NPTEL Video Course - Civil Engineering - NOC:Sustainable Materials and Green Buildings

Subject Co-ordinator - Dr. B. Bhattacharjee

Co-ordinating Institute - IIT - Delhi

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Introduction and Planet Equivalent
Lecture 2 - Basics of Carbon Cycle
Lecture 3 - Factors Affecting carbon Cycle
Lecture 4 - Fundamentals of Sustainability
Lecture 5 - Role of Materials and Embodied Energy
Lecture 6 - Case Study for Energy in Building
Lecture 7 - Calculation of Ecological Footprint
Lecture 8 - Role of Cement in Sustainability and Calculation of Chemical Exergy
Lecture 9 - Fuel for Cement
Lecture 10 - Cemebtitious/Supplementary Cementitious Materials and Their Characterization
Lecture 11 - Strength of Concrete With Supplementary Cementitious Materials and Composite Cements
Lecture 12 - Types of Composite Cements
Lecture 13 - Alternative Fuel for cement and Embodied Energy
Lecture 14 - Life Cycle Embodied Energy and Concrete Sustainability
Lecture 15 - Strength of Concrete and Use of Admixtures
Lecture 16 - Curing Methods and Use of Waste Water for Mixing and Curing
Lecture 17 - Modern Composite Concrete
Lecture 18 - Recycled Aggregate-ITZ and Proessing
Lecture 19 - Classification of Recycled Aggregate
Lecture 20 - Crushing and Grinding
Lecture 21 - Operational Energy
Lecture 22 - Operational Energy
Lecture 23 - Operational Energy
Lecture 24 - Thermal Diffusivity and Clay Bricks
Lecture 25 - Types of Bricks Kilns and Carbon Balance
Lecture 26 - Carbon Balance, Comparison of Various Types of Brick Kilns and Sealants, Paints, Adhesive
Lecture 27 - Sealants, Health Hazards of Building Materials and Emission Models
Lecture 28 - Emission Models and Testing
Lecture 29 - Energy Efficient Design of Buildings

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Lecture 30 - Design Optimization of Buildings
Lecture 31 - Building Design Optimization Using Genetic Algorithm
Lecture 32 - Urban Heat Island
Lecture 33 - Urban Heat Island
Lecture 34 - Evapotranspiration
Lecture 35 - Evapotranspiration
Lecture 36 - Energy Conservation Building Code (ECBC2007)
Lecture 37 - Energy Conservation Building Code (ECBC2007) (Continued...)
Lecture 38 - ECBC Compliant Methodology
Lecture 39 - OTTV Methodology
Lecture 40 - Solar Energy and Solar Cells
Lecture 41 - Solar Photo Volatic Cells
Lecture 42 - Solar Water Heating
Lecture 43 - Design Strategies and the Green Design Process
Lecture 44 - Green Building Rating Systems
Lecture 45 - Autoclaved Aerated Concrete, Insulated Precast System and Insulated Precast Forms
Lecture 46 - Insulated Concrete Form and Tunnel Form
Lecture 47 - Modular Construction
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