

## **31066 COMPUTER APPLICATIONS IN CIVIL ENGINEERING PRACTICE**

### DETAILED SYLLABUS

#### **LIST OF EXPERIMENTS**

##### **PART A**

##### **I. ELECTRONIC SPREAD SHEET USING SOFTWARE**

Solving problems involving estimation, analysis and design using any one of the available packages mentioned below or any other suitable packages for the following exercises.

1. Prepare the Estimate sheet with given data (provide all the measurement details) and calculate the quantity using formula bar.
2. Prepare the Abstract sheet for the given data and calculate Amount and Total Amount using Formula bar (Use separate column for rates and units)
3. Design and Analysis problems
  - a. Calculate Area and Elongation using Formula bar
  - b. Calculate Effective depth 'd' and Area of Steel 'Ast' using Formula Bar
4. For given dimension of Masonry/R.C.C Dam ie. top width, bottom width, height of Dam, height of water, Specific weight of masonry/R.C.C., Sp.wt of Water etc,. Find the base pressure and check the stability of the dam
5. Finding centre of gravity; IZZ and IYY of I, L, T and channel sections

##### **PART B**

##### **II. RCC DETAILING USING SOFTWARE**

Generation of detailed drawings for given specification and Preparation of Bar Bending schedule using one of the packages mentioned below or any other suitable packages for the following exercises. Cross section and longitudinal section of:

1. Continuous one way slab (with three equal spans)
2. Simply supported two-way slab 8. Restrained two - way slab
3. Singly reinforced rectangular beam
4. Doubly reinforced continuous rectangular beam with two equal span
5. Dog-legged staircase
6. R.C.C Column with square Isolated footing

III. RCC STRUCTURES - ANALYSIS USING SOFTWARE

Carry out the analysis and design of RCC structures using any one of the available packages mentioned below or any other suitable packages.

IV. CONSTRUCTION PROJECT MANAGEMENT USING SOFTWARE

Develop the CPM / PERT Network for the proposed simple building project using any one of the available packages mentioned below or any other suitable packages

V. DRAWING MAPS USING GIS SOFTWARE (FOR PRACTICE ONLY – NOT FOR EXAMINATION)

Develop Aerial map of given area using any one of the available packages mentioned below or any other suitable packages.

**References**

1. <http://www.aicte-india.org/downloads/Commercial%20Software.pdf>
2. <http://www.aicteindia.org/downloads/Autodesk%20Program%20Briefing%20Document.pdf>