Marwadi University
Marwadi Chandarana Group

**Bachelor of Technology**

**Civil Engineering**

# Computer Application in Civil Engineering - III

# 01CI1505

**Objective of the Course:**

- To make students understands about simulation of traffic conditions in any urban area
- To impart knowledge to the students on optimization of signal timing and designing
- Student can design and analyze the Geotech field problem using Geo5 software

**Credit Earned: 01**

**Student's learning outcomes:**

After successful completion of the course, it is expected that students will be able to,

1. Apply various drawing tools and commands to analyze road network.
2. Find optimum signal cycle time as per traffic conditions.
3. Determine parameters of shallow foundations as per field conditions.
4. Design the cantilever retaining wall as per field condition.

**Teaching and Examination Scheme**

| Teaching Scheme (Hours) | | | Credits | Theory Marks | | | Tutorial/ Practical Marks | | Total Marks |
|---|---|---|---|---|---|---|---|---|---|
| Theory | Tutorial | Practical | | ESE (E) | IA (M) | CSE (I) | Viva (V) | Term Work (TW) | |
| 00 | 00 | 02 | 01 | - | - | - | 25 | 25 | 50 |

**Detailed Syllabus**

| Sr No. | List of Practicals | Number of hours |
|---|---|---|
| | **PART-A VISSIM** | |
| **1** | **Introduction** | **4** |
| | Introduction - VISSIM, Applications and Various Technical Terms and Theories | |
| **2** | **Network Generation** | **2** |
| | Simple Cross Road, Intersection with Turning Movement | |
| **3** | **Route Assignment and Road Geometric parameters** | **4** |
| | Vehicle Input and Route Assignment, Conflict Point – concept and speed reduction | |
| **4** | **Traffic Signal Design** | **4** |
| | **PART-B Geo5** | |

| | | |
|---|---|---|
| **5** | **Introduction** | **2** |
| | Introduction – Geo5, Applications and Various Module in the Geo5 | |
| **6** | **Design and Analysis of Spread Footing** | **6** |
| | Geometry Preparation, Soil Profile, Analyzed the structure, Result Interpretation | |
| **7** | **Design and Analysis of Cantilever Wall** | **6** |
| | Geometry Preparation, Soil Profile, Analyzed the structure, Result Interpretation | |
| | **Total** | **28** |

**Suggested Theory Distribution**

The suggested theory distribution as per Bloom's taxonomy is as per follows. This distribution serves as guidelines for teachers and students to achieve an effective teaching-learning process

| Distribution of Theory for course delivery and evaluation | | | | | |
|---|---|---|---|---|---|
| Remember | Understand | Apply | Analyze | Evaluate | Create |
| 10% | 25% | 10% | 35% | 20% | 00% |

**Instructional Method and Pedagogy:**

1. Presence in all academic sessions is mandatory which shall carry 5% marks of the total internal evaluation.
2. At the end of each unit/topic an practice problem based on the course content shall be given to the students which shall carry 5% weightage for timely completion and submission of the assigned work.

**Recommended Study Material**

1. Lab Manual on VISSIM by Ptv VISSIM.
2. Geo5 Use's Guide, Version 19.