



<b>Program</b>	BACHELOR OF VOCATION (B.Voc.)	<b>Semester - 2</b>
<b>Type of Course</b>	-	
<b>Prerequisite</b>		
<b>Rationale</b>	NA	
<b>Effective From A.Y.</b>	2024-25	

Teaching Scheme (Contact Hours)				Examination Scheme				
Lecture	Tutorial	Lab	Credit	Theory Marks		Practical Marks		Total Marks
				SEE T	IAT	SEE P	CCE	
-	-	16	6	-	-	100	-	200

SEE - Semester End Examination, IAT - Internal Assessment Test, CCE - Continues & Comprehensive Evaluation

Course Content		T - Teaching Hours   W - Weightage	
Sr.	Topics	T	W
1	<p><b>Carry out market research and prepare a cost estimate for a Rooftop Solar Photovoltaic plant</b></p> <p>Select the right quality of solar module by identifying the key technical parameters in data specification sheets &amp;bull; select the right quality of inverter by identifying the key technical parameters in data specification sheets, select the right quality of mounting structure by identifying the key technical parameters in data specification sheets, select the right quality of battery by identifying the key technical parameters in data specification sheets, select the balance of system by identifying the key technical parameters,</p> <p>Identify market price of different components of solar PV system, prepare a cost estimate for a solar project, prepare a cost benefit analysis for a rooftop solar PV plant including LCOE, Payback, IRR etc., identify the policy, regulations and procedures for solar rooftop sector in the local market, identify and select the appropriate business models in solar rooftop sector</p>	60	30
2	<p><b>Prepare site feasibility report</b></p> <p>Identify optimum location of installations, Assess the site level pre-requisites for solar panel installation, Decide on the type of mounting to be constructed and place of mounting as per client requirement, Check for any shading obstacles, Prepare a site map of the location where installation has to be carried out, Assess the load to be run on solar PV power plant and prepare a load profile, Estimate the capacity of solar PV power plant, Decide on battery backup as per grid availability, loads and client expectation, Assess or obtain the site specific major parameters of solar resource data like GHI, DNI, Temperature and Wind, Perform shading analysis, Estimate the energy generated from the rooftop solar PV power plant using solar design software's like PV*SOL®, PV syst, etc. Identify the risks associated with the specific solar project, Prepare a site Feasibility Study Report using specialized software like PV*SOL®, PVsyst, etc.</p>	40	20
3	<p><b>Manage Solar PV project lifecycle</b></p> <p>Read and interpret the single line diagram, civil / mechanical drawings and electrical drawings, Read and interpret the bill of material, Calculate the lifecycle cost of a rooftop solar project, Identify and mitigate various risks associated with the project, Ensure the solar PV system and structure meets the local government and regulatory requirements, Prepare action plan and coordinate the implementation of rooftop solar project, Identify the maintenance activity required for a rooftop solar PV power plant components, Prepare a preventive maintenance schedule, Ensure proper cleaning of solar panels periodically, Ensure regular inspection of the solar PV system to identify and rectify the faults</p>	50	25
4	<p><b>Entrepreneurship skills</b></p>	25	15



Course Content		T - Teaching Hours   W - Weightage	
Sr.	Topics	T	W
	Describe the process for setting up a new venture, Identify the key ingredients of a business plan, Distinguish between fixed and working capital requirements, Describe the components of a loan application for fund raising, Demonstrate good Etiquettes and manners while communicating with the client, Demonstrate the importance of time management, Demonstrate leadership skills and effective resource management techniques, Demonstrate the use of MS word and MS excel for preparing a proposal, Prepare a workable presentation for marketing and business development, Choose the right buyer in a given situation of market parameters, Identify the challenges and risks for new entrepreneurs and the possible mitigation measures		
5	<b>Maintain Personal Health &amp; Safety at project site</b>  Identify the requirements for safe work area; Administer first aid; Identify the personal protective equipment used for the specific purpose; Identify the hazards associated with photovoltaic installations; Identify work safety procedures and instructions for working at height; Understand Occupational health & Safety standards and regulations for installation of Solar PV system	25	10
<b>Total</b>		<b>200</b>	<b>100</b>

Course Outcomes	
<b>At the end of this course, students will be able to:</b>	
C01	Market Research and Cost Estimation
C02	Site Feasibility Assessment
C03	Solar PV Project Lifecycle Management
C04	Entrepreneurship Skills

Reference Books	
1.	<b>Solar Photovoltaic Technology and Systems: A Manual for Technicians, Trainers, and Engineers</b> By Chetan Singh Solanki   Academic Press
2.	<b>Photovoltaic Systems Engineering</b> By Roger A. Messenger and Jerry Ventre   CRC Press
3.	<b>Photovoltaic Design and Installation For Dummies</b> By Ryan Mayfield   For Dummies
4.	<b>Solar PV Engineering and Installation: Preparation for the NABCEP PV Installation Professional Certification</b> By Sean White   Routledge
5.	<b>Photovoltaic Design and Installation Manual</b> By Solar Energy International   New Society Publishers



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<b>Type of Course</b>	-	
<b>Prerequisite</b>		
<b>Rationale</b>	NA	
<b>Effective From A.Y.</b>	2024-25	

Teaching Scheme (Contact Hours)				Examination Scheme				
Lecture	Tutorial	Lab	Credit	Theory Marks		Practical Marks		Total Marks
				SEE T	IAT	SEE P	CCE	
-	-	16	6	-	-	100	-	200

SEE - Semester End Examination, IAT - Internal Assessment Test, CCE - Continues & Comprehensive Evaluation

Course Content		T - Teaching Hours   W - Weightage	
Sr.	Topics	T	W
1	<b>Introduction to Industrial Electrician</b>  Basic block diagram of power system. State the elements of Power Systems Generation, Transmission, and Distribution. Discuss Power industry and Types of load. State the duties and responsibilities of an Industrial Electrician.	10	5
2	<b>Fundamental of Industrial Wiring</b>  Explain the importance of basic laws, such as Ohms law, Kirchhoff's laws. Define the standard units of electrical measurement such as Current, voltage, resistance, impedance, power factor and energy. Identify conductors, insulators and their types. Explain the conversion of Star to Delta and vice versa. Measure current, voltage and resistance of single phase and three phase load. Establish simple single phase and three phase electrical connections using resistance, voltmeter, ammeter and multimeter etc.	40	20
3	<b>Prepare for industrial wiring operations</b>  Verify the characteristics of series, parallel and its combination circuits. Typea of wiring. Identify the types of electric lighting and heating systems for commercial, domestic residential and industrial use.  Interpret layout and drawings of the circuit. Describe classification and identification of the electrical equipment, cables, wires and electrical accessories used in the industry. Identify the phase, neutral and earth connections in single and three phase supply.	40	20
4	<b>Earthing Design.</b>  Types of earthing. Detail earthing design. Soil resistivity. Need of earthing in industrial system. Rod, Plate & Pipe Earthing. Explain the concept of pipe earthing and plate earthing. Insert the galvanized iron plate electrode in case of plate earthing. Fix the pipe electrode as per specifications in case of pipe earthing. Check that the connections are not loose and fixed as per the specifications.	30	15
5	<b>Perform installation and testing of switchboard:</b>  Describe the various types of switches such as SPST, SPDT, DPST, DPDT, Toggle switch, pushbutton switch, level actuator, limit switch, selector switch, and flame proof switch. MCB, MCCB, ELCB. Prepare One Switch Board as par application. Perform control panel wiring design.	20	10
6	<b>Interpret Different Drawing Diagram:</b>	20	10



Course Content		T - Teaching Hours   W - Weightage	
Sr.	Topics	T	W
	Read and interpret drawings and documentation including 1 $\emptyset$ System through RLC circuits with phase diagram, 3 $\emptyset$ System-generation of 3 $\emptyset$ system, 3 $\emptyset$ type (Star, Delta). Identify the range of materials and installation techniques to be used in different environments. Describe how to lay cable in different circuits.		
7	<b>Basic Tools Identification</b>	20	10
	Explain functioning and usage of tools required for marking, punching, cutting, drilling, filing, stripping, crimping, socketing and fixing glands and screws etc. Describe the Central Electricity Authority (CEA) Regulations for measures relating to Safety and Electricity Supply (2010).		
8	<b>Workplace health and safety practices</b>	20	10
	State the importance of working in clean and safe environment. Identify potential health and safety risks and hazards in the work environment and their possible causes.  Identify various causes of fire, such as heating of metal, spontaneous ignition, sparking, electrical heating, loose fires, smoking, welding, chemical fires, etc. Describe the different methods of extinguishing a fire.		
<b>Total</b>		<b>200</b>	<b>100</b>

Course Outcomes	
<b>At the end of this course, students will be able to:</b>	
C01	To Understand basic concept of Industrial Wiring
C02	To Understand use of different switching equipment for industrial wiring
C03	Application of earthing and panel design for control the equipment
C04	To Understand health and safety practices on work place

Reference Books	
1.	<b>Electrical Wiring Residential</b> By Ray C. Mullin and Phil Simmons   Cengage Learning
2.	<b>Electricity for the Trades</b> By Frank Petruzella   McGraw-Hill Education
3.	<b>Principles of Power System</b> By V. K. Mehta, Rohit Mehta   S. Chand Publications
4.	<b>Practical Electrical Wiring: Residential, Farm, Commercial, and Industrial</b> By Frederic P.Hartwell   McGraw-Hill Education
5.	<b>Elements of Electrical Design</b> By J. G. Jamnani   Mahajan Publication



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<b>Type of Course</b>	-	
<b>Prerequisite</b>		
<b>Rationale</b>	NA	
<b>Effective From A.Y.</b>	2024-25	

Teaching Scheme (Contact Hours)				Examination Scheme				
Lecture	Tutorial	Lab	Credit	Theory Marks		Practical Marks		Total Marks
				SEE T	IAT	SEE P	CCE	
-	-	2	1	-	-	30	-	50

SEE - Semester End Examination, IAT - Internal Assessment Test, CCE - Continues & Comprehensive Evaluation

Course Content		T - Teaching Hours   W - Weightage	
Sr.	Topics	T	W
1	To demonstrate usage of Digital Voltmeter, Digital Ammeter and Digital multi meter.	2	
2	To demonstrate usage of DSO for Periodic waveforms, Square waveforms produced by a function generator.	2	
3	To study the Sinusoidal Waveform with it's different Parameters.	2	
4	To demonstrate the different rating Resistors, Inductors and Capacitors.	2	
5	To study the measurement of Real Power, Reactive Power and Apparent Power.	2	
6	To study Purely Resistive Circuit with its Waveform.	2	
7	To Obtain Response of Purely inductive Circuit and Impedance Calculation.	2	
8	To Understand the Phenomena of Resonance.	2	
9	To verify Phase and Line relationship of Voltage and Currents in 3 phase Star and Delta Connection	2	
10	To Study and Understand Series and Parallel RLC circuit.	2	
<b>Total</b>		<b>20</b>	



**Course Outcomes**

**At the end of this course, students will be able to:**

C01	Describe Different Electrical Equipments and its Usage.
C02	Analyze Single Phase Series Circuits with demonstration.
C03	Evaluate Different A.C Series Circuits useful in Electrical Components.
C04	Understand the 3phase Circuits with wave form and hands on practice.



<b>Program</b>	BACHELOR OF VOCATION (B.Voc.)	<b>Semester - 2</b>
<b>Type of Course</b>	-	
<b>Prerequisite</b>		
<b>Rationale</b>	In the field of Electronics, it is essential to use/maintain various types of equipment which are electronically operated and controlled. For using/maintaining such equipment, the fundamental principles of electronics are to be applied in many situations to arrive at the probable solutions to many of the broadly defined problems which they will face during their career. Therefore, the knowledge about the functions of various basic electronics devices and the associated circuits including the associated practical skills acquired through the laboratory will help the student. This course is therefore so designed that the students will be able to apply the principles of digital electronics when required.	
<b>Effective From A.Y.</b>	2024-25	

Teaching Scheme (Contact Hours)				Examination Scheme				
Lecture	Tutorial	Lab	Credit	Theory Marks		Practical Marks		Total Marks
				SEE T	IAT	SEE P	CCE	
-	-	2	1	-	-	30	-	50

SEE - Semester End Examination, IAT - Internal Assessment Test, CCE - Continues & Comprehensive Evaluation

Course Content		T - Teaching Hours   W - Weightage	
Sr.	Topics	T	W
1	Convert Number system to another. (Binary, Decimal, Octal, Hexadecimal)	2	
2	To study different types of Logic Gates & verify the Truth-Table for the same. (AND, OR, NOT, NAND, NOR, EX-OR & EX-NOR)	2	
3	To verify the statements of De-Morgan's Theorem.	2	
4	To verify NAND gate as Universal Gate	2	
5	To verify NOR gate as Universal Gate	2	
6	To verify the given Boolean Expression experimentally by using Basic Logic Gates. $A.B + A'.C = (A + C) . (A' + B)$	2	
7	To Design and implement Half-Adder & Full-Adder.	2	
8	To Design and implement Half Subtractor & Full Subtractor.	2	
9	To Perform 3 To 8 Line Decoder.	4	
10	To study different types of Flip-Flops.	4	
<b>Total</b>		<b>24</b>	

**Course Outcomes**

At the end of this course, students will be able to:

C01	Solve the given problem using fundamentals of Number systems.
C02	Apply Boolean algebra for circuit optimization.
C03	Elaborate various types of Combinational circuits.
C04	Recognize Flip-flops as Sequential circuits.

**Miscellaneous****Major Equipment:**

1. Digital Electronics Trainer kit.
2. Complete Bread Board Systems, switches and I/O indicators, millimeters.
3. Digital Storage Oscilloscopes.

**List of Open Source Software/learning website:**

1. [www.vlab.co.in](http://www.vlab.co.in)
2. [www.nptel.ac.in](http://www.nptel.ac.in)



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<b>Type of Course</b>	-	
<b>Prerequisite</b>		
<b>Rationale</b>	In the field of Solar & Renewable Energy, Solar energy is leading renewable source. It is essential to know the basic of solar cell and internal structure with their characteristic. Enhance the knowledge of solar cell manufacturing. Construction of Solar Photovoltaic modules. Design of solar PV module. Solar cell performance analysis technique. Solar radiation and its measurement.	
<b>Effective From A.Y.</b>	2024-25	

Teaching Scheme (Contact Hours)				Examination Scheme				
Lecture	Tutorial	Lab	Credit	Theory Marks		Practical Marks		Total Marks
				SEE T	IAT	SEE P	CCE	
3	1	-	4	50	-	-	-	70

SEE - Semester End Examination, IAT - Internal Assessment Test, CCE - Continues & Comprehensive Evaluation

Course Content		T - Teaching Hours   W - Weightage	
Sr.	Topics	T	W
1	<b>Introduction to Solar Cell</b>  Introduction to Solar Cell, introduction to P-N junction, Space charge, Energy band diagram of P-N junction, P-N junction different bias condition, I-V relationship, P-N junction Qualitative analysis.	10	20
2	<b>Design of solar cell:</b>  Basics of Solar Photovoltaic, Photovoltaic effect, Principle of photovoltaic conversion, Solar cell Characteristic and design, Short circuit current, open circuit voltage, Fill factor, Efficiency. Loss in solar cells, effect of series and shunt resistance, Effect of temperature, Analytical Techniques. Types of Solar Cell	12	30
3	<b>Solar Photovoltaic Modules:</b>  Solar PV modules from solar cells, Cell Series and Parallel Connection, Mismatch in Series Parallel Connection, design and structure of PV module, PV module Power output. Block Diagram of Solar PV system.	12	30
4	<b>Solar Radiation:</b>  The SUN and The Earth position, The SUN and Earth movement, angle of sunrays on Solar Collector, SUN Tracking, Estimation of Solar Radiation Energy, Measurement of Solar Radiation	10	20
<b>Total</b>		<b>44</b>	<b>100</b>

Suggested Distribution Of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyze	Evaluate	Create
<b>Weightage</b>	40	40	20	0	0	0

NOTE : This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

**Course Outcomes**

At the end of this course, students will be able to:

C01	Basics of Solar PV Cell and PN junction
C02	Learn the fundamentals Characteristic of Solar PV Cell.
C03	Learn the fundamentals Characteristic of Solar PV Cell.
C04	Ability to understand solar radiation and measurement

**Reference Books**

1.	<b>3. Renewable Energy Technologies; A Practical Guide for Beginners</b> By Chetan Singh Solanki   PHI School Books, Pub. Year 2008
2.	<b>Solar Photovoltaic: Fundamentals, Technologies and Application</b> By Chetan Singh Solanki   PHI Learning Pvt Ltd, Pub. Year 2009
3.	<b>Renewable Energy Source &amp; Emerging Technologies</b> By D P Kothari, K C Singal   PHI Learning Pvt. Ltd.



<b>Program</b>	BACHELOR OF VOCATION (B.Voc.)	<b>Semester - 2</b>
<b>Type of Course</b>	-	
<b>Prerequisite</b>		
<b>Rationale</b>	NA	
<b>Effective From A.Y.</b>	2024-25	

Teaching Scheme (Contact Hours)				Examination Scheme				
Lecture	Tutorial	Lab	Credit	Theory Marks		Practical Marks		Total Marks
				SEE T	IAT	SEE P	CCE	
3	-	-	3	50	-	-	-	50

SEE - Semester End Examination, IAT - Internal Assessment Test, CCE - Continues & Comprehensive Evaluation

Course Content		T - Teaching Hours   W - Weightage	
Sr.	Topics	T	W
1	<b>Alternating Current</b> <ul style="list-style-type: none"> <li>Representation of sinusoidal waveforms,</li> <li>Peak and RMS values, Impedance, Form Factor, Peak Factor</li> <li>Phasor representation of AC quantities,</li> <li>Real power, Reactive power, Apparent power</li> <li>Power Triangle</li> </ul>	10	20
2	<b>AC Circuit Analysis</b> <ul style="list-style-type: none"> <li>Power factor and It's important, Phasor Representation ,</li> <li>Analyzing Single phase AC Circuits</li> <li>Purely Resistive circuit ( R Circuit ) ,</li> <li>Purely Inductive circuit ( L Circuit )</li> <li>Purely Capacitive circuit ( C Circuit )</li> </ul>	8	20
3	<b>Series AC Circuit</b> <ul style="list-style-type: none"> <li>Series RL Circuit</li> <li>Series RC Circuit</li> <li>Series RLC Circuit</li> <li>Parallel RLC Circuit</li> <li>Resonance, Series and parallel resonance.</li> </ul>	8	25
4	<b>Three Phase circuit</b> <ul style="list-style-type: none"> <li>Importance of Three phase circuit</li> <li>Balanced Circuit, Unbalanced Circuit</li> <li>Star Connection of Impedance</li> <li>Delta Connection of Impedance</li> <li>Line Voltage, Phase Voltage</li> <li>Voltage and Current relations in star and delta connections</li> <li>Power measurement in three phase circuit</li> </ul>	10	20
5	<b>Complex Quantities</b> <ul style="list-style-type: none"> <li>Polar Representation</li> <li>Rectangular Representation</li> <li>Polar to Rectangular Conversion and Vice versa</li> <li>Addition , Subtractions, Multiplication and Division of Quantities</li> </ul>	6	15
<b>Total</b>		<b>42</b>	<b>100</b>

**Suggested Distribution Of Theory Marks Using Bloom's Taxonomy**

Level	Remembrance	Understanding	Application	Analyze	Evaluate	Create
<b>Weightage</b>	40	40	10	10	0	0

*NOTE : This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.*

**Course Outcomes**

**At the end of this course, students will be able to:**

C01	Describe the Alternating Quantities applied to the Electrical Circuits
C02	Analyze Single Phase A.C Circuits
C03	Evaluate Single Phase Series Circuits
C04	Evaluate Complex problems of A.C Circuits



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<b>Type of Course</b>	-	
<b>Prerequisite</b>		
<b>Rationale</b>	The students need to learn basic concepts of digital circuits and system which leads to design of complex digital system such as microprocessors/microcontroller. The students need to know combinational and sequential circuits using digital logic fundamentals. This is the first course by which students get exposure to digital electronics world.	
<b>Effective From A.Y.</b>	2024-25	

Teaching Scheme (Contact Hours)				Examination Scheme				
Lecture	Tutorial	Lab	Credit	Theory Marks		Practical Marks		Total Marks
				SEE T	IAT	SEE P	CCE	
3	-	-	3	50	-	-	-	50

SEE - Semester End Examination, IAT - Internal Assessment Test, CCE - Continues & Comprehensive Evaluation

Course Content		T - Teaching Hours   W - Weightage	
Sr.	Topics	T	W
1	<b>Binary Systems</b> Introduction of Digital Systems, Binary numbers, Base Conversion (Binary, Decimal, Octal, Hexadecimal), Complements - R's Complement, (R-1)'s Complement, 2' and 10's Complement, 1's and 9's Complement, Binary Codes-Weighted Codes, Gray Code, Excess-3 Code	10	20
2	<b>Binary Logic And Boolean Algebra:</b> Binary logic, Logic Gates-AND, OR, NOT, NOR, NAND, EX-OR & EX-NOR, Universal Gates - NAND Gate & NOR Gate, Postulates, Laws, Boolean algebra, De-Morgan's Theorems, Boolean functions	8	20
3	<b>Boolean Function Implementation:</b> Need for simplification, Simplification by Karnaugh map(K-map) method 2 - Variable K - map, 3 - Variable K - map, 4 - variable K - map, K - Map using Don't care condition.	8	20
4	<b>Basic Combinational circuits:</b> Introduction to combinational circuit, Arithmetic and Logical Combinational Circuits -Half Adder, Full Adder, Half Subtractor, Full Subtractor, Decoder -3 to 8 Decoder, Encoder 8 to 3 Encoder, Multiplexer - 4 to 1 multiplexer, Demultiplexer -1 to 4 Demultiplexer.	8	20
5	<b>Basic Sequential circuits:</b> Introduction to sequential circuits, Flip-flops-SR Flip flop, JK Flip flop, D-Flip flop, T-Flip flop,	8	20
<b>Total</b>		<b>42</b>	<b>100</b>

Suggested Distribution Of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyze	Evaluate	Create
<b>Weightage</b>	40	40	20	0	0	0

NOTE : This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

**Course Outcomes**

At the end of this course, students will be able to:

C01	Solve the given problem using fundamentals of Number systems.
C02	Apply Boolean algebra for circuit optimization.
C03	Optimize given Boolean expression with K-map.
C04	Elaborate various types of Combinational circuits.
C05	Recognize Flip-flops as Sequential circuits.

**Reference Books**

1.	<b>Digital Logic and Computer Design</b> By Mano M. Morris   Pearson publication
2.	<b>Fundamentals of Digital circuits</b> By A. Anand Kumar   PHI
3.	<b>Digital Principles and Applications</b> By Malvino & Leech   McGraw-Hill Education
4.	<b>Modern Digital Electronics</b> By R P Jain   TMH



<b>Program</b>	BACHELOR OF VOCATION (B.Voc.)	<b>Semester - 1</b>
<b>Type of Course</b>	-	
<b>Prerequisite</b>		
<b>Rationale</b>	-	
<b>Effective From A.Y.</b>	2024-25	

Teaching Scheme (Contact Hours)				Examination Scheme				
Lecture	Tutorial	Lab	Credit	Theory Marks		Practical Marks		Total Marks
				SEE T	IAT	SEE P	CCE	
3	1	-	4	50	-	-	20	70

SEE - Semester End Examination, IAT - Internal Assessment Test, CCE - Continues & Comprehensive Evaluation

Course Content		T - Teaching Hours   W - Weightage	
Sr.	Topics	T	W
1	<b>Elements of Grammar</b> Tenses Active-passive voice Subject verb agreement Modal auxiliary Prepositions	15	25
2	<b>Basics of Communication</b> Introduction Learning effective communication Definition and Process of communication Verbal and non-verbal communication Importance of interpersonal and intercultural communication in today's Organisation	8	25
3	<b>Reading and Writing Practices</b> Comprehension Précis writing Email writing Report writing Notice Writing	12	25
4	<b>Speaking Skill</b> Need and importance of effective speaking Barriers of effective speaking Short speeches Dialogue on various situation	10	25
<b>Total</b>		<b>45</b>	<b>100</b>

Suggested Distribution Of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyze	Evaluate	Create
<b>Weightage</b>	30	40	30	0	0	0

NOTE : This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table.

**Course Outcomes**

At the end of this course, students will be able to:

CO1	Comprehend the dynamics of various rules of grammar and check its validation while they speak and write language correctly.
CO2	Harness strategies to minimize barriers of effective communication. This structured mapping ensures learners build foundational knowledge, comprehend communication dynamics, and apply them effectively in real-world organizational contexts.
CO3	Demonstrate the qualities of writing in diverse situation by using the nuances such as conciseness, clarity, accuracy, organization, and coherence.
CO4	This chapter builds understanding of effective speaking and its barriers, then moves to the application level through speech and dialogue practice, enhancing real-world communication skills.

**Reference Books**

1.	<b>Communication Skills (TextBook)</b> By Sanjay Kumar, Pushp Lata   Oxford University Press
2.	<b>Technical English (TextBook)</b> By Dr. M. Hemamalini   Wiley
3.	<b>Spoken English (TextBook)</b> By R K Bansal and J B Harrison   Orient Longman
4.	<b>Communication Skills For Engineer (TextBook)</b> By Yogesh Ramani