Ambedkar University Delhi

Format for List of Courses for Winter Semester 2019

AES Division

School: School of Human Ecology

Programme: MA Environment and Development

Programme Coordinator: Dr Oinam Hemlata Devi

Date of Submission: 3/11/2018

S.No.	Course Title	Course Code	Semester	Credits	Whether Approved?* If yes by BOS/SCAP/AC	(Tentative) Course Coordinator/ Course Team
1.	EEE (Environmental and Ecological Economics)	**SHE2ED106**	II	4	AC	Dr Suresh Babu(CC); Prof. Asmita Kabra and Dr Vikram Dayal (Visiting Faculty)
2.	ELPG (Environmental Law, Policy & Governance)	**SHE2ED105**	II	4	AC	Dr Budhaditya Das (CC)+Visiting faculty (1)
3.	SPE (Social and Political Ecology)	**SHE2ED104**	II	4	AC	Dr Oinam Hemlata Devi (CC)+ Visiting faculty
4.	RM II (Research Methodology)	**SHE2ED202**	II	4	AC	Dr Oinam Hemlata Devi (CC) and Dr Suresh Babu
5.	Displacement, Resettlement, and Rehabilitation (2 credits)	SHE2ED309	IV	2	AC	Prof. Asmita Kabra
6.	Ecological Restoration in Practice II (2 credits)	SHE2ED310	IV	2	AC	Dr Suresh Babu
7.	Geographic Information System II	SHE2ED317	IV	2	AC	Dr Pulak Das
8.	Applied Population ecology	SHE2ED304	IV	2	AC	Dr Suresh Babu

1. Course outline of all courses in AES format

Semester 2 courses:

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Course Outline

Winter Semester (Jan-May 2019)

School:	Human Ecology
Programme with title:	MA Environment and Development
Semester to which offered: (I/ III/ V)	II semester
Course Title:	**Environmental and Ecological Economics**
Credits:	4 Credits
Course Code (new):	**SHE2ED106**
Type of Course:	Compulsory yes Cohort MAED
Course Coordinator and Team:	Dr Suresh Babu(CC); Prof. Asmita Kabra and Dr Vikram Dayal (Visiting Faculty)
Email of course coordinator:	suresh@aud.ac.in
Pre-requisites:	None

Aim: This course will be aimed at familiarizing students with the existing methodology and approaches in Environmental Economics and Ecological Economics. Environmental Economics focuses largely on market based solutions to environmental problems, mainly through valuation approaches that are able to capture externalities and address market failures. crafting techniques for valuation. Ecological Economics, on the other hand, attempts to displace the centrality of the market in resolving environmental issues. Building on principles of methodological pluralism, Ecological Economics is able to incorporate ecological, economic, historical, psychological, ethical and philosophical considerations in addressing environmental challenges.

The course focuses on interdisciplinary approaches between economics and physical and biological sciences to develop a conceptual framework for ecological economics.

Learning Objectives:

Students learn how ecology and environment was conceptualised in various paradigms of economics and how ideas derived from biological and physical sciences were integrated into them. This approach helps to form an interdisciplinary framework to understand ecological and environmental impact of economic activities. In doing so it develops a strong critique of the market based paradigm and develops a case for institutional and non market based approaches to environmental problems. Techniques of valuation and integrating natural resources to national income accounting for developing macroeconomic approaches to environmental problems are discussed. Finally, students are familiarised with bioeconomic modelling that facilitated integration of information from ecology and economics to conceptualise options that are described by objective functions.

Brief description of modules/ Main modules:

S. No.	Module
1	Introduction to Environmental and Ecological Economics
2	Economic and Ecological Systems: Interdependences
3	Basic mathematics for Ecological Economics: Derivatives, Elasticity, Optimisation in Excel/R
4	Basic Econometrics: Basic Statistics, Hypothesis Testing, Regression in Excel/R
5	Economic Concepts and Foundations I: Consumer, Producer, Demand, Supply, Markets, Basic Laws, Equilibrium, Elasticity
6	Economic Concepts and Foundations II: Property Rights, Market Failure, Externalities, Public Goods, Open Access Regimes, Missing Markets
7	Valuation Theory: Cost-Benefit Analysis, Discounting, Net Present Value, Willingness to Pay, Willingness to Accept
8	Applying Economics to Environmental Problems: CDM, PES and REDD+
9	Economics of Natural Resources (Theory and Lab Simulations)
10	Natural Resource Accounting
11	Game Theory and Applications
12	Emerging Issues in Ecological Economics: Wildlife, Economy, Green GDP, Climate, Invasives

Indicative Reading List:

- Common, M., & Stagl, S. (2005). Ecological Economics: An Introduction. Cambridge, UK: Cambridge University Press.
- Conrad, J. M. (2010). Resource Economics(2nd ed.). Cambridge, UK: Cambridge University Press.
- Daly, H. E.,& Farley, J. (2011). Ecological Economics: Principles and Applications (2nd ed.). London: Island Press.
- Dougherty, C. (2007). Introduction to econometrics (3rd ed.). New Delhi: Oxford University Press.
- Gujarati, D. N. (2003). Basic Econometrics (4th ed.). New Delhi: Tata McGraw-Hill Education.
- Maddala, G. G., & Lahiri, K. (2009). Introduction to Econometrics (4th ed.). New Delhi: Wiley.
- Tietenberg, T. & Lewis, L. (2012). Environmental and Natural Resource Economics (9th ed.). Delhi: Pearson.

Assessment with details of weightage:

The students will be assessed through term papers, presentations on topics from field work, tests and exams. The weightage will be as follows: Assessment 1 (30%); Assessment 2 (30%); Assessment 3 (40%).

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Course Outline

Winter Semester (Jan-May 2019)

School:	Human Ecology
Programme with title:	MA Environment and Development
Semester to which offered: (I/ III/ V)	II semester
Course Title:	**Environmental Law, Policies and Governance**
Credits:	4 Credits
Course Code (new):	**SHE2ED105**
Type of Course:	Compulsory yes Cohort MAED
Course Coordinator and Team:	Dr Budhaditya Das + Visiting faculty (1)
Email of course coordinator:	budhaditya@aud.ac.in
Pre-requisites:	None

Aim: This course reviews environmental policies that are currently being debated. It explores the role of various stakeholders in shaping environmental governance. It analyses regulatory and policy instruments and explores how blends of the two are increasingly employed in major areas of environmental policy. The course will provide an introduction to policy, law and governance; and approaches to making policies in India. It will emphasize rights-based approaches and the role of law in environment-development debates. It will also explore the importance of institutions in local governance as well as institutions at the provincial, national and international level.

Learning Objectives:
The students will get an in-depth understanding of law and policy-making, and also its implementation on ground.

Brief description of modules/ Main modules:

- Indian Constitution & Environment
- Statutory laws
- International environmental law
- Environmental Law & its role in infrastructural Project
- Law & Decentralised Natural Resource Management
- Traditional and non-formal form of institutions and Forest Policies
- Locating NGOs in the decentralization debate
- PRIs, User Groups and the politics of decentralization
- Local knowledge and customary law
- Local knowledge and participation
- Decentralisation of NRM in India: Policies and Programmes
- Environmental Policies/Issues in the North East

Indicative Reading List:

- Singh, Satyajit, 'Introduction' in Singh & Sharma (eds.), Decentralisation: Institutions and Politics in Rural India, OUP, 2007, New Delhi.
- Menon, Ajit, et. al, Community-Based Natural Resource Management in South Asia: Issues and Cases from South Asia, New Delhi/ London/California/Singapore, SAGE, 2007 (Introduction).
- Lélé, Sharachchandra, 'Decentralising Governance of Natural Resources in India: A review', CISED, Bangalore, 2004.
- Lélé, Sharachchandra, 'Beyond State-community Polarizations and Bogus "Joint"ness: Crafting Institutional Solutions for Resource Management', in Max Spoor (ed.), Globalisation, Poverty and Conflict, Kluwer Academic Publishers, 2004.
- Shakleton, S, B. Campbell, E. Wollenberg & D. Edmunds, 'Devolution and Community Based Natural Resource Management: Creating Space for Local People to Participate and Benefit?', ODI Natural Resource Perspectives: No. 76, March 2002.
- Larson, Anne M. & Jesse C. Ribot, 'Democratic Decentralisation through a Natural Resource Lens: An Introduction', European Journal of Development Research, Vol.16, No.1, Spring 2004.
- Agrawal, A & J. Ribot, 'Accountability in Decentralisation: A Framework with South Asian and West African Cases', The Journal of Developing Areas, 33 (4), 1999.
- James Manor, 'User Committees: A Potentially Damaging Second Wave of Decentralisation?', EJDR, 16(1), 2004.
- Mosse, David, 'The Making and Marketing of Participatory Development',
- Baumann, P., 'Panchayati Raj and watershed management in India: Constraints and opportunities', Working Paper no. 114, Overseas Development Institute, London, 1998.
- Chhotray, Vasudha, 'The Negation of Politics in Participatory Development Projects, Kurnool, Andhra Pradesh', Development and Change, 32 (2), 2004.
- Johnson, Nancy et.al., 'User Participation in Watershed Management and Research', CAPRi Working Paper No. 19, September 2001.
- Bavinck, M., 'A History of Nets and Proscriptions in Artisinal Fishing: Restrictions on Technical Innovation along the Coromandal Coast', South Indian Studies, 3.
- D'Cruz & Avinash V. Raikar, 'Democratic Management of Common Property in Goa: From 'Gaonkarias' and 'Communidades' to Gram Sabhas', EPW, February 4, 2006.
- Ananthpur, K., 'Dynamics of Local Governance in Karnataka', EPW, February 24, 2007.
- Videh Upadhyay, 'Beyond the Buzz: Panchayats, Water User Groups and Law in India', CSLG Working Paper Series-05,
- Mollinga, Peter P., 'The Inevitability of Reform: Towards Alternative Approaches for Canal Irrigation Development in India' in L. K. Joshi and R. Hooja (Eds.), 2000, Participatory Irrigation Management: Paradigm for the 21st Century, vol. 1, Rawat Publications, Jaipur (67-98).
- Mollinga, Peter P., 'Power in Motion: A Critical Assessment of Canal Irrigation Reform in India' in Hooja, R., G. Pangare and K. V. Raju (Eds.), Users in Water Management: The Andhra Model and Its Replicability in India, Rawat Publications, Jaipur, 2002.
- Parthasarathy, R., 'Comparing Gujarat with Andhra Pradesh: Reforms in Irrigation Management and People's Participation' in Hooja, R., G. Pangare and K. V. Raju (Eds.), Users in Water Management: The Andhra Model and Its Replicability in India, Rawat Publications, Jaipur, 2002.
- Jairath, Jasveen, 'Contradictions of a Supply Side Approach: PIM in Andhra Pradesh', in Hooja, R., G. Pangare and K. V. Raju (Eds.), Users in Water Management: The Andhra Model and Its Replicability in India, Rawat Publications, Jaipur, 2002.
- Pangare, Ganesh, 'Scaling-up PIM in India: Lessons Learnt from the AP Model and Future Strategies' in Hooja, R., G. Pangare and K. V. Raju (Eds.), Users in Water Management: The Andhra Model and Its Replicability in India, Rawat Publications, Jaipur, 2002.

- Venkateswarlu, D., 'Politics of Irrigation Management Reforms in AP', in Hooja, R., G. Pangare and K. V. Raju (Eds.), Users in Water Management: The Andhra Model and Its Replicability in India, Rawat Publications, Jaipur, 2002.
- Reddy, D.N., 'Designer Participation: Politics of Irrigation Management in AP' in Hooja, R., G. Pangare and K. V. Raju (Eds.), Users in Water Management: The Andhra Model and Its Replicability in India, Rawat Publications, Jaipur, 2002.
- Niranjan Pant, 'Some Issues in Participatory Irrigation Management', EPW, January 5, 2008.
- V Ratna Reddy and P.P. Reddy, 'How Participatory Is Participatory Irrigation Management? Water Users' Associations in Andhra Pradesh ', EPW, December 31, 2005.
- Mamata Swain and Deepak Kumar Das, 'Participatory Irrigation Management in India: Implementations and Gaps', Journal of Developments in Sustainable Agriculture, 3, 2008
- Sen, Arnab & Esther Lalhrietpui, 'Scheduled Tribes (Recognition of Forest Rights) Bill: A View from Anthropology and Call for Dialogue', EPW, September 30, 2006.
- Upadhyay, Sanjay, From Joint Management to Community Ownership of Forest in India– The Legal Challenge, ENVIRO-LEGAL DEFENCE FIRM, New Delhi, 2002.
- Upadhyay, Sanjay, 'Tribal Self-Rule Law and Common Property Resources in Scheduled Areas of India- A New Paradigm Shift or another Ineffective Sop?', Tenth Biennial Conference of the International Association for the Study of Common Property (IASCP) "The Commons in an Age of Global Transition Challenges, Risks and Opportunities" Hosted by the Instituto de Investigaciones Sociales, Universidad Nacional Autónoma de México Oaxaca, México, 9 – 13 August 2004.
- Edmunds, David & Eva Wollenberg, Local Forest Management: The Impact of Devolution Policies, Earthscan, London, 2003 (Chapter 3).
- Springate-Baginsky, Oliver & Piers Blaikie (eds.), Forests, People and Power: The Political Ecology of Reform in South Asia, Earthscan, London, 2007 (Chapter 1, 7, 8, 9 & 11).

Assessment with details of weightage:
Two short essays (Take home): 15% each
One Tutorial: 30%
End-sem exam: 40%

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Course Outline

Winter Semester (Jan-May 2019)

School:	Human Ecology
Programme with title:	MA Environment and Development
Semester to which offered: (I/ III/ V)	II semester
Course Title:	**Social and Political Ecology**
Credits:	4 Credits
Course Code (new):	SHE2ED104
Type of Course:	Compulsory yes Cohort MAED
Course Coordinator and Team:	Dr Oinam Hemlata Devi + Visiting faculty (1)
Email of course coordinator:	hemlata@aud.ac.in
Pre-requisites:	None

Aim: As environmentalism has gained momentum in the last four decades, the idea of nature as an apolitical entity has come into question. It is in this context that the field or perspective of social and political ecology has made its presence felt across the disciplines. It originates from two basic critiques of technocratic, a historic and a social understanding of nature. The first is the recognition that the environment has long been abstracted from society (and society from the environment) with serious consequences, and therefore it is necessary to tie together humans, non-humans, and the biophysical world in a holistic interpretive framework. The second critique builds on the assumption that if nature and society are intricately linked, then environmental issues are simultaneously technical, social and political. This course will build the conceptual-theoretical base for a political ecological perspective on concerns around nature/society, analyze politics and movements related to the knowledge, control and governance of nature, and finally, consider the technologies through which nature is constantly given shape.

Brief description of modules/ Main modules:

Part I: Introduction and Overview of Debates:

- *Nature as Social Construction*
- *Hybridity*
- *Politics of the Environment*
- *Interrogating Environmental Narratives*

Part II: Cultural Ecology and Critique

Part III: Political Ecology

- *The Beginnings*
- *Nature of the State*

- *Capitalism, Neoliberalism and Nature*
- *New Directions in Political Ecology*

Part IV: Governmentality, Technoscience and Nature

References:

1. A. Jalais (2008), 'Unmasking the cosmopolitan tiger', Nature and Culture 3(1): 25-40.
2. L. Mehta (2003), 'Contexts and Constructions of Water Scarcity', Economic and Political Weekly 38(48): 5066-5072.
3. P. Robbins (2001), 'Tracking Invasive Land Covers in India, or Why Our Landscapes Have Never Been Modern', Annals of the Association of American Geographers 91 (4): 637-659.
4. S. Whatmore (1998), 'Wild(er)ness: Reconfiguring the Geographies of Wildlife, Transactions of the Institute of British Geographers 23(4): 435-454.
5. R. Hardin (2011), 'Concessionary Politics: Property, Patronage, and Political Rivalry in Central African Forest Management', Current Anthropology 52(S3): 113-125.
6. A. Chhatre and V. Saberwal (2005), 'Political Incentives for Biodiversity Conservation', Conservation Biology 19(2): 310-317.
7. J. Fairhead and M. Leach (1995), 'False Forest History Complicit Social Analysis: Rethinking Some West African Environmental Narratives', World Development 23(6): 1023-1035.
8. C. Kull (2000), 'Deforestation, Erosion and Fire: Degradation Myths in the Environmental History of Madagascar',Environment and History 6: 423-450.
9. Julian Steward, 'Theory of Culture Change: The Methodology of Multilinear Evolution'
10. R. Rappaport (1967), 'Ritual Regulation of Environmental Relations among a New Guinea People', Ethnology 6(1): 17-30.
11. Marvin Harris, 'The Cultural Ecology of India's Sacred Cow'
12. E.B. Ross (1978), 'Food Taboos, Diet and Hunting Strategy: The Adaptation to Animals in Amazon Cultural Ecology', Current Anthropology 19(1): 1-36.
13. Anna Tsing (1999), 'Becoming a tribal elder and Other Green Development Fantasies'
14. M. Watts (1984), 'Hazards and Crisis', Antipode 15(1): 24-34.
15. T. Bassett (1988), 'The Political Ecology of the Peasant Herder Conflict in the Northern Ivory Coast', Annals of The Association of American Geographers.
16. J. Scott (1998), 'Seeing like a State', ch 1 and 8.
17. J. Ribot (1993), 'Forestry Policy and Charcoal Production in Senegal', Energy Policy, May 1993.
18. P. Robbins (2000), 'The Practical Politics of Knowing: State Environmental Knowledge and Local Political Economy', Economic Geography 76(2): 126-144.
19. J. O'Connor (1994), 'Is Sustainable Capitalism Possible?'.
20. J. Whitehead (2003), 'Space, Place and Primitive Accumulation in Narmada Valley and Beyond', EPW 38(40): 4224-4230.
21. M. Arsel (2012), 'Between "Marx and Markets?" The State, The "Left Turn" and Nature in Ecuador', Journal of Economic and Social Geography, 103(2): 150-163.
22. B. Mansfield (2004), 'Neoliberalism in the Oceans: "rationalization", property rights, and the commons question', Geoforum, 35: 313-326.
23. D. Davis (2006), 'Neoliberalism, environmentalism, an agricultural restructuring in Morocco', The Geographical Journal, 172(2): 88-105.
24. M. Lawhon et al (2013), 'Provincializing Urban Political Ecology: Towards a Situated UPE through African Urbanism', Antipode
25. M. Watts (2010), 'Resource Curse? Governmentality, Oil and Power in the Niger Delta, Nigeria', Geopolitics 9(1): 50-80.
26. J. Ribot (2010), 'Vulnerability does not fall from the sky', in R. Mearns ed.
27. Timothy Mitchell, 'Can the Mosquito Speak?', from Rule of Experts

28. B. Latour, 'The Pasteurization of France', ch 2 and 3.
29. A. Agrawal (2005), Environmentality, ch 1 and 6
30. A. Petryna (2004), 'Biological Citizenship': the Science and Politics of Chernobyl-Exposed Populations', Osiris 19: 250-265.
31. K. Fortun (2004), 'From Bhopal to the Informating of Environmentalism: Risk Communication in Historical Perspective', Osiris 19: 283-296.
32. V. Adams (2002), 'Randomized controlled crime: Postcolonial sciences in alternative medicine research', Social Science of Science 32(5-6).
33. I. Abraham (1997), 'Science and Secrecy in Making of Postcolonial State', EPW 32(33-34).

Assessment with details of weightage:

1. Review essays/quiz (40%)
2. Book Review (25%)
3. Final Exam (35%)

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Course Outline

Winter Semester (Jan-June 2019)

School:		Human Ecology		
Programme with title:		MA Environment and Development		
Semester to which offered:		II semester		
Course Title:		**Research Methodology II**		
Credits:		4 Credits		
Course Code:		SHE2ED202		
Type of Course:	Compulsory	Yes	Cohort	MAED
Course Coordinator and Team:		Dr Oinam Hemlata Devi (CC) and Dr Suresh Babu		
Email of course coordinator:		hemlata@aud.ac.in		
Pre-requisites:		None		

Aim: This course will build upon the topics covered in Research Methods 1 to provide students with an in-depth understanding of study design as well as the tools and techniques of data mining, data collection and data analysis. They will also be familiarized with the strengths and weaknesses of different data collection tools and techniques using a combination of classroom lectures and hands-on activities in the field and the laboratory.

Learning outcomes:
At the end of the course, students will be able to develop robust study designs around specific research themes and questions relevant to environment and development. They will be able to develop and test simple hypotheses based on primary and secondary data. They will also become familiar with the use of preliminary data graphing and analysis software for both qualitative and quantitative data.

Brief description of modules/ Main modules:

Module No.	**Topic**
Module 1	Introduction to Study Design
Module 2	Broad based or extensive data collection tools: Surveys, PRA/RRA, Mixed Methods
Module 3	Positionality and bias
Module 4	In-depth or intensive data: Observation based methods
Module 5	In-depth or intensive data: Life histories and Case Studies
Module 6	Introduction to qualitative data analysis software
Module 7	Numerical and graphical representation of data
Module 8	Introduction to descriptive statistics
Modules 9-11	Understand the basics of probability and statistics, including distributions, Bayesian statistics and hypothesis testing
Module 12	Understand basic inferential statistics including ANOVA and regression analysis

Indicative Reading list:

- Chambers, R. (1997). *Whose reality counts? Putting the first last.* London: Intermediate Technology.
- Chambers, R. (2003). The best of both worlds. In R. Kanbur (Ed.), *Q-Squared: Qualitative and quantitative poverty appraisal* (pp. 34–45). Delhi: Permanent Black.
- Edmondson, A. & D. Druve. (1996). *Advanced Biology Statistics*. Oxford University Press.
- Einspruch, E.L. (2005). *An introductory Guide to SPSS for Windows* (2nd ed.). Sage Publications.
- Kothari, Uma. (2001). Power, Knowledge and Social Control in Participatory Development. In Bill Cooke and Uma Kothari (Eds.). *Participation: The New Tyranny?* (pp.139–52) 1st ed. London: Zed Books.
- Neil A. Weiss. (1993). *Elementary Statistics*. Addison-Wesley Publishing Company.
- Sarantakos, Sotirios. (2005). *Social Research*. 3rd ed. Palgrave Macmillan.
- Singh, Y.K. (2006). *Fundamental of Research Methodology and Statistics* (pp. 147-160). New Delhi: New Age International Pubishers.

Tentative Assessment schedule with details of weightage:

This course will have continuous assessment in the form of classroom-based activities, take-home assignments, field based activities and an end-term examination.

Semester 4 courses: 2 credit electives

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Course Outline

Winter Semester (Jan-May 2019)

School:		Human Ecology		
Programme with title:		MA Environment and Development		
Semester to which offered: (I/ III/ V)		IV semester		
Course Title:		Displacement, Resettlement, and Rehabilitation		
Credits:		2 Credits		
Course Code (new):		SHE2ED309		
Type of Course:	Compulsory	No	Cohort	NA
	Elective	Yes	Cohort	MAED
Course Coordinator and Team:		Prof. Asmita Kabra		
Email of course coordinator:		asmita@aud.ac.in		
Pre-requisites:		None		

Aim:

Content

Land is the basis for all productive activity, and as such, is at the crux of issues and debates on environment and development. Concerns of growth, distribution and sustainability are linked intimately with questions about land ownership, access and use. This course will familiarize students with some of these issues in the backdrop of the global surge in land acquisition and involuntary displacement since the 1980s, which has reconfigured traditional forms of access, tenure and control over land in the global South.

Learning objectives

This 2-credit interdisciplinary course will provide students with a holistic view of global and local frameworks of law, policy and experience of land acquisition, population displacement, resettlement and rehabilitation. The questions of voluntary versus involuntary displacement, special concerns relating to indigenous communities, and the challenges of post-displacement reconstruction of livelihoods will be discussed in depth.

On successful completion of the coursework, students will be able to understand and apply these concepts in consultancies, research projects, advocacy and field action related to land acquisition, displacement, resettlement and rehabilitation. As such, it is useful for those seeking careers as consultants, field practitioners, researchers or activists, or simply as engaged citizens.

Course Outline

S. No.	Module name
1	Development and displacement: An overview of issues and debates
2	Land acquisition laws and policies: Global and Indian perspectives
3	Theorizing displacement: CBA, IRR and political economy approaches
4	Displacement, resistance and social movements
5	Resettlement, rehabilitation and livelihood reconstruction
6	Research methods in displacement and resettlement

Indicative Reading List

1. Baviskar, A. In the Belly of the River: Tribal Conflicts over Development in the Narmada Valley. New Delhi: Oxford University Press, 1995.
2. Brockington, Daniel and James Igoe. "Eviction for Conservation: A Global Overview." *Conservation and Society, Vol.4, No.3*, 2006: 424-470.
3. Cernea, Michael M. "The Risks and Reconstruction Model for Resettling Displaced Populations." *World Development October 25*, 1997: 1569-87
4. Dwivedi, R. " Displacement, Risks and Resistance: Local Perceptions and Actions in the Sardar Sarovar." *Development and Change 30(1)*, 1999: 43-78.
5. Dwivedi, R. "Models and Methods in Development-induced Displacement." *Development and Change 33(4)*, 2002: 709-732.
6. Hakim, Roxanne P. "From Corn to Cotton: Changing indicators of fod security amongst resettled Vasavas." In *Risks and Reconstruction: Experience of resettlers and refugees*, by M. and C. McDowell Cernea, 229-252. Washington D.C.: The World Bank, 2000.
7. Hakim, Roxanne P. "Identity, Resettlement and Perceptions of Change: The Vasava Bhils of Gujarat, India." *Goldsmiths Anthropology Research Papers, University of London*, 2000.
8. Iyer, Ramaswamy R. "Towards a Just Displacement and Rehabilitation Policy." *Economic and Political Weekly Volume 42, No.30*, 2007: 3103-3107
9. Kabra, Asmita (2016). "Assessing economic impacts of forced land acquisition and displacement: A qualitative rapid research framework". *Impact Assessment and Project Appraisal Vol.34, Issue 1.*DOI: 10.1080/14615517.2015.109603
10. Kabra, Asmita, and Sonam Mahalwal. 2014. "Impact of Conservation-Induced Displacement on Host Community Livelihoods: Complicating the DIDR Narratives." *Land Use Policy* 41 (November): 217–24. doi:10.1016/j.landusepol.2014.05.010.
11. Kabra, A. *Conservation-induced displacement: Anatomy of a win-win solution.*Social Change Volume 43, Number 4 (December 2013). doi: 10.1177/0049085713502592Social Change December 2013 vol. 43 no. 4 533-550
12. Kabra, Asmita. "Conservation-induced Displacement: A comparative study of two Indian Protected Areas." *Conservation and Society 7(4)*, 2009: 249-267.
13. Mathur, H.M. (ed). *Managing Resettlement in India: Approaches, Issues, Experiences.* New Delhi, Oxford University Press. 2006.
14. McLean, J. and S. Straede. "Conservation, relocation, and the paradigms of Park and people management: A case study of the Padampur villages and the Royal Chitwan National Park, Nepal." *Society and Natural Resources 16*, 2003: 509-526.

15. Nielsen, Kenneth. 2011. “Land, law and resistance”, Economic and Political Weekly Vol 66, No. 41; 38-40.
16. Penz, Peter, Jay Drydyk and Pablo S. Bose. (2011). *Displacement by development: ethics, rights and responsibilities.* Edinborough: Cambridge University Press. Introduction and Chapter 1.
17. World Bank Operational Manual, Operational Policies. 2001. Involuntary Resettlement. Washington DC.

Course Organization and Teaching

The coursework will consist of two **weekly lectures** by the course faculty. Lectures will be based on prior reading by students and will be interactive and discussion-based. Outline notes for each lecture will be posted to students by email.

The course will use a host of case studies from India and elsewhere to illustrate core concepts. The pedagogy will combine classroom lectures with intensive reading, seminars, small group discussions and presentations.

Assessment

There will be two or three assessments during the course, in the form of test/essay/seminar presentations, including a choice based essay on a sector/theme of choice for each student.

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Course Outline

Winter Semester (Jan-May 2019)

School:	Human Ecology			
Programme with title:	MA Environment and Development			
Semester to which offered: (I/ III/ V)	IV semester			
Course Title:	**Ecological Restoration in Practice**			
Credits:	2 Credits			
Course Code (new):	**SHE2ED310**			
Type of Course:	Elective	Yes	Cohort	MAED
Course Coordinator and Team:	Dr Suresh Babu			
Email of course coordinator:	suresh@aud.ac.in			
Pre-requisites:	None			

Aim: This course would be a continuation of Basic Principles of Restoration Ecology (SHE2ED305) to more advanced topics. The course would deal with the implementation of restoration programmes and try to develop an understanding and appreciation of the broad scope of societal and ecological issues associated with ecological restoration. The issues covered would include the role of economics and society in restoration decision making; and restoration planning and implementation strategies. The hands-approach would be central to this course as it would involve several case studies and field visits, with each student developing a restoration project through curriculum.

Learning objectives:
The emphasis of this course would be on challenges in implementing restoration programmes, with a hands-on approach. Field visits and Case Studies would be central to this course with an emphasis on individual attention and encouragement to develop site-specific restoration plans.

- Understand Restoration planning with extensive case studies
- Understand economic and social issues associated with ecological restoration
- Evaluate ethics and reasons for restoring ecosystems

Brief description of modules/ Main modules:

- Restoration education and community involvement
- Economics of restoring ecosystems and sustainability

- Ethics and ecological restoration
- Case Studies on Restoration Experiences

Indicative Reading List:

- Botkin, D. B. (1990). Discordant harmonies. A new ecology for the twenty-first century. Oxford, UK: Oxford University Press.
- Clewell, A. F., & Aronson, J. (2007). Ecological Restoration: Principles, Values, and Structure of an Emerging Profession. Island Press, Washington, DC.
- Doyle, M., &Drew, C. A. (Eds). (2008). Large-Scale Ecosystem Restoration. Island Press, Washington, DC.
- Davis, M. A., &Slobodkin, L. B. (2004). The science and values of restoration ecology. Restoration Ecology, 12, 1-3.
- Palmer, M. A., & Filoso, S. (2009). Restoration of ecosystem services for environmental markets. Science, 325, 575-576.
- Wallington, T. J., Hobbs,R. J. &Moore, S. A. (2005). Implications of current ecological thinking for biodiversity conservation: A review of the salient issues. Ecology and Society, 10, 15. http://www.ecologyandsociety.org/vol10/iss1/art15/
- Winterhalder, K., Clewell,A. F. & Aronson, J. (2004). Values and science in ecological restoration—A response to Davis and Slobodkin. Restoration Ecology, 12, 4-7.
- Young, T. P., Petersen,D. A. & Clary, J. J. (2005). The ecology of restoration: Historical links, emerging issues and unexplored realms. Ecology Letters, 8, 662-673.

Assessment with details of weightage:

There would be three assessments. First would be an Essay Submission based on the first 3 modules. Second would be a Short Quiz and End Semester Report based on a case study. The credit distribution of the assessments would be:

Essay: 30%
Short Quiz: 30%
Case Study Report: 40%

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Course Outline

Winter Semester (Jan-May 2019)

School:	Human Ecology			
Programme with title:	MA Environment and Development			
Semester to which offered: (I/ III/ V)	IV semester			
Course Title:	Geographic Information System			
Credits:	2 Credits			
Course Code (new):	**SHE2ED317**			
Type of Course:	Elective	Yes	Cohort	MAED
Course Coordinator and Team:	Dr Pulak Das			
Email of course coordinator:	pulak@aud.ac.in			
Pre-requisites:	None			

AIM: The course entails basic concept of Remote sensing techniques and their application in various fields. In this students acquire a base of geographic knowledge and data collection methods used in subsequent GIS application. Introductory raster GIS operations are discussed and reinforced in computer lab work (using Integrated Land and Water Information System- ILWIS). Subjects include the acquisition and compilation of data from maps, field surveys and satellite images; and an introduction to the linkage between a map and a database.

Image processing techniques and classification techniques will be key focus in this semester. Image georectification, unsupervised, supervised classification of the satellite image will be taught to the students.

Learning objectives:

- To understand functional basis of a remote sensing, appreciate the potential uses of GIS and remote sensing in natural resource management.
- Creation of quality spatial data involved in using remote sensing

Broad topics:

- Principles of Remote sensing
- Image processing techniques,
- Thematic extraction from Satellite image,
- Area calculation/ Estimation
- Change detection
- Conversion of Raster in to GIS
- Integration of GIS & Remote sensing.

Indicative Reading list:

- Principles of Geographical Information Systems by P.A. Burrough, & McDonnell,
- Geographic Information Systems and Science. Second edition. By P. A.Longley, M. F. Goodchild, D. J. Maguire and D. W. Rhind. John Wiley, Chichester, 2005.
- Managing Natural Resources with GIS by Laura Lang, Environmental Systems Research Institute.
- Remote Sensing and Image Interpretation by Thomas M. Lilles and, Ralph W. Kiefer.
- GIS: A Visual Approach by Bruce Ellsworth Davis, Bruce Davis

Assessment:

Assessment will be as follows:

1. **Practical exercise submission**
2. **Project submission**
3. **Written Test**
4. **In class activity**

Ambedkar University Delhi

Course Outline

Winter Semester (Jan-May 2019)

School:	Human Ecology			
Programme with title:	MA Environment and Development			
Semester to which offered: (I/ III/ V)	IV semester			
Course Title:	Applied Population Ecology			
Credits:	2 Credits			
Course Code (new):	**SHE2ED304**			
Type of Course:	Elective	Yes	Cohort	MAED
Course Coordinator and Team:	Dr Suresh Babu(CC); **Course Team:** Adjunct Faculty			
Email of course coordinator:	suresh@aud.ac.in			
Pre-requisites:	None			

AIM:

Population ecology is the study of how population sizes of one or more species change over time and space. Applications of population ecology are important in conservation and ecosystem management and include field population estimations, study of harvested species, modelling population growth, environmental monitoring and endangered species surveys. Population assessments can also help identify threats and evaluate the performance of conservation initiatives. Thus study of biological populations is crucial for most wildlife conservation or research programs.

A wide variety of estimators can be used to monitor populations, provided they are reliable and replicable. In absence of robust estimators it becomes difficult to infer whether the change (or lack of it) in the estimator is due to real population changes or some other factor, viz. variation in methodology, field personnel, experience, season etc. Empirical estimation of the probability of detection of the species of interest has undergone most of the recent development in the field of population ecology.

As part of this course, students will be taught to design studies to answer specific population-related questions, collecting the right data and analysing it to make appropriate inferences that are robust over uncertainties incurred by method. The coursework is expected to provide a widget box to the students for applying the right methods to answer specific questions. The course is expected to be mainly hands-on and computer-based.

Course Contents:

S. No.	Module
1	a. Asking the right questions for assessments and monitoring programs b. Statistical distributions and sampling c. Modelling basics and information theoretic approach

S. No.	Module
2	a. Conceptual framework for population ecology and management (presence/absence, relative abundance, absolute abundance) b. What we see vs what is there—dealing with imperfect detections c. Maximum Likelihood theory Field and Analytic techniques (including basics, theory, assumptions, limitations, survey designs, implementation, applications, field exercise and lab exercise)
3	Distance sampling (software DISTANCE) i) Line transects ii) Point counts
4	a. Mark-recapture (MARK & CAPTURE) i) Single season estimators ii) Multiple season estimators iii) Multiple Observer counts b. Species Richness (MARK & CAPTURE)
5	Occupancy probability (PRESENCE) i) Single season ii) Multiple seasons iii) Species co-occurrence iv)Multiple counts v) Abundance indices from presence vi)Multiple methods
6	Population Viability Analysis (RAMAS, Excel, R)

Indicative Reading List:

- Williams, B. K., Nichols, J. D. and Conroy, M. J. 2001. Analysis and Management of Animal Populations. Academic Press. California, USA. Pp. 817.
- Cooch, E. and White (Eds). 2008. Program Mark: A gentle introduction. Pp. 766.
- Buckland, S. T., Anderson, D. R., Burnham, K. P., Laake, J. L. 1993. Distance sampling: estimating abundance of biological populations. Chapman and Hall, London. Pp. 446.
- Donovan, T. M. and J. Hines. 2007. Exercises in occupancy modeling and estimation. < http://www.uvm.edu/envnr/vtcfwru/spreadsheets/occupancy/occupancy.htm >

Assessment Methodology:

Students will be given computer-based in-class assignments and a short project based on the concepts taught.