Fiber reinforced concrete, Different types of fibers, Factors affecting properties of F.R.C, High performance concrete.

TEXT BOOKS:

1. M.S.Shetty, "Concrete Technology", 1st ed., S.Chand & Co, 2005.
2. S. C. Rangwala, "Engineering Materials", 36th ed., Charotar Publishing House, Anad, 2009.

REFERENCE BOOKS:

1. M.L. Gambhir, "Concrete Technology", 3rd ed., Tata McGraw Hill Publishers, New Delhi, 1986.
2. A.R. Santha Kumar, "Concrete Technology", 3rd ed., Oxford University Press, New Delhi, 2009.
3. A.M.Neville, "Properties of Concrete", 4th ed., Longman Technical & Scientific, 2009.

B.Tech. II Year	L	T	P	To	C
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CE209 MATERIAL TESTING LAB

Course Description and Objective:

To evaluate the mechanical and physical properties of steel, wood and cement.

Course Outcomes:

- *To find the Young Modulus, torsional strength, hardness and tensile strength of given specimens*
- *To find impact value and crushing value of coarse aggregates*
- *To find the compressive strength of concrete cubes and bricks*
- *To find stiffness of open coiled and closed coiled springs*
- *To find the physical properties of given coarse aggregate, fine aggregate and cement samples*

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

1. To study the stress-strain characteristics of HYSD bars by UTM.

2. To find young's modulus of the given material (steel or wood) by conducting bending test on simply supported beam.
3. To find modulus of rigidity by conducting torsion test on solid circular shaft.
4. To find the hardness of the given material by Brinnel's or Vickers hardness tester.
5. To find impact resistance of the given material by conducting Charpy test on Impact testing machine.
6. To determine the ultimate shear strength of steel rod in single and double shear.
7. To determine the modulus of rigidity of the spring.
8. Normal consistency and Initial setting and final setting time of cement
9. Fineness of cement.
10. Compressive strength of Cement.
11. Slump cone test to determine workability of concrete.
12. Compaction factor or Vee-Bee consist meter test to determine the workability of concrete.
13. To determine the compressive strength and split tensile strength of concrete.
14. Specific gravity of fine and coarse aggregates.
15. Bulking of fine aggregate.
16. To determine the fineness modulus of fine aggregate and coarse aggregate.
17. Non-destructive testing on concrete (for demonstration) and concrete mix Design (IS method-For demonstration).