern tools usage** **PO6: Engineer and Society** **PO7: Environment and Sustainability** **PO8: Ethics** **PO9: Individual & Teamwork** **PO10: Communication** **PO11: Project management & Finance** **PO12: Lifelong learning** **B.Tech. EEE Programme Specific Outcome (PSO)** **PSO1:** Awareness of Future Technology: Develop solutions for future systems using smart technologies. **PSO2:** Research and Innovation: Identify engineering challenges, approach using cutting edge research tools and execute innovative solutions.	• CO 1: Recall key concepts and terms associated with Sanatana Dharma, scriptures, and core cultural elements of India. • CO 2: Explain the concepts of Īśvara, Guru Tattva, Avatara Tattva, and the Theory of Karma as foundational elements of Indian cultural philosophy • CO 3: Apply the knowledge of Purusharthas, Sanyasa, and Yajna to analyze real-life ethical and spiritual scenarios. • CO 4: Analyze the symbolism in cultural practices, Nataraja iconography, and temple architecture. • CO 5: Evaluate the significance of temples as cradles of culture and explore alternative systems in India's cultural landscape. • CO 6: Develop projects or presentations that highlight the essence of Sanatana Dharma, sadhana, and the cultural significance of symbols.

E. CO-PO Mapping: [affinity#: 3 – high; 2- moderate; 1- slightly]

COs	**Program Outcomes [POs]**												**Program Specific Outcomes [PSOs]***	
	PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO01	-	-	-	-	-	-	-	2	-	-	-	3	-	-
CO02	-	-	-	-	-	1	-	2	-	-	-	3	-	-
CO03	-	-	-		-	3	3	3	2	-	-	2	-	-
CO04	-	-	-	-	-	3	-	-	-	-	-	3	-	-
CO05	-	-	-	-	-	2	3	-	-	-	-	2	-	-
CO06	-	-	-	-	-	2	2	2	2	-	-	3	-	-
Total														
Average														

F. SYLLABUS **GLIMPSES OF INDIAN CULTURE** **[P/F]**

Course Syllabus

Chapter 1	-	*What is Sanatana Dharma*
Chapter 2	-	*The Heritage ofScriptures*
Chapter 3	-	*The idea of Īśvara*
Chapter 4	-	*Guru Tattva and Avatara Tattva*
Chapter 5	-	*Theory of Karma*
Chapter 6	-	*Purusharthas*
Chapter 7	-	*Sanyasa*
Chapter 8	-	*Yajna*
Chapter 9	-	*Symbolism*
Chapter 10	-	*Understanding Nataraja*
Chapter 11	-	*Temples: The Cradle of Culture*
Chapter 12	-	*Other Heterodox Systems in India*
Chapter 13	-	*Sadhana*

GLIMPSES OF INDIAN CULTURE

Reference Books:

The Eternal Truth by Mata Amritanandamayi Devi
Temples: Centers for Spiritual Practice by Mata Amritanandamayi Devi
All About Hinduism by Swami Sivananda
Art of God Symbolism by Swami Chinmayananda
*Temples in India by Swami Sivanand*a

G. Evaluation Pattern: 60:40

Component	Weightage	Remarks
Internal	60	-
External	40	-
TOTAL	100	

Reading 1: Schindler, S., & Friese, M. (2022). The relation of mindfulness and prosocial behavior:What do we (not) know? Current Opinion in Psychology, 44, 151-156.
Reading 2: 'Sympathy and Compassion.' Chapter 100 in Amritam Gamaya (2022). Mata Amritanandamyi Mission Trust.

Textbooks / References:

1. Mata Amritanandamayi Devi, "Cultivating Strength and vitality," published by Mata Amritanandamayi Math, Dec 2019
2. Swami Amritaswarupananda Puri," The Color of Rainbow "published by MAM, Amritapuri. 3. Craig Groeschel, "Winning the War in Your Mind: Change Your Thinking, Change Your Life" Zondervan Publishers, February 2019
4. R Nagarathna et al, "New Perspectives in Stress Management "Swami Vivekananda Yoga Prakashana publications, Jan 1986
5. Swami Amritaswarupananda Puri "Awaken Children Vol 1, 5 and 7 - Dialogues with Amma on Meditation", August 2019
6. Swami Amritaswarupananda Puri "From Amma's Heart - Amma's answer to questions raised during world tours" March 2018
7. Secret of Inner Peace- Swami Ramakrishnananda Puri, Amrita Books, Jan 2018.
8. Mata Amritanandamayi Devi "Compassion: The only way to Peace:Paris Speech", MA Center, April 2016.
9. Mata Amritanandamayi Devi "Understanding and collaboration between Religions", MA Center, April 2016.
10. Mata Amritanandamayi Devi "Awakening of Universal Motherhood: Geneva Speech" M A center, April 2016.