

Module No. 3: Passive Solar Architecture
No. of weeks / credits 3

Week 1

- **Elements of Passive Solar Architecture**
 - Introduction
 - Climate and Human Thermal Comfort
 - Heat Exchange in Buildings
 - Thermal Properties of Materials
 - Surface Characteristics With Respect to Radiation: Absorptivity, Reflectivity and Emissivity

Week 2

- **Concepts of passive heating**
 - Minimization of Surface to Volume Ratio
 - Insulation
 - Infiltration and Wind Shelter
 - Solar Heat Gain and Storage
 - Passive Solar Heating Systems With or Without Storage
 - Guidelines for the Design of Passive Solar Heating Systems

Week 3

- **Passive Cooling Concepts**
 - Manipulating Building Form and Orientation
 - Shading
 - Vegetation
 - Insulation
 - Ventilation
 - Evaporative and Nocturnal Cooling