ADVANCED CONCRETE TECHNOLOGY

(Elective-II)

Course Code: 15CE2215

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Course Outcomes: At the end of the course, the student will be able to:

CO1: Discuss the concrete ingredients and its influence at gaining strength.

CO2: Design of concrete mix and grade as per IS codes.

CO3: Summarise the concepts of conventional concrete and its differences with other concretes like no fines, light weight etc.

CO4: Describe the application and use of fiber reinforced concrete.

CO5: Design and develop the self compacting and high performance concrete.

UNIT I (10-Lectures)

Properties of cement, fine aggregate and coarse aggregates, Additives and Admixtures in Concrete, Rheology of Concrete.

UNIT – II (10-Lectures)

Manufacturing and methods of concreting, Properties of fresh and hardened concrete, mix design by I.S. method

UNIT –III (10-Lectures)

Design and manufacture of normal concrete, Light weight concrete – Cellular concrete – No fines concrete – Aerated & foamed concrete

UNIT – IV (10-Lectures)

Design and manufacture of fiber reinforced concrete – Polymer concrete – Fly ash concrete

UNIT – V (10-Lectures)

Design and manufacture of Self compacting concrete – High performance concrete – Very high strength concrete – High density concrete

TEXT BOOKS

1. Neville, A.M. and Brookes, J.J., *"Concrete Technology",* 2nd Edition, Pearson Education, 2010.
2. Gambhir, M.L., *"Concrete Technology",* 2nd Edition, Tata McGraw Hill Publishers, New Delhi, 2009.

REFERENCES

1. Neville, A.M., "Properties of Concrete", 3rd Edition, Longman Scientific and General, 1992.
2. Shanta Kumar A.R., *"Concrete Technology",* 2nd Edition, Oxford University Press, New Delhi, 2000.
3. Krishna Raju. N, "Design of Concrete Mixes", 2nd Edition, CBS Publishers and Distributors, 2009.
4. Shetty, M.S., *"Concrete Technology",* 3rd Edition, S.Chand Publications, 2008.