

MIPC2004 ROCK MECHANICS (3-0-0)

Module-I:(9Hours)

Introduction: Rock formation, Engineering properties of intact rock – physico-mechanical properties. Rock mass classification methods and their applications. Soil classification methods, applications, and their properties.

Module-II:(9Hours)

Determination of physico-mechanical and rheological properties of rock and their determination (static and dynamic)

Module-III:(9Hours)

Swelling, elastic and time dependent behaviour of rock and their determination, rock deformability

Module-IV:(9Hours)

Stress-strain analysis in 2D and 3D, failure criteria, effect to anisotropic behaviour of rock.

Module-V: (9Hours)

Rock Mass classification, Rock Slope Classification, Support Criteria; introduction to numerical methods - FEM, DEM

Books:

1. Introduction to rock Mechanics – Wiley; 2nd edition (January 17, 1989), ISBN-10: 0471812005 by R. Goodman
2. Rock Engineering – McGraw – Hill (March 1, 1989), ISBN-10: 0070218889 by Franklin & Duseault
3. Rock Mechanics for under ground mining – Springer Netherlands; 3rd edition (2 Jun. 2010), ISBN-10: 1402020643 by Brady and Brown
4. Mechanical Properties of rocks – by V.S. Vutukuri, R.D. Lama, S.S. Saluja, Trans Tech Publications, 01-Jan-1978 - Science-515 pages
5. Rock Mechanics – An introduction CRC Press, Taylor and Francis Group, 2013, by NSivakugan, S K Shukla and B M Das
6. Fundamental of Rock Mechanics – Jaeger, JC, NGW. Cook and RW Zimmerman, Wiley India Pvt Ltd; Fourth edition (30 January 2012), ISBN-10: 8126534567
7. Fundamentals and Applications of Rock Mechanics by Deb Debasis, and Verma Abhiram Kumar, PHI Learning Pvt. Ltd. (2016), ISBN-10: 8120351827