

**Certificate Program In  
Welding**  
(To be launched from Jan 2023)

**Course Curriculum  
Structure**



**DEPARTMENT OF MECHANICAL ENGINEERING**

**GIRIJANANDA CHOWDHURY UNIVERSITY**

Hathkhowapara, Azara , Guwahati 781017, Assam



## Semester I

Course Code	Course Name	Hours per week			No. of Credits	Evaluation criteria		
		L	T	P		C	Continuous Evaluation	End term
	Communication Skill	2	0	0	2	20	---	20
	Basics of computing	0	0	2	2	20	---	20
	Basic Science	1	0	0	1	10	----	10
	Demonstration and Practice of Arc welding	0	0	36	36	100	---	100
	Demonstration and Practice of Gaswelding and cutting	0	0	33	33	50	---	50
	Introduction and demonstration of MIG welding	1	0	2	3	20	---	20
	Job Production	0	0	36	36	30	70	100
	Project/ Industrial visit	0	0	10	10	30	----	30
	<b>Total</b>	<b>4</b>	<b>0</b>	<b>119</b>	<b>123</b>	<b>280</b>	<b>70</b>	<b>400</b>

*L: Lecture, T: Tutorial, P: Practical, C: Credit*

**1. Details of Syllabus**

<i>Week 1 and Week 2</i>		<b>Contact hours</b>
<b>Theory:</b> Introduction to the institution and its working, Introduction to the course, Discipline, and general principles of the discipline.		10
<b>Theory:</b> Introductory classes on communicative skills, entrepreneurship skills, productivity, and occupational safety, health, and environmental education.		10
<b>Practical:</b> Familiarization with the institute; Introduction to safety equipment and their uses; Introduction to first aid, road safety, operation of electrical mains; Safety hazards, occupational health hazards, and associated environment-related issues		60
<i>Week 3 and Week 4</i>		<b>Contact hours</b>
<b>Theory:</b> Chemistry and Physics-related to welding		12
<b>Practical:</b> Physical exercise; Demonstration of properties of acids, alkalis, gases and organic flammable liquids & commonly used industrial chemicals		60
English Literacy		4
Extracurricular activity		4
<i>Week 5 and Week 6</i>		<b>Contact hours</b>
<b>Introduction to welding in shop floor system</b>		
<b>Theory</b>	Safety Measures on the shop floor	12
	Basic features of the joining process	
<b>Practical</b>	Demonstration of tools and Equipment	60
	English Literacy	4
	Extracurricular activity	4



<i>Week 7 and Week 8</i>		<b>Contact hours</b>
<b>Demonstration and Practice of Arc welding</b>		
<b>Theory and Practica I</b>	Arc length maintenance	72
	Speed control	
	Types of electrode motion	
	Straight and Reverse polarity	4
	A.C and D.C welding	4
	English Literacy Extracurricular activity	
<i>Week 9 and Week 10</i>		<b>Contact hours</b>
<b>Job production</b>		
<b>Theory and Practica I</b>	Straight beading on M-S plate	72
	Butt joint	
	T-joint	
	Corner joint	4
	Lap joint	4
	Edge joint	
	English Literacy Extracurricular activity	
<i>Week 11 and Week 12</i>		<b>Contact hours</b>
<b>Demonstration and Practice of Gas welding and cutting</b>		
<b>Theory and Practica I</b>	Oxy-acetylene gas welding-equipments and accessories	72
	Torch adjustments and flame control	
	The practice of welding and cutting techniques	
	Introduction and demonstration of MIG welding	4
	English Literacy Extracurricular activity	4

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<b><i>Week13 and Week 14</i></b>		<b>Contact hours</b>
<b>Practice sessions</b>		
<b>Practical</b>	Arc welding jobs	72
	Gas welding and cutting job	4
	IT Literacy Extracurricular activity	4
<b><i>Week 15 and Week 16</i></b>		<b>Contact hours</b>
<b>Project work/Industrial visit</b>		-----
<b><i>Week 17</i></b>		<b>Contact hours</b>
<b><i>Revision</i></b>		-----
<b><i>Week 18</i></b>		<b>Contact hours</b>
<b><i>Examination</i></b>		-----

## 6. Reference book & resources

- i. Welder Trade Practicals- Directorate General of Employment & Training, Ministry of labour, Govt. of India-Central Instructional Media Institute (CIMI), Chennai
- ii. Welder Trade Theory- Directorate General of Employment & Training, Ministry of labour, Govt. of India-National Instructional Media Institute (NIMI), Chennai-University Press