Course title: Methods of Research in Economics			
Course code: MPE 176	**No. of credits:** 4	**L-T-P:** 46-4-20	**Learning hours:** 60
Pre-requisite course code and title (if any): Microeconomics and Macroeconomics at Post Graduate Level or equivalent; MPE 185 Environment and Economic Development			
Department: Department of Policy and Management Studies			
Course coordinator(s): Prof. Sukanya Das	**Course instructor(s):** Prof. Sukanya Das		
Contact details: sukanya.das@terisas.ac.in			
Course type: Core	**Course offered in:** Semester 3		

Course description

This course provides a broad exposure on various steps in conducting meaningful and grounded research in economics with a focus on ecological, environmental and resource economics, the specialization of the MSc Economics programme. In the process, it walks the students through the entire spectrum of research design, that begin with theories, concepts, frameworks and models and end with a Research Proposal for the Masters' Thesis to be written in the fourth semester.

Course objectives

1. To provide the students an exposure to some stages of research in economics, from conceptualisation to proposal writing.
2. To make the students understand the significance of academic rigour, logical consistency and expositional clarity in research.

Course content

Module	Topic	L	T	P
1.	**Introduction** Logical reasoning Statement of facts Facts – social and natural Values -- social construction, assumptions and interpretations Causation Explanations--evolutionary, functional and causal Method of scientific investigation: induction, inference, hypothetico-deductivemodel and falsification	10		
2.	**Theories, Concepts, Paradigms, Frameworks and Models** Illustration 1: Institutional Analysis and Development Framework Illustration 2: Socio-ecological systems Illustration 3: Sustainable Livelihood Framework	8		
3.	**Research Design: Research Problem, Research Questions and Research Method** Goals, aims, objectives Requirements for and of a Hypothesis Case study method Logical framework matrix Interdisciplinarity--potential and challenges	7		
4.	**Selected aspects of theoretical research** Preliminaries: specification of agents, action space, state space, strategies, payoffs, assumptions Notion of equilibrium/optimum used Results: characterization, comparative statics, robustness Interpretation and explanation	4		
5.	**Presentation of Research Concept Note**			8
6.	**Secondary Data** Metadata [with illustrations from National Accounts Statistics Sources and Methods 2007 and SDG Index and Dashboards Report 2017 - Metadata] Managing large database [with illustrations from IHDS and Cost of Cultivation	3	4	

	Dataset] 6.3 Cleaning of data [with illustrations from IHDS and Cost of Cultivation Dataset]			
7.	**Primary data** Type of Quantitative and qualitative data collection methods Potential and challenges of use of qualitative data in economics Sites of study Framing of questions and Design of questionnaire Conducting Field survey—issues and challenges	6		
8.	**Expressions for a proposal** Framing of Abstract: proposals and papers Framing of Introduction: motivations Aligning the question with theoretical ideas and concepts Reporting a Literature Survey or Review: meta analysis Description of the Research Method: appropriateness, justification of choice, limitations Listing of variables and their justification Data to be used and collection method: sampling plan, sample size, unit of analysis,study site description, if any Empirical Method for data analysis: prospects and limitations in answering theresearch question Anticipated results: local, regional and national policy implications, if any Matrix: linking hypothesis (if any), research design, variables, empirical method,data sources Presentation of results: description, interpretation, implication, prescription Professional Ethics in Research	6		
9.	**Overview of some of the General Parameters for Assessment, Evaluation and Review** Content, Structure and Form Academic Rigour Expositional clarity Logical consistency Integration and coherence Originality	2		
10.	**Presentations of Proposals**			12
		46	**4**	**20**

Evaluation criteria

1. **ASSESSMENT 1**: Research Concept Note – 20% (learning outcome 2)

Structure

A. Title: It should capture the essential theme(s) of the proposed research. It should show clearly what is being investigated. A concise and focused title is preferred (no more than 15 words).
B. Motivation: Provide an account of (a) why do you want to inquire into this specific area and (b) its relevance (ecological, economic, social, political, philosophical, policy related, legal, etc.)
C. Research Problem: Provide a clear and simple description of your research problem (maximum 200 words). What do you want to find out? What will be known after this research is conducted?
D. Objectives: *Identify* overall study goals and specific research objectives (maximum 100 words)
E. Background (a complete Literature Review is not necessary at this stage): A concise review of the main research work and current issues in the specific subject area. What is already known about this specific subject? What is/are the gap/s? Identify at least three papers whose methodology/ model you are most likely to apply. (300 words)

F. Hypotheses/research questions to be tested or answered (maximum 25 words each).
G. Analytical Methods: *Describe* economic theory/ies and concept/s that your work will rely on for testing hypotheses/ answering research questions (200 words)
H. Proposed Empirical Methods, if any (100 words): *Describe* type of models, tools of analysis, etc. and justify their employment.
I. Description of the Study Site (if any, but can be indicative), variables and data sources (100 words): definition of variables, indicators, etc.

Criteria and sub-criteria for assessment

A. Title: Extent of focus and relevance.
B. Research Problem: Expositional clarity and logical consistency.
C. Research objectives: Whether clear and achievable.
D. Background: Sufficiency of description of the state of knowledge and identification of gaps.
E. Research questions/hypothesis: How interesting the question/s is/are? How important are they? Does addressing it/them fill/s any gap in literature? Feasibility of answering them: does it require significant monetary expense, a duration of more than 9 months, access to and use of leased in equipment and materials, new technical knowledge and yet-to-be acquired skill, and access to a really large number of human subjects.
F. Methods and data: Level of clarity on proposed methods (analytical and empirical) and approaches of data collection.
G. Integration and Coherence across different components.

Suggested weights in total marks:

25% each on (a) research question and (b) method and data

10% each on (c) title, (d) research problem, (e) research objectives, (f) background, and (g) integration & coherence.

2. **ASSESSMENT 2**: Presentation of Research Proposal – 30% (learning outcome 1)

Criteria and sub-criteria for assessment

A. Introduction, Problem Statement and Research Question: Relevance, Clarity, Innovativeness.
B. Literature review: Coverage, Ability to review the relevant literature, Inferences of gaps in the literature.
C. Method: Choice of method, Appropriateness of method, Comprehensive background, description and limitations of the method; Discussion of conjectures/variables/data sources/sampling strategy and questionnaire (if relevant)
D. Expected findings/Discussion of results: Clarity on expected outcome of the project; Interpretation and implications of results (in case of final presentation
E. Integration and Coherence: Linkages between the introduction, problem statement, research question, method, results, conclusion, etc.
F. Clarity of Presentation: Audible and comprehensible; Information is presented in logical sequence; Good language skills and pronunciation; Appropriate pace of presentation
G. Quality of visual presentation: Clarity; Organization and layout.
H. Responses during Q&A session: Response to questions and comments.

Suggested Weights in total marks:

20% each on (a) method of analysis, (b) integration & coherence and (c) clarity of presentation
10% each on (d) literature review, (e) expected findings/discussion of results, (f) quality of visual presentation and (g) responses during Q & A session.

3. **ASSESSMENT** 3: Research Proposal – 50% (learning outcome 2)

Structure

A. Abstract or a Summary of research proposal: a self-contained summary of the proposal with clear objective,

research question/s, research method, data, and anticipated results. [400 words]

B. Research Problem: a clear and simple description of your research problem, the socio-economic and environmental context and why it is important to investigate further (your contribution in the backdrop of existing literature), and potential policy implications of your work.

C. Study Goals: identify your overall goal of the study, specific objectives /research question. You should clearly state single but critical and interesting research question/s to address the issue that raised in the 'Research Problem'.

D. Literature Review: an e*xhaustive* account of relevant knowledge domains. Review may be restricted to the works most pertinent to the study. You should clearly identify the research gaps and your likely contribution using latest literature.

E. Research Methods

1. Theoretical ideas and relevant concepts: include logical/ theoretical/ behavioral model and link it with hypothesis, research question and empirical method/data.
2. Hypothesis to be tested, if any.
3. Clear indication of what variables to be used and why.
4. Data to be used and collection methods (sampling plan, sample size, unit of analysis, etc.).
5. A description of the study site, if any.
6. Empirical methods for data analyses. It should be clearly linked with your research question, and how your proposed analysis answers the question.

F. Expected Results.

G. Policy implications: local, regional, or national.

H. Bibliography following an accepted citation style such as Chicago Manual of Style or APA or EPW.

I. Annexure: Draft questionnaire in case primary data are to be collected.

Criteria and sub-criteria for assessment

A. Abstract: Comprehensiveness.

B. Problem Statement and Research Question: Relevance; Clarity; Innovativeness.

C. Literature review: Coverage; Ability to review the relevant literature and Inferences of gaps in the literature.

D. Method: Choice of proposed method; Appropriateness of method; Comprehensive background, description and limitations of the method; Identification of variables and data sources (if relevant); Sampling strategy and questionnaire (if relevant); Formal Conjectures (if relevant).

E. Expected Findings: Clarity in the expected direction of thesis; Understanding on relevance of expected findings.

F. Integration and Coherence: Linkages between the problem statement, research question, method and expected findings.

G. List of references as per the Citation Style: Adequate use of references through-out the text; Link between list of references to text; Citation style, both in-text and in reference.

Suggested weights in total marks:

20% each on (a) problem statement and research question and (b) method of analysis

10% each on (c) abstract, (d) introduction, (e) literature review, (f) expected findings, (g) list of references and (h) integration & coherence.

A minimum grade of C is required to qualify for the next semester and submit the Master's thesis

Learning Outcomes

a. Skills for making effective presentations.

b. Ability to prepare a comprehensive research proposal.

Reading Materials

All readings are available here:

CORE:

Module 1

Mark Kanazawa. 2018. 'A brief history of knowledge and argumentation' in *Research Methods for Environmental Studies*, 15-39. London and New York: Earthscan,

John Pheby. 1988. 'lnductivism and Deductivism in Economics', 'Falsification and Economics' and 'Kuhn and Economics' in *Methodology and Economics: A critical introduction*,1-53. London: Macmillan.

Homa Katouzian. 1980. 'Value judgements and ideology: morality and prejudice in economic science' in *Ideology and Method in Economics*, 135-156. London: Macmillan.

Module 2

Edella Schlager. 2007. 'A Comparison of Frameworks, Theories, and Models of Policy Processes', in *Theories of the Policy Process* edited by Paul A. Sabatier, Colorado: Westview Press.

John R Wood, S Enarth and Amita Shah. 2016. 'Comparative CNRM: from concepts to field research' in *Community Natural Resource Management and Poverty in India* edited by S Enarth et al, New Delhi: Sage

K Chopra and G Kadekodi. 1999. 'Chapter 1: Economic-Ecological Modelling—Conceptual Framework' in *Operationalising Sustainable Development: economic-ecological modelling for developing countries*, 17-41, New Delhi: Sage Publications.

E Ostrom. 2011. 'Background on the Institutional Analysis and Development Framework' *The Policy Studies Journal* 39 (1): 7-27

Module 3

Mark Blaug. 1992. 'The falsificationists, a wholly twentieth-century story' in *The methodology of economics: or how economists explain*, 83-111. Second Edition. Cambridge: Cambridge University Press

John W Creswell and David J Creswell. 2018. 'Selection of a Research Approach' in *Research Design: Qualitative, quantitative and Mixed methods approaches*, 3-23 New Delhi: Sage [also, https://edge.sagepub.com/creswellrd5e, the companion website:]

Fritz Machlup. 1978. 'Fact and Theory in Economics' and 'The problem of verification in Economics' in *Methodology of Economics and Other Social Sciences*,101-130 and 137-157. New York: Academic Press.

Mark Kanazawa. 2018. 'General research design principles' and 'The case study method' in *Research Methods for Environmental Studies*, 40-59, 182-203. London and New York: Earthscan

Module 4

William Thomson. 2011. "Chapter 2: Writing Papers" in *A Guide for the young economist*, 45-117. Second edition. Cambridge: MIT Press.

Module 6

MOSPI. 2017. National Accounts Statistics Sources and Methods 2007. New Delhi: Government of India, available online at http://www.mospi.gov.in/publication/national-accounts-statistics-sources-and-methods-2007-0

Sachs, J., Schmidt-Traub, G., Kroll, C., Durand-Delacre, D. and Teksoz, K. (2017): SDG Index and Dashboards Report 2017 - Metadata. Bertelsmann Stiftung and Sustainable Development Solutions Network (SDSN), Gütersloh and New York, available online at http://sdgindex.org/assets/files/2017/2017-SDG-Index-and-Dashboards-Report--Metadata.pdf

Module 7

Martha A. Starr. 2012. 'Qualitative and mixed methods research in economics: surprising growth, promising future" *Journal of Economic Surveys* 28 (2): 238-264

Mark Kanazawa. 2018. 'Data Collection 1: Principles of Surveying' and 'Data Collection II: Interviewing' in *Research Methods for Environmental Studies*, 285-312 and 313-332. London and New York: Earthscan

John W Creswell and David J Creswell. 2018. 'Quantitative Methods' in *Research Design: Qualitative, quantitative and Mixed methods approaches*, 155-182, New Delhi: Sage

John W Creswell and David J Creswell. 2018. 'Qualitative methods' in *Research Design: Qualitative, quantitative and Mixed methods approaches*, 183-213, New Delhi: Sage

Module 8

John W Creswell and David J Creswell. 2018. 'Writing strategies and Ethical Considerations', 'The Introduction', 'The Purpose Statement', 'Research Questions and Hypotheses', 'Glossary' in *Research Design: Qualitative, quantitative and Mixed methods approaches*, 77-103, 107-121, 123-138, 139-153, 241-250. New Delhi: Sage

Mark Kanazawa. 2018. 'Ethical issues in environmental research' and 'Writing a Research Proposal' in *Research Methods for Environmental Studies*, 333-350 and 351-373. London and New York: Earthscan

Module 9

Elsevier. n.d. A guide for writing scholarly articles or reviews for the Educational Research Review. Available online at https://www.elsevier.com/ data/promis_misc/edurevReviewPaperWriting.pdf

OTHER

Module 1

Mark Blaug. 1992. 'From the received view to the views of Popper', 'From Popper to the new heterodoxy, 'The distinction between positive and normative economics' in *The methodology of economics: or how economists explain*, 1-52 and 129-156. Second Edition. Cambridge: Cambridge University Press**.**

Fritz Machlup. 1978. Section titled 'Methodology, logic, epistemology, philosophy' and 'Why bother with Methodology' in *Methodology of Economics and Other Social Sciences*,53-62 and 63-70. New York: Academic Press.

M Boumans and J B Davis. 2015. *Economic Methodology. Understanding Economics as a Science* 2nd edition. Palgrave-Macmillan

Fritz Machlup. 1978. 'Homo Oeconomicus and his class mates' in *Methodology of Economics and Other Social Sciences*, 267-281. New York: Academic Press

Module 2

John M Anderies and Marco A. Jansen. 2016. *Sustaining the Commons* Tempe: Center for Behavior, Institutions and the Environment, Arizona State University

V Dayal. 2014. 'Chapter 2: Models and Frameworks' in *The Environment in Economics and Development: pluralist extensions of core economic models*, 19-30. New Delhi: Springer.

Hinkel, J., P. W. G. Bots, and M. Schlüter. 2014. 'Enhancing the Ostrom social-ecological system framework through formalization'. *Ecology and Society* 19 (3): 51

Rana, Pushpendra and Daniel C. Miller. 2019. Explaining long term outcome trajectories in social–ecological systems. PLoS ONE 14(4): e0215230. https://doi.org/10.1371/journal.pone.0215230

Module 3

Milton Friedman. 1953. "The Methodology of Positive Economics" in *Essays in Positive Economics*, 3-46. Chicago and London: The University of Chicago Press

Fritz Machlup. 1963. "Introductory Remarks," *The American Economic Review*, 53 (2): 204

G. C. Archibald, Herbert A. Simon and Paul A. Samuelson. 1963. "Discussion," *The American Economic Review*, 53 (2): 227-236

Andreas G. Papandreou. 1963. "Theory Construction and Empirical Meaning in Economics" *The American Economic Review*, 53 (2): 205-210

Ernest Nagel. 1963. "Assumptions in Economic Theory," *The American Economic Review*, 53 (2): 211-219

Sherman Krupp. 1963. "Analytic Economics and the Logic of External Effects" *The American Economic Review*, 53 (2): 220-226

Daniel M. Hausman. Ed. 2008. *The Philosophy of Economics: An Anthology*. Third Edition. Cambridge: Cambridge University Press.

A L George and A Bennett. 2005. 'Phase One: Designing Case Study Research' In *Case studies and Theory Development in Social Sciences*, 73-88 Cambridge and London: MIT Press

Kevin Hoover. 2004. *The Methodology of Empirical Macroeconomics* Cambridge: Cambridge University Press

S Lele. 2009. "Reflections on Interdisciplinarity in Environmental Economics in India" in *Handbook of Environmental Economics in India* edited by K Chopra and V Dayal, 305-325, New Delhi: OUP

Jeffrey M Wooldridge. 2003. 'Carrying out an Empirical Project' in *Introductory Econometrics: A Modern Approach*,616-642, South-Western College Pub

Hal R Varian. 2016. "How to Build an Economic Model in Your Spare Time" *The American Economist* 61(1): 81-90

Module 4

HalR Varian. 1989." What use is Economic Theory" available online at http://people.ischool.berkeley.edu/~hal/Papers/theory.pdf

Module 6

M R Saluja. 2017. 'Chapter 1: Indian and International Statistical Systems', 'Chapter 3: Agricultural Statistics', 'Chapter 12: National Accounts' and 'Chapter 14: Environmental Statistics", in *Measuring India: The Nation's Statistical System*, 1-45, 96-135, 394-454 and 488-508, Delhi: Oxford

Module 7

Angus Deaton. 1997. *The Analysis of Household Surveys: Microeconomic Analysis for Development Policy.* Baltimore: Johns Hopkins University Press for the World Bank.

Priscilla Salant and Don A. Dillman. 1994. *How to Conduct your own Survey* Wiley

Module 8

William Thomson. 2011. "Chapter 3: Giving Talks" in *A Guide for the young economist*, 119-150. Second edition. Cambridge: MIT Press.

George DeMartino. 2013. "Professional Economic Ethics: Why Heterodox Economists Should Care," *Economic Thought* 2(1): 43-53

George DeMartino. 2013. "Epistemic Aspects of Economic Practice and the Need for Professional Economic Ethics," *Review of Social Economy* 71 (2): 166-186

Eric Rasmusen. 2001. "Aphorisms on Writing, Speaking, and Listening" in Readings in Games and Information edited by Eric Rasmusen, Blackwell Publishers

Paul Dudenhefe. 2009. *A Guide to Writing in Economics* available online at http://writing.ku.edu/sites/writing.drupal.ku.edu/files/docs/Guide_Writing_Economics.pdf

Module 9

William Thomson. 2011. "Chapter 4: Writing Referee Reports" in *A Guide for the young economist*, 151-165. Second edition. Cambridge: MIT Press.

Deirdre N. McCloskey. 2019. *Economic Writing*. University of Chicago Press

Pedagogical Approach

Additional information (if any)

Useful material:

1. On presentation: Leslie Roldan available online at https://ocw.mit.edu/courses/brain-and-cognitive-sciences/9-85-infant-and-early-childhood-cognition-fall-2012/assignments/MIT9_85F12_Proposal.pdf
2. On Academic Integrity: MIT handbook for students available online at http://integrity.mit.edu/handbook/writing-original-work

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