

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY: KAKINADA KAKINADA – 533 003, Andhra Pradesh, India

DEPARTMENT OFCIVIL ENGINEERING

III Year – I Semester		L	Т	P	C
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CONCRETE TECHNOLOGY LAB					

Course Learning Objectives:

• To study basic properties ingredients of concrete, fresh and hardened concrete properties

Course Outcomes:

Upon successful completion of this course, student will be able to

- Determine consistency and fineness of cement.
- Determine setting times ofcement.
- Determine specific gravity and soundness ofcement.
- Determine compressive strength ofcement.
- Determine workability of cement concrete by compaction factor, slump and Vee Beetests
- Determine specific gravity of coarse aggregate and fine aggregate by Sieve analysis.
- Determine flakiness and elongation index of aggregates.
- Determine bulking of sand.
- Understand non-destructive testing procedures on concrete.

List of Experiments: At least 10 experiments must be conducted (at least one for each property)

- 1. Determination of normal Consistency and fineness ofcement.
- 2. Determination of initial setting time and final setting time ofcement.
- 3. Determination of specific gravity and soundness ofcement.
- 4. Determination of compressive strength ofcement.
- 5. Determination of grading and fineness modulus of Coarse aggregate by sieveanalysis.
- 6. Determination of specific gravity of coarseaggregate
- 7. Determination of grading and fineness modulus of fine aggregate (sand) by sieve analysis.
- 8. Determination of bulking ofsand.
- 9. Determination of workability of concrete by compaction factormethod.
- 10. Determination of workability of concrete by slumptest
- 11. Determination of workability of concrete by Vee-beetest.
- 12. Determination of compressive strength of cement concrete and its young's modulus
- 13. Determination of split tensile strength of concrete.
- 14. Non-Destructive testing on concrete (fordemonstration)



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List of Equipment:

- 1. Standard set of sieves for coarse aggregate and fineaggregate
- 2. Vicat's apparatus
- 3. Specific gravitybottle.
- 4. Lechatlier's apparatus.
- 5. Slump TestApparatus.
- 6. Compaction Factor TestApparatus.
- 7. Vee- Bee testapparatus
- 8. Longitudinal compresso-meter
- 9. Universal testing Machine (UTM)/Compression Testing Machine(CTM).
- 10. Rebound hammer, Ultrasonic pulse velocity machine, micro cover meteretc.

Reference:

1) Concrete Manual by M.L.Gambhir