



Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Technology and Science
Choice Based Credit System (CBCS) Scheme in light of NEP-2020
Generic Elective (Even Semester)
(2021-2025)

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL		L	T	P	CREDITS
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*				
BTMEGE24	GE	VEHICLE MAINTENANCE	60	20	20	0	0	3	0	0	3

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):

The objective of the course is to describe the (A) Machine Faults, (B) Measurement of fault (C) Data acquisition and signal processing techniques, (D) Fault Diagnosis.

Course Outcomes (COs):

After completion of this course the students are expected to be able to demonstrate the following:

1. Student will be familiar with vehicle maintenance procedures.
2. Student gain the knowledge of maintenance procedures for various engine component and chassis systems.
3. Students will be able to do maintenance of electrical system.
4. Students will be able to do maintenance of lubrication system, fuel system cooling system etc.

Syllabus

Unit – I

(9 Hrs)

Maintenance Schedules and Records: Importance of maintenance, preventive (scheduled) and breakdown (unscheduled) maintenance, requirements of maintenance, preparation of check lists. Inspection schedule, Maintenance of records and its formats; log sheets and other forms, safety precautions in maintenance.

Unit – II

(10 Hrs)

Engine Diagnostics: Dismantling of engine components and cleaning, cleaning methods, visual and dimensional inspections, minor and major reconditioning of various components, reconditioning methods, engine assembly, special tools used for maintenance overhauling, engine tune up.

Unit – III

(9 Hrs)

Chassis Diagnostics: Diagnostics of automobile clutch and gear box, servicing/maintenance of propeller shaft and differential system. Diagnostics of suspension systems problems, Brake systems problems and their rectification; Steering systems; overhauling and maintenance; Wheel alignment; computerized alignment and wheel balancing

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Unit-IV

(9 Hrs)

Electrical System Maintenance: Testing methods for checking electrical components, checking battery, starter motor, charging systems, DC generator and alternator, ignitions system, lighting systems. Fault diagnosis and maintenance of modern electronic controls, checking and servicing of dash board instruments.

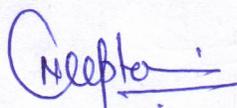
Unit - V

(8 Hrs)

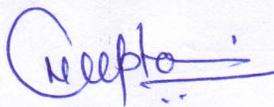
Diagnostics of Other Systems Problems: Servicing and maintenance of fuel system of different types of vehicles, calibration and tuning of engine for optimum fuel supply. Cooling systems problems: water pump, radiator, thermostat, anti-corrosion and antifreeze additives. Lubrication maintenance, lubricating oil changing, greasing of parts; Vehicle body maintenance, Minor and major repairs. Door locks and window glass actuating system maintenance.

Text and References Books:

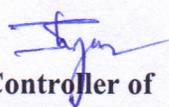
1. "Advanced Engine Performance Diagnosis" by James D.Halderman, PHI, 2011.
2. "Bosch Automotive Handbook", Sixth Edition, 2004.
3. "Maintenance planning and control" by Higgin L.R. Mc Graw Hill, 2007.
4. "Practical Machinery Vibration Analysis and Predictive Maintenance" by C. Scheffer & Paresh Girdhar; Elsevier, 2004.
5. "Vehicle Maintenance and Garage Practice" by Jigar A. Doshi, D.U.Panchal and J.P.Maniar, PHI Learning Pvt. Ltd, 2014.
6. "Advanced automotive fault diagnosis" by Tom Denton, Elsevier BH, 2006.



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