

CENTRAL WORKSHOP
CSIR-INSTITUTE OF MINERALS & MATERIALS TECHNOLOGY



The Central Mechanical Workshop of CSIR-Institute of Minerals & Materials Technology is well equipped with different modern and state of the art machinery like Conventional Lathe m/c, Milling m/c, Surface Grinder m/c, Shaping m/c, Radial drilling m/c, CNC Lathe, CNC Milling and CNC EDM m/c to carter different R&D requirement of the Scientists. All the machineries are supported by well trained technical manpower and advance CAD & CAM software are used to carry out precision works. To translate the knowledge, Central Mechanical Workshop has proposed an Advance Certificate Course in Machining & Welding Technology under “CSIR Integrated Skill Initiative programme.

A) Facility in CNC Section.

- 1) CNC Turning m/c
- 2) CNC Milling m/c
- 3) WIRE EDM m/c
- 4) CAD software.

B) Facility in Machine Section.

- 1) Air Compressor
- 2) Shearing m/c.
- 3) Surface Grinding m/c
- 4) Portable Grinder m/c -16".
- 5) Grinder m/c
- 6) Horizontal Milling m/c
- 7) Centre Lathe m/c
- 8) Conventional lathe machine m/c
- 9) Shaping m/c, 10) Redial Drilling m/c
- 11) High Speed Power Hacksaw m/c,
- 12) Sheet & Plate Bending m/c.



CNC MILLING M/C



CNC TURNING M/C



WIRE EDM M/C



HYDRAULIC SHEARING M/C



SURFACE GRINDING



HYDRAULIC PLATE BENDING M/C



SHAPER M/C



CONVENTIONAL LATHE M/C

C) Fitting Hand Tools.

- 1) Jig Saw, Model.2) Drill machine 1/4" cap, 3) Drill machine 30 mm cap, 4) Metal cutting
- 5) Rotary Drill, 6) Mini Angle Grinder, 7) Angle Pipe Cutter, 8) Electric Impact Wrench.
- 9) Heavy Duty Angle Grinder

D) Facility in welding section.

- 1) AC Arc Welding m/c
- 2) Portable welding rectifier
- 3) Welding Rectifier
- 4) TIG Arc welding m/c
- 5) MIG ARC welding m/c
- 6) Gas Cutting (Oxy-Acetylene)
- 7) Oxy-Acetylene gas welding and cutting set
- 8) AC arc welding transformer-Single phase



PLASMA CUTTING



TIG



ARC WELDING



SPOT WELDING

E) Glass Blowing Section.

- 1) Lathe glass working machine
- 2) Rotary compressor vacuum pump
- 3) Glass cutting machine.
- 4) Glass grinding & polishing.



GLASS TUBE



GLASS LATHE

Certificate course in Advance Machining/Advance Welding
11th to 15th November- 2019

Objectives:-

- To translate the knowledge about Mechanical Workshop technology.
- Basic knowledge about the advance mechanical machine tools (CNC Turning/CNC Milling/Wire EDM).
- Learn about basic and advance welding operations.
- Lecture about basic & advance welding process like TIG, MIG; Sport welding, Plasma cutting etc.
- Involving with Lab. scientific R&D fabrication works.

Course duration- 5 days / 40 Hrs.
Date of commencement- 11th November 2019.

Salient Features of the Course: 20% theory and 80% practical, Hands on practical exposure to different machineries.

Eligibility Criteria ITI pass in Trade of Machinist/Turner/ Fitter. (For advance Machining) ITI pass in Trade of Welder. (For advance Welding)	A/C No: 30267734773 IFSC Code: SBIN0007499 Name of the bank: State Bank of India Branch: SBI, IMMT Campus *Participants have to make their own arrangements for accommodation and working lunch.
Training Fee Training Fee is Rs. 3,000/- per participant (Inclusive of all)* Course fee can be paid by net banking or D.D of any nationalized bank in favour of “Director, CSIR-IMMT”	Course Organizer: Dr. P.C Beuria (Coordinator Central Workshop, pbeuria@immt.res.in. Ph. No.-0674-237-9340) Mr. R.K Mandal (In-charge, Central Workshop, rkmandal@immt.res.in. Ph No.- 0674-2379-173/ 9861429446)

For participation contact the course organizer. For further information about Skill Development Programme at IMMT Bhubaneswar write to:

Dr. S.K. Pradhan
skpradhan@immt.res.in
Ph: 0674-2379218
www.immt.res.in

SYLLABUS FOR ADVANCE MACHINING:

A) Conventional Lathe m/c.-

- Description of different parts of machine and their use, different operations like Threading, Facing, Drilling, Reaming, Taper Turning, Others operation like Grooving, Parting, Boring etc.

B) Conventional Milling m/c.-

- Description of different parts of machine and their use, different operations like Plain Milling, Side Milling, Face Milling, Slot & Groove Milling etc.

C) Introduction of CNC m/c.-

- Description of different parts of machine and their use, different operations like Threading, Facing, Drilling, Reaming, Taper Turning, Grooving, Parting, Boring etc.

D) Fitting Section.

- Bench work & Marking.
- Measuring Instruments and their use.
- Fundamental Engineering Drawing.
- Machine Tool Maintenance.
- Hand Tools.
- General Workshop Safety Precaution.

SYLLABUS FOR ADVANCE WELDING:

A) Basic Fundamental.

- Different types of Welding Processes.
- Basic Welding Metallurgy.
- Welding Consumables

B) Oxy-Fuel Gas Welding and Cutting Process.

- Description of equipment & accessories
- Selection of consumables
- Joint preparation & procedure

C) Advanced Brazing Process:-

- Description of Brazing processes
- Process Characteristics
- Brazing on different metals and metal combinations

D) Gas Shielded Tungsten arc Welding (GTAW) for M.S/S.S

- GTAW Process & accessories.
- Selection of holders / nozzles Tungsten electrodes & shielding gases.
- Welding techniques.

E) Gas Shielded metal arc Welding (GMAW) for M.S/S.S

- GMAW (MIG/MAG) Process & accessories
- Selection of holders / nozzles electrodes & shielding gases
- Welding techniques

F) Plasma Cutting Process.

- Plasma cutting process & accessories
- Selection of holders / nozzles
- Cutting techniques.

G) Spot welding Process.



CSIR-INSTITUTE OF MINERALS AND MATERIALS TECHNOLOGY

Council of Scientific & Industrial Research

BHUBANESWAR – 751 013

Application Form

CSIR Integrated Skill Initiative programme

Certificate course in Advance Machining/Advance Welding

11th to 15th November 2019

1. Name:	
2. Address: (In Block letters)	
E-mail:	Mobile:
3. Nationality :	
4. ID Proof (Aadhaar Card/Authentic ID):	

Please paste self signed recent colour passport size photograph

5. Record of Academic/Technical Training:

(Commencing from Secondary School Certificate or Equivalent Examination; attach Xerox copies)

Examination	School/College/ University	Subjects/ Trade	Class/ Division	Year of Passing	% marks scored (Grade Points)

DECLARATION

I declare that the above information furnished by me is true to the best of my knowledge and belief. If selected, I hereby agree to abide by the Rules and Regulations of the course framed by CSIR-IMMT.

Signature of Candidate

Date:

Place: