DEPARTMENT OF CIVIL ENGINEERING
LESSON PLAN

CE-HS (401)

CIVIL ENGINEERING SOCIETAL AND GLOBAL IMPACT **2 CREDIT**

Module	Topic name	No. of lecture planned	Content Delivery Technique	Evaluation Technique/ Comment
1	Introduction to Course and Overview; Understanding the past to look into the future: Preindustrial revolution days, Agricultural revolution, first and second industrial revolutions, IT revolution; Recent major Civil Engineering breakthroughs and innovations; Present day world and future projections, Ecosystems in Society and in Nature; the steady erosion in Sustainability Global warming, its impact and possible causes; Evaluating future requirements for various resources; GIS and applications for monitoring systems; Human Development Index and Ecological Footprint of India Vs other countries and analysis	**3**	Giving Classroom lectures , board work , interactive session with students and sometime power point presentation	Classroom interaction after each module completion, Assignment, classroom test, quiz
2	Understanding the importance of Civil Engineering in shaping and impacting the world; The ancient and modern Marvels and Wonders in the field of Civil Engineering; Future Vision for Civil Engineering	**3**	Giving Classroom lectures , board work , interactive session with students and sometime power point presentation	Classroom interaction after each module completion, Assignment, classroom test, quiz

3	Infrastructure Megacities, Smart Cities, futuristic visions Habitats, Transportation (Roads, Railways & Metros, Airports, Seaports, River ways, Sea canals, Tunnels (below ground,under water); Futuristic systems (ex, Hyper Loop)); Energy generation (Hydro, Solar (Photovoltaic, Solar Chimney), Wind Wave, Tidal, Geothermal, Thermal energy); Water provisioning; Awareness of various Codes & Standards governing Infrastructure development Innovations and methodologies for ensuring Sustainability	8	Giving Classroom lectures , board work , interactive session with students and sometime power point presentation	Classroom interaction after each module completion, Assignment, classroom test, quiz
4	Environment-Traditional & futuristic methods; Solid waste management, Water purification, Wastewater treatment & Recycling, Hazardous waste treatment; Flood control (Dams, Canals, River interlinking), Multi-purpose water projects, Atmospheric pollution; Global warming phenomena and Pollution Mitigation measures, Stationarity and non-stationarity; Environmental Metrics& Monitoring; Other Sustainability measures; Innovations and methodologies for ensuring Sustainability	7	Giving Classroom lectures , board work , interactive session with students and sometime power point presentation	Classroom interaction after each module completion, Assignment, classroom test, quiz

5	Built environment–Facilities management, Climate control; Energy efficient built environments and LEED ratings, Recycling, Temperature/ Sound control in built environment, Security systems; Intelligent/ Smart Buildings; Aesthetics of built environment, Role of Urban Arts Commissions; Conservation, Repairs & Rehabilitation of Structures & Heritage structures; Innovations and methodologies for ensuring Sustainability	**5**	**Giving Classroom lectures , board work , interactive session with students and sometime power point presentation**	**Classroom interaction after each module completion, Assignment , classroom test, quiz**
6	Civil Engineering Projects Environmental Impact Analysis procedures; Waste(materials, manpower, equipment) avoidance/ Efficiency increase; Advanced construction techniques for better sustainability; Techniques for reduction of Green House Gas emissions in various aspects of Civil Engineering Projects; New Project Management paradigms & Systems (Ex. Lean Construction), contribution of Civil Engineering to GDP, Contribution to employment(projects, facilities management), Quality of products, Health & Safety aspects for stakeholders; Innovations and methodologies for ensuring Sustainability during Project development	4	**Giving Classroom lectures , board work , interactive session with students and sometime power point presentation**	**Classroom interaction after each module completion, Assignment , classroom test, quiz**