



# GUJARAT TECHNOLOGICAL UNIVERSITY

## BACHELOR OF ENGINEERING SYLLABUS

Minor/Honours Degree : Forensic Structural Engineering

Subject Code : N114AU01

Subject Name : Forensic Science & Law

|                          |            |
|--------------------------|------------|
| WEF Academic Year :      | 2024-25    |
| Semester :               | 4          |
| Category of the Course : | Compulsory |

|                       |   |
|-----------------------|---|
| <b>Prerequisite :</b> | Basic Civil Engineering   |
| <b>Rationale :</b>    | Rapid economic development and fast-track modern construction practices can trigger catastrophic structural failures. To investigate structural failures scientifically, this program will become very useful. This program would help to understand Forensic Science & Law, appreciate and investigate construction failures along with Structural evaluation of existing structures, the experience of material testing and non-destructive testing, Prevention and resolution of Construction Disputes etc. Forensic Structural Engineering Studio will give opportunity to students to work on case studies as well as live projects. |

### Course Scheme :

| Teaching Scheme |   |    | Total Credits | Assessment Pattern and Marks |         |           |   | Total Marks |
|-----------------|---|----|---------------|------------------------------|---------|-----------|---|-------------|
| L               | T | PR |               | Theory                       |         | Practical |   |             |
|                 |   |    | ESE (E)       | PA(M)                        | ESE (V) | PA (I)    |   |             |
| 2               | 0 | 0  | 2             | 70                           | 0       | 0         | 0 | 70          |

### Course Content :

| Sr. No. | Course Content                          | No. of Hours | % of Weightage |
|---------|---|--------------|----------------|
| 1       | Nature, need and scope                  | 4            | 10             |
| 2       | Principles and laws of forensic science | 8            | 30             |
| 3       | Global development of Forensic Science  | 8            | 30             |
| 4       | Forensic Science in India               | 8            | 30             |
|         | <b>Total</b>                            | <b>28</b>    | <b>100</b>     |



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### Reference Book :

1. Forensic Structural Engineering Handbook, Robert T. Ratay, McGraw-Hill Professional; 2nd edition (16 January 2010).
2. Forensic Engineering: Damage Assessments for Residential and Commercial Structures, Stephen E. Petty, CRC Press; 2nd edition (24 September 2021)
3. Structural Condition Assessment, Robert T. Ratay, John Wiley & Sons Inc; 1st edition (11 February 2005)
4. Repair And Rehabilitation Of Concrete Structures, Modi P.I. and Patel Chirag, PHI Learning Pvt. Ltd (1 January 2016)

### Course Outcome :

After Completion of the Course, Student will able to :

| No | Course Outcomes  | RBT Level* |
|----|--|------------|
| 01 | Understanding of the importance of the Laws in Forensic science.           | UN         |
| 02 | Interpret the reasoning behind the principles and laws of forensic science | RM/UN      |
| 03 | Develop a knowhow of the current status of forensic science in India       | UN         |

\*RM: Remember, UN: Understand, AP: Apply, AN: Analyze, EL: Evaluate, CR: Create

**Suggested Course Practical List : NA**

**List of Laboratory/Learning Resources Required : NA**

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