

## Course syllabus

Department of Civil Engineering, Indian Institute of Technology Madras

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### CE4111 – Sustainable Technologies for Env. Systems Management

**Credit Distribution:** C:9 L:3 T:0 P:0 E:0 O:6 TH:9

**Course Type:** Theory

**Description:** To give an overview of the role of technology in sustainable management of different environmental systems in domestic, industrial and agricultural sectors under rural and urban settings

**Course Content:** Introduction to sustainable technologies in managing environmental systems considering conservation, efficient utilization, reclamation, reuse and recycling. The systems include water, air, soil and land, energy and materials. Mitigating carbon and water footprints through technology, Life cycle costing for air, water, waste (water and solid); Case studies on best practices, models for each system in urban and rural environments covering agricultural, industrial, and domestic sectors

#### Text Books

Meyers, Robert A, (2012) Encyclopedia of Sustainability Science and Technology, Springer (ISBN 978-0-387-89469)

#### Reference Books

- Arjun B. Chhetri, M. Rafiqul Islam 2008 Inherently-Sustainable Technology Development, Nova Publishers.
- Global Environmental Health -2009 Research Gaps and Barriers for Providing Sustainable Water, Sanitation, and Hygiene Services: Workshop Summary , National Academy Press.
- UNEP (Editor); IETC (Editor) (1996): International Source Book on Environmentally Sound Technologies for Municipal Solid Waste Management. United Nations Environment Programme (UNEP) and International Environmental Technology Centre Japan (IETC).
- SelimKapur, HariEswaran, Winfried E.H. Blum 2011 Sustainable Land Management - Learning from the Past for the Future Springer publication ISBN: 978-3-642-14781-4
- Gilbert M. Masters 2008 Energy for Sustainability: Technology, Planning, Policy Publisher: Island Press ISBN-10: 1597261033

**Prerequisite:** NIL