

**Curriculum**  
**For**  
**Certificate in Occupational Health and Safety in Marble**  
**Sector**  
**(6 Months Duration Course)**  
**Code:VD35S004**  
**(2013)**

## Scheme of Studies

### Occupational Health & Safety in Marble Sector

<b>Sr.#</b>	<b>Module</b>	<b>Theory (Hrs )</b>	<b>Practical (Hrs)</b>	<b>Total Hours</b>
1	Module A :Personnel Safety	20	100	120
2	Module B: First Aid	20	100	120
3	ModuleC: Electrical Safety	15	90	105
4	Module D: Production Floor Safety	25	130	155
5	Module E: Handling of Material	15	60	75
6	Module F: water pollution & solid waste	10	50	60
7	Module G: Quality Control	15	30	45
8	Module H :Communication with others	15	30	45
9	Module I. Role of Supervisor and subordinates	10	20	30
10	Module J. Personnel Selection & Training	15	30	45
	<b>Total</b>	<b>160</b>	<b>640</b>	<b>800</b>

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## **Introduction**

This course is aimed at introducing the basic skills and knowledge of occupational health and safety in marble sector. The trainee is introduced in step by step manner to the various elements of the discipline and their implication. The students are encouraged to perform practical work with a focus on acquiring a wide range of new skills.

## **Course Objectives**

1. Objective of this course is to provide HSE skilled workforce to Marble sector.
2. Workforce produced by this training would help to reduce unemployment and poverty in the society.
3. This training course is designed to create job opportunities.
4. Further, this Curriculum is developed by considering the requirements of local market and need of the trade enabling the pass-outs to meet the job market.
5. Provide technical and vocational training which reflects the requirements of the local Marble sector.

## **Competencies gained after completion of the course**

**After completion of this course, the student should be able to:**

1. Explain all safety & health hazards involved during working in the marble sector.
2. Explain the personal protective equipment (PPE's) & its importance.
3. Enhancement of efficiency in an organized workshop.
4. Elaborate the possible work and health hazard at work place.
5. Describe the importance of First aid in the industry.
6. Explain the first aid method during the emergency.
7. Elaborate the permit to work system (PTW).

8. Explain the possible hazard associated with damaged cables & their possible actions / consequences.
9. Elaborate the safety measures on all work places.
10. Describe the types of fire & their preventive measures.
11. Elaborate the hazards associated with lifting equipments & lifting operations.
12. Explain the stacking of marble slabs & loading of marble slabs on the truck.
13. Explain the pollution (water/solid) & its effect on the surrounding environment.
14. Elaborate the concept of quality to achieve maximum production.
15. Describe the importance of HSE training of employees.
16. Apply all safety precautions.
17. Handle the various machines with safety.
18. Do the proper cleaning of machine and materials.
19. Handle the hand machines & tools safely.
20. Assess the diamond grain on the blades (for marble cutting).
21. Understand the earthing of electrical installation & its effect.
22. Understand the accident & prevention measure from the accident.
23. Use the fire extinguishers.
24. Understand the safe handling of lifting equipment & lifting operations.
25. Make safe procedures to handle the pollution & understand its effect on surrounding.
26. Communicate with the related persons in the Industry.

27. Apply basic concept of quality control & its importance in marble sector to achieve the maximum production.
28. Select the proper / suitable work force for marble sector.
29. Understand the training of workers for effective production.

## **JOB OPPORTUNITIES**

- Marble Industry.
- Marble Handicraft Industry.
- Marble Training/teaching Institutes
- Ceramic Industry
- Local, National and International Marble & Ceramic
- Middle east Marble & Ceramic industry.

## **CARRIER PATH**

- Supervisor in Marble Industry

## Curriculum Salient Features

### Trainee Entry Level2

Entry Level	Matric
Duration of Course	06 months
Total training hours	780
	34 hours (per week)
	6 days (week)
	6 hours a day (except Friday 4 hours)

### Training Methodology

Practical 75 %  
Theory 25 %

Medium of Training Urdu

### Min Qualification of Trainer

Matric with Industrial experience of ten years (minimum) in the relevant field. Or

Intermediate with five years of relevant field experience. Or

Certificate course in respective field with two years of industrial experience.



## Course Overview

Module Title and Aim	Learning Units	Theory <sup>1</sup> Days/ho urs	Workpla ce <sup>2</sup> Days/ho urs	Timeframe of modules
<b>Module A :Personnel Safety</b>  Able to learn about the self protection during working in the factory	1. Wear Work Clothes 2. Personal Protection Equipment (PPE) 3. Prepare the work place/ Housekeeping 4. Deal with work& health hazard.	20	100	120
<b>Module B: First Aid</b>  Able to know principles of treatment on the occurrence of an accident or in case of sudden illness, using facilities & material available at time.	1. Elements of First Aid Box 2. Basic Principles for initial first aid. 3. Method of First Aid for factory accident	20	100	120
<b>ModuleC: Electrical Safety</b>  Developemnt the competency to protect the personnel from electrical hazards.	1. Inspect Connections. 2. Earthling of Machines. 3. Safe system of work. 4. Portable electrical appliances. 5. Replace damage Cables	15	90	105
<b>Module D: Production</b>	1. Accidents & prevention from the accidents.	25	130	155

<sup>1</sup> Learning hours in training provider premises

<sup>2</sup> Training workshop, laboratory and on-the-job workplace

<p><b>Floor Safety</b></p> <p>The module develops competency of the safety measures on the production floor.</p>	<ol style="list-style-type: none"> <li>2. Accident while using hand tools.</li> <li>3. Accident During Cutting &amp; Grinding.</li> <li>4. Machine Guards.</li> <li>5. Machine Safety Devices.</li> <li>6. Use of Fire Extinguishers</li> </ol>			
<p><b>Module E: Handling of Material</b></p> <p>This module develops the competencies of safe handling of material &amp; lifting operations.</p>	<ol style="list-style-type: none"> <li>1. Lifting Equipment.</li> <li>2. Lifting Operation.</li> <li>3. Stacking of Marbles.</li> <li>4. Loading of marble slab on truck.</li> <li>5. Shifting of Marble.</li> </ol>	15	60	75
<p><b>Module F: water pollution &amp; solid waste</b></p> <p>Enable the students to understand the pollution &amp; its effect on the surrounding environment.</p>	<ol style="list-style-type: none"> <li>1. Water Pollution</li> <li>2. Solid Waste Management</li> </ol>	10	50	60
<p><b>Module G: Quality Control</b></p> <p>Able to understand the basic concept of quality control &amp; its importance in marble sector to achieve the maximum production</p>	<ol style="list-style-type: none"> <li>1. Process of Quality Control.</li> <li>2. Methods of Quality Control.</li> <li>3. Advantages of Quality control.</li> </ol>	15	30	45
<p><b>Module</b></p>	<ol style="list-style-type: none"> <li>1. Communicate with senior</li> </ol>	15	30	45

<p><b>H.Communication with others</b> Enable the trainee to be able to properly communicate with the relevant personnel in the Industry.</p>	<p>/ junior. 2. Communicate with peers. 3. Communicate with engineer/ Supervisor. 4. Communicate with concerned office / stakeholder.</p>			
<p><b>Module I. Role of Supervisor and subordinates</b> To learn the necessary abilities for the supervisor. To help the management for achievement of business objectives.</p>	<p>1. Abilities of a Supervisor. 2. Functions of Forman</p>	10	20	30
<p><b>Module J. Personnel Selection &amp; Training</b> To select the proper /suitable work force for marble industry. To understand the training of worker for effective production</p>	<p>1. Source of Recruitment 2. Recruitment Procedure 3. Training of the Workers</p>	15	30	45

**Total Hours: 160                      640                      800**

## Module A :Personal Safety

**Objective:**Able to learn about the self protection during working in the factory.

**Duration:** .....120..... hours **Theory:** ....20..... hours **Practice:**..100..... hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Wear Work Clothes.	1.1 Able to understand & apply the personal safety. 1.2 Able to work will be wearing dangri & aprons. 1.3 Able to explain the advantages of proper safe dress/clothes	<b>Knowledge of:</b> -Work safety & environment. -Types of safety dresses/clothes  <b>Ability to:</b> - Perform at work place while wearing safety dress. -Identify the work environment& select proper safety dress/clothes.	5+20	1.Apron 2.Dangri 3.Pant,Shirt 4.Leather jacket	Class Room/ Factory area or work place
2. Personal Protective Equipment (PPE)	2.1 Able to understand the usage of safety equipment. 2.2 Able to understand the purpose of each PPE. 2.3 Introduction of basic PPE's	<b>Knowledge of:</b> -Personal protective equipment i.e. Safety Helmet, Safety shoes, Gloves, safety goggles, earmuff, Dust mask etc. -Safety at work place& its importance <b>Ability to</b> -Use personal protective equipment -Identify the safety.	5+40	1.Ear Muff 2.Ear Plug 3.Safey shoes 4.Safety Goggles 5.Gloves 6.Safety Helmet 7.Chin guards 8.Face Shield 9.Saftey harness 10. Lifting belts 11.Information sheets 12. Dust Masks. 13. Gas Masks.	Class Room/ Factory area or work place
3. Prepare the Work Place/	3.1 Able to know about the Housekeeping & its	<b>Knowledge of:</b> -Work place preparation to		1. White Board & markers.	

Housekeeping	<p>advantages.</p> <p>3.2 Gather appropriate tools &amp; equipment required to perform the job.</p>	<p>start the activity.</p> <ul style="list-style-type: none"> <li>-Safe working environment &amp; its advantages.</li> <li>-Relation of organized workplace &amp; performance</li> </ul> <p><b>Ability to:</b></p> <ul style="list-style-type: none"> <li>-Identify &amp; Select tools required</li> <li>-Arrange &amp; place the Tools &amp; equipment involved.</li> </ul>	5+35	<ul style="list-style-type: none"> <li>2. Information sheet</li> <li>3. Clean equipment</li> <li>4. Sponge</li> <li>5. Mopping brush &amp; cloth.</li> <li>6. Dust bins</li> </ul>	Class Room/ Factory area or work place
4. Deal with work & health hazard.	<ul style="list-style-type: none"> <li>4.1 Able to understand the work &amp; health hazard.</li> <li>4.2 Able to know about the possible injuries.</li> <li>4.3 Able to know about the first aid.</li> </ul>	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>-Health Hazard.</li> <li>-Possible work hazard.</li> <li>-First Aid provisions &amp; emergency responses.</li> <li>- ERP</li> </ul> <p><b>Ability to:</b></p> <ul style="list-style-type: none"> <li>-Provide first aid to the fellow who is suffering.</li> <li>-Response to emergency situation</li> </ul>	5+25	<ul style="list-style-type: none"> <li>1. First Aid Box</li> <li>2. White Board &amp; marker</li> <li>3. Duster</li> <li>4. Information Sheet.</li> <li>5. Safety Signs and display boards</li> </ul>	Class Room/ Factory area or work place

## Module B: First Aid

Objective: Able to know principles of treatment on the occurrence of an accident or in case of sudden illness, using facilities & material available at time..

**Duration:** .....120..... hours **Theory:** .....20..... hours **Practice:**...100..... hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Elements of First Aid Box.	1.1 Able to know the first aid. 1.2 Able to know about the elements of first aid box.	<b>Knowledge of:</b> -Elaborate the importance of first aid. -Proper first aid elements for marble industry. -Use the first aid equipment i.e. thermometer. <b>Ability to:</b> -Understand the first aid importance -Use the equipment -Do bandage	5+25	1.First Aid Box 2.Pain Kill medicine 3.Antibiotic 4.Carbebandages 5.Chemical e.g. Dettol, pyodine etc 6.Dissection instruments 7.Thermometer 8.Pain Killer sprays 9.Oxygen Cylinders 10. Eye Drops	Class Room/ Factory area or work place
2. Basic Principles for initial First Aid	2.1 Able to know the response level to meet with work & health hazard. 3. Able to know about the initial First Aid of affected persons.	<b>Knowledge of:</b> -Elaborate the quick response to the accident. -Dealing with the affected person. -Act upon the general guidance for first aid. <b>Ability to:</b> -Handle the situation -Identify the required first aid.	5+25	1.First Aid Box 2.White Board & Marker 3.Duster	Class Room/ Factory area or work place

<p>3. Method of First Aid for factory accident</p>	<p>3.1 Able to assess the situation . 3.2 Able to understand the state of fracture &amp; type of fracture.</p>	<p>-Make better use of resources.</p> <p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- Use of First Aid methods.</li> <li>- Artificial breathing.</li> <li>- Electric shock.</li> <li>- Mechanical accident injury.</li> <li>- Burn Injury.</li> <li>- Deal with the affected person with proper procedure.</li> <li>- Identify the state of fracture.</li> <li>- identify the type of fracture.</li> </ul> <p><b>Ability to:</b></p> <ul style="list-style-type: none"> <li>- Handle the fracture of patient.</li> <li>- Check &amp;diagnose the problem.</li> <li>- Identify the first aid need.</li> <li>- protect &amp; deal the patient.</li> </ul>	<p>10+50</p>	<p>1.First Aid Box 2.White Board &amp;Marker 3.Duster</p>	<p>Class Room/ Factory area or work place</p>
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## Module: C: Electrical Safety

Objective : Developethe competency to protect the personnel from electrical hazards.

Duration: .....105..... hours Theory: .....15.....hours Practice: .....90..... hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Inspect Connection	<b>1.</b> Familiar with ElectricalConnection. <b>2.</b> Introduction and basic knowledge of electricity. <b>3.</b> Types of electricity <b>4.</b> Measurement of Volts, current, resistance etc.  <b>2.1</b> Able to understand the earthing of electrical installation & its effect.  <b>3.1</b> Understand execution of the jobs & working conditions.	<b>Knowledge of:</b> - Electrical Connection.  <b>Ability to:</b> - check the electricity connection. - Measurement and check connections.	3+15	1. Tester 2. Plier 3. Tong tester	Class Room/ Factory area or work place
2. Earthing of Machines.		<b>Knowledge of:</b> - Earthing to give protection against direct contact.  <b>Ability to:</b> - check earthing of the electrical installation.	3+15	1. Tester 2. Plier 3. Multimeter 4. Tong Tester	Class Room/ Factory area or work place
3. Safe system of work		<b>Knowledge of:</b> - Work permit system. - analyze the work place condition & hazard. - Plan job for proper execution.  <b>Ability to:</b> - asses the job &generate required work permits. - assess the safety requirements.	3+20	1. Work sheet 2. information sheet. 3. White Board. 4. Marker/Duster	Class Room/ Factory area or work place



<p>4. Portable electrical application.</p>	<p>4.1 Able to inspect &amp; test the portable electrical appliance by competent person.</p>	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- Identify the hazard associated with portable electrical appliance.</li> <li>- Arrange testing of portable electrical equipment.</li> </ul> <p><b>Ability to:</b></p> <ul style="list-style-type: none"> <li>- Identify &amp; Check the wire &amp; electrical connection of equipment.</li> </ul>	<p>3+10</p>		<p>Class Room/ Factory area or work place</p>
<p>5. Knowledge of damageCables.</p>	<p>5.1 Keep the cables in good condition to prevent form casualties/ mishaps.</p>	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>-Protection of cables from mechanical damage.</li> <li>- Cause which damage the cables.</li> <li>- Keeping the cables in plastic pipe or any other protection.</li> <li>- Color Coding System</li> </ul> <p><b>Ability to:</b></p> <ul style="list-style-type: none"> <li>- Communicate with electrician.</li> <li>- check the electrical cables</li> </ul>	<p>3+15</p>		<p>Class Room/ Factory area or work place</p>

## Module D:- Production Floor Safety

Objective : This module develops competency to of the safety measures on the production floor.

Duration: ...155..... hours Theory: ....25.....hours Practice:.....130.....hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Accidents & prevention from the accidents.	1.1 Understand the accident & preventive measures from the accident.	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- Cause of accident.</li> <li>- reason of accident</li> <li>- Losses due to occurring of accident.</li> <li>- Accidents and Incidents</li> </ul> <p><b>Ability to:</b></p> <ul style="list-style-type: none"> <li>- Change the attitude of worker.</li> <li>- Make atmosphere work friendly.</li> <li>- identify the preventive measure from accident.</li> </ul>	5+20	<ol style="list-style-type: none"> <li>1. Work sheet</li> <li>2. information sheet.</li> <li>3. White Board.</li> <li>4. Marker/Duster</li> </ol>	Class Room/ Factory area or workplace
2. Accident while using hand tools.	2.1 Able to understand the proper use of tools.	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- Use of personal protective equipment (PPE's).</li> <li>- Selection of proper work equipment.</li> <li>- Wear proper Clothes.</li> <li>- Safe application of the grinder drill &amp; hand tools etc. drilling the machine of Marbles handcraft.</li> <li>- Segregation of blunt tools.</li> <li>- Safe application of screw driver for chisel work for marble handicraft making.</li> </ul>	3+15	<ol style="list-style-type: none"> <li>1. Grinder</li> <li>2. Drill</li> <li>3. Blades</li> <li>4. PPE</li> <li>5. Fist Aid</li> </ol>	Class Room/ Factory area or workplace

<p>3. Accident During Cutting &amp; Grinding</p>	<p>3.1 Familiar with cutting &amp; Grinding able to understand the effect of accident during cutting &amp; grinding</p>	<p><b>Ability to:</b></p> <ul style="list-style-type: none"> <li>- Handle the hand machines &amp; tools safely.</li> <li>- Assess the diamond grain on the blades (for marbles cutting)</li> </ul> <p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- Safe procedure of cutting &amp; grinding.</li> <li>- tie up the stone with ropes for cutting on Gang saw.</li> <li>- Losses during cutting &amp; grinding accident. <ul style="list-style-type: none"> <li>• Material Loss</li> <li>• Machine Loss</li> <li>• Personal Loss</li> <li>• Safe unloading of material from machine</li> </ul> </li> <li>- Safety information sheets.</li> </ul> <p><b>Ability to:</b></p> <ul style="list-style-type: none"> <li>- Use PPEs.</li> <li>- Clean the workplace.</li> <li>- check the electrical wires.</li> <li>- Deliver Safety lectures.</li> </ul>	<p>4+25</p>	<ol style="list-style-type: none"> <li>1. Cutting machine i.e fixed cutter, Gang saw cutter.</li> <li>2. Grinding Machine.</li> <li>3 P.P.E</li> <li>4. First Aid Box</li> </ol>	<p>Class Room/ Factory area or workplace</p>
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<p>4. Machine Guards</p>	<p>4.1 Able to assess the machine safety.</p> <p>4.2 Able to understand the hazards associated due to unguarded cutter, pulley &amp; all moving parts.</p> <p>4.3 Able to understand principal cause of injury.</p>	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- arrangements for lubrication &amp; guards (for cutter &amp; belts)</li> <li>- importance of safety dress.</li> <li>- Entanglement hazards.</li> <li>- Contact hazards.</li> <li>- Types of guards i.e fixed guard, adjustable guard &amp; distance guard.</li> </ul> <p><b>Ability to:</b></p> <ul style="list-style-type: none"> <li>- identify the guard from machine.</li> <li>- identify the hazard of unguarded machine</li> </ul>	<p>4+20</p>	<ol style="list-style-type: none"> <li>1. PPE</li> <li>2. First Aid Box</li> <li>3. Machine.</li> <li>4. Guards.</li> <li>5. Safety information sheets</li> </ol>	<p>Class Room/ Factory area or workplace</p>
<p>5. Machine Safety Devices</p>	<p>5.1 Familiar with machine safety device</p>	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- Trip device two hand control device.</li> <li>- Overrun device.</li> <li>- Mechanical restraint device</li> </ul> <p><b>Ability to:</b></p> <ul style="list-style-type: none"> <li>- Assess the machine hazard.</li> <li>- Identify the specific device for the machine</li> </ul>	<p>4+10</p>	<ol style="list-style-type: none"> <li>1. Cutting machine</li> <li>2. safety device.</li> </ol>	<p>Class Room/ Factory area or workplace</p>
<p>6. Use of Fire Extinguishers</p>	<p>6.1 Fire safety, Hazards and Response in case of fire</p>	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- Types of fire</li> <li>- Causes of Fire</li> <li>- Fire Hazards</li> </ul>	<p>5+40</p>	<ol style="list-style-type: none"> <li>1. White/ Black board</li> </ol>	<p>Class Room/ Factory site</p>

	<p>6.2 Fire extinguishers and other techniques</p>	<ul style="list-style-type: none"> <li>- Fire Safety</li> <li>- Process and response in case of emergency</li> <li>- Types of fire extinguishers</li> <li>- Electrical fire</li> </ul> <p><b>Ability to:</b></p> <ul style="list-style-type: none"> <li>- Use the fire extinguishers</li> <li>- Use of fire blankets</li> <li>- Use of Water and Sand .</li> <li>- Remain safe and keep others safe as well</li> <li>- Making precautionary measures</li> <li>- Respond correctly in case of emergency</li> </ul>		<ol style="list-style-type: none"> <li>2. Transparenc es</li> <li>3. Informatio n sheets</li> <li>4. Exercise sheets</li> <li>5. Work sheets</li> <li>6. Fire Extinguish ers of all types</li> <li>7. Fire Blankets</li> <li>8. Water Buckets</li> <li>9. Sand Buckets</li> <li>10. Fire Hydrants.</li> </ol>	
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## Module E: Handling of Material

**Objective:** This module develops the competencies of safe handling of material & lifting operations.

Duration: ...75..... hours Theory: ....15.....hours Practice:.....60.....hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Lifting Equipment	1.1 Able to understand the safe handling of lifting equipment.	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- Kinds of stone lifting rope.</li> <li>- Attachment hooks.</li> <li>- Shackles</li> <li>- Overhead crane.</li> <li>- Tripod stands with chain &amp; pulley.</li> <li>- Trolley</li> <li>- Safe operation of lifting equipment.</li> </ul> <p><b>Ability to:</b></p> <ul style="list-style-type: none"> <li>- Assess the load of stone.</li> <li>- Identify the lifting equipment for specified Job.</li> <li>- Assess the hazards associated with lifting equipments.</li> </ul>	5+20	<ol style="list-style-type: none"> <li>1. Rope.</li> <li>2. Hooks</li> <li>3. Shackles</li> <li>4. Chain Slings</li> <li>5. Wire ropes.</li> <li>6. Over head crane.</li> <li>7. Trolleys</li> <li>8. Tripod stand with chain pulley</li> <li>9. Chain Blocks</li> </ol>	Class Room/ Factory area or workplace
2. Lifting Operation	2.1 Familiar with the hazard associated with lifting operation	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- Safe procedure of lifting operation.</li> <li>- Inspection of lifting equipment.</li> </ul> <p>Safe handling of material</p> <ul style="list-style-type: none"> <li>- Color Codings</li> </ul>	5+20	<ol style="list-style-type: none"> <li>1. Lifting operation places activity.</li> </ol>	Class Room/ Factory area or workplace

<p>3. Stacking of Marbles</p>	<p>3.1 Able to understand the importance of proper stacking of marble slabs.</p>	<p><b>Ability to:</b> Arrange Safety measures before lifting operation</p> <p><b>Knowledge of:</b> - Use PPEs. - Stack height. - Importance of leveled floor. - Procedure for manual lifting</p> <p><b>Ability to:</b> - Handle the marble slabs in proper way.</p>	<p>2+10</p>	<p>1. Marbles slabs 2. PPEs</p>	<p>Class Room/ Factory area or workplace</p>
<p>4. Loading of marble slab on truck</p>	<p>4.1 Able to understand the safety loading of slab on truck</p>	<p><b>Knowledge of:</b> - Hazard associated during loading. - Safety watcher. - Use PPEs. - Proper &amp; Safe stocking in the truck.</p> <p><b>Ability to:</b> - Assess the hazard. - Handle the large &amp; small size marble slabs.</p>	<p>3+10</p>	<p>1. P.P.Es 2. Marble Slabs</p>	<p>Class Room/ Factory area or workplace</p>

## Module F: Pollution

**Objective:.** Enable the students to understand the pollution & its effect on surrounding.

**Duration:** .....60..... hours **Theory:** .....10..... hours **Practice:**.....50..... hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Water Pollution	1.1 Water Chemistry 1.2 familiar with pollution of water in marble industry. 1.3 Able to understand different types of water pollution 1.4 Remedial Actions	<b>Knowledge of:</b> - Safe procedures to drain the polluted water. - Effect of water pollution on agriculture Land . <b>Ability to:</b> - Assess the intensity of pollutant in the water - Assess effects of polluted water on environment	4+22	1. Test kits 2. Chemicals 3. Water samples 4. Lab. Pots etc	Class Room/ Factory area or workplace
2. Solid Waste Management	2.1 Able to understand the effect of marble solid waste 2.2 Handling of solid wastage 2.3 .segregation of wastage 2.4 Disposal techniques 2.5 Environmental effects	<b>Knowledge of:</b> - Safe disposal procedures of solid waste of marble industry. - Effect of solid waste on agriculture land. <b>Ability to:</b> - Asses the hazards associated with marble solid waste. - Assess HAZID (Hazard Identification )	4+22	1. Solid waste samples 2. Waste bins 3. Landfill sites	Class Room/ Factory area or workplace
3. Noise Pollution	3.1 Able to understand the effects of noise pollution on human health	<b>Knowledge Of:</b> - Different noise levels - Adverse effects of noise	2+6	Noise Meter	



## Module G: Quality Control

Objective: Able to understand the basic concept of quality control & its importance in marble sector to achieve the maximum production.

Duration: .....45..... Hours

Theory:.....15..... hours

Practice: ....30..... Hours.

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Process of Quality Control	1.1 Able to understand the defects & remedial actions. 1.2 Able to achieve maximum quality product & minimize waste material .	<b>Knowledge of:</b> <ul style="list-style-type: none"> <li>- Stages of inspection</li> <li>- Inspection of Raw Material&amp; final Product.</li> <li>- Machine inspection.</li> <li>- Inspection during production process.</li> <li>- Standard limits</li> <li>- <b>Ability to:</b></li> <li>- Assess the defect of raw material &amp; final product.</li> </ul>	5+10	1. Work sheets 2. Quality control tools <ul style="list-style-type: none"> <li>- Measuring tapes</li> <li>- Vernier caliper</li> <li>- Spirit level</li> <li>- Tri square etc</li> </ul>	Class Room/ Factory area or workplace
2. Methods of Quality Control	2.1 Familiar with the standard quality control tools.	<b>Knowledge of:</b> <ul style="list-style-type: none"> <li>- Standards &amp; specification.</li> <li>- Use statistical Methods</li> <li>- <b>Ability to:</b></li> <li>- Assess the product quality trends</li> </ul>	5+10	1. Work sheets 2. Quality control tools <ul style="list-style-type: none"> <li>- Measuring tapes</li> <li>- Vernier caliper</li> <li>- Spirit level</li> <li>- Tri square etc</li> </ul>	Class Room/ Factory area or workplace
3. Advantages of Quality control	3.1 Enable to take maximum output. 3.2 Enable to increase the profit through quality control	<b>Knowledge of:</b> <ul style="list-style-type: none"> <li>- Better use of man &amp; Machine.</li> <li>- Improve the goodwill in the market.</li> </ul>	5+10	1. Work sheets,	Class Room/ Factory area or workplace

		<ul style="list-style-type: none"><li>- increase the worker efficiency</li><li>- <b>Ability to:</b></li><li>- Take the preventive measure to control wastage of material &amp; production.</li></ul>			
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## Module H: Communication with others

Objective :To enable the trainee to be able to properly communicate with the related persons in the Industry

Duration: ...45..... Hours

Theory:.....15..... hours

Practice:....30..... Hours.

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Communicate with senior / junior	1.1 Understand the communication skill and communicate with senior / junior	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- Verbal communication, channel of communication and written communication</li> </ul> <p><b>Ability to:</b></p> <ol style="list-style-type: none"> <li>1. Communicate verbally according to the status of senior / junior, select the suitable channel and communicate in verbal &amp; written.</li> </ol>	4+5	1.Information Sheets. 2. White Board 3. Markers / Duster	Class Room/ Factory area or workplace
2. Communicate with peers	2.1 Understand the communication	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- Communication techniques and communication skill</li> </ul> <p><b>Ability to:</b></p> <ol style="list-style-type: none"> <li>1. Communication technique and communication skill</li> </ol>	3+5	.Information Sheets. 2. White Board 3. Markers / Duster	Class Room/ Factory area or workplace

3. Communicate with engineer/ Supervisor	3.1 Understand the communication skill and communicate with engineer/ supervisor	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- written</li> <li>- Verbal communication,</li> <li>- Channel of communication and written communication.</li> </ul> <p><b>Ability to:</b></p> <ol style="list-style-type: none"> <li>1. Communication verbally according to the status of engineer / supervisor, select the suitable channel and communicate in written.</li> </ol>	4+5	.Information Sheets. 2. White Board 3. Markers / Duster	Class Room/ Factory area or workplace
4. Communicate with concerned office / stakeholder	6.1 Understand the communication and communicate with office / stakeholder	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>- Verbal communication,</li> <li>- channel of communication and written communication.</li> </ul> <p><b>Ability to:</b></p> <ol style="list-style-type: none"> <li>1. Communication verbally according to the status of office / stakeholder, select the suitable channel and communicate in writing</li> </ol>	4+15	1, .Information Sheets. 2. White Board 3. Markers / Duster  4. Related books	Class Room/ Factory area or workplace

## Module I: Role of Supervisor in Management

Objective: To learn the necessary abilities for the supervisor.

To help the management for achievement of business objectives.

Duration: .....30..... Hours

Theory:.....10..... hours

Practice:.....20.....Hours.

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Abilities of a Supervisor	1.1. Able to make the decisions. 1.2. Able to take work with leadership qualities. 1.3. Able to have the complete knowledge of machinery, tools & quality control.	<b>Knowledge of:</b> -Driving the subordinates impartially & honestly -To achieve the production targets  <b>Ability to:</b> -Instruct & check the quality of work of the employees. -Motivate the worker - Team building - Skill enhancement of subordinate staff.	5+10	1, .Information Sheets. 2. White Board 3. Markers / Duster  4. Related books	Lecture Room
2. Abilities of a Foreman	2.1. Able to motivate the worker 2.2. Co-ordinate b/w workers & management. 2.3. Able to use better resources & in time work.	<b>Knowledge of:</b> -Understanding the management objectives. -Schedule the activities of the marble factory.  <b>Ability to:</b> -Boost up /enhance the morale of workers to attain maximum output.	5+10	1, .Information Sheets. 2. White Board 3. Markers / Duster  4. Related books	Lecture Room

## Module J. Personnel Selection & Training

Objective: To select the proper / suitable work force for marble industry.

To understand the training of workers for effective production.

Duration: .....45..... Hours

Theory:.....15..... hours

Practice:.....30..... Hours.

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1. Source of recruitment	1.1 Able to search the human resources or employees for working in the factory through different techniques.	<p><b>Knowledge of:</b> -Procedure of hiring i.e. Internal sources External sources e.g. advertisement, technical institutes walk in interviews etc.</p> <p><b>Ability to:</b> -Apply the searching techniques for hiring</p>	4+10	1. Notice Board 2. Electronic / Print Media 3. Recruitment agencies	Factory / work place / office
2. Recruitment Procedure	<p>2.1. Able to select suitable worker through proper procedure of recruitment.</p> <p>2.2. Able to make strong skilled workforce</p>	<p><b>Knowledge of:</b> -Proper procedure for the selection of employees in the marble sector i.e. i. Application form ii. Analysis of applications. iii. Interview &amp; personality test iv. Medical test</p> <p><b>Ability to:</b> -Follow the recruitment procedure -Forecast the worker's ability during test &amp; interview</p>	4+10	1. Notice Board 2. Electronic / Print Media 3. Recruitment agencies	Factory / work place / office

<p>3. Training of workers</p>	<p>3.1. Able to understand the importance of training.</p> <p>3.2. Able to learn that how training is necessary to reduce the industrial accidents.</p> <p>3.3. Skill improvement</p> <p>3.4. Quality of production</p>	<p><b>Knowledge of:</b></p> <ul style="list-style-type: none"> <li>-advantages of training of marble industrial workers</li> <li>-Understanding the methods of training</li> </ul> <p><b>Ability to:</b></p> <ul style="list-style-type: none"> <li>-Achieve quality</li> <li>- To adjust in Local, National &amp; International market.</li> </ul>	<p>7+10</p>		
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## Assessment Template

### Module A: Personnel Safety

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Wear Work Clothes	5	20	<ol style="list-style-type: none"> <li>1. Select and use the safety clothes according to the work and environment</li> <li>2. Wear work clothes</li> </ol>	Short Question and answer, Oral test, Task	
2. Personal Protective Equipment (PPE)	5	40	<ol style="list-style-type: none"> <li>1. Identify and select the PPEs according to work operations</li> <li>2. Wear PPE</li> </ol>	Short Question and answer, Oral test, Task	
3. Prepare the work place	5	35	<ol style="list-style-type: none"> <li>1. Demonstrate to prepare workplace in executing aJob.</li> <li>2. Prepare the workplace</li> </ol>	Short Question and answer, Oral test, Task	
4. Deal with work& health hazard	5	25	<ol style="list-style-type: none"> <li>1. Explain/Demonstrate the work hazards, injuries &amp; required first aid .</li> <li>2. Describe the current hazards and safety measures involved in the operation of various machinery</li> <li>3. Explain work hazards, accidents &amp; injuries during working in marble industry.</li> </ol>	Short Question and answer, Oral test, Task	



## Module B: First Aid

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Elements of First Aid Box	5	25	<ol style="list-style-type: none"> <li>1 Identify the element (medicine etc) of first aid box in marble industry.</li> <li>2 Demonstrate to use the thermometer.</li> <li>3 Explain the importance of first aid.</li> <li>4 Blood pressure (B.P.) apparatus.</li> <li>5 Snake bite kit.</li> </ol>	Short Question and answer, Oral test, Task	
2. Basic Principles for initial first aid.	5	25	<ol style="list-style-type: none"> <li>1. Demonstrate the quick response to the accident.</li> <li>2. Explain the basic principle to provide first aid to the affected person.</li> </ol>	Short Question and answer, Oral test, Task	
3. Method of First Aid for factory accident	10	50	<ol style="list-style-type: none"> <li>1. Demonstrate the artificial breathing.</li> <li>2. Explain the types of fractures.</li> <li>3. Explain eyes problem &amp; remedies.</li> </ol>	Short Question and answer, Oral test, Task	

## Module C: Electrical Safety

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Inspect Connections.	3	15	1 Understand to inspect the electrical connection. 2.DB's(Distribution Boxes)	Short Question and answer, Oral test, Task	
2. Earthing of Machines.	3	15	1. Explain the earthing system of machine. 2.ELCB's(Earth leakage circuit Brakers)	Short Question and answer, Oral test, Task	
3. Safe system of work.	3	20	1. Describe the permit to work system.(PTW) 2. Explain the execution of job and working condition. 3. Demonstrate to accomplish the work permit.	Short Question and answer, Oral test, Task	
4. Portable electrical appliances	3	10	1. Handling of the portable electrical equipments.	Short Question and answer, Oral test, Task	
5. Replace damage Cables	3	15	1. How do you keep the cables in good condition for execution of job. 2. Color Codlings	Short Question and answer, Oral test, Task	

## Module D: Production Floor Safety

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Accidents & prevention from the accidents.	5	20	<ol style="list-style-type: none"> <li>1. Near Misses.</li> <li>2. Incidents</li> <li>3. Identify the preventive measures from accident.</li> <li>4. RWI (Restricted Work Injuries)</li> <li>5. LTI's ( Loss Time Injuries)</li> </ol>	Short Question and answer, Oral test, Task	
2. Accident while using hand tools.	3	15	<ol style="list-style-type: none"> <li>1. Handling the grinder, screw driver, drill.</li> <li>2. Cleaning tool &amp; techniques.</li> </ol>	Short Question and answer, Oral test, Task	
3. Accident during Cutting & Grinding.	4	25	<ol style="list-style-type: none"> <li>1. Demonstrate what type of loss can occur due to machine accident.</li> <li>2. Describe the personal loss due to unsafe act on machine.</li> <li>3. Explain the importance of personal protective equipments during working at the machine.</li> </ol>	Short Question and answer, Oral test, Task	
4. Machine Guards.	4	20	<ol style="list-style-type: none"> <li>1. How machine guards are beneficial for worker.</li> <li>2. Describe the hazards associated with unguarded machines.</li> </ol>	Short Question and answer, Oral test, Task	
5. Machine Safety Devices	4	10	<ol style="list-style-type: none"> <li>1. Knowledge of Machines</li> <li>2. Demonstrate the working of machine safety devices.</li> </ol>	Short Question and answer, Oral test, Task	
6. Use of extinguishers	5	40	<ol style="list-style-type: none"> <li>1. Extinguishing Techniques</li> <li>2. Extinguisher types</li> </ol>	Short Question and answer, Oral test, Task, fire	

			<ol style="list-style-type: none"><li>3. Fire safety, Hazards and Response in case of fire.</li><li>4. Fire extinguishers and other technique.</li><li>5. Fire Hydrants</li><li>6. Fire Types</li><li>7. Muster Knowledge</li></ol>	Extinguishing drills	
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## Module E: Handling of Material

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Lifting Equipment.	5	20	<ol style="list-style-type: none"> <li>1. Knowledge of Lifting / rigging equipments</li> <li>2. Explain the safe handling of lifting equipment.</li> <li>3. Identify the hazards from different type of lifting equipment.</li> </ol>	Short Question and answer, Oral test, Task, practical	
2. Lifting Operation.	5	20	<ol style="list-style-type: none"> <li>1. Describe the safe procedures of lifting operation.</li> <li>2. Make the stock of marble slabs on the ground.</li> </ol>	Short Question and answer, Oral test, Task	
3. Stacking of Marbles.	2	10	<ol style="list-style-type: none"> <li>1. Demonstrate the height of the stock of marble slabs.</li> </ol>	Short Question and answer, Oral test, Task	
4. Loading of marble slab on truck.	3	10	<ol style="list-style-type: none"> <li>1. Explain the importance of safety watcher during loading the truck.</li> <li>2. Describe the loading hazard.</li> <li>3. Identify the personal protective equipments for loading.</li> </ol>	Short Question and answer, Oral test, Task	

## Module F: Pollution

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Water Pollution	4	22	<ol style="list-style-type: none"> <li>1. Explain the effect of polluted water on agricultural land.</li> <li>2. Demonstrate the safe procedure to drain the polluted water.</li> </ol>	Short Question and answer, Oral test, Task	
2. Solid Waste Management	4	22	<ol style="list-style-type: none"> <li>1. Explain the safe procedure to dispose of the solid waste of marble industry.</li> </ol>	Short Question and answer, Oral test, Task	
3. Noise Pollution	2	6	3.1 Able to understand the effects of noise pollution on human health	Short Question and answer, Oral test, Task, Noise Meter	

## Module G: Quality Control

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Process of Quality Control.	5	10	<ol style="list-style-type: none"> <li>1. Describe the stages of inspection.</li> <li>2. Explain the standard control limit during cutting &amp; grinding of marble.</li> </ol>	Short Question and answer, Oral test, Task	
2. Methods of Quality Control.	5	10	<ol style="list-style-type: none"> <li>1. Product Quality</li> <li>2. Demonstrate the statistical methods to assess the quality of product.</li> </ol>	Short Question and answer, Oral test, Task	
3. Advantages of Quality	5	10	<ol style="list-style-type: none"> <li>1. Explain the advantages of quality control.</li> </ol>	Short Question and answer, Oral	

control.			2. How quality effect to improve the goodwill of production in market.	test, Task	
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### Module H: Communication with others

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Communicate with senior / junior	4	5	<ol style="list-style-type: none"> <li>1. Explain communication technique and communication skills with senior/junior.</li> <li>2. Demonstrate to perform the communication with the related person.</li> </ol>	Short Question and answer, Oral test, Task	
2. Communicate with peers	3	5	<ol style="list-style-type: none"> <li>1. Explain communication technique and communications skill with peers</li> <li>2. Demonstrate to perform the communication with the related person</li> </ol>	Short Question and answer, Oral test, Task	
3. Communicate with engineer/ Supervisor.	4	5	<ol style="list-style-type: none"> <li>1. Explain communication technique and communications skill with engineer/supervisor.</li> <li>2. Demonstrate to perform the communication with the related person</li> </ol>	Short Question and answer, Oral test, Task	
4. Communicate with concerned office / stakeholder .	4	15	<ol style="list-style-type: none"> <li>1. Explain communication technique and communications skill with concerned office/stakeholder.</li> <li>2. Demonstrate to perform the communication with the related person</li> </ol>	Short Question and answer, Oral test, Task	

## Module I: Role of Supervisor in Management

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Abilities of a Supervisor.	5	10	1. Explain the abilities of good supervisor.	Short Question and answer, Oral test, Task	
2. Abilities of a Forman	5	10	1. Explain the abilities of the supervisor.	Short Question and answer, Oral test, Task	

## Module J: Personnel Selection & Training

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Source of Recruitment	4	10	1. Describe the procedure to hire the workforce. 2. Explain the sources of recruitment of workers.	Short Question and answer, Oral test, Task	
2. Recruitment Procedure	4	10	1. How to select the employees in the factory. 2. Describe the selection procedure of workers.	Short Question and answer, Oral test, Task	
3. Training of the Workers	7	10	3. Explain the types of training. 4. Describe the effect, of training on production & product cost. 5. Elaborate the advantages of industrial training.	Short Question and answer, Oral test, Task	



## List of Tools, Machinery & Equipment

SR. NO.	NOMENCLATURE OF EQUIPMENT / TOOLS
1.	Over head crane, Tripod stand
2.	Shackles, Chain block pulley, Chain Slings, Hooks, Ropes Wire ropes, Trolleys,
3	Gang Saw cutter, Vertical cutter
4	Grinding Machine
5	Ear Muff, Ear Plug
6	Safety shoes
7	Gloves
8	Safety Goggles

9	Safety Helmet
10	Fire Extinguishers of all types
11	Fire Blankets
12	Water Buckets
13	Sand Buckets
14	Face Shield
15	Diamond Cutter
16	First Aid Box
17	Dissection Instrument
18	Thermometer and B.P apparatus

19	White Board
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### List of Consumable Materials

SR. NO.	Consumable Items
1	Apron, Dangri, Pant, Shirt
2	Marble Slabs
3	Marble Stones
4	Carbe bandages
5	Pain Killer medicine
6	Pain Killer Sprays

7	Work sheets, Safety information sheet, White Board Markers
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## Reference Books

1. Safety Procedure
2. Manuals.
3. Tutorials.
4. Journals.
5. Websites.
6. HSE related Books.

## Contributions for Development of This Curriculum

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