

Skill Development Programme

Certificate course in Advance Machining / Advance Welding

11th March – 29th March 2019

The training programme will be focused on Advanced Machining and Welding. The Central Mechanical Workshop of CSIR-Institute of Minerals & Materials Technology, Bhubaneswar is well equipped with different modern and state of 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 cater different R&D requirement of the Scientist.

Objectives of the programme:

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

Course Organizer:

Dr.P.C Beuria (Coordinator Central Workshop, pcbeuria@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)

Eligibility Criteria

ITI pass in Trade of Machinist/Turner/Fitter. (For advance Machining)
ITI pass in Trade of Welder. (For advance Welding)

Training Fee

Training Fee is Rs. 4,000/- per participant (Inclusive of Registration Kit, Service Tax @18% G.S.T, Course material, Certificate).

Participants have to make their own arrangements for accommodation and working lunch.

Training charges may be paid in the form of Demand Draft / NEFT in favour of Director, CSIR-IMMT payable at Bhubaneswar.

Course duration

03 Weeks / 120 Hrs.

Date of commencement- 11th March 2019.

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
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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.

D) 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.

E) 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.