

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF  
ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN  
Session-2023-2024

Discipline: Mechanical Engg. Semester: 5th

Subject: DGME

Name of the Teaching Faculty: Soumya Prakash Rath

Subject: DYME No. of Days/per week class allotted 04

Semester From Date: 01-08-2023 To Date: 30-11-23 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
1	1 <sup>st</sup>	Introduction about Machine Design
	2 <sup>nd</sup>	Classification of Machine Design
	3 <sup>rd</sup>	Discuss about Factors governing design of Machine <sup>Elements.</sup>
	4 <sup>th</sup>	Introduction about Mechanical Engineering Materials
2	1 <sup>st</sup>	Discuss Physical & Mechanical Properties of Materials
	2 <sup>nd</sup>	Discuss different Types of Stress in Machine Parts.
	3 <sup>rd</sup>	Discuss Factor of Safety & Stress-Strain Curve for <sup>mild steel &amp; Cast Iron.</sup>
	4 <sup>th</sup>	Discuss about Different modes of Failure.
3	1 <sup>st</sup>	Discuss about Stress Concentration and Method of <sup>Reducing this.</sup>
	2 <sup>nd</sup>	Problems related to Variable Stresses in Machine <sup>Parts.</sup>
	3 <sup>rd</sup>	Describing General Procedure in Machine Design
	4 <sup>th</sup>	Previous Years Question Solving

Soumya Prakash Ravi  
Signature of the Faculty

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Week	Class Day	Theory /Practical Topics
4	1 <sup>st</sup>	Introduction about Joints & their classification.
	2 <sup>nd</sup>	Discuss about Welded Joints and its classification.
	3 <sup>rd</sup>	Advantages and Disadvantages of welded Joints over other Joints.
	4 <sup>th</sup>	Design of Welded Joints for axially loaded unsymmetrical welded section.
5	1 <sup>st</sup>	Design of Eccentrically loaded welded Joints.
	2 <sup>nd</sup>	Solving Numericals from previous years questions on welded Joints.
	3 <sup>rd</sup>	Introduction of Rivet Joint and its classification.
	4 <sup>th</sup>	Describe Modes of Failure of Riveted Joint.
6	1 <sup>st</sup>	Determine Strength and Efficiency of Riveted Joint.
	2 <sup>nd</sup>	Design of Longitudinal and Circumferential Joint for a Boiler
	3 <sup>rd</sup>	Design of Riveted Joints for Pressure vessels.
	4 <sup>th</sup>	Solving Numericals from previous years questions on Rivet Joints.

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Semester From Date: 01.08.23 To Date: 30.11.23 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
7	1 <sup>st</sup>	Introduction of Shaft, materials used and its Junction.
	2 <sup>nd</sup>	Design of Solid and Hollow Shaft to transmit Power on Basis of Strength.
	3 <sup>rd</sup>	Design of Shaft on basis of shear stress.
	4 <sup>th</sup>	Design of Shaft on basis of Combined Bending and Twisting moment.
8	1 <sup>st</sup>	Design of shaft on basis of Rigidity.
	2 <sup>nd</sup>	Discuss Standard Size of shaft as Per Indian Standard (IS)
	3 <sup>rd</sup>	Introduction to key, its junction, classification and material used.
	4 <sup>th</sup>	Discuss Failure of key and effect of key ways.
9	1 <sup>st</sup>	Design of Rectangular Sunk key considering failure against shear and crushing
	2 <sup>nd</sup>	Design of Rectangular Sunk key using empirical relation for given diameter of shaft.
	3 <sup>rd</sup>	Discuss Specification of Parallel key, Gib-head key and Pin key as Per Indian Specification.
	4 <sup>th</sup>	Solving Numericals from Previous Years Question on Design of Shaft and key.

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Subject: DGMC No. of Days/per week class allotted 04

Semester From Date: 01-08-23 To Date: 30-11-23 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
10	1 <sup>st</sup>	Introduction to Designing Shaft Coupling.
	2 <sup>nd</sup>	State Requirements of a good Shaft Coupling.
	3 <sup>rd</sup>	Discuss about types of Shaft Coupling.
	4 <sup>th</sup>	Design of sleeve and muff coupling.
11	1 <sup>st</sup>	Design of clamp and compression Coupling.
	2 <sup>nd</sup>	Discuss about Flange Coupling.
	3 <sup>rd</sup>	Solving Numericals for Design of Sleeve and muff Coupling.
	4 <sup>th</sup>	Solving Numericals for Designing Clamp and Compression Coupling.
12	1 <sup>st</sup>	Solving Numericals about Designing Flange Coupling.
	2 <sup>nd</sup>	Solving Previous year Question <del>and</del> about Shaft Coupling.
	3 <sup>rd</sup>	Discuss about Flexible Coupling.
	4 <sup>th</sup>	Solving Numericals of Previous years about Coupling.

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Subject: DME No. of Days/per week class allotted 04

Semester From Date: 01.8.23 To Date: 30.11.23 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
13	1 <sup>st</sup>	Introduction about closed coil helical springs.
	2 <sup>nd</sup>	Classification of Spring
	3 <sup>rd</sup>	Materials used for Helical Spring.
	4 <sup>th</sup>	Discuss Standard Size of spring wire (SWG)
14	1 <sup>st</sup>	Discuss terms used in Compression Springs.
	2 <sup>nd</sup>	Discuss about stresses in Helical springs of circular wire.
	3 <sup>rd</sup>	Discuss about Deflection of Helical springs of circular wire.
	4 <sup>th</sup>	Discuss Eccentric loading and Buckling of Compression Springs.
15	1 <sup>st</sup>	Discuss about Surge in springs.
	2 <sup>nd</sup>	Solve numericals on Design of closed coiled Helical spring.
	3 <sup>rd</sup>	Solving Previous years Question related to Design of closed coil Helical compression spring.
	4 <sup>th</sup>	Previous Years Questions Discussion Element related to all chapters of Design of Machine

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