MANIPAL UNIVERSITY JAIPUR

Course Overview

Name of the Course	**Sustainable built environment; Theory and Practice**
Name of Instructor:	Mr. Bibhu Kalyan Nayak
Session:	Dec 2020
Language of Instruction:	English
Number of Contact Hours:	36
Credit Awarded:	03

Objective of course:	• To explain and demonstrate the basic principles of sustainability in built environment • To learn the processes involved in performance evaluation of sustainability • To learn the application of simulation tools used for building performance modelling

Syllabus

Course / Project Description:

This course will explain the fundamental principles of sustainability in building design. It will also demonstrate the use of technology to measure the performance of buildings in both in design stage and post occupancy. It enables the learner to use the simulation tools effectively to predict the performance of the building. The course is for beginning level course for undergraduate students.

- **To explain and demonstrate the basic principles of sustainability in buildings (5 days)**
  - Site selection and Site analysis
  - Water management and efficiency
  - Energy efficiency
  - Indoor environmental Quality
  - Material Efficiency
- **To learn the application of simulation tools used for building performance modelling (5 days)**
  - Application of bioclimatic chart and sun path diagram
  - Climate consultant application
  - Design Builder simulations
  - Integration of simulation tools on parametric platforms (Rhino and Grasshopper plug in tool for energy simulation)
- **To learn the processes involved in building performance evaluation (5 days)**
  - Assessment processes of various rating agencies in India
  - A basic introduction to the compliance documentation.

Mode of lectures: online lecture/online videos/case study/ discussion/ workshop/ hands-on

Course Plan:

L: 1-2	Site selection and Site analysis	Bibhu K Nayak
L: 3-4	Water management and efficiency	Bibhu K Nayak
L: 5-6	Energy efficiency	Bibhu K Nayak
L: 7-8	Indoor environmental Quality	Bibhu K Nayak
L: 9-10	Material Efficiency	Bibhu K Nayak
L: 11-12	Assessment processes of various rating agencies in India	Bibhu K Nayak
L: 13-14	A basic introduction to the compliance documentation.	Bibhu K Nayak

Organization of the Course:

Total contact hrs 36		
1st week:	**18 hrs (classes)**	**2 hrs (self-study/project) (Mid-term exam/assessment/discussion)**
2nd week:	**18 hrs (classes)**	**2 hrs (End term exam)**

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Course Instructor:
Mr. Bibhu Kalyan Nayak

Bibhu is an architect, urban planner, and academic researcher, based in Jaipur. He has been with MUJ since 2013. He has a keen interest in research related to Climate sensitive planning, Energy conscious design, Smart urban solutions, and Conservation of natural and built heritage.

He studied architecture at CET, Bhubaneswar from 2003-2008. Before going for higher studies he worked for a year with Vikram Lall Architects at Delhi. He obtained a masters in environmental planning from CEPT University, Ahmedabad. Since then he has been associated with several social enterprises & technology-driven design start-ups. He helps people & organizations to make designs more sustainable & efficient. As a teacher, he believes in collaborative learning processes in architectural design education. Currently, he is also pursuing his doctoral research from Centre for Energy and Environment at MNIT, Jaipur.

In his personal space, he loves watching documentaries on Netflix, listen to Indian classical music and read history books and travelogues.