

GUJARAT TECHNOLOGICAL UNIVERSITY

Diploma in Automobile Engineering

Semester: 3

Subject Code

Subject Name AUTOMOBILE TRANSMISSION & MECHANISM

Sr. No.	Course content
1.	CLUTCH : Necessity of clutch, Types of clutch, Constructional and functional details of clutch., Construction and functional details of clutch actuating mechanism, Constructional and functional details of fluid coupling
2.	GEAR BOX : Necessity of gearbox, various resistance on vehicle, Types of gear box, Constructional and functional details of Sliding mesh, Constant mesh, Synchro mesh, Epi-cyclic train & automatic transmission, Gear shifting mechanism, Torque converter and overdrive.
3.	PROPELLER SHAFT & UNIVERSAL JOINT : Necessity of propeller shaft, universal joint and slip joint, Constructional & functional details of various types of propeller shaft, various types of universal joints
4.	REAR AXLE ASSEMBLY : Necessity of final drive, Types of final drive, Constructional & functional details of final drive, Necessity of differential, Constructional & functional details of differential, Types of axle housing, Function of axle housing and different types of axle mounting
5.	FRONT AXLE AND STEERING MECHANISM : Necessity of steering geometry, Types of front axle, Types of steering linkages, Types of steering gear box, Wheel alignment and wheel balancing, Power steering, Effect of under steer and over steering, Steering lock and turning circle radius, Front and four wheel drive.
6.	BRAKES : Necessity of brakes technically and statutory, Types of brakes, Constructional and functional details of braking system, Braking Mechanism, Brake setting, Modern development in brakes.
7.	SUSPENSION SYSTEM : Necessity of suspension system, Types of suspension system, Types of spring, Constructional and functional details of various types of suspension system, Necessity of shock absorber, Constructional and functional details of shock absorber

8.	WHEELS AND TYRES : Various types of wheel, Salient features of various types of wheel, Arrangement of dual disc. Salient features of different types of rims, Types of tyres, Constructional details of tyres, Tyre retraining procedure, Rating of tyre, Factors affecting life of tyre.
9.	CHASSIS AND FRAME : Different lay out of chassis, Different types of frame, Lubrication of chassis

SUGGESTIVE LIST OF LABORATORY EXPERIMENTS :

1. Demonstration of clutches
2. Demonstration of Gear boxes
3. Demonstration of overdrive mechanism
4. Demonstration of torque conversion and fluid coupling
5. Demonstration of Automatic transmission
6. Demonstration of propeller shaft and universal joint
7. Demonstration of differential
8. Demonstration of brakes (Hydraulic, Mechanical, Air brake,ABS)
9. Demonstration of steering system
10. Demonstration of power steering
11. Demonstration of suspension systems
12. Demonstration of wheels and tyres
13. Demonstration of chassis and frame

Reference Books:

Sr.No.	Name of Book	Author
1.	Transmission and power Train	W.H.Crouse
2.	Automotive Mechanics	Newton & Steeds
3.	Motor Manual	A.W.Judge
4.	Automobile Engineering	R. B. Gupta
5.	Automobile Engineering	K. M. Gupta
6.	Motor Automotive Technology	Anthony E.Schwaller
7.	Automobile Engineering	G. B. S. Narang
8.	Automobile Engineering (Vol-2)	Anil Chhikara