



Curriculum
For
Certificate in Ship Breaking
Six Months Duration Course
Code:VJ92S002
(2013)

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Curriculum specification for Ship Breaking worker

1. Introduction

The structure of this course

This curriculum comprises 11 modules. The recommended delivery time is 800 hours. Delivery of the course could therefore be full time, 5 days a week, for 6 months. Training providers are at liberty to develop other models of delivery, including part-time and evening delivery.

The full structure of the course is as follow:

Module	Theory ¹ Days/ hours	Workplace ² Days/ hours	Total hours
Module 1: Introduction Tools and Equipment	16	64	80
Module 2: Safety Precautions	10	50	60
Module 3: Gas Welding Equipment and Accessories	24	92	116
Module 4: Gas Welding and Cutting	24	84	108
Module 5: Design Ship Gate	10	35	45
Module 6: Prepare Deck Platform	10	35	45
Module 7: Disintegrate Larger Pieces	15	45	60
Module 8: Tank Cutting	8	60	68
Module 9: Cut Ship Bottom	10	70	80
Module 10: Move Ship by Wench	18	84	102
Module 11: Ensure Safety Precautions	15	21	36

The purpose of the Ship Breaking worker course is to engage young people with a programme of development that will provide them with the knowledge, skills and

¹ Learning Module hours in training provider premises

² Training workshop, laboratory and on-the-job workplace

understanding to start this career in Pakistan. The course has been developed to address specific issues, such as the national, regional and local cultures, the work force availability within the country, and meeting and exceeding the needs and expectations of their guests.

Central aim of the training provider, trainer or teacher

The aim for the team of staff responsible for delivery of the Ship Breaking curriculum is to develop work related skills through comprehensive action orientation. Action orientation can be understood as the willingness and ability of a student to act in professional, social and private situations appropriate, thoughtfully and in a socially responsible manner.

Teaching staff will support students in developing their willingness and ability, through their technical knowledge and abilities, to solve tasks and problems that are goal-oriented. They will need to use student-centred, practically oriented methods. They will also need to develop a programme of practical assessment that reflects the learning outcomes stated in the curriculum.

Students of the ship breaking curriculum will also develop their willingness and ability as an individual to clarify issues, think through and to assess development opportunities. They will learn to consider requirements and constraints in family, professional and private life and to develop their own talents and future life plans.

Teaching staff will also support students in developing characteristics such as self-reliance, reliability, responsibility, a sense of duty and the willingness and ability to criticize and to accept criticism well and to adapt their future behaviour accordingly.

Teaching also needs to use the Ship Breaking curriculum to address development of social competence. Students need to acquire a willingness and ability to live and shape their own social relationships.

Entry level for Trainees

Middle

ALL ENTRANTS SHOULD HOLD A CURRENT MEDICAL CERTIFICATE

Minimum teaching qualification

Teaching staff should have at least G-ii Certificate or three years' experience in the role of Mechanical Supervisor in Ship Breaking yard. They should also hold or be working towards a formal teaching qualification.

Trainers must be competent in Urdu English and numeracy.

Medium of instruction

Instruction will be Urdu and English. It will also be helpful to develop knowledge of Greek terminology for the Shipping industry.

Terminology

This curriculum is for a Ship Breaking. Some organisations may use alternative terms to describe this job role. Training providers should examine the Overview of the Curriculum to determine whether this curriculum meets the needs of potential students.

This curriculum specification also uses the term supervisor to indicate the Ship Breaking's line manager. Organisations are likely to use a range of different terms and this should be interpreted flexibly.

Laws and regulations

- Training providers must ensure they keep up to date with laws, standards and regulations – at both national and regional levels – relating to personal safety, work safety and other relevant issues.
- Factories Act 1934
- West Pakistan Hazardous Occupations Rules 1963
- Provincial Employees Social Security (Occupational Diseases) Regulation 1967
- Workmen Compensation Act 1923 and Rules 1961
- Dock Labourers Act 1934
- Hazard Analysis and Critical Control Points (HACCP)
- Occupational Health and Environmental Safety (OH & ES)

The team of staff responsible for delivery of the Ship Breaking curriculum must familiarise themselves with laws and regulations that relate to their area of teaching and ensure that learners know and understand how to comply with and meet their responsibilities. Learning units will refer to the above list where appropriate.

Suggested distribution of modules

Each module covers a range of learning components. These are intended to provide detailed guidance to teachers (for example the Learning Elements component) and give them additional support for preparing their lessons (for example the Materials Required component). The detail provided by each module will contribute to a standardised approach to teaching, ensuring that training providers in different parts of the country have clear information on what should be taught.

The distribution table is shown overleaf:

Module 1: Introduction Tools and Equipment 80 hours	Module 5: Design Ship Gate 45 hours	Module 10: Move Ship by Winch 102 hours
Module 3: Gas Welding Equipment and Accessories 116 hours	Module 6: Prepare Deck Platform 45 hours	
	Module 8: Cut Tank 68 hours	
	Module 7: Disintegrate larger Pieces 60 hours	
Module 4: Gas Welding and Cutting 108 hours	Module 9: Cut Ship Bottom 82 hours	
Module 2: Safety Precautions 34 hours		
Module 11: Ensure Safety Precautions 96 hours		

2. Competency Standard– “SHIP BREAKING”

Definition

Ship Breaking plan, apply, organize, prepare and practice ship breaking. While specific duties vary depending on the type of establishment, it is the ship breaking worker's responsibility to prepare ship pieces and simple cutting that are both guided by supervisor.

Overall objectives of this course

- Know the Ship breaking process
- Selecting tools and equipment used in Ship breaking industry
- Cutting portions and pieces of Ship according to requirement and guided by supervisor
- Checking the pieces size type and quality, during and after breaking process of Ship
- Working safely according to safety rules.

Competencies gained after completion of the course:

At the end of the course, the Trainee must have attained the following competencies:

- Understand and perform basic mathematical operation and knowledge
- Explain ship breaking process
- Understand layout of ship and breaking process
- Use of tools and equipment of ship breaking yards
- Proficient in gas welding and cutting processes and cutting techniques
- Apply personal safety and occupational safety regulations
- Maintain professional standards throughout shift
- Cut larger pieces of ship
- Prepare larger pieces of ship
- Prepare, metal sheets of ship pieces
- Clean workplace and yard equipment and tools
- Identify and pursue new business opportunities in the ship breaking industry

Personal requirements

Ships breaking need the following characteristics:

- A genuine interest in Ship breaking
- A desire to learn
- Good health
- Hardworking
- Stamina – able to work for long duty and hard work hours in Ship breaking industry
- Able to work as a member of a team
- Willingness to maintain the standard of safety necessary in any workplace environment.

Opportunities for employment and advancement

Ship breaking workers are employed in Ship breaking industry, yards, Ship yard, Steel mills, and institutions. Self-employment by founding an enterprise in this field of activity is possible as well. Some jobs for Ship breaking are seasonal and/or part-time. Experienced Ship breaking may advance through promotions with the same employer or by moving to more advanced positions with other employers. They can become:

- Ground cutter
- Cost cutter
- Ship Cutter
- Ground Supervisor
- Supervisor
- Foreman
- Senior Supervisor
- Ship yard Managers

Some experienced Ship breaking workers achieve a respected level of salaries. There are good prospects for travel both within Pakistan and abroad. The employment outlook in this industry will be influenced by a wide variety of factors including:

- Trends and events affecting overall employment (especially in the Shipping Industry and Breaking yards services industry)
- Employment turnover (work opportunities generated by people leaving existing positions)
- Occupational growth (work opportunities resulting from the creation of new positions that never existed before)
- Flexibility of the applicant (concerning location and schedule of work).

3. Teaching and Learning Guide for Ship breaking

The aim of the training is to enable trainee to work independently as well as in team in ship breaking operations.

The trainee will after completion of this programme applies knowledge and demonstrate skills in the practical situation at the work place.

Different methodologies can therefore contribute to achieving this objective. Theory methodologies should be supported by appropriate resources, as indicated in the 'Materials required' column of the Learning Unit specifications. Trainer should also illustrate theory sessions with examples of how the learning could be applied in the workplace. Practical methodologies should be set in an appropriate environment and supported by appropriate resources, also indicated in the 'Materials required' column of the Learning Unit specifications. Methods that directly promote capacity-building for the trainees are essential suitable and therefore should be included appropriately in the teaching approach.

4. SCHEME OF STUDIES

Sr. No	Module	Theory (Hours)	Practical (Hours)	Total (Hours)
1	Introduction Tools and Equipment	16	64	80
2	Safety Precautions	10	50	60
3	Gas Welding Equipment and Accessories	24	92	116
4	Gas Welding and Cutting	24	84	108
5	Design Ship Gate	10	35	45
6	Prepare Deck Platform	10	35	45
7	Disintegrate Larger Pieces	15	45	60
8	Tank Cutting	8	60	68
9	Cut Ship Bottom	10	70	80
10	Move Ship by Wench	18	84	102
11	Ensure Safety Precautions	15	21	36
TOTAL HOURS		160	640	800

4.1. Module 1: Introduction Tools and Equipment

Objective of the module: The aim of this module is to develop basic knowledge, skills and understanding of tools and equipment to Ship Breaking.

Duration 80 hours **Theory:** 16 hours **Practical:** 64 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Basic Metal Work	The student will be able to: Identify basis metal working tools. Selected the suitable tools for the job. Explain basic arithmetic operations	Identify, select and use the measuring tools. Identify, select and use the marking tools. Identify, select and use cutting tools. Identify, selected and use the grinding. Prepare the selected jobs according to the drawing. Solve the problems of arithmetic operations.	Total: 80 hours Theory: 16hours Practical: 64hours	MS Iron, materials of ship breaking industry. Metal cutter, oils, Measuring tools, basic metal work tools, work bench	For theoretical learning: Class room with multimedia aid, audio-visual facilities and flip charts For practical learning: Training workshop OR Access to industry

4.2. Module 2: Safety Precautions

Objective of the module: The aim of this module is to develop knowledge, skills and understanding of the personal safety, workplace safety and medical first aid.

Duration 60 hours **Theory:** 10 hours **Practical:** 50 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Personal Safety	The student will be able to: Know and explain the personal safety. Apply the personal safety.	Introduction of Personal Safety. Know the Personal Safety. Apply the Personal Safety Rules and Regulations.	Total: 34 hours Theory: 10 hours Practical: 24 hours	Personal safety shows, goggles, welding apron, gloves, helmet. First Aid Box. Workshop safety charts. Occupational health safety charts, marine safety charts.	For theoretical learning: Class room with multimedia aid, audio-visual facilities and flip charts For practical learning: Training workshop OR Access to industry
LU2: Work Safety	The student will be able to: Explain the work safety.	Under the work safety Rules. Explain the safety Rules of Workplace. Practice the work safety Rules.		Workshop safety charts Hazardous instructions charts	
LU3:	The student will be able to:	Understand the safety		Safety standard charts	

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
Safety Standards	Explain the safety standard.	standards. Explain the safety standards. Follow the safety standards.			

4.3. Module 3: Gas Welding Equipment and Accessories

Objective of the module: The aim of this module is to develop knowledge, skills and understanding of the Gas Welding Equipment and Accessories and their proper use..

Duration 116 hours **Theory:** 24 hours **Practical:** 92 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Gas Welding Equipment and Accessories,	The student will be able to: Understand Gas Welding Tools and Equipment Proper use of Gas Welding Tools and Equipment	Understand Gas Welding Tools and Equipment Proper Use of Gas Welding Tools and Equipment Gas Cylinders and Acetylene Generator, Regulators, Hoses with Fittings, Google spark Lighter, Gas Welding and Cutting Torch with nozzles/tips. Their care and safety rules.	Total: 116 hours Theory: 24hours Practical: 92hours	Gas welding torch, nozzles, nozzle cleaning kit, gas cylinders, back fire resister, lighter, fire extinguisher	For theoretical learning: Class room with multimedia aid, audio-visual facilities and flip charts For practical learning: Training workshop OR Access to industry

4.4. Module 4: Gas Welding and Cutting

Objective of the module: The aim of this module is to develop knowledge, skills and understanding of the Gas Welding and Cutting and their proper use..

Duration 108 hours **Theory:** 24 hours **Practical:** 84 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Gas Welding and Cutting,	The student will be able to: Understand Gas Welding and Cutting. Proper use of Gas Welding and Cutting	Understand Gas Welding and Cutting. Practice of Gas Welding and Cutting Select proper tools and equipment	Total: 108 hours Theory: 24hours Practical: 84hours	Welding torch set, welding work bench, gas welding safety instruction charts, welding safety equipment	For theoretical learning: Class room with multimedia aid, audio-visual facilities and flip charts For practical learning: Training workshop OR Access to industry
LU2: Welding Joints and Positions	The student will be able to: Explain the Welding Joints and Positions.	Understand Type of Welding Joints. Explain the Welding Joints. Practice the Welding Joints. Welding joints are formed by welding two or more work pieces made of metal		Butt top corner Edge tee	For theoretical learning: Class room with multimedia aid, audio-visual facilities and flip charts For practical learning:

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
		& plastics			Training workshop OR Access to industry
LU3: Welding and Cutting Techniques	The student will be able to: Understand the Welding and Cutting Techniques. Practice the Welding and Cutting Techniques.	Understand the Welding and Cutting Techniques, Fore Hand, Back Hand Welding, Flame Cutting Process, Free Hand Cutting, Guide Bar Cutting, Curve Cutting and Circular Cutting.			

4.5. Module 5: Design Ship Gate

Objective of the module: The aim of this module is to develop knowledge, skills and understanding of the Designing of Ship Gate.

Duration 45 hours **Theory:** 10 hours **Practical:** 35 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Understand Work Information	The student will be able to: Understand and Read the Work Information Sheet guided by the Supervisor. Explain the Work Sheet Information	Understand the Work Information Sheet Proper Use of Work Information Sheet.	Total: 38 hours Theory: 08hours Practical: 30hours	Welding cutting torch set, gas welding safety instruction charts, welding safety equipment, ladder, lifters, power wench	For theoretical learning: Class room with multimedia aid, audio-visual facilities and flip charts For practical learning: Training workshop OR Access to industry
LU2: Plan the Gate Cutting	The student will be able to: Sketch and Understand the Gate Cutting Drawing guided by the Supervisor.	Sketch and Understand the Gate Cutting Drawing guided by the Supervisor. Select proper Tools and Equipment Practice the Gate Sketch and Layout.			

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU3: Cut Gate	The student will be able to: Select the proper tools and equipment for Gate Cutting. Select the proper torch and nozzles for Gate Cutting Check Gas pressure	Select the proper tools and equipment for Gate Cutting. Select the proper torch and nozzles for Gate Cutting Check Gas pressure			

4.6. Module 6: Prepare Deck Platform

Objective of the module: The aim of this module is to develop knowledge, skills and understanding and preparation of Deck Platform.

Duration 45 hours **Theory:** 10 hours **Practical:** 35 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Draw Layout of Deck Platform	The student will be able to: Understand and Explain the Sketch of Deck Platform Draw the layout of Deck Platform Measurement of Deck Platform Cutting Points Select proper tools and equipment.	Understand and Explain the Sketch of Deck Platform Draw the layout of Deck Platform Measurement of Deck Platform Cutting Points Select proper tools and equipment.	Total: 38 hours Theory: 8 hours Practical: 30 hours	Welding cutting torch set, gas welding safety instruction charts, hazardous safety instruction charts, welding safety equipment, power wench, lifter.	For theoretical learning: Class room with multimedia aid, audio-visual facilities and flip charts For practical learning: Training workshop OR Access to industry
LU2: Plan Deck Platform	The student will be able to: Sketch and Understand the Deck Platform Cutting Drawing guided by the Supervisor.	Sketch and Understand the Deck Platform Cutting Drawing guided by the Supervisor. Select proper Tools and Equipment Practice the Deck Platform			

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
		Sketch and Layout.			
LU3: Cut Deck Platform	The student will be able to: Select the proper tools and equipment for Deck Platform Cutting. Select the proper torch and nozzles for Deck Platform Cutting Check Gas pressure	Select the proper tools and equipment for Deck Platform Cutting. Select the proper torch and nozzles for Deck Platform Cutting Check Gas pressure			

4.7. Module 7:Disintegrate Larger Pieces

Objective of the module:The aim of this module is to develop knowledge, skills and understanding the Disintegrate Larger Pieces.

Duration 60 hours **Theory:** 15 hours **Practical:** 45 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Identification of Large Pieces	The student will be able to: Understand and Explain the Identification of Large Pieces. Measurement before Cutting Mark Cutting Points Disjoint the Welded Pieces Select proper tools and equipment.	Understand and Explain the Identification of Large Pieces. Measurement of Large Pieces. Cutting Points Perform Cleaning of Pieces. Select proper tools and equipment.	Total: 38 hours Theory: 8hours Practical: 30hours	Welding cutting torch set, gas welding safety instruction charts, hazardous safety instruction charts, welding safety equipment, power wench, lifter.	For theoretical learning: Class room with multimedia aid, audio-visual facilities and flip charts For practical learning: Training workshop OR Access to industry
LU2: Maintain Balance	The student will be able to: Design the Gala guided by the Supervisor. Make the Gala guided by the Supervisor. Maintain the balance by Wench guided by the Supervisor.	Design the Gala guided by the Supervisor. Make the Gala guided by the Supervisor. Maintain the balance by Wench guided by the Supervisor.		Check wire rope conditions Perfume winch load test Check winch speed	

4.8. Module 8: Tank Cutting

Objective of the module: The aim of this module is to develop knowledge, skills and understanding the Cut Tank.

Duration 68 hours **Theory:** 8 hours **Practical:** 60 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Identification of Tank	The student will be able to: Understand and Explain the Identification kinds of Tank. Ensure proper cleaning of Tanks Measurement before Cutting Mark Cutting Points Design Gala Make Gala Perform final Cutting	Understand and Explain the Identification Kinds of Tank. Cutting Points Perform Cleaning of Pieces. Select proper tools and equipment. Check gala and winch position	Total: 68 hours Theory: 8hours Practical: 60hours	Welding cutting torch set, gas welding safety instruction charts, hazardous safety instruction charts, welding safety equipment, power wench, lifter.	For theoretical learning: Class room with multimedia aid, audio-visual facilities and flip charts For practical learning: Training workshop OR Access to industry

4.9. Module 9:Cut Ship Bottom

Objective of the module:The aim of this module is to develop knowledge, skills and understanding the Cut Ship Bottom.

Duration 80 hours **Theory:** 10 hours **Practical:** 70 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Identification of Pieces	The student will be able to: Understand and Explain the Identification of Pieces. Measurement before Cutting Mark Cutting Points Design Gala Make Gala Perform final Cutting	Understand and Explain the Identification of Pieces. Cutting Points Select proper tools and equipment.	Total: 82 hours Theory: 10hours Practical: 72hours	Welding cutting torch set, gas welding safety instruction charts, hazardous safety instruction charts, welding safety equipment, power wench, lifter.	For theoretical learning: Class room with multimedia aid, audio-visual facilities and flip charts For practical learning: Training workshop OR Access to industry

4.10. Module 10:Move Ship by Wench

Objective of the module:The aim of this module is to develop knowledge, skills and understanding the Movement of Ship by Wench

Duration 102 hours **Theory:** 18 hours **Practical:** 84 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
<p>LU1: Take direction of the Supervisor.</p>	<p>The student will be able to: Understand the direction guided by the Supervisor. Follow the direction. Ensure attachments of Wench Maintain Speed Maintain Balance Operate Wench</p>	<p>Understand the direction Proper Use of direction. Maintain Speed Maintain Balance Wench operate</p>	<p>Total: 102 hours Theory: 20hours Practical: 82hours</p>	<p>Manual wench, power wench, tools and equipment for wench maintenance</p>	<p>For theoretical learning: Class room with multimedia aid, audio-visual facilities and flip charts For practical learning: Training workshop OR Access to industry</p>

4.11. Module 11:Ensure Safety Precautions

Objective of the module:The aim of this module is to develop knowledge, skills and understanding and Ensure Safety Precautions.

Duration 36 hours **Theory:** 15 hours **Practical:** 21 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
LU1: Apply Personal Safety	The student will be able to: Know and explain the personal safety. Apply the personal safety.	Introduction of Personal Safety. Knowledge of Personal Safety. Apply the Personal Safety Rules and Regulations	Total: 96 hours Theory: 24hours Practical: 72hours	Personal safety shows, goggles, welding apron, gloves, helmet. First Aid Box. Workshop safety charts. Occupational health safety charts, marine safety charts.	For theoretical learning: Class room with multimedia aid, audio-visual facilities and flip charts For practical learning: Training workshop OR Access to industry
LU 2: Cutting welding hazards Safety	The student will be able to: Know and explain ionizing, radiations (x-rays, gama rays), non-ionizing radiations(ultraviolet, infrared) Physical : visible lights, temperature extremes, noise, electrical energy Chemical: flammable, welding	Introduction of Personal Safety. Knowledge of Personal Safety. Apply the Personal Safety Rules and Regulations			For theoretical learning: Class room with multimedia aid, audio-visual facilities and flip charts For practical learning: Training workshop

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
	fumes, toxics gases, dust Biological: bacteria, fungus, viruses the personal safety. Apply the personal safety.				OR Access to industry

5. General assessment guidance for the Ship Breaking Curriculum

Good practice in Pakistan makes use of sessional and final assessments, the basis of which is described below. Good practice by vocational training providers in Pakistan is to use a combination of these sessional and final assessments, combined to produce the final qualification result.

Sessional assessment is going on all the time. Its purpose is to provide feedback on what students are learning:

- to the trainee: to identify achievement and areas for further work
- to the trainer: to evaluate the effectiveness of teaching to date, and to focus future plans.

Assessors need to devise sessional assessments for both theoretical and practical work. Guidance is provided in the assessment strategy

Final assessment is the assessment, usually on completion of a course or module, which says whether the trainee has "passed" or not.

Methods of assessment

For lessons with a high quantity of theory, written or oral tests related to learning outcomes and/ or learning content can be conducted. For workplace lessons, assessment can focus on the quality of planning the related process, the quality of executing the process, the quality of the product and/or evaluation of the process.

Methods include direct assessment, which is the most desirable form of assessment. For this method, evidence is obtained by direct observation of the student's performance.

Indirect assessment is the method used where the performance could not be watched and evidence is gained indirectly.

Indirect assessment should only be a second choice. (In some cases, it may not even be guaranteed that the work products were produced by the person being assessed.)

Planning for assessment

Sessional assessment: assessors need to plan in advance how they will conduct sessional assessments for each module. The tables on the following pages are for assessors to use to insert how many hours of theoretical and practical assessment will be conducted and what the scheduled dates are.

Final assessment: Training providers need to decide ways to combine modules into a cohesive two-day final assessment programme for each group of five trainees. Training providers must agree the jobs for practical assessments in advance.

5.1. ASSESSMENT

Module 1: Introduction Tools and Equipment

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1. Basic Metal Work	16	64	<ol style="list-style-type: none"> 1. Explain the different types and properties of materials used in the ship breaking industries 2. Explain different tools and equipment used in metal work. 3. Explain and demonstrate the working principle and operation of different cutting process of materials 4. Demonstrate the basic operation on metal work 5. Demonstrate proper use of tools and equipment in metal work 6. Perform arithmetic operation 7. Prepare basic metal jobs according to drawings 	MCQ, Short Question and answer, Oral test, Task	

Module 2: Safety Precautions

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
2. Safety Precautions	10	50	<ol style="list-style-type: none"> 1. Explain and demonstrate the personal safety 2. Explain safety rules and regulations 3. Explain and demonstrate workplace safety 4. Explain safety standards 	MCQ, Short Question and answer, Oral test, Task	

Module 3: Gas Welding Equipment and Accessories

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
3. Gas Welding Equipment and Accessories	24	92	<ol style="list-style-type: none"> 1. Explain and identify the gas welding tools and equipment 2. Explain the working principle and operation of gas welding tools and equipment 3. Demonstrate proper use of gas welding tools and equipment 4. Explain and demonstrate safety of equipment and tools of gas welding 	MCQ, Short Question and answer, Oral test, Task	

			5. Perform basic operation of gas welding		
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Module 4: Gas Welding and Cutting

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
4. Gas Welding and Cutting	16	64	<ol style="list-style-type: none"> 1. Explain and demonstrate the different types gas welding and properties 2. Demonstrate proper use of tools and equipment in gas cutting 3. Explain and demonstrate gas cutting techniques 4. Explain and demonstrate gas welding joints 5. Prepare jobs according to drawings 	MCQ, Short Question and answer, Oral test, Task	

Module 5: Design Ship Gate

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
5. Design Ship Gate	10	35	<ol style="list-style-type: none"> 1. Explain and proper use of work information sheet 2. Explain and sketch gate cutting drawings 3. Explain gate cutting operations 4. Explain and demonstrate proper selection of tools and 	MCQ, Short Question and answer, Oral test, Task	

			equipment for gate cutting 5. Demonstrate gate cutting 6. Prepare jobs according to drawings		
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Module 6: Prepare Deck Platform

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
6. Prepare Deck Platform	10	35	1. Explain and draw sketch of deck platform design 2. Explain deck platform cutting operations 3. Explain and demonstrate proper selection of tools and equipment for deck platform cutting 4. Demonstrate deck platform cutting 5. Prepare jobs according to drawings	MCQ, Short Question and answer, Oral test, Task	

Module 7: Disintegrate Larger Pieces

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
7. Disintegrate Larger Pieces	15	45	<ol style="list-style-type: none"> 1. Explain the identification process of larger pieces 2. Explain larger pieces cutting process 3. Explain proper selection of tools and equipment for larger pieces disintegration 4. Explain and demonstrate gala designing 5. Demonstrate larger pieces cutting 6. Prepare jobs according to drawings 	MCQ, Short Question and answer, Oral test, Task	

Module 8: Tank Cutting

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
8. Tank Cutting	8	60	<ol style="list-style-type: none"> 1. Explain the types tanks 2. Explain tank cutting process 3. Explain and demonstrate proper selection of tools and equipment for tank cutting 	MCQ, Short Question and answer, Oral test, Task	

			<ul style="list-style-type: none"> 4. Demonstrate tank cutting 5. Prepare jobs according to drawings 		
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Module 9: Cut Ship Bottom

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
9. Cut Ship Bottom	10	70	<ul style="list-style-type: none"> 1. Explain the ship bottom design 2. Explain and identify ship bottom cutting points 3. Explain and demonstrate proper selection of tools and equipment for ship bottom cutting 4. Explain and demonstrate marking and designing gala 5. Demonstrate ship bottom cutting 6. Prepare jobs according to drawings 	MCQ, Short Question and answer, Oral test, Task	

Module 10: Move Ship by Wench

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
10. Move Ship by Wench	18	84	<ul style="list-style-type: none"> 1. Explain the operation and types of wench used in the ship breaking industries 	MCQ, Short Question and answer, Oral	

			<ol style="list-style-type: none"> 2. Demonstrate basic wench operation of different movement of pieces and ship 3. Demonstrate proper use of tools and equipment of wench maintenance 	test, Task	
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Module 11: Ensure Safety Precautions

Learning Units	Theory hours	Workplace Days/hours	Recommended formative assessment	Recommended Methodology	Scheduled Dates
11. Ensure Safety Precautions	15	21	<ol style="list-style-type: none"> 1. Explain and demonstrate the personal safety 2. Explain safety rules and regulations 3. Explain radiations, environmental effects 4. Demonstrate identification of radiations effects 5. Explain and demonstrate workplace safety 6. Demonstrate first Aid and safety measures of effects 	MCQ, Short Question and answer, Oral test, Task	

6. Tools and equipment

S.No.	Items	Quantity	Remarks
1	Steel measuring rule 30 cm	20	
1.	Measuring steel tape 3 m	20	
2.	Measuring tape 30 m	20	
3.	Spirit level 12"	20	
4.	Work bench	20	
5.	Hammer ball pen 500 mg	20	
6.	Hammer cross pen 500 mg	20	
7.	Hammer 1000 mg	20	
8.	Sledge hammer 8000 mg	20	
9.	Hand hacksaw	20	
10.	Outside caliper	10	
11.	Inside calliper	10	
12.	File set	20	

13.	Try square	20	
14.	Combination pliers 8"	20	
15.	Open hand spanner set	10	
16.	Screw driver set	10	
17.	Adjustable screw wrench 8" 12"	10	
18.	Anvil with stand	10	
19.	Allen key set	20	
20.	Hand share	20	
21.	Blow lamp kerosene oil	20	
22.	Chisel set	20	
23.	Centre punch set	20	
24.	Twist drill set 25 pieces (3- 13mm)	20	
25.	Hand vice	40	
26.	Tape and die (6-12mm)	20	
27.	Line scriber	20	

28.	Vernier calliper	20	
29.	Angle plate	20	
30.	Safety goggle	20	
31.	Pedestal drill machine	4	
32.	Hand drill machine	10	
33.	Power saw	4	
34.	Bench share	4	
35.	Hand disc grinder 7"	4	
36.	Hand disc grinder 4"	4	
37.	Gas welding working stations	10	
38.	Cylinder for oxygen	8	
39.	Cylinder for acetylene	8	
40.	Regulator oxygen	8	
41.	Regulator acetylene	8	
42.	Flash back arrester acetylene	10	
43.	Flash back arrester oxygen	10	

44.	Hose pipe oxygen	10	
45.	Hose pipe acetylene	10	
46.	Oxy-acetylene welding and cutting set (injector type) complete with tip cleaner needles	10	
47.	Steel table with fire bricks top	10	
48.	Spark lighter	10	
49.	Welding goggles	20	
50.	Burner pliers	20	
51.	Welding Tong	20	
52.	Stool	20	
53.	Table for gas cutting	10	
54.	High gauge 500 mm	10	

Note: the tools, equipment and material are for 20 trainees' batch

Fire, first aid and safety equipment

4 example copy of personal safety guidelines

4 example copy of workplace standards

4 set of fire equipment, including the provision of fire exits, fire doors, fire extinguishers, alarm systems, emergency lighting, fire safety and exit signs

1 set of first aid equipment: personal safety plasters, in a variety of different sizes and shapes; small, medium and large sterile gauze dressings; sterile eye dressings; triangular bandages; crêpe rolled bandages; safety pins; disposable sterile gloves; scissors; alcohol-free cleansing wipes; tape; distilled water, for cleaning wounds and as an eye bath

1 example copy of logbooks for recording accidents and incidents

Uniform (may be purchased by Trainees)

Jeans dress of welders (trousers & shirt combine)

Helmet (

Welder shoes or boots

Welding gloves

Safety Goggles'

7. List of consumable supplies

S.No.	Name of Item	Quantity	Remarks
1	Oxygen Gas	20,000 ltr	
2	Acetylene	10,000 ltr	
3	MS filler rod 2mm	100 kg	
4	MS filler rod 3.2 mm	100 kg	
5	Aluminum filler rod 2mm	50 kg	
6	Aluminum filler rod 3.2mm	50 kg	
7	Stainless steel rod 1.5mm	50 kg	
8	Stainless steel rod 3.2mm	50 kg	
9	Mild Steel plate 1/2"	20,000 kg	
10	Mild Steel plate 2"	20,000 kg	
11	Mild Steel plate 3/16"	20,000 kg	
12	MS Pipe dia 4"	200 m	
13	MS Pipe dia 8"	200 m	

14	Steel pipe 8"	200 m	
15	Aluminium pipe 8" dia	100 m	
16	Aluminium pipe 4" dia	100 m	
10	MS Pipe 1'	100 m	
11	MS Channel 75x38x6mm	40 nos	
12	MS Flat 62.5x15mm	80 nos	
13	MS Plate 5mm	5000 kg	
14	Aluminium sheet 3mm	5000 kg	
15	Brass Sheet 50x25x1mm	100 kg	
16	Stainless steel sheet 2mm	5000 kg	

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