

Fundamentals of Welding Day to Day Planning

SL No.	Day No.	Theory Session (90min)	Topics	Practical session (4hr 45 min)	Topics	Remark
1	Day 1	MC, RNB & SS	Inauguration by Dignitaries Introduction- Keepsake CoE, Safety protocols of Center-MC. Setting the context by RNB	Pre training assessment in the training hall 11:30 to 12 pm. Methods of measurement- SS, & JK (Practical). Identification of metal.	Pre training assessment . Measurement Practical (Plate). Spark Test.	Vernier, measure tape, filler gauge, BCG gauge, right angle etc. Metal samples for identification. Equipment to be kept in the training room
2	Day 2	Dr. GH Upadhyay	Introduction to Gas cutting & Grinding - with Safety	SS & JK	Gas Cutting Practice . Grinding practice on plate	Equipment to be kept in the training room for explanation
3	Day 3	RNB & SS	Types of welding - SMAW process, power source & equipment	SS & JK	Practice on Welding Simulator	
4	Day 4	Prof. D K Patel & SS #	Types of welding - MIG & TIG process, power source & equipment	SS & JK	Practice on Welding Simulator	
5	Day 5	SS	Types of Welding Position & Joints. Electrode & filler material	SS & JK	welding Practice on Actual Power Source	
6	Day 6	Dr. Mrunal Chaud	Welding metallurgy. Pre-Heating & Post heating during	SS & JK	Welding Practice on Actual Power Source	Microscope, microstructures of Metal

		hari (+ RNB) #	welding			
7	Day 7	SS & JK	Types of Welding Defects, Causes & Remedy	SS & JK	Welding Practice on Actual Power Source	
8	Day 8	NC + SS	DT, NDT & X-ray film review	SS & JK	Practice DPT	
9	Day 9	MRB & Team	Automation in Welding	GH & SS	Industry Visit to Manufacturing set - up	
10	Day 10	Aga Khan Trust (MC & RNB)	Getting ready for job.	Post-training assessment & review in the training hall 11:30 to 1 pm. Feedback on training - SS & JK	Final Assessment, feedback & Certificate Distribution by Dignitaries	

Total - 15 hr theory

Total - 47 hr 30min. Practical

Total - 62 hr 30min. Training program

MC	Jahid Khan	
RNB	Manan R Bateriwala	
SS	Gulam Hussain	
NC		

Bach No: 2018-2019/Keepsake/B6

A report about the Short-Term Training Program on “Beginners/Fresher Welding Training Course” at the GTU’s Keepsake Welding research and skill development center at the at L.D College Engineering.

- **Course Name:** Beginners/Fresher Welding Training Course
- **Trade Name** Fabrication
- **Duration:** 23/08/2018 to 01/09/2018
- **Venue:** Keepsake Welding research and skill development center at the at L.D College Engineering
- **No of participant:** 19
- **Inauguration function date:** 23/08/2018

GTU has established Skill Development Center in Welding Sector at L.D College Engineering. To develop such center Keepsake Engineering Consultancy Pvt.Ltd (Industry Partner), CED and GTU (Host Institute) work jointly.

During the 23/08/2018 to 01/09/2018, “Beginners/Fresher Welding Training Course” tanning was arranged under the Keepsake Welding Research & Skill Development Centre at the L.D College Engineering.

Welding & Fabrication technologies are the most important job skills for Mechanical Engineers. It is very essential technology in Industrial infrastructure development such as erection, commissioning of pipes, shipping, Power plants, steel plants, cement plants etc. The course curriculum includes classes by faculty, video classes, PowerPoint presentations. This is pure workshop training and it gives the opportunity to the students, hands on experience on welding & fabrication equipment, safety engineering, plant technologies etc.

Objective of the Tanning Program:

The Internationally accredited Welder (Fabrication & Fitting) Courses classroom training and Onsite training program improve your technical skill and that you bring to expand your career potential, it will help you to achieve a standard professional career.

Topic covered under the Tanning Program:

- Introduction to Welding, Material selection, Design considerations, Mathematical calculations, Formulas
- Safety instructions and checklist, Personal protection, Welding fumes, Work site protection
- Cutting, Joining, rebuilding, hardfacing, Coating, cold repairs,
- Filler material consumption, Metal identification, Evaluation of welds
- Coated Electrodes, TIG Welding Rods & Fluxes, Wires for Wire Welding, Gas Welding Rods & Fluxes, Brazing Rods & Fluces
- Arc Welding: Electrode welding & gouging, TIG Welding, Wire Welding, Plasma Cutting, Current Distribution System
- Gas Welding: AC/OX cutting, welding, brazing, Gas Supplies and gas distribution system

Course syllabus – Fabrication

- Introduction to fabrication, Design considerations, Mathematical calculations, Formulas, Codes and Standards
- Material selection, Method selection for production and fabrication, Different Metals available for Metal Fabrication,
- most common forms of stock sizes and materials, metal fabricator's tool box
- Occupational hazards, personal safety, Workplace safety

Outcome of the training Program:

Fabrication applies to the building of machines, structures, or process equipment by cutting shaping and assembling components made from new materials. Fabrication shops generally concentrate on the metal preparation, welding and assembly. Standard raw materials used by metal fabricator are: Plate metal, formed and expended metal, pipes, tubes, square tube, I-beam, H-beam, C-channel, Hardware, Casting etc. The raw material has to be cut to size. This is done with a variety of tools.

Career Opportunities

Upon graduation, welding students will be prepared for careers in the construction, pipeline, metal fabrication, manufacturing, repair, and specialty/custom job fields. Jobs that utilize arc welding, gas metal arc welding, flux core, TIG, oxyacetylene cutting, plasma cutting, and general fabrication are examples of the choices available to graduates. The welding and fabrication field is ideal for the person who likes hands on work. Common career titles include production welder, welder fabrication person, metal fabrication person, shop foreman in fabrication, welding shop foreman, welding shop owner or manager, welding supply salesperson, and welding product salesperson.

Program Outcomes

By completing this program, students will achieve the following learning outcomes:

- Apply proper industry safety standards.
- Apply welding and cutting safety procedures;
- Identify proper welding consumables and fluxes for a selected process;
- Perform a variety of welding processes using appropriate equipment and setup procedures and for GMAW, SMAW, GTAW, and OAW;
- Apply principles of basic welding fundamentals, symbols, blueprints and welding metallurgy;
- Design and execute fabrication projects to specifications;
- Read and interpret fabrication blueprints and drawings; and
- Demonstrate effective written and oral communication skills.