



INTRODUCTION TO CIVIL ENGINEERING PROFESSION

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PRE-REQUISITES : High school education

INTENDED AUDIENCE : 1st year civil engineering students

COURSE OUTLINE :

The course introduces the civil engineering profession and the degree programme to first year students and prospective students. The different disciplines of civil engineering are briefly explained, along with the pre-requisites, scope and opportunities. Career prospects and novel/emerging areas are also presented. This should be a compulsory first course in civil engineering to present the perspective for the undergraduate students.

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. Subhadeep Banerjee is an Associate Professor of Civil Engineering at IIT Madras. He received his PhD in Civil Engineering from National University of Singapore in 2010. Since 2012, he is involved in teaching various civil engineering core courses, such as Geology & Soil Mechanics, and Advanced Foundation Engineering for UG and PG students. His expertise includes seismic soil-foundation interactions, cyclic behaviour of geomaterials and finite element analysis of complex dynamic problems.

COURSE PLAN :

Week 1: What is Civil Engineering? Different disciplines of civil engineering. scope and prospects.

Heritage structures, architecture

Week 2: Environmental Engineering. Prevention of environmental impact. Pollution, waste and water

treatment

Week 3: Geotechnical Engineering. Soil mechanics and foundations. Hydraulics and water resources

Week 4: Construction Materials and Methods. Infrastructure Engineering. Sustainability.

Week 5: Structural Engineering. Analysis, design and modelling

Week 6: Highway Engineering. Traffic Engineering and Planning

Week 7: Automation and Robotics in Construction. Water Security.

Week 8: Novel areas. Career Prospects