

**CE/BOS/ CE E45/0210**

**K L UNIVERSITY  
ROCK MECHANICS (09 - CE E45)**

<b>L</b>	<b>T</b>	<b>P</b>	<b>Cr</b>
<b>3</b>	<b>0</b>	<b>0</b>	<b>3</b>

**SYLLABUS**

**UNIT – 1**

Classification of Intact rock mini fissures, joints in rock masses and Engineering Classifications  
Rock masses Strength. Physico-mechanical properties, Laboratory tests Seno Controlled  
Systems. Field shear test, Deformability tests in rock mass.

**UNIT – 2**

Failure criteria for rock and rock masses, Strength and deformability of jointed rock mass. Rock  
Joints - Types

**UNIT – 3**

Insitu stress, various methods of stress measurement, Hydro fracturing technique, Flat jack  
technique, Overcoming technique. Underground openings Stresses in Tunnels.

**UNIT-4**

Stability of rock slopes, Modes of failure, Plane failure, Wedge failure, Circular failure, Toppling  
failure. Foundation on rocks, Estimation of bearing capacity, Stress distribution in rocks,  
Settlement in rocks, Pile foundation in rocks.

**UNIT-5**

Methods to improve rock mass responses, Grouting in Rocks, Rock bolting, Rock Anchors.

**TEXT BOOKS:**

1. Goodman. R.E, John Wiley & Sons. Introduction to Rock Mechanics.
2. Ramanamurthy. T, Engineering in Rocks for Slopes, Foundation and Tunnels, Prentice Hall  
India Pvt. Ltd.

**REFERENCE BOOKS:**

1. Jaeger, Cook and Zimmerman, Blackwell Publishing. Fundamentals of Rock Mechanics,  
Fourth Edition,
2. ISRM and B. I. S Text Methods of Rocks and Rock Masses