

## **Objectives of Centre for Experiential Learning (CEL)**

The primary objective of experiential learning is to help complete students' preparation for their chosen careers, reinforcing course content and theory, which is the most vital ingredient in modern technical education. Students learn through peer centric approach-rather than instructor-centered experiences by doing, discovering, reflecting and applying. Through these experiences, students develop communication skills, self-confidence, team spirit, and decision-making skills by responding to and solving real-world problems and processes. The centre would work with the following objectives;

1. to develop experiments for hands-on experience in choosing and using common scientific, engineering or trades equipment appropriately;
2. to develop motor skills in using scientific, engineering or industrial tools or creative media;
3. to give participants an understanding of the advantages and limitations of laboratory experiments;
4. to enable students to see science, engineering or trade work in action
5. to allow teachers and students to test hypotheses or to see how well concepts, theories, and procedures work when tested under laboratory conditions
6. to train participants on how to design and conduct experiments
7. to design and create objects or equipment in different physical media.

**Note:- Post 1 and 2 has to work under this centre.**

### **1. Technical Officer/ Workshop Supervisor/Deputy Consultant (Temporary on Contract) – No. of Post-01(One).**

#### **Eligibility Criteria:**

- Minimum Qualification: Master Degree in Engineering/Technology in relevant field from recognized University/ Institution.
- Minimum Experience: 2- 5Yrs. experience in industry/research/teaching. The candidate must have experience in the operation and maintenance of engineering workshop and laboratory equipment.

- Emoluments: Up to Rs.1, 20,000/-

Retired govt. personnel: He/She will be given remunerations admissible as per Ministry of Finance, Department of Expenditure OM. No. F. No. 3-25/2020-E.IIIA dated 9th December 2020 and as amended from time to time.

- Tenure: One year, Extension for further period based on performance

### **Job Roles:**

- Preparing and follow-up of general maintenance schedule in Labs.
- Assist Mentors on cost-effective ways to prepare teaching aids.
- Keeping a maintenance record and filing documents, invoices, and instruction manuals.
- Procurement, keeping the inventory/records of maintenance tools, materials, and parts etc.
- Assist project team for arranging the equipment and software required for the project.
- Supervising the project team. Housekeeping of laboratory/work place.
- Performing operation, maintenance and repair tasks related to project.
- Assist Chief Technical officer (CTO) in carrying out their jobs.
- Proactively performing structural maintenance and keeping Labs neat and clean.
- Diagnosing equipment malfunctions and performing repairs.
- Assist in purchasing maintenance tools, materials, or replacement parts.
- Following prescribed safety regulations at all times.
- Prepare and finalize component and assembly drawings as well as work flow for fabrication/assembly.

## **2. Technical Assistant (Temporary on Contract)**

### **(i) CNC Operator/Programmer Temporary on Contract - No. of post-01(One).**

#### **Eligibility Criteria:**

- Minimum Qualification: Diploma in relevant field from recognized institution.
- Minimum Experience: 2-5 years. The ideal candidate should have a diploma in Mechanical Engineering with 2-5 years of experience in CNC programming and machining.
- Emoluments: Up to Rs.45,000/-

Retired govt. personnel: He/She will be given remunerations admissible as per Ministry of Finance, Department of Expenditure OM. No. F. No. 3-25/2020-E.IIIA dated 9th December 2020 and as amended from time to time.

- Tenure: One year, Extension for further period based on performance

**Job Roles:**

- Translate the requirements of detailed part drawings into measurements for production
- Perform proper set-up and calibration procedures for all equipment and accessories to be used on various projects
- Ensure that every machine procedure is done in accordance with the strict guidelines of the Project mentors.
- Follow all laboratory/workshop safety protocol.
- Inspect the work area and machines that were used during the day prior to leaving at the end of each day.
- Attend and actively participate in training classes and safety sessions

**(ii) Milling / Lathe Machine Operator Temporary on Contract, No. of Post-01(one)**

**Eligibility Criteria:**

- Minimum Qualification: Diploma in Mechanical Engineering from recognized Institution.
- Minimum Experience: 2-5Years. The ideal candidate should have experience in operating milling and lathe machines.
- Emoluments: Up to Rs. 45,000/
- Retired govt. personnel: He/She will be given remunerations admissible as per Ministry of Finance, Department of Expenditure OM. No. F. No. 3-25/2020-E.IIIA dated 9th December 2020 and as amended from time to time).
- Tenure: One year, Extension for further period based on performance.

**Job Roles:**

- Load/unload parts from machine.
- Works from detailed blueprints.
- Lays out reference lines and points as a guide in machining operations when necessary.

- Sets up milling machines by positioning and locating work piece.
- Set up Lathe Machines.
- Control and adjust machine settings.
- Operates assigned machine shop tools including mill, lathe, horizontal and vertical saws, grinders and drill presses.
- Performs routine preventative maintenance and cleaning on assigned machines.
- Learns to use the hand tools needed to perform the job.
- Sets-up mills and lathes by installing and adjusting three- and four-jaw chucks, tools, attachments, collects, bushings, cams, gears, stops, and stock pushers.
- Hand loads parts and/or material, hand feed tools as required.
- Inspects parts during production using various types of gauging devices such as comparators, hand mikes, plug and depth gages, makes machine and tooling adjustments necessary to maintain print specifications.
- Re-sharpens and replaces tools, rakes chips, sands face, adds coolant.
- Performs straight and taper turning, boring, threading, facing, drilling, tapping, reaming, plugging and mill work, to the required dimensional specifications and tolerances.
- Operates Iron Worker to notch and punch a variety of metals.
- Operates band saw to cut angles, pipes, tubings and hss.
- Desired experience for lathe operator includes:
- Must be able to operate CNC Lathes AND Mills with G code controls and Mazatrol controls.
- Reliable and able to work with attention to detail and safety standards.
- Ability to communicate issues verbally and in written form.
- Some knowledge of inspection gauges and equipment.

**(iii) Fitter - Temporary on Contract, No. of Post-02 (Two)**

**Eligibility Criteria:**

- Minimum Qualification: ITI Fitter certificate from recognized Institution.
- Minimum Experience: 2-5Years. The ideal candidate should have experience in fitting work.
- Emoluments: Up to Rs.35,000/-
- Retired govt. personnel: He/She will be given remunerations admissible as per Ministry of Finance, Department of Expenditure OM. No. F. No. 3-25/2020-E.IIIA dated 9th December 2020 and as amended from time to time.
- Tenure: One year, Extension for further period based on performance.

**Job Roles:**

- Reviewing the blueprints of various mechanical systems.

- Constructing and joining structural components.
- Examining and measuring components to ensure that they are of the correct size and quality.
- Using welding equipment and hand tools like ball-peen hammer, hack saw, and steel ruler while constructing structural components.
- Performing regular maintenance checks.
- Identifying system malfunctions and rectifying the same.
- Placing replacement orders for defective or broken parts.
- Adhering to the safety guidelines and industry standards at all times.
- Fabricating, assembling, and disassembling metal parts and tools as and when required.
- Checking if the finished parts are as per the specifications provided.
- Cleaning the work area before and after work.

### **3. CTO/Consultant/Adjunct Faculty (Temporary On Contract) No. of Post -1(One)**

#### **Eligibility Criteria:**

##### **Introduction**

NITTTR, Bhopal invites applications for the post of Adjunct Faculty (On contract) in the Department of Electrical & Electronics Engineering Education, NITTTR, Bhopal on consolidated pay for establishing a Skilling Centre for OSAT/ATMP Semiconductor Industry at NITTTR, Bhopal. The Indian Semiconductor Mission (ISM) aims to make India a hub for semiconductor manufacturing and design by promoting domestic manufacturing and innovation. To achieve this goal, it is necessary to develop a skilled workforce in the semiconductor industry. The establishment of a skill development and training center for OSAT (Outsourced Semiconductor Assembly and Test) / ATMP (Assembly, Testing, Marking, and Packaging) for Semiconductor Industry at NITTTR, Bhopal, would be a critical step towards achieving the objectives of the ISM. The Centre primarily aims to develop a industry specific capacity building activities addressing the skill gap in the OSAT/ATMP semiconductor industry, provide hands-on training and technical training programs for individuals at various levels in the semiconductor industry. It will also help in upskilling the existing workforce to keep up with the latest technological advancements.

##### **Objectives**

The objectives of the proposed centre are to:

- Develop a comprehensive training program to address the skill gap in the OSAT/ATMP semiconductor industry.
- Providing technical training programs for individuals at various levels in the semiconductor industry.
- Equipping trainees with the necessary skills and knowledge to operate and maintain semiconductor equipment, perform testing and quality control, and package semiconductor devices.
- Offer customized training programs to meet the specific needs of different companies.
- Provide support and guidance to individuals and organizations seeking to develop their capacity in the OSAT/ATMP semiconductor industry.

- Establish partnerships with industry stakeholders, including companies, industry associations, and research institutions, to facilitate technology transfer and collaboration.

The selected Adjunct faculty will be responsible for establishing a Skilling Centre for OSAT/ATMP Semiconductor Industry at NITTTTR, Bhopal. He will prepare DPR for setting up of Skilling Centre for OSAT/ATMP semiconductor industry and prepare technical details of infrastructure, equipment, machinery, end product specific and will be guiding the procurement, installation and commissioning at the facility. He will also be responsible for preparing financial proposal for raising funds from DoT/MeitY/DST etc.

### **Qualification**

- Essential Qualification: Bachelor's degree in engineering in a relevant branch /field from a recognized University.
- Essential Experience: Ample exposure and experience in semiconductor OSAT/ATMP processes and technologies, equipment and infrastructure, training and skilling, etc. with 15+ years' experience the in semiconductor/ATMP domain to meet the objectives.
- In the case of retired Govt. officials: officers who retired from grade pay level-13 & above.

### **Scope of work:**

The objective of appointing CTO/Consultant/Adjunct Faculty mainly is to -

- Establish a Skilling Centre for OSAT/ATMP Semiconductor Industry at NITTTTR, Bhopal.
- Prepare DPR for setting up of OSAT/ATMP lab for skilling.
- Prepare technical details of infrastructure, equipment, machinery, product specifications and procurement, installation and commissioning at the facility.
- Prepare financial proposal for raising funds from DoT/MeitY/DST/MoEetc.
- Assists in designing the need-based curriculum to meet the industry's current and future skill requirements and to keep pace with technological advancements.
- Assists in delivering the training programs in partnership with the semiconductor industry experts to ensure that the training programs are relevant and up-to-date and also provide real-world insights and experiences to the trainees.
- Assists in collaborating with the industry partner who is renowned in this field for certification purposes.

- Senior technical professionals who have worked in the relevant areas in reputed companies, academicians from universities, institutes, R&D labs, governments in India and abroad, reputed scientists, engineers, and other professionals, both serving and retired, can be inducted as adjunct faculty from outside the Institute.
- Preference will be given to persons with a relevant industry background and having experience at senior levels in semiconductor ATMP/OSAT industry/labs.

**Remuneration:**

- An Adjunct faculty shall be given a pay on need/visit basis for training activities as per Institute norms as decided by the BoG.
- Retired govt. personnel: He/She will be given remunerations admissible as per Ministry of Finance, Department of Expenditure OM. No. F. No. 3-25/2020-E.IIIA dated 9th December 2020 and as amended from time to time.
- Industry/Other Personnel: A fixed amount ranging from INR up to 2.0 Lakhs per month will be admissible.
- Travelling allowance will be paid as per Institute norms. She/he shall be provided with free lodging and boarding in the Institute's Guest house during the period of stay.

**Tenure:**

- The period of engagement of the CTO/Consultant/Adjunct Faculty shall be initially for a period of one year. No person shall be appointed or continued as Adjunct faculty on attaining the age of 70 years.
- All other terms and conditions shall be as prescribed in the MoE guidelines issued in this regard from time to time.

**Terms and conditions:**

- The **last date** for submitting **add** the CV giving the details of education qualifications, experience (in reverse chronological order), list of publications and patents, projects handled and statement of purpose along with justification for the suitability for the post applied is **28<sup>th</sup> of August 2023**.
- The hard copy of the duly **filled application form along** with CV and supporting documents (all documents must be self attested) should reach at the to Director NITTTR, Bhopal, Shamlia Hills, Bhopal -462002 by registered post or by hand at dispatch section.

