Course Code	Course Name	Credits
MEL701	**DESIGN OF MECHANICAL SYSTEMS**	**01**

Objectives:

1. To familiarize with the concept of system and methodology of system design
2. To study system design of various systems such as Gear box, snatch block, belt conveyors, I. C. engine system and pumps
3. 3To familiarize with the standard codes of professional practices in designing the various systems

Outcomes: Upon successful completion of this course, the learner will be able to …

1. Apply the concept of system design.
2. Design of Gear box.
3. Design of hoisting mechanism of EOT crane,
4. Design belt conveyor systems
5. Design engine components such as cylinder, piston, connecting rod and crankshaft
6. Design pumps for the given applications

Term Work:	**Comprises of Part - A & Part -B**
Module	**Details**
Part A	**1. DESIGN AND DETAILED ASSEMBLY DRAWING :**
	a) Computer aided Design and detailed assembly drawing (**A3 size sheets)** of **any one** design problem, from any CAD software
	i) Design of hoisting mechanisms
	ii) Design of belt conveyors
	iii) Design of Engine
	b) Design and detailed assembly drawing (Full Imperial drawing sheet 762x559 mm) of **any one** design problem from the following:
	i) Design of Gear box
	ii) Design of pumps
	2. COURSE PROJECT :
	Students in a group of two to four should be able to apply and integrate the knowledge gained during the course. Design and preparation of working drawings of any system having minimum 5 to 6 components is expected. Course project may be given as development of software program using python, VB, C++, EXCEL etc for mechanical systems
Part B	**ASSIGNMENT :**
	Exercises on following topics in the form of design calculations with sketches and / or drawings.
	1. Methodology & Morphology of design
	2. Design of gearbox (As mentioned in theory)
	3. Design of Hoisting mechanism
	4. Design of Belt conveyor

	5. Engine design (SI/CI engine)
	6. Design of Pump
	The distribution of marks for term work shall be as follows:
	Exercises and Drawing sheets : 10 marks.
	Assignments : 05 marks
	Course Project : 05 marks.
	Attendance : 05 Marks.
	ASSESSMENT :
	End Semester Practical/Oral examination:
	1. Each student will be given a small task of design based on syllabus, which will be assessed by pair of examiners during the oral examination.
	2. Distribution of marks for practical-oral examination shall be as follows:
	Design Task : 15 marks
	Oral : 10 marks
	3. Evaluation of practical/oral examination to be done based on the performance of design task
	4. Students work along with evaluation report to be preserved till the next examination