
ADVANCED CONCRETE TECHNOLOGY

Course Code: 13CE 2215

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Course Educational Objectives:

1. To familiarize the students with various types of cements, concretes and their properties.
2. To impart an awareness of various admixtures for specific concreting purposes.
3. To produce Civil Engineering students who have strong foundation in testing of fresh and hardened concrete.

Course Outcomes:

1. Student will be able to select proper ingredients of concrete and acquire knowledge about the testing of materials for quality assurance.
2. Student will be able to select special concretes for specific purposes.
3. Student will be able to select proper ingredients of concrete and acquire knowledge about the testing of materials for quality assurance.
4. Student will be able to select special concretes for specific purposes.

UNIT I

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

UNIT – II

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

UNIT –III

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

UNIT – IV

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

UNIT – V

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.
