

Government of Pakistan

National Vocational and Technical Training Commission

Prime Minister Hunarmand Pakistan Program

"Skills for All"



Course Contents / Lesson Plan

Course Title: Advance Welding (SMAW and GTAW)

Duration: 6 Months

Course Details / Description & Preliminaries

Course Title	Advanced Welding (SMAW and GTAW)
Objectives and Expectations	<p><u>Employable skills through an intensive course on Advance Welding (SMAW & GTAW)</u></p> <p>This is a special course designed to address unemployment in the youth. The course aims to achieve the above objective through hands on practical training delivery by a team of dedicated professionals having rich market/work experience. This course is therefore not just for developing a theoretical understanding/back ground of the trainees. Contrary to that it is primarily aimed at equipping the trainees to perform commercially in a market space in independent capacity or as a member of a team.</p> <p>The course therefore is designed to impart not only technical skills but also soft skills (i.e. interpersonal/communication skills; personal grooming of the trainees etc.) as well as entrepreneurial skills (i.e. marketing skills; free lancing etc.). The course also seeks to inculcate work ethics to foster better citizenship in general and improve the image of Pakistani work force in particular.</p> <p><u>Main Expectations:</u></p> <p>In short, the course under reference should be delivered by professional instructors in such a robust hands- on manner that the trainees are comfortably able to employ their skills for earning money (through wage/self-employment) at its conclusion.</p> <p>This course thus clearly goes beyond the domain of the traditional training practices in vogue and underscores an expectation that a market centric approach will be adopted as the main driving force while delivering it. The instructors should therefore be experienced enough to be able to identify the training needs for the possible market roles available out there. Moreover, they should also know the</p>

Key Features of Training & Special Modules

strengths and weaknesses of each individual trainee to prepare them for such market roles during/after the training.

- i. Specially designed practical tasks to be performed by the trainees have been included in the Annexure-I to this document. The record of all tasks performed individually or in groups must be preserved by the management of the training Institute clearly labeling name, trade, session etc so that these are ready to be physically inspected/verified through monitoring visits from time to time. The weekly distribution of tasks has also been indicated in the weekly lesson plan given in this document.
- ii. In order to materialize the main expectations, a special module on **Job Search & Entrepreneurial Skills** has been included in the later part of this course (5th & 6th month) through which, the trainees will be made aware of the Job search techniques in the local as well as international job markets (Gulf countries). Awareness around the visa process and immigration laws of the most favored labor destination countries also forms a part of this module. Moreover, the trainees would also be encouraged to venture into self-employment and exposed to the main requirements in this regard. It is also expected that a sense of civic duties/roles and responsibilities will also be inculcated in the trainees to make them responsible citizens of the country.
- iii. A module on **Work Place Ethics** has also been included to highlight the importance of good and positive behavior at work place in the line with the best practices elsewhere in the world. An outline of such qualities has been given in the Appendix to this document. Its importance should be conveyed in a format that is attractive and interesting for the

<p>Training Tools/ Methodology</p>	<p>trainees such as through PPT slides +short video documentaries. Needless to say that if the training provider puts his heart and soul into these otherwise non-technical components, the image of Pakistani workforce would undergo a positive transformation in the local as well as international job markets.</p> <p>In order to maintain interest and motivation of the trainees throughout the course, modern techniques such as:</p> <ul style="list-style-type: none"> • Motivational lectures • Success stories • Case studies <p>These techniques would be employed as an additional training tool wherever possible (these are explained in the subsequent section on Training Methodology).</p> <p>Lastly, evaluation of the competencies acquired by the trainees will be done objectively at various stages of the training and proper record of the same will be maintained. Suffice to say that for such evaluations, practical tasks would be designed by the training providers to gauge the problem solving abilities of the trainees.</p> <p style="text-align: center;">(i) Motivational Lectures</p> <p>The proposed methodology for the training under reference employs motivation as a tool. Hence besides the purely technical content, a trainer is required to include elements of motivation in his/her lecture to inspire the trainees to utilize the training opportunity to the full and strive towards professional excellence. Motivational lectures may also include general topics such as the importance of moral values and civic role & responsibilities as a Pakistani. A motivational lecture should be delivered with enough zeal to produce a deep impact on the trainees. It may comprise of the following:</p>
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- Clear Purpose to convey message to trainees effectively.
- Personal Story to quote as an example to follow.
- Trainees fit so that the situation is actionable by trainees and not represent a just idealism.
- Ending Points to persuade the trainees on changing themselves.

A good motivational lecture should help drive creativity, curiosity and spark the desire needed for trainees to want to learn more.

Impact of a successful motivational strategy is amongst others commonly visible in increased class participation ratios. It increases the trainees' willingness to be engaged on the practical tasks for longer time without boredom and loss of interest because they can clearly see in their mind's eye where their hard work would take them in short (1-3 years); medium (3 -10 years) and long term (more than 10 years).

As this tool is expected that the training providers would make arrangements for regular well planned motivational lectures as part of a coordinated strategy interspersed throughout the training period as suggested in the weekly lesson plans in this document.

(ii) Success Stories

Another effective way of motivating the trainees is by means of Success Stories. Its inclusion in the weekly lesson plan at regular intervals has been recommended till the end of the training.

A success story may be disseminated orally, through a presentation or by means of a video/documentary of someone that has risen to fortune, acclaim, or brilliant achievement. A success story shows how a person achieved his goal through hard work, dedication and devotion. An inspiring success story contains compelling and significant facts articulated clearly and easily comprehensible words. Moreover, it is helpful if it is assumed that the reader/listener knows nothing of what is being revealed. Optimum impact is created when the story is revealed in the form of:-

- Directly in person (At least 2-3 cases must be arranged by the training institute)
- Through an audio/ videotaped message (2-3 high quality videos must be arranged by the training institute)

It is expected that the training provider would collect relevant high quality success stories for inclusion in the training as suggested in the weekly lesson plan given in this document.

Suggestive structure and sequence of a sample success story and its various shapes can be seen at annexure III.

(iii) Case Studies

Where a situation allows, case studies can also be presented to the trainees to widen their understanding of the real life specific problem/situation and to explore the solutions.

In simple terms, the case study method of teaching uses a real life case example/a typical case to demonstrate a phenomenon in action and explain theoretical as well as practical aspects of the knowledge related to the same. It is an effective way to help the trainees comprehend in depth both the theoretical and practical aspects of the complex phenomenon in depth with ease. Case teaching can also stimulate the trainees to participate in discussions and thereby boost their confidence. It also makes class room atmosphere interesting thus maintaining the trainee interest in training till the end of the course.

Depending on suitability to the trade, the weekly lesson plan in this document may suggest case studies to be presented to the trainees.

The trainer may adopt a power point presentation or video format for such case studies whichever is deemed suitable but it's important that only those cases are selected that are relevant and of a learning value.

The Trainees should be required and supervised to carefully analyze the cases.

For the purpose they must be encouraged to inquire and collect specific information / data, actively participate in the discussions and intended solutions of the problem / situation.

Case studies can be implemented in the following ways:-

- i. A good quality trade specific documentary (At least 2-3 documentaries must be arranged by the training institute)
- ii. Health & Safety case studies (2 cases regarding safety and industrial accidents must be arranged by the training

	<p>institute)</p> <p>iii. Field visits (At least one visit to a trade specific major industry/ site must be arranged by the training institute)</p>
Learning Outcome of the Course	<p>By the end of this course, the trainees should gain the following competencies:</p> <ul style="list-style-type: none"> • Maintain Safe Work Environment • Prepare Materials for Welding • Use Shielded Metal Arc Welding (SMAW) in Flat (1F, 1G) position • Use advance welding techniques at Horizontal (2F, 2G) Positions Using SMAW Process. • Use advance welding techniques at vertical (3F, 3G) Positions Using SMAW Process. • Use Gas Metal Arc Welding (GMAW) in Flat (1F, 1G) position. • Use advance welding techniques at Horizontal (2F, 2G) Positions using Gas Metal Arc Welding. • Carry out Advance(Flux Cored Arc) Welding (FCAW) in Flat(1F, 1G) and Horizontal (2F, 2G) Positions • Use advance Gas Tungsten Arc Welding (GTAW) in Flat (1F,1G) and Horizontal (2F, 2G) Positions
Course Execution Plan	<p>Total Duration of Course: 6 Months (26 Weeks)</p> <hr/> <p>Class Hours: 4 Hours per day (06 Days/Week)</p> <hr/> <p>Theory: 20% Practical: 80%</p> <hr/> <p>Weekly Hours: 24 Hours Per week</p> <hr/> <p>Total Contact Hours: 600 Hours</p>
Companies Offering Jobs in the respective trade	<ol style="list-style-type: none"> 1. Automotive industries 2. Automotive parts producing vendor 3. Oil and Gas industries 4. Power plants 5. Processing industries

	6.Ship making industries 7.Construction industries 8.Oil refineries
Job Opportunities	<p>All over the world there is a high demand in the Welding industry for Welders in various fields Such as: fabricators, pipe welders, multi-welders, constructors. With the help of this course, we will be able to give technical trainings of Advance welding to our youth. There are also opportunities for start-up entrepreneurship due to the high demand in the market in following designated jobs;</p> <ul style="list-style-type: none"> • Fitters • Fabricators • 3G welders • Argon welders • CO2 Welders • Multi welders • Structural Contractors • Welding supervisors • Welding inspectors with additional quality inspection training.
No of Students	25
Learning Place	Classroom / Lab / Workshop / Industry

WEEKLY SCHEDULE OF TRAINING

Scheduled Week	Module Title	Learning Units	Remarks
Week 1	Introduction	<ul style="list-style-type: none"> • Course Introduction • Motivational Lecture(<i>For further detail please see Page No: 4</i>) • Application of the course • Job market overview • Institute/Work ethics (<i>For further detail please see Annexure-II at the end</i>) • Health & Safety • Job market • Introduction to welding • Various welding process • Setting SMAW equipment • Starting welding • Success story (<i>For further detail please see Page No: 5 and Annexure-III at the end</i>) 	<ul style="list-style-type: none"> • TASK: 1 & 2 <p><u>Details may be seen at Annexure-I</u></p>
Week 2	<u>Module -1</u> Shielded Metal Arc Welding (SMAW) Chapter 1 Maintain welding workshop safety and set equipment for SMAW.	<ul style="list-style-type: none"> • Hazard at workplace • Safety Signs • Welding Equipment • Welding transformer • Welding cable • Return cable • Electrode holder • Preparation material for welding • Setting welding current • Welding Bead Practice • Success story (<i>For further detail please see Page No: 5 and Annexure-III at the end</i>) 	<ul style="list-style-type: none"> • TASK: 2&3 <p><u>Details may be seen at Annexure-I</u></p>
Week 3	Chapter 2 Shielded Metal Arc welding (SMAW) At 1F position	<ul style="list-style-type: none"> • Motivational Lecture(<i>For further detail please see Page No: 4</i>) • Basic measuring tools • Electrode Number • Welding Current • Electrode manipulation • Preparing material for flat 1F position • Tack weld 	<ul style="list-style-type: none"> • TASK: 3 to 6 <p><u>Details may be seen at Annexure-I</u></p>

		<ul style="list-style-type: none"> • Electrode angle (slop angle) • Practice welding at 1F 	
Week 4	Chapter 2 Continued	<ul style="list-style-type: none"> • Metal non- Metal • Material Identification by color • Basic Workshop tools • Practice welding at 1F position • Case Study-1 (Health & Safety) (<i>For further detail please see Page No: 6</i>) 	<ul style="list-style-type: none"> • TASK: 7 <i><u>Details may be seen at Annexure-I</u></i> • Monthly Test – 1
Week 5	Chapter 3: Shielded Metal Arc welding (SMAW) At 1G position	<ul style="list-style-type: none"> • Motivational Lecture (<i>For further detail please see Page No: 4</i>) • Timers: • Welding Positions • Types of weld • AWS position codes • Types of grooves • Root face • Root gape • Including angle • Root pass • Filling pass • Capping • Penetration • Welding practice at 1G position 	<ul style="list-style-type: none"> • TASK: 8 <i><u>Details may be seen at Annexure-I</u></i>
Week 6	Chapter 4 Shielded Metal Arc welding (SMAW) At 2F position	<ul style="list-style-type: none"> • Weld features • Leg length • Throat • Convex face • Concave face • Mitered face • Perpendicularity • Setting current • Electrode tilt slop angle while welding • Welding at 2F position • Success story (<i>For further detail please see Page No: 5 and Annexure-III at the end</i>) 	<ul style="list-style-type: none"> • TASK: 9 <i><u>Details may be seen at Annexure-I</u></i>

Week 7	Chapter 6 Shielded Metal Arc welding (SMAW) At 2G position	<ul style="list-style-type: none"> • Material Properties (Mechanical) • Material Preparation • Beveled angle • Root face • Root gape setting • Electrode manipulation • Welding at 2G position • Case Study-2 (Health & Safety) (For further detail please see Page No: 6) 	<ul style="list-style-type: none"> • TASK: 10 <i>Details may be seen at Annexure-I</i>
Week 8	Chapter 7 Shielded Metal Arc welding (SMAW) At 3F / 3G position	<ul style="list-style-type: none"> • Motivational Lecture (For further detail please see Page No: 4) • Material Preparation • Setting workpiece vertical position • Electrode angle • Electrode manipulation • Welding at 3F /3G position • Cleaning of bead • Visual inspection 	<ul style="list-style-type: none"> • TASK: 10 Continued ... <i>Details may be seen at Annexure-I</i> • Monthly Test – 2
Week 9	Module 2 Gas Metal Arc Welding Chapter 1 Setting equipment	<ul style="list-style-type: none"> • Function of Shielding gases • Active gases • Inert gases • Gas regulator • Need of heater • Cracking cylinder • Attaching cylinder to machine • Installing wire spool • Attaching torch to machine • Setting parameter • Inching • Starting welding • Success Story (For further detail please see Page No: 5 and Annexure-III at the end) 	<ul style="list-style-type: none"> • TASK: 11 to 14 <i>Details may be seen at Annexure-I</i>
Week 10	Chapter 2 Gas Metal Arc Welding at 1F position	<ul style="list-style-type: none"> • Motivational Lecture (For further detail please see Page No: 4) • Preparing Material • Tack weld • Set work piece as per 1F position • Torch angle • Wire manipulation • Welding at 1F position 	<ul style="list-style-type: none"> • TASK: 15 <i>Details may be seen at Annexure-I</i>

Week 11	Chapter 3 Gas Metal Arc Welding at 1G position	<ul style="list-style-type: none"> • Welding defects identification • Material Preparation • Setting root gap • Gas flow • Setting parameter • Tack weld • Welding at 1G position • Case Study-3 (For further detail please see Page No: 6) 	<ul style="list-style-type: none"> • TASK: 15 Continued ... <u>Details may be seen at Annexure-I</u>
Week 12	Chapter 4 Gas Metal Arc Welding at 2F position	<ul style="list-style-type: none"> • Motivational Lecture (For further detail please see Page No: 4) • Material Preparation • Tack weld • Position material • Gas flow • Setting parameter • Wire manipulation • Welding at 2F position 	<ul style="list-style-type: none"> • TASK: 15 Continued ... <u>Details may be seen at Annexure-I</u> • Monthly Test – 3
Week 13	Overview of the previous weeks & Mid Term Examination		<ul style="list-style-type: none"> • TASK: 16 <u>Details may be seen at Annexure-I</u>
Week 14	Chapter 5 Gas Metal Arc Welding at 2G position	<ul style="list-style-type: none"> • Preparing material • Tack weld • Position material • Setting parameter • Wire manipulation • Welding at 2G position • Success Story (For further detail please see Page No: 5 and Annexure-III at the end) 	<ul style="list-style-type: none"> • TASK: 16 Continued ... <u>Details may be seen at Annexure-I</u>
Week 15	Module 3 Flux Core Arc Welding (FCAW) Chapter 1 Setting equipment and machine	<ul style="list-style-type: none"> • Motivational Lecture(For further detail please see Page No: 4) • Introduction to process • Process Application • Flux core wire construction • Shielding methods • FCAW machine parts • External unit • Loading wire spool • Roller Pressure setting 	<ul style="list-style-type: none"> • TASK: 17 to 20 <u>Details may be seen at Annexure-I</u>

		<ul style="list-style-type: none"> • Wire inching • Parameter setting • Starting welding • Case Study-4 (For further detail please see Page No: 6) 	
Week 16	Chapter2 FCAW welding at 1F Position	<ul style="list-style-type: none"> • Motivational Lecture (For further detail please see Page No: 4) • Material Preparation • Setting current • Setting voltage • Selecting shielding • Selecting wire diameter • Positioning material • Setting torch angle • Wire manipulation • Welding at 1F positions 	<ul style="list-style-type: none"> • TASK: 21 <u>Details may be seen at Annexure-I</u>
Week 17	Chapter 3 FCAW welding at 1G Position Job search	<ul style="list-style-type: none"> • Material Preparation • Setting current • Setting voltage • Selecting shielding • Selecting wire diameter • Positioning material • Setting torch angle • Wire manipulation • Welding at 1G positions • Job market & job search • Job related skills. • Interpersonal skills • Communication skills 	<ul style="list-style-type: none"> • TASK: 21 Continued ... <u>Details may be seen at Annexure-I</u> • Monthly Test – 4
Week 18	Chapter 4 FCAW welding at 2F Position	<ul style="list-style-type: none"> • Motivational Lecture (For further detail please see Page No: 4) • Material Preparation • Setting current • Setting voltage • Selecting shielding • Selecting wire diameter • Positioning material • Setting torch angle • Wire manipulation • Welding at 2F positions 	<ul style="list-style-type: none"> • TASK: 22 <u>Details may be seen at Annexure-I</u>

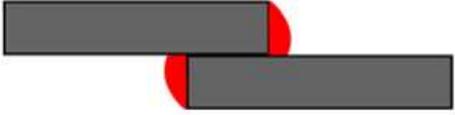
		<ul style="list-style-type: none"> • Session on CV Building. • How to make notable CV. • Dos and Don'ts of CV making. 	
Week 19	Chapter 5 FCAW welding at 2G Position	<ul style="list-style-type: none"> • Material Preparation • Setting current • Setting voltage • Selecting shielding • Selecting wire diameter • Positioning material • Setting torch angle • Wire manipulation • Welding at 1G positions • Case Study-5 (For further detail please see Page No: 6) 	<ul style="list-style-type: none"> • TASK: 22 Continued ... <u>Details may be seen at Annexure-I</u>
Week 20	Module 4 Gas Tungsten Arc Welding (GTAW) Chapter 1 Setting equipment	<ul style="list-style-type: none"> • Motivational Lecture(For further detail please see Page No: 4) • Types of Electrode • Shielding Gases • Electrode sharpening • Ceramic cup • Collets • Gas diffuser • Air or water cooled welding torches • Attaching torch to machine • Attaching cylinder to machine • Setting gas flow • Setting electrode in torch • Setting start current • Up-Slop time • Welding base time • Down-slop time • Setting Cater filler • Start welding • Session on Self-Employment • How to start a Business. • Requirements (Capital, Physical etc) • Benefits/Advantages of self-employment 	<ul style="list-style-type: none"> • TASK: 23 to 26 <u>Details may be seen at Annexure-I</u>
Week 21	Employable Project/Assignment	<ul style="list-style-type: none"> • Guidelines to the Trainees for selection of students employable project like final 	<ul style="list-style-type: none"> • Project

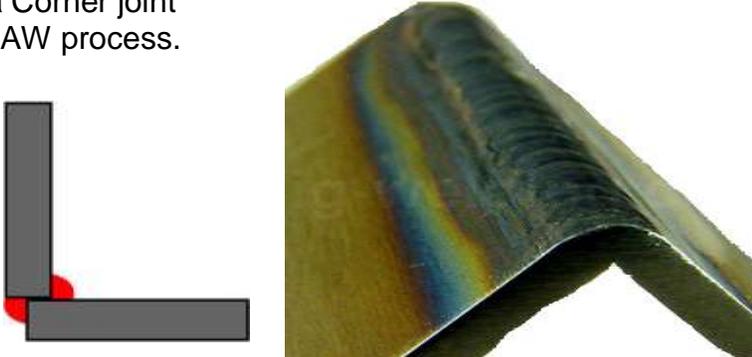
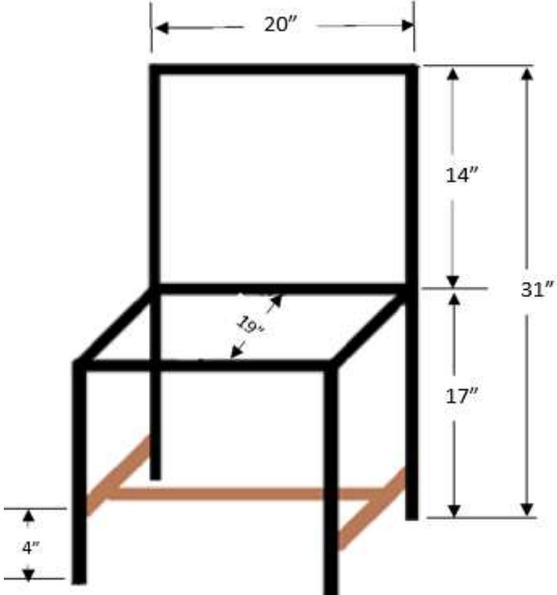
	(6 weeks i.e. 21-26) in addition of regular classes.	<p>year project (FYP)</p> <ul style="list-style-type: none"> • Assign Independent project to each Trainee • A project based on trainee's acquired skills. • Designed by keeping in view the emerging trends in the local market as well as across the globe. • The project idea may be based on Entrepreneur. • Leading to the successful employment. • The duration of the project will be 6 weeks • The project will be presented in front of Industrialists for commercialization • The best business idea will be placed in NAVTTC business incubation center for commercialization. 	<ul style="list-style-type: none"> • TASK: 27 <i><u>Details may be seen at Annexure-I</u></i>
Week 22	Chapter 2 GTAW at 1F Position	<ul style="list-style-type: none"> • Material Preparation • Setting parameter • Tack weld • Fore-hand technique • Back-hand technique • Electrode manipulation • Wire feeding • Welding at position • Motivational Lecture (<i>For further detail please see Page No: 4</i>) 	<ul style="list-style-type: none"> • Project Continued ... • TASK: 27 Continued ... <i><u>Details may be seen at Annexure-I</u></i> • Monthly Test – 5
Week 23	Chapter 3 GTAW at 1G position	<ul style="list-style-type: none"> • Material Preparation • Setting parameter • Tack weld • Fore-hand technique • Back-hand technique • Electrode manipulation • Wire feeding • Welding at 1G position <ul style="list-style-type: none"> • Session on General Overseas Employment opportunities. 	<ul style="list-style-type: none"> • Project Continued ... • TASK: 27 Continued ... <i><u>Details may be seen at Annexure-I</u></i>

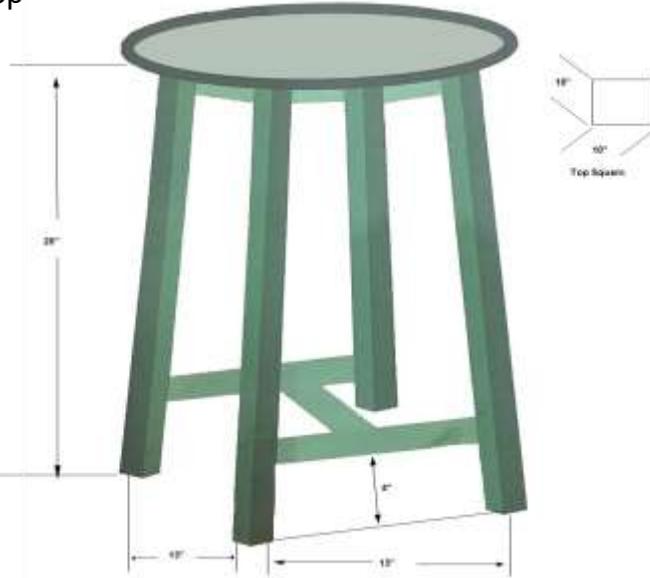
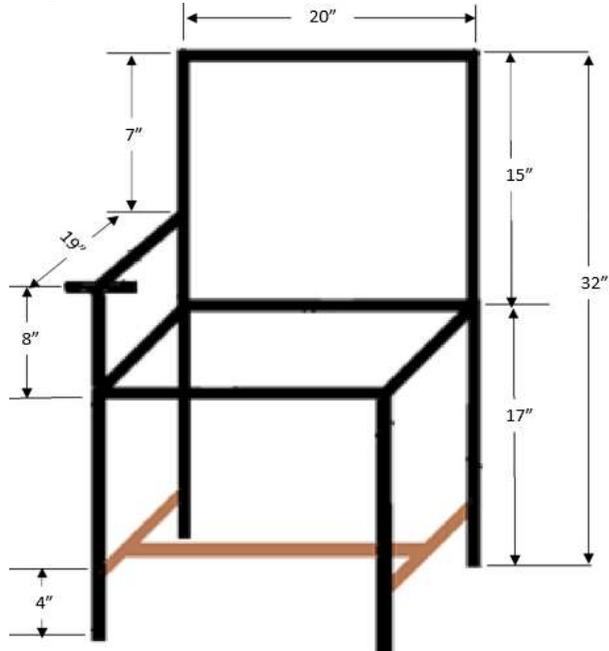
		<ul style="list-style-type: none"> • Job search Avenues. • Visa Processes and other necessary requirements. • Immigration Information (Legal age requirements, Health Certificate, Police Clearance & Travel Insurance) 	
Week 24	Chapter 4 GTAW at 2F position	<ul style="list-style-type: none"> • Motivational Lecture (<i>For further detail please see Page No: 4</i>) • Material Preparation • Setting parameter • Tack weld • Electrode manipulation • Wire feeding • Welding at 2F position • Site Visit (Pakistan Locomotive Factory or Similar) • Visit Report 	<ul style="list-style-type: none"> • Project Continued ...
Week 25	Chapter 5 GTAW at 2G position	<ul style="list-style-type: none"> • Motivational Lecture (<i>For further detail please see Page No: 4</i>) • Preparing material • Setting parameter • Tack weld • Electrode manipulation • Wire feeding • Welding at 2G position • Success Story (<i>For further detail please see Page No: 5 and Annexure-III at the end</i>) • Site Visit (Trade specific any reputed factory/organization in the vicinity) • Visit Report 	<ul style="list-style-type: none"> • Project Continued ...

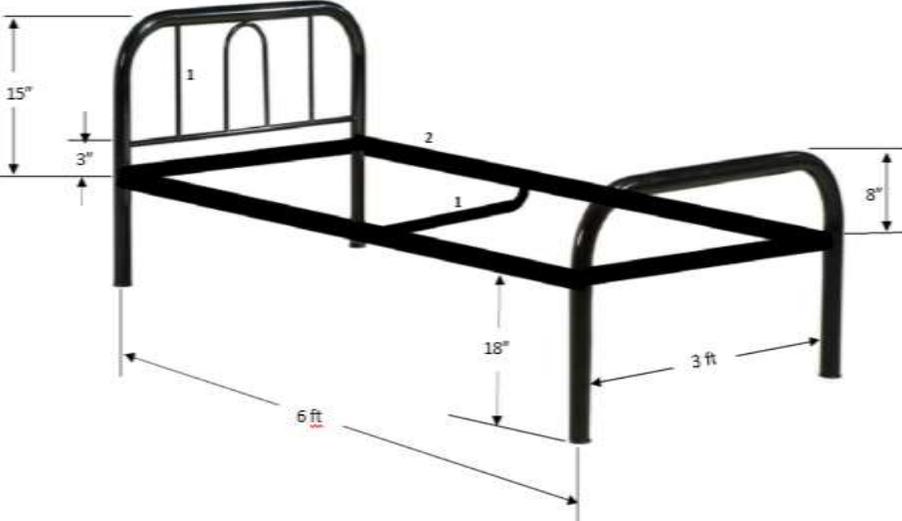
Week 26	Entrepreneurship and Final Assessment	<ul style="list-style-type: none"> • Selection of two countries of destination (Gulf Countries, Malaysia, South Korea etc) focusing on:- <ol style="list-style-type: none"> I. Trade specific Job Prospects and Earning levels in that country. II. Country Specific Labor laws, entry and exit requirements (Legal age requirements, Health Certificate, Police Clearance & Travel Insurance etc.) • Entrepreneurship • Business Incubation and Acceleration • Sales and Marketing Strategies • Final Assessment 	<ul style="list-style-type: none"> • Project Continued... • Final Assessment
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TASKS FOR ADVANCE WELDING

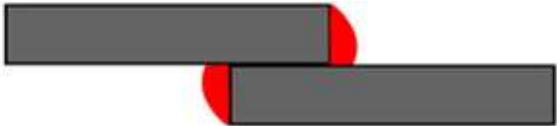
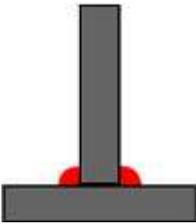
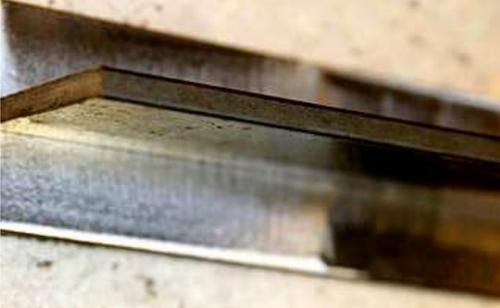
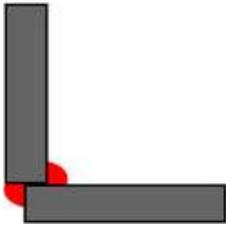
Task No.	Task	Description
1	Safety Chart	Prepare safety charts. Showing general & Trade specific safety measure (text/pictorial). Each trainee will prepare different chart.
2	Draw Sketches of Tools & Equipment	Draw neat and clean sketches of different Tools & Equipment Used by welder. Each trainee to draw sketches of at least 10 different Tools/Equipment on drawing sheet.
3	Prepare a Butt Joint	Prepare Butt Joint using SMAW Process <div style="text-align: center;">  <p>Butt Joint</p>  </div>
4	Prepare a LAP Joint.	Prepare LAP Joint using SMAW Process <div style="text-align: center;">  <p>LAP Joint</p>  </div>

<p>5</p>	<p>Prepare a Tee joint.</p>	<p>Prepare a T joint Using SMAW Process.</p> 
<p>6</p>	<p>Prepare a Corner joint.</p>	<p>Prepare a Corner joint Using SMAW process.</p> 
<p>7</p>	<p>Prepare a chair.</p>	<p>Prepare the given chair using square pipe (size: 1"x 1", Gauge: 18) Using SMAW Process.</p> 

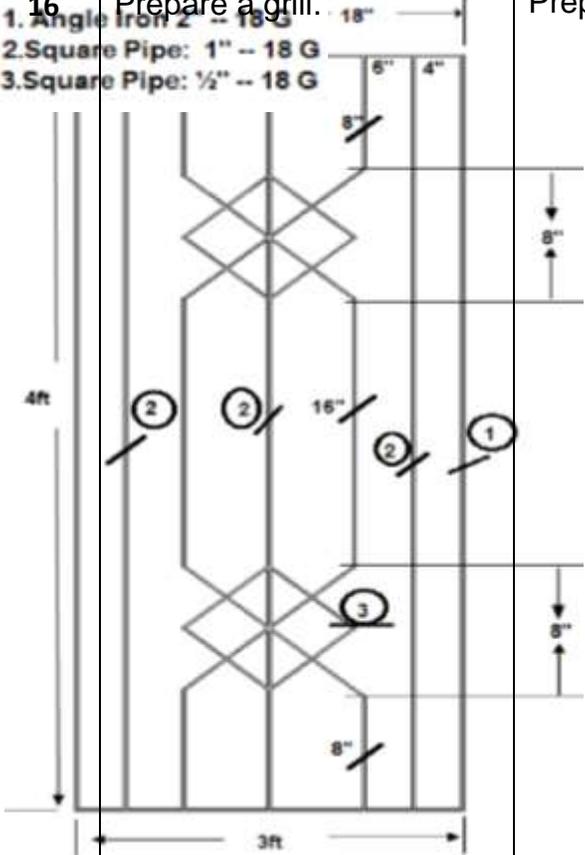
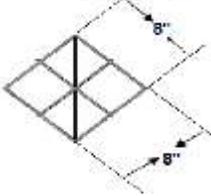
<p>8</p>	<p>Prepare a stool</p> 	<p>Prepare the given stool using square pipe (size: 20 mm², V process).</p>
<p>9</p>	<p>Prepare a Tablet chair.</p>	<p>Prepare the given Tablet chair using square pipe (size: 1"x 1", Gauge: 18)</p> 

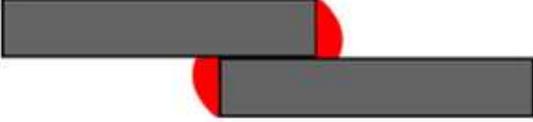
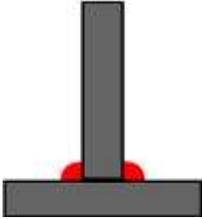
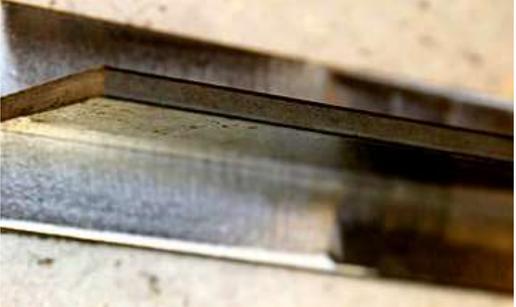
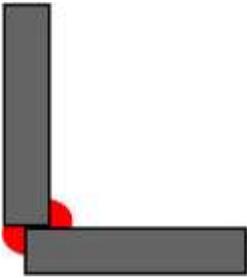
<p>10</p>	<p>Prepare a single bed.</p>	<p>Prepare the given single bed using round pipe of the following size:</p> <p>1: 1" 2: 1.5" Gauge: 18</p> 
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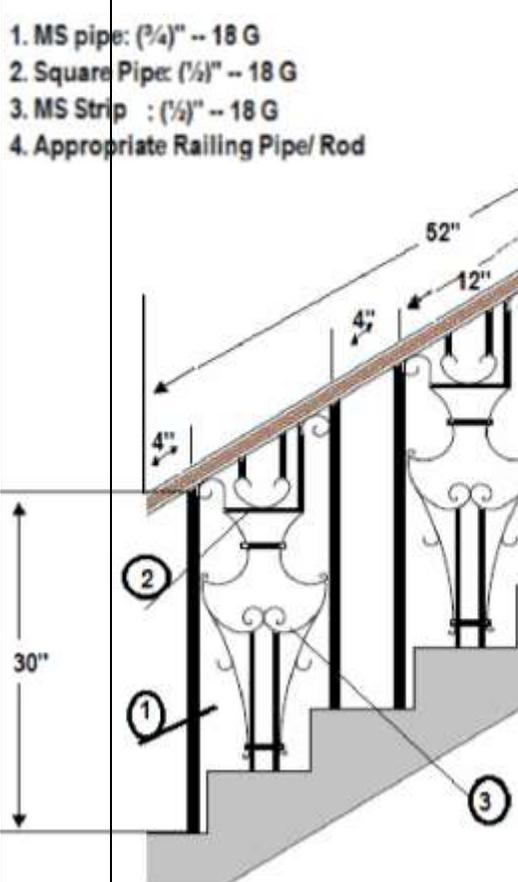
<p>11</p>	<p>Prepare a butt joint</p>	<p>Prepare the following joint. Using GMAW(MIG) process</p>  <p>Butt Joint</p> 
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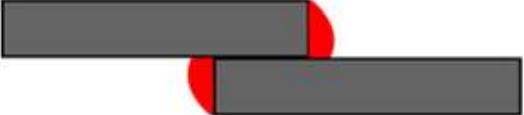
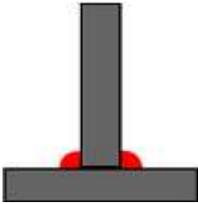
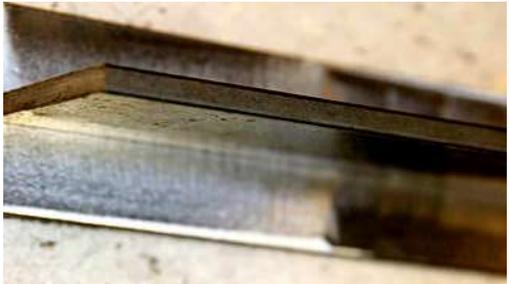
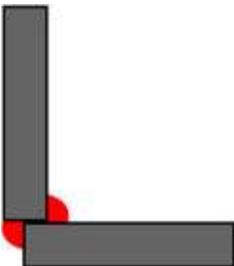
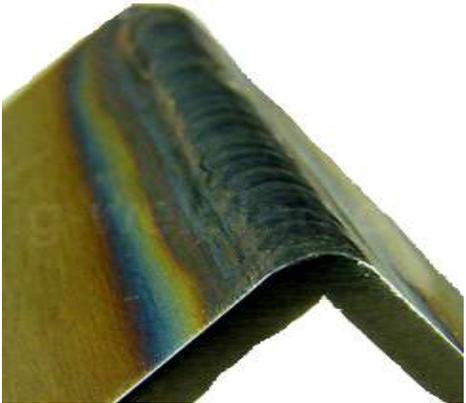
<p>12</p>	<p>Prepare a Lap joint.</p>	<p>Prepare the following joint. Using GMAW(MIG) process.</p>  <p>LAP Joint</p> 
<p>13</p>	<p>Prepare a Tee Joint.</p>	<p>Prepare the following joint. Using (GMAW) Process.</p>  
<p>14</p>	<p>Prepare a Corner Joint.</p>	<p>Prepare the following joint. Using (GMAW) Process.</p>  

<p>15</p>	<p>Prepare a bench.</p>	<p>Prepare the given bench using square Pipe and MS strip of the following sizes; Using the (GMAW) Process.</p> <p>1:1",2:3",1/4"(MS strip), Gauge: 18</p> 
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<p>16</p>	<p>Prepare a grill.</p> <p>1. Angle Iron 2" x 1/8" G 2. Square Pipe: 1" x 18 G 3. Square Pipe: 1/2" x 18 G</p> 	<p>Prepare the given grill with the following material;</p> 
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<p>17</p>	<p>Prepare a Butt Joint.</p>	<p>Prepare the following joint.Using (FCAW)Process.</p>  <p>Butt Joint</p> 
<p>18</p>	<p>Prepare a Lap Joint.</p>	<p>Prepare the following jointUsing (FCAW)Process.</p>  <p>LAP Joint</p> 
<p>19</p>	<p>Prepare a Tee Joint.</p>	<p>Prepare the following jointUsing (FCAW)Process.</p>  
<p>20</p>	<p>Prepare a Corner Joint.</p>	<p>Prepare the following jointUsing (FCAW)Process.</p>  

<p>21</p> <p>Prepare a Reeling.</p> <p>1. MS pipe: (3/4)" -- 18 G 2. Square Pipe: (1/2)" -- 18 G 3. MS Strip : (1/4)" -- 18 G 4. Appropriate Railing Pipe/ Rod</p> 	<p>Prepare the given reeling using the FCAW process and following material:</p> 
<p>22</p> <p>Prepare a 3 tire Corner flower pot stand.</p>	<p>Prepare the given 3 tire Corner flower pot stand of the suitable size, using the FCAW process. The Material can be used of your own choice.</p>

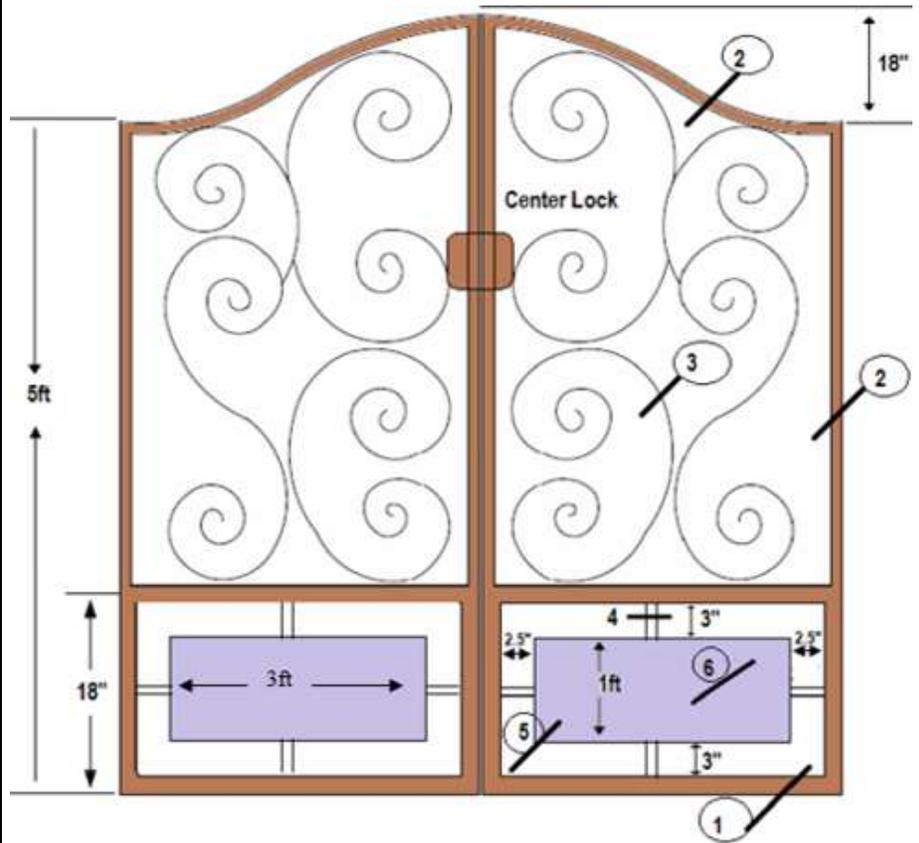
<p>23</p>	<p>Prepare a Butt Joint.</p>	<p>Prepare the following joint.Using(GTAW) TIG Process.</p>  <p style="text-align: center;">Butt Joint</p> 
<p>24</p>	<p>Prepare a Lap Joint.</p>	<p>Prepare the following joint.Using(GTAW) TIG Process.</p>  <p style="text-align: center;">LAP Joint</p> 
<p>25</p>	<p>Prepare a Tee Joint.</p>	<p>Prepare the following joint.Using(GTAW) TIG Process.</p>  
<p>26</p>	<p>Prepare a Corner Joint.</p>	<p>Prepare the following joint.Using(GTAW) TIG Process.</p>  

27

Prepare a gate.

- 1. Square Pipe: (2X2)" --18 G
- 2. Square Pipe: (1.5X1.5)" --18 G
- 3. MS Strip ½" --18 G
- 4. Rectangle Pipe: ½"X1½" --18 G
- 5. Angle Iron ½" --18 G
- 6. MS Sheet -- 18 G

Prepare the given gate with the following:



Workplace/Institute Ethics Guide

Work ethic is a standard of conduct and values for job performance. The modern definition of what constitutes good work ethics often varies. Different businesses have different expectations. Work ethic is a belief that hard work and diligence have a moral benefit and an inherent ability, virtue or value to strengthen character and individual abilities. It is a set of values centered on importance of work and manifested by determination or desire to work hard.

The following ten work ethics are defined as essential for employee's success:

1. Attendance:

Be at work every day possible, plan your absences don't abuse leave time. Be punctual every day.

2. Character:

Honesty is the single most important factor having a direct bearing on the final success of an individual, corporation, or product. Complete assigned tasks correctly and promptly. Look to improve your skills.

3. Team Work:

The ability to get along with others including those you don't necessarily like. The ability to carry your own weight and help others who are struggling. Recognize when to speak up with an ideas and when to compromise by blend ideas together.

4. Appearance:

Dress for success, set your best foot forward, personal hygiene, good manner, remember that the first impression of who you are, can last a life time

5. Attitude:

Listen to suggestions and be positive, accept responsibility. If you make a mistake, admit it. Values workplace safety rules and precautions for personal and co-worker safety. Avoids unnecessary risks. Willing to learn new processes, systems and procedures in light of changing responsibilities.

6. Productivity:

Do the work correctly, quality and timelines are prized. Get along with fellows, cooperation is the key to productivity. Help out whenever asked, do extra without being asked. Take pride in your work, do things the best you know how. Eagerly focuses energy on accomplishing tasks, also referred to as demonstrating ownership. Takes pride in work.

7. Organizational Skills:

Make an effort to improve, learn ways to better yourself. Time management; utilize time and resources to get the most out of both. Takes an appropriate approach to social interactions at work. Maintains focus on work responsibilities.

8. Communication:

Written communication, being able to correctly write reports and memos.
Verbal communications, being able to communicate one on one or to a group.

9. Cooperation:

Follow institute rules and regulations, learn and follow expectations. Get along with fellows, cooperation is the key to productivity. Able to welcome and adapt to changing workplace situations and the application of new or different skills.

10. Respect:

Work hard, work to the best of your ability. Carry out orders, do what's asked the first time. Show respect, accept and acknowledge an individual's talents and knowledge. Respects diversity in the workplace, including showing due respect for different perspectives, opinions and suggestions.

SUGGESTIVE FORMAT AND SEQUENCE ORDER OF SUCCESS STORY

S. No	Key Information	Detail/Description
1.	Self & Family background	<ul style="list-style-type: none"> • Self-introduction • Family background and socio economic status, • Education level and activities involved in • Financial hardships etc
2.	How he came on board NAVTTC Training/ or got trained through any other source	<ul style="list-style-type: none"> • Information about course, apply and selection • Course duration, trade selection • Attendance, active participation, monthly tests, interest in lab work
3.	Post training activities	<ul style="list-style-type: none"> • How job / business (self-employment) was set up • How capital was managed (loan (if any) etc). • Detail of work to share i.e. where is job or business being done; how many people employed (in case of self-employment/ business) • Monthly income or earnings and support to family • Earning a happy life than before
4.	Message to others (under training)	<ul style="list-style-type: none"> • Take the training opportunity seriously • Impose self-discipline and ensure regularity • Make Hard work pays in the end so be always ready for the same.

Note: Success story is a source of motivation for the trainees and can be presented in a number of ways/forms in a NAVTTC skill development course as under: -

1. To call a passed out successful person of institute. He/she will narrate his/her success story to the trainees in his/her own words and meet trainees as well.
2. To see and listen to a recorded video/clip (5 to 7 minutes) showing a successful person Audio video recording that has to cover the above mentioned points.
3. The teacher displays the picture of a successful trainee (name, trade, institute, organization, job, earning per month etc.) and narrates his/her story in teacher's own motivational words.