

LESSON PLAN-2022(w)

| Discipline:civil engineering | | | | Name of The Teaching Faculty:Jyotirmayee Samal | |
|---|-------------|------------|-----------------|---|---|
| Subject:Geotechnical Engineering(TH2) | | | | Semester From Date:15-09-2022 To Date 22-12-2022 | |
| SEMESTER-3rd | | | | No. Of Weeks:14 | 4P/WEEK |
| No. of Days/week class allotted:04 period per week(Mon,Thurs, Fri & Saturday 1 Period | | | | TOTAL PERIOD-60 | |
| MONT H | WEEK | DATE | DAYS/PE RIOD | SYLLABUS TO BE COVERED | NOS. OF PERIODS AVAILABLE |
| S e p t e m b e r | | | | 1: INTRODUCTION (2P) | |
| | 3rd | 15.9.2022 | Thurs | 1.1- Soil and Soil Engineering. 1.2- Scope of Soil Mechanics. | 1 |
| | | 16.9.2022 | Fri | 1.3 Origin and formation of soil | 1 |
| | | | | 2: PRELIMINARY DEFINITIONS AND RELATIONSHIP (6P) | |
| | | 17.9.2022 | Sat | 2.1 Soil as a three Phase system. | 1 |
| | 4th | 19.9.2022 | Mon | 2.2 Water Content, Density, Specific gravity, Voids ratio, Porosity, Percentage of air voids, air content, | 1 |
| | | 22.9.2022 | Thurs | Degree of saturation, density Index, Bulk/Saturated/dry/submerged density, Interrelationship of various soil parameters | 1 |
| | | 23.9.2022 | Fri | Numerical problems | 1 |
| | | 24.9.2022 | Sat | Numerical problems | 1 |
| | | 26.9.2022 | Mon | Numerical problems | 1 |
| | 5th | | | 3. INDEX PROPERTIES OF SOIL (4P) | |
| | | 29.9.2022 | Thurs | 3.1- Water Content | 1 |
| | | 30.9.2022 | Fri | 3.2- Specific Gravity | 1 |
| | O c t | 1st | 1.10.2022 | Sat | 3.3- Particle size distribution, Sieve analysis, wet mechanical analysis, particle size distribution curve and its uses |
| 3rd | | 10.10.2022 | Mon | 3.4 – Consistency of Soils, Atterberg’s Limits, Plasticity Index, Consistency Index, Liquidity Index | 1 |
| | | | | 4. CLASSIFICATION OF SOIL. (6P) | |
| | | 13.10.2022 | Thurs | 4.1- General. | 1 |
| | | 14.10.2022 | Fri | 4.1- General. | 1 |
| | | 15.10.2022 | Sat | 4.2 I.S. Classification, | 1 |
| | | 17.10.2022 | Mon | 4.2 I.S. Classification | 1 |
| | | 20.10.2022 | Thurs | Plasticity chart | 1 |

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| 4th | 21.10.2022 | Fri | CLASS TEST | 1 |
| | | | 5 .PERMEABILITY AND SEEPAGE (7P) | |
| | 22.10.2022 | Sat | 5.1- Concept of Permeability, Darcy's Law, Co-efficient of Permeability, | 1 |
| 5th | 27.10.2022 | Thurs | 5.1- Concept of Permeability, Darcy's Law, Co-efficient of Permeability, | 1 |
| | 28.10.2022 | Fri | 5.2- Factors affecting Permeability. | 1 |
| | 29.10.2022 | Sat | 5.3- Constant head permeability | 1 |
| Last | 31.10.2022 | Mon | 5.3-falling head permeability Test. | 1 |
| 1st | 3.11.2022 | Thurs | 5.4- Seepage pressure, Phenomenon of quick sand | 1 |
| | 4.11.2022 | Fri | 5.4- Seepage pressure, Phenomenon of quick sand | 1 |
| | | | 6 .COMPACTION AND CONSOLIDATION(8P) | |
| | 5.11.2022 | Sat | 6.1- Compaction, Light and heavy compaction Test, | 1 |
| 2nd | 7.11.2022 | Mon | Optimum Moisture Content of Soil, Maximum dry density, Zero air void line | 1 |
| | 10.11.2022 | Thurs | Factors affecting Compaction, Field compaction methods and their suitability | 1 |
| | 11.11.2022 | Fri | numericals | 1 |
| | 12.11.2022 | Sat | 6.2- Consolidation, distinction between compaction and consolidation. | 1 |
| 3rd | 14.11.2022 | Mon | 6.2- Consolidation, distinction between compaction and consolidation. | 1 |
| | 17.11.2022 | Thurs | Terzaghi's model analogy of compression/ springs showing the process of consolidation | 1 |
| | 18.11.2022 | Fri | Terzaghi's model analogy of compression/ springs showing the process of consolidation | 1 |
| | 19.11.2022 | Sat | 6.5- Terzaghi's model analogy of compression/ springs showing the process of consolidation – field implications | 1 |
| | | | 7 SHEAR STRENGTH (6P) | |
| 4th | 21.11.2022 | Mon | 7.1- Concept of shear strength | 1 |
| | 24.11.2022 | Thurs | , Mohr- Coulomb failure theory, Cohesion, | 1 |
| | 25.11.2022 | Fri | Angle of internal friction, strength envelope for different type of soil, | 1 |

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| D e c e m b e r | | 26.11.2022 | Sat | 7.2- Measurement of shear strength;- Direct shear test, | 1 |
| | 5th | 28.11.2022 | Mon | Triaxial shear test, | 1 |
| | 1st | 1.12.2022 | Thurs | Unconfined compression test and vane-shear test | 1 |
| | | | | 8 EARTH PRESSURE ON RETAINING STRUCTURES. (7P) | |
| | | 2.12.2022 | Fri | 8.1- Active earth pressure, | 1 |
| | | 3.12.2022 | Sat | Passive earth pressure, Earth pressure at rest. | 1 |
| | 2nd | 5.12.2022 | Mon | 8.2- Use of Rankine's formula for the following cases (cohesion-less soil only) | 1 |
| | | 8.12.2022 | Thurs | NUMERICAL PROBLEMS | 1 |
| | | 9.12.2022 | Fri | NUMERICAL PROBLEMS | 1 |
| | | 10.12.2022 | Sat | (i) Backfill with no surcharge, (ii) backfill with uniform surcharge | 1 |
| | 3rd | 12.12.2022 | Mon | NUMERICAL PROBLEMS | 1 |
| | | | | 9 FOUNDATION ENGINEERING.(14) | |
| | | 15.12.2022 | Thurs | 9.1- Functions of foundations, shallow and deep foundation, | 1 |
| | | 16.12.2022 | Fri | Different type of shallow foundations with sketches. | 1 |
| | | 17.12.2022 | Sat | Different type of deep foundations with sketches. | 1 |
| | 4th | 19.12.2022 | Mon | Types of failure (General shear, Local shear & punching shear) | 1 |
| | | 22.12.2022 | Thurs | 9.2- Bearing capacity of soil, | 1 |
| | | | EXTRA CLASS | 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 | |
| | | CLASS TEST | | 1 | |