



SUSTAINABLE ARCHITECTURE

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IIT Roorkee

TYPE OF COURSE : New | Core | UG

COURSE DURATION : 12 weeks (27 Jan' 20 - 17 Apr' 20)

EXAM DATE : 25 Apr 2020

PRE-REQUISITES : Climatology, Building materials

INTENDED AUDIENCE : Architecture and Planning students

INDUSTRIES APPLICABLE TO : IGBC, GRIHA, BEE, BIS, Green Building Consultants, Practicing Architecture Firms

COURSE OUTLINE :

The pace at which resource consumption is increasing in every field, it has become imperative to consider sustainability in all aspects. Buildings are a major consumer of resources through their life time. This has been realized by the nations world over and hence stricter norms and laws for construction are being laid. Buildings are supposed to be more and more efficient and optimal in consuming resources. Such buildings are called sustainable buildings and all buildings will be required to be sustainable.

Hence this course becomes important in understanding-

1. The basic parameters of sustainable buildings.
2. Design, Practices and technology which would lead to creation of such buildings.
3. Science behind performance of efficient buildings.

ABOUT INSTRUCTOR :

Prof. Avlokita Agrawal earned Bachelor of Architecture degree from IIT Roorkee in 2003 and PhD from IIT Roorkee in 2010. After B Arch, she pursued PhD where she studied Impact of Vaastushastra on thermal comfort in traditional Havelis of Rajasthan.

COURSE PLAN :

Week 1: Fundamentals of sustainability

Week 2: Impacts of built environment on natural environment, Sustainable Development, Agenda 21, UN Goals,

Week 3: Characteristics of sustainable architecture

Week 4: Sustainable buildings, Green buildings

Week 5: Site development- site selection, UHI, Public Transport, vegetation, development footprint, storm water runoff, SRI

Week 6: Water – estimating the use, reductions in consumption, recycling, reuse, landscape requirement, strategies and technology for water conservation

Week 7: IEQ- day lighting, views, CFC free, ventilation, comfort, VOC free,

Week 8: Materials and Resources

Week 9: Energy

Week 10: Codes and compliances

Week 11: Vernacular architecture and sustainability, culture and sustainability,

Week 12: Software use for Energy compliance- Design Builder, Climate Consultant etc