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| Image result for nit meghalaya logo | **National Institute of Technology Meghalaya**An Institute of National Importance | **CURRICULUM** |
| Programme | **Bachelor of Technology in Civil Engineering** | Year of Regulation | **2020-21** |
| Department | **Department of Civil Engineering** | Semester | **VI** |
| CourseCode | Course Name | **Pre requisite** | Credit Structure | Marks Distribution |
| L | T | P | C | INT | MID | END | Total |
| **CE 354** | **Geotechnical Engineering-II Lab** | **NIL** | **0** | **1** | **2** | **2** |  | **100** | **100** |
| CourseObjectives | To familiarize the students with the analysis of the various test methodologies for evaluating the soil shear strength both under laboratory conditions. | Course Outcomes | CO1 | Identify the shear strength parameters of soil with analytical solutions. |
| To familiarize the students with the analysis of the various test methodologies for evaluating the soil shear strength both under field conditions. | CO2 | Identify the shear strength parameters with laboratory investigations  |
|  | CO3 | Evaluate the settlement criteria of different types of soil with laboratory investigations |
|  | CO4 | Determination of in-situ shear strength |
| No. | COs | Mapping with Program Outcomes (POs) | Mapping with PSOs |
| PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
| 1 | CO1 | **0** | **3** | **3** | **2** | **3** | **2** | **0** | **0** | **3** | **0** | **3** | **3** | **0** | **3** | **2** |
| 2 | CO2 | **0** | **0** | **0** | **2** | **0** | **0** | **0** | **0** | **3** | **0** | **3** | **3** | **0** | **3** | **2** |
| 3 | CO3 | **0** | **3** | **3** | **2** | **3** | **0** | **0** | **0** | **3** | **0** | **3** | **3** | **0** | **3** | **2** |
| 4 | CO4 | **0** | **3** | **3** | **2** | **3** | **0** | **0** | **0** | **3** | **0** | **3** | **3** | **0** | **3** | **2** |
| SYLLABUS |
| No. | Content | Hours | COs |
| I | Identify the shear strength parameters with analytical solutions. | **4** | **CO1** |
| II | To determine the shearing strength of the soil using the direct shear apparatus. | **4** | **CO1, CO2** |
| III | To determine shear parameters of cohesive soil | **4** | **CO1, CO2** |
| IV | To find the shear of the soil by UndrainedTriaxial Test. | **4** | **CO1, CO2** |
| V | To determine the settlements due to primary consolidation of soil by conducting one dimensional test. | **4** | **CO4** |
| VI | To determine the California bearing ratio by conducting a load penetration test in the laboratory. | **4** | **CO1, CO2** |
| VII | Determination of shear strength in-situ [Standard Penetration test (SPT), Cone Penetration Test (CPT), Dynamic Cone Penetration Test (DCPT), Vane Shear Test (VST), Dilatometer Test (DMT),Pressure meter Test (PMT) etc] | **12** | **CO4** |
| Total Hours | **36** |  |
| **Essential Readings** |
| 1. Ranjan, G and Rao, A.S.R., “Basic and Applied Soil Mechanics”, New Age International.
 |
| 1. Terzaghi K., Peck R. B. and Mesri G., “Soil Mechanics in Engineering Practice”, John Wiley & Sons.
 |
| **Supplementary Readings** |
| 1. KanirajS.R.,”Design Aids in Soil Mechanics & Foundation Engineering”, Tata McGraw Hill.
 |
| 1. Lambe T.W and Whitman R.V., “Soil Mechanics”, John Wiley & Sons.
 |
| 1. Punmia B.C., “Soil Mechanic and Foundation Engineering”, Laxmi Publication Pvt. Ltd.
 |
| 1. Braja M. Das., “Fundamental of Foundation Engineering”, Thomson Asia Pvt. Ltd, Singapore.
 |
| 1. Bardet J., “Experimental soil mechanics”, Upper Saddle River, Prentice Hall, USA.
 |
| 1. Liu, C. and Evett, J. B. , “Soil properties: testing, measurement and evaluation”, Upper Saddle River, Prentice Hall, USA
 |