

Course code	Course Name	L-T-P - Credits	Year of Introduction
AU234	VEHICLE SYSTEMS LAB	0-0-3-1	2016
Prerequisite : Nil			
Course Objectives <ul style="list-style-type: none"> To study about hand tools, special purpose tools, and their uses. To familiarize with various systems and components of an automobile. To know about writing technical specifications and description of all types of chassis and transmission components of automobiles, including body and interiors 			
List of Exercises/Experiments (Minimum 12 exercises/experiments are mandatory) <ol style="list-style-type: none"> Servicing of clutch assembly, checking the spring tension of coil springs in spring tester. Dismantling of gear box, inspecting components, servicing, checking the gear ratios. Dismantling of differential assembly, servicing, backlash adjustments, check for drive axis ratio. Servicing of A. C. mechanical fuel pump and testing the pump. Servicing of Carburetor, Study Various Circuits on it, tuning of carburetor. Servicing master and wheel cylinders in hydraulic brake system & bleeding of brakes. Valve timing setting including valve clearance adjustment. Servicing of steering gear box, checking for end play in shafts. Overhauling of a complete strut type suspension system. Dismantle and assemble C.V joint. Also examine a slip joint, U.J cross in propeller shaft. Compression test of petrol and diesel engine. Disassembling cylinder head, decarbonizing, Valve Seat Grinding Disassembling of engine: inspection of engine components, servicing of components, measurement of dimensions of different components of engine, compare with standard specifications, piston ring setting, assembling using special tools. Rectifying the troubles in ignition system, adjusting spark plug and C. B. Point gap, checking ignition timing. Cylinder reconditioning: Checking the cylinder bore, setting the tool, re-boring operation using vertical or portable cylinder reboring machine. Tyre removing, inspection, check for cuts, bulges and excessive tread wear, resetting using pneumatic tyre changer & Wheel balancing: Balancing of wheels by computerized wheel balancing machine. Wheel alignment: Checking the camber, caster, king pin inclination, toe in and toe out with computerized wheel alignment machine. F. I. P Calibration and phasing: Setting the angle of fuel delivery, calibration of fuel quantity by FIP calibrating machine. Brake drum re-conditioning: Brake drum skimming after leveling machine, ovality measurement and setting the tool. Testing of Two wheeled vehicles on chassis dynamometer 			
Expected outcome. After this course the student will be able to <ol style="list-style-type: none"> handle any maintenance issue in a vehicle identify the troubles of the vehicles from the symptoms shown. 			
Text Book: <ol style="list-style-type: none"> Boyce Dwiggins – Automobile Repair guide, Theodor Audel and Co., Indiana – 1978. A. W. Judge – Maintenance of high speed diesel engine, Chapman Hall Ltd. A. W. Judge – Motor vehicle engine servicing 3rd edition, Pitman paper mark, London, 1969. Vehicle service manuals and reputed manufacturers. 			