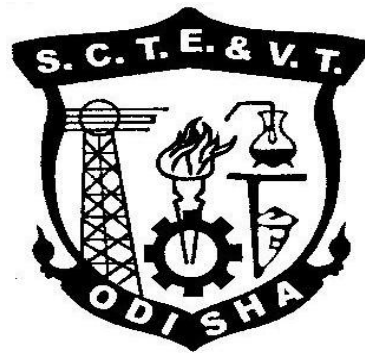


**CURRICULLUM OF
LEVEL 03; 1ST SEMESTER**

For

**DIPLOMA VOCATIONAL IN
AUTOMOBILE SERVICING**

(Effective FROM 2021-22 Sessions)



**STATE COUNCIL FOR TECHNICAL EDUCATION & VOCATIONAL TRAINING,
ODISHA, BHUBANESWAR**

STATE COUNCIL FOR TECHNICAL EDUCATION AND VOCATIONAL TRAINING, ODISHA								
TEACHING AND EVALUATION SCHEME FOR LEVEL 03: 1st Semester (D.Voc in Automobile Servicing) (wef 2021-22)								
Sl. No.	Subject Code	Subject	Periods/week		Credit		Marks in Evaluation Scheme	
			L	P	T	P	Exams (Hours)	Total Marks
		Theory						
1	Th.1	Language-I	3	-	3	-	2	50
2	Th.2	Applied Chemistry	3	-	3	-	2	50
3	Th.3	Applied Physics	3	-	3	-	2	50
4	Th.4	Applied Mathematics-I	3	-	3	-	2	50
		<i>Total</i>	<i>12</i>		<i>12</i>			<i>200</i>
		Practical						
5	Pr.1	Applied Chemistry Lab		1.5		1.5	3	50
6	Pr.2	Applied Physics Lab		1.5		1.5	3	50
		<i>Total</i>		<i>03</i>		<i>03</i>		<i>100</i>
		On-Job-Training (OJT)						
7		Automotive Service Technician Level 3 (ASC/Q 1401) OR Auto Body Technician Level 3 (ASC/ Q 1410) OR Casting Technician Level 3 (ASC/Q 3202)		15		15	-	200
		<i>Total</i>		<i>15</i>		<i>15</i>		<i>200</i>
		Grand Total	12	18	12	18		500
Abbreviations: L-Lecturer, T-Tutorial, P-Practical. Each class is of minimum 60 minutes duration								
		Evaluating Agency / Body					Passing Marks	
Theory		State Council of Technical Education & Vocational Training, Odisha					35%	
Practical		SCTE&VT/ Institute / Skill Knowledge Provider (SKP) / Training Partner					50%	
On-job Training (OJT)		Concerned Industry (where On-job Training was undergone by the student)					50%	

TH.1. LANGUAGE-I

Theory	3 Periods per week	Examination	2hours
Total Periods	45 Periods	Total Marks	50 Marks

Topic Wise Distribution of Periods

Sl. No.	Topic	Periods
1	Reading comprehension - Prose texts (Prescribed)	8
2	Reading comprehension – Poem (Prescribed)	5
3	Reading comprehension - Non prescribed	5
4	Grammar and usage	2
5	Functional writing and study skills - Paragraph writing	8
6	Functional writing and study skills - Letter writing	10
7	Functional writing and study skills - Note making	5
8	Functional writing and study skills - Ending	2

DETAILED CONTENTS

Module 1: Reading comprehension (prescribed texts) and functional grammar

A variety of genres – short stories, expository pieces, biographies, poems, plays, newspaper and magazine excerpts have been included. Teaching of grammar has been integrated with the reading texts. The emphasis is on functional grammar.

The following ten prose texts and five poems have been selected for development of different reading skills.

Prose texts (Prescribed)

- A warmer or a colder earth (popular science) Arthur – C. Clark
- The tiger in the tunnel (narrative) – Ruskin Bond.
- First two or four pages from Sunny Days (autobiographical) – By Sunil Gavaskar
- Case of suspension (narrative)
- Big brother (narrative) Shekhar Joshi
- Father, dear father (newspaper article from the Hindu)
- Face to face (autobiographical) Ved Mehta
- I must know the truth (narrative) Sigrun Srivastva
- If I were you (play) Douglas James
- India, her past and her future (speech) Jawahar Lal Nehru

Poems (Prescribed)

- Leisure – W H Davis
- The road not taken – Robert Frost
- Where the mind is without fear- Tagore
- My grandmother's house – Kamla Das
- The night of the scorpion – Nissi, Ezekiel

Non-prescribed

In this section learners will be exposed to newspaper, articles, tables, diagrams, advertisements etc. which they have to read carefully and interpret. In the examination similar pieces will be used.

Grammar and usage:

The following points of grammar and usage have been selected from the reading passages.

- Agreement /concord: number – gender etc.
- Tenses: simple past (negatives/interrogatives) present perfect, past perfect continuous, past perfect, expressing future time (will and going to)

- Passive voice (perfect tenses and modals)
- Modals (must, should, ought to, would)
- Linking words (to like because although, instead of, if, as, since, who, which that, when however, in spite of)
- Reported speech, statements, questions (yes/no)

Module 2: Functional writing and study skills

This module helps the learner to write descriptive and narrative paragraphs, letters, reports, notices etc. and also practice skills of note making

- Paragraph writing
 - Describing objects
 - Describing people
 - Narrating events, stories
- Letter writing
 - Application for leave
 - Application for jobs
 - Asking for information from various agencies (e.g. Last date for getting prospects; price of items before placing orders etc.)
- Note making
- Ending (punctuation, spelling, appropriate vocabulary, structures)

Syllabus to be covered before IA: Module 1

RECOMMENDED BOOKS

1. Effective Communication Skills, Kulbhushan Kumar, Khanna Publishing House
2. Business Communications, Varinder Bhatia, Khanna Publishing House

TH.2 APPLIED CHEMISTRY

Theory	3 Periods per week	Examination	2hours
Total Periods	45 Periods	Total Marks	50 Marks

Topic Wise Distribution of Periods

Sl. No.	Topic	Periods
1	Structure of Atom	7
2	Periodic Properties of Elements	8
3	Chemical Bonds	5
4	Fuel and their Classification	8
5	Water	5
6	Corrosion	5
7	Plastic and Polymers	7

DETAILED CONTENTS

1.0 Structure of Atom:

- Rutherford model of the structure of atom, Bohr's theory of electrons, quantum numbers and their significance, de-Broglie equation and uncertainty principle, electronic configuration of 1 to 30 elements

2.0 Periodic Properties of Elements:

- Periodic law, periodic table, periodicity in properties like atomic radii and volume, ionic radii, ionization energy and electron affinity, Division of elements into s,p,d and f blocks

3.0 Chemical Bonds:

- Electrovalent, covalent and coordinate bond and their properties, Metallic bonding (electron cloud model) and properties (like texture, conductance, luster, ductility and malleability).

4.0 Fuel and their Classification:

- Definition, characteristics, classification into solid, liquid and gaseous fuel, Petroleum and brief idea of refining into various fractions and their characteristics and uses, Calorific value of fuel, Gaseous fuels- preparation, properties, composition and use of producer gas, water and oil gas.

5.0 Water:

- Impurities in water, methods of their removal, hardness of water, its types, causes and removal, disadvantages of hard water in boilers, pH value and its determination by calorimetric method.

6.0 Corrosion:

- Its meaning, theory of corrosion, prevention of corrosion by various methods using metallic and non-metallic coatings

7.0 Plastic and Polymers:

- Plastic-thermo-plastic and thermo-setting, Introduction of Polythene. P.V.C. Nylon, synthetic rubber and phenol-formal-dehyde resin, their application in industry.

Syllabus covered up to I.A-Chapters 1,2 &3

RECOMMENDED BOOKS

1. Chemistry, Satyaprakash, Khanna Publishing House
2. Engineering Chemistry, Saiful Islam, Khanna Publishing House

TH.3 APPLIED PHYSICS

Theory	3 Periods per week	Examination	2hours
Total Periods	45 Periods	Total Marks	50 Marks

Topic Wise Distribution of Periods

Sl. No.	Topic	Periods
1	Units & Dimensions	7
2	Surface Tension and Viscosity	8
3	Vibrations	7
4	Heat	8
5	Ultrasonic	7
6	Optics	8

DETAILED CONTENTS

1.0 Units & Dimensions:

- M.K.S. fundamentals & derived units, S.I. base units supplementary units and derived units, Dimensions of various physical quantities, uses of dimensional analysis.

2.0 Surface Tension and Viscosity:

- Molecular forces, molecular theory of surface tension, surface energy, capillary action, concept of viscosity, coefficient of viscosity, principle and construction of viscometers.

3.0 Vibrations:

- Vibration as simple spring mass system, elementary and qualitative concept of free and forced vibrations, resonance. Effects of vibrations on building bridges and machines members.

4.0 Heat:

- Temperature and its measurement, thermoelectric, platinum resistance thermometers and pyrometers. Conduction through compound media and laws of radiations.

5.0 Ultrasonic:

- Productions of ultrasonic waves by magnetostriction and piezo-electric effect, application of ultrasonics in industry.

6.0 Optics:

- Nature of light, reflection and refraction of a wave from a plane surface. Overhead projector and Epidiascope.

Syllabus covered up to I.A-Chapters 1,2 &3

RECOMMENDED BOOKS

1. Text Book of +2 Physics – Vol-I & II by Barik, Das & Sharma (Klayani Publishers).
2. Engineering Physics by Gaur & Gupta (Dhanpat Rai & Co., New Delhi)
3. Fundamental of Physics - Halliday, Resnick & Walker (Willey Toppan Publishers)
4. Engineering Physics – B. L. Theraja (S. Chand Publishers, New)

TH.4. APPLIED MATHEMATICS – I

Theory	3 Periods per week	Examination	2hours
Total Periods	45 Periods	Total Marks	50 Marks

Topic Wise Distribution of Periods

Sl. No.	Topic	Periods
1	Sets, Relations and Functions	10
2	Sequences and Series	8
3	Algebra-I	10
4	Co-ordinate Geometry	10
5	Statistics and Probability	7

DETAILED CONTENTS

1.0 Sets, Relations and Functions:

- Sets
- Relations and Functions-I
- Trigonometric Functions-I
- Trigonometric Functions-II
- Relation between Sides and Angles of A triangle

2.0 Sequences and Series:

- Sequences and Series, Some Special Sequences

3.0 Algebra-I:

- Complex Numbers
- Quadratic Equations and Linear inequalities
- Principle of Mathematical Induction
- Permutations and Combinations
- Binomial Theorem

4.0 Co-ordinate Geometry:

- Cartesian System of Rectangular Co-ordinates, Straight Lines, Circles, Conic Sections

5.0 Statistics and Probability:

- Measures of Dispersion
- Random Experiments and Events
- Probability

Syllabus covered up to I.A-Chapters 1, 2 &3

RECOMMENDED BOOKS

1. Applied Mathematics-I, J.K. Tyagi, Khanna Publishing House
2. Engineering Mathematics, Reena Garg, Khanna Publishing House

Pr.1. APPLIED CHEMISTRY LAB

Practical	1.5 Periods per week	Examination	3 hours
Total Periods	23 Periods	Total Marks	50 Marks

List of Practical Experiments:

1. Proximate analysis of solid fuel.
2. Experiments based on Bomb Calorimeter.
3. Determination of turbidity in a given sample.
4. To determine the flash and fire point of a given lubricating oil.
5. To determine the viscosity of a given lubricating oil by Redwood viscometer.
6. To determine cloud and pour point of a given oil.

Pr 2. APPLIED PHYSICS LAB

Practical	1.5 Periods per week	Examination	3 hours
Total Periods	23 Periods	Total Marks	50 Marks

List of Practical Experiments:

1. To determine the surface tension of a liquid by rise in capillary.
2. To determine the viscosity of a given liquid.
3. To determine the frequency of tuning fork using a sonometer.
4. To determine the frequency of AC main using sonometer.
5. Time period of a cantilever.