



AMRITA
VISHWA VIDYAPEETHAM
DEEMED TO BE UNIVERSITY UNDER SECTION 3 OF UGC ACT, 1956

SCHOOL OF
**SOCIAL & BEHAVIOURAL
SCIENCES**

MSc. Social Data Science & Policy

Programme Overview,
2024-25





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SOCIAL DATA SCIENCE & POLICY:
AN INTERDISCIPLINARY SKILL IN HIGH DEMAND



2-Year Master’s Pro-
gramme

Preparing graduates to apply complex data and information technologies to inform policy and community decision-making related to global issues, especially sustainable development in the Global South

3 main clusters of dis-
ciplines

The programme combines the social sciences and computer science in which the analysis of big data is linked to policy development and impact analysis

Diversity of Skills

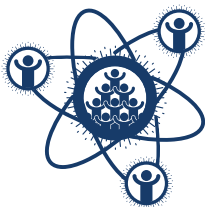
Systems theories, Population metrics, Public policy analysis, Machine learning, GenAI, Economic theory, and other concurrent sociological dimensions



Data Science

Technical skills in data collection, analysis, programming, and visualization.

- Tech-supported field research and data collection
- Machine learning and AI-enhanced research
- Micro/meso/macro-level analysis
- Improved visualisation of data for public awareness



Social Sciences

Fundamental principles of social sciences (sociology, anthropology, philosophy).

- Critical evaluation of policy and economic theory for sustainable development
- Identify gaps in existing research and data
- Application of systems-approach
- Field research component to ground studies



Policy

Global-South focused education in policy principles, values, and history.

- Identification of core values that shape national policies
- Impact of policy on populations and development
- Identify trends and areas for improvement in sustainable development and inclusive economic growth
- Identify gaps in policy implementation, assessment, and communication

SODAS VISION & OBJECTIVES

The SODAS program is uniquely designed for students who are passionate about making a difference in the world and who want to learn to apply complex data science methods to inform policy and community decisions to solve social problems.

The program is ideal for students of: Social Sciences, Public Policy, & Data Sciences

Objectives: To provide graduates with skills in

- Rigorous scientific research methods & communication
- Deep understanding of sustainable development and Global South issues through
 - A. Applications of state-of-the-art data science methods
 - B. Critical evaluation of Public Policy
 - C. Systems-oriented social science techniques
- Formation of strong personal skills and values for lifelong learning

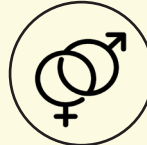
The course is currently planning to offer the following Specializations:



Economic Policy



Health Policy



Gender Policy



Education Policy

Job Prospects

Graduates are prepared for careers in Government ministries and departments, international organizations, research institutions, private companies and consultancies, etc. as:

- Data privacy analyst
- Data security and governance specialist
- Social Analytics scientists at NGOs, corporate, or Government sectors
- Specialist of Data Visualization & Journalism
- Policy Advisor, and more



AMRITA'S UNIQUE ADVANTAGE

Unique Contributions

- One of the only programs in India (or abroad) that offers an MSc. with foundations of Social Sciences, Data Science & AI, as well as Public Policy
- Provides focus on Global South priorities and issues
- Dedicated fieldwork and primary research for applied experiences
- MoUs with high-profile expert organizations, including **CRISP**, **Amrita DST Satellite Policy Research Centre**, and the **UNESCO Chair** in Gender Equality & Women's Empowerment
- Located at the **Amrita Hospital and University Campus in Faridabad**, Delhi NCR, with access to Asia's largest hospital complex as well as urban, peri-urban, and rural communities.
- Opportunities to collaborate, intern, and gain placement at high-profile national and international organizations



UNESCO Chair on
Gender Equality and
Women Empowerment
Amrita Vishwa Vidyapeetham
India



Center for Women's
Empowerment &
Gender Equality



PROGRAM OUTCOMES (POs)

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	Lifelong 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)

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 Global South 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.

SODAS Semester - Wise Course Plan: 83 Credits

First Year

Semester 1	Credits	Semester 2	Credits
Introduction to Social Data Science	4	Sustainable Community Development	4
Economics for Public Policy	4	Academic Writing & Communication	3
Programming for Social Data Science I	4	Research Methods for Policy Studies II	4
Research Methods for Policy Studies I	4	Programming for Social Data Science II	4
Introduction to Indian Society & Culture	2	Specialization I	3
Immersive Data Collection	2	Universal Values	1
		Successful Executive Functioning	2
Total	21	Total	21

Second Year

Semester 3	Credits	Semester 4	Credits
Behavioral Economics and Public Policy	4	Major Project/Publication	14
Machine Learning for Social Data Science	4	Specialization III	3
Policy & Design Thinking	3	Open Elective	3
Specialization II	3		
Internship	4		
Open Elective	3		
Fundamentals of Data Science		Fundamentals of Policy	
		Fundamentals of Social Science	

SEMESTER 1:
FOUNDATIONS & SETTING THE SCOPE

Introduction to Social Data Science (4 credits) Unit I – Introduction to Social Data Science Unit II – Critical Perspectives in Data Science Unit III – Data Science for Political Studies Unit IV – Data Science for Sociology. Unit V – Data Science for Anthropology	Economics for Public Policy (4 credits) Unit I – Introduction to Economics for Public Policy Unit II – Public Policy Frameworks Unit III – Managing the National Economy in the Short Run Unit IV – Long-Run Economic Growth Unit V – International Economy
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Programming for Social Data Science – I (4 credits) Unit I – Introduction to Programming Unit II – Data wrangling and Descriptive analysis Unit III – Data visualization using gg-plot or Matplotlib Unit IV – Elementary programming Unit V – Exploratory analyses

Research Methods for Policy Studies – I (4 credits) Unit I – Introduction to policy and research design Unit II – Foundations of qualitative research Unit III – Foundations of exploratory data analysis Unit IV – Statistical inference Unit V – Regression analysis
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SEMESTER 1:
FOUNDATIONS & SETTING THE SCOPE (CONT.)

Introduction to Indian Values & Culture
[Glimpses of Indian Culture] (2 credits)

- Unit I – Values, Personality, and Samskara
- Unit II – Self-discipline, Human Development, Dimensions of Spiritual Education

Immersive Data Collection (3 credits)

- Unit I – Pilot visit to target village
- Unit II – Objectives, Activities, & Outcome planning
- Unit III – Situational Analysis, Needs Assessment, and Community Engagement Intervention Design
- Unit IV – Reporting



SEMESTER 2:
REFINEMENT & VALUES

Sustainable Community Development (4 credits)

- Unit I – Components and Characteristics of Community
- Unit II – The Role of Systems Thinking in the Practice of Implementing the SDGs
- Unit III – Inequalities and Marginalized groups
- Unit IV – Intergovernmental Approaches to Sustainable Community development
- Unit V – Global South policies/welfare programs/schemes in relation to SDGs

Academic Writing & Communication for Policy (3 credits)

- Unit I: Online Library Tutorial
- Unit II: Critical reflection of introductory article
- Unit III: Outline of arguments for essay & policy
- Unit IV: Final Essay
- Unit V: Final Presentation

Research Methods for Policy Studies – II
(4 credits)

- Unit I – Introduction to Qualitative Research Methods
- Unit II – Research Strategies
- Unit III – Methods of Collection and Analysis
- Unit IV – Practices of Interpretation and Evaluation
- Unit V – Mixed-methods research

Programming for Social Data Science – II
(4 credits)

- Unit I – Text as data
- Unit II – Tools for Multi modal data
- Unit III – Data Models
- Unit IV – Data storage
- Unit V – Object Oriented Programming

 SEMESTER 2:

Refinement & Values (cont.)
Universal Values
[Vedanta in Day-to-Day Life] (1 credits)

- Unit I – Art of Living Through Amma
- Unit II – Insights from Sacred Texts
- Unit III – Great Spiritual Teachers of India
- Unit IV – Intergovernmental Approaches to Sustainable Community development
- Unit V – Appreciation of Indian Culture, Values, and Practices

Other Course Credits:
Specialization I (3 Credits)



Successful Executive Functioning
[Mastery Over Mind (MAOM)] (2 credits)

- Unit I – A: Importance of meditation
- Unit II – Causes of Stress and How Meditation Improves Well-being
- Unit III – The Science of Meditation
- Unit IV – Improving Communication and Relationships
- Unit V – Meditation and Compassion-driven Action

SEMESTER 3:
APPLICATIONS & INNOVATIONS



Behavioural Economics & Public Policy (3 credits)

- Unit I – Intro to Prospect Theory
- Unit II – Static and Dynamic Models of Individual Decision-Making
- Unit III – Applications of Behavioral Economics to Public Policy
- Unit IV – Prosocial Preferences and Motivation
- Unit V – Behavioral Game Theory



Machine Learning for Social Data Science (4 credits)

- Unit I – Introduction to machine learning
- Unit II – Supervised Learning
- Unit III – Unsupervised Learning
- Unit IV – Machine Learning with tree-based models
- Unit V – Deep learning



Policy & Design Thinking (3 credits)

- Unit I – Introduction to Design Thinking
- Unit II – Empathy & Ethnography
- Unit III – Prototyping Policy Solutions
- Unit IV – Collaborative Design and Multi-Stakeholder Engagement
- Unit V – Communication and Storytelling in Policy Design



Other Course Credits:

- Specialization II (3 credits)
- Internship (4 credits)
- Open Elective I (3 credits)



SEMESTER 4:
MAJOR PROJECT & PUBLICATION



Other Course Credits:

- Research Paper and Publication in a SCOPUS-Indexed Journal or conference (14 credits)
- Specialization III (3 credits)
- Open Elective II (3 credits)

SPECIALIZATION: ECONOMIC POLICY



Foundations of Development Policy (3 credits)

- Introduction to Development Policy
- Political Economy
- Investing in Human Capital
- Nutrition, Health, and Productivity
- Financial Markets

Evidence-Based Policy-Making (3 credits)

Guided by Dr. Ram Fischman, TAU

Economic Policy in a Global Context (3 credits)

Units TBD

SPECIALIZATION: GENDER POLICY



Gender & Development (3 credits)

- Unit I – Introduction to Gender and Development
- Unit II – Analysis FrameworkGenders
- Unit III – Gender, Work, and Economic Development
- Unit IV – Gender, Health, and Education
- Unit V – Gender, Environment, and Sustainable Development

Gender Policy & Legislations in India (3 credits)

- Unit I – Introduction to Gender Policy and Legislation
- Unit II – Constitutional Framework and Gender Rights
- Unit III – Women’s Empowerment and Development Policies
- Unit IV – Gender-Based Violence
- Unit V – Emerging Issues and Future Directions



Critical Masculinities & Gender Equality (3 credits)

Unit I – Introduction to Critical Masculinities

Unit II – Representations of Masculinity in Media and Culture

Unit III – Masculinities and Violence

Unit IV – Transformative Masculinities and Allyship

SPECIALIZATION: HEALTH POLICY



Health Policy & Systems Research (3 credits)

Unit I: Introduction to HPSR

Unit II: Conceptual Frameworks for HPSR

Unit III: Performance assessment & Conducting HPSR

Unit IV: Systems thinking and Public Health

Unit V: Reading Empirical Research

Biostatistics and Epidemiology (3 credits)

Units TBD

Global Health issues (3 credits)

Units TBD

SPECIALIZATION: EDUCATION POLICY



Education for Sustainable Development [SWAYAM] (3 credits)

Unit I: Introduction and SDGs

Unit II: Human Rights, Gender Equality, and Diversity

Unit III: 21st Century Competencies for Economic Development

Unit IV: ESD for Social Transformation

Unit V: Educational Research and Social Benefits



National Education Policy & Contemporary India and Education [SWAYAM, SWAYAM] (3 credits)

Unit I: Foundations: Structure, Access, Equity and Bhartiya Gyan Parampara

Unit II: History of Education in India

Unit III: Technology, Internationalisation, Research, and Regulations

Unit IV: Values in Education & Policy

Unit V: Monitoring and Evaluation, Impact Assessment Strategies

Global Education Policy (3 credits)

Units TBD

OPEN ELECTIVES: A GROWING LIST



Social Welfare Policy & Administration

Unit I: Social Welfare Policy

Unit II: Social Welfare Policies and Programmes for Various Populations

Unit III: Social Welfare Administration

Unit IV: Non State Organizations & Civil Society Organizations

Unit V: Administration of NSOs/CSOs

Public Financial Management & Budgeting

Units TBD

Science, Technology, & Society Interactions

Unit I – Basic concepts and perspectives

Unit II – Science, Technology and Culture

Unit III – Science and Technology in India

Unit IV – Structure of Scientific Research & Development Organizations

1-YEAR POST-GRADUATE CERTIFICATE*

Interested students may avail a Post-Graduate Certificate in Social Data Science and Policy following the completion of the first year of the total program. The certificate would cover:

Programming for Social Data Science – I & II

Research Methods for Social Data Science – I & II

Foundations in a. Social Science, b. Data Science, c. Public Policy

Field-work Component

Initial Specialization Course

Values & Ethics

*Pending approval from Academic Council



SCHOOL OF
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Center for Women's
Empowerment &
Gender Equality



United Nations
Educational, Scientific and
Cultural Organization



- UNESCO Chair in Gender Equality
and Women's Empowerment
- Amrita Vishwa Vidyapeetham
- Kerala, India



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7TH RANKED
UNIVERSITY IN INDIA 2023



NAAC A++
ACCREDITED



CATEGORY 1
GRADED AUTONOMY
UGC, GOVT. OF INDIA

No.1
IN INDIA

