

Syllabus of Advanced Concrete Durability

- Durability of Concrete Structure
- Durability and Sustainability
- Concrete Permeability and porosity
- Classification of pores at different length scale in concrete.
- Advanced techniques for pores evaluation: SEM and MIP.
- Cement paste/aggregate Interfacial Transition Zone (ITZ)
- Advanced techniques for ITZ evaluation: - SEM, and – EDX.
- Concrete Carbonation
- Corrosion of steel reinforcement in Concrete
- Dimensional Stability
- Degradation mechanisms in concrete
- Degradation of Concrete in Hot Weather Conditions
- Chemical Degradation of Concrete
- Heat and mass transfer
- Definitions and basic concepts
- Laws of thermodynamics
- Thermo-physical properties of concrete
- Conditions through a plain and composite walls
- Dynamic thermal admittance properties of concrete
- Concrete Fire Resistance