

1.	Title of the course	Rock Mechanics
2.	Course number	CE536L
3.	Structure of credits	3-0-0-3
4.	Offered to	PG
5.	New course/modification to	Modification To CE5031/11
6.	To be offered by	Department of Civil and Environmental Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	<b>Course Objective(s):</b> To introduce the principles of rock mechanics for understanding the behaviour of intact rocks and rock masses. To impart knowledge on physical and mechanical behaviour of intact rock and rock masses, and applications for the design of the underground structures and slopes in rocky terrain.	
10.	<b>Course Content:</b> Geological formation of rocks, classification of rocks; Physico-chemical and mechanical properties of intact and jointed rocks; Laboratory and field characterization of rocks; Engineering classification of rocks and rock masses: RQD, RSR, RMR and Q classifications, rating, applications; Discontinuity and anisotropy; Strength and failure criteria for intact rock and rock masses; Stress-strain behaviour; Theory of arching; Strength and deformability of jointed rock mass; Fracture mechanism; Hydro-mechanical behaviour of fractured rocks; Time-dependent behaviour and creep; Applications of rock mechanics: rock slopes, foundations, underground openings, and tunnels.	
11.	<b>Textbook(s):</b> 1. Goodman R E, <i>Introduction to Rock Mechanics</i> , 2nd Edition, Wiley India Pvt. Ltd., (1989). 2. Ramamurthy T, <i>Engineering in Rocks for Slopes, Foundations and Tunnels</i> , 3rd Edition, PHI Learning, New Delhi (2014).	
12.	<b>Reference(s):</b> 1. Brady B H G and Brown E T, <i>Rock Mechanics for Underground Mining</i> , 3rd Edition, Springer, Dordrecht (2006). 2. Jaeger J C, Cook N G W and Zimmerman R W, <i>Fundamentals of Rock Mechanics</i> , 4th Edition, Wiley-Blackwell (2007). 3. Singh B and Goel R K, <i>Engineering Rock Mass Classification</i> , 1st Edition, Butterworth-Heinemann, Elsevier Inc. (2012). 4. Wittke W, <i>Rock Mechanics-Theory and Applications with Case Histories</i> , 1st Edition, Springer-Verlag Berlin Heidelberg (1990).	