



STRATEGIES FOR SUSTAINABLE DESIGN

PROF. SHIVA JI

Department of Design and Department of Climate Change
IIT Hyderabad

INTENDED AUDIENCE : Architecture, Product Design, Interiors, Construction, and Manufacturing.

INDUSTRIES APPLICABLE TO : Construction and Manufacturing

COURSE OUTLINE :

The course discusses sustainability principles and concepts from across various domains. Elaborates on sustainability definitions, aspects, dynamic nature of it, and its application in everyday life. Further, it discusses global efforts from UNFCCC, IPCC, and other agencies for developing context-based solutions and climate change mitigation efforts. Involves field visits, real-life case examples, and assignments. Includes study on building technologies to improve efficiency and response to surroundings. Focusses on basic scientific principles underlying the environmental performance of the built environment and designing for efficacy on EIA/LCA. It elaborates about NBC of India, CNBC, and SA Methods also such as GRIHA, LeNS tools, etc. Overall, it touches on UN SDG and systemic analysis for an easy understanding of assessment for students. The course provides a state of the art study material using the latest research papers, journals, books, and reports, etc.

ABOUT INSTRUCTOR :

Prof. Shiva Ji is a practicing Architect, Industrial Designer and Assistant Professor in Department of Design and Department of Climate Change at IIT Hyderabad. He has B.Arch, M.Des, MBA and PhD in sustainability assessment methods in built environments from IIT Guwahati. He has over 13 years of cumulative experience in industry and academics. He has accomplished several projects in field and has over 39 designs launched in the market. His research areas include design for sustainability, sustainability assessment, virtual & augmented reality, architectural heritage reconstruction using technology. He is involved with many research projects using state of the art technology in domains of architecture and design. He is a member with several national and International organizations.

COURSE PLAN :

Week 1: Definitions and Perspectives on Sustainability in Industrial Design and Built Environments

Week 2: ESE Aspects of Sustainability and Climate Change Mitigation

Week 3: Current National and International Scenario of SD and Dependence on Energy

Week 4: Impact of Pollutions and Design Processes with Alternative Solutions for Health of Ecosystem

Week 5: Environmental Impact Assessment and Lifecycle Analysis

Week 6: Policy, Growth, Development and 3R's for Consumption

Week 7: NBC, ECBC, and SA Methods such as GRIHA

Week 8: UN SDG and System Design tools such as SPSS, MSDS by LeNS

Week 9: Vernacular and Responsive Design using Net-Zero Energy, Lighting, Ventilation, Views, etc., for Human Comfort

Week 10: Design for Sustainability and Nature as Inspiration

Week 11: International Conventions, Laws and Emerging Technologies for SD

Week 12: SD Case Studies and Summary