PEOPLE'S UNIVERSITY, BHOPAL

(Applicable for Admitted from Academic Session 2019-20 onwards)

Programme: **Diploma in Engineering** **Semester –V**

Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External (70)	Internal (30)	Total (100)	External	Internal	Total
DME15011	Industrial Engineering & Management	3	1	-			Min: 40 (D Grade)	Nil	Nil	Nil

Duration of Theory (Externals): 3 Hours

Theory Internal- Max Marks: 30	Best of Two Mid Semester Test – Max Marks: 15	Assignment/Quiz/Attendance Max. Marks: 15
Practical Internal Max Marks: Nil	Lab work & Sessional – Max Marks: Nil	Assignment / Quiz/Attendance Max. Marks: Nil

Pre-Requisite	Student should have basic knowledge of engineering principles.
Course Outcome	1. An ability to understand the different methods and parameters to optimize the industrial problems and also work for product design and development.
	2. Understand different concepts regarding Organization and Productivity in industries.
	3. Manage and implement different concepts involved in work and method study and understanding of work contents in different situations.

Unit	Contents	Marks Weightage
I	**Industrial Engineering:** Definition, Development, Object, Contribution & Function of Industrial Engineering, Place of Industrial Engineering in an Organization, Management Ergonomics, Objectives and need for Maintenance, Types of Maintenance, Breakdown, Predictive and Preventive Maintenance, Condition Based Maintenance System..	**14**
II	**Work Study:** Introduction and Definition of Work-Study, Productivity and Work Study, Prerequisites of Conducting a Work Study. **Method Study:** Introduction, Definition, Procedure, Recording Techniques, Flow Process Charts, Critical Examination by Questioning Technique, Man-Machine Chart, Motion Economy Principles, Micro Motion Study –Therbligs. **Work Measurement:** Definition, Objectives, Techniques of Work Measurement, Selection & Timing the Job, Rating, Allowances,	**14**
III	**Material Management:** Objectives and Functions of Materials Management, Organization of Materials Management, MRP I And MRP II.	**14**
IV	**Materials Handling:** Principles of Materials Handling, Unit Load, Types of Materials Handling Equipment, Relation between Materials Handling and Plant Layout.	**14**
V	**Production Planning and Control:** Functions, Organization, Master Scheduling, Aggregate Planning and Strategies, Materials Requirement Planning, Product Structure Tree, Routing, Loading, Scheduling – Forward and Backward, Dispatching – Priority Rules, Sequencing, Gantt's Chart, Bar Chart, Flow Process Chart	**14**

Text Book/References Books/ Websites:

1. P. Ramamurty ; Production and Operation Management ; New Age International Publication.
2. Martand &Telsang ; Industrial Engineering & Production Management ; S. Chand & Co.,
3. R.P. Mohanty & S G Deshmukh ; Supply Chain Management; Indian Text Edition.
4. R. Mayer ; Production And Operation Management ; Tata Mcgraw Hill Publication.
5. Juran And Gryna ; Quality Planning And Analysis; Tata Mcgraw Hill Publication

Suggested List of Laboratory Experiments:- (Expandable): Nil

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Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External (70)	Internal (30)	Total (100)	External	Internal	Total
DME15012	Machine Tool Technique & Maintenance	3	1	-			Min: 40 (D Grade)	Nil	Nil	Nil

Duration of Theory (Externals): 3 Hours

Theory Internal- Max Marks: 30	Best of Two Mid Semester Test – Max Marks: 15	Assignment/Quiz/Attendance- Max. Marks: 15
Practical Internal Max Marks: Nil	Lab work & Sessional – Max Marks: Nil	Assignment / Quiz/Attendance- Max. Marks: Nil

Pre-Requisite	Student should have basic knowledge of engineering principles.
Course Outcome	1. Ability to understand about machine tool and cutting techniques.
	2. To understand maintenance and availability of machine.
	3. Study of different material for tools.

Unit	Contents (Theory)	Marks Weightage
I	**Machine Tools**: Introduction, Classification, Construction And Specifications of Lathe, Drilling Machine, Milling Machine, Boring Machine, Broaching Machine, Shaping Machine, Planning Machine, Grinding Machine.	**14**
II	**Machining Processes**: Introduction, Types of Motions in Machining, Turning and Boring, Shaping, Planning and Slotting, Thread Cutting, Drilling and Reaming, Milling, Broaching, Gear Cutting and Grinding, Machining Parameters and Related Quantities.	**14**
III	**Cutting Tool Materials, Geometry and Surface Finish**: Introduction, Desirable Properties and Characteristics of Cutting Tool Materials, Cutting Tool Geometry, Cutting Fluids and its Applications, Surface Finish, Effect of Machining Parameters on Surface Finish.	**14**
IV	**Industrial Maintenance:** Maintenance - basic concepts, purpose, functions and objectives of maintenance. Types of maintenance, Inter-relationship between Productivity, Quality, Reliability and Maintainability, Bathtub Curve, Maintenance Planning and Scheduling.	**14**
V	**Maintenance Organization**: Objectives and Characteristics -Centralized and Decentralized Maintenance. **Maintenance Costs:** Classification of Maintenance Costs – Maintenance Cost Analysis – Cost Effectiveness Analysis. **Human Factors in Maintenance:** Manpower Planning for Maintenance – Objectives and Stages of Manpower Planning – Training for Maintenance Personnel.	**14**

Text Book/References Books/ Websites:

1. Hajra Chaudhary; Workshop Technology Vol. I & II; Media Promoters & Publishers Pvt.
2. Rusinoff; Manufacturing Processes; Tata Mcgraw Hill Publishing Co. Ltd.
3. R. K. Jain ; Production Technology; Khanna Publishers, Delhi
4. B. S. Raghuvanshi; Workshop Technology Vol. I And II; Dhanpat Rai & Sons.
5. H.P. Garg ; Industrial Maintenance ; S. CHAND & Company Ltd .
6. H.W. Heinrich; Industrial Accident Prevention; Tata Mc Graw Hill Book Company.

Suggested List of Laboratory Experiments :- (Expandable): Nil

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Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External	Internal	Total (100)	External	Internal	Total
DME15013	I C Engines	3	1	-	(70)	(30)	Min: 40 (D Grade)	Nil	Nil	Nil

Duration of Theory (Externals): 3 Hours

Theory Internal- Max Marks: 30	Best of Two Mid Semester Test – Max Marks: 15	Assignment/Quiz/Attendance Max. Marks: 15
Practical Internal Max Marks: Nil	Lab work & Sessional – Max Marks: Nil	Assignment / Quiz/Attendance Max. Marks: Nil

Pre-Requisite	Student should have general knowledge Mechanical Engineering.
Course Outcome	1. To understand working of various types of engines.
	2. To have firsthand knowledge of working of various systems in a vehicle.
	3. Develop a strong base to understand future developments in the field of engines

Unit	Contents (Theory)	Marks Weightage
I	**Internal Combustion Engine**: Introduction to S.I. And C.I. Engines, Two and Four Stroke Cycles, Actual Cycle, Determination of Engine Size, Engine Speed, Fuel Consumption, Mean Effective Pressure, Efficiency, Factors Effecting Efficiency, Heat Balance, Cylinder Arrangement, Valve Timing.	**14**
II	**Combustion in SI Engines :** Flame Wave Propagation, Ignition Lag, Knocking, Effect of Engine and Fuel Variables on Knocking Tendency, Knock Rating of Volatile Fuels, Octane Number, H.U.C.R., Pre-Ignition, its Causes and Remedy, Valve Timing and Firing Order.	**14**
III	**Combustion in C.I. Engines:** Combustion Phenomenon in C.I. Engines, Indicator Diagrams, Various Stages of Combustion, Delay Period, Detonation, Cetane Number, Knock Inhibitors, Types of Combustion Chambers, Simple Problems on Fuel Injection, Rotary I. C. Engines, Their Working.	**14**
IV	**I.C. Engine System:** Fuel Injection in SI Engine (MPFI & TBI), Theory of Carburetion, Simple Problems on Carburetion. Fuel Metering in CI Engines: Fuel Injection in CI Engine. Conventional Fuels And Alternate Fuels. Engine Exhausts Emission, Carbon Monoxide, Unburnt Hydro Carbon, Oxides of Nitrogen, Smoke, Density, Measurement and Control.	**14**
V	**Ignition Systems, Supercharging:** Introduction to Ignition Systems, Cooling, Exhaust/Scavenging and Lubrication System, Supercharging: Effect of Attitude on Mixture Strength and Output of S.I. Engines, Low and High Pressure Super Charging, Exhaust, Gas Turbo-Charging, Supercharging in two Stroke Engines.	**14**

Text Book/References Books/ Websites

1. DomKundwar; Internal Combustion Engines ; Dhanpat Rai Publications.
2. S. Srinivasan; Automotive engines; TMH.
3. V. Ganeshan; Internal Combusion engines; TMH.

Suggested List of Laboratory Experiments :- (Expandable): Nil

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Programme: **Diploma in Engineering** **Semester –V**

Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External (70)	Internal (30)	Total (100)	External	Internal	Total
DME1502	Advanced Manufacturing Process	3	1	-			Min: 40 (D Grade)	Nil	Nil	Nil

Duration of Theory (Externals): 3 Hours

Theory Internal- Max Marks: 30	Best of Two Mid Semester Test – Max Marks: 15	Assignment/Quiz/Attendance Max. Marks: 15
Practical Internal Max Marks: Nil	Lab work & Sessional – Max Marks: Nil	Assignment / Quiz/Attendance Max. Marks: Nil

Pre-Requisite	Student should have knowledge of Production Engineering.
Course Outcome	1. To understand the manufacturing methods, measurements, automation and quality control.
	2. To get the knowledge of CNC operations and G-code, M-code program.
	3. Classify different plastic molding processes, Extrusion of Plastic and Thermoforming.

Unit	Contents (Theory)	Marks Weightage
I	**Unconventional Machining Methods:** Limitations of Conventional Machining. Working Principle, Operating Parameters and Application of Unconventional Machining. Electro Chemical Machining, Chemical Machining, Electric Discharge Machining, Electron Beam Machining, Ultra Sonic Machining, Abrasive Jet Machining, LASER Beam Machining.	**14**
II	**Manufacturing Automation:** Introduction to Numerical Control, Computer Numerical Control, Direct Numerical Control, CNC Millings M/C, CNC Turning M/C, Turn Mill Centers, Flexible Manufacturing System and Preliminary Idea of Robotics. Introduction to G and M Code as used in Part Programming. Use of Canned Cycles. Simulation of Parts, Drawing Generated Through CAD, Its Modeling and Transfer.	**14**
III	**Plastic Moulding:** Types of Plastic, Compression Moulding, Transfer Moulding , Injection Moulding, Blow Moulding, Vacuum Forming, Extrusion .	**14**
IV	**Special Purpose Machines:** Difference between Forming and Generation of Gears, Principle of Gear Shaping, Hobbing and Shaving, Rate of Production Accuracy and Limitations. Thread Production: Thread Rolling and Thread Milling. Broaching Machines: Definition of Broaching, Types of Broaches, Broaching Machines, Advantages and Limitations.	**14**
V	**Machine Tool Drives:** Requirements of Machine Tools, Elements of Machine Tools and their Purpose Drive Systems: Stepped And Step Less Drives, Advantages and Limitations of the Gear Box Drives, Function of Feed Box, Types of Feed Gear Boxes, Working and Advantages. Principle of Straight Line Motion, Multi handle, Single Lever and Pre-Selective Control System.	**14**

Text Book/References Books/ Websites:

1. Hajra Chaudhary ; Workshop Technology; Media Promoters & Publishers Pvt. Ltd. Mumbai
2. Suresh Dalela ,;Manufacturing Science and Technology Vol. I & II.; Umesh Publication
3. B. S. Raghuvanshi ; Workshop Technology Vol. I And II; Dhanpat Rai & Sons
4. R. K. Jain ; Production Technology; Khanna Publishers, Delhi
5. P.N. Vijayvargiya , Machine Tool Shilp Vigyan (Hindi); Deepak Prakashan, Gwalior

Suggested List of Laboratory Experiments :(Expandable):-Nil

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Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External	Internal	Total (100)	External	Internal	Total (50)
DME1503	Metrology	3	1	1	(70)	(30)	Min: 40 (D Grade)	(35)	(15)	Min: 20 (D Grade)

Duration of Theory (Externals): 3 Hours

Theory Internal- Max Marks: 30	Best of Two Mid Semester Test – Max Marks: 15	Assignment/Quiz/Attendance- Max. Marks: 15
Practical Internal Max Marks: 15	Lab work & Sessional – Max Marks: 10	Assignment / Quiz/Attendance Max. Marks: 05

Pre-Requisite	Knowledge of Engineering Measurements.
Course Outcome	1. To understand the Principles of measuring instruments and their uses.
	2. To study Machine tool testing to evaluate machine tool quality.
	3. Inspection of gear and thread elements.

Unit	Contents	Marks Weightage
I	**Introduction to Metrology:** Introduction, Need, Elements ,Work Piece, Instruments Environment and their effect on Precision and Accuracy, Errors in Measurements and its Types; Control and types of Standards.	**14**
II	**Measurement Through Comparators**: Comparators: Mechanical, Electrical and Electronic Comparators, Pneumatic Comparators and their uses in Mass Production. **Machine Tool Alignment Tests:** Requirement of Machine Tool Alignment Tests, Alignment Tests on Lathe, Milling, Drilling Machine Tools, Preparation of Acceptance Charts. **Gear Measurement:** Gear Measuring Instruments, Gear Tooth Profile Measurement, Measurement of Diameter, Pitch Pressure Angle and Tooth Thickness.	**14**
III	**Limits, Fits, Tolerances and Gauges:** Concept of Limits, Fits, and Tolerances, Selective Assembly, Interchangeability, Hole and Shaft Basis System, Taylor's Principle, Design of Plug, Ring Gauges, IS919-1993 (Limits, Fits & Tolerances, Gauges IS 3477-1973, Concept of Multi Gauging and Inspection.	**14**
IV	**Angular Measurement:** Concept, Instruments for Angular, Measurements, Working and Use of Universal Bevel Protractor, Sine Bar, Spirit Level, Principle of Working of Clinometers, Angle Gauges.	**14**
V	**Thread Metrology:** ISO Grade and Fits of Thread, Errors in Threads, Pitch Errors, Measurement of Different Elements such as Major Diameter, Minor Diameter, Effective Diameter, Pitch, Two Wire Method, Thread Gauge Micrometer, Working Principle of Floating Carriage Dial Micrometer	**14**

Text Book/References Books/ Websites:

1. R. K. Jain , Engineering Metrology ; Khanna Publisher, Delhi.
2. J.F.W. Galyer And C. R. Shotbolt Metrology For Engineers Elbs3.
3. K. J. Hume Engineering Metrology; Kalyani Publishers
4. I.C. Gupta; A Text Book of Engineering Metrology; Dhanpat Rai And Sons,
5. M. Adithan and R. Bahn Metrology Lab. Manual T.T.T.I. Chandigarh.

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Programme: **Diploma in Engineering** **Semester –V**

Suggested List of Laboratory Experiments: (Expandable):-

1. To Study The Measurement Of Length, Height & Diameter By Vernier Caliper And Micrometer.
2. To Study The Measurement Of Bores By Using Micrometer And Dial Bore Indicator.
3. To Study The Measurement Of Gear Tooth Thickness By Using Three Gear Tooth
4. To Study The Angular Measurement By Bevel Protractor And Sine Bar.
5. To Study The Measurement Of Flatness Of Surface Plate By Using Spirit Levels.
6. To Study The Surface Roughness Measurement By Using Taly Surf.

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Programme: **Diploma in Engineering** **Semester –V**

Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P			Total (100)			Total (50)
DME1504	Theory of Machines	3	1	1	External (70)	Internal (30)	Min: 40 (D Grade)	External (35)	Internal (15)	Min: 20 (D Grade)

Duration of Theory (Externals): 3 Hours

Theory Internal- Max Marks: 30	Best of Two Mid Semester Test – Max Marks: 15	Assignment/Quiz/Attendance- Max. Marks: 15
Practical Internal Max Marks: 15	Lab work & Sessional – Max Marks: 10	Assignment / Quiz/Attendance- Max. Marks: 05

Pre-Requisite	Nil
Course Outcome	1. Able to understand the concept of various machine components and its mechanism
	2. Able to construct different types of cam profile for a given data.
	3. Study the various machines parts and its applications.

Unit	Contents (Theory)	Marks Weightage
I	**Fundamentals and Types of Mechanisms:** Kinematics of Machines: Definition of Kinematics, Dynamics, Statics, Kinetics, Kinematic Link, Kinematic Pair and its types, Constrained motion and its types, Kinematic Chain and its types, Mechanism, Inversion, Machine and Structure. Inversion of Single Slider Crank Chain- Rotary I.C. Engines Mechanism, Oldham's Coupling.	**14**
II	**Belt and Chain Drives:** Belt Drives - Flat Belt, V– Belt & its applications, Material for flat and V-Belt, Angle of Lap, Belt length. Slip and Creep. Determination of Velocity Ratio, Ratio of Tight Side and Slack Side Tension, Centrifugal Tension and initial tension, Condition for maximum Power Transmission (Simple Numerical) Chain Drives, Advantages & Disadvantages, Selection of Chain & Sprocket Wheels, Methods of lubrication.	**14**
III	**Gear & Rope Drives:** Spur Gear Terminology, Types of Gears and Gear Trains, Their Selection For Different application, Train Value & Velocity Ratio For Compound, Reverted and Simple Epicyclic Gear Train, Methods of Lubrication, Law of Gearing. Types, Applications, Advantages & Limitations of Steel Ropes.	**14**
IV	**Brakes & Clutches :** Function of Brakes, Types of Brakes , Construction and Working of Shoe Brake, Band Brake, Numerical Problems to find braking Force and Braking Torque for Shoe & Band Brake , Clutches- Uniform Pressure and Uniform Wear Theories , Function of Clutch and its application, Construction and working of Single and Multi Plate Clutch.	**14**
V	**Cams and Followers:** Concept, Definition and Application of Cams and Followers , Classification of Cams and Followers , Different Follower Motions and their Displacement Diagrams like Uniform Velocity, SHM, Uniform Acceleration and Retardation , Drawing of Profile of Radial Cam with Knife-Edge and Roller Follower with and without offset with Reciprocating Motion (Graphical Method).	**14**

Text Book/References Books/ Websites:

1. R.S.Khurmi & Gupta; Theory of Machines ; Eurasia Publishing House Pvt. Ltd.
2. S.S.Rattan ; Theory of Machine; Mcgraw Hill Companies II Edition.
3. P.L.Ballaney, Theory of Machines; Khanna Publication .
4. Timo Shenko ;Theory of Machines; Wiley Eastern.

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5. Jagdish lal; Theory of Machines; Bombay Metro Politan Book Ltd.
6. Ghosh - Mallik; Theory Of Machines ; Affilated East West Press.
7. T .Beven.; Theory of Machines; CBS Publication.
8. J.E.Shigley; Theory of Machine; Tata Mcgraw Hill.

Suggested List of Laboratory Experiments;- (Expandable):

1. To study various types of Links, Pairs, Chain and Mechanism.
2. To study inversion of four Bar Mechanism, Single Slider Crank Chain Mechanism and Double Slider Crank Chain Mechanism.
3. To study velocity diagram for Slider Crank Mechanism.
4. To study various kinds of belts drives.
5. To study and find coefficient of friction between belt and pulley.
6. To study various types of Cam and Follower arrangement.
7. To plot follower displacement Vs cam rotation graph for various cam follower arrangement.
8. To study the working of Screw Jack and determine its efficiency.
9. To study Different types of Gears.
10. 10. To study Different types of Gear Trains.

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Programme: **Diploma in Engineering** **Semester –V**

Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External	Internal	Total (100)	External	Internal	Total (50)
DME1505	Automobile Engineering	3	1	1	(70)	(30)	Min: 40 (D Grade)	(35)	(15)	Min: 20 (D Grade)

Duration of Theory (Externals): 3 Hours

Theory Internal- Max Marks: 30	Best of Two Mid Semester Test – Max Marks: 15	Assignment/Quiz/Attendance- Max. Marks: 15
Practical Internal Max Marks: 15	Lab work & Sessional – Max Marks: 10	Assignment / Quiz/Attendance- Max. Marks: 05

Pre-Requisite	Nil
Course Outcome	1. To get firsthand knowledge in construction of automotive vehicles.
	2. The student will be able to understand the environmental implications of automobile emissions.
	3. Develop a strong base to understand future developments in the automobile industry.

Unit	Contents (Theory)	Marks Weightage
I	**Introduction of Automobile:** Classification of Automobiles, Vehicle Layout & Types, Body Construction - Types & Nomenclature of Car Body. Introduction to Aerodynamic body Shapes. Emission Standards and Pollution Control: Indian Standards for Automotive Vehicles-Bharat III And IV, Euro V And VI	**14**
II	**Automobile Transmission:** Clutch- Necessity, Construction & Working of Coil Spring & Diaphragm, Spring Type Clutch, Gear Box- Tractive Effort and Tractive Resistance, Types of G.B, Differentials. Torque Converter, Overdrive, Transfer Case, Final Drive- Necessity, Construction & Working of Propeller Shaft & Differential, Axle- Type of Rear Axles, Front Axles & their Applications.	**14**
III	**Control Systems:** Steering System- Requirement of Steering System. Construction and working of Steering linkage. Steering Gear Box- Construction & working of Rack and Pinion. Introduction to Power Steering, Steering Geometry- Camber, Caster, Toe-in, Toe-out, Brake System- Construction & working of Hydraulic & Pneumatic Brakes. Comparison of Disc & Drum Brake.	**14**
IV	**Suspension Systems**: Wheels & Tyres: Necessity & Classification of Suspension System, Working & Construction of Leaf Spring, Rigid Axle Suspension, Introduction to Air Suspension and its construction & working, Construction & Working of Telescopic Shock Absorbers. Construction, Working & Comparison of Radial, Cross-Ply and Tubed, Tubeless Tyre & Tyre Specifications, Factors affecting Tyre Life. Wheel Alignment.	**14**
V	**Automobile Electrical Systems & Body:** Battery- Working, Construction & Rating of Battery, Ignition System- Construction & Working of Electronic and CDI Ignition System, Starting System- Construction & Working of Starting Motor, Charging System- Construction & Working of Alternator, Wiring System-Harnessing & Colour Codes, Lighting System-Head Light, Tail light, Indicator light & their Circuits.	**14**

Text Book/References Books/ Websites:

1. D.S. Kumar; Automobile Engineering; Katson Books Publication.
2. S. Srinivasan; Automotive Engines; TMH.
3. A.G. Ambekar; Mechanism and Machine; PHI.

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Suggested List of Laboratory Experiments :- (Expandable):

1. To study and prepare report on the constructional details, working principles and operation of the Automotive Clutches.
2. To study and prepare report on the constructional details, working principles and operation of the Automotive Transmission systems.
3. To study and prepare report on the constructional details, working principles and operation of the Multi-cylinder: Diesel and Petrol Engines.
4. To study and prepare report on the constructional details, working principles and operation of the Automotive Engine Systems & Sub Systems.
5. To study and prepare report on the constructional details, working principles and operation of the Fuels supply systems.
6. To study and prepare report on the constructional details, working principles and operation of the Engine cooling & lubricating Systems.
7. To study and prepare report on the constructional details, working principles and operation of the Automotive Suspension Systems.
8. To study and prepare report on the constructional details, working principles and operation of the Automotive Steering Systems.
9. To study and prepare report on the constructional details, working principles and operation of the Automotive Brake systems.
10. To study and prepare report on the constructional details, working principles and operation of the Automotive Tyres & wheels.

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Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External (Nil)	Internal (Nil)	Total	External (35)	Internal (15)	Total (50)
DME1506	Minor Project	-	-	1			Nil	Min: 14 (D Grade)	Min: Nil	Min: 20 (D Grade)

Duration of Theory (Externals): Nil

Theory Internal- Max Marks: Nil	Best of Two Mid Semester Test – Max Marks: Nil	Assignment/Quiz/Attendance- Max. Marks: Nil
Practical Internal Max Marks: 15	Lab work & Sessional – Max Marks: 10	Assignment / Quiz/ Attendance- Max. Marks: 05

Pre-Requisite	Student should have basic knowledge of engineering principles.
Course Outcome	The student will be able to-An ability to utilize technical resources:
	1. Identify, analyze & define the problem.
	2. Generate alternative solutions to the problem identified.
	3. Compare & select feasible solutions from alternatives generated.
	4. Compare machines/devices/apparatus for performance practices.
	5. Work effectively in a team.

Unit	Contents (Theory)	Marks Weightage
	The student should prepare a working system or some design or understanding of a complex system (on minor level) that he/she has selected for his/her minor project work using system analysis tools and submit the same in the form of a write-up i.e. detail project report. The student should maintain proper documentation of different stages of project such as concept evaluation, requirement specification, objectives, work plan, analysis, design, implementation and test plan wherever applicable. Each student is required to prepare a project report based on the above points and present the same at the final examination with a demonstration of their project.	**50**

Text Book/References Books/ Websites: Nil

Suggested List of Laboratory Experiments :- (Expandable): Nil

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Subject Code	Subject Title	Credit			Theory			Practical		
		L	T	P	External	Internal	Total	External	Internal	Total (100)
DME1507	Industrial Training-II	-	-	2	(Nil	(Nil)	Nil	(70)	(30)	Min: 40 (D Grade)

Duration of Theory (Externals): Nil

Theory Internal- Max Marks: -Nil	Best of Two Mid Semester Test – Max Marks: -Nil	Assignment/Quiz/Attendance Max. Marks: -Nil
Practical Internal Max Marks: 30	Lab work & Sessional – Max Marks: 25	Assignment / Quiz Attendance Max. Marks: 05

Pre-Requisite	Basic principles and theory knowledge of concern discipline of engineering.
Course Outcome	1. To develop general confidence, ability to gain the basic technological concepts through Industrial visits, seminars on technical topics and group discussion. Correlate theoretical knowledge with practical engineering work. 2. Ability to learn under actual working environment.

Unit	Contents (Theory)	Marks Weightage
	As a part of the Diploma in Engineering curriculum, DPE 507, Industrial Training II is a Practical course, which the students should undergo in reputed Private / Public Sector / Government organization / companies as industrial training of minimum two weeks to be undergone by the student in the semester break after IV semester theory examinations. **Training period**: Minimum of two weeks or 15 (Fifteen) Days. **Companies / Areas covered**: Any field related to concern branch / discipline of Diploma in Engineering. **Grading**: As per Scheme. **Note:** Presentation will take place the following week after you complete your training in IV semester. The presentation is evaluated by your class in charge. Report must be submitted during power point presentation. The report evaluation is done by your class in charge. A Viva voce comprising comprehensive questions based on training undergone. **Etiquette:** Dress properly, Behave well, Portray good image as a university student, Be punctual, Observe work ethics, Concern for safety, Be professional.	**100**

Text Book/References Books/ Websites: ***Nil***

Suggested List of Laboratory Experiments :- (Expandable): ***Nil***