CRITERION 3	Course Outcomes and Program Outcomes	120

3. COURSE OUTCOMES AND PROGRAM OUTCOMES (120)

3.1 Establish the correlation between the courses and the Program Outcomes (Pos) and the Program Specific Outcomes (PSOs) (20)

(Program outcomes as mentioned in Annexure 1 and Program Specific Outcomes as defined by the Program)

3.1.1 Course Outcomes (COs) (SAR should include course outcomes of one course from each semester of study , however , should be prepared for all courses and made available as evidence if asked)(05)

Course Name: Motor Vehicle Technology II CAY- 2018 Onwards

Course Outcomes After the course completion, students will be able to:	
5.GV.01.1	Understand the fundamental concepts of Internal Combustion Engine in order to solve the related problems.
5.GV.01.2	Understand the concept of automotive vehicle design and diagnosis of different components.
5.GV.01.3	Make repair and maintenance of I.C Engine.
5.GV.01.4	Analyze the possible causes of breakdown of different parts of automtives

Course Name: Automobile Electrical Equipments (5.GV.02)

Course Outcomes After the course completion, students will be able to:	
5.GV.02.1	Students understand the principles and requirements of electrical components of automotives and learning how to assemble and disassemble important parts used in major electrical applications.
5.GV.02.2	Understand the need of electrical equipments for different functioning of automobile ignition and sensor controls.
5.GV.02.3	Diagnose for different possible breakdowns.
5.GV.02.4	Troubleshoot the problems encountered with starting and ignition systems.

Course Name: Two and Three Wheeler (5.GV.03)

Course Outcomes After the course completion, students will be able to:	
5.GV.03.1	Students will able to learn about the functioning and performance evaluation of two stroke and four stroke engines
5.GV.03.2	Students will able to learn and analyze the combustion phenomenon in I.C. engines.
5.GV.03.3	Repair and diagnose different parts of three wheel vehicles
5.GV.03.4	Make improvision in existing design and optimize the same.

Course Name: Modern Electric and Hybrid Vehicles (5.GV.04)

Course Outcomes After the course completion, students will be able to:	
5.GV.04.1	Understand Social, Economical and environmental need of hybrid vehicles.
5.GV.04.2	Understand electric and hybrid vehicle drive train topologies.
5.GV.04.3	Analyze the power flow in drive trains of hybrid vehicles.
5.GV.04.4	Handle the motor and controller requirements in vehicles.
5.GV.04.5	Utilize the concept of regenerative braking system in future vehicles.

Course Name: Metrology and Measuring Instrument Lab (5.VP.01)

Course Outcomes After the course completion, students will be able to:	
5.VP.01.1	Measure the different shapes of machine components.
5.VP.01.2	Calliberate the different instruments at periodic intervals
5.VP.01.3	Make accurate readings of experimental setups
5.VP.01.4	To Familiarize with different instruments, their handling and dimensional conversions.

Course Name: Electric and Hybrid Vehicle Lab (5.VP.02)

Course Outcomes After the course completion, students will be able to:	
5.VP.02.1	Understand working of different configurations of electric vehicles
5.VP.02.2	Understand hybrid vehicle configuration and its components, performance analysis
5.VP.02.3	Understand of electric vehicle drive systems.
5.VP.02.4	Fault diagnosis & repair / replacement of Battery, DC & AC Electrical Machines, Hybrid Electric Vehicles

Course Name: Industrial Management (5.GV.05)

Course Outcomes After the course completion, students will be able to:	
5.GV.05.1	Understand the management of men, materials and machines.
5.GV.05.2	Understand merits and demerits of public sector industry and private sector industry.
5.GV.05.3	To understand the wages and incentive structure of the organizations.
5.GV.05.4	To aware of various industry law, labor law and tax laws.

Course Name: -Total Quality Management (5.GV.06)

Course Outcomes After the course completion, students will be able to:	
5.GV.06.1	**Understand the basic concepts of total quality management**
5.GV.06.2	**Approach the continuous process improvement**
5.GV.06.3	**Implement the use of Management planning tools & Bench marking**
5.GV.06.4	**Understand the procedures of total productive maintenance**
5.GV.06.5	**Process and application of Just In Time.**

Course Code : Enterpreneurship (5.GV.07)

Course Outcomes After the course completion, students will be able to:	
5.GV.07.1	**to learn about the industrial policy.**

5.GV.07.2	**Learn and Analyze the different types of tax systems and acts.**
5.GV.07.3	**Learn about various types of entrepreneurship support systems and startups.**

Course Code : Garage Optimization & Transport Management (5.GV.08)

Course Outcomes **After the course completion, students will be able to understand:**	
5.GV.08.1	**Layout and constructions details of a fully equipped modern garage**
5.GV.08.2	**garage organisation charts and duties to manage the firm.**
5.GV.08.3	**Stores and store-keeping procedure**
5.GV.08.4	**Scheduling and maintenance of a fleet**
5.GV.08.5	**Essentials of driving and traffic regulations.**

Course Code:Project (5.VP.03)

Course Outcomes **After the course completion, students will be able to:**	
5.VP.03	Design and fabricate their ideas into reality.
5.VP.03	Assemble and Dissemble the different components of automotives.
5.VP.03	Analyze the real life problems and diagnose them efficiently.
5.VP.03	Understand the process of project making from raw to finished product.

Course Code: Automobile Electrical System (6.GV.01)

Course Outcomes **After the course completion, students will be able to:**	
6.GV.01.1	Understand construction and working of starting system of automotives.
6.GV.01.2	Understand the diagnosis of ignition system related problems.
6.GV.01.3	Recognize the different types of lighting systems adopted in automotives
6.GV.01.4	Understand the problems related to spark plugs and other accessories.

Course Name: Automobile Drawing and Design (6.GV.02)

Course Outcomes After the course completion, students will be able to:	
6.GV.02.1	Apply Drafting of sectional views of the various assemblies of automobiles.
6.GV.02.2	Draw Free hand line diagram of the fuel supply systems, suspension systems and braking systems etc.
6.GV.02.3	Drafting of sectional views of the assemblies of Master cylinder, Wheel cylinder and Universal joint
6.GV.02.4	Design components of an automobile engine Piston assembly, Connecting rod assembly, Crank shaft and Flywheel.

Course Name: Automobiles Engines (6.GV.03)

Course Outcomes After the course completion, students will be able to:	
6.GV.03.1	Understand various laws of thermodynamics.
6.GV.03.2	Study and analyze the construction features and working principles of different classes of Internal Combustion Engines.
6.GV.03.3	Analyze the performance characteristic of different engine parts.
6.GV.03.4	Understand the concepts of supercharging and scavenging.

Course Name: Automotive Refrigeration & Air- conditioning Subject Code: 6.GV.06

Course Outcomes After the course completion, students will be able to:	
6.GV.06.1	Understand the concepts various cycles used in refrigeration
6.GV.06.2	Study and analyze the construction features and working principles of air conditioning components.
6.GV.06.3	Study the construction features and working principles of different air distribution system.
6.GV.06.4	Understand and analyze the concept of psychrometry process and its use in the air conditioning calculation.
6.GV.06.5	Analyze and design various mechanical elements used in air conditioning like outside and inside design consideration, factors forming the loads and load calculation for automobile.

Course Name: Automotive RAC Lab Subject Code: 6.VP.03

Course Outcomes **After the course completion, students will be able to:**	
6.VP.03.1	Testing on vapour compression and air conditioning rig.
6.VP.03.2	Study and demonstration of various methods of transport, car and bus air conditioning.
6.VP.03.3	Study the different components with the help of cut section of compressor, condenser, evaporator, expansion device, blower fan and heating system. .
6.VP.03.4	Visit to maintenance shop of automotive air conditioning and written report.
6.VP.03.5	To understand the various leak testing and detection methods.