



## **CE467 HIGHWAY PAVEMENT DESIGN**

### **Module 1**

**Introduction to highway pavements, Types and component parts of pavements, Factors affecting design and performance of pavements, Functions and significance of sub grade properties, Various methods of assessment of sub grade soil strength for pavement design.**

**Mix design procedures in mechanical stabilization of soils.**

**Design of bituminous mixes by Marshall, Hubbard - field and Hveem's methods**

### **Module 2**

**Introduction to analysis and design of flexible pavements, Stresses and deflections in homogeneous masses, Burmister's 2 layer and 3 layer theories, Wheel load stresses, ESWL of multiple wheels, Repeated loads and EWL factors**

### **Module 3**

**Empirical, semi - empirical and theoretical approaches for flexible pavement design, Group index, CBR, Triaxial, Mcleod and Burmister layered system methods**

### **Module 4**

**Introduction to analysis and design of rigid pavements, Types of stresses and causes, Factors influencing stresses, General conditions in rigid pavement analysis, Warping stresses, Frictional stresses, Combined stresses**

### **Module 5**

**Joints in cement concrete pavements, Joint spacings, Design of slab thickness, Design and detailing of longitudinal, contraction and expansion joints, IRC methods of Design**

### **Module 6**

**Introduction to pavement evaluation, Structural and functional requirements of flexible and rigid pavements, Quality control tests for highway pavements, Evaluation of pavement structural condition by Benkelman beam, rebound deflection and plate load tests, Introduction to design of pavement overlays and the use of geosynthetics**