Lesson Plan.

Discipline: **Mechanical Engineering**		Semester: **5TH**		Faculty: **Dr .Niharika Mohanta**
Subject: **Design of Machine elements (TH2)**		No of day/week of class allotted: **4 Periods**		Semester starts from-**15/09/2022 To:21/12/2022**
MONTH	**WEEK**	**AVAILABILITY OF CLASSES**	**CLASS DAY**	**THEORY TOPICS TO BE COVERED**
September	1st	02	15/09/2022	Briefing about the syllabus. **Module 1:Introduction** Introduction to Machine Design and its Classification.
			15/09/2022	Different mechanical engineering materials used in design with their uses and their mechanical and physical properties
	2nd	04	19/09/2022	Different mechanical engineering materials used in design with their uses and their mechanical and physical properties
			20/09/2022	Concept of Working stress, yield stress, ultimate stress & factor of safety
			22/09/2022	Stress –strain curve for M.S & C.I.
			22/09/2022	Modes of Failure (By elastic deflection, general yielding & fracture)
	3rd	04	26/09/2022	Factors governing the design of machine elements.
			27/09/2022	Design procedure.
			29/09/2022	Revision
			29/09/2022	**Module 2:Design of fastening elements:** Introduction
October	4th	NA	NA	NA
	5th	04	10/10/2022	Joints and their classification.
			11/10/2022	Types of welded joints
			13/10/2022	Advantages of welded joints over other joints.
			13/10/2022	Design of welded joints(Lap joint and Butt joint)
	6th	04	17/10/2022	Design of welded joints for eccentric loads
			18/10/2022	Solve numerical on Welded Joint
			20/10/2022	Types of riveted joints and types of rivets.
			20/10/2022	Failure of riveted joints.
	7th	03	25/10/2022	Determination of strength & efficiency of riveted joints
			27/10/2022	Design of riveted joints (Longitudinal joint and circumferential joint)
			27/10/2022	Design of riveted joints for pressure vessel. Solve numerical on Riveted Joints.
			29/10/2022	**Class test 1 (Class test will be conducted on Saturday 2nd half for module 1 and module 2)**
November	8th	03	1/11/2022	Solve numerical on Riveted Joints.
			3/11/2022	Revision
			3/11/2022	**Module 3 : Design of shafts and Keys:** Function of shafts.
	9th	03	7/11/2022	State materials for shafts.
			10/11/2022	Design of solid & hollow shafts to transmit a given power at given rpm based on a) Strength: (i) Shear

				stress,
			10/11/2022	Design solid & hollow shafts to transmit a given power at given rpm based on a) Strength: ii)Combined bending tension
	10th	02	14/11/2022	Numerical
			15/11/2022	Design of solid & hollow shafts to transmit a given power at given rpm based on b) Rigidity: (i) Angle of twist, (ii) Deflection, (iii) Modulus of rigidity
			17/11/2022	**Internal assessment**
			18/11/2022	**Internal assessment**
			19/11/2022	**Internal assessment**
	11th	04	21/11/2022	Standard size of shaft as per I.S
			22/11/2022	Function of keys, types of keys & material of key
			24/11/2022	Failure of key, effect of key way
			24/11/2022	Design of rectangular sunk key considering its failure against shear & crushing
	12th	02	28/11/2022	Design of rectangular sunk key by using empirical relation for given diameter of shaft
			29/11/2022	Specification of parallel key, gib-head key, taper key as per I.S.
			Extra class	Numerical on keys Revision
December	13th	06	01/12/2022	**Module 4 Design of Coupling:** Introduction Design of Shaft Coupling
			01/12/2022	Requirements of a good shaft coupling
			05/12/2022	Types of Coupling.
			06/12/2022	Design of Sleeve or Muff-Coupling.
			08/12/2022	Numerical on Muff-Coupling.
			08/12/2022	Design of Clamp or Compression Coupling.
	14th	04	12/12/2022	Numerical on Compression Coupling.
			13/12/2022	Revision
			15/12/2022	**Module 5:Design a closed coil helical spring:** Types of spring, Materials used for helical spring
			15/12/2022	Standard size spring wire. (SWG), Terms used in compression spring
	15th	02	19/12/2022	Stress in helical spring of a circular wire
			20/12/2022	End connection for helical tension spring
	16th		Extra class	Deflection of helical spring of circular wire
			Extra class	Eccentric loading of spring
			Extra class	Surge in spring, numerical on design of spring.
			Extra class	Numerical on spring.
			Extra class	Revision
			Extra class	Exam oriented unit test

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Lecturer in Mechanical Engg.

16/09/2022

HOD, Mechanical Engg.
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Principal
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