



ADVANCED TOPICS IN THE SCIENCE AND TECHNOLOGY OF CONCRETE

PROF. RAVINDRA GETTU

Department of Civil Engineering
IIT Madras

PROF. MANU SANTHANAM

Department of Civil Engineering
IIT Madras

TYPE OF COURSE : Rerun | Elective | PG

COURSE DURATION : 4 weeks (24 Jan' 22 - 18 Feb' 22)

EXAM DATE : 27 Mar 2022

PRE-REQUISITES : Should have taken courses in Concrete Technology, and preferably Advanced Concrete Technology

INTENDED AUDIENCE : Research scholars and scientists working in the areas of concrete science and technology

INDUSTRIES APPLICABLE TO : Industry with R&D in the area of cement and concrete

COURSE OUTLINE :

International experts on the science and technology of concrete will give brief lectures to highlight advanced topics based on their own research. This will introduce the student to new fields of research and give them an opportunity to learn more than what is usually covered in courses on concrete technology.

ABOUT INSTRUCTOR :

Prof. Ravindra Gettu is a chair professor of Civil Engineering at IIT Madras. He has coordinated the introductory course at IITM and given lectures at other institutes on civil engineering for more than 10 years. He has a wide range of experience in research, education and consultancy. His specific area of expertise is construction materials.

Prof. Manu Santhanam is a Professor at the Department of Civil Engineering at IIT Madras. His research interests are in multi-scale characterization of concrete, supplementary cementitious materials, durability and non-destructive evaluation.

COURSE PLAN :

Week 1: Guest lecture on Calcium Sulphoaluminate Cement, by Prof. Piyush Chaunsali, IIT Madras.

Guest lectures on Micro-structural characterisation of cementitious materials, Prof. Karen Scrivener, EPFL, Switzerland

Week 2: Closed-loop testing of concrete. Guest lectures on Performance of Fiber reinforced materials Historic prospective and glance into the future, by Prof. Surendra P. Shah, Northwestern University

Week 3: Durability parameters of concrete. Sulphate attack. Guest lectures on Development and performance approach for durability and service life prediction for structures, by Prof. Mark Alexander, Univ. of Cape Town

Week 4: Corrosion of steel reinforcement in concrete. Life cycle assessment of concrete.