



தமிழ்நாடு திறந்தநிலைப் பல்கலைக்கழகம்
Tamil Nadu Open University, Chennai
சென்னை – 15

தொடர் கல்விக்கானப் பள்ளி
School of Continuing Education

வாகன மெக்கானிக்
தொழிற்கல்வி பட்டயம்
Vocational Diploma in Vehicle Mechanic
(VDVM)

(From Academic Year 2021-2022 onwards)

பாடத்திட்ட ஒறிக்கை & விவரமான பாடத்திட்டம்
Programme Project Report (PPR)
&
Syllabus

Board of Studies [BOS] of School of Continuing Education

1. Director of School-Chairman		
(1)	Dr. P. Thiyagarajan	Professor & Director School of Continuing Education Tamil Nadu Open University, Chennai
2. Internal Faculty Members		
(1)	Er. R. Meenambigai	Assistant Professor School of Continuing Education Tamil Nadu Open University, Chennai
(2)	Dr. I. Ambeth	Assistant Professor & Regional Director i/c Madurai Regional Centre, Tamil Nadu Open University, Madurai
3. Outside Experts		
(1)	Dr. K. Devan	Professor & Centre Head Centre for Adult and Continuing Education, Pondicherry University, R.V. Nagar, Puducherry
(2)	Dr. V.P. Matheswaran	Professor & Head Department of Adult & Continuing Education, University of Madras, Chepauk, Chennai
(3)	Dr. S. Jayalakshmi	Assistant Professor, DDU-KAUSHAL Kendra, Bharathidasan University, Tiruchirappalli
4. Industrialist		
(1)	Mr.S.Vendan	Managing Director, Vendan Visual Effects, Thirvanmiyur, Chennai
(2)	Mrs.C.Rohini Chandrasekaran	Consultant, Fair Labour Associations, Tirupur, Tamil Nadu
5. Alumini		
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(2)	Mrs. V. Rubini	Nurse, Health Centre, Tamil Nadu Open University, Chennai
6. Students on Roll		
(1)	Ms.N.Saranya	Student, Nano Nagle Community College, Chennai
(2)	Mr.B.Saravanan	Student, Global Progressive Community College, Chennai

Vice-Chancellor Foreword

My dear Learners, Vanakkam, I deem it a great privilege to extend a hearty welcome to you to the Vocational Diploma Programme being offered by the Tamil Nadu Open University (TNOU). I also appreciate your keen interest of know about the curriculum of the Programme, in which you shall gain an enthralling experience, and pleasurable and beneficial learning. With passing a specific act in the Tamil Nadu Legislative Assembly (TNLA) in 2002, the TNOU came into existence as a State Open University (SOU). It has been offering the socially relevant academic Programmes in diverse disciplines with due approval of the University Grants Commission (UGC) and the Distance Education Bureau (DEB), New Delhi since its inception.

This Vocational Diploma Programme is one among the approved Programmes. The Board of Studies, a statutory academic body of the University, consisting of the versatile scholars, eminent teachers including both internal and external, well acclaimed industrialists, outstanding alumni, and prospective learners as members, has designed the robust curriculum of this Programme.

The curriculum is overhauled to be more suitable to the socio-economic and scientific needs in the modern era based on the emerging trends in the discipline of State and National as well as International level and accordingly, modified to our local context. Moreover, the whole syllabi of this Programme have special focuses on promoting the learners to the modern learning environment. With a Credit System, this Programme is offered in non-semester pattern. The Self-Learning Materials that are the mainstay of pedagogy in the Open and Distance Learning (ODL) have been developed incorporating both the traditional and the modern learning tools, like web-resources, multi-media contents, text books and reference books with a view to providing ample opportunities for sharpening your knowledge in the discipline.

At this juncture, I wish to place on record my deepest appreciations and congratulations to the Chairperson and the Members of the Board of Studies concerned for having framed the curriculum of high standard. I would also like to acknowledge the Director, the Programme Coordinator and the members of staff of the respective School of Studies for their irrevocable contributions towards designing the curriculum of this Programme.

Last but not least, I register my profuse appreciation to the Director (i/c), Curriculum Development Centre (CDC), TNOU, who have compiled this comprehensive Programme Project Report (PPR) that includes the regulations and syllabi of the Programme, and also facilitated the designing in the form of e-book as well as printed book. I am immensely hopeful that your learning at TNOU shall be stupendous, gratifying, and prosperous. Wish you all success in your future endeavours!

Vice-Chancellor

Vocational Diploma in Vehicle Mechanic (VDVM)

Programme Project Report (PPR)

(From Academic Year-2021-2022 onwards)

1. Programme's Mission & Objectives

The main Objectives of the Vocational Diploma in Vehicle Mechanic Programme is to train the learners for the job of a car mechanic, wheel aligner, Tyre puncture mechanic, shop floor worker, Vehicle wash yard worker and also building the key competencies amongst the learner.

2. Relevance of the Programme with HEI's Mission and Goals

Tamil Nadu Open University one of Mission and Goal is to encourage Skill Development to empower the human resource through Participatory Education System and accordingly the Vocational Diploma in Vehicle Mechanic Programme has been developed. The Programme is being offered under Flexible Skill Training mode.

3. Instructional Design

The Curriculum and the Syllabi are designed by covering all the aspect of Vehicle Mechanic Programme. The duration of the Programme is one Year and it will be offered both English and Tamil Medium. Required Faculties working in the Community Colleges will handle classes for the Vocational Diploma in Vehicle Mechanic Programme. The Programme will be delivered through Community Colleges approved by the Tamil Nadu Open University which is having required faculties and support staff. The Credits systems suggested as per UGC-ODL Regulations-2020 has been followed. Accordingly 32 Credits have been assigned for the Vocational Diploma in Vehicle Mechanic Programme. Print, Audio and Video materials also developed for the Programme. Apart from ODL Mode, the Programme also has been designed to offer under Flexible Skill Training mode. Vehicle Mechanics are to are to trouble shoot the vehicle, identify the problem and rectify the same, perform regular maintenance and servicing of vehicles. To acquire Specific Skill, the Core Skills, Generic Skills and Professional Skills component are also included.

4. Procedure for Admissions, Curriculum Transaction and Evaluation

The admission for the Vehicle Mechanic Programme will be carried out through on-line by Tamil Nadu Open University and the Counselling and Practical classes will be conducted through Community Colleges of Tamil Nadu Open University. The hands on training will be provided in the Community Colleges. The evaluation will be carried by Tamil Nadu Open University consists of Continuous Internal Assessment (CIA) through Assignment and External Assessment through Term End Examination (TEE).

(i). Eligibility: Candidates who have passed in the 10th Standard Examinations or its equivalent as per Tamil Nadu Government Order No-163 dated 22-05-2008.

(ii). Fee Structure: Rs.4,200/- (plus Registration Charges)

(iii). Age: 15 Years and above

(iv).Duration of Programme: 1 Year and Maximum of 3 Years

(v). Examination System: Examination to the Diploma in Vehicle Mechanic is designed to maintain quality of standard. The Examination for the Vocational

Diploma Programme shall consist of Theory and Practical Courses. Theory Examinations will be conducted by the University. Practical will be conducted in the Industries and Community Colleges. For the On the Job Training Assignment students will be assessed jointly by Industrial Partners.

(a) Theory Examinations: The Theory Examinations shall be of three hours duration to each Course and conducted at the end of the year. The candidates who failing in any Course(s) will be permitted to reappear for each failed Course(s) in the subsequent examinations.

(b) Practical Examinations: The practical examinations (if any) shall be of three hours duration to each practical and conducted at the end of each year. The candidates who failing in any practical(s) will be permitted to reappear for each failed practical(s) in the subsequent examinations.

(c).Assignments: The Scheme of Evaluation Includes the Continuous Internal Assessment (Assignment for 25 Marks and attendance for 5 Marks based on percentage of Attendance i.e. 50-60% 1 Mark, 60-70% 2-Marks, 70-80% 3-Marks, 80-90% 4-Marks and Above 90 5-Mraks) and Term End Examination.

(vi). Question Pattern for Theory Examinations

Max. Marks: 70

Time: 3 hours

PART - A ($3 \times 3 = 9$ marks)

Answer any THREE questions out of FIVE questions in 50 words

[All questions carry equal marks]

1. From Block - I
2. From Block – II
3. From Block - III
4. From Block - IV

PART - B ($3 \times 7 = 21$ marks)

Answer any THREE questions out of FIVE questions in 150 words

All questions carry equal marks

1. From Block - I
2. From Block - II
3. From Block - III
4. From Block - IV

PART - C ($4 \times 10 = 40$ marks)

Answer any FOUR questions out of SEVEN questions in 400 words

[All questions carry equal marks]

- 1.From Block - I
- 2.From Block - II
- 3.From Block - III
- 4.From Block - IV

(vii). Passing Minimum

(a).For Theory Examination

The Candidate shall be declared to have passed the examination if the candidate secures not less than 25 marks in the Term End Examinations (TEE) in each theory paper and secures not less than 13 marks in the Continuous Internal Assessment

(CIA) and overall aggregated marks is 40 marks in both external and internal taken together.

For the Core Courses such as Communication Skills and Life Coping Skills, the passing minimum is 35 percent in the internal and external/ theory examination taken together for successful completion of each course

Continuous Internal Assessment (CIA)		Term End Examination (TEE)		Overall Aggregated Marks	Maximum Marks
Minimum Pass Mark	Maximum Pass Mark	Minimum Pass Mark	Maximum Pass Mark	CIA + TEE	
13	30	25	70	40	100

(b).For Practical Examination

The candidate shall be declared to have passed the examination if the candidate secures not less than 40 marks out of 100 marks in the University examination and the practical record notebook taken together is required to Pass the examination. There is no passing minimum for record notebook. However submission of record notebook/ Field visit/ Industrial Visit report is a must.

Note: *In case, if a learner failed to secure 40 per cent of aggregate marks, he/she may re-appear in term end examination or re-do the assignments for securing passing minimum.*

(c).Classification of Successful Candidate: Candidates who pass all the Courses and who secure 60 per cent and above in the aggregate of marks will be placed in the First Class. Those securing 50 per cent and above but below 60 per cent in the aggregate will be placed in the Second Class. Those securing 40 per cent and above but below 50 per cent in the aggregate will be placed in the Third Class.

(d). Pattern of Question Paper for Practical Examinations

Each set of question paper should contain questions from the syllabus and the candidate has to choose one by lot.

(e).Awarding of Marks for Practical examinations.

Total Marks: 100 (Practical 70 Marks + Record 30 Marks)

(f). Project(if any)- Choose a Specialized Field Required to be attached.

- i) Project
- ii) Industrial Training
- iii) Case Study etc.

The work will be based upon the study of field based report.

5. Delivery of Programme

Vocational Diploma Programme in Vehicle Mechanic will be offered through Community College/ Constituent Community Colleges. The Assistant Professors/Associate Professors/ Professors of relevant faculty employed in Colleges/Universities/Higher Educational Institutions and Industrial Expert are eligible to handle Academic Counselling in TNOU for Diploma Programmes.

6. Financial Assistance

Scholarships for SC/ST category are available as per the norms of the State Government of Tamil Nadu. Complete Admission fee waiver for the Physically Challenged/ Differently abled persons.

7. Policy of Programme Delivery

The Academic Calendar for the Programme will be available for the learners to track down the chronological events/ happenings. The Counselling schedule will be uploaded in the TNOU website and the same will be intimated to the students through SMS.

8. Requirement of the laboratory support and Library Resources

Lab Facilities are made available in Industries, Constituent Community Colleges and Community Colleges of Tamil Nadu Open University as per requirement as given in the National Skill Development Corporation(NSDC), Qualification Pack(QP). Practical Manual developed by the Tamil Nadu Open University will be supplied to the Students apart from Self Learning Materials. Library Books are available at the Headquarters, Regional Centres and Constituent Community Colleges and Community Colleges of TNOU.

9. Ranking

The University Rank shall be offered for the toppers (First Rankers) in the University Examination having passed their examinations in the first appearance within the prescribed duration of the respective programme. Absence from an examination shall not be taken as an attempt.

The top scorers in the University Rank Examination would be declared as University Rank Holders, irrespective of their grades/marks in their respective University Term End Examinations.

Rank Certificate will be issued for a Programme as follows

- a) There is no Rank if the learner strength of concerned programme is below Fifty.
- b) The learners strength of the programme concerned will be indicated in the Rank Certificate.
- c) The first Rank holder (gold medallist) will be eligible to get the rank certificate in the university convocation ceremony.

10. Cancellation of Admission

Admission is liable to be cancelled at any stage on the following grounds.

- A candidate admitted to a programme provisionally without verifying and ascertaining his / her eligibility for admission and found ineligible later through scrutiny of the filled-in admission form.
- Suppression of facts, furnishing incomplete, wrong or false information in filled-in Admission Form.
- Misconduct, Indiscipline and Violation of University Norms, Rules & Regulations.

11. Refund

If found ineligible later on, admission will be cancelled and claim for refund of such fees will be considered by the University after deduction of service charges, as applicable from time to time as per prevailing norms of the University.

12. Cost Estimate of the Programme and the Provisions

The cost estimate for development, delivery and maintenance of the Vocational Diploma in Vehicle Mechanic Programme is provided in the following Table.

S.No	Details	Amount in (Rs.)
1	Programme Development, Delivery and Maintenance (Expenditure)	8,56,618
2	Programme Fee Charged for 1 Year (Income)	2500
3	Examination Fee Charged for 1 Year (Income)	1125
4	Examination Expenses Per Student for 1 Year (Expenditure)	900

13. Quality Assurance Mechanism and Expected Programme Outcomes

Tamil Nadu Open University, Centre for Internal Quality Assurance (CIQA) will monitor the delivering aspect of Constituent Community Colleges and community Colleges of TNOU for maintaining quality. Feedback will be collected from the Learners and success story if any will also be shared with learners. After completion of Vehicle Mechanic Programme, Learner will acquire the Core Skills, Generic Skills and Professional Skills components and will be employed in the Automotive Industry.

14. Legal Issues

Any issue of conflict shall be cleared through mutual representation from both the sides, and in case of conflict of issues still persist, they shall be settled in the Court of Law under the Jurisdiction of Chennai.

15. Programme Structure of Vocational Diploma in Vehicle Mechanic

S.No	Course Code	Course Title	Credits	Marks Distribution		
				Internal	External	Total
1	VDVM-1	Automobile Engine and Electrical System	4	30	70	100
2	VDVM -2	Chassis and Transmission System	4	30	70	100
3	VDVM -3	Automobile Electronics	4	30	70	100
4	VDVM -P1	Automobile Engine and Electrical System (Practical)	4	30	70	100
5	VDVM -P2	Chassis and Transmission System (Practical)	4	30	70	100
6	LCS	Life Coping Skills	6	30	70	100
7	CNS	Communication Skills	6	30	70	100
Total			32	210	490	700

*CIA-Continuous Internal Assessment (Internal): TEE-Term End Exam (External)



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**Name of the Programme–Vocational Diploma in Vehicle Mechanic -
Syllabus (Flexible Skill Training Mode)**

Course Title	:	Automobile Engine & Electrical System
Course Code	:	VDVM-1
Course Credit	:	4

Course Objectives

While studying the **Automobile Engine and Electrical system**, the student shall be able to:

- Describe the construction and Principle of operation of Internal Combustion Engine
 - Summarize the different types of combustion of Diesel Engine
 - Identify the fuel inlet and exhaust system of automobile
 - Gain knowledge about engine sub-system like Cooling and Lubricating system
 - Illustrate the various maintenance process of engine
 - Explain about the electric circuits, lighting system and dash board gauges of a automobile
-

Course Outcomes

After completion of the **Course Automobile Engine and Electrical system**, the student will be able to:

- Identify the various parts of the engine
 - Compare and contrast the SI and CI engine of automobile
 - State the components and working of cooling and lubricating system
 - Demonstrate the execute the general procedure of vehicle maintenance and repairing
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Block- 1: Automotive Engine, Inlet & Exhaust Manifold

Unit-1: Car Engines

Historical Overview - Internal Combustion Engine - Engine and its Construction - Principles of Operation of IC Engines - Comparison of CI and SI Engines - Advantages and Disadvantages of 2-stroke cycle over 4-stroke cycle - Classification of IC Engines - Firing Order - Different Cycles of Engine

Unit-2: Fuel Supply and Exhaust System

Air – Fuel Ratio - Fuel Supply System – Carburettor - Diesel Fuel Injection – Governor - Exhaust System

Block -2: Fuel Combustion and Performance of Engine

Unit-3: Combustion

Diesel Engine and its Terminologies - Combustion and its stages - Combustion Chamber - Comparison of Direct Injection and Indirect Injection - Turbulence and Combustion in Diesel Engines – Turbocharging - Supercharging

Unit-4: Engine Performance and Testing

Dynamometers - Engine Testing - Characteristics of IC Engines – Friction - Engine performance: Basic Measurements - Measurement of Exhaust emission - Measurement of Brake Power - Measurement of Friction Horse Power.

Block-3: Engine Sub-Systems and Maintenance

Unit-5: Cooling and Lubrication System

Cooling System and its Need - Air Cooling System - Water Cooling System - Components of Cooling System - Engine Lubricating System - Lubricating (Oil) System Components - Types of Lubricating (Oil) Systems - Properties of Good Lubricants.

Unit-6: Car Servicing and Maintenance

Garage, Service Station and Repair Shop - Tools and Equipments - Major Equipments of Service Station - Engine Reconditioning Equipments - General Procedure for servicing and Maintenance of Motor Vehicles - Overhauling

Block-4: Car Electrical Systems and Circuits

Unit-7: Basic Electrical Circuits of Automobile

Electrical System of Automobile - Charging Circuit - Starting Circuit

Unit-8: Vehicle Lighting and Dash Board Instruments

DC Generators – Alternators - Lighting Circuit - Head Light and Head Light Switch - Blackout Lights - Turn Signal, Stop Light and Emergency Light System - Dash Board Instruments.



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**Name of the Programme– Vocational Diploma in Vehicle Mechanic -
Syllabus (Flexible Skill Training Mode)**

Course Title	:	Chassis and Transmission System
Course Code	:	VDVM-2
Course Credit	:	4

Course Objectives

While studying the **Chassis and Transmission System**, the student shall be able to:

- Describe construction and working of clutches and manual transmission
 - Perform the servicing and trouble shooting of transaxles
 - Explain the working of automatic transmission
 - Diagnose the trouble and service the universal joint, viscous coupling, differential and drive axle
 - Summarize about suspension system, brakes, tires and wheels of automobile
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Course Outcomes

After completion of the **Course Chassis and Transmission System**, the student will be able to:

- State the function and purpose of clutch, manual and automatic transmission, universal joint, four wheel drive, differential and transaxle
 - Identify the various braking systems of the automobile
 - Explain the construction of tires and its types
 - Perform wheel balancing of vehicles
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Block-1: Clutches and Manual Transmission

Unit-1: Automotive Clutches

Purpose and Function of Clutch - Construction and Operation of Clutch - Clutch Linkage - Clutch troubles and its Diagnosis - Servicing the Clutch - Clutch removal and Installation.

Unit-2: Manual Transmission and Transaxles

Transmission and Transaxle - Gears and Gearing - Manual Transmission - Manual Transaxle - Dual range Transaxle - Gear shifting and Shift Linkage.

Unit-3: Diagnosis and Service of Transaxles

Trouble diagnosis of Manual Transmission and Transaxle - Manual Transmission – Trouble diagnosis - Manual Transaxle – Trouble diagnosis - Service and maintenance of Manual Transmission - Service and maintenance of Manual Transaxle.

Block-2: Power Transmission Systems

Unit-4: Drive Shafts, Universal Joints, Differentials and Drive Axles

Drive Lines - Rear Drive Axles - Differentials - Driveshaft and Universal joint diagnosis and service - Diagnosis and Servicing of CV-Joint and Halfshaft - Diagnosis and Servicing of Drive axle - Servicing of Differential assembly - Servicing Limited Slip differentials.

Unit-5: Four Wheel Drive, Transfer Case and Viscous Couplings

Four-Wheel and All-Wheel Drive - Transfer case and its Purpose - Auxiliary Front-Drive Axles - Locking Hubs - Viscous Coupling - All Wheel Drive Systems - Electronic Control of Transfer Case and Drive Trains - Diagnosis and Service of Four Wheel Drive.

Block-3: Automatic Transmission and Transaxles

Unit-6: Automatic Transmission and Transaxles

Construction and Operation of Automatic Transmission and Transaxles - Torque Converters - Planetary Gear Trains - Hydraulic System - Electronic Control System.

Unit-7: Diagnosis and Servicing Automatic Transmission and Transaxles

Types of Servicing - Normal Maintenance - Diagnosis of Automatic Transmission and Transaxle - Electronic Shift Control Diagnosis - Servicing of Automatic Transmission and Transaxle - Transmission and Transaxle removal and installation - Overhauling of Transmission and Transaxle.

Block-4: Suspension System, Brakes and Tires

Unit-8: Automotive Suspension Systems

Purpose and components of the Suspension system - Automotive Springs - Shock Absorbers - Rear Suspension - Front Suspension - Electronic Suspension and Ride Control

Unit-9: Automotive Brakes

Brake System - Friction and Braking – Hydraulics - Brakes and Braking - Drum Brakes - Disc Brakes - Parking Brakes - Brake system valves - Master Cylinder - Power Brakes - Servicing of Drum Brakes - Servicing of Disc Brakes.

Unit-10: Tires and Wheels

Purpose of Tires - Tire Construction - Tire Grading - Wheel Construction - Servicing of Tires - Tire and Wheel balance - Tire and Wheel repair.



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**Name of the Programme– Vocational Diploma in Vehicle Mechanic -
Syllabus (Flexible Skill Training Mode)**

Course Title : **Automobile Electronics**
Course Code : **VDVM-3**
Course Credit : **4**

Course Objectives

While studying the **Automotive Electronics**, the student shall be able to:

- Define the basic terminologies of automobile electronics and digital electronics
- Explain about the various fuel ignition and injection systems
- Recognize the various sensor and actuators of the vehicle
- Summarize about the locking and safety systems of vehicle
- Perform the fault diagnosis of all electronic system of the automobile

Course Outcomes

After completion of the **Course Automotive Electronics**, the student will be able to:

- Understand about the basic terms of automobile electronics
- Describe about the electronic fuel ignition and injection system
- Demonstrate the use and applicability of sensors and actuators
- Explain about Anti-lock braking system and automatic transmission
- Conduct the Repair and maintenance of electronic system of automobile

Block-1: Electronic Terminologies And Electronic Fuel Injection System

Unit-1 – Basic Terminologies

What is Automotive Electronics? - Basic Electrical Terms - Basic Electronics Terminologies - Digital Electronics

Unit-2: Ignition and Fuel Injection System

Ignition System - Electronic Ignition System - Induction ignition or TCI - Capacitive Discharge Ignition (CDI) - Advantages and disadvantages of Electronic ignition - Advanced Ignition System - Electronic Fuel Injection System

Block-2: Sensors and Actuators

Unit-3: Sensors

What is sensor? - Types of Sensors - Oxygen Sensor - Parking Sensor

Unit-4: Actuators and Testing of Sensors & Actuators

Actuators - Various Actuators in Automobile - Testing of Sensors and Actuators

Block-3: Microprocessors, Vehicle Comfort and Safety Systems

Unit-5: Microprocessors and Microcontrollers

Microprocessor – Microcontrollers - Windscreen Wipers and Washers - Digital Displays - Lightings

Unit-6: Comfort, Safety systems of Vehicle

Driver Information - Car Air-Conditioning - Central Locking System and Power Windows - Air Bags and Belt Tensioners - Vehicle Security System

Block-4: ABS and Servicing of Electronic Components of Vehicle

Unit-7: Anti-Lock Brakes and Automatic Transmission system

Introduction to ABS - Anti-Lock Brake System (ABS) - Automatic Transmission - Electric Power Steering - Other Electronic systems - Cruise control

Unit-8: Repairing and Servicing of Electronic Components of Vehicle

Safe working practices - Circuits and Systems - Tools and Test Equipments – Multimeters - Special equipments - Diagnostics of Electronic Sensors and Actuators - Diagnosing charging system faults - Diagnosing ignition system faults - Diagnosing fuel control system faults - Diagnosing Lighting and Auxiliary system faults - Diagnosing Air-Conditioning and Chassis Electrical system faults - Diagnosing comfort and safety system faults.



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**Name of the Programme–Vocational Diploma in Vehicle Mechanic -
Syllabus (Flexible Skill Training Mode)**

Course Title	:	Automobile Engine & Electrical System (Practical)
Course Code	:	VDVM-P1
Course Credit	:	4

The following ten experiments are to be carried out on six different types of engines components including modern engines components and perform their servicing/replacing procedures of the components.

1. Dismantling and Study of Multi-Cylinder Petrol Engine.
2. Assembling of Multi-Cylinder Petrol Engine.
3. Dismantling and study of Multi-Cylinder Diesel Engine.
4. Assembling of Multi-Cylinder Diesel Engine.
5. Dismantling, Study and Assembling of Petrol Engine Fuel System.
6. Dismantling, Study and assembling of diesel engine fuel system.
7. Dismantling, Study and assembling of petrol engine cooling and lubrication system.
8. Dismantling, Study and assembling of diesel engine cooling and lubrication system.
9. Dismantling, Study and assembling of petrol engine ignition system.
10. Measurement of Cylinder bore, Stroke, Ovality, Tapperness, Main bearing dimensions and all other Engine components.



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**Name of the Programme–Vocational Diploma in Vehicle Mechanic -
Syllabus (Flexible Skill Training Mode)**

Course Title	:	Chassis and Transmission System (Practical)
Course Code	:	VDVM-P1
Course Credit	:	4

The following experiments are to be carried out on six different types of vehicles components including modern vehicles and perform their servicing/replacing procedures of the components.

1. Study and Measurement of Light and Heavy Commercial Vehicle Frame and Chassis.
2. Study, Dismantling and Assembling of Clutch.
3. Study, Dismantling and Assembling of Gear Box.
4. Study, Dismantling and Assembling of Propeller shaft.
5. Study, Dismantling and Assembling of Differential.
6. Study, Dismantling and Assembling of Front axles.
7. Study, Dismantling and Assembling of Rear axles.
8. Study, Dismantling and Assembling of Braking system.
9. Study, Dismantling and Assembling of Suspension system.
10. Study, Dismantling and Assembling of Steering system.



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**Life Coping Skills (LCS) and Communication Skills (CNS)-Core
Course for all Vocational Diploma Programmes**

Life Coping Skills and Communication Skills have been included to help the students to understand the meaning of life and to understand the meaning of relationship and how we communicate in every day life.

Examination System: Examination to Life Coping Skills and Communication Skills are designed to maintain quality of standard. Theory will be conducted by the University in the identified Examination Centres. For the Assignment students may be permitted to write with the help of books/materials for each Course, which will be evaluated by the Evaluators appointed by the University.

Assignment (Internal): Assignment carries 30 marks, consists of descriptive type of questions for each Course (3 X 10 = 30 Marks). Learners are expected to write 10-15 pages for each assignment. Submission of Assignment is compulsory.

Theory Examination (External): Students shall normally be allowed to appear for Theory Examination by completing Practical and Assignment. The Term-End Examination shall carry Section- A, Section- B and Section- C

Section-A	Three out of Five Short Answer Questions [Each 3- Marks]	3 X 3 = 9 Marks
Section-B	Three out of Five Long Answer Questions [Each 7- Marks]	3 X 7 = 21 Marks
Section-C	Four out of Seven Essay questions of which one will be Multiple Choice Question [Each 10-marks]	4 X 10 = 40 Marks
Total		70 Marks

Passing Minimum: The passing minimum is 35 percent in the internal and external/ theory examination taken together for successful completion of each course.



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Name of the Course – Life Coping Skills - Syllabus (Flexible Skill Training Mode)

Course Title	:	Life Coping Skills
Course Code	:	LCS
Course Credit	:	6

(1).Life Coping Skills : The main objectives of the Life Coping skills is to understand the meaning of life and its challenges, provide skills and knowledge needed to cope with life’s problems and challenges, develop a positive attitude, train to be successful and useful citizens through positive thinking, cope with criticism, failure, anger, loneliness, physical and verbal abuse, improve self-esteem, manage time and stress, develop one’s personality to its full potential, help the students to become team players, develop personal skills and to provide skill problems solving and decision making.

Block- 1-Self Skills

Unit-1: Self Skill – I

Meaning and Process of Coping- Restructuring the Life Story - External and Internal Influences in One's Life - Messages: Positive and Negative - Life Illustrations - Self Esteem - Self Concept - Self Acceptance - Self Actualisation- Personality Development

Unit-2: Self Skill – II

Positive Thinking - Goal Setting - Problem Solving - Decision Making

Block- 2: Social and Leadership Skills

Unit-3: Social Skills

Social Skills- Motivation- De-motivating Factor- Meaning and Attitude to Success- Time Management -The Management of Time is the Management of Life - How to gain an extra mile every day- Tips for Time Management - Stress Management

Unit-4: Leadership Skills

Emergence of a Leader -Characteristics of Leadership -Various kinds of Leaders - What should Leader do- The Moulding of a Leader - Characteristics of a Successful Leader- Team Work - What is it like work in a Team- What is Team Learning

Unit-5: Coping Skills – I

What is Shyness- How to Overcome Shyness- Tips to Overcome Shyness - Coping with Loneliness-Finding Ways to Change the Feelings of Loneliness-Overcoming Loneliness - Tips to Overcome Loneliness- Coping with Depression - Coping with Fear- Coping with Anger and Verbal Abuse -Verbal Abuse- Coping with Failure - Coping with Criticism

Unit-6: Coping Skills – II

Coping with HIV – AIDS- Coping with Alcoholism - Tobacco and Smoking - Coping with Substance Abuse

Block -4: Managerial and Entrepreneur Skills

Unit-7: Managerial Skills

Coping with Conflict- Conflict can be Constructive or Destructive- Constructive Nature of Conflicts- What are the Strategies for Managing Conflicts- Tactics of Conflict Management- Coping with Change- Twelve Steps to Implement Change

Unit-8: Entrepreneur Skills

Career Guidance - Career Planning- Preparation for Employment- Looking for Opportunities - Preparation for the Interview - Work Environment - Thriving in Today's Work Environment.



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Name of the Course – Communication Skills - Syllabus (Flexible Skill Training Mode)

Course Title	:	Communication Skills
Course Code	:	CNS
Course Credit	:	6

(2).Communication Skills: The main objectives of the Communication Skills is to introduce to the students the process and kinds of communication, train the students to code and decode communication effectively, explain the various interpersonal skills required to interact with others and make the students understand the meaning of relationship and how we communicate in every day life.

Block -1: Communication

Unit-1: Introduction to Communication

Communication concept- Process of Communication- Elements of Communication- Types of Messages- Types of Communication- Speech- Different Types of Verbal Communication-Effective Communication- Interpersonal Communication- Communication as Skilled Behaviour-Social Skills Model- Social Skills Model to Interpersonal Communication-Implications of the Approach-Components of Interpersonal Skills-Characteristics of a Good Conversation-Hints for Inter-Personal Relation-Ship

Unit-2: Effective Communication

Definition of Effective Communication- Common Forms of Communication- The Positive Value of Good Communication- Guidelines for Effective Communication- Review Questions- Three Principles of Communication- Communication Strategies

Block- 2: Situational and Behavioural Communication

Unit-3: Situational Language

Greeting and Introducing- Inviting Someone and Making Requests- Offering Help and Seeking Permission- Asking for Advice and Expressing Gratitude-Asking whether Someone Remembers- Persuading, Complimenting and Congratulating- Expressing Sympathy- Complaining and Apologising- Making Suggestions and Warning Someone- Asking for Excuse and Ending a Conversation- Asking for Information and Someone's Opinion- Asking if someone is sure and to Say Something

Again- Checking that you have understood- Asking whether someone knows- Asking About Possibility and Preference- Requesting Someone- Asking if someone Agrees- Asking if someone is Obligated to do something- Some Useful Expressions- Different Models of Situational Conversations

Unit-4: Behavioural Communication

Effective Criticism Made Easy: Basic Rules for Delivering-Negative Feedback to Others- Before Delivering to Negative Feedback- While Delivering Negative Feedback- After Delivering Negative Feedback

Block -3: Types and Modes of Communication

Unit-5: Modes of Communication

Group Discussion- Importance of Group Testing- Factors that Contribute to Group-Worthiness- Guidelines for Group Discussion- Factors that Matter in a Group Discussion- Important Parameters in Group Discussion- Types of Groups- Speech-Speech Distractions- Five ways to make your Audience Sit Up- Successful Public Speaking- Drafting a Speech- Major Pitfalls in Public Speaking- Body Language-The Constituents of Body Language

Unit-6: Leadership and Team Communication

Definition of a Leadership- Types of Leadership- Shared Leadership- Ten Principles for Leadership Communication- Styles of Leadership- Team Communication-Achieving Effectiveness through Team Communication- The Components of Communication- Characteristics of Highly Cohesive Teams

Block- 4: Interview Skills and English Language

Unit-7: Interview Skills

Interview Defined- Kinds of Interviews- Preparation for a Job Interview- Telephonic Interview- Preparation for a Telephonic Interview- Speaking to Foreigners- Success in Interview-Ten Most Frequently Asked Questions- Inter Whew- Inter Phew

Unit-8: English as Spoken and Written Language

Simple Sentence- Word Order- Modals- Passive Voice- Letter Writing-An Informal Letter-Formal Letter-Personal Letters- Official Letters- Paragraph Writing- Essay Writing- Types of Essay- Prose Comprehension- Poetry Comprehension- Precise Writing- Dialogues.