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## **CE6016 PREFABRICATED STRUCTURES**

### **DETAILED SYLLABUS**

#### **UNIT I INTRODUCTION**

Need for prefabrication – Principles – Materials – Modular coordination – Standardization – Systems – Production – Transportation – Erection.

#### **UNIT II PREFABRICATED COMPONENTS**

Behaviour of structural components – Large panel constructions – Construction of roof and floor slabs – Wall panels – Columns – Shear walls.

#### **UNIT III DESIGN PRINCIPLES**

Disuniting of structures- Design of cross section based on efficiency of material used – Problems in design because of joint flexibility – Allowance for joint deformation.

#### **UNIT IV JOINT IN STRUCTURAL MEMBERS**

Joints for different structural connections – Dimensions and detailing – Design of expansion joints.

#### **UNIT V DESIGN FOR ABNORMAL LOADS**

Progressive collapse – Code provisions – Equivalent design loads for considering abnormal effects such as earthquakes, cyclones, etc., - Importance of avoidance of progressive collapse.

#### **TEXTBOOKS**

1. CBRI, Building materials and components, India, 1990
2. Gerostiza C.Z., Hendrikson C. and Rehat D.R., "Knowledge based process planning for construction and manufacturing", Academic Press Inc., 1994

#### **REFERENCES**

1. Koncz T., "Manual of precast concrete construction", Vol. I, II and III, Bauverlag, GMBH, 1976.
2. "Structural design manual", Precast concrete connection details, Society for the studies in the use of precast concrete, Netherland Betor Verlag, 2009.

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**OBJECTIVES**

To impart knowledge to students on modular construction, industrialised construction and design of prefabricated elements and construction methods.