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## **CN5203 COMPUTER APPLICATIONS IN CONSTRUCTION**

### **ENGINEERING AND PLANNING**

#### **DETAILED SYLLABUS**

##### **UNIT I INTRODUCTION**

Overview of IT Applications in Construction – Construction process – Computerization in Construction – Computer aided Cost Estimation – Developing application with database software. BIM for construction engineering.

##### **UNIT II OPTIMIZATION TECHNIQUES**

Linear, Dynamic and Integer Programming - Branch and Bound Techniques – Application to Production Scheduling, Equipment Replacement, Material Transportation and Work Assignment Problems – Software applications.

##### **UNIT III INVENTORY MODELS**

Deterministic and Probabilistic Inventory Models - Software applications.

##### **UNIT IV SCHEDULING APPLICATION**

PERT and CPM - Advanced planning and scheduling concepts – Computer applications – Case study.

##### **UNIT V OTHER PROBLEMS**

Sequencing problems – Simulation – Enterprises – Introduction to ERP systems.

##### **REFERENCES**

1. Billy E.Gillet., Introduction to Operations Research – A Computer Oriented Algorithmic Approach, Mc Graw Hill, 2008.
2. Feigenbaum,L., Construction Scheduling with Primavera Project Planner Prentice Hall Inc., 2002.
3. Ming Sun and Rob Howard, “Understanding I.T. in Construction, Spon Press, Taylor and Francis Group, 2004.
4. Paulson, B.R., Computer Applications in Construction, Mc Graw Hill, 1995.

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**OBJECTIVES**

To study and understand the hardware and software requirements of computer, programming, optimization techniques, inventory models and scheduling techniques applied to construction engineering.