| | |
|---|---|
| **INSTITUTE** | **FACULTY OF TECHNOLOGY** |
| **PROGRAM** | **BACHELOR OF TECHNOLOGY (CIVIL ENGINEERING)** |
| **SEMESTER** | **5** |
| **COURSE TITLE** | **COMPUTER APPLICATIONS IN CIVIL ENGINEERING - III** |
| **COURSE CODE** | **01CI1505** |
| **COURSE CREDITS** | **1** |

**Objective:**

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

**Course Outcomes:** After completion of this course, student 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

**Pre-requisite of course:**..

**Teaching and Examination Scheme**

| Theory Hours | Tutorial Hours | Practical Hours | ESE | IA | CSE | Viva | Term Work |
|---|---|---|---|---|---|---|---|
| 0 | 0 | 2 | 0 | 0 | 0 | 25 | 25 |

| Contents : Unit | Topics | Contact Hours |
|---|---|---|
| **Total Hours** | | |

**Suggested List of Experiments:**

| Contents : Unit | Topics | Contact Hours |
|---|---|---|
| 1 | **Introduction**<br>Introduction - VISSIM, Applications and Various Technical Terms and Theories | 4 |
| 2 | **Network Generation**<br>Simple Cross Road, Intersection with Turning Movement | 2 |
| 3 | **Route Assignment and Road Geometric parameters**<br>Vehicle Input and Route Assignment, Conflict Point – concept and speed reduction | 4 |

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**Digitally signed by (Name of HOD)**

DR. RAJENDRASINH BAHADURSINH JADEJA
**Digitally signed by (Name of Dean/ Principal)**

**Suggested List of Experiments:**

| Contents : Unit | Topics | Contact Hours |
|---|---|---|
| 4 | **Traffic Signal Design**<br>Traffic Signal Design | 4 |
| 5 | **Introduction**<br>Introduction – Geo5, Applications and Various Module in the Geo5 | 2 |
| 6 | **Design and Analysis of Spread Footing**<br>Geometry Preparation, Soil Profile, Analyzed the structure, Result Interpretation | 6 |
| 7 | **Design and Analysis of Cantilever Wall**<br>Geometry Preparation, Soil Profile, Analyzed the structure, Result Interpretation | 6 |
| **Total Hours** | | **28** |

**Textbook :**

1 Principles of Traffic Simulation, Aleksandar Stevanovic and Milos Balac, Aleksandar Stevanovic and Milos Balac, 2021

**References:**

1 Traffic Engineering and Transport planning, Traffic Engineering and Transport planning, y Dr. L.R. Kadiyali, Khanna Publishers, 2018

**Suggested Theory Distribution:**

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

Distribution of Theory for course delivery

| Remember / Knowledge | Understand | Apply | Analyze | Evaluate | Higher order Thinking / Creative |
|---|---|---|---|---|---|
| 10.00 | 25.00 | 10.00 | 35.00 | 20.00 | 0.00 |

**Instructional Method:**

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

**Supplementary Resources:**

1 https://www.ptvgroup.com/en/solutionsproducts/ptv-vissim/

2 https://www.finesoftware.eu/geotechnical-software/

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