

## **TRANSPORTATION ENGINEERING LABORATORY**

Practicals : 3 Periods/Week  
Semester End Exam.: 3 Hrs.

Sessional marks : 40  
Semester End Exam. marks : 60  
Credits : 2

### **Course Objectives:**

- This course presents the major strength and shape parameters involved in selection of aggregate for various types of construction works
- This course exhibits various tests conducted on aggregate in order to propose it for suitable construction work
- This course later presents the detail investigation on sub-base course (soil) by conducting a laboratory test for evaluation of pavement thickness
- This course also deals with the various properties of bitumen and the tests required to determine them

### **Course Outcomes:**

- At the end of the laboratory course every student can thus know the important parameters for selection of aggregate for different construction components
- Student can evaluate and conduct the required tests on the given aggregate and propose the suitable inference
- Student can evaluate the grade of bitumen by conducting the required tests and propose it for suitable region and place of pavement construction

***Note: A minimum of twelve (12No) shall be done and recorded***

### **A. Tests On Aggregates**

1. Aggregate Crushing value test.
2. Aggregate impact value test.
3. Los Angeles' abrasion test.
4. Deval's attrition value test.
5. Shape test a) Flakiness index test b) Elongation index test c) Angularity number test. .
6. Specific gravity Test.

### **B. Tests On Bituminous Materials**

7. Penetration test.
8. Softening point test.
9. Flash and fire point test.
10. Ductility test.
11. Viscosity test.
12. Bitumen Extractions Test.
13. Specific gravity of Bitumen.

### **C. Test On Bituminous Mixes**

14. Marshall stability test.

### **D. Test On Soil Subgrade**

15. California bearing ratio test.