

LESSON PLAN-2025(W)

| Discipline:civil engineering | | | | Name of The Teaching Faculty: JYOTIRMAYEE SAMAL | | |
|---|----------------|------------|---|--|---|---|
| Subject:Geotechnical Engineering(TH2) | | | | Semester From Date:14.7.2025 To Date 15.11.2025 | | |
| SEMESTER-3rd | | | | No. Of Weeks:18 | 4P/WEEK | |
| No. of Days/week class allotted:04 period per week(Monday, Wednesday- 1P & Saturday- 2 Period) | | | | | TOTAL PERIOD-60 | |
| MONTH | WEEK/M ONTH | DATE | DAYS/P ERIOD | SYLLABUS TO BE COVERED | NOS. OF PERIODS AVAILABLE | |
| | | | | 1: INTRODUCTION (2P) | | |
| J U L Y | 3RD | 14.07.2025 | Mon | 1.1- Soil and Soil Engineering. 1.2- Scope of Soil Mechanics. | 1 | |
| | | 16.07.2025 | Wed | 1.3 Origin and formation of soil | 1 | |
| | | | | 2: PRELIMINARY DEFINITIONS AND RELATIONSHIP (6P) | | |
| | | 19.07.2025 | Sat | 2.1 Soil as a three Phase system. | 1 | |
| | | 19.07.2025 | Sat | 2.2 Water Content, Density, Specific gravity | 1 | |
| | 4TH | | 21.07.2025 | Mon | 2.2 Voids ratio, Porosity, Percentage of air voids, air content, | 1 |
| | | | 23.07.2025 | Wed | Degree of saturation, density Index, Bulk/Saturated/dry/submerged density, Interrelationship of various soil parameters | 1 |
| | | 5TH | 28.07.2025 | Mon | Numerical problems | 1 |
| | 30.07.2025 | | Wed | Numerical problems | 1 | |
| | AUGUST | 1st | 02.08.2025 | Mon | Numerical problems | 1 |
| | | | | | 3. INDEX PROPERTIES OF SOIL (4P) | |
| | | 2ND | 04.08.2025 | Mon | 3.1- Water Content | 1 |
| | | | 06.08.2025 | Wed | 3.2- Specific Gravity | 1 |
| | | | | | 3.3- Particle size distribution, Sieve analysis, wet mechanical analysis, particle size distribution curve and its uses | 1 |
| 3RD | 11.08.2025 | Mon | | | | |
| | 13.08.2025 | Wed | 3.4 – Consistency of Soils, Atterberg’s Limits, Plasticity Index, Consistency Index, Liquidity Index | 1 | | |
| | | | 4. CLASSIFICATION OF SOIL. (6P) | | | |
| | 16.08.2025 | Sat | 4.1- General. Classification | 2P | | |
| 4TH | 16.08.2025 | Sat | 4.1- General. Classification | | | |
| | 18.08.2025 | Mon | 4.2 I.S. Classification, | 1 | | |
| | 20.08.2025 | Wed | 4.2 I.S. Classification | 1 | | |

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| | | 25.08.2025 | Mon | Plasticity chart | 1 |
| | 5TH | | | 5.1- Concept of Permeability, Darcy's Law, Co-efficient of Permeability, | 2P |
| | | 30.08.2025 | Sat | 5.1- Concept of Permeability, Darcy's Law, Co-efficient of Permeability, | |
| | | 30.08.2025 | Sat | 5.1- Concept of Permeability, Darcy's Law, Co-efficient of Permeability, | |
| S e p t e m b e r | 1ST | 01.09.2025 | Mon | Derivation of Darcy's Law | 1 |
| | | | | 5 .PERMEABILITY AND SEEPAGE (7P) | |
| | | 03.09.2025 | Wed | | 1 |
| | | 06.09.2025 | Sat | 5.2- Factors affecting Permeability. | 2P |
| | | 06.09.2025 | Sat | 5.3- Constant head permeability | |
| | 2ND | 08.09.2025 | Mon | Numerical problems | 1 |
| | | 10.09.2025 | Wed | 5.3-falling head permeability Test. | 1 |
| | 3RD | 15.09.2025 | Mon | Numerical problems | 1 |
| | | 17.09.2025 | Wed | Numerical problems | 1 |
| | | 20.09.2025 | Sat | 5.4- Seepage pressure, Phenomenon of quick sand | 2P |
| 4TH | | | 6 .COMPACTION AND CONSOLIDATION(8P) | | |
| | 22.09.2025 | Mon | 6.1- Compaction, Light and heavy compaction Test, | 1 | |
| | 24.09.2025 | Wed | Optimum Moisture Content of Soil, Maximum dry density, Zero air void line | 1 | |
| | 06.10.2025 | Mon | Factors affecting Compaction, Field compaction methods and their suitability | 2P | |
| 2ND | 08.10.2025 | Wed | numericals | 1 | |
| | 13.10.2025 | Mon | 6.2- Consolidation, distinction between compaction and consolidation. | 1 | |
| 3RD | 15.10.2025 | Wed | 6.2- Consolidation, distinction between compaction and consolidation. | 1 | |
| | 18.10.2025 | Sat | Terzaghi's model analogy of compression/ springs showing the process of consolidation | 2P | |
| O c t o b e r | 4TH | 20.10.2025 | Mon | 6.5- Terzaghi's model analogy of compression/ springs showing the process of consolidation – field implications | 1 |
| | | | | 7 SHEAR STRENGTH (6P) | |
| | 22.10.2025 | Wed | 7.1- Concept of shear strength | 1 | |
| | 27.10.2025 | Mon | , Mohr- Coulomb failure theory, Cohesion, | 1 | |
| | 5TH | 29.10.2025 | Wed | Angle of internal friction, strength envelope for different type of soil, | 1 |

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| November | 1ST | 01.11.2025 | Sat | 7.2- Measurement of shear strength;- Direct shear test, | 2P | |
| | 2ND | 3.11.2025 | Mon | Triaxial shear test, | 1 | |
| | | 10.11.2025 | Mon | Unconfined compression test and vane-shear test | 1 | |
| | 3RD | | | 8 EARTH PRESSURE ON RETAINING STRUCTURES. (7P) | | |
| | | 12.11.2025 | Wed | 8.1- Active earth pressure, | 1 | |
| | | 15.11.2025 | Sat | Passive earth pressure, Earth pressure at rest. 8.2- Use of Rankine's formula for the following cases (cohesion-less soil only) | 2P | |
| | | | | | 1 | |
| | | | | | 1 | |
| | November | | | | NUMERICAL PROBLEMS | 1 |
| | | | | | NUMERICAL PROBLEMS | 1 |
| | | | | (i) Backfill with no surcharge, (ii) backfill with uniform surcharge | 1 | |
| | | | | NUMERICAL PROBLEMS | 1 | |
| | | | | 9 FOUNDATION ENGINEERING.(14) | | |
| | | | | 9.1- Functions of foundations, shallow and deep foundation, | 1 | |
| | | | | Different type of shallow foundations with sketches. | 1 | |
| | | | | Different type of deep foundations with sketches. | 1 | |
| | | | | Types of failure (General shear, Local shear & punching shear) | 1 | |
| | | | | 9.2- Bearing capacity of soil, | 1 | |
| | | | | Bearing capacity of soils using Terzaghi's formulae | 1 | |
| | | | | IS Code formulae for strip, Circular and square footings. | 1 | |
| | | | | Effect water table on bearing capacity of soil | 1 | |
| | | | | 9.3 Plate load test | 1 | |
| | | | | 9.3 Plate load test and | 1 | |
| | | | | standard penetration test | 1 | |
| | | | | standard penetration test | 1 | |
| | | | | DOUBT CLEARING CLASS | 1 | |
| | | | DOUBT CLEARING CLASS | 1 | | |