Circular

School of Public Policy, IIT Delhi

The School of Public Policy is offering the following **Special Modules, Special Topics courses and new** courses during the upcoming Diwali semester (July-December, 2**024**). The details of these courses are mentioned below.

Course Code: SPL 810
Course Title: Advanced Topics in Policy Studies (Climate Change Adaptation: From Theory to Practice)
Credit Structure: 3 Credits (3-0-0)
Instructor: Prof. Anshu Ogra
Lecture Slot & Time: Slot H (Mon 11:00-12:00, Wed 11:00-12:00, Thu 12:00-13:00)

Course Description:

This course aims to equip students with the concepts, tools, and techniques required for effectively engaging with and contributing to adaptation policy and planning processes at national and regional levels. Students will learn: the interrelationship between adaptation, vulnerability, and resilience theory; overlaps between climate change adaptation and development; and limits and barriers to adaptation.

Course Content:

Introduction to key terms: adaptation, vulnerability, and resilience; adaptation governance from the local to the global level; climate change adaptation and social policy; knowledge systems and adaptation; Climate Resilient Development (CRD); limits and barriers to adaptation; maladaptation; Loss and Damage; adaptation finance; adaptation planning and decision making in India: current state and future visioning.

Course Code: SPL 754
Course Title: Geographical Information Systems (GIS) for Public Policy
Credit Structure: 3 Credits (2-0-2)
Instructor: Prof. Rajarshi Dasgupta
Lecture Slot & Time: Slot AB (Mon 15:30-17:00, Thu 15:30-17:00)

Course Description:

Students will achieve a fundamental understanding of GIS and geospatial technology and their application in public policy and social science research. Students will learn several GIS-based analytical tools, understand and interpret spatial data and develop problem-solving skills through thematic maps. Students will get hands-on training to solve complex public policy problems through spatial analysis.

Course Content:

- Introduction to GIS (Spatial data structure, maps, projection and overview of geospatial technology etc.)
- Use of GIS in Public Policy Research
- Theories and training on basic GIS analysis and their application in public policy research (e.g., raster/vector processing, digitization, geodatabase creation and management, overlay analysis, creation of thematic maps etc.)
- Advanced GIS analysis and their application in public policy research (e.g., spatial interpolation techniques, hot-spot analysis, network analysis etc, geographically weighted regression, zonal statistics).
- Public Participatory GIS (PPGIS) in public policy research
- Use of nighttime satellite data for social science research
- Practical on basic and advanced GIS analysis
- Case studies on GIS applications in public health and natural resource management

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Course Code: SPL 751
Course Title: Technology and Globalisation
Credit Structure: 4 Credits (3-0-2)
Instructor: Prof. Suma Athreye
Lecture Slot & Time: Slot A (Mon 08:00-09:30, Thu 08:00-09:30)

Course Description:

Students will learn how technological changes and changes in industrial leadership have shaped the global economy. The course will equip students to think about contemporary technological changes (move to green technologies, digitization and AI) and how they may influence (and are influenced by) the international environment.

Course Content:

Causes of growing international economic integration, international economic integration versus globalization, role of technology, economics and politics in historical episodes of international economic integration, international monetary system, GATT, WTO and the growth of world trade; contemporary production systems and industrial leadership, environmental and political limits to international economic integration, forces behind the retreat of international economic integration.

Course Code: SPL 724
Course Title: Electricity Sector Reforms in the Renewables Era
Credit Structure: 3 Credits (3-0-0)
Instructor: Prof. Sanjay Mitra & Prof. Kaveri K Iychettira
Lecture Slot & Time: Slot F (Tue 11:00-12:00, Thu 11:00-12:00, Fri 11:00-12:00)

Course Description:

On completion of this course, the students will be able to analyze the structure and governance of electricity systems, with particular focus on the context of increasing renewable penetration, and in developing country contexts. The students will demonstrate an ability to apply concepts of power system economics, including wholesale electricity market design, regulation of generation and network segments, retail competition, and electricity tariff design. They will also examine the limitations of economic theory, particularly in the context of insufficient cost-recovery in developing country settings. They will be able to analyse contemporary policies and outcomes in the Indian electricity sector: evaluate proposed reforms, such as the Electricity Amendment Bill 2022, issues related to the transition to renewables in the power sector, market design challenges and opportunities, concerns of intermittency and related policies, with particular emphasis on the challenges specific to the Indian power sector, such as access, affordability and regional equity. The students will develop hands-on expertise on the electricity sector, with detailed case studies, corresponding to each theory segment also using actual utility data; they will be able to locate electricity sector issues within the wider public policy framework.

Course Content:

Evolution of the vertically integrated electricity utility, initial experiences in developed countries and early reformers; Independent Electricity Producers (IPPs), regulation and de-regulation, Independent System Operators; Power system cost structures, power system economics, power purchase agreements – long-term risk distribution, electricity market design – day-ahead, intraday, balancing markets, ancillary services. Tariff design for end consumers, retail competition, capacity remuneration mechanisms. Critique of the reforms experienced worldwide, salience of the distribution sector, access and affordability, reforms rollback, renewables. Country experiences -China, Germany, USA (California, Texas), Mexico, UK; Indian experience – Electricity Act, cases of Enron (Dabhol), Odisha, Delhi.
Renewables penetration – impact on access, electricity for agriculture tariffs, regional equity, national programmes -- KUSUM, Saubhagya, Deen Dayal Upadhyaya Grameen Vidyutikaran Yojana.
Excel-based exercises on the financial viability of Discoms using actual utility data. Explore and develop renewables and reforms trajectories for different states. Electricity sector reforms and the larger public policy rubric-centre-state issues, effects of the dominant global discourse on the renewables programme in India

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Course Code: SPL 361
Course Title: Information & Communication Technologies (ICT) and Society
Credit Structure: 4 Credits (3-0-2)
Instructor: Prof. Rathin Biswas
Lecture Slot & Time: Slot M (Mon 17:00-18:30, Thu 17:00-18:30)

Course Description:

The students will be able to understand the socially critical policy-relevant complex real-world developmental challenges and how technology can help in addressing those, across various domains – water and sanitation, health, transportation, education, waste management, urban environment, etc. They will learn the benefits, limitations, and challenges of Information & Communication Technologies (ICT) -- including Internet of Things (IoT) -- while addressing such challenges across various domains, along with the associated policy nexus. Students will be able to ideate potential ICT solutions for an area-specific problem, contributing towards Sustainable Development Goals (SDGs) and policy support.

Course Content:

Introduction to information & Communications Technologies (ICT) including Internet of Things (IoT), smart city concept, ICT & urban sensing, ICT use in transportation and applicability, policy for ICT in education and case studies of NMEICT projects, global water crisis and sanitation challenges, ICT for water & sanitation, role of ICT in health, role of ICT towards inclusive society with policy nexus, municipal waste management & ICT, e-governance, limitations and challenges of ICT, digital divide, unanticipated consequences of ICT, social change and the cult of technology, technology and disempowerment, data privacy, data protection bill/regulation (GDPR & DPDPB), conceptualization of ICT-based potential solution.

Course Code: SPV 794
Course Title: Special Module on Public Policy in Data, Communication and Computation
Credit Structure: 1 Credits (1-0-0)
Instructor: Prof. Nandana Sengupta
Lecture Slot & Time: Slot AB (Mon 15:30-17:00, Thu 15:30-17:00)

Course Description:

Students will be introduced to the basic concepts underlying Artificial Intelligence or AI tools. They will get an overview of the major social debates in contemporary AI including ethical issues of fairness, accountability and transparency as well as the literature on algorithmic bias. Finally, students will be able to analyze the pros and cons of current policy approaches towards the regulation of AI technologies from across the world.

Course Content:

AI and society: major opportunities and challenges. FATE framework: Fairness, Accountability, Transparency and Ethics in AI systems. Algorithmic bias: empirical evidence and mitigation strategies. AI and Public Policy: AI Ethics, AI Safety and AI Alignment. AI and Public Policy: Public attitudes to AI; AI and Public Policy: policy response and regulation of AI.

Course Code: SPV 798
Course Title: Special Module on Public Policy in Transport and Infrastructure
Credit Structure: 1 Credits (1-0-0)
Instructor: Prof. Sanjay Mitra
Lecture Slot & Time: Slot D (Tue 09:00-10:00, Wed 09:00-10:00, Fri 09:00-10:00)

Course Description:

To enable students to critically examine and understand issues related to infrastructure development through a public policy lens.

Course Content:

In this 1-credit module, we will examine several infrastructure and transport sectors including highways, ports, shipping, civil aviation, logistics and urban bus transport through a public policy lens. Starting with general ideas about public policy making in India, we will relate concepts in public policy literature with specific instances in policy formulation, programme design and implementation in these sectors. For example, highway development and rural roadswith simplicity and parsimony in programme design (Tinbergen's Rule); complex policy design and the logistics sector; policy evaluation, feedback and the report of the Kelkar committee suggesting changes in the PPP framework; technocratic policy formulation and the National Transport Development and Policy Committee; inter-ministerial negotiations and the evolution of a vehicle scrappage policy; unintended consequences of public policy – road safety and accelerated road development; policy predictability and coastal shipping; policy layering, renewables and urban bus transport reforms. There are no pre-requisites. It is open to all students. Requirements include: attendance, class participation, a viva covering appreciation of the course material and the readings, and a 1500-word policy memo on "green public bus transport" based on a case study introduced in class.

Course Code: SPV 799
Course Title: Special Module in Policy Studies (Building Sustainability Capacity through the Policy-Industry-Community-Science (PICS) framework – Part 1 Foundation)
Credit Structure: 1 Credits (1-0-0)
Instructor: Prof. Debabnanda Misra
Lecture Slot & Time: Slot AD (Tue 15:30-17:00, Fri 15:30-17:00)

Course Description: The course aims to mainstream an emphasis on industrial innovation, policy, and communities in the research training and capability of masters students (MTech/MSc) in the areas of energy and sustainability. It will enhance students' research capability by providing tools and skills that complement their disciplinary S&T research skills and methodologies with those related to industrial applications and innovation, and policy and communities. It promotes a transdisciplinary and problem-oriented Policy-Industry-Community-Science (PICS) teaching and learning framework that enhances graduate students' research capability on the three aspects above that have hitherto been missing in the

research training of students. In addition to the focus on scientific output, the framework will move forward students' research studies through three pathways (i) academic; (ii) industry innovation; and (iii) start-up commercialization and entrepreneurial preparation. By the end of the course, students will cultivate interest in research by seeing the true value of it, understand the mechanisms of technology transfer, and build confidence in international collaboration with key stakeholders. Students will develop a comprehensive understanding of the topics in the program from a cross-national and comparative perspective.

Students enrolled in the course will have an opportunity to make a full-funded round trip to UCL for a one-week study visit (funded through a grant awarded to IIT Delhi and UCL). Please make sure you are fit for international travel, and have the dedicated commitment throughout the two semesters. More details here

Course Content: Sustainability and clean energy, big picture – global perspectives Citizen science: Problems, questions and research: identifying a citizen science research topic; Literature review: the foundation of research methods; Ethics and Dilemmas in community research; Citizen science: Conducting your research: co-designing with communities.