

**INDIAN INSTITUTE OF INFORMATION TECHNOLOGY
DESIGN AND MANUFACTURING (IIITD&M) KANCHEEPURAM**

INTRODUCTION OF NEW COURSE

Course Title	Automobile Engineering and Systems	Course No (will be assigned)			
		Structure (LTTC)			
Offered for	UG	Status	Core <input type="checkbox"/>	Elective <input checked="" type="checkbox"/>	
Faculty (Not more than two)	Dr. B.Raja Dr.S. Jayavel	Type	New <input checked="" type="checkbox"/>	Modification <input type="checkbox"/>	
Pre-requisite	COT	To take effect from	August 2010		
Submission date		Date of approval by AAC			
Objectives	The students will be exposed to the basics of automotive mechanics and their working principles. The concepts of steering, cooling system brakes, transmission, vehicle control etc and the importance of various automotive components will be dealt using the cut section models. The role of alternative fuels and pollution free vehicle will also be dealt.				
Contents of the course (With approximate break up of hours) -45 hrs	<p>Power plant: Principles of Engine operation, Engine parts, cooling systems, Lubrication systems, Fuel systems, Emission standard and testing. (16)</p> <p>Structures: Construction, function, loading, principles of suspension, suspension systems and mechanics (6)</p> <p>Transmission systems: Clutch, Flywheel, Gear Boxes - types and construction (7)</p> <p>Vehicle controls: Steering Geometry and Types, Brakes - construction and types (7)</p> <p>Auto electrical and electronics: Battery Generator, Starting Motor, Lighting and Ignition, Electronic Fuel Injection (4)</p> <p>Alternative concepts: Alternative fuels - types, Basics of electric and hybrid vehicles, fuel cells. (5)</p>				
Text Books	<ol style="list-style-type: none"> 1. Heitner J, Automotive Mechanics, 2nd Edn., CBS publisher, 2006. 2. Heisler H, Advanced Engine Technology, 1995, Edward Arnold, 1995. 3. Kirpal singh, Vol I&II, Automobile Engineering, Standard Publishers, 2007. 				
Reference Books	<ol style="list-style-type: none"> 1. Pulkrabek, Willard W., Engineering Fundamentals of the Internal Combustion Engine, 2nd Edn., Prentice Hall, 2003. 2. William Crouse, Automobile Engineering Series, McGraw-Hill, 1988. 3. Newton. K., Steeds. W and Garrett T.K., Motor Vehicles, ELBS, 1985. 4. Automotive Handbook, 3rd Edn., Robert Bosch GmbH, S.A.E. 1993 5. Julian Happian-Smith, Introduction to Modern Vehicle Design, Elsevier, 2000 				