JHARKHAND Rai University
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Lesson Plan & Tracking

Programe : B .TECH	**Session : 2022-23**	**Year : 2022**	**Sem: FIVE**
Course: ROCK MECHANICS			
Name of the Faculty: MRITUNJAY KUMAR	**Commencement Date:29th August 2022**		**Date of Closure:**

Lecture No.	Week	Unit	Topics to be Covered	Blended Mode			Date	Duration	Tracking of Lectures	Related Course Outcome	Signature of Faculty	Signature of HoD	Remarks (if any)
				ICT Tool/Platform/ LMS	Resources	Activity							
1	1	Unit 1	Definition, history										
2		Unit 1	inherent , complexities										
3		Unit 1	source of information and field										
4	2	Unit 1	application of rock mechanics.										
5		Unit 1	Concept of stress										
6		Unit 1	strain in rock:										
7	3	Unit 1	Analysis of stress, strain										
8		Unit 1	constitutive relations										
9		Unit 1	constitutive relations in isotropic and anisotropic rocks.										
10	4	Unit2	Physico-mechanical properties of rock:										
11		Unit2	Determination of physical properties										
12		Unit2	strengths										

13		**Unit2**	strength indices										
14	**5**	**Unit2**	static elastic constants										
15		**Unit2**	Parameter										
16		**Unit2**	influencing strength										
17	**6**	**Unit2**	Abrasivity										
18		**Unit2**	Abrasivity of rock and its determination.										
19		**Unit 3**	Failure criteria for rock and rock mass:										
20	**7**	**Unit 3**	Coulomb's failure criteria										
21		**Unit 3**	Mohr and Griffith criteria										
22		**Unit 3**	Mohr and Griffith criteria										
23	**8**	**Unit 3**	Empirical criteria.										
24		**Unit 3**	Pre-mining state of stress										
25		**Unit 3**	Sources, methods										
26	**9**	**Unit 3**	Sources, methods of determination including over coring,										
27		**Unit 3**	hydro-fracturing methods and other methods.										
28		**Unit 4**	**D**ynamic properties of rock and rock mass: Propagation of elastic wave in rock media										
29	**10**	**Unit 4**	Determination of dynamic strength and elastic constants of rock.										

30		**Unit 4**	Time dependent properties of rock: Creep deformation and strength behavior										
31	**11**	**Unit 4**	Creep test and rheological models. Strength and Deformability of Rock Mass										
32		**Unit 4**	In situ shear tests; Evaluation of shear strength										
33		**Unit 4**	In situ bearing strength test;										
34	**12**	**Unit 4**	In situ deformability tests-Plate Loading Test										
35		**Unit 4**	Plate Jacking Test										
36		**Unit 4**	Bore hole Jack Tests.										