



Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
 An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

Academic Year 2026-27

Semester- ODD

**Structure of Course**

|                                                |                                    |
|------------------------------------------------|------------------------------------|
| Class                                          | S.Y B.Tech Sem. -III               |
| Course Code and Course Title                   | (25AF1191PC302) Mechanics of Solid |
| Prerequisite/s                                 | Mechanics                          |
| Teaching Scheme:<br>Lecture/Tutorial/Practical | 02/01/00                           |
| Credits                                        | 03                                 |
| Evaluation Scheme: CA / MSE / ESE              | 20/20/60                           |

**Course Outcomes:**

| Course Outcomes (COs):<br>Upon successful completion of this course, the student will be able to: |                                                                                    | Blooms Level |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------|
| 25AF1191PC302_1                                                                                   | Perform the stress-strain analysis.                                                | L3           |
| 25AF1191PC302_2                                                                                   | Draw force, and bending moment distribution diagrams for determinate beams.        | L3           |
| 25AF1191PC302_3                                                                                   | Determine stresses in beam, and distribution of stress for various cross sections. | L3           |
| 25AF1191PC302_4                                                                                   | Understand concept of Principal stresses and strains, and perform failure analysis | L3           |
| 25AF1191PC302_5                                                                                   | Analyse columns, shafts, and stresses in thin-walled members..                     | L3           |

**Mapping of CO's with PO's and PSO's:**

| Course Outcomes | Programme Outcomes |    |     |     |   |   |   |   |   |    |    |       |       |       |
|-----------------|--------------------|----|-----|-----|---|---|---|---|---|----|----|-------|-------|-------|
|                 | 1                  | 2  | 3   | 4   | 5 | 6 | 7 | 8 | 9 | 10 | 11 | PS O1 | PSO 2 | PSO 3 |
| 25AF1191PC302_1 | 3                  | 3  | 2   | 2   |   |   |   |   |   |    | 2  | 2     | 2     | 2     |
| 25AF1191PC302_2 | 3                  | 3  | 3   | 2   | 2 |   |   |   | 2 | 2  | 2  | 2     | 2     | 2     |
| 25AF1191PC302_3 | 3                  | 3  | 3   | 2   |   |   |   |   |   |    | 2  | 2     | 2     | 2     |
| 25AF1191PC302_4 | 3                  | 3  | 3   | 3   |   |   |   |   |   |    | 2  | 2     | 2     | 2     |
| 25AF1191PC302_5 | 3                  | 3  | 3   | 2   | 2 |   |   |   | 2 | 2  | 2  | 2     | 2     | 2     |
| <b>Total</b>    | 15                 | 15 | 14  | 11  | 4 |   |   |   | 4 | 4  | 10 | 10    | 10    | 10    |
| <b>Average</b>  | 3                  | 3  | 2.8 | 2.2 | 2 |   |   |   | 2 | 2  | 2  | 2     | 2     | 2     |
| 25AF1191PC302   | 3                  | 3  | 2.8 | 2.2 | 2 |   |   |   | 2 | 2  | 2  | 2     | 2     | 2     |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                       |                                                              |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------------------------------------------------------------|
| <br><b>Prepared by</b><br><b>Course Coordinator</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <br><b>Verified by</b><br><b>Academic Coordinator</b> | <br><b>Approved by</b><br><b>HOD- Civil</b><br><b>H.O.D.</b> |
| <p><b>Mission of the Department</b><br/>         We, at Department of Civil Engineering, are committed to achieve our vision by-</p> <p><b>Vision of the Department</b><br/>         To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.</p> <p><b>M1:</b> To impart quality technical education through interactive and innovative learning method.<br/> <b>M2:</b> To promote research and development activity by encouraging creativity and exposure to real world problem.<br/> <b>M3:</b> To mentor students for innovating thinking with relevance to entrepreneurship<br/> <b>M4:</b> To develop social awareness in graduates to serve society.</p> |                                                       |                                                              |



Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
 An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

**CO Attainment Targets:**

| CO                       | 302 1 | 302 2 | 302 3 | 302 4 | 302 5 |
|--------------------------|-------|-------|-------|-------|-------|
| Previous Attainment      | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  |
| Target for CAY (2026-27) | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  |

**Target Levels of Attainments**

| Level | 2026-27   | 2025-26   | 2024-25   |
|-------|-----------|-----------|-----------|
| 1     | $\geq 60$ | $\geq 50$ | $\geq 40$ |
| 2     | $\geq 70$ | $\geq 60$ | $\geq 50$ |
| 3     | $\geq 80$ | $\geq 70$ | $\geq 60$ |

**Teaching Learning Activity Mapping with SDG's**

| Mode                  | Assessment Tool | Type of Learning                             | CO Mapped               | Self-learning Hours | SDG's Mapped                                                                |
|-----------------------|-----------------|----------------------------------------------|-------------------------|---------------------|-----------------------------------------------------------------------------|
| Continuous Assessment | Worksheet       | Problem-Based Learning                       | CO2, CO3, CO4           | 08                  | SDG 4 Quality Education<br>SDG 9 Industry, Innovation and Infrastructure    |
|                       | Poster          | Collaborative Learning and Creative Learning | CO2, CO5                | 4                   | SDG 4: Quality Education,<br>SDG 9: Industry, Innovation and Infrastructure |
|                       | Assignment      | Active Learning                              | CO1, CO2, CO3, CO4, CO5 | 10                  | SDG 4: Quality Education,<br>SDG 9: Industry, Innovation and Infrastructure |

*Source*

*Lab*



*2/3*

**Prepared by  
Course Coordinator**

**Verified by  
Academic Coordinator**

**Approved by  
HOD- Civil**

**Vision of the Department**

To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

**Mission of the Department**

We, at Department of Civil Engineering, are committed to achieve our vision by:

- M1: To impart quality technical education through interactive teaching and learning methods.
- M2: To promote research and development activity by encouraging students to explore real world problems.
- M3: To mentor students for innovative thinking with relevance to entrepreneurship.
- M4: To develop social awareness in graduates to serve society.



Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
 An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

Academic Year 2026-27

Semester- ODD

**Structure of Course**

|                                                |                                      |
|------------------------------------------------|--------------------------------------|
| Class                                          | S.Y. B.Tech. Sem. – I                |
| Course Code and Course Title                   | 25AF1918PC303 Surveying              |
| Prerequisite/s                                 | Basic Civil Engineering, Mathematics |
| Teaching Scheme:<br>Lecture/Tutorial/Practical | 02/01/02                             |
| Credits                                        | 3                                    |
| Evaluation Scheme: CA /MSE/ ESE                | 20/20/60                             |

**Course Outcomes:**

| Course Outcomes (COs):<br>Upon successful completion of this course, the student will be able to: |                                                                                                       | Blooms Level |
|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------|
| 25AF1191PC303_1                                                                                   | Apply chain surveying techniques for accurate measurement and mapping of land areas.                  | L3           |
| 25AF1191PC303_2                                                                                   | Apply compass and plane table surveying techniques for measuring bearings and areas in field surveys. | L3           |
| 25AF1191PC303_3                                                                                   | Compute accurately the ground elevations and areas using levelling techniques and planimeter tools.   | L3           |
| 25AF1191PC303_4                                                                                   | Interpret angular measurements using a theodolite for precise surveying applications.                 | L3           |
| 25AF1191PC303_5                                                                                   | Explain the procedures in basic types of surveys for engineering projects.                            | L2           |

**Mapping of COs with PO's and PSO's:**

| Course Outcomes | Programme Outcomes |    |   |    |    |   |   |   |   |    |    |      |      |      |
|-----------------|--------------------|----|---|----|----|---|---|---|---|----|----|------|------|------|
|                 | 1                  | 2  | 3 | 4  | 5  | 6 | 7 | 8 | 9 | 10 | 11 | PSO1 | PSO2 | PSO3 |
| 25AF1191PC303_1 | 2                  | 2  |   | 2  | 2  |   |   |   |   |    | 2  |      |      | 2    |
| 25AF1191PC303_2 | 2                  | 2  |   | 2  | 2  |   |   |   |   |    | 2  |      |      | 2    |
| 25AF1191PC303_3 | 2                  | 2  |   | 2  | 2  |   |   |   |   |    | 2  |      |      | 2    |
| 25AF1191PC303_4 | 2                  | 2  |   | 2  | 2  |   |   |   |   |    |    |      |      | 2    |
| 25AF1191PC303_5 | 2                  | 2  |   | 2  | 2  |   |   |   |   |    | 2  |      |      | 2    |
| Total           | 10                 | 10 |   | 10 | 10 |   |   |   |   |    | 8  |      |      | 10   |
| Average         | 2                  | 2  |   | 2  | 2  |   |   |   |   |    | 2  |      |      | 2    |
| 25AF1191PC303   | 2                  | 2  |   | 2  | 2  |   |   |   |   |    | 2  |      |      | 2    |

Prepared by  
Course Coordinator

Verified by  
Academic Coordinator

Approved by  
HOD-CED

**Vision of the Department**

To become center of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

**Mission of the Department**

We, at Department of Civil Engineering, are committed to achieve our vision by

- M1: To impart quality technical education through interactive teaching learning method.
- M2: To promote research and development activity by encouraging creativity and exposure to real world problem.
- M3: To mentor students for innovating thinking with relevance to entrepreneurship
- M4: To develop social awareness in graduates to serve society.



Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

**CO Attainment Targets:**

| CO                       | PC303_1 | PC303_2 | PC303_3 | PC303_4 | PC303_5 |
|--------------------------|---------|---------|---------|---------|---------|
| Previous Attainment      | 3       | 3       | 3       | 3       | 3       |
| Target for CAY (2026-27) | 3       | 3       | 3       | 3       | 3       |

**Target Levels of Attainments**

| Level | 2026-27   | 2025-26   | 2024-25   |
|-------|-----------|-----------|-----------|
| 1     | $\geq 50$ | $\geq 50$ | $\geq 40$ |
| 2     | $\geq 60$ | $\geq 60$ | $\geq 50$ |
| 3     | $\geq 70$ | $\geq 70$ | $\geq 60$ |

**Teaching Learning Activity Mapping with SDG's**

| Mode                  | Assessment Tool     | Type of Learning                  | Syllabus Units | CO Mapped               | Self-learning Hours | SDG's Mapped                                                                                                             |
|-----------------------|---------------------|-----------------------------------|----------------|-------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------|
| Continuous Assessment | Assignment          | Conceptual & Theoretical Learning | 1,2,3,4&5      | CO1, CO2, CO3, CO4, CO5 | 10                  | SDG 4 – Quality Education.<br>SDG 9 – Industry, Innovation & Infrastructure<br>SDG 11 – Sustainable Cities & Communities |
|                       | Case studies        | Experiential Learning             | 3              | CO1, CO2, CO3, CO4,     | 8                   | SDG 4 – Quality Education.<br>SDG 9 – Industry, Innovation & Infrastructure<br>SDG 11 – Sustainable Cities & Communities |
|                       | Poster Presentation | Collaborative & Peer Learning     | 4,5            | CO 4,5                  | 8                   | SDG 4 – Quality Education.<br>SDG 9 – Industry, Innovation & Infrastructure<br>SDG 11 – Sustainable Cities & Communities |

Prepared by  
Course Coordinator

Verified by  
Academic Coordinator

Approved by  
HOD/CVI

**Vision of the Department**

To become center of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

**Mission of the Department**

We, at Department of Civil Engineering, are committed to achieve our vision by:  
M1: To impart quality technical education through interactive teaching learning method.  
M2: To promote research and development by encouraging creativity and exposure to real world problem.  
M3: To mentor students for innovating thinking with relevance to entrepreneurship  
M4: To develop social awareness in graduates to serve society.



Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
 An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

Academic Year 2026-27

Semester- ODD

**Structure of Course**

|                                                |                                     |
|------------------------------------------------|-------------------------------------|
| Class                                          | S.Y. Sem. –III                      |
| Course Code and Course Title                   | 25AF1191PC304 Building Construction |
| Prerequisite/s                                 | 0UBHES104                           |
| Teaching Scheme:<br>Lecture/Tutorial/Practical | 03/00/00                            |
| Credits                                        | 03                                  |
| Evaluation Scheme: CA / MSE / ESE              | 20/20/60                            |

**Course Outcomes:**

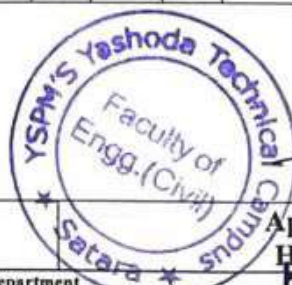
| Course Outcomes (COs):<br>Upon successful completion of this course, the student will be able to: |                                                                               | Blooms Level |
|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------|
| 25AF1191PC304 _1                                                                                  | Explain construction details of load bearing structures.                      | L3           |
| 25AF1191PC304 _2                                                                                  | Explain construction details of RCC frame structures.                         | L3           |
| 25AF1191PC304 _3                                                                                  | Identify construction details of different types of means of communication.   | L3           |
| 25AF1191PC304 _4                                                                                  | Develop construction details of different types of Roofs.                     | L3           |
| 25AF1191PC304 _5                                                                                  | Choose construction details of low-cost construction & pre cast construction. | L3           |

**Mapping of CO's with PO's and PSO's:**

| Course Outcomes  | Programme Outcomes |    |   |   |    |    |    |   |   |    |    |       |       |       |
|------------------|--------------------|----|---|---|----|----|----|---|---|----|----|-------|-------|-------|
|                  | 1                  | 2  | 3 | 4 | 5  | 6  | 7  | 8 | 9 | 10 | 11 | PSO 1 | PSO 2 | PSO 3 |
| 25AF1191PC304 _1 | 3                  | 2  |   |   | 2  | 2  | 2  |   |   |    | 2  | 2     | 2     | 2     |
| 25AF1191PC304 _2 | 3                  | 2  |   |   | 2  | 2  | 2  |   |   |    | 2  | 2     | 2     | 2     |
| 25AF1191PC304 _3 | 3                  | 2  |   |   | 2  | 2  | 2  |   |   |    | 2  | 2     | 2     | 2     |
| 25AF1191PC304 _4 | 3                  | 2  |   |   | 2  | 2  | 2  |   |   |    | 2  | 2     | 2     | 2     |
| 25AF1191PC304 _5 | 3                  | 2  |   |   | 2  | 2  | 2  |   |   |    | 2  | 2     | 2     | 2     |
| Total            | 15                 | 10 |   |   | 10 | 10 | 10 |   |   |    | 10 | 10    | 10    | 10    |
| Average          | 3                  | 2  |   |   | 2  | 2  | 2  |   |   |    | 2  | 2     | 2     | 2     |
| 25AF1191PC304    | 3                  | 2  |   |   | 2  | 2  | 2  |   |   |    | 2  | 2     | 2     | 2     |

Prepared by  
Course Coordinator

Verified by  
Academic Coordinator



Approved by  
HOD- Civil  
H.O.D.

**Vision of the Department**

To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

**Mission of the Department**

We, at Department of Civil Engineering, are committed to achieve our vision by-

- M1: To impart quality technical education through interactive teaching.
- M2: To promote research and development activities, innovation, creativity and encourage to real-world problem.
- M3: To mentor students for innovating thinking with relevance to entrepreneurship
- M4: To develop social awareness in graduates to serve society



Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
 An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

**CO Attainment Targets:**

| CO                       | 504 1 | 504 2 | 504 3 | 504 4 | 504 5 |
|--------------------------|-------|-------|-------|-------|-------|
| Previous Attainment      | 2.6   | 2.6   | 2.6   | 2.6   | 2.6   |
| Target for CAY (2025-26) | 2.86  | 2.86  | 2.86  | 2.86  | 2.86  |

**Target Levels of Attainments**

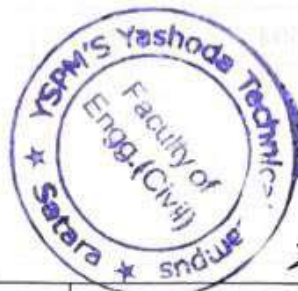
| Level | 2026-27   | 2025-26   | 2024-25   |
|-------|-----------|-----------|-----------|
| 1     | $\geq 60$ | $\geq 50$ | $\geq 40$ |
| 2     | $\geq 70$ | $\geq 60$ | $\geq 50$ |
| 3     | $\geq 80$ | $\geq 70$ | $\geq 60$ |

**Teaching Learning Activity Mapping with SDG's**

| Mode                  | Assessment Tool     | Type of Learning       | CO Mapped               | Self-learning Hours | SDG's Mapped                                                                                                                                 |
|-----------------------|---------------------|------------------------|-------------------------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Continuous Assessment | Poster Presentation | Participative Learning | CO1, CO2, CO3, CO4, CO5 | 08                  | SDG 4: Quality Education, SDG 9: Industry, Innovation and Infrastructure, SDG 11: Sustainable Cities and Communities, SDG 13: Climate Action |
|                       | Model Making        | Experiential Learning  | CO1, CO2, CO3, CO4, CO5 | 10                  | SDG 4: Quality Education, SDG 9: Industry, Innovation and Infrastructure, SDG 11: Sustainable Cities and Communities, SDG 13: Climate Action |
|                       | Assignment          | Active Learning        | CO1, CO2, CO3, CO4, CO5 | 12                  | SDG 4: Quality Education, SDG 9: Industry, Innovation and Infrastructure, SDG 11: Sustainable Cities and Communities, SDG 13: Climate Action |

**Prepared by**  
Course Coordinator

**Verified by**  
Academic Coordinator



**Approved by**  
HOD- Civil

**Vision of the Department**

To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

**Mission of the Department**

We, at Department of Civil Engineering, are committed to achieve our vision by-

- M1: To impart quality technical education through interactive teaching learning method
- M2: To promote research and development activity by encouraging creative thinking to real world problem.
- M3: To mentor students for innovating thinking with relevance to entrepreneurship
- M4: To develop social awareness in graduates to serve society.



Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
 An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

Academic Year 2026-27

Semester- ODD

**Structure of Course**

|                                                |                                          |
|------------------------------------------------|------------------------------------------|
| Class                                          | B. Tech. Sem. –VI                        |
| Course Code and Course Title                   | 25AFARPOE305C Energy Efficient Buildings |
| Prerequisite/s                                 | Environmental Engineering                |
| Teaching Scheme:<br>Lecture/Tutorial/Practical | 02/00/00                                 |
| Credits                                        | 02                                       |
| Evaluation Scheme: CA / MSE / ESE              | 20/20/60                                 |

**Course Outcomes:**

| Course Outcomes (COs):<br>Upon successful completion of this course, the student will be able to: |                                                                                                                                                                                             | Blooms Level |
|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 25AFARPOE305C_1                                                                                   | Analyse and calculate the energy balance of buildings without the aid of available energy calculation programs.                                                                             | L4           |
| 25AFARPOE305C_2                                                                                   | Illustrate the assess for potential conflict between energy conservation and indoor climate for different energy-saving measures.                                                           | L3           |
| 25AFARPOE305C_3                                                                                   | Analyse and interpret results both critically and independently regarding energy and indoor climate in buildings based on values from both calculations and measurements.                   | L3           |
| 25AFARPOE305C_4                                                                                   | Demonstrate ability to work independently on investigating energy and indoor climate issues for buildings and present the results orally and in writing in well-prepared technical reports. | L4           |
| 25AFARPOE305C_5                                                                                   | Ability to calculate the energy balance of buildings without the aid of available energy calculation programs                                                                               | L5           |

**Mapping of CO's with PO's and PSO's:**

| Course Outcomes | Programme Outcomes |      |   |      |      |     |     |   |     |      |    |      |      |      |
|-----------------|--------------------|------|---|------|------|-----|-----|---|-----|------|----|------|------|------|
|                 | 1                  | 2    | 3 | 4    | 5    | 6   | 7   | 8 | 9   | 10   | 11 | PSO1 | PSO2 | PSO3 |
| 25AFARPOE305C_1 | -                  | 3    | - | 3    | 2    | -   | 3   | - | -   | -    | -  | 3    | 2    | 3    |
| 25AFARPOE305C_2 | -                  | 3    | - | 2    | 2    | 2   | 3   | - | -   | -    | -  | 2    | 2    | 3    |
| 25AFARPOE305C_3 | -                  | 3    | - | 3    | 2    | 2   | 3   | - | -   | 2    | -  | 2    | 2    | 3    |
| 25AFARPOE305C_4 | -                  | 2    | - | 2    | 2    | 2   | 3   | - | 2   | 3    | -  | 2    | 3    | 3    |
| 25AFARPOE305C_5 | -                  | 3    | - | 3    | 3    | -   | 3   | - | -   | 2    | -  | 3    | 3    | 3    |
| Total           | -                  | 14   | - | 13   | 11   | 6   | 15  | - | 2   | 7    | -  | 12   | 12   | 15   |
| Average         | -                  | 2.80 | - | 2.60 | 2.20 | 2.0 | 3.0 | - | 2.0 | 2.33 | -  | 2.40 | 2.40 | 3.00 |
| 25AFARPOE305C   | -                  | 3    | - | 2    | 2    | 2   | 3   | - | -   | 2    | -  | 2    | 2    | 3    |

Prepared by  
Course Coordinator

Verified by  
Academic Coordinator

Approved by  
HOD- Civil  
H.O.D.

**Vision of the Department**

To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

**Mission of the Department**

We, at Department of Civil Engineering, are committed to achieve our vision by-

- M1: To impart quality technical education through interactive and innovative teaching.
- M2: To promote research and development activity by encouraging creativity and innovation.
- M3: To mentor students for innovating thinking with relevance to entrepreneurship.
- M4: To develop social awareness in graduates to serve society.





Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

CO Attainment Targets:

| CO                       | 305C_1 | 305C_2 | 305C_3 | 305C_4 | 305C_5 |
|--------------------------|--------|--------|--------|--------|--------|
| Previous Attainment      | 2.4    | 2.5    | 2.4    | 2.8    | 2.4    |
| Target for CAY (2026-27) | 3.0    | 3.0    | 3.0    | 3.0    | 3.0    |

Target Levels of Attainments

| Level | 2026-27   | 2025-26   | 2024-25   |
|-------|-----------|-----------|-----------|
| 1     | $\geq 70$ | $\geq 60$ | $\geq 50$ |
| 2     | $\geq 80$ | $\geq 70$ | $\geq 60$ |
| 3     | $\geq 90$ | $\geq 80$ | $\geq 70$ |

Teaching Learning Activity Mapping with SDG's

| Mode                  | Assessment Tool  | Type of Learning       | CO Mapped                           | Self-learning Hours | SDG's Mapped                                                                                                                                         |
|-----------------------|------------------|------------------------|-------------------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Continuous Assessment | PPT Presentation | Participative Learning | CO4,                                | 08                  | SDG 4: Quality Education,<br>SDG 9: Industry, Innovation and Infrastructure<br>SDG 11: Sustainable Cities and Communities,<br>SDG 13: Climate Action |
|                       | Case studies     | Active Learning        | CO4,CO5                             | 10                  | SDG 4: Quality Education,<br>SDG 9: Industry, Innovation and Infrastructure<br>SDG 11: Sustainable Cities and Communities,<br>SDG 13: Climate Action |
|                       | Assignment       | Active Learning        | CO1,<br>CO2,<br>CO3,<br>CO4,<br>CO5 | 10                  | SDG 4: Quality Education,<br>SDG 9: Industry, Innovation and Infrastructure<br>SDG 11: Sustainable Cities and Communities,<br>SDG 13: Climate Action |

*Naishankar Singh*  
Prepared by  
Course Coordinator

*Dr. S. B. Patil*  
Verified by  
Academic Coordinator

*Dr. D. D. Patil*  
Approved by  
HOD- Civil

Vision of the Department

To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

Mission of the Department

We, at Department of Civil Engineering, are committed to achieve our vision by-

- M1: To impart quality technical education through interactive and innovative teaching method.
- M2: To promote research and development activity by encouraging students to apply their knowledge to real world problem.
- M3: To mentor students for innovating thinking with relevance to entrepreneurship
- M4: To develop social awareness in graduates to serve society.



Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
 An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

Academic Year 2026-27

Semester- ODD

**Structure of Course**

|                                                |                                                   |
|------------------------------------------------|---------------------------------------------------|
| Class                                          | SY. Sem. -III                                     |
| Course Code and Course Title                   | 25AF1191MD306 Introduction to Engineering Geology |
| Prerequisite/s                                 | Basic civil Engineering                           |
| Teaching Scheme:<br>Lecture/Tutorial/Practical | 03/00/00                                          |
| Credits                                        | 03                                                |
| Evaluation Scheme: CA / MSE / ESE              | 20/20/60                                          |

**Course Outcomes:**

| Course Outcomes (COs):<br>Upon successful completion of this course, the student will be able to: |                                                                                                                            | Blooms Level |
|---------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|--------------|
| MD306_1                                                                                           | Analyze geomorphological processes and landforms relevant to civil engineering.                                            | L4           |
| MD306_2                                                                                           | Identify the mineralogical and petrological features suitable for types of foundations.                                    | L3           |
| MD306_3                                                                                           | Interpret structural features and groundwater characteristics to assess their significance in civil engineering project    | L3           |
| MD306_4                                                                                           | Apply geological and geophysical investigation methods, core logging, and rock property evaluation in site investigations. | L3           |
| MD306_5                                                                                           | Analyze the influence of geological conditions on dams, tunnels, bridges and recommend suitable remedial measures.         | L4           |

**Mapping of CO's with PO's and PSO's:**

| Course Outcomes | Programme Outcomes |    |   |   |   |    |   |    |    |    |    |       |       |       |
|-----------------|--------------------|----|---|---|---|----|---|----|----|----|----|-------|-------|-------|
|                 | 1                  | 2  | 3 | 4 | 5 | 6  | 7 | 8  | 9  | 10 | 11 | PS O1 | PSO 2 | PSO 3 |
| MD306_1         | 2                  | 2  |   |   |   | 2  |   | 2  | 2  |    | 2  | 3     | 2     | 2     |
| MD306_2         | 2                  | 2  | 2 | 2 |   | 2  |   | 2  | 2  |    | 2  |       | 2     | 2     |
| MD306_3         | 2                  | 2  | 2 | 2 |   | 2  |   | 2  | 2  |    | 2  | 2     | 3     | 2     |
| MD306_4         | 2                  | 2  | 2 | 2 |   | 2  |   | 2  | 2  |    | 2  | 3     | 2     | 2     |
| MD306_5         | 2                  | 2  | 2 |   |   | 2  |   | 2  | 2  |    | 2  | 2     | 2     | 2     |
| Total           | 10                 | 10 | 8 | 6 |   | 10 |   | 10 | 10 |    | 10 | 10    | 11    | 10    |
| Average         | 2                  | 2  | 2 | 2 |   | 2  |   | 2  | 2  |    | 2  | 2     | 2.20  | 2     |
| MD306           | 2                  | 2  | 2 | 2 |   | 2  |   | 2  | 2  |    | 2  | 2     | 2.5   | 2     |

Prepared by  
Course Coordinator

Verified by  
Academic Coordinator

Approved by  
HOD- Civil

**Vision of the Department**

To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

**Mission of the Department**

We, at Department of Civil Engineering, are committed to achieve our vision by-

- M1: To impart quality technical education through interactive learning.
- M2: To promote research and development activity by encouraging creativity and exposure to real world problem.
- M3: To mentor students for innovating thinking with relevance to entrepreneurship
- M4: To develop social awareness in graduates to serve society.





Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

**CO Attainment Targets:**

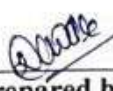
| CO                       | 306_1 | 306_2 | 306_3 | 306_4 | 306_5 |
|--------------------------|-------|-------|-------|-------|-------|
| Previous Attainment      | 3.00  | 3.00  | 2.68  | 2.04  | 3.00  |
| Target for CAY (2026-27) | 3.00  | 3.00  | 3.00  | 3.00  | 3.00  |

**Target Levels of Attainments**

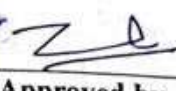
| Level | 2026-27   | 2025-26   | 2024-25   |
|-------|-----------|-----------|-----------|
| 1     | $\geq 60$ | $\geq 50$ | $\geq 40$ |
| 2     | $\geq 70$ | $\geq 60$ | $\geq 50$ |
| 3     | $\geq 80$ | $\geq 70$ | $\geq 60$ |

**Teaching Learning Activity Mapping with SDG's**

| Mode                  | Assessment Tool     | Type of Learning       | CO Mapped               | Self-learning Hours | SDG's Mapped                                                                                                                                         |
|-----------------------|---------------------|------------------------|-------------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Continuous Assessment | Case Study          | Participative Learning | CO2, CO3                | 08                  | SDG 4: Quality Education,<br>SDG 9: Industry, Innovation and Infrastructure<br>SDG 11: Sustainable Cities and Communities,<br>SDG 13: Climate Action |
|                       | Poster Presentation | Experiential Learning  | CO1, CO4, CO5           | 12                  | SDG 4: Quality Education,<br>SDG 9: Industry, Innovation and Infrastructure<br>SDG 11: Sustainable Cities and Communities,<br>SDG 13: Climate Action |
|                       | Assignment          | Active Learning        | CO1, CO2, CO3, CO4, CO5 | 10                  | SDG 4: Quality Education,<br>SDG 9: Industry, Innovation and Infrastructure<br>SDG 11: Sustainable Cities and Communities,<br>SDG 13: Climate Action |

  
**Prepared by**  
**Course Coordinator**

  
**Verified by**  
**Academic Coordinator**

  
**Approved by**  
**HOD- Civil**

**Vision of the Department**

To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

**Mission of the Department**

We, at Department of Civil Engineering, are committed to achieve our vision by-

- M1: To impart quality technical education through interactive and innovative method.
- M2: To promote research and development activity by encouraging creativity and innovation to real world problem.
- M3: To mentor students for innovating thinking with relevance to entrepreneurship
- M4: To develop social awareness in graduates to serve society.



Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
 An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

Academic Year 2026-27

Semester- ODD

**Structure of Course**

|                                                |                                     |
|------------------------------------------------|-------------------------------------|
| Class                                          | B. Tech. Sem. – IV                  |
| Course Code and Course Title                   | 25AF1922VE308 Constitution of India |
| Prerequisite/s                                 | Indian Knowledge System             |
| Teaching Scheme:<br>Lecture/Tutorial/Practical | 02/00/00                            |
| Credits                                        | AU                                  |
| Evaluation Scheme: CA / MSE / ESE              | 00/00/00                            |

**Course Outcomes:**

| Course Outcomes (COs):<br>Upon successful completion of this course, the student will be able to: |                                                                                                                                                                                                            | Blooms Level |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| 25AF1922VE308_1                                                                                   | <b>Explain</b> the importance, need, and salient features of the Constitution in establishing and functioning of a democratic government.                                                                  | L2           |
| 25AF1922VE308_2                                                                                   | <b>Describe</b> the Fundamental Rights, Fundamental Duties, and Directive Principles of State Policy and <b>relate</b> them to responsible citizenship.                                                    | L3           |
| 25AF1922VE308_3                                                                                   | <b>Explain</b> the roles and constitutional responsibilities of key institutions and authorities, including the President, Prime Minister, Council of Ministers, Chief Minister, and local administration. | L2           |
| 25AF1922VE308_4                                                                                   | <b>Explain</b> the role and functions of the Election Commission and the importance of free, fair, and democratic elections.                                                                               | L3           |
| 25AF1922VE308_5                                                                                   | <b>Analyze</b> the constitutional principles of secularism, federalism, democracy, liberty, freedom of expression, and special provisions for states in the context of Indian governance.                  | L4           |

**Mapping of CO's with PO's and PSO's:**

| Course Outcomes   | Programme Outcomes |   |   |   |   |     |    |   |   |    |     | PSO 1 | PSO 2 | PSO 3 |
|-------------------|--------------------|---|---|---|---|-----|----|---|---|----|-----|-------|-------|-------|
|                   | 1                  | 2 | 3 | 4 | 5 | 6   | 7  | 8 | 9 | 10 | 11  |       |       |       |
| 25AF1922VE308_1   |                    |   |   |   |   | 2   | 3  |   |   |    | 2   |       |       | 1     |
| 25AF1922VE308_2   |                    |   |   |   |   | 2   | 3  | 2 | 2 |    | 2   |       |       | 2     |
| 25AF1922VE308_3   |                    |   |   |   |   | 2   | 3  |   | 2 |    | 2   |       |       | 2     |
| 25AF1922VE308_4   |                    |   |   |   |   | 2   | 3  | 2 | 2 |    | 2   |       |       | 2     |
| 25AF1922VE308_5   |                    |   |   |   |   | 3   | 3  | 2 | 2 |    | 3   |       |       | 2     |
| <b>Total</b>      |                    |   |   |   |   | 11  | 15 | 6 | 8 |    | 11  |       |       | 9     |
| <b>Average</b>    |                    |   |   |   |   | 2.2 | 3  | 2 | 2 |    | 2.2 |       |       | 1.8   |
| <b>BTEEOE705B</b> |                    |   |   |   |   | 3   | 3  | 2 | 2 |    | 3   |       |       | 2     |

Prepared by  
Course Coordinator

Verified by  
Academic Coordinator

Approved by  
HOD- Civil  
H.O.D.

**Vision of the Department**

To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

**Mission of the Department**

We, at Department of Civil Engineering, are committed to achieve our vision by-

- M1: To impart quality technical education through interactive and innovative learning.
- M2: To promote research and development activity by encouraging creativity and exposure to real world problem.
- M3: To mentor students for innovating thinking with relevance to entrepreneurship
- M4: To develop social awareness in graduates to serve society.





Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
 An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

**CO Attainment Targets:**

| CO                       | VE308_1 | VE308_2 | VE308_3 | VE308_4 | VE308_5 |
|--------------------------|---------|---------|---------|---------|---------|
| Previous Attainment      | -       | -       | -       | -       | -       |
| Target for CAY (2026-27) | 2.00    | 2.50    | 2.50    | 2.50    | 2.50    |

**Target Levels of Attainments**

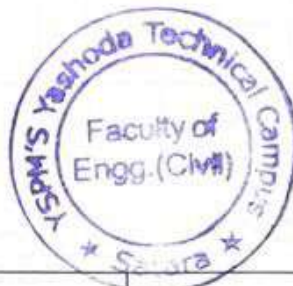
| Level | 2026-27   | 2025-26   | 2024-25   |
|-------|-----------|-----------|-----------|
| 1     | $\geq 60$ | $\geq 50$ | $\geq 40$ |
| 2     | $\geq 70$ | $\geq 60$ | $\geq 50$ |
| 3     | $\geq 80$ | $\geq 70$ | $\geq 60$ |

**Teaching Learning Activity Mapping with SDG's**

| Mode                  | Assessment Tool | Type of Learning       | CO Mapped               | Self-learning Hours | SDG's Mapped                                                                                                                    |
|-----------------------|-----------------|------------------------|-------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Continuous Assessment | Field Visit     | Experiential Learning  | CO1, CO2, CO3, CO4, CO5 | 08                  | SDG 4: Quality Education, SDG 10: Reduce inequalities within and among countries SDG 16: Peace, Justice and strong Institutions |
|                       | Presentation    | Participative Learning | CO1, CO2, CO3, CO4, CO5 | 15                  | SDG 4: Quality Education, SDG 10: Reduce inequalities within and among countries SDG 16: Peace, Justice and strong Institutions |
|                       | Poster Making   | Experiential Learning  | CO1, CO2, CO3, CO4, CO5 | 12                  | SDG 4: Quality Education, SDG 10: Reduce inequalities within and among countries SDG 16: Peace, Justice and strong Institutions |

*[Signature]*

*[Signature]*



*[Signature]*

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                            |                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|----------------------------------|
| <b>Prepared by</b><br>Course Coordinator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>Verified by</b><br>Academic Coordinator | <b>Approved by</b><br>HOD- Civil |
| <b><u>Mission of the Department</u></b><br>We, at Department of Civil Engineering, are committed to achieving vision by-<br><b>M1:</b> To impart quality technical education through interactive teaching learning method.<br><b>M2:</b> To promote research and development activity by encouraging curiosity and exposure to real world problem.<br><b>M3:</b> To mentor students for innovating thinking with relevance to entrepreneurship<br><b>M4:</b> To develop social awareness in graduates to serve society. |                                            |                                  |

**Vision of the Department**

To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.



Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
 An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

Academic Year 2026-27

Semester- ODD

**Structure of Course**

|                                                |                                        |
|------------------------------------------------|----------------------------------------|
| Class                                          | S.Y B.Tech Sem. -III                   |
| Course Code and Course Title                   | (25AF1191PC310) Mechanics of Solid Lab |
| Prerequisite/s                                 | Mechanics                              |
| Teaching Scheme:<br>Lecture/Tutorial/Practical | 00/00/02                               |
| Credits                                        | 01                                     |
| Evaluation Scheme: CA / ESE                    | 30/20                                  |

**Course Outcomes:**

| Course Outcomes (COs):<br>Upon successful completion of this course, the student will be able to: |                                                                                                                        | Blooms Level |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|--------------|
| 25AF1191PC310_1                                                                                   | Evaluate Young's Modulus, tensile strength, compressive strength, shear strength, torsional strength of given specimen | L3           |
| 25AF1191PC310_2                                                                                   | Evaluate Flexural strength of given specimen                                                                           | L3           |
| 25AF1191PC310_3                                                                                   | Apply graphical method to find principal stress parameters                                                             | L3           |
| 25AF1191PC310_4                                                                                   | Communicate effectively subject concern knowledge.                                                                     | L3           |

**Mapping of CO's with PO's and PSO's:**

| Course Outcomes | Programme Outcomes |     |   |     |   |   |   |   |   |    |    |       |       |       |
|-----------------|--------------------|-----|---|-----|---|---|---|---|---|----|----|-------|-------|-------|
|                 | 1                  | 2   | 3 | 4   | 5 | 6 | 7 | 8 | 9 | 10 | 11 | PSO 1 | PSO 2 | PSO 3 |
| 25AF1191PC310_1 | 3                  | 3   |   | 2   | 3 |   |   |   | 2 |    |    |       | 2     | 2     |
| 25AF1191PC310_2 | 3                  | 3   | 2 | 2   | 3 |   |   |   | 2 |    |    |       | 2     | 2     |
| 25AF1191PC310_3 | 2                  | 2   | 2 | 2   | 3 |   |   |   | 2 |    |    |       | 2     | 2     |
| 25AF1191PC310_4 | 2                  | 2   |   |     |   |   |   |   | 2 | 3  |    |       | 2     | 2     |
| Total           | 10                 | 10  | 4 | 6   | 9 |   |   |   | 8 | 3  |    |       | 8     | 8     |
| Average         | 2.5                | 2.5 | 2 | 2   | 3 |   |   |   | 2 | 3  |    |       | 2     | 2     |
| 25AF1191PC310   | 2.5                | 2.5 | 2 | 2.5 | 3 |   |   |   | 2 | 3  |    |       | 2     | 2     |

*[Signature]*

*[Signature]*



*[Signature]*

Prepared by  
Course Coordinator

Verified by  
Academic Coordinator

Approved by  
HOD, Civil  
H.O.D.

**Vision of the Department**

To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society.

**Mission of the Department**

We, at Department of Civil Engineering, are committed to achieve our vision by:

M1: To impart quality technical education through interactive learning and teaching methods.

M2: To promote research and development activity by encouraging research and development problem.

M3: To mentor students for innovating thinking with relevance to entrepreneurship

M4: To develop social awareness in graduates to serve society.

**YSPM's Yashoda Technical Campus, Satara**



Yashoda Shikshan Prasarak Mandal's  
**YASHODA TECHNICAL CAMPUS, SATARA**  
An Autonomous Institute  
**FACULTY OF ENGINEERING**  
**Department of Civil Engineering**

**CO Attainment Targets:**

| CO                       | 310 1 | 310 2 | 310 3 | 310 4 |
|--------------------------|-------|-------|-------|-------|
| Previous Attainment      | 3.00  | 3.00  | 3.00  | 3.00  |
| Target for CAY (2026-27) | 3.00  | 3.00  | 3.00  | 3.00  |

**Target Levels of Attainments**

| Level | 2026-27   | 2025-26   | 2024-25   |
|-------|-----------|-----------|-----------|
| 1     | $\geq 60$ | $\geq 50$ | $\geq 40$ |
| 2     | $\geq 70$ | $\geq 60$ | $\geq 50$ |
| 3     | $\geq 80$ | $\geq 70$ | $\geq 60$ |

**Teaching Learning Activity Mapping with SDG's**

| Mode                  | Assessment Tool                     | Type of Learning                 | CO Mapped          | Self-learning Hours | SDG's Mapped                                                             |
|-----------------------|-------------------------------------|----------------------------------|--------------------|---------------------|--------------------------------------------------------------------------|
| Continuous Assessment | Practical Performance & Observation | Experiential / Hands-on Learning | CO1, CO2, CO3, CO4 | 08                  | SDG 4 Quality Education<br>SDG 9 Industry, Innovation and Infrastructure |



|                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| <b>Prepared by</b><br>Course Coordinator                                                                                                                                                                                              | <b>Verified by</b><br>Academic Coordinator                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Approved by</b><br>HOD- Civil                                                     |
| <b><u>Vision of the Department</u></b><br>To become centre of excellence by producing Civil engineers having research and development activity, sound technical knowledge, professional skills and social awareness to serve society. | <b><u>Mission of the Department</u></b><br>We, at Department of Civil Engineering, are committed to achieve our vision by:-<br>M1: To impart quality technical education through interactive learning.<br>M2: To promote research and development activity by encouraging creativity and exposure to real world problem.<br>M3: To mentor students for innovating thinking with relevance to entrepreneurship.<br>M4: To develop social awareness in graduates to serve society. | <b>H.O.D.</b><br><b>Civil Engineering</b><br>YSPM'S Yashoda Technical Campus, Satara |