

Curriculum For Level-V Certificate Course

VEHICLE QUALITY

SYLLABUS FOR

ONE YEAR – FULL TIME

LEVEL-V CERTIFICATE COURSE IN VEHICLE QUALITY

Effective From

Under Development

Prepared By

Curriculum Development Cell

Institute of Research, Development & Training, U.P.,

Kanpur

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TEACHING AND EXAMINATION SCHEME																			
COURSE NAME :VECHILE QUALITY (SECTOR – AUTOMOBILE)																			
COURSE CODE : VQ-LEVEL V																			
DURATION OF COURSE : ONE YEAR																			
WITH EFFECT FROM																			
Sr. No.	Subject	ST. Code	Teaching Scheme						Examination Scheme										
			T h.	TU	Pr./ WS	D R G	Total	Hrs	Theory			Th. Total		PR. Total				Grand Total	
									Max	Min	SI Test	Max	Min	Hrs.	Marks	Sl. Test	Total marks		
1	Material Introduction	VQ 5.1	4	-	2		6	2.5	50	17	20	70	24	03	20	10	30	100	
2	Ferrous & Non Ferrous Physical Properties	VQ 5.2	4	-	2		6	2.5	50	17	20	70	24	03	20	10	30	100	
3	Plastics Mechanical Properties	VQ 5.3	4	-	3		7	2.5	50	17	20	70	24	03	20	10	30	100	
4	Rubber-Heat Treatment	VQ 5.4	7	-	6		13	2.5	50	17	20	70	24	03	20	10	30	100	
5	EMPLOYABLE SKILLS	GEN 5.5	4	-	4		8	2.5	50	17	20	70	24	03	20	10	30	100	
							40												500

Student Centered Disciplines(20)

20

OBREVIATIONS : TH-THEORY, TU-TUTORIAL, SL-SESSIONAL, PR-PRACTICALS, WS-WORKSHOP, DRG-DRAWING

NOTE :

1. Each period will be 50 minutes duration.
2. Each session will be 32 weeks.
3. Effective teaching will be at least 25 weeks.
4. Remaining periods will be utilized for revision etc.
5. SI system of units shall be used in each subject
6. Student centered activities will comprise of various co-curricular activities like seminar, extension lectures, field visits, NCC, NSS, Hobby, clubs, Games and cultural activities

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II- MAIN FEATURES OF THE CURRICULUM

Title of the course : **Level V Certificate Course in Vehicle Quality**

Duration : One Year

Pattern of the course : Annual System

Intake : 100

Type of course : Full Time

III-LIST OF EXPERTS

S.No.	Name & Designation	Name Of Organization/Institution	Date	Workshop Place
1	Sri Rituraj Mishra DGM	Tata Motors Ltd , Lucknow	26/09/18	G.P.Lucknow
2	Sri Sanjay srivastava	Tata Motors Ltd , Lucknow	26/09/18	G.P.Lucknow
3	Sri Prakash Chandra	Tata Motors Ltd , Lucknow	26/09/18	G.P.Lucknow
4	Sri Rajesh Kumar Sharma	Tata Motors Ltd , Lucknow	26/09/18	G.P.Lucknow
5	Smt Meenu Drivedi	Lecturer, Mechanical G.P.Lucknow	26/09/18	G.P.Lucknow
6	Sri Tushar Kiran	Lecturer, Mechanical G.P.Lucknow	26/09/18	G.P.Lucknow
7	Sri Himanshu Bhaskar	Lecturer, Mechanical G.P.Lucknow	26/09/18	G.P.Lucknow
8	Smt Deepshikha	Lecturer, English G.G.P.Lucknow	26/09/18	G.P.Lucknow
9	Sri Janbeag Loni	Principal, G.P.Lucknow	26/09/18	G.P.Lucknow
10	Sri Sanjeev Kumar Singh	Secretary, Board Of Technical Education, U.P	26/09/18	G.P.Lucknow
11	Sri Ashok Kushwaha	Text Book Officer, IRDT Kanpur	26/09/18	G.P.Lucknow

5.1 MATERIAL INTRODUCTION

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1. Latest Aggregates. (36 Hours)
2. Latest Vehicle Introduction to Indian Market. (24 Hours)
3. Introduction To Changes In Materials In Newer Vehicles. (25 Hours)
4. Benefits of New Materials. (15 Hours)

List of Practicals

1. Practical on new generation vehicles. (10 Hours)
2. Practical on new generation aggregates. (10 Hours)
3. Dismantling and assembly of urea tank, Exhaust gas processing unit. (20 Hours)
4. Materials identification and properties. (10 Hours)

5.2 FERROUS AND NON FERROUS PHYSICAL PROPERTIES

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1. **Introduction to Ferrous and Nonferrous Materials :** (16 Hours)
Magnetic properties, strength, conductivity
2. **Usages of Ferrous and Nonferrous Materials :** (16 Hours)
Various usage in automotive sector, non auto usage.
3. **Testing of Ferrous and Nonferrous Materials:** (16 Hours)
Hardness test, toughness test, hot hardness test. Tensile test, compression & dampening test.
4. **Execution Quality Process :** (20 Hours)
Detailing of manufacturing process & defining Quality controls during process.
5. **Measuring and Driving Quality Parameters :** (32 Hours)
Detailing of Quality processes, defining critical to Quality, measuring & control.

List of Practicals

1. Usage of instruments on vehicle (20 Hours)
2. Physical verification of performance symptoms. (20 Hours)

5.3 PLASTICS MECHANICAL PROPERTIES

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1. **Know How on Plastics :** (24 Hours)
What are plastics, thermo plastics & thermoset. Manufacturing technology of plastics.
2. **Properties of Plastics :** (16 Hours)
Melting point, durability, Virgin plastics, raw materials
3. **Handling, Storage and Shelf Life of Plastics :** (24 Hours)
Handling of raw material, Plastic moulding process, impact of temperature, dust on plastics.
Storage guidelines.
4. **Painting, Handling, Packaging of Painted Plastics :** (36 Hours)
Painting process, packaging & handling of different type of plastics. Handling of painted plastic material. Finishing of painted plastics.

List of Practical's

1. Identification of Plastics through properties. (10 Hours)
2. Preparing check list and handling trials for chapter 02. (20 Hours)
3. Preparing check list and handling trials for chapter 03.(20 Hours)
4. Defects identification and repairs practical. (20 Hours)

5.4 RUBBER-HEAT TREATMENT -PROCESS

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1. **Know How On Rubber, Different Kinds of Rubber : (24 Hours)**

Types of rubber, natural rubber Vs Synthetic rubber. Source of rubber. Different processes on rubber manufacturing,

2. **Preparation, Mixing and Making of Rubber : (16 Hours)**

Mixing ingredients, moulding & Vulcanizing of rubber. Finishing of rubber.

3. **Rubber Properties : (24 Hours)**

Elasticity, dampening & other properties of rubber.

4. **Usages of Rubber And Testing : (18 Hours)**

Different usage of rubber in industries. Various testing of properties of rubber.

5. **Handling, Storage & Shelf life of Rubbers : (18 Hours)**

Handling of raw material, rubber moulding process, impact of temprature, dust on rubber. Storage guidelines.

6. **Glass-Testing :**

I. **Glass Manufacturing : (16 Hours)**

Manufacturing process in detail.

II. **Processing of Glass : (16 Hours)**

Finishing, polyshing, fitting, cutting ,bending.

III. **Testing and Handling of Glass : (16 Hours)**

Thermal shock testing , internal pressure strength, vertical load resistance, pendulum impact testing.

7. **Composites-Re-cyclibility :**

I. **Re cycling requirement : (24 Hours)**

Purpose, use & need of recycling, Enviroment friendly methods & materials for re cycling.

II. Processes of re cycling : (28 Hours)

Different materials for re cycling, impact of re cycling. Various steps of re cycling.

List of Practicals

1. Uses of rubber on vehicle. (20 Hours)
 2. Identification, adjustment on vehicle. (20 Hours)
 3. Storage, FIFO and Handling. (30 Hours)
 4. Testing of Rubber components. (30 Hours)
 5. Measurement and checking (10 Hours)
 6. Handling and fitment (15 Hours)
 7. Testing (15 Hours)
- } Glass Testing

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5.5 EMPLOYABLE SKILLS

RATIONALE

Diploma holders are required to not only possess subject related knowledge but also soft skills to get good jobs and to rise steadily at their workplace. This subject is included to develop employability skills amongst the students.

DETAILED CONTENTS

1-Industrial Scenario Engineering Education and Expectations of competences from an engineer by employer .

2- Personality types characteristics and features for a successful engineer.

3-Professional Engineer desirable values and ethics and their development. Relation between engineering profession society and environment.

4- Managing project

- Leadership
- Motivation
- Time management
- Computer Software
- Interpersonal Relationship
- Engineer economics and fundamentals

5- Effective communication

- Listening
- Speaking
- Writing
- Presentation Technique/ Seminar
- Group discussion

6-Preparing for Employment

- Searching for job/job hunting

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- Resume writing
- Interview technique in personal interview telephonic interview, panel interview, group interview. Video conference.

7- Managing Self

- Managers body, mind motion & spirit
- Stress management
- Conflict resolution

8- Continuing professional development

- Organising learning and knowledge
- Use of computer for organising knowledge resources

9- Creativity, Innovation and Intellectual property right.

- Concept and need in present time for an engineer

10- Basic rules, laws and norms to be adhered by engineers during their working

Reference:- I. R.D.T. Uttarakhand (Community College Syllabus)

List of Equipments

1.	Aggregates cut sections	2
2.	General tools, concentration checking	1
3.	Measuring tape, Angle checking	2
4.	DFT, Cross Test, Vernier caliper	1
5.	Welding Tools and Equipment	1
6.	Painting Tools and Equipment	1
7.	General Tools	1
8.	Compression and Pull Tester	1
9.	Cutter	1
10.	Hacksaw Blade	1

Kindly mail the suggestion and comments for improvement of syllabus

Ashok Kushwaha

H.O.D.(Computer Science & Engineering)

Test Book Officer

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Kanpur-208002

(Please note that all information in this survey is confidential for the use of curriculum design only)

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