



Course Outline

| | | | | |
|-----------------------------|---|-----|-----|-------|
| Class: TY B Tech | Name of the Course: Design of Transmission Systems | | | |
| Course Type: PEC-III | Course code: BME6503E | | | |
| | Examination Structure | | | |
| Credits: 03 | IE | MTE | ETE | Total |
| | 20 | 30 | 50 | 100 |

Course Relevance: The course enables the students to design the transmission systems in automobiles and lifting machines.

Pre requisites:

- a. Machine Design b. Kinematics and Theory of Machines c. Heat Transfer

Course Outcome and Mapping with POs and PSOs

| CO | Statement | Learning Level | PO/ PSO Mapped | Tools for direct Assessment |
|----|---|----------------|---------------------|------------------------------------|
| 1 | Design the flexible drives for the industrial applications | Evaluate | PO1, PO2, PO3, PSO1 | IE2, ETE, Case study |
| 2 | Design the automotive clutches and brakes. | Evaluate | PO1, PO2, PO3, PSO1 | IE2, ETE, Case study |
| 3 | Design the helical and bevel gears against fluctuating bending stresses and contact stresses | Evaluate | PO1, PO2, PO3, PSO1 | IE1, MTE, ETE, Case study |
| 4 | Design transmission system in lifting machinery such as worm gearbox and chain drives | Evaluate | PO1, PO2, PO3, PSO1 | IE1, MTE, ETE, Poster presentation |
| 5 | Ability to Design the constant mesh gearboxes for industrial applications. | Apply | PO1, PO2, PSO1 | ETE |
| 6 | Ability to Analyze the power split devices used in HEVs | Analyze | PO1, PO2, PO3, PSO1 | MTE, ETE |

Internal Evaluation

| CO | Statement | IE 1 Planning | IE 2 Planning | MTE |
|----|---|-------------------------------|---------------------------------|-----|
| | Weightages | 10 | 10 | 30 |
| 1 | Design the flexible drives for the industrial applications | | Case study on selection of belt | |
| 2 | Design the automotive clutches and brakes. | | | |
| 3 | Design the helical and bevel gears against fluctuating bending stresses and contact stresses | Case study on design of gears | | MTE |
| 4 | Design transmission system in lifting machinery such as worm gearbox and chain drives | | | MTE |
| 5 | Design the constant mesh gearboxes for industrial applications. | | | |
| 6 | Analyze the power split devices used in HEV | | | MTE |

Rubric for the assessment of Case study

| Parameter/ Marks | 8-10 | 5-7 | 2-4 | 0-1 |
|------------------|---|---|---|--|
| Knowledge | Covers the complete scope and submits a report with appropriate work with clear understanding | Covers the complete scope and submits a report with appropriate work without complete clarity | Covers the scope partially and submits a report with appropriate work without clarity | Covers the scope partially and submits a report without appropriate work without clarity |



Department: Mechanical Engineering

A.Y. 2022-23

Semester: I

Date:26.07.2022

Ref No:

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|-------------------------------------|---|--|--|--|
| Presentation (Skill) | Presents with clarity and answers all the questions asked | Presents with clarity and answers almost all the questions asked | Presents without clarity and answers a few questions asked | Presents without clarity and fails to answer the questions asked |
| Timely Submission (Attitude) | Followed the submission time line | Late by one day | Late by two days | Late by one week |

Teaching Plan for Theory Sessions

| CO/PO | PO1 | PO2 | PO3 | PSO1 | |
|-------|-----|-----|-----|------|----|
| 1 | 2 | 2 | 3 | 1 | 8 |
| 2 | 2 | 2 | 3 | 1 | 8 |
| 3 | 2 | 2 | 3 | 1 | 8 |
| 4 | 2 | 2 | 3 | 1 | 8 |
| 5 | 2 | 3 | | 2 | 7 |
| 6 | 2 | 2 | 1 | 1 | 6 |
| | 12 | 13 | 13 | 07 | 45 |

Marks distribution

| CO | IE1 | IE2 | MTE | ETE |
|--------------|-----|-----|-----|-----|
| Out of | 10 | 10 | 50 | 80 |
| Converted to | 10 | 10 | 30 | 50 |
| 1 | - | 5 | - | 20 |
| 2 | - | 5 | - | 20 |
| 3 | 5 | - | 10 | 5 |
| 4 | 5 | - | 10 | 5 |
| 5 | - | - | - | 25 |
| 6 | - | - | 15 | 10 |



Dr. L.V. Awadhani

Course Faculty & Module Coordinator