Course Name:
Rock Mechanics

Course Number:
20445

Credit:
3

Course Content (outline):

1. Introduction, History of Rock Mechanics and Rock Engineering
2. Geotechnical Exploration and Site Investigation in Rock Engineering
3. Mechanical and Physical Properties of Rocks and Method of Determination
4. Ground Stresses; Sources of Stresses and Methods of Determination
5. Rock Mass Classifications
6. Failure and Strength Criteria of Rock Masses
7. Rheological Characteristics of Rock Masses
8. Shear Strength of Rock Masses
9. Strength and Geo-Mechanical Properties of Rock Masses
10. Graphical Analysis of Rock Mass Discontinuities (Stereo Graphical Methods)
11. Design Methodology in Rock Engineering
12. Rock Engineering in Slope Stability
13. Rock Engineering in Foundation and Rock Abutments
14. Technical Field Trips and Case Studies

References:

- Goodman, R. E. (2010), Introduction to Rock Mechanics, Wiley India
- Jaeger, J. and Cook, N.G. (2007), Fundamentals of Rock Mechanics, Wiley-Blackwell
- Brady, B. H.G and Brown, E.T. (1985), Rock Mechanics for Underground Mining, Springer
- Wyllie, D.C. (2017), Rock Slope Engineering: Civil and Mining, CRC Press
- Brown, E.T. Ed. (1981), Rock Characterization, Testing, and Monitoring, ISRM suggested Methods, Pergamon Press