



**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**Syllabus for Bachelor of Vocation (B.Voc.), 4<sup>th</sup> Semester**  
**Branch: Solar & Renewable Energy**  
**Subject Name: Industrial Safety**  
**Subject Code: 1140703**

**Type of course:** Core

**Prerequisite:** Basic requirement of Safety

**Rationale:** In the field of Solar & Renewable Energy, Industrial Safety is the major portion. Because there are many components in the Solar Application and Renewable energy sources which requires higher safety standards and the components should be environment friendly. That they will provide the required output with no hazard.

**Teaching and Examination Scheme:**

Teaching Scheme			Credits	Examination Marks				Total Marks
L	T	P	C	Theory Marks		Practical Marks		
				ESE(E)	PA(M)	ESE(V)	PA(I)	
3	0	0	3	50	0	0	0	50

Sr. No.	Topic	No. of Hours	Module Weightage
01	<b>Introduction to Industrial Safety</b> Objectives, Definition of safety, Types of safety, Definition of industrial safety, Importance of industrial safety, Overview of industrial accidents and safety regulations, Emergency Symbols.	6	15%
02	<b>Electrical Safety Management:</b> Safety Management during Operation and Maintenance, Clearance and Creepages, Electric Shock, need of Earthing, different methods of Earthing, factors affecting the Earth Resistance, methods of measuring the Earth Resistance, Equipment Earthing and System Grounding, Earthing Procedure - Building installation, Domestic appliances, Industrial premises, Earthing of substation, generating station and overhead line.	12	30%
03	<b>Hazard Identification and Risk Assessment</b> Methods for identifying workplace hazards, Risk assessment techniques e.g., Hazard and Operability Studies (HAZOP), Hazard Identification Study (HAZID), Prioritizing and mitigating risks, Work place Management	8	20%
04	<b>Personal Protective Equipment (PPE)</b> Types of PPE and their applications, Selection, proper use, and maintenance of PPE, PPE regulations and standards, First Aid, CPR	10	20%
05	<b>Emergency Preparedness and Response</b> Developing emergency response plans, Evacuation procedures and drills, Handling emergencies such as fires, Emergency rescue teams, and medical emergencies	6	15%
<b>TOTAL</b>		<b>42</b>	<b>100</b>



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**Distribution of marks weightage for cognitive level:**

<b>Distribution of Theory Marks</b>					
R Level	U Level	A Level	N Level	E Level	C Level
20	20	10	-	-	-

**Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze, E: Evaluate C: Create above Levels (Revised Bloom's Taxonomy)**

**Reference Books:**

1. Industrial Safety and Health Management C.Ray Asfahl, David W, Risky, Prentice Hall Publication
2. Industrial Safety and Maintenance management M.P.Poonia, S.C.Sharma, Khanna Publication
3. Rao, S., "Testing, commissioning, operation and maintenance of electrical equipment", 6/E., Khanna Publishers, New Delhi

**Course Outcome:**

<b>Sr.No.</b>	<b>CO statement</b>	<b>Marks% weightage</b>
CO1	To Relate different types of Industrial Safety	20
CO2	To Define Electrical Safety and it's Management	30
CO3	To Able to Classify Hazard Identification and Risk Assessment	30
CO4	To Develop Capability in Emergency Preparedness and Response	20