Program Name : Diploma in Automobile Engineering

Program Code : AE

Semester : Fifth

Course Title : Transport Management and Motor Vehicle Act

Course Code : 22557

1. RATIONALE

The growth of any country mainly depends on transportation of the passengers as well as Goods. The Automobile technologist can play key role in management of various transport organization. The transport industry provides good employment opportunities for Automobile Diploma Engineer as service engineer, fleet manager and depot manager. The Automobile Diploma Engineer requires in-depth knowledge of Motor vehicle act, rules, record keeping, estimation and valuation of vehicle, standard operating procedures and effective driving skills for deciding various transport related policies, fulfilling legal compliances, providing quality service, economic feasibility while working in transport industry.

2. COMPETENCY

The aim of this course is to help the student to attain the following industry identified competency through various teaching learning experiences:

- **Use relevant management principles in Motor Transport industry.**

3. COURSE OUTCOMES (COs)

The theory, practical experiences and relevant soft skills associated with this course are to be taught and implemented, so that the student demonstrates the following ***industry oriented*** COs associated with the above mentioned competency:

a. Interpret the Motor Vehicle Act and Traffic Rules.
b. Implement concept of Taxation and Insurance in vehicle registration.
c. Implement the business of buying and selling of vehicles.
d. Select suitable mode of transportation and vehicle as per requirement.
e. Identify role of various research organizations in Motor Industry.

4. TEACHING AND EXAMINATION SCHEME

Teaching Scheme			Credit (L+T+P)	Examination Scheme													
				Theory							Practical						
L	T	P		Paper Hrs.	ESE		PA		Total		ESE		PA		Total		
					Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
3	-	-	3	3	70	28	30*	00	100	40	--	--	--	--	--	--	

(*): Under the theory PA; Out of 30 marks, 10 marks of theory PA are for micro-project assessment to facilitate integration of COs and the remaining 20 marks is the average of 2 tests to be taken during the semester for the assessment of the UOs required for the attainment of the COs.

***Legends: L**-Lecture; **T** – Tutorial/Teacher Guided Theory Practice; **P** - Practical; **C** – Credit, **ESE** - End Semester Examination; **PA** - Progressive Assessment.*

5. COURSE MAP (with sample COs, and topics)

This course map illustrates an overview of the flow and linkages of the topics at various levels of outcomes (details in subsequent sections) to be attained by the student by the end of the

course, in all domains of learning in terms of the industry/employer identified competency depicted at the centre of this map.

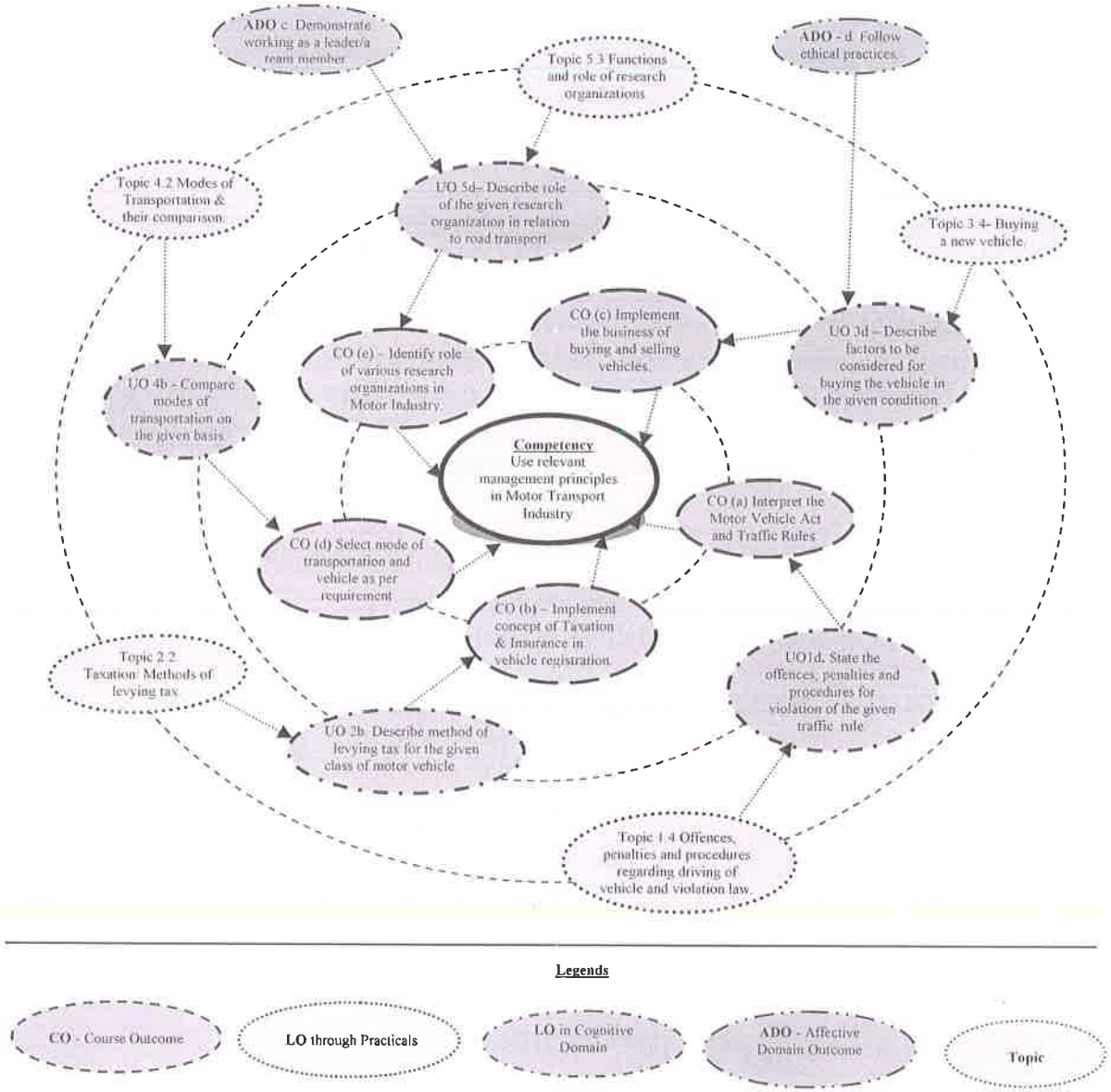

Figure 1 - Course Map

6. SUGGESTED PRACTICALS/ EXERCISES

Not applicable

7. MAJOR EQUIPMENT/ INSTRUMENTS REQUIRED

Not applicable.

8. UNDERPINNING THEORY COMPONENTS

The following topics are to be taught and assessed in order to develop the sample UOs given below for achieving the COs to attain the identified competency. More UOs could be added.

Unit	Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Unit – I Introduction to Motor Vehicle Acts S	1a. Interpret the given terms used in Motor Vehicle Act. 1b. Describe procedure to obtain the given type of license according to Motor Vehicle Act. 1c. Describe procedure for registration of the given type of motor vehicle according to Motor Vehicle Act. 1d. State the offences, penalties and procedures for violation of the given traffic rule. 1e. Describe the given advanced traffic control system with its features.	1.1 **Motor Vehicle Act:** Brief description, Short titles and Definitions of terms used. 1.2 **Licensing of Drivers and conductors of Motor Vehicle:** i. **Driver's License** - Necessity, Eligibility criteria, Documents required, Procedure to obtain Learner's License and Permanent Driving License, Driving Test, Validity and Renewal of driving license, Restriction on use of learner's license as a driving license, Addition of class to the driving license, Suspension or cancellation of driving license. ii. **Conductor's License** – Necessity, Eligibility criteria, Application for grant of conductor's license, Revocation of Conductor's License, Power to disqualify conductor's license, Renewal of conductor's license. iii. Duties and responsibilities of driver and conductor. 1.3 **Registration of Vehicles:** Necessity of registration, Exemption from registration, Procedure of registration of motor vehicles, Display of Registration mark, Validity of certificate of registration, Renewal of registration, Temporary registration, Transfer of Ownership of Motor Vehicle, Suspension and cancellation of registration. 1.4 **Offences, Penalties :-** Regarding driving of vehicle and violation of law. 1.5 **Transport Authorities and Control of Transport:** i. Transport authorities and their functions. ii. Necessity of Permits, Types of Permit -Stage Carriage Permit, Contract Carriage Permit, Private Service Vehicle Permit, Goods Carriage Permit, Tourist permit, National Permit, Temporary Permit, Exemption from Permit. 1.6 **Control of Traffic:** Traffic Signs

Unit	Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
		and Signals, Vehicle navigation system, GPS, Advance traffic control devices, intelligent transport system, Smart card.
Unit –II Construction of Motor Vehicle, Taxation and Insurance	2a. Describe general provisions regarding construction and maintenance of the given class of motor vehicle. 2b. Describe method of levying tax for the given class of motor vehicle. 2c. Describe significance of the given type of motor vehicle insurance. 2d. Describe the procedure to claim compensation in the given situation.	2.1 **Construction of Motor Vehicle:** Overall dimensions, General provision regarding construction and maintenance of motor vehicle, Power of state and central government to make rules. 2.2 **Taxation:** Objectives, Basis of taxation, Methods of levying tax to motor vehicle, Tax structure for motor vehicles in Maharashtra, Modes of payment of the tax, Tax exemption, Refund of tax. 2.3 **Insurance:** Types of Motor Vehicle insurance – Comprehensive and Third Party insurance, Procedure to claim compensation, Motor Accident Claim Tribunal, Liability without fault in certain cases, Provision of compensation in Hit and Run case.
Unit– III Estimation and Valuation of Vehicle	3a. Describe duties and responsibilities of a surveyor in the given condition. 3b. Prepare accident survey report in the given situation. 3c. Describe the significance of warranty for the given vehicle. 3d. Describe factors to be considered for buying the given type of vehicle in the given condition. 3e. Describe procedure for selling the given type of vehicle.	3.1 **Role of surveyor**: Eligibility for surveyor, Procedure to obtain surveyor's licence, Duties and responsibilities of Surveyor. 3.2 Procedure of accident survey and valuation of vehicle, Accident survey report. 3.3 Importance of warranty system and protection of law. 3.4 **Buying a new vehicle:** Factors to be considered -Ex-showroom price and on road price, use of vehicle, when and where to buy. 3.5 **Buying used vehicles:** When and where to buy: Dealers, used car firms, Private sellers, Garages, Auctions. 3.6 **Sale of used vehicles:** Procedures - Before, During and after sale of vehicle, Auctions, Garages, Private sale, preparing the vehicle documents, selling price.

Unit	Unit Outcomes (UOs) (in cognitive domain)	Topics and Sub-topics
Unit IV- Passenger and Goods transport operation.	4a. Interpret the given terms used in transport operation. 4b. Compare different modes of transportation for the given conditions. 4c. State the criteria used for vehicle selection for the given transport operation. 4d. Describe services provided by transport organization to the given stakeholders. 4e. Describe factors considered in Bus scheduling for the given requirement. 4f. Draw a layout of bus depot for the given facilities. 4g. Explain the significance of records kept in the given transport organization	4.1 **Terms used in transportation**: Transport vehicle, Public service vehicle, Goods vehicle, Public place, Depot, Route, Trip, crew, Time table, Vehicle schedule, Fare. 4.2 Modes of transportation and their comparison. 4.3 **Basic elements in Transport Management** – Market Potential, Selection of vehicle, Organization setup, Legal compliance, Policies of transport organization towards Passenger and employee service. 4.4 **Bus and Crew scheduling:** Basic factors in bus, crew (staff) scheduling. 4.5 **Bus depot layout:** Site selection for depot, Layout, Passenger amenities and infrastructural facilities required. 4.6 **Record Keeping:** Log book, Trip operational sheet, Vehicle ledger, Truck history card, Monthly operational sheet, Goods consignment note, various types of bookings.
Unit-V Motor Transport and Research organizations	5a. Draw organizational structure of the given transport organization. 5b. Explain the working of the given transport organization with sketch. 5c. Explain the role of automobile engineer in the given organization with justification. 5d. Describe role of the given research organization in relation to road transport.	5.1 **Structure and working of Transport Organizations** - MSRTC, BEST. 5.2 **Role of diploma automobile engineer in Motor Transport Industry.** 5.3 **Functions and Role of Research Organizations:** Central Institute of Road Transport, Automotive Research Association of India, Vehicle Research Development and Establishment, Central Road Research Institute, Petroleum Conservation and Research Association.

Note: To attain the COs and competency, above listed UOs need to be undertaken to achieve the 'Application Level' of Bloom's 'Cognitive Domain Taxonomy'.

9. SUGGESTED SPECIFICATION TABLE FOR QUESTION PAPER DESIGN

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
I	Introduction to Motor Vehicle Act.	16	04	08	08	20
II	Construction of Motor Vehicle, Taxation and Insurance	06	02	02	08	12
III	Estimation and Valuation of Vehicle	06	02	04	06	12

Unit No.	Unit Title	Teaching Hours	Distribution of Theory Marks			
			R Level	U Level	A Level	Total Marks
IV	Passenger and Goods Transport Operation.	14	02	04	10	16
V	Motor Transport and Research organizations	06	02	04	04	10
Total		**48**	**12**	**22**	**36**	**70**

Legends: *R=Remember, U=Understand, A=Apply and above (Bloom's Revised taxonomy)*

Note*: This specification table provides general guidelines to assist student for their learning and to teachers to teach and assess students with respect to attainment of UOs. The actual distribution of marks at different taxonomy levels (of R, U and A) in the question paper may vary from above table.*

10. SUGGESTED STUDENT ACTIVITIES

Other than the classroom and laboratory learning, following are the suggested student-related ***co-curricular*** activities which can be undertaken to accelerate the attainment of the various outcomes in this course: Students should conduct following activities in group and prepare reports of about 5 pages for each activity, also collect/record physical evidences for their (student's) portfolio which will be useful for their placement interviews:

a. Prepare a report by collecting different forms used in RTO office and fill them.
b. Prepare report on Traffic signs and Signals.
c. Prepare a report on buying or selling a old vehicle

11. SUGGESTED SPECIAL INSTRUCTIONAL STRATEGIES (if any)

These are sample strategies, which the teacher can use to accelerate the attainment of the various learning outcomes in this course:

a. Massive open online courses (***MOOCs***) may be used to teach various topics/sub topics.
b. ***'L' in item No. 4*** does not mean only the traditional lecture method, but different types of teaching methods and media that are to be employed to develop the outcomes.
c. About ***15-20% of the topics/sub-topics*** which is relatively simpler or descriptive in nature is to be given to the students for ***self-directed learning*** and assess the development of the COs through classroom presentations (see implementation guideline for details).
d. With respect to item No.10, teachers need to ensure to create opportunities and provisions for ***co-curricular activities***.
e. Guide student(s) in undertaking micro-projects.
f. Demonstrate students thoroughly before they start doing the practice.
g. Encourage students to refer different websites to have deeper understanding of the subject.
h. Observe continuously and monitor the performance of students in Lab.
i. Demonstrate students thoroughly before they start doing the practice.
j. Encourage students to refer different websites to have deeper understanding of the subject.

12. SUGGESTED MICRO-PROJECTS

Only one micro-project is planned to be undertaken by a student that needs to be assigned to him/her in the beginning of the semester. In the first four semesters, the micro-project are group-based. However, in the fifth and sixth semesters, it should be preferably be ***individually***

undertaken to build up the skill and confidence in every student to become problem solver so that s/he contributes to the projects of the industry. In special situations where groups have to be formed for micro-projects, the number of students in the group should ***not exceed three.***

The micro-project could be industry application based, internet-based, workshop-based, laboratory-based or field-based. Each micro-project should encompass two or more COs which are in fact, an integration of PrOs, UOs and ADOs. Each student will have to maintain dated work diary consisting of individual contribution in the project work and give a seminar presentation of it before submission. The total duration of the micro-project should not be less than ***16 (sixteen) student engagement hours*** during the course. The student ought to submit micro-project by the end of the semester to develop the industry oriented COs.

A suggestive list of micro-projects is given here. Similar micro-projects could be added by the concerned faculty:

a. Registration Process of Motor Vehicle – Steps involved in registration process of given class of motor vehicle.
b. Modern traffic management: Case study of implemented modern traffic management system.
c. Transfer of ownership: Formalities involved in the given case of transfer of ownership (Examples- Within state/region, Interstate, Class of vehicle, change of owner)
d. Transport Organization Management: Passenger transport or Goods Transport organization – Relevant resource management.

13. SUGGESTED LEARNING RESOURCES :

S. No.	Title of Book	Author	Publication/ISBN NO.
1	Passenger Amenities in STU	Sudarsanam, P.	Manual of Central Institute of Road Transport, Pune.
2	Bus station Management	Sudarsanam, P.	Manual of Central Institute of Road Transport, Pune.
3	Bus and Crew Scheduling	Sudarsanam, P.	Manual of Central Institute of Road Transport, Pune.
4	Central M. V. Rules 1989	Ministry of Transport, Central Government.	Govt. of India.
5	Bus operation	Kitchin, L. D.	Iliffe and Sons Ltd. London, 2nd Edition,1952, ISBN No.B0007J9ZJ6
6	Bus and Coach Operation	Rex W., Faulks	Butterworth-Heinemann, 1987.1st edition, ISBN No.9780408028103
7	Motor Vehicle Act and Transport Management	Khilery, V.S; Sharma, Satpal; Gupta, Shaman	Ishan Publications, 1st edition ISBN No.13: 978-9381551950

14. SOFTWARE/LEARNING WEBSITES

a. https://transport.maharashtra.gov.in/1035/Home
b. https://parivahan.gov.in/sarathiservice7/stateSelection
c. https://parivahan.gov.in/sarathiservice7/sarathiHomePublic
d. https://parivahan.gov.in/vahanservice/vahan/ui/statevalidation/homepage.xhtml