

International Winter School Manipal University Jaipur (IWSMUJ2022)

Course Overview

Name of course: Climate Responsive Architecture

Name of instructor: Dr. Manish Sharma/ Ar. Bibhu Kalyan Nayak/ Ar. Raunak Prasad

Session: January 2022

Language of instruction: English

Number of contact hours: 36

Credit awarded: 03

Objective of course

- To understand climate and the science of climate responsive building design
- To deliver appropriate design solution for all climatic zones
- To learn basics of new age technology and materials in regards to climate responsive architecture.

Syllabus

- Introduction to the different types of energy systems: active systems, passive systems and hybrid systems
- Concept of heat transfer and attainment of comfort
- Passive cooling and heating systems - types, technologies, limitations, control and variations
- Introduction to Green Architecture & Green Building Rating Systems

Organization of course

Total contact hrs 36		
1st week:	10 hrs (classes)	2 hrs (self-study/project)
2nd week:	10 hrs (classes)	2 hrs (Mid term exam/assessment/discussion)
3rd week:	10 hrs (classes)	2 hrs (End term exam)

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

Course Plan

Lecture no.	Topic	Lecture mode	Instructor
L: 1-2	Introduction & Concept overview	Online lecture/ video	Dr. Manish Sharma
L: 3-4	Energy Conscious Design	Online lecture/ video	Ar. Raunak Prasad
L: 5-6	Thermal Comfort	Online lecture/ video	Ar. Bibhu Kalyan Nayak
L: 7-8	Psychometry	Online lecture/ video	Ar. Raunak Prasad
L: 9-10	Heat Loss and Gain	Online lecture/ video	Ar. Raunak Prasad
L: 11-12	Passive Design in hot and Dry climate	Online lecture/ video	Dr. Manish Sharma
L: 13-14	Passive Heating direct heat gain	Online lecture/ video	Dr. Manish Sharma
L: 15-16	Passive Heating indirect heat gain	Online lecture/ video	Dr. Manish Sharma
L: 17-18	Energy efficient building materials	Online lecture/ video	Ar. Raunak Prasad
L: 19-20	Smart Buildings/ Intelligent buildings	Online lecture/ video	Ar. Bibhu Kalyan Nayak
L: 21-22	GRIHA/ ASHRAE Sustainable cooling technologies	Online lecture/ video	Ar. Bibhu Kalyan Nayak
L: 23-24	GRIHA/ ASHRAE Simulation Software	Online lecture/ video	Ar. Bibhu Kalyan Nayak

Brief profile of the instructors

Dr. Manish Sharma, an architect and an urban planner, is currently working as an Assistant Professor at School of Architecture and Design, Manipal University Jaipur. He is the resource person for subjects like Climate Responsive Architecture, Environmental Studies etc.



Ar. Bibhu Kalyan nayak, an architect and an environmental planner, is currently working as an Associate Professor at School of Architecture and Design, Manipal University Jaipur. He is the resource person for subjects like Energy Conscious Design, Energy simulation, Indoor Air Quality, Environment related policies etc.



Ar. Raunak Prasad, an architect and an urban planner, is currently working as an Assistant Professor at School of Architecture and Design, Manipal University Jaipur. He is the resource person for subjects like Building Services, Building Construction and Materials etc.

