

Course title: Urban Disaster Management and Climate Resilient Cities				
Course code: MEU 162		No. of credits: 2	L-T-P: 22-6-0	Learning hours: 28
Pre-requisite course code and title (if any): NA				
Department: Department of Energy and Environment				
Course coordinator: Bhawna Bali			Course instructor: Bhawna Bali	
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Course type: Elective			Course offered in: Semester 3	
Course description:				
<p>The world has been witnessing increased incidences of disasters and cities that house huge infrastructure and population are vulnerable to disaster risks. This course focusses on risk reduction and management of disaster and extreme climate events in cities. The course also addresses the slow onset climate impacts on cities and its systems. It covers the critical aspect of vulnerability and risk assessment in urban areas and addresses key components relating to disaster and climate risk reduction, management and building climate resilience. The existing situation of policy and institutional mechanisms of disaster management in cities in India is examined.</p>				
Course objectives:				
<ul style="list-style-type: none"> • To create knowledge on urban disaster risk reduction and climate resilience. • To provide an understanding of vulnerability and risk assessment tools and techniques. • To equip students with knowledge on key components relating to disaster risk reduction and innovative management approaches being adopted by cities towards climate resilience. • To impart knowledge on policy and institutional mechanisms for disaster management in India. 				
Course contents				
Module	Topic	L	T	P
1	Understanding Disasters and Climate Impacts a) Concept of hazard, vulnerability, risk and disaster b) Slow onset climate impacts c) Extreme events and disaster	4		
2	Vulnerability and Risk Assessment a) Risk assessment and vulnerability assessments relating to the slow onset climate risks and disaster/extreme events risks	4	2	
3	Disaster Risk Reduction and Climate Resilience a) Disaster preparedness and response mechanisms b) Disaster risk reduction and management of earthquakes, cyclone and floods c) Climate risk mitigation and adaptation d) Building climate resilient cities	8	4	
4	Disaster Management in India a) Disaster profile of India	6		

	b) Policy and institutional mechanisms			
	Total	22	6	0
<p>An exercise to be introduced to the students where they will work on the following case studies:</p> <p>a. Floods in Jammu/Chennai b. Cyclone in Vizag c. Earthquake in Gujarat</p> <p>Evaluation criteria: Assignment : 50% Final Examination : 50%</p>				
<p>Learning outcomes: On successful completion of this course, the students would be equipped with knowledge on disaster risk reduction and climate resilience in cities. The students shall also be able to apply the tools and techniques used for vulnerability and risk assessment.</p>				
<p>Pedagogical approach: The course will be delivered through a mix of classroom lectures, discussion sessions and exposure to case studies on the theme</p>				
<p>Materials:</p> <p>Readings:</p> <ol style="list-style-type: none"> 1. Bicknell J., Dodman D. and Satterthwaite D. Eds. 2009. Adapting Cities to Climate Change. Earthscan, London. 2. Blaikie, P. et al. 1994. At Risk: Natural Hazards, People's Vulnerability and Disasters. Routledge, London. 3. Birkmann, J. 2006. Measuring Vulnerability to Natural Hazards: Towards Disaster Resilient Societies. United Nations University Press, Tokyo. 4. Kapur, Anu. 2010. Vulnerable India: A Geographical Study of Disasters. Sage Publications India Pvt. Ltd, New Delhi. 5. M.C. Gupta, L.C. Gupta, B.K. Tamini, Vinod K. Sharma. 2000. Manual on Natural Disaster Management in India. National Disaster Management Centre, New Delhi. 6. National Policy on Disaster Management, 2009. http://ndma.gov.in/images/guidelines/national-dm-policy2009.pdf 7. National Disaster Management Guidelines on Earthquake, Cyclone and Urban Flooding http://ndma.gov.in/en/ndma-guidelines.html 8. NIDM and UNDP. 2014. National Disaster Management: Toolkit for Urban Planning 9. NIDM and UNDP. 2014. Mainstreaming Disaster Risk Reduction in Development Planning 10. Rosenzweig C., Solecki, W. D., Hammer, S. A. and Mehrotra, S. P. Eds. 2011. Climate Change and Cities: First Assessment Report of the Urban Climate Change Research Network (ARC3). Cambridge University Press, Cambridge and New York. 11. UNHABITAT. 2011. Global Report on Human Settlements-Cities and Climate Change Policy Directions. Earthscan. 12. World Bank. 2010. Climate Risks and Adaptation in Asian Coastal Megacities. A Synthesis 				

Report

13. World Bank. 2011. Cities and Flooding: A Guide to Integrated Urban Flood Risk Management for the 21st Century

Additional Resources

1. Documentary Film - "Tales of Gorakhpur"
(<https://www.youtube.com/watch?v=93P49Xy4pM8&list=PLJRwiYPH5RkTfzhCjYcSwJPCW0BLIsll4>)
2. Policy brief on Climate Proofing Indian Cities
(<http://www.teriin.org/policybrief/docs/Urban.pdf>)
3. Policy brief on Methodologies for urban climate resilience
(<http://pubs.iied.org/pdfs/10655IIED.pdf>)
4. Sharma, D. Et al. 2013. Urban Climate Resilience: A review of the methodologies adopted under the ACCCRN initiative in Indian cities. Asian Cities Climate Resilience Working Paper Series 5. IIED: London
(<http://pubs.iied.org/10650IIED.html?k=asian%20cities%20climate%20resilience%20working%20paper>)
5. Sharma, D. Raina Singh & Rozita Singh. 2014: Building urban climate resilience: learning from the ACCCRN Experience in India. International Journal of Urban Sustainable Development, DOI:10.1080/19463138.2014.937720
6. TERI. 2012. Mainstreaming Climate Resilience in Urban Areas – A Case of Gorakhpur City. TERI, New Delhi.
(http://accrn.org/sites/default/files/documents/Gorakhpur%20report_Synthesis.pdf)
7. TERI. 2013. Climate Proofing Guwahati, Assam. City Resilience Strategy and Mainstreaming Plan (Synthesis Report). TERI, New Delhi.
(http://accrn.org/sites/default/files/documents/TERI_Guwahati%20Synthesis%20Report.pdf)
8. TERI. 2014. Climate Resilient Infrastructure Services - Case Study Brief: Panaji
(<http://www.teriin.org/eventdocs/files/Case-Study-Panaji.pdf>)
9. TERI. 2014. Climate Resilient Infrastructure Services - Case Study Brief: Visakhapatnam
(<http://www.teriin.org/eventdocs/files/Case-Study-Vishakhapatnam.pdf>)
10. TERI. 2014. Working Paper on Planning Climate Resilient Coastal Cities: Learnings from Panaji and Visakhapatnam, India. TERI, New Delhi.
(<http://www.teriin.org/eventdocs/files/Working-Paper-climate-resilient.pdf>)
11. UNDP-UNEP. 2011. Mainstreaming Climate Change Adaptation into Development Planning: A Guide for Practitioners. UNDP-UNEP Poverty-Environment Initiative. www.unpei.org.
12. UGEC. 2011. Addressing Grand Challenges for Global Sustainability: Monitoring, Forecasting, and Governance of Urban Systems. UGEC viewpoints. No.6. www.ugec.org
13. Webinar on Climate Resilient Cities (<https://www.youtube.com/watch?v=clOiZbQI9Bs>)

Web links

<http://www.accrn.org/resources>
<http://www.unisdr.org/we/campaign/cities>
<http://www.unisdr.org/we/inform/publications>
<http://www.unisdr.org/we/coordinate/hfa>
<http://www.indiaenvironmentportal.org.in/>
<http://mirror.unhabitat.org/pmss/>

<http://www.100resilientcities.org/>
<http://cdkn.org/resources/>
<http://www.apan-gan.net/>
<http://resilient-cities.iclei.org/>

Additional information (if any):NA

Student responsibilities:

Attendance, feedback, discipline: as per university rules.