ORISSA SCHOOL OF MINING ENGINEERING				
DEPARTMENT OF MECHANICAL ENGINEERING				
LESSON PLAN				
Discipline: DRILLING ENGINEERING		**Semester: 4th**	**Name of the Teaching faculty: RAKESH ROSHAN APATTA**	
Subject: BME		**No of Days/Week class alloted:4**	**Semester from Date: 14/02/23 To Date: 23/05/23 No of weeks: 16**	

Month	Week	Availability of Classes	Class Day	Theory Topics to be covered
FEBRUARY	1st	4	14/02/23	**UNIT 1: STRENTH OF MATERIAS:** Define beam, classify beam
			14/02/23	Define S.F and B.M.
			16/02/23	S.F. and B.M. for cantilever beam with concentrated loading and UDL over whole span.
			16/02/23	S.F. and B.M. for simply supported beam with concentrated loading and UDL over whole span.
	2nd	4	21/02/23	**numerical solve.**
			21/02/23	Define bending stress, state bending formula, define section modulus.
			23/02/23	section modulus for rectangular section, I section, T section
			23/02/23	**Numerical solve.**
	3rd	2	28/02/23	Explain concept of torsion, application of torsion, torsion formula.
			28/02/23	define polar modulus.
MARCH	4th	2	2/3/2023	polar modulus for various sections links, circular section (solid and hollow)
			2/3/2023	**numerical solve on torsion formula.**
	5th	2	9/3/2023	**UNIT 2: AIR COMPRESSORS** Industrial use of compressed air, define air compressor
			9/3/2023	classify air compressor
	6th	4	14/03/23	working principle of air compressor.
			14/03/23	explain the working principle of screw compressor
			16/03/23	working principle of single and double stage reciprocating air compressor.

			16/03/23	working principle of double stage screw air compressor.
	7th	4	21/03/23	define volumetric efficiency, derivation of volumetric efficiency
			21/03/23	numerical solve on volumetric efficiency.
			23/03/23	care and maintenance procedure of air compressor
			23/03/23	class test 1
	8th	2	28/03/23	UNIT-3 DIESEL ENGINE: Operation of diesel engine.
			28/03/23	care and maintenance procedure of diesel engine.
APRIL	9th	4	4/04/2023	cooling system of diesel engine.
			4/04/2023	cooling system of diesel engine.
			6/04/2023	working of fuel injection pump.
			6/04/2023	state various safety features of diesel engine for underground use.
	10th	4	11/04/2023	Explain PV and TS diagram for diesel engine.
			11/04/2023	Explain PV and TS diagram for diesel engine.
			13/04/23	Define IHP, BHP, Mechanical efficiency and thermal efficiency.
			13/04/23	REVISION
	11th	4	18/04/23	UNIT-4 THEORY OF MACHINE: Introduction, define: - kinematics link, Kinematic pair,
			18/04/23	Kinetic chain, mechanism
			20/04/23	Inversion
				explain working of four bar link mechanism.
				class test 2
	12th	4	25/04/23	explain the velocity diagram for crank and connecting rod mechanism
			25/04/23	explain the velocity diagram for crank and connecting rod mechanism
			27/04/23	explain the acceleration diagram for crank and connecting rod mechanism
			27/04/23	explain the acceleration diagram for crank and connecting rod mechanism.

MAY	13th	4	2/05/2023	**UNIT-5 FRICTION CONCEPT:** Explain the working of multiple collars bearing
			2/05/2023	explain the working of conical pivot bearing
			4/05/2023	explain friction in screw jack
			4/05/2023	explain friction in clutches.
	14th	4	9/05/2023	explain the working of journal bearing
			9/05/2023	explain roller and ball bearing
			11/05/2023	explain working of absorption type dynamometer
			11/05/2023	**UNIT-6 POWER TRANSMISSION: Introduction, velocity ratio, length of belt, ratio of tensions of a belt drive**
	15th	4	16/05/23	derive the relation of power transmitted through belt drive.
			16/05/23	find width of belt required.
			18/05/23	numerical solve.
			18/05/23	concept of rope drive, state uses of belt and chain drive
	16th	4	23/05/23	**UNIT-7 GOVERNORS AND FLY WHEEL:** State the function of governor.
			23/05/23	define: - sensitivity, stability, isochronism, hunting. Differentiate between fly wheel and governors.