

Information Brochure



National Institute of Technical Teachers' Training and Research, Kolkata

(Established by the Ministry of Education,
Government of India)



Consultancy and Extension
Services

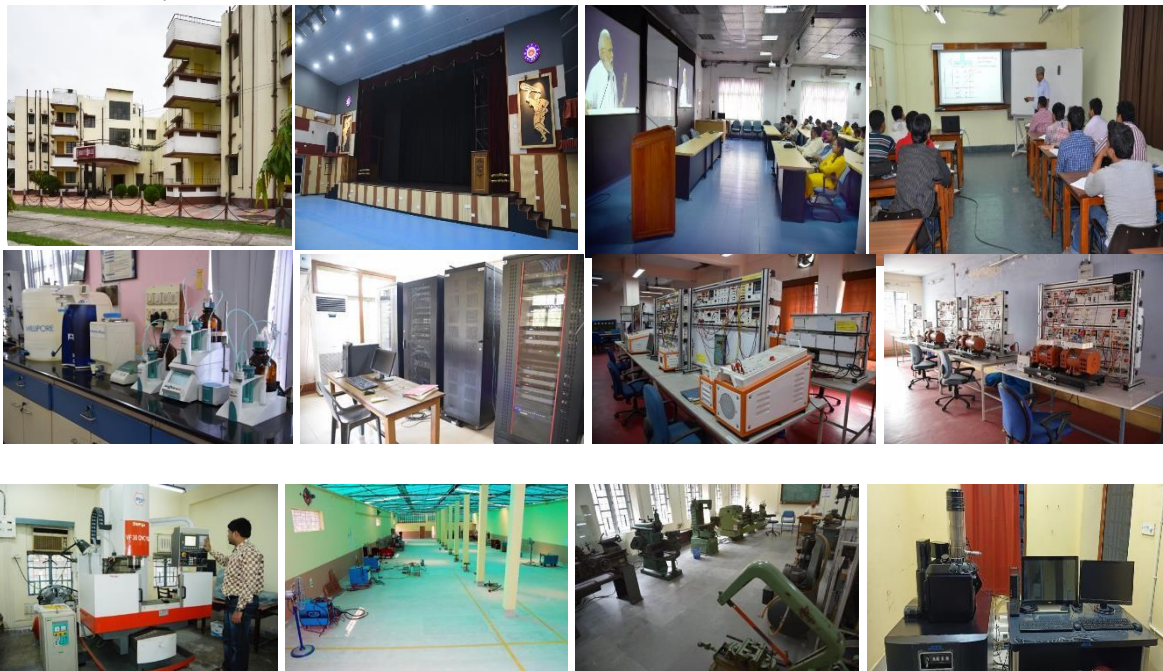


About Us

National Institute of Technical Teachers' Training & Research (NITTTR), Kolkata was established in 1965 by the Ministry of Education, Govt. of India as fully Centrally Funded Autonomous Institution. The focal activities of the Institute are (i) Education & Short-term Training, (ii) Curriculum Development, (iii) Learning Resources Development, (iv) Research & Development and (v) Extension Services & Consultancy. At present the Institute has two Extension Centres, one at Guwahati and the other in Bhubaneswar. NITTTR Kolkata has five academic departments in the field of Civil, Computer Science, Electrical and Mechanical Engineering.

In order to keep pace with the development in the frontier areas of Technology, all the departments are equipped with the state-of-the-art laboratories, machines, equipment, testing facilities and computing resources in a networked environment.

The Institute has been serving the needs of the other academic and industrial establishments for over fifty-five years. We are determined in providing consultancy and testing services of global standard to the community.



OUR SERVICES

Accommodation & Renting

- Mandana Mishra Hostel (AC)
- Swami Vivekananda Hostel (Non AC)
- Vacant Quarters

Laboratory/Workshop/ Testing Facilities

Civil Engineering:

- Concrete & Structure Laboratory (Two-Storeyed height)
- Geo-technical Engineering Laboratory
- Transportation Engineering Laboratory
- Computational Laboratory equipped with STAAD. Pro, STRUDS, RISA, ETABS, Auto CAD etc.
- Non-destructive and semi-destructive testing facilities
- Shake Table
- Environmental and Pollution Control Laboratory

Computer Science and Engineering:

- Programming & Database Laboratory
- Multimedia Engineering Laboratory
- Linux Laboratory
- Network Laboratory
- High Performance Computing Facility
- Cloud Computing Laboratory
- Computational Intelligence Laboratory

Electrical Engineering:

- Electrical Machine lab
- Power System lab
- PLC and SCADA Lab
- Mechatronics Lab
- Microprocessor and Microcontroller Lab
- Signal Conditioning and data acquisition Lab

Mechanical Engineering:

- Machine Tools Laboratory
- Automation Laboratory
- CAD CAM Laboratory
- Thermal Engineering Laboratory
- Simulation Laboratory
- Material Characterization Laboratory
- Scanning Electron Microscopy Laboratory
- Welding Centre

Training and Mentoring

- Teachers' Training in a wide range of subjects
- Students' Final Year/Research Project/Internship
- Special Courses

Curriculum Design

- Development of curriculums
- Revision of curriculum and gap analysis

OUR SERVICES

Skills Training

- Skills Training on various equipment/ machines/ laboratories of Civil, Electrical and Mechanical Engineering
- Welding/CAD/CAM/Machine Tools/Materials Characterization etc.
- Electrical Installation Testing/PLC/Control Systems/Sensors/Process Control etc.
- Water and Air Quality Testing
- Destructive/semi/non-destructive testing in Civil Engineering
- Technician & Supervisor Training (Industry & Govt. Organizations)
- Pollution Testing of Automobiles

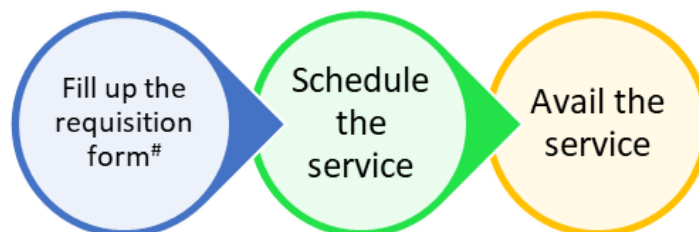
Consultancy

- Soil testing (CE)
- Design and fabrication of suitable structures (ME)
- Testing and Preparation of water quality test reports(CE)
- Material Characterization Study (ME)
- RC Structures testing (CE)
- Feasibility Study of Educational Programs/Social Issues (E&M)
- SWOC analysis of Institutes and Programmes (E&M)
- NBA/NAAC etc. report preparation and feasibility study (E&M)
- Preparation of DPR

Studio

- a) World Class Recording Studio and Editing facility

APPLICATION PROCEDURE



#Tariff details are available in the Tariff list, which can also be accessed from [Institute Website](#).

*Terms and Conditions for
External Users*

Terms and Conditions for External Users

Application Procedure

Step A: Intending users may send their applications by filling up the google form available on the institute's website. (www.nitttrkol.ac.in/extension_services.php)

Document required while filling up the google form:

1. Copy of payment receipt with UTR and date of payment (pdf, jpg)
2. Filled up version of the application form (pdf)

Step B: Users will get an intimation by email for the available slot

Step C: Users should visit the Institute at the said slot for availing the service

Payment Terms

Payment can be made in the following ways.

NEFT/RTGS	Crossed Demand Draft
Bank Details Name of the Acc. Holder: NITTTR Kolkata(NER) Name of the Bank: STATE BANK OF INDIA Acc. No.: 34181726656 Branch: SALT LAKE CITY, SECTOR-1 IFSC Code: SBIN0001612 CIF NUMBER: 80672446839	in Favour of Director, NITTTR Kolkata payable at Kolkata

General Terms:

1. Service tax will be charged extra as per GOI norms (18% GST for services).
2. The user has to apply at least 7 days prior to the date of usage
3. Any special instruction which is not mentioned in the brochure can be mentioned in the application form but the institute has the right to decide whether to acknowledge the request.
4. For testing, the users should clearly mention the operating conditions and type and no. of results required
5. The user has to bring up a CD/DVD for taking the data, no provision for pen drive/email.
6. Please bring external HDD for data transfer only in case of studio (LRC).
7. It will be the responsibility of the users to bring appropriately prepared sample otherwise for sample preparation extra charge has to be paid.
8. Only test report will be provided, no certificate will be given.
9. The test report can be used purely for academic/research purpose only. It must not be used for any legal purpose. NITTTR Kolkata won't provide any support in such case if any.
10. Samples or leftover, once tested shall not be returned to the agency.
11. For Hostels standard 24 hour check in and check out time will be maintained.
12. Enquiry/Requests may be sent by e-mail to the below mentioned numbers / address

Contact Details

Address: NITTTR Kolkata, FC Block, Salt Lake, Sector-3, North 24 Parganas-700106

Designation	Nodal Officer for Consultancy and Extension Services	Co-Nodal Officer for Consultancy and Extension Services
Email	dbose@nitttrkol.ac.in	arpan@nitttrkol.ac.in
Telephone	033-66251981	033-66251982

*Tariffs for Central
Facilities*

Tariff for Accommodation

SL. No.	Hostel Name	Room Type	Tariff (Daily Basis) (RS.)
1.	Mandana Mishra	Single room (Single Occupancy)	2000
2.	Mandana Mishra	Single Room (Double Occupancy)	2500
3.	Mandana Mishra	Double Room (VIP)	3000
4.	Swami Vivekananda	Hostel -2 (Non AC)	300

Tariff for Facilities

Sl.No	Facilities	Tariff (Daily Basis)(Rs.)	Security Deposit# (Rs.)	Advance Payment (Rs.)	
1	Auditorium	35000	15000	50000	
2	Mini Auditorium	Without Terrace	20000	10000	30000
		With Terrace	25000	10000	35000
3	Seminar Room/One Prototype Hall	10000	5000	15000	
4	Board Room	10000	5000	15000	
5	Class Room (Big Size)	5000	3000	8000	
6	Class Room(Moderate size)	3000	1500	4500	
7	DN Block Community Hall	25000	10000	35000	

The security deposit will be refunded after getting the clearance from Estate/Hostel Warden(s) subject to deduction if any.

Departmental Brochure with Tariff

I) Civil Engineering

II) Computer Science & Engineering

III) Education and Management

IV) Electrical Engineering

V) Mechanical Engineering

VI) Learning Resources Centre

**ENVIRONMENTAL POLLUTION MONITORING LABORATORY, DEPARTMENT OF CIVIL
ENGINEERING**



National Institute of Technical Teachers' Training and Research
(Ministry of Education, Govt. of India)
Block-FC, Sector - III, Salt Lake City
Kolkata - 700 106

About Us

National Institute of Technical Teachers Training and Research (NITTTR), Kolkata was born in 1965 as Technical Teachers' Training Institute, Calcutta. This was the first of such four institutes (other three being at Chandigarh, Bhopal and Chennai) established by Department of Education, MHRD, Govt. of India as fully centrally funded autonomous institution. The primary focus of the institute is to provide in-service training to the teachers & staff of Degree & Diploma level technical institutions like engineering colleges, polytechnics, pharmacy colleges, architecture colleges, management institutes, industrial & business organizations and conducting activities related to the quality improvement of the technical education system of the country. Government of India, in 2003, accorded national status to this Institute, (along with the 3 sister institutes) in recognition to the expert service rendered for overall improvement of quality of Technical Education system.

Some of the notable national level projects in which the Institute is associated are Formulation of Tech. Ed. QIP proposal, Facilitating PWD Scheme, Consultancy of World Bank assisted Tech. Ed. III project, Developing Curriculum & Learning materials for National Vocational Education Qualification & Certification Framework, Serving as Nodal agency to Community Polytechnic Scheme etc.

The institute has highly qualified faculty members and excellent infrastructural support in the form of well-equipped laboratories, library and other resources. The institute will also focus on production of multi-media learning materials, textbooks, laboratory manuals, video programmes to technical and vocational institutions.

The focal activities of the Institute are Short Term Training, Curriculum Development, Learning Resources Development, Research, Educational Management and Extension Services.

The Institute has established extension centres at Guwahati and Bhubaneswar for reaching out to its clients. The new mandate of the Institute has extended its clientele catchments area outside the country encompassing the Technical & Vocational Institutions of particularly SAARC & ASEAN countries.

Environmental Pollution Monitoring Laboratory at NITTTR, Kolkata

This Environmental Pollution Monitoring Laboratory is well set for providing the following value added services to the industries, institutions and individuals.

- Training programme based on theoretical and practical aspects of Environmental Pollution, Control and its Management.
- Environmental Consultancy
- Analytical Services

A) Training Programmes: In the areas of

- Environmental Pollution.
- Pollution control and monitoring techniques.
 - Water Quality Monitoring – potable and industrial use.
 - Industrial Pollution Control and its management.
 - Environmental Protection.
 - Pollution Abatement.
 - Hazardous Waste Management.
 - Laboratory Experimentation in Hydraulics, Engineering Chemistry, Environmental Chemistry, Water Pollution, Air Pollution, Noise Pollution, Soil Pollution, Public Health Engineering etc.

B) Environmental Consultancy: In the areas of

- Effectiveness study of a water and wastewater treatment plant.
- Water and wastewater analysis to meet Pollution Control Board requirements.
- Wastewater management with respect to its treatment, quality and monitoring procedure.
- Municipal water management – treatment, clarification and quality control for portable use.
- Cost effectiveness study with ROI calculation.
- Oily waste management.

- Right product selection and dose optimisation study.
- Air pollution and its monitoring techniques.
- New laboratory set up.
- Environmental Pollution – Laboratory Experimentation, Master Thesis, Project Work for Diploma, B. Sc., B.E & M.E students.
- Rural water quality monitoring.

C) Analytical Services: In the areas of

- Industrial wastewater analysis to meet the stringent requirements of Pollution Control Board.
- Drinking water analysis as per PHED/WHO guidelines.
- Power plant utilities and water testing – cooling water and boiler water analysis.
- Agriculture water analysis – fertility analysis and irrigation water quality assessment.
- River water, sea water and bore well water analysis.
- Municipal wastewater analysis.
- Environmental testing to monitor water quality for site remediation surveys, assess emergency situations such as flooding or other disasters and monitor rivers and lakes.
- Water formed Scale-deposit analysis.
- Soil analysis

The Laboratory has the following Sophisticated Instruments

- Atomic Absorption Spectrophotometer, Agilent, USA.
- DR-6000 UV-VIS Spectrophotometer – HACH CO., USA, BOD Trak Reactor – HACH CO., USA, COD Reactor – HACH CO., USA
- Flame Photometer. VIS- Spectrophotometer
- pH meter, Conductivity meter, Turbidity meter, Jar testing apparatus, Sludge De-watering apparatus, Sludge Volume Index Apparatus, E. Coli and Total Coliform count Kit, TVC Kit, Colony Counter, DO-meter, Muffle Furnace, Air-oven, Electronic Analytical Balance – Mettler, Toledo, High Volume Air Sampler, Auto-Exhaust gas analyser, Lux meter, Db-meter
- Glass column for heavy metal removal

ENVIRONMENTAL POLLUTION MONITORING LABORATORY
 Department of Civil Engineering
 National Institute of Technical Teachers' Training & Research, Kolkata

List of Facility

I. Water and Wastewater Analysis Lab

Sl. No.	Name of Equipment	Make / Model
1.	Atomic Absorption Spectrophotometer with Graphite Furnace Hollow Cathode (HC) Lamp Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Mercury (Hg), Molybdenum (Mo), Lead (Pb), Zinc (Zn)	Model: Agilent 240 AA, Make: Agilent Technologies, USA
2.	DR 6000 UV – VIS Spectrophotometer	Make: Hach, USA
3.	DR 5000 UV-Visible Spectrophotometer	Model: DR / 5000, Make: Hach, USA
4.	Portable Colorimeter	Model: Move 100, Make: Merck
5.	Portable Colorimeter	Model: DR900, Make: Hach, USA
6.	pH Meter: Microprocessor controlled pH meter	InoLab pH 730, Make: WTW, USA
7.	pH Meter built in printer	Model: inoLab pH 7310P, Make: WTW, USA
8.	Conductivity/TDS Meter	InoLab Cond 720, Make: WTW, USA
9.	Turbidity Meter, , Laboratory Turbidimeter	Mode: 2100N, Make: Hach, USA
10.	Portable Turbidity Meter	Model: 2100Q, Make: Hach, USA
11.	Jar Test Apparatus (Six Jar)	Make: SONAR, India
12.	Jar Tester: Programmable Six Paddle	Model: 26317-02, 26925-00, 26928-00 Make: Hach, USA
13.	Jar Test Apparatus	Make: Phipps & Bird, USA
14.	Portable Floc Tester / Jar Tester	Model : ET730, Make: Lovibond, UK
15.	Flame Photometer	Model No.: 126, Model No.: 128, Make: Systronics, India
16.	BOD Trak Apparatus	Make: Hach, USA
17.	Multi-Parameter testing instrument	Model: HQ40d, Make: Hach

18.	OxiTop Control 6 Digital BOD Analyser with remote controller	Model: TS 606 – G / 2 – i, Make: WTW, USA
19.	COD Reactor	Make: Hach, USA
20.	Quanti – Tray Sealer Plus	Make : IDEXX, USA
21.	Bio-Safety Cabinet	Model No.: 4SB4, Make: AXIVA, SONAR, India
22.	Titration Instruments Automatic Titrator	Model No.: 848, Titrimo Plus, Make: Metrohm, Switzerland
23.	Titration Instruments	Model: Titronic Universal, Make: Scott, Germany
24.	Bench Top DO Meter	Model: inoLab Oxi 7310P, Make: WTW, USA
25.	Waterproof TDS Testr11+ Multi Range Tester with ATC & Temperature Display (0 – 100.0 ppm; 0 – 1000 ppm; 0 – 10.00 ppt)	Make: Eutech, Singapore
26.	TSS Portable Hand – held SS, Turbidity, Sludge Level System	Make: Hach, USA
27.	Pocket colorimeter with free and total Chloride	Model: MD110, Make: Lovibond, UK
28.	pH Tester (Waterproof pHTestr30)	Make: Eutech, Singapore
29.	TDS Tester (Waterproof TDS Testr11+ Multi Range Tester)	Make: Eutech, Singapore
30.	Nitrate Electrode for HQ 40d	Make: Hach, USA
31.	Autoclave: Steam Sterilizer- Vertical - (Fully Automatic-GMP Model), Size: 12” dia. × 20” ht., Cap: 35 lit.	Make: Revotek, India
32.	Motorized Sieve Shaker with different sieves	Model: AIM 054 – 1, Make: Aimil. India
33.	Digital colony counter	Make: SONAR, India
34.	IR Thermometer Tester with Laser Sighting, Temp. Range 18 – 60°C	Make: Eutech, Singapore
35.	Microscope: Tri-nocular Research Microscope with CCD Camera and Monitor	Model: DME, LEICA, Germany
36.	Bacteriological Incubator (Precision Type, GMP)	Make: RIVOTEK, India

37.	Digital Camera and Image Analysis Software for Lieca DME Trinocular Microscope	LEICA, Germany
38.	pH Tester for Food Application	Make: Eutech, Singapore
39.	Waterproof Pocket pH Tester: range: -1 to 15 pH	Make :EUTECH, Singapore
40.	Moisture Analyser (Halogen)	Model XM120, Make: Precisa Instrument AG, Switzerland
41.	B.O.D. Incubator	Model: GMP, Make: Rivotek, India
42.	Moisture Analyser: Halogen Moisture Analyser	Model: HB – 43 – S, Make: Mettler Toledo, Switzerland
43.	Colony Counter	Sonar, India
44.	Ozone Generator for Water, Fruits & Vegetable Purifier	Make: Kent, USA
45.	Electronic Single Pan Balance	Model No.: XS-104, Make: METTLER, Switzerland
46.	Balance : Electronic Precision Balance	Model: PL-202-S/00, Mettler, Switzerland
47.	Balance: Analytical Balance	Model: ML – 204, Make: Mettler Toledo, Switzerland
48.	Analytical Electronic Balance	Model: ME 104, Make: Mettler Toledo, Switzerland
49.	Analytical Electronic Balance	Model: MT 104T, Make: Mettler Toledo, Switzerland
50.	Semi-micro Balance	Model: MS 105DU, Make: Mettler Toledo, Switzerland
51.	Training Kit for E.Coli & Coli	Model: EZ – Fluo System, Make: Merck, Germany

II. Air Pollution Lab

Sl. No.	Name of Equipment	Make / Model
1.	Auto Exhaust Gas Analyser (Multi Gas Analyser): For Petrol/CNG/LPG driven vehicle emission testing (ARAI approved), measures: CO, HC, CO ₂ , O ₂ engine RPM & Oil temp	Make: Netel, Model: NPM – MGA – 1, India
2.	Diesel Smoke Meter for Diesel Engine Emission (ARAI Approved), Measures: HSU, Engine RPM, Oil Temp by Piezo Sensor	Make: Netel, Model: NPM – SM – 111B, India
3.	Digital Lux Meter, Range: 0 – 50,000 LUX	Model: LX-101, Make: LUTRON, TAIWAN
4.	Digital Lux Meter, Range: 0 – 400,000 LUX	Model: 1102, Make: LUTRONE, Taiwan
5.	Microbial Air Sampler MAS-100 ECO	Model: MAS-100 ECO Make: Merck, USA
6.	Air Sampler: Fine Particulate Sampler	Model: APM 550, Make: Enviro-tech, India
7.	PM ₁₀ Respirable Dust Sampler with gaseous sampling attachment	Model: APM 460, Make: Enviro-tech, India
8.	Air Purifier : Dr Aeroguard Air Purifier	Model: SCPR 1100, Make: Eureka Forbes, India
9.	Air Purifier : Dr Aeroguard Air Purifier	Model: SCPR 700, Make: Eureka Forbes, India
10.	High Volume Air Sampler (Respirable Dust Sampler):	Make: Netel, Model: NPM – HVS / R
11.	Stack Monitoring Kit	Make: Netel, Model: NPM – SMK – 1
12.	Microbial Air Sampler(MAS 100 NT)	Make: Merck, Germany
13.	Fine Dust Sampler with Consumable for SO ₂ and NO ₂ :	Model: NPM FDS 2.5, Make: Netel (India) Pvt. Ltd.
14.	Portable dB Meter : Digi-Sense Data Logging Sound Meter with NIST-Traceable Calibration	Make: Cole-parmer, USA

15.	Digi-Sense Wireless Digital Thermometer & Humidity Set	Make: Cole-parmer, USA
16.	Ozone Generator for Air Purification	Make : Kent, USA

III. Accessories

Sl. No.	Name of Item	Make / Model
1.	Mini Rotary Shaker	Make: SONAR, India
2.	Soxlet Extraction Unit	Make: SONAR, India
3.	Macro-pipette Controller: (Manual pipette controller for 0.1 to 100 mL)	Make: MERCK, Germany
4.	SPINOT Magnetic Stirrer, 10 × 10 cm. with Hot Plate, 100 – 1000 rpm	Make: Tarsons, India
5.	Vacuum Pump – Portable, Oil Free	Make: RIVOTEK, India
6.	Micro Pipette Tripette, 100-1000 µL	Make: Merck, Germany
7.	Hotplate cum Stirrer	Model No.: SLK6, Make: SCHOTT, GERMANY
8.	Strong Acid Bottle Dispenser, Capacity: 10 – 50 ml., Graduation: 1 ml., Accuracy: 0.5%, Precision: 0.1%	Make: EMTECH COLOR, GERMANY
9.	Pipetting Device for All Conventional Glass Pipettes	Make: EMTECH COLOR, GERMANY
10.	Membrane Filter Assembly With Pump	Make: AXIVA, SONAR, India
11.	Digital Burette-Bottle Top Titration	Make: WALU, GERMANY
12.	Test tube Rotator	Make: Tarsons, India
13.	Refrigerator 310 Lit	Godrej, Model: Eon, India
14.	Spin win MC – 02	Make: Tarsons, India
15.	Multispin Stirrer	Make: Tarsons

16.	Water Bath Rectangular, Chamber Size: 12" x 10" x 4"	Model: digital, Make: SoNuu, India
17.	Water Bath Rectangular:, Chamber Size: 16" x 12" x 4"	Model: Digital & microprocessor based, Make: SoNuu, India
18.	Distillation Unit, Double Stage with Quartz boiler	Make: Rivotek, India
19.	Hot Air Oven	Model: GMP, Make: Rivotek, India
20.	Ultrasonic Cleaner: Tank Capacity: 20 lit, Tank Capacity Ltrs: 20.0 Tank Clear Size mm: 450 x 300 x 150	Make: Rivotek, India
21.	Water Bath Shaker: Type: Orbital, Tank Size L x B x H (mm): 400 x 375 x 250 ht, Tray size in mm: 325 x 325, Stroke Speed Per Min. (Without load): 20 – 200	Make: Rivotek, India
22.	Micro-oven with Grill, Capacity: 30 Litre	LG, South Korea
23.	Muffle Furnace Light Weight	Model: GMP, Make: Rivotek, India
24.	Peristaltic Pump	Make: Cole-Parmer, USA
25.	Incubator (Portable)	Model: Culture Mini - incubator Make: Merck, Germany
26.	Water Softener(Mini) for Water Purification,	Make : Kent, USA
27.	Reciprocating Refrigerated Water Bath Shaker	Make: Scientific Instruments, India
28.	Transferpette, Adjustable Volume, Cap.: 500 to 5000 µl	Make: Brand, Germany
29.	Transferpette, Adjustable Volume, Cap.: 1000 to 10000 µl	Make: Brand, Germany
30.	Bench – top Rack (for Transferpette, Adjustable Volume)	Make: Brand, Germany
31.	Transferpette Electronic, Adjustable Volume, Cap.: 100 to 1000 µl	Make: Brand, Germany
32.	Transferpette Electronic, Adjustable Volume, Cap.: 500 to 5000 µl	Make: Brand, Germany

33.	Stand (for Transferpette Electronic, Adjustable Volume: Upto 1000 μ l)	Make: Brand, Germany
34.	Stand (for Transferpette Electronic, Adjustable Volume: 500 μ l to 5000 μ l)	Make: Brand, Germany
35.	3 – device charging Stand with AC Adapter (for Transferpette: Electronic, Adjustable Volume)	Make: Brand, Germany
36.	Transferpettor, Digital Adjustable, Cap.: 1,000 to 5,000 μ l, Color: Red	Make: Brand, Germany
37.	Transferpettor, Digital Adjustable, Cap.: 2,000 to 10,000 μ l, Color: Orange	Make: Brand, Germany
38.	Station / Stand (for Transferpettor)	Make: Brand, Germany
39.	Pipette: Handy Step Electronic with PD (Precision Dispenser) Tip, Repetitive Pipette, with Charger	Make: Brand, Germany
40.	Peristaltic Pump	Make: Cole-Parmer, USA
41.	Bench – top Rack (for Transferpette)	Make: Brand, Germany
42.	All Quartz Double Distillation Unit (bottom drainage with pinchcock system)	Make: Borosil, India
43.	Variable volume Single Channel Fully Autoclavable- Micropipettes Excel	Make: Borosil, India
44.	Electronic Pipette Filling Device, Grey Body/Red Collet and plunger	Make: Borosil, India
45.	Magnetic Heater cum Stirrer	Make: Tarsons, India

Environmental Pollution Monitoring Laboratory
 Department of Civil Engineering
 National Institute of Technical Teachers' Training & Research, Kolkata

WATER AND WASTEWATER ANALYSIS Tariff List

Sl. No.	Parameters	Charge (in Rs.) For Industry/ External	Charge (in Rs.) For Academic Institution	Charge (in Rs.) For NITTTR Kolkata
1.	pH	100	80	0
2.	Turbidity	100	80	0
3.	Conductivity	100	80	0
4.	Temperature	60	40	0
5.	Colour	100	80	0
6.	Salinity	100	80	0
7.	TDS	100	80	0
8.	TSS	300	250	0
9.	TS	300	250	0
10.	Solids (Volatile)	400	300	0
11.	Solids (Fixed)	400	300	0
12.	Settleable Solids	500	400	0
13.	Sludge Volume Index (SVI)	1000	800	0
14.	Total Hardness	300	200	0
15.	Calcium Hardness	300	200	0
16.	Magnesium Hardness	300	200	0
17.	Chloride	350	250	0
18.	Fluoride	500	400	0
19.	Total or M Alkalinity	300	200	0
20.	P Alkalinity	300	200	0
21.	OH ⁻ Alkalinity	300	200	0
22.	CO ₃ ²⁻ Alkalinity	300	200	0
23.	HCO ₃ ⁻ Alkalinity	300	200	0
24.	Total Chlorine	300	200	0
25.	Residual Chlorine	300	200	0
26.	Sodium	400	300	0
27.	Potassium	400	300	0
28.	Calcium	300	200	0
29.	Magnesium	300	200	0
30.	Nitrate	300	150	0
31.	Nitrite	300	150	0
32.	Ammonium	300	150	0
33.	Sulphate	300	150	0
34.	Sulphide	300	150	0
35.	Phosphate	500	400	0
36.	Total Coliform	800	700	0
37.	E. Coli	800	700	0
38.	DO	200	150	0
39.	COD	700	600	0
40.	BOD	1000	900	0
41.	Oil & grease	500	400	0
42.	Phenol	500	400	0
43.	Iron	300	250	0

44.	Manganese	300	250	0
45.	Arsenic	1000	500	0
46.	Copper	300	250	0
47.	Lead	500	400	0
48.	Cadmium	500	400	0
49.	Chromium	500	400	0
50.	Nickel	500	400	0
51.	Zinc	500	400	0
52.	Aluminium	500	400	0
53.	Mercury	500	400	0
54.	Cobalt	500	400	0
55.	Silica	500	400	0
56.	Detergent	500	400	0
57.	Dosage Optimization Study(1 trial only)	5000	4000	0

All charges are excluding of GST. It will be charged at actual.

For details please contact:

DR. S. N. MANDAL
FACULTY-IN-CHARGE

National Institute of Technical Teachers' Training and Research

(Ministry of Education, Govt. of India)

Block - FC, Sector - III, Salt Lake City
Kolkata- 700 106.

Phone No.: 662519993

Mobile: 8902292816

Fax: (033)-337-6331 (Direct)

Email: snmandal@nittrkol.ac.in

National Institute of Technical Teachers' Training & Research, Kolkata

Department of Computer Science and Engineering

SI No.	Name of the Laboratory	Rate	Maximum Capacity
1	Computational Intelligence Lab.	Rs. 5000/- per Person / Week	5 persons
2	Programming and Database Lab.	Rs. 5000/- per Person / Week	7 persons
3	Multimedia Engg. Lab.	Rs. 5000/- per Person / Week	6 persons
4	Cloud Computing Lab.	Rs. 5000/- per Person / Week	5 persons
5	Linux Lab.	Rs. 5000/- per Person / Week	14 persons
6	Networking Lab. (available only for demonstration)	Rs. 5000/- per Person / Week	8 persons

Remarks: All rates are subject to availability of the laboratory concerned.

Department of Education and Management

Consultancy and Extension Services



**National Institute of
Technical Teachers' Training and Research,
Kolkata**

May, 2022

About the Department:

The department is actively involved in training technical teachers since its inception. As a result of merger of three departments and centre stated above, the department of Education & Management has become a veritable forte of expertise in important areas of Pedagogy & Educational management. The department being the foundation of the Institute feels proud in serving & contributing towards conduct of a greater share of training programmes both in the Institute & in-house. The training programmes are designed on the basis of training needs analysis report and therefore, are highly customized as per the need of the clientele. Design / revision and implementation of courses under Diploma and Degree programmes is a regular activity of the department. The department has offered various new programmes for teachers in the areas of Pedagogy, Student performance evaluation, Accreditation and NBA, Outcome based education & assessment, Strategic management & planning, Emotional intelligence, Problem solving and decision making, Student mentorship and conducted several expert sessions on NEP 2020 under ATAL / AICTE sponsored programmes. Besides developing learning resources, this department is constantly contributing towards preparing video programmes for Gyan Darshan Channel. The department has coordinated vetting of equipment under upgradation of existing polytechnic scheme, Govt. of India.

Consultancy Services Offered:

Sl. No.	Services/Activities	Charge involved	Contact Person
1	Design and Development of new curriculums	Outcome Based Curriculum (Under Graduate programme) – Rs. 2 Lakhs/Programme	Dr. Habiba Hussain
		Outcome Based Curriculum (Diploma programme) – Rs. 1.5 Lakhs/ Programme	
		Competency Based Curriculum (Certificate level programme) – Rs. 1 Lakh / Programme	
2	Revision of curriculum and gap analysis	Rs. 1.5 Lakhs per Programme	Dr. Habiba Hussain
3	Special Courses	For a special course of 30 hrs. duration (5 days) per participants (Tea and working lunch included) - Rs. 5000/- for teachers - Rs. 2000/- for Students / Scholars	Dr. Sukanta Kumar Naskar / Dr. Habiba Hussain
4	Technician & Supervisor Training (Industry & Govt. Organizations)	For a training programme Rs. 3000/- per day per participants (Tea and working lunch included)	Dr. Sukanta Kumar Naskar
5	Feasibility Study of Educational Programs/Social Issues	Charges will be decided on case-to-case basis	Dr. Sukanta Kumar Naskar
6	SWOC analysis of Institutes and Programmes	Total charge includes all related expenditure of 2 times visit to the institute by 2 experts and fees Rs. 25,000/-	Dr. Urmila Kar
7	NBA/NAAC etc. report preparation and feasibility study	Total charge includes all related expenditure of 1 time (2-day) visit to the institute by 2 experts and fees Rs. 40,000/-	Dr. Urmila Kar
8	Preparation of DPR	Charges will be decided on case-to-case basis	Dr. Sukanta Kumar Naskar

Department of Electrical Engineering

National Institute of Technical Teachers' Training and Research Kolkata

Name Of The Lab	Charge (per person per week)
1. Electrical Machine lab	Rs. 5000/-
2. Power System lab	Rs. 5000/-
3. PLC and SCADA Lab	Rs. 5000/-
4. Mechatronics Lab	Rs. 5000/-
5. Microprocessor and Microcontroller Lab	Rs. 5000/-
6. Signal Conditioning and data acquisition Lab	Rs. 5000/-

Department of Mechanical Engineering

Consultancy and Extension Services

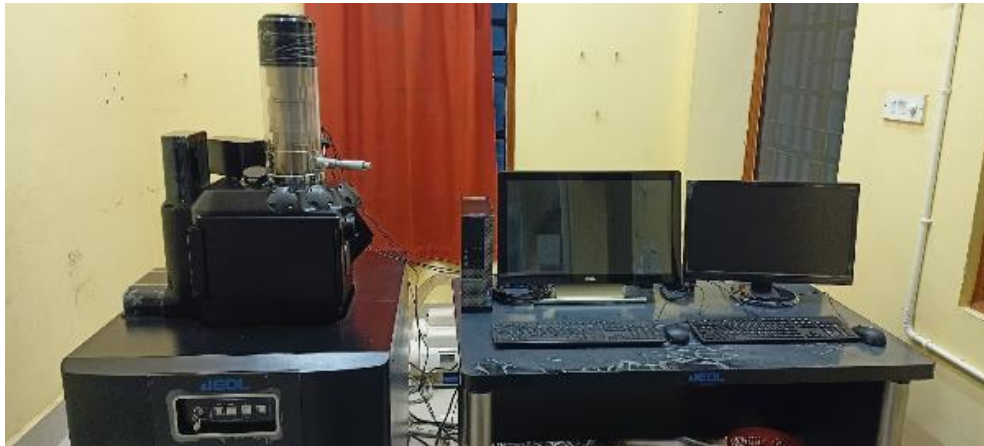


**National Institute of
Technical Teachers' Training and Research,
Kolkata**

Department of Mechanical Engineering
National Institute of Technical Teachers' Training & Research, Kolkata

Equipment Specifications

Scanning Electron Microscope (SEM) with EDS



Model/Supplier	JEOL JSM IT500
Resolution	<i>High Vacuum mode</i> 3 nm at 30KV 20 nm at 1KV <i>Low Vacuum mode</i> 4 nm or better at 30 KV in BSE
Accelerating Voltage	0.3KV to 30KV (continuous)
Probe Current	1 μ A
Magnification	5X to 3,00,000X
Vacuum System	10- 400 Pa
Stage Specification	5 axis Fully Motorized, Eucentric / Compucentric Stage, X = 100 mm or higher, Y = 50 mm or higher, Z = 50 mm or higher, Fully motorized Tilt = -10° to 90° or better, Rotation = 360° (continuous).
Specimen Size	200 mm in diameter
Detectors & Scanning Parameters	1. Dedicated and separate secondary electron detector for low vacuum/variable pressure mode. 2. 5 segment solid state back scattered Electron detector for both high vacuum

	<p>and low vacuum/ variable pressure mode.</p> <p>3. Separate secondary electron detector</p> <p>4. MIX (SE+BSE)</p> <p>5. Facilities for Scanning control, Image Storage, Image Processing and Detector control</p> <p>6. Auto gun control and gun alignment, auto bias and auto saturation of gun condition.</p> <p>7. Automatic / manual control of other features like focus, brightness and contrast etc.</p> <p>8. Manual user interface with knob control for focusing, stigmation, brightness and other SEM controls with manual joystick for stage movement</p> <p>9. High Vacuum to Low Vacuum or Low Vacuum to High Vacuum mode of operation should be controlled by software not mechanically.</p> <p>10. The entire range of Variable Pressure (10 to 400 Pa or More) must be controlled by a single aperture not by multiple change of aperture.</p> <p>11. Condenser Lens is preferable for adjustment the Probe Current (Low to High Range) without changing of aperture.</p> <p>12. The system must have suitable condenser and objective lens, also suitable objective lens aperture adjusted from outside both for imaging & analysis.</p> <p>13. Evacuation or venting of the system for sample exchange should be without N2 gas.</p>
Image format	BMP, JPEG or TIFF
EDS (Energy Dispersive X-Ray Spectrometer)	<ul style="list-style-type: none"> • LN2 free SDD detector, active area 30 mm² with 129 eV resolution • Detection from Be (4) to Am (95) • Have quantitative, qualitative analysis, mapping, Line scan, Point id , Area Analysis capabilities

Equipment name: High Precision Lathe



Model/ Supplier	Panther 2050/4
Type of bed	Gap bed
Height of centre	2354/305 mm
Width of bed	325 mm
Swing over bed	484/595 mm
Swing over saddle	360/460 mm
Swing over cross slide	292/395
Swing in gap	800/900 mm
Length of gap in front of face plate	200 mm
Number of spindle speed	8
Spindle speed range	30 to 1235 rpm
Taper in spindle	MT-4
Spindle hollow	52 mm
No. of British Threads	40
Range of British Threads	2 to 60 TPI
No. of metric threads	20
Range of metric threads	0.5 to 15 mm Pitch
No. of feeds	40
Range of longitudinal feeds	0.066 to 1.98 mm/rev.
Range of traverse speed	0.016 to 0.048 mm/rev.
Lead screw	38mm x 4 TPI
Tail stock spindle diameter	63.5 mm
Taper in tailstock spindle	MT-4
Cross-slide travel	265 mm
Compound slide travel	140 mm
Tail stock sleeve travel	180 mm
Chuck type	3 jaw self centering
Motor	3 H.P.

Equipment name: universal milling machine



Model/Supplier	Dhillon Machinery Corporation
Bed length	1143 mm
Bed width	546 mm
No. of Spindle speed	9
Spindle Speed range	50 to 950 rpm
No. of Arbour speed	9
Lead of screw	0.250 inch
No. of Longitudinal table velocity	3
Table velocity range	11 to 32 mm/min
Motor	

Equipment: Radial Drilling machine



Model/ Supplier	Radial drill SMTR II-38/40
Spindle nose	MT-4
Spindle travel	220 mm
No. of spindle speed	8
Range of spindle speed	62-1980 rpm
Range of power feed	(2) 0.08-0.04
Belt type	V belt
Table Dimensions	380 ×300 ×300 mm
Drill radius	895/440 mm
Max./Min. distance from column to spindle	810/360 mm
Max. Drill head travel	450 mm
Max./Min. base plate to spindle	930/230
Diameter of column	168 mm
Swivel of arm L/R side	90°
Drilling capacity	38 mm

Equipment: Universal Testing Machining Set Up



Model/Supplier	UTE 100
Max Capacity	100 Tonne
Minimum graduation	20 Kgf
Clearance for tensile at fully descended working piston	50-800 mm
Clearance for compression at fully descended working piston	0-850 mm
Clearance between columns	750 mm
Ram stroke	250 mm
Straining/ Piston Speeds at no loads	0-80 mm/min
Size	2415 ×815 ×2900 mm
Clamping jaws for round specimen diameter	10-25 mm 25-45 mm
Clamping jaws for flat specimen thickness	20-22 mm
Width	22-44 mm
Pair of compression plates diameter	150 mm
Table with adjustable rollers of width	160 mm
Diameter of roller	50 mm
Max. Clearance between supports	800 mm
Radius of punch tops	16,22 mm

Equipment: Electrochemical machining Set Up



Model/Supplier	ELECTRO-M
Tool area	300 sq. mm (i.e. 10×30 mm or 15×20 mm etc.)
Cross head stroke	40 mm or 75 mm
Job holder	100×40×150 mm
Tool feed motor	Stepper motor
Power	3-phase 440 V A.C.

Voltage O/P range	0-25Volts DC
Current O/P range	0-300 Amps
Efficiency	>80 % at partial and full load condition
Operation mode	Manual/ Automatic
Tool feed rate	0.03-1 mm/min
Machining	5 -300 Amps variable through touch screen
Machining voltage setting	0-250Volts Variable through touch screen
Machining time	0-1999 Sec.
Display	Voltage, current and feed rate
USB port	For Data Storage
All setting parameters	Through LCD touch screen panel
Pulsating facility	On time 100 μ S to 1Sec. Variable Off time 100 μ S to 1Sec. variable Plus amplitude 2v- 10v variable
Microprocessor controller	For forward and reverse feed rate settings and feed rate display

Equipment: Automatic specimen mounting press



Model/supplier	CMP-P
Mould cylinder diameter	26 mm
Mould heating	By band heater of 1500-2000 watts
Mould cooling arrangement	By water circulation around band heater assembly
Colling control mode	Solenoid operated valve
Thermocouple	PT-100

Equipment: Single disc polisher



Model/supplier	PMV-T8-I
Voltage	220 Volts A.C.
Motor	0.25 H.P. TEFC single phase
Speed range	300-900 rpm by means of circular control wheel
Working disc	8" diameter bronze disc
Polishing paper types	Sic and alumina paper
Polishing cloths types	Felt, Selvyt, Billiard, Nylon

Equipment: Automatic multi-specimen grinder/polisher



Model/supplier	Autopol- II
Operation temperature	0-60 °C
Storage temperature	-10 - 70 °C
Humidity (Non condensing)	5-95 % RH
Required ac power	230 V ac +/- 5%
Frequency	50 Hz +/- 2Hz or 60Hz +/- 2Hz
feedback	Armature/Tacho
Speed control range	10:1 armature feedback 50:1 with Tacho feedback
Line regulation	5%
Armature control voltage	0-200 VDC adjustable with internal potentiometer
Field voltage	200 VDC @1.5 Amps max
Rpm meter o/p	0-2 VDC linear with armature voltage
Dimensions	Wall mounting type Width 252 mm Height 165 mm Depth 85-125 mm

Equipment: Diamond precision saw



Model/Supplier	CDS-500
Motor	0.25 HP high torque geared motor
Wheel shaft	0.25 inch diameter
Speed	0-500 rpm
Speed display	Digital RPM meter
Weight for loading	Upto 250 gm
Weights for balancing	200 gms
Sample positioning	With help[of digital micrometer, positioning accuracy +/- 0.001 mm, Digital display for sample position and slice thickness
Cutting depth	Adjustable up to 25 mm
Sample Holder	Various sample holders with attachments
Control panel	Panel to set RPM, ON/OFF
Power supply	230 V AC 50 Hz

Equipment: Air plasma arc cutter



Model/Supplier	Powercut 63D
Power voltage	415 V
Phases	3
Rated input capacity	14 KV
Rated input current	21 A
Rated load endurance rate	60 %
Idle voltage	240 V
Work voltage	120 V
Cutting thickness	2-20 mm
Air pressure	0.5 MPa
Air flow	130 L/min
Cutting torch cable length	3 m
Out form dimension	600 340 620
Weight	90 Kg

Equipment: Gas Metal Arc Welding/Metal Inert Gas Welding Machine



Model/supplier	CPT-400
Input Voltage	415 V
Frequency	400 Amps
Max. Welding current at 60 % Duty cycle	400 Amps
100 % Duty cycle	310 Amps
Open circuit voltage	15- 55 V DC
Insulation	Class H
Transformer cooling	Forced Air
Dimensions	
Input connection	3 phase
Input cable size	10 sq.mm/ 4 Core
Input TPN size	32 Amps
Wire Feeder	
Model	CPF 600
Drive	4 roll quick release
Wire diameter	0.8 mm, 1.2 mm, 1.6 mm
Wire feed rate	1.2- 18.5 m/min

Equipment: Submerged Arc Welding



Model/Supplier	SAW-1000
Primary Voltage	380-440 V
Phase	3
Frequency	50Hz/ 60Hz
Open Circuit Voltage	16- 56V
Welding Current range	80-1200 Amps
Max Continuous Welding current at 60% Duty cycle	1000 Amps
Input Cable Size	25 Sq. mm Copper cable
Input TPN size	1000 Amps

Equipment: Plasma welding machine



Model/Supplier	Fronius PTW500, PTW 1500
Power range	0.5-50 A
Maximum value at 60 % duty cycle	50 A
Maximum value at 100% duty cycle	35 A
Pilot arc current	5 A
Voltage measurement(V- Peak)	141 V
Plasma gas/Shielding gas (according to EN 439)	Argon
Length of hosepack	4 m
Electrode diameter	1 mm
Cooling system coolant	Liquid cooling Original Fronius coolant
Cooling power	500 W
Min. coolant pressure	3.0 bar
Max. coolant pressure	5.5 bar
Minimum coolant flow rate	1.0 L/min

Equipment: GTAW/Pulse TIG machine



Model/Supplier	MagicWave 2500	TransTig 800
Mains Voltage	3×400 V	230 V
Mains voltage tolerance	±15 %	-20 %/+15 %
Mains frequency	50/60Hz	50/60Hz
Mains fuse protection(slow-blow)	16A	16A
Mains connection	Z _{max} at PCC= 122 μOhm	Restrictions possible
Primary continuous power (100% d.c)	4.7 KVA	2.1 KVA
Cos phi	0.99	0.99
Welding current range		
TIG	3-250 A	0.5-80 A
Electrode	10-250 A	10-80 A
Welding current at		
10min/ 25 °C 100 % d.c		80 A
10 min/ 40° C 35% d.c	250 A	80 A
10 min/40 ° C 40 % d.c	180 A	70 A
10 min/40 ° C 100% d.c		
Open circuit voltage	89 V	85 V
Working voltage		
TIG	10.1-20.0 V	10.0-13.2 V
Electrode	20.4-30.0 V	10.4-23.2 V
Striking voltage (U_p)	10 KV	9.0 KV
Degree of protection	IP 23	IP 23
Type of cooling	AF	AF
Insulation class	B	B
EMC emission class (in accordance with EN/IEC 60974-10)	A	A
Dimension (L W H)	560/250/435 mm	485/180/344 mm
Weight without handle		14.2 Kg
Weight with Handle	26.6 Kg	
Mark of conformity	S, CE	S,CE

Equipment: Pneumatically Operated Resistance Spot Welding Machine



Model/Supplier	Electroweld Industries/SP200
Power	200 KVA @ 50% duty cycle
Current	500 A
Voltage	410 V
Frequency	50 Hz
MS	1-7 mm
SS	1-7 mm
Controller	Thyristor

Equipment: Digital Ultrasonic Flaw Detector



Model/Supplier	DIGISCAN DS-322
Viewing area	117.2 8.4 mm
Pixel Density	320 RGB 240 Volts
'A' Scan area	300 200 pixel
Display	TFT colour LCD with cfl backlight
Key board	User friendly with direct access to frequently used function
Dimensions	243 56 195
Weight	2.4 Kg
Power source	Built in battery pack, Li-ion (3.7 V, 18 AH),rechargeable battery model BAT322L
Operating Temperature	0-55 °C
Humidity	Up to 70 °C
Receiver bandwidth	0.5 to 10MHz by wide band amplifier.
Gain	0-80dB, 0.1,0.5,1,2,6,12 dB selectable
Rejection	Linear type(0-99 %), 1% step
Operating mode	Single, double probe, T-R mode
Test mode	Pulse reflection or pulse transmission
Charge indicators	Green LED for charging
Energy	4 energy levels-1,2,3,4
Damping	HI/LOW -150E/ 1K
Echo display	Full wave rectified
Vertical linearity	5 %
Range	5 mm min. – 5 Mts max.
Delay	0-3 Mtrs
PRF	Variable in 100 Hz from 100Hz to 1000 Hz
Velocity	2000 M/S- 9999 M/S
Time base linearity	1 %
Zoom	Gated portion min. 10mm
Triggering	Internal
Monitor Gates	2 gates
Monitor logic	±Logic selectable
Alarm	Audio/Visual
DAC	10 points auto plotting curve, Curve types: 1. Exponential

	2. Parabolic 3. Point to point
Trigonometric functions	Beam path, Flaw depth & Projection distance
Measurements	Echo height- ± 1.0 % tolerance
Measurement Units	Millimeters
Parameter display	Horizontal 7 vertical graticule, gain Beampath
Brightness	Adjustable
Display freeze	Current display freeze
Active freeze	Display accumulation
Reference pattern display	Reference pattern can be displayed at the background from selected locations in memory
Graticules	5 div \times 5 div
Battery Indicators	Battery status indicator with auto shutdown
memory	255 'A' scans memory with calibration parameters and trigonometric values + label (ID tag)
Interface	Standard printer interface
lock	Keyboard can be lock
Probe connector	BNC type
Print	Current 'A' scan or saved
Colours	Selectable gray and black background
PC software	EECOWn PC interface software Can upload current "Frame" or from saved to set to P through the RS-232 serial port
Display pattern	Envelope or Filled
Accessories	Battery Charger PC cable Protective cover

Equipment: Tool grinder



Model/Supplier	Pathak
motor	3 phase electric motor
RPM	2800
Table swivel range	0-15 °
Feeding axes	3 axes

Equipment: Metallurgical Microscope



Model/Supplier	Leica DM 2700M
Contrast method	Incident light Transmitted light
Incident light axis With 4x filter turret disc	Incident-light illuminator for up to eyepiece field number 22 <ul style="list-style-type: none"> • 4x filter turret disc • 2 filter positions • Color-coded ceterable aperture • Pre-centered field diaphragm • Manual brightness adjustment
Transmitted light axis	Manual adjustment of <ul style="list-style-type: none"> • Light intensity • Aperture diaphragm • Field diaphragm • Toggle switch for TL/RL
Illumination	<ul style="list-style-type: none"> • Led lamp housing LH13 • Optional external light sources
Tube	<ul style="list-style-type: none"> • Fixed or variable viewing angle • Up to 3 switchiong position <ul style="list-style-type: none"> • 1 or 2 camera ports • With upright image
Magnification changer	1x, 1.5x, 2x
Objective turret	<ul style="list-style-type: none"> • 6x or 7x with M25 thread • 5x with M32 thread
XY Stage	<ul style="list-style-type: none"> • With condenser holder • Coaxial pinion, optional telescopic stage control • Control mountable on left or right
Condenser	<ul style="list-style-type: none"> • Universal condense UCL 0.90/1.25 oil • Pol universal condenserUCL/P with interchangeable condenser head and 6 position condenser disc
Focusing	<ul style="list-style-type: none"> • Height adjustment • Speed switch(optional)

Equipment: Surface roughness tester



Model/Supplier	Mitutoyo SURFTEST SJ-410
Measuring Range	X axis: 25mm, Z axis: 800um
Cut off lengths	0.08,0.25,0.8,2.5,8 mm
Tilt adjustment range	+/-1.5 degree
Roughness Parameters	Ra, Rq, Rz, Ry, Rp, Rv, Rt, R3z, Rsk, Rku, Rc, R _{Pc} , R _{Sm} , R _{max} *1, R _{z1max} *2, S, HSC, R _{zJIS} *3, R _{ppi} , R _{Δa} , R _{Δq} , R _{lr} , R _{mr} , R _{mr} (c), R _{σc} , R _k , R _{pk} , R _{vk} , Mr1, Mr2, A1, A2, Vo, λ _a , λ _q , Lo, R _{pm} , t _p *4, H _{tp} *4, R, Rx, AR, W, AW, Wx, Wte Customizable
Measuring force	0.75 mN

Department of Mechanical Engineering
National Institute of Technical Teachers' Training & Research, Kolkata

Tariff list

SL. NO.	Experimental Facility	Experimental details and Sample specification	Charges per sample (Rs.) (EXL. GST)	
			Academic Institution/Start Ups	Industry
Faculty in charge: Dr. Arpan Kumar Mondal				
1	Scanning electron microscopy	Image only SE/BSE/MIX Rectangular (20 10 20 mm) Cylindrical (15-20 length, 20 mm dia max)	1000 per sample/ 1500 /hr	3000 /hr
2	Scanning electron microscopy	Image only Powder	1000 per sample/ 1500 /hr	3000 /hr
3	Scanning electron microscopy	Composition test Rectangular (20 10 20 mm) Cylindrical (15-20 length, 20 mm dia max)	1500 per sample	3000 per sample
4	Scanning electron microscopy	EDAX mapping Rectangular (20 10 20 mm) Cylindrical (15-20 length, 20 mm dia max)	1500 per sample	3000 per sample
5	Vickers micro-hardness	Micro-hardness plot Max size for plate diagonal 40 mm, for circular cross section 40 mm dia	1000 /hr	2000 /hr
6	Manual metal arc welding (375 amps. Natural air cooled)	Butt, lap, Fillet, Pipe welding 100, 200, 300, 400, 500 mm	30 per 50 mm welding,	50 per 50 mm welding, Rs 100
			50 per 50 mm welding in pipe/1200 /hr	50 mm welding/2400 /hr
7	Manual metal arc welding rectifier (400 amps. Thyristor-based)	Butt, lap, Fillet, Pipe welding 100, 200, 300, 400, 500 mm	30 per 50 mm welding,	50 per 50 mm welding, Rs 100
			50 per 50 mm welding in pipe/1200 /hr	50 mm welding in pipe/2400 /hr
8	Manual metal arc welding rectifier (400 amps.	Butt, lap, Fillet, Pipe welding 100, 200, 300, 400, 500 mm	30 per 50 mm welding,	50 per 50 mm welding,

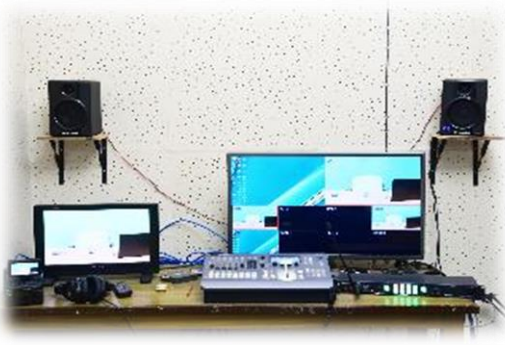
	Inverter-based)		50 per 50 mm welding in pipe/1200 /hr	100 per 50 mm welding in pipe/2400 /hr
9	Metal arc welding (400 amps. Thyristor control shielded)	Butt, lap, Fillet, Pipe welding 100, 200, 300, 400, 500 mm	30 per 50 mm welding,	50 per 50 mm welding, Rs 100/2400 /hr
			50 per 50 mm welding in pipe	50 mm welding
10	Submerged Arc welding of 1000 amps.	All position 100, 200, 300, 400, 500 mm	60 per 50 mm welding,	100 per 50 mm welding, Rs 200
			100 per 50 mm welding in pipe/1200 /hr	50 mm welding/2400 /hr
11	Tungsten arc welding (400 amps. Inverter based gas shielded)	All position 100, 200, 300, 400, 500 mm	60 per 50 mm welding,	100 per 50 mm welding, Rs 200
			100 per 50 mm welding in pipe/1200 /hr	50 mm welding/2400 /hr
12	Portable gas cutting machine	Cutting 100, 200, 300, 400, 500 mm	60 per 50 mm welding,	100 per 50 mm welding, Rs 200
			100 per 50 mm welding in pipe/1200 /hr	50 mm welding/2400 /hr
13	Shearing machine (Mechanical type)	Up to 5 mm thickness plate cutting 100, 200, 300, 400, 500 mm	20 per 50 mm welding,	100 per 50 mm welding, Rs 200
			100 per 50 mm welding in pipe/1200 /hr	50 mm welding/2400 /hr
14	Air plasma cutting set	Up to 12 mm Up to 300 mm	20 per 50 mm welding,	100 per 50 mm welding, Rs 200
			100 per 50 mm welding in pipe/1200 /hr	50 mm welding/2400 /hr
15	Plasma welding machine (trans TIG)	Butt, fillet welding Up to 300 mm	80 per 50 mm welding,	150 per 50 mm welding, Rs 300
			Rs, 100 per 50 mm welding in pipe/1200 /hr	50 mm welding/2400 /hr
16	Welding Training Simulator (AURA+)	Welding simulation (SMAW, GTAW, GMAW) All positions	1000 /hr	2000 /hr
17	Rockwell Hardness Testing Machine	Hardness test in A,B, C scale Flat, polished specimen	200 per sample/1000 /hr	500 per sample/2000 /hr
18	Plasma welding machine trans TIG	Butt, fillet welding Up to 300 mm	80 per 50 mm welding,	150 per 50 mm welding, Rs 300
			Rs, 100 per 50 mm welding in pipe/1200 /hr	50 mm welding/2400 /hr
19		Butt, lap, fillet weld Thin plates upto 3 mm	100 per 50 mm welding,	300 per 50 mm welding,

	Pulse TIG Welding Machine		200 per 50 mm welding in pipe/1200 /hr	500 for 50 mm welding in pipe/2400 /hr
20	Spot Welding Machine (Pedal Operated Rocker arm type)	Spot weld Plate thickness upto 5 mm	20 per spot/1200 /hr	50 per spot/2400 /hr
Faculty in charge: Dr. Dipankar Bose				
21	Universal Testing Machine (100 Ton load capacity)	Uni-axial tensile test, Compression test Circular, rectangular cross section as per ASTM dimensions	250 per sample	500 per sample
22	C-type Hydraulic Press	Shallow and deep drawing 70 mm dia cup shape max.	100 per sample/1000 /hr	200 per sample/2000 /hr
23	Combined universal cum vertical milling machine	End milling, face milling, gang milling, Plain milling 500×300 mm rectangular plate	100 per sample/ 1000 /hr	200 per sample/2000 /hr
24	Radial drilling machine	Drilling, counter sinking, reaming 20 mm max dia	100 per sample/1000 /hr	200 per sample/2000 /hr
25	All geared high speed lathe machine with optional accessories.	Lathe operations Cylindrical	1000/hr	2000/hr
26	“Harihar” Lathe with attachments,	Lathe operations Cylindrical	1000/hr	2000/hr
27	Hydraulic Trainer	Hydraulic circuit simulation Simulation	500 /hr	1000 /hr
28	Drilling Machine	Drilling, reaming, countersinking	50 per sample	100 per sample
29	Hydraulic Press	Custom	1000/hr	1500/hr
30	Impact Testing Machine	Izod and Charpy test ASTM standard	200 per test	500 per test
31	Universal Tool & Cutter Grinder	Tool grinding, tool making Custom	200 per test	500 per test
32	Power hacksaw	Cutting Round and rectangular	50 per sample	100 per sample
Faculty in charge: Dr. Nirmal Kumar Mandal				
33	Drilling Tool Dynamometer	Force, Torque measurement	200 per test/1000 /hr	500 per test/2000 /hr
34	Milling Tool Dynamometer	Force, Torque measurement	200 per test/1000 /hr	500 per test/2000 /hr
35	Lathe Tool Dynamometer	Force and torque measurement Custom	200 per test/1000 /hr	500 per test/2000 /hr
36	CNC vertical Milling Maching Centre	End milling Custom	2000/hr	4000/hr

37	CNC Lathe Trainer CNC Slant bed lathe 8 stations indexing tool post and FANUC	CNC turning Custom	2000/hr	4000/hr
38	Maxturn plus CNC 2 axis slant bed lathe centre with Siemars	CNC turning Custom	2000/hr	4000/hr
39	CNC Wire cut EDM Machine	Profile cutting Custom	200 per sample/1000 /hr	500 per sample/2000 /hr
40	CNC Milling Tool Dynamometer	Force, torque, vibration measurement Custom	1000/hr	1500/hr
41	Wear and Friction Monitor	Wear and friction test Flat specimen	250 per sample	500 per sample
42	Profile Projector	Custom	500/hr	700/hr
Faculty in charge: Dr. Subrata Mondal				
42	High temperature vacuum furnace	Heat treatment Cylindrical, parallelepiped, conical	300 /hr	500 /hr
43	Pedestal Grinder with motor.	Grinding Custom	50 per sample	100 per sample
44	Electric Furnace	Heat treatment Cylindrical, parallelepiped, conical	300 /hr	500 /hr
45	Metallurgical Microscope	Material characterization Flat polished specimen	400 per sample//1000 /hr	800 per sample/2000 /hr
46	Tool Maker's Microscope	Cutting angle identification and modification Custom	400 per sample	800 per sample
47	Las Grain Expart, Las Image Analyzer etc. Microscope	Phase, grain analysis Flat polished specimen	400 per sample/1000 /hr	800 per sample/2000 /hr
Faculty in charge: Dr. Rayapati Subbarao				
48	Computerised Variable compression ratio multi-fuel engine test rig	Custom	1000/hr	1500/hr
49	Multi cylinder petrol engine test rig. With hydraulic dynamometer	Custom	2000/hr	2500/hr
50	Multi Gas Analyser for CO, HC, CO2, O2, Nox, Sox	Custom	1000/hr	1500/hr

51	Heat Transfer Equipment (3 no.)	Custom	1000/hr	1500/hr
52	Compressor blower test rig.(3 no.)	Custom	1500/hr	2000/hr
53	Variable compression ratio (VCR),dual fuel (petrol & Diesel)engine test rig with Eddy current dynamometer	Custom	2000/hr	2500/hr
54	Trainer for refrigeration & A.C. Component	Custom	1500/hr	2000/hr
55	Vapour compression refrigeration test rig	Custom	1500/hr	2000/hr

Facilities of Learning Resource Centre



NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING & RESEARCH, KOLKATA
Block FC, Sector-III, Salt Lake City-700106

Learning Resources Centre
National Institute of Technical Teachers' Training & Research, Kolkata

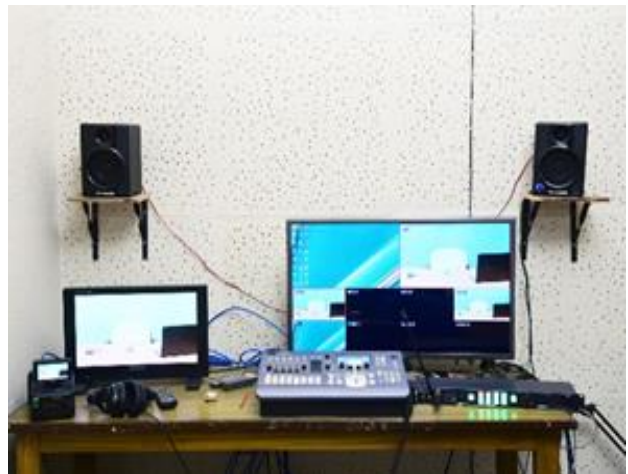
Since inception, Learning Resources Centre (LRC) of NITTTR, Kolkata (formerly TTTI, Calcutta), plays a pivotal role on 'teaching-learning system' for the last fifty-seven years.

It is said, "A picture is worth thousand words". A photograph reveal the unseen world into reality. To implement this concept in classroom learning in the beginning era, this department had prepared Photographic blow-ups, Slide tape program, 16mm film, charts etc. to make learning more interesting and value added.

To cope with the changing technology from analogue to digital era this department also shifted its activities from darkroom to computer and tape base shooting to card base recording. Presently this department equipped with state of the art cameras, editing machine etc. along with a highly skilled and experienced staff members.

Facilities in this department:

- A. Video Studio: Acoustically treated Studio (32'x23') with Chroma (green) Key facility attached with PCR (16'x8') and Light control room. This studio also equipped with two 5.5 Ton Duct able air conditioner.



List of major equipment in LRC Studio:

Sl no	Name of equipment	Quantity
1.	Studio camera Sony PMW-200 card base with accessories	3
2.	Switcher Sony MCS-8M with 32"LED display(LG), Sony 17"OLED monitor and Sony PMW50 portable recorder	1 set
3.	Wireless microphone – Sennheiser G3 series	2
4.	Camcorder Sony PXW-X70	1
5.	Tripod for camera MVK502AM	3
6.	Intercom system Datavideo	1no
7.	Studio Lighting System on grid and floor(Hard and Soft Light) of Canara with light control dimmer	L/S
8.	Tele- prompter Anycast	1
9.	No-linear Editing m/c i mac FCP7	2
10.	55" LED Samsung on castor wheel	1
11.	Headphone Sennheiser	2 set

B. e-classroom : Classroom (26'x20') with air conditioner having Chroma background



List of e-classroom equipment:

Sl no	Name of equipment	Quantity
1.	PTZ Camera	3
2.	Switcher Sony Anycast AWS-750	1
3.	Wireless microphone – Sennheiser G3	2
4.	Graphic Tablet (WACOM)	1
5.	Tripod for camera	3
6.	Desktop Visualizer	1
7.	Halogen Lights- Panel, Halogen	L/S
10.	21" Computer Monitor for on/off line recording Display view	1
11.	Headphone Sennheiser	2 set

C. **Edit suit**- apple iMac for editing and other post production work



Key feature of edit suit:

27-inch iMac with retina 5k display: 3.8 GHz quad-core Intel Core i5/8GB DDR 2400 MHz RAM/2TB Fusion Pro 580 with 8GB VRAM/ Wireless mouse / Mac OS. 8GB DDR4 2400 MHz Memory Extension for Apple iMac system. Final Cut Pro-7

Learning Resources Centre

National Institute of Technical Teachers Training & Research, Kolkata

Rate Chart to avail the following facilities for outside agencies/institute/organisation of repute

SL NO	Facility	Types of work	Faculty-in-charge, LRC/LRC representative	Rate per shift*/per Hrs without manpower
1.	Video Studio Recording	Lecture based program/Panel Discussion/ Talk show / News anchoring or any type of nonfiction program	Dr.Chandan Chakraborty/Prasanta Paul	Rs 8000/- per shift Rs.5000/- for half Hrs If less than 4 Hrs but not less than 2 Hrs 1500/- per Hour
2.	e-Class room recording	Lecture based recording	Dr.Candan Chakraborty/Prasanta Paul	Rs 4000/ per shift Rs 2500/- for half shift If less than 4 Hrs but not less than 2 Hrs 1000/- per Hour
3.	Editing	Edit from raw footage, insert of Background music, graphics	Dr.Chandan Chakraborty/Prasanta Paul & Provas Seal	Rs200/-per Hrs but not less than 3 Hrs

* One shift means 8Hrs

Application Forms

Consultancy and Extension Services

APPLICATION FORM FOR CENTRAL FACILITIES

1.	Name of the Applicant		
2.	Name of the Organization seeking facilities (if applicable)		
3.	Address		
4.	Contact No.		
5.	e-mail		
6.	Purpose of Requirement		
7.	Type of Services requested for (please Tick ✓)	a) Accommodation <input type="checkbox"/>	
		b) Other Facilities <input type="checkbox"/>	
8.	Name & Description of the Accommodation and / or Facilities		
9.	Quantity / Number (if mentionable)		
10.	Period of Requirement	From	To

Date:

Signature of the Applicant

PAYMENT DETAILS *(To be made only after getting confirmation from the NITTTR, Kolkata)*

Total Amount paid	Mode of Payment	Transaction Number	Date of transaction

FOR OFFICE USE ONLY

Remarks of the Concerned Department regarding :
availability of Accommodation / Facilities, if any

Accounts Section			
Verified / Not Verified <i>(Amount Received)</i>		Remarks, if any	
Dealing Assistant		FIC Accounts	

ALLOTMENT DETAILS

Particulars	Name & Signature of the Applicant with date	Signature of NITTTR, Kol Representative
Accommodation / Facility Handed over in Good Condition		
Accommodation / Facility Returned back in Good Condition		

Security Deposit to be refunded, if any: Rs.....

Countersigned by: Dealing Assistant
(C&ES)

Co-Nodal Officer
(C&ES)

Nodal Officer
(C&ES)

Consultancy and Extension Services

Date:

APPLICATION FORM FOR ACADEMIC SERVICES

Name of the Applicant			
Name of the Supervisor / Project Head			
Name of Institution / Industry			
Address			
Contact No.			
Email Address			
Name of the Services Required			
Department Involved			
Quantity of samples / Services,			
Brief description about the Purpose of Requirement	Date	Time	

PAYMENT DETAILS

Amount paid	Mode of Payment	Transaction Number	Date of transaction

Signature of the applicant with date

FOR OFFICE USE ONLY

Accounts Section			
Verified / Not Verified (Amount Received)		Remarks, if any	
Dealing Assistant		FIC Accounts	

SLOT ALLOTMENT DETAILS				
Date	Time	Signature of the Supervisor	Signature of the In-Charge / HoD	Remarks

N.B : Please bring a blank CD / DVD/ Storage Device for data transfer.

Countersigned by: Dealing Assistant
(C&ES)

Co-Nodal Officer
(C&ES)

Nodal Officer
(C&ES)

Consultancy and Extension Services

Date:

APPLICATION FORM FOR LRC RELATED SERVICES

Name of the Applicant			
Name of supervisor/ Project Head			
Name of Institution/ Industry			
Address			
Contact No.			
Email address			
Facility to be used			
Duration of Studio to be used (in Hours)	Duration of e-classroom to be used (in Hours)	Duration of edit console to be used (in Hours)	
Brief Description of the Purpose of Requirement		Date	Time

PAYMENT DETAILS

Amount paid	Mode of Payment	Transaction Number	Date of transaction

Signature of the applicant with date

FOR OFFICE USE ONLY

Accounts Section			
Verified / Not Verified (Payment Received)		Remarks, if any	
Dealing Assistant		FIC Accounts	

SLOT ALLOTMENT DETAILS

Date	Time	Signature of the Operator/Supervisor	Signature of the In-Charge / HoD	Remarks

N.B- Please bring an External Hard Drive for final output

Countersigned by: Dealing Assistant
(C&ES)

Co-Nodal Officer
(C&ES)

Nodal Officer
(C&ES)

Consultancy and Extension Services

Date:

APPLICATION FORM FOR ENGINEERING SERVICES

Name of the Applicant			
Name of Supervisor/ Project Head			
Name of Institution/ Industry			
Address			
Contact No.			
Email address			
Name of the Facility Required	Dept. involved (Please ✓)	Quantity (if any)	Duration
	CIVIL ENGG.		
	COMP.SC.& ENGG.		
	ELECTRICAL		
	MECHANICAL		
Brief Description about the Purpose of the Requirement			
		Date	Time

PAYMENT DETAILS

Amount paid	Mode of Payment	Transaction Number	Date of transaction

Signature of the applicant with date

FOR OFFICE USE ONLY

Accounts Section			
Verified / Not Verified (Payment Received)		Remarks, if any	
Dealing Assistant		FIC Accounts	

SLOT ALLOTMENT DETAILS				
Date	Time	Signature of the Supervisor	Signature of the In-Charge / HoD	Remarks

Countersigned by: Dealing Assistant
(C&ES)

Co-Nodal Officer
(C&ES)

Nodal Officer
(C&ES)