योजना तथा वास्तुकला विद्यालय, विजयवाड़ा
School of Planning and Architecture, Vijayawada
An Institute of National Importance, Ministry of Education, Govt. of India

## Department of Planning,
## Lecture Plan, Odd Semester, AY 2024-25

**Name of Course: Master of Environmental Planning and Management.**

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| Subject Name: | Energy Studies (MEPM215) |
| Year & Sem: | Third Semester, AY 2024-25 |
| Course Duration: | 22/07/2024 to 14/11/2024 |
| Course Coordinator: | Dr. Adinarayanane R |
| Number of Credits: | 03 Credits |
| Subject Category: | Theory |
| Total Periods/Week: | 03 Periods per Week |
| Internal Assessment | 50 |
| End Evaluation | 50 |
| Total Marks | 100 |
| Total No. of Internal Assessment & Mode | Three Internal Assessments<br>(Two assignments for 15 marks each and Written Test for 20 marks) |

**Subject Objective:** To introduce fundamental concepts and quantification-based assessment of energy consumption.

| Week | Lecture / Session Topic (Teaching-Learning Objective aimed) | Unit and Assignment |
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| **Week 1** (22-26 July,24) | Introduction to Principles of Energy: Sources and Consumption. | |
| **Week 2** (29July-2 Aug,24 | Energy Demand and Supply; sources of energy and typology of energy available at source. | |
| **Week 3** (5-9 Aug,24) | Quantification of Resource Consumption and patterns of consumption. | |
| **Week 4** (12-16 Aug,24) | Relating energy consumption patterns with sectors – residential, commercial, transport, etc. | **Unit-1:** Energy, Urbanisation, Spatial Planning and Measures for the Cities Energy Transition. |
| **Week 5** (19-23 Aug,24) | Cluster & Group Based Energy Use: Energy efficiency and ISO; Introduction to ISO; ISO-14000 and its Planning Implications. | |
| **Week 6 & 7** 27 August to 08 Sept (except first years) | Field Trip | |
| **Week 8** (9-13 Sep,24) | Case Study of an ISO certified industry, Environmental and Financial Benefits of ISO. | |
| 17-21 Sept | Mid- Semester Assessment week | |
| **Week 9** (23-27 Sep,24) | Cluster Based Environment Management approach & Group Environmental Management System. | |
| **Week 10** (30Sep to04 Oct,24) | Monetary valuation techniques: Cost Benefit Analysis; Natural Resource Accounting. | |
| **Week 11** (7-11 Oct,24) | Pricing, Non-use Value, Techniques of monetary evaluation/ valuation methodologies. | **Special Lecture** |

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|---|---|---|
| **Week 12** (14-19 Oct,24) | Techniques of monetary evaluation/ valuation methodologies; Energy Audit; Conservation Issues. | **Unit-5**: Green Cities and its Energy Implication in Planning |
| **Week 13** (21-25 Oct,24) | Concepts of cleaner development mechanism; Life cycle analysis. | |
| **Week 14** (28 Oct to 01 Nov,24) | Life cycle analysis; Carbon trading / GHG emissions; Energy efficiency and Re-use. | |
| **Week 15** (4-8 Nov,24) | Energy vis-a-vis concept of smart cities; Solar city mission in India; Renewable energy concept and its application in planning. | |
| **Week 16** (11-14 Nov,24) | Green cities and its energy implication, energy footprint. | |
| 14 Nov,24 end of class work | | |

**Reference books:**

1. Subhes Bhattacharyya (2020), Routledge Handbook of Energy in Asia, ISBN 9780367660017, by Routledge, Taylor & Francis Group.
2. Theme Report on ENERGY ACCESS towards the Achievement of SDG-7 and Net-Zer Emissions (2021), published by the Division for Sustainable Development Goals Department of Economic and Social Affairs United Nations.
3. Kornelis Blok, Evert Nieuwlaar (2021), Introduction to Energy Analysis, ISBN 9780367434816, by Routledge, Taylor & Francis Group.
4. Nana Asare Obeng-Darko (2024), Renewable Energy Law in Sub-Saharan Africa Assessing Ghanaian Renewable Energy Development and Policy, ISBN 9781032614465, by Routledge, Taylor & Francis Group.
5. Report on World Energy Outlook (2021), World Energy Outlook Special Report, Directorate of Sustainability, Technology and Outlooks International Energy Agency, IEA Publications, Paris, France.
6. Gilles Debizet, Marta Pappalardo, Frédéric Wurtz (2024), Local Energy Communities Emergence, Places, Organizations, Decision Tools, ISBN 9781032190693, by Routledge, Taylor & Francis Group.
7. TRACKING SDG-7- The Energy Progress Report (2022), published by World Bank, Washington D.C.
8. Annika Bose Styczynski (2024), India's Energy Revolution Insights into the Becoming of a Global Power, ISBN 9781032251523, by Routledge.
9. John Twidell (2021), Renewable Energy Resources, ISBN 9781032269252, by Routledge, Taylor & Francis Group.
10. Susanne Hanger-Kopp, Jenny Lieu, Alexandros Nikas (2020), Narratives of Low-Carbon Transitions Understanding Risks and Uncertainties, ISBN 9780367660710, by Routledge, Taylor & Francis Group.
11. Report on India Energy Outlook (2021), World Energy Outlook Special Report, Directorate of Sustainability, Technology and Outlooks International Energy Agency, IEA Publications, Paris, France.
12. S. Mahendra Dev and Sudhakar Yedla (2015), Cities and Sustainability Issues and Strategic Pathways, Springer New Delhi Heidelberg New York Dordrecht London © Springer India 2015.

**Note:**

1. Any other closed holidays as declared by SPAV shall supersede the above lecture plan. Holidays shown above may alter as per Notice from time to time.
2. Assessment Sessions may be re-scheduled, with prior intimation.
3. Reading lists provided is not exhaustive and is subject to addition–students are advised to follow progression of class to keep abreast of the new reading lists, if any.