

Lesson Plan on Civil Engineering Lab – I (3rd Sem/W-23)

Total Contact Hours: 90 Hours

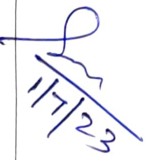
Weekly Practical Hours: 6 Hours

Duration: 15 Weeks (6 Hours/Week)

Faculty – Dhanurjaya Behera and Soubhagya Ranjan Mohanty

Week	Practical Hours	Topic / Experiment	Teaching-Learning Activities
1	6	Introduction to Material Testing Laboratory, safety precautions, laboratory equipment identification and handling	Introduction to testing machines, IS codes, safety procedures
2	6	Test on Steel: Introduction to Universal Testing Machine (UTM), specimen preparation and testing procedure	Demonstration of UTM operation and tensile test procedure
3	6	Determination of Young's Modulus of Steel using UTM	Perform tensile test, record load-extension data, calculate stress- strain relationship
4	6	Cement Tests: Determination of fineness of cement by sieving method	Demonstration and practical performance of sieve analysis
5	6	Determination of Normal Consistency of Cement	Conduct consistency test using Vicat apparatus, calculation of water percentage
6	6	Determination of Initial and Final Setting Time of Cement	Practical using Vicat apparatus and observation recording
7	6	Determination of Soundness of Cement by Le-Chatelier Apparatus	Demonstration and testing procedure
8	6	Determination of Compressive Strength of Cement	Preparation of cement mortar cubes, curing and testing procedure
9	6	Tests on Sands and Aggregates – Introduction, sieve analysis and grading	Aggregate sampling, sieve analysis and calculation of grading
10	6	Aggregate tests: Impact value, crushing value, abrasion value (Demonstration/Practice)	Testing procedure and result interpretation
11	6	Brick and Block Tests: Determination of compressive strength of burnt clay bricks	Preparation of samples and compression testing
12	6	Determination of compressive strength of Fly Ash Bricks and Blocks	Compression test using testing machine

13	6	Concrete Laboratory: Introduction to concrete ingredients, mix proportioning and laboratory practices	Demonstration of concrete preparation
14	6	Concrete Workability Tests: Slump test, Compaction factor test	Perform workability tests and record observations
15	6	Concrete Compressive Strength Test, Non-Destructive Testing (Rebound Hammer) and Viva/Revision	Concrete cube testing, NDT demonstration, record completion

Faculty Civil: 

HOD Civil: 