EXPANSIVE SOIL

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TYPE OF COURSE : New | Elective | UG/PG
COURSE DURATION : 8 Weeks (24 Jan' 22 - 18 Mar' 22)
EXAM DATE : March 27, 2022

INTENDED AUDIENCE : PG students, researchers, design and site engineers

INDUSTRIES APPLICABLE TO : Civil Engineering companies working in the area of infrastructure development and ground improvement

COURSE OUTLINE :

Expansive soil occurs in many parts of the world particularly in arid and semi-arid regions. These soils undergo volumetric changes upon wetting and drying, thereby causing ground heave and settlement problems. Cracking associated with the shrinkage is of concern for embankment and earth-dam stability. This leads to considerable construction defects if not adequately taken care of. Such soils are considered natural hazards and pose challenges to civil engineers.

ABOUT INSTRUCTOR :

The SME, Prof. Anil Kumar Mishra, currently working as an Associate Professor at Indian Institute of Technology, Guwahati. After completing his PhD degree from Kyushu University, Japan in 2006, Dr. Mishra worked as a postdoctoral researcher in Korea, U.K. and Japan and worked in various research topics related to the geoenvironmental engineering. Dr. Mishra joined IIT-Guwahati as an Assistant professor in the year 2010. Dr. Mishra's research work is primarily focuses in studying the chemical compatibility of expansive soil and ground improvement using different waste material among the other topics. Dr. Mishra has guided 3 PhD students and 16 master students and has published more than 60 research publication in reputed international journals and conference proceedings so far.

COURSE PLAN :

Week 1**:** Introduction to soil mechanics

Week 2**:** Clay mineralogy; Introduction to Expansive soils

Week 3**:** Swelling behavior of expansive soil

Week 4**:** Swelling-shrinkage characteristics of expansive soil

Week 5**:** Behaviour of expansive soil

Week 6**:** Treatment of expansive soil-1

Week 7**:** Treatment of expansive soil-2

Week 8**:** Foundation on expansive soil; Engineering application of expansive soil