AE-424: Automobile process control										
L	**T**	**P**	Credit	Area		**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
3	0/1	2/0	4	DEC		15/25	25/-	20/25	40/50	-

Objectives: To understand various methods to control automotive processes, resource planning, operational performance, control system.

AE-424: Automobile process control		Contact Hours
Unit-1	Introduction: Classification/ Specifications of Products. Product life cycle. Product mix. Introduction to product design. Modern product development process. Innovative thinking. Morphology of design	**8**
Unit-2	Resource planning: Aggregate Production Planning – Chase and leveling strategies, MRP, MRP-II, Agile manufacturing Systems	**6**
Unit-3	OPERATIONAL PERFORMANCE Engine performance & operating characteristics, Operation at full load and part load conditions.	**6**
Unit-4	Fuel economy, effect of vehicle condition, tyre and road condition, traffic condition and driving habits on fuel economy, vehicle safety	**8**
Unit-5	CONTROL SYSTEMS Braking arrangements & Characteristics, weight transfer, steering arrangements, rigid & independent suspension, roll centre, torsion bar, stabilizer, radius bar.	**8**
Unit-6	VEHICLE TRANSMISSION PERFORMANCE Characteristics & features of friction clutches, mechanical gear transmission & Epicyclic gear boxes.	**6**
	Total	**42**

Reference Books:

1	Martyr A. J, Plint M. A, "Engine Testing Theory and Practice" 3 rdeditionPublisherButterworth-Heinemann, 2007(ISBN -13: 9780768018509)
2	Gousha H. M,"Engine Performance Diagnosis & Tune Up Shop Manual" PublisherCanfield press (ISBN 978006454
3	Giles J. G, "Vehicle Operation & Performance" Publisher-Iliffe, 1969
4	Crouse. W. H, Anglin. D. L, "Motor Vehicle Inspection", Publisher-McGraw Hill, (ISBN -13: 9780070148130)1978

Course Outcomes

CO1	To study Classification/ and Specifications of Products and Product life cycle
CO2	To discuss Resource planning: APP –MRP, MRP-II, Agile manufacturing Systems
CO3	To explain Engine performance & operating characteristics with different load conditions.
CO4	To describe fuel economy, tyre and road condition, traffic condition and vehicle safety
CO5	To analyze Braking, steering arrangements, rigid & independent suspension
CO6	To apply knowledge on friction clutches, mechanical gear transmission & Epicyclic gear boxes.

CO-PO/PSOMatrix

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	2	0	0	0	0	0	0	2	2	1	1
CO2	3	3	2	3	1	0	0	0	0	0	0	1	2	1	1
CO3	3	3	3	3	1	0	0	0	0	0	0	2	3	3	2
CO4	3	3	3	3	1	0	0	0	0	0	0	1	3	3	2
CO5	2	2	2	2	2	0	0	0	0	0	0	1	2	2	2