

For Syllabus, Question Papers, Notes & many More

AT6801 VEHICLE BODY ENGINEERING

DETAILED SYLLABUS

UNIT I CAR BODY DETAILS

Types of Car body - Saloon, convertibles, Limousine, Estate Van, Racing and Sports car – Visibility regulations, driver's visibility, improvement in visibility and tests for visibility. Driver seat design –Car body construction- Various panels in car bodies. Safety aspect of car body.

UNIT II BUS BODY DETAILS

Types of bus body: based on capacity, distance traveled and based on construction– Bus body lay out for various types, Types of metal sections used – Regulations – Constructional details: Conventional and integral. driver seat design- Safety aspect of bus body.

UNIT III COMMERCIAL VEHICLE DETAILS

Types of commercial vehicle bodies - Light commercial vehicle body. Construction details of commercial vehicle body - Flat platform body, Trailer, Tipper body and Tanker body – Dimensions of driver's seat in relation to controls – Drivers cab design - Regulations.

UNIT IV VEHICLE AERODYNAMICS

Objectives, Vehicle drag and types. Various types of forces and moments. Effects of forces and moments. Side wind effects on forces and moments. Various body optimization techniques for minimum drag. Wind tunnels – Principle of operation, Types. Wind tunnel testing such as: Flow visualization techniques, Airflow management test – measurement of various forces and moments by using wind tunnel.

UNIT V BODY MATERIALS, TRIM, MECHANISMS AND BODY REPAIR

Types of materials used in body construction-Steel sheet, timber, plastics, GRP, properties of materials. Body trim items-body mechanisms.Hand tools-power tools-panel repair-repairing sheet metal-repairing plastics-body fillers-passenger compartment service- corrosion: Anticorrosion methods, Modern painting process procedure-paint problems.

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TEXT BOOKS

1. Powloski, J., "Vehicle Body Engineering", Business Books Ltd., 1998.
2. James E Duffy, "Body Repair Technology for 4-Wheelers", Cengage Learning, 2009.

REFERENCES

1. Giles, G.J., "Body construction and design", Illiffe Books Butterworth & Co., 1991.
2. John Fenton, "Vehicle Body layout and analysis", Mechanical Engg. Publication Ltd., London, 1992.
3. Braithwaite, J.B., "Vehicle Body building and drawing", Heinemann Educational Books Ltd., London, 1997.
4. Dieler Anselm., The passenger car body, SAE International, 2000.

OBJECTIVES

The main objective of this course is to impart knowledge in the construction of vehicle, aerodynamic, concept, paneling of passenger car body trim. At the end of the course the student will be well versed in the design and construction of external body of the vehicles.