National Institute of Electronics and Information Technology, Aurangabad (Maharashtra)

Type of the institute:	Other GFTIs
Complete Mailing Address:	Dr. B.A.M. University Campus, Aurangabad - Maharashtra
Contact Person For Admission:	Dr. Anirban Jyoti Hati/ Ritesh Prasad
Email:	btech-abad@nielit.gov.in
Alternate Email:	dir-aurangabad@nielit.gov.in
Phone Nos:	91-240-2982021,240-2982022
Fax No:	91-240-2982050
Mobile No.:	91-7001008528 / 9451167614

About the Institute:

NIELIT Aurangabad –An Introduction

Genesis

The history of NIELIT dates back to 1974 when the Department of Electronics (DoE) now Ministry of Electronics and Information Technology (MeitY), Govt. of India and the University Grants Commission (UGC) set up the first CEDT within the premises of **Indian Institute of Science (IISc.), Bangalore** with assistance from Swiss Development Corporation.

A decade after the successful running of CEDT, Bangalore, DoE (now MeitY) set up similar centres at **Aurangabad, Imphal** and **Srinagar in 1987, Calicut, Mohali** and **Gorakhpur in 1989**, with an objective to develop human resources at different levels and in different specialized areas of Electronics Design. Aim was to bridge the gap between the academic institutions and industries.

The CEDT centres based at Aurangabad, Calicut, Gorakhpur, Imphal and Srinagar were merged with **DOEACC (a scientific society of MeitY)** in 2001. In order for its metamorphism into an **Institute of National Importance** the Society was renamed as '**National Institute of Electronics and Information Technology (NIELIT) on October 10, 2011**.

The **NIELIT Aurangabad** is co-located inside the lush green campus of Dr B.A.M. University and its campus is spreads over **more than 18 acres**. It has about **14 well equipped**

laboratories and **Mechanical workshop** besides a rich Library, Gymnasium for students, Auditorium, Canteen, Basket-ball ground, Volley ball ground, Kho Kho ground etc.

The Centre start offering unique AICTE approved courses viz **Diploma in Electronics Production and Maintenance** since 1987, **M.Tech (Electronics Design and Technology)** since 1990, **B Tech (Electronics System Engineering)** since 2013 (**Presently B.Tech in Electronic Engineering**) and is also a Recognized Research Centre of the Dr. B.A.M. University, Aurangabad since 2007 for conducting research leading to award of Ph.D. Degree in Engineering and Technology.

The Centre also provides **consultancy** and other services to leading **Industries** of the region like Bajaj Auto Ltd, Videocon, Sterlite, Siemens, Meltron, Maharashtra Police Wireless, etc. It is also implementing **ESDM scheme** sponsored by **Ministry of Electronics and Information Technology (MeitY)** for developing human resource with adequate competence levels in **Electronics Design & Production Technologies.**

The Industrial grade laboratories of the Centre are fully equipped with the latest systems and development tools in the area of Printed Circuit board, VLSI Design, Embedded Systems, Product Design, Digital Systems, Process Control & Instrumentation and in CAD/CAM.

Besides numerous reference books, Journals, magazines; the students of the Centre have access to **MeitY Library Consortium** (rich collection of latest e-Journals including IEEE and books) and **National Knowledge Network (NKN)** a strong a network with multi-gigabit capability connected to all universities, research institutions, libraries, laboratories, healthcare and agricultural institutions across the country.

All the labs, library and office are connected through the central network and students can retrieve information from their terminals itself and through well connected Wi-Fi system. The Centre organizes **National Level Seminars/Workshops** in areas like Agri-Electronics, Electronics Product Design, Intellectual Property Rights(IPR), Neural Networks, e-learning regularly.

Trained to become R&D engineers students of the centre are working in **leading and reputed organizations** like C.G Coral. Lucent India, Texas, L&T, HCL, Wipro Technologies, BITS, IIT, BEL, HAL, ISRO, DRDO, BARC, ECIL, Semsung, Thermax, Honeywell Cyrus logic L&T EMSYS to name a few.

The Centre has become a solution-oriented model organization and knowledge-based enterprise and is tirelessly working for creating a pool of R&D engineers and Entrepreneurs.

Objectives of Centre

1. To bring an **innovative, entrepreneurial spirit** along with excellence in teaching, learning and research to develop leaders in IT and Electronics.

2. To generate and keep update **Industry-ready quality professionals** with **knowledge-based skill set** in IECT and allied fields through formal and informal education system.

3. To establish a **Quality system of examination and certification** that is globally recognized and provides a fair assessment of the competency of students

4. To maintain **close links** with **Industries, R&D and Academic Institutions** to promote electronics, IT and industrial design culture

5. To develop **entrepreneurs, experts and designers**, carry out R&D and provide **Industrial Consultancy** in IECT

6. To offer **e-Training** in Electronics, Information Technology and Industrial Design methodology and production technique

Mission

Identifying the needs of modern engineering & technology education and providing **Quality Technical Education** leading to **Academic Excellence**, **creativity** and **innovation** in the areas of Electronics and Information Technology

Vision

To impart **professional education** that is outcome oriented, combined with fostering **innovative thinking**, **application of knowledge**, inculcating **professional ethics** and consciousness to social responsibilities.

Product Design

The Centre is providing world-class educational & skill development opportunities to the youth and the course structure at the Centre is designed to inculcate system level understanding among the students. Most of the M.Tech. projects are sponsored by companies and result in Hardware Electronic Products. Some of the students later transform their knowledge into commercial ventures.

Industry Interaction:

The institute is also providing the services like product design & development, product engineering, proto-type development, process automation, consultancy, etc. to industries. The institute is also making all efforts to create best infrastructure to provide quality services to industry in servicing and maintenance of sophisticated instruments / machines, support in technology absorption and procurement of latest equipment/ machines.

R & D, Projects and Consultancy

Post Graduate level academic projects are of one (01) year duration, whereas Diploma level projects are of one (01) semester (six months) duration. Students are encouraged to interact with industry to expose them to industry environment and motivated to undertake real problems of industry as their innovative project work, guided by the faculty. In addition to above, the institute also undertakes Government as well as industry sponsored projects. Some of them are “Training of Teachers in e-learning”, “Information Security Education &

Awareness" and Women Empowerment through Value Added Skill Development in IECT". Apart from above, the consultancy is also provided to the industry.

NIELIT Aurangabad also offers Internship-2024(Hybrid Mode) under Chip to startup program(C2S) of Ministry of Electronics & Information Technology(MeitY), Government of India from passionate and dynamic students from various institutes across India. This programme is created in such a way that the student will gain substantial knowledge, in the opted field, within a specific duration. In the course of their internship at NIELIT Aurangabad, the intern has the chance to carry out novel research and contribute to development initiatives under the supervision of research-oriented mentors, in order to enhance their research experience and exposure to the research and innovative world. The NIELIT Internship Program offers a transformative experience for students, empowering them with the skills, knowledge, and confidence to thrive in today's technology-driven world. By bridging the gap between academia and industry, this program prepares interns for successful careers and contributes to the growth and innovation of the technology sector.

Fee Structure:

B.Tech Fee-Structure for 1st year admission for Academic year (2024-25)

Course Name	Particulars	One-time fee	Odd_ Sem Fees (Rs.)	Even Sem Fees (Rs.)
B.Tech	Tuition Fee	--	50000/-	50000/-
	Student Development Fund	--	4100/-	-
	Mark sheet Printing charges	--	300/-	300/-
	ID card and certificate charges	640/-	-	-
	Caution Money Deposit *	1000/-	--	-
	Sub Total	**1640/-**	**54400/-**	**50300/-**
	Total to be paid during admission	**Rs 56040**		

Hostel	Particulars	One-time fee	Odd_ Sem Fees (Rs.)	Even Sem Fees (Rs.)
Boy's Hostel Accommodation	Hostel Fee per Semester	--	10050/-	10050/-
	Hostel Deposit*	1000/-	--	--
	Sub total	**1000/-**	**10050/-**	**10050/-**
	Total to be paid during admission	**RS 11050**		

NOTE:

1. Caution Money Deposits are onetime payment and transferred to student alumina fund on completion of the course.
2. Presently, SC/ST students – only Tuition Fee is met from SCSP/TSP Scheme of MeitY (subject to the terms and conditions and availability of this scheme). Hence tuition fees for SC/ST student is waived.
3. There shall be an increase in tuition fee and hostel fee for every academic year.
4. The student shall have to complete the registration formalities including full payment of hostel fees and tuition fees

within one week of the commencement of registration process before every semester starts. Last date of registration

will be notified in academic calendar with approval of executive director.

5. Back log Exam Fee is applicable to all students appearing Back log Exams.
6. Mess charges are to be paid directly to mess manager on monthly basis.

Academic Structure:

Formal Courses

The Institute Offers following AICTE approved courses:

A. Diploma in Electronics Production and Maintenance (DEPM) (3 years after Matriculation).

B. B.Tech in Electronic Engineering (Previously known as Electronics System Design)

C. M. Tech in Electronics Design and Technology

D. Part-time M. Tech in Electronics Design and Technology

These courses are practical oriented and are designed with an emphasis on design and project work. The quality of education is maintained by periodic review and update of syllabus considering the latest trends and needs of industry, in-depth study by the students through semester system, transparent evaluation system and flexibility being autonomy granted to the Centre by Dr. B.A.M. University, Aurangabad (M.S). The Degree is awarded by Dr. Babasaheb Ambedkar Marathwada University (BAMU), Aurangabad. Starting from the academic session 2024-25, degrees are proposed to be awarded by NIELIT Deemed to be University, pending approval. Students will have the option to select the awarding university (i.e., BAMU or NIELIT Deemed to be University).

The Centre enjoys the reputation of its students getting employed in reputed industries and organizations almost immediately on their completion of courses or settled as successful entrepreneur.

Rules For Change Branch:

There is only one Branch in B.Tech(i.e., Electronic Engineering previously known as Electronics System Engineering).

Faculty:

Partial List of Teaching Staff

Sr No	Name of Faculty	Designation	Educational Qualification	Brief Profile
1.	Dr. Jayaraj Kidav	Scientist/Engineer 'E'	Ph.D.(Electronics & comm. Engg-VLSI Signal Processing)	Overall 18 years of experience in research and teaching. He is a principal investigator in Ultrasound System Development Project, SMDP-C2SD Project and

				CARS/NRB Project
2.	Sh. Sasi Kumar Gera	Dean (Academics)& Scientist E	M.Tech (Manuf. Engg) , B.Tech(Mech. Engg)	Alumnus of IIT Madras, in his professional career spanned over 24 years he is instrumental in initiating many out-of-box research works in areas of CAD/CAM, CNC Machines, Industrial Robots Machine vision, Industrial Design. He has implemented real-time robot path control by using image processing for seam-less welding applications at the University of Liverpool, England as research associate (UNDP/UNIDO fellowship). He has guided several projects at Masters level. His research interests are Industry 4.0, Autonomous Robots, CAD/CAM, Lean Manufacturing.
3.	Sh. Lakshman	Dean (Skill Development), and Scientist D	PhD, M. Tech, B. Tech. (CSE)	In his professional career spanning over 12 years, he has executed many Government Projects of IT Mission (Kerala), Ministry of Social Justices, and ISEA project etc. His areas of areas of interest are Thermal Image Processing, Blockchain, Cyber Security, Mobile Application Development and Software Engineering. He is also working as a Placement Officer and Nodal Officer of Model Career Centre.
4.	Sh. Saurabh Kesari	Scientist C	B.Tech (Electronics and Tele-Communication Engineering)	More than 6 years of industrial experience in Embedded and IOT Hardware design and development

5.	Chaitanya Narayan Kadadas	Scientist C	B.E.(Electronics and Tele-Communication Engineering)	Having 7 Years' experience in fiber optics communication and networking
6.	Sh. Saurabh Bansod	Scientist C	M.Tech (Electronics & Instrumentation) B.E.(Electronics)	Alumnus of N.I.T. Rourkela, In the span of 6 years he has done tremendous work in the area of Industrial Automation. His area of interest includes data acquisition using NI DAQ cards, Machine Learning on Embedded Systems.
7.	Dr. Anirban Jyoti Hati	Scientist C	PhD, M.Tech, B.Tech	With expertise in Electronics System design, he has experience of teaching advanced microcontroller and microprocessor. He has sound knowledge of Deep learning and Machine learning. He is also doing projects on Artificial Intelligence, Computer Vision and Embedded Systems.
8.	Sh. Yogesh Kumar	Scientist 'B'	B.Tech (CSE)	A young scientist who possesses expertise in the area of Internet of Things, Scripting languages like Python. His other areas of interest are Cyber Security, Web Application Development.
9.	Sh. Shashank Kumar Singh	Scientist 'B'	B.Tech. (Electronics and Communication Engineering)	A young scientist who possesses expertise in the area of VLSI. More than 1 years of teaching experience.
10.	Sh. B. B. Sorte	Sr. Tech. Officer	DME, (DCS&M)	More than 20 Years' experience as Trainer / faculty of CAD/CAM/CAE including 08 Years of experience as Faculty for Mechanical Design and Developments and Workshop Technology. He is

				looking after Design & Development of Electro- Mechanical products under Academic activities of DEPM &B.Tech& M.Tech courses
11.	Sh. M.S.Kshirsagar	Sr. Tech. Officer	Diploma (Ind. Electronics)	He is highly motivated and experienced faculty who specializes in Electronics.
13.	Sh. Ritesh Prasad	Senior Technical Assistant	M.Tech (Electronics and communication Engg.)	With expertise in Electronics System design, he has experience of teaching various subjects of electronics. His area of interest includes Microelectronics and Embedded Systems.
14	Sh. Ravi Ranjan Singh	Senior Technical Assistant	M.Tech (Electronics and communication Engg.)	With expertise in Electronics System design, he has experience of teaching various subjects of electronics. His area of interest includes VLSI Design and Embedded Systems.

Facility:

Departments:-		
Embedded system & VLSI	Power Electronics	IT& Networking
Electronic Product Design	Industrial Automation	Communication Technology
Agri &Consumer Electronics	CAD/CAM &Workshop	Basic science &Humanities
LABs:-		
Embedded system Lab	VLSI Lab	Computer Center
Electronics & Communication Lab	Power Electronics Lab	Software Development Lab
Product Design(Industrial Design)	Opto Electronics Lab	Networking &IT Security Lab
PCB Design, Fabrication & SMD	Consumer Electronics Lab	Research Lab
Agri Instrumentation &Process control Lab	Multimedia Lab	Information Science (Library)
Testing &Measurement Lab	CAD/CAM Lab, Workshop	Physics
CAD/CAM LAB **Objectives**		

CAD/CAM Lab is equipped with the latest Machines of both for machining and additive manufacturing, also has flagship CAD/CAM software packages and high end CAD/CAM workstations to meet the present industrial requirements.

The lab is aimed at giving exposure to and enhancing the knowledge and skills of engineers involved in the operation use of CNC machines, CAD packages and for those who want to provide training to others in this area. It gives exposure and on hand experience in the field of CAD/CAM and CNC machines, 3D printing, reverse engineering, Computer Integrated Manufacturing and Industrial Robots. Some of the facilities available as follows:

Main Equipment's Available

1. CNC Lathe Machine

Lathes are machines that cut work pieces while they are rotated. CNC lathes are able to make fast, precision cuts, generally using indexable tools and drills with Automatic Tool Changer. It has Graphic simulation for product proving.

2. CNC Milling Centre

CNC mills use computer controls that are able to translate programs consisting of alpha-numeric codes to move the spindle (or workpiece) to various locations and depths to cut materials. It has Automatics tool turret with 6 tools and Graphic simulation for product proving.

3. 3D Printer

It prints professional-quality models at your desk. It's as simple to use as a document printer, yet powered by FDM Technology to build spot-on, functional concept models and rapid prototypes in ABS plus thermoplastic. Mojo 3D Print Pack equipped with everything designers, engineers or educators need to start 3D printing:

3D Scanner

A metrological 3D solution (reverse engineering), perfect for capturing 3D objects for CAD applications and captured images will be transformed to 3D Computer Aided Design (CAD) models that helps in improving the designs without having CAD drawings for the existing products.

4. CAD/CAM Software

Ø Catia V5

Ø Creo (Pro/Engineer)

Ø MasterCAM

Ø AutoCAD

CONSUMER ELECTRONICS LAB

Objective:

Consumer Electronics Lab has been established to provide hands on skills to the students that employers are seeking in Electronics Hardware & Productions as per Industrial requirements and standards. In various verticals of Consumer Electronics aspiring Maintenance Technician, Supervisor & Design Assistants are being skilled**.**

Main Equipments available:

1. Rigol DS1104Z-S 100 MHz Digital Oscilloscope:

The DS1000Z 4 channel oscilloscopes come in 70 or 100 MHz versions with a 7 inch display and Rigol's UltraVision technology as well as a host of options.

2. EasyScope - Scientech 801C:

EasyScope - Scientech 801C is a New Trend. The Vertical Bandwidth is more than adequate for all our needs and we can easily view signals upto 40 MHz.

3. NI ELVIS Engineering Lab Workstation:

The NI Educational Laboratory Virtual Instrumentation Suite (NI ELVIS) II is a modular engineering educational laboratory solution developed specifically for academia.

4. Strain Gauge Trainer

Use of ***strain gauge*** for such a purpose can be studied using this ***trainer***. This ***Load cell trainer*** is designed to measure the pressure of the cylinder by using a diaphragm as a primary transducer and ***strain gauge*** as a secondary transducer.

5. LCD Digital TV Trainer

This trainer has been designed with a view to provide theoretical and practical knowledge of a general LCD Digital TV (DTV) on SINGLE P.C.B.

6. DTH Trainer Kit

DTH trainer has been designed with a view to provide theoretical and practical knowledge of a Direct to Home Trainer (DTH) on Single P.C.B. Signals can be monitored and demonstrated at various testing point.

7. High-End Digital storage Oscilloscope (DSO)

High-End Digital storage Oscilloscope (DSO) can ensure the proper functioning of the device or design flaws allowing for a more intuitive visual diagnosis of the source of unexpected voltage. It allows probing of individual components and connections within electronic devices, acting as a simple signal tracer to determine the specific malfunctioning part besides providing alert regarding replacement need or fine tuning of electronic component.

of completely uniform deposit thickness and high precision. By using this process and principle, PTH process has been completed shapes because of completely uniform deposit thickness and high precision. By using this process and principle, PTH process has been completed

INTERNET of THINGS

Objectives

Recent trend of merging control systems associated with both factory and process automation demands knowledge from diverse fields. The purpose of the lab work is to study automation of time critical systems that demand precise real-time readings and control.

Main Equipment's Available

1. NI 9217 4-Ch PT 100 RTD 24-bit, 100S/s/ch

The NI-9217 is compatible with 3- and 4-wire RTD measurements, and it automatically detects the type of RTD (3- or 4-wire) connected to the channel and configures each channel for the appropriate mode

2. NI PCIe-6321, X series multifunction DAQ (16 AI, 24 DIO, and 2 AO), 250kS/s single channel sampling rate:

The PCIe-6321 offers analog I/O, digital I/O, and four 32-bit counters/timers for PWM, encoder, frequency, event counting, and more.

3. NI USB-6211 Bus-powered M series Multifunction DAQ device:

It offers analog I/O, digital input, digital output, and two 32-bit counters. The device provides an onboard amplifier designed for fast settling times at high scanning rates.

4. NI USB-9211A, 4 Ch., 24-Bit Thermocouple input module:

Plug-and-play connectivity via USB. Compatibility with J, K, R, S, T, N, E, and B thermocouple types
Small, portable device (12.1 x 8.6 x 2.5 cm)

5. **CompactRIO:**

CompactRIO (or cRIO) is a real-time embedded industrial controller made by National Instruments for industrial control systems. The CompactRIO is a combination of a real-time controller, reconfigurable IO Modules (RIO), FPGA module and an Ethernet expansion chassis.

6. **Programmable Logic Controller**

PLC is used for control applications as in special purpose machines for milling, drilling, packaging etc. PLC senses inputs from field (using its input cards), for example from a level sensor, a proximity switch, pushbutton etc. PLC's have been programmed in a language called as ladder language.

7. **Electro-Pneumatic Trainer Kit**

Electro-pneumatic control consists of electrical control systems and operating pneumatic power systems. In this solenoid valves are used as interface between the electrical and pneumatic systems. Devices like limit switches and proximity sensors are used as feedback elements.

8. **Level Measurement**

Capacitive Level Sensors also referred as Radio Frequency (RF) level sensors, are used for measuring process level at a specific point, multiple points or continuously over the entire vessel height. Level change results in a variation of capacitance value around the probe, depending upon the degree of immersion

NETWORK and SERVER FACILITY

Objective

All the classrooms and lab are well connected with central switching center and have 100Mbps NKN Link. For academic and research purpose there is also a facility of a mini Data center having CISCO UCS 5108 Chassis with 4 Numbers of B220 blade servers. For faulty tolerance and to decrease downtime there are redundant Fabric Interconnect in clustered fashion.

Main Equipment's Available

1. CISCO Layer 3 Central Switch 4507.

This CISCO L3 main switch deployed with two sup Engines, 2 Line card for 10G fiber optic ports and 2 Line card for 48 PoE Gigabit Ethernet copper ports with dual 6000w power supply. This form main 10G backbone on fiber optic connectivity for NIELIT Aurangabad.

2. CISCO Catalyst 2960X-48TDL.

Every lab is deployed with CISCO Layer2 switch 48 Gigabit Ethernet port and 10G fiber optic port for uplink to main central L3 Switch.

3. UCS 5108 Chassis with 4 blade servers

Server is CISCO 5108 with 4 B220 blade server each having 2 Xeon processor and 192 GB RAM. Chassis is connected using Fabric Interconnect to 40 GB storage. The hardware is controlled is CISCO UCS and VMware software.

4. **Storage IBM v3700**

IBM storage is used to provide space to the VMs created on servers. storage is configured and working on iSCSI connectivity with server Chassis.

5. CISCO router ISR 2911 and ISR2821

NIELIT Aurangabad is acting as CISCO network Academy for CCNA routing and Switching course. The lab is equipped with 3 Nos. of 2911 CISCO routers to understand working and configure various routing protocols.

6. CISCO Catalyst switches 2960:

There are 3 Nos. of CISCO Catalyst 2960 switches for CCNA practical. This is useful hands on practice to configure and troubleshoot various VLAN, VTP, STP, trunking protocols.

7. Programmable Logic Controller

Cisco HWIC 2T serial port module is used to configure various WAN protocols like HDLC, PPP, Frame-relay, etc.

8. Connection to NKN link

Whole office is using 100Mbps NKN link for public connectivity using Juniper route MX-8 and for security using Cyberoam 300iNG as firewall.

9. **System Administration using RHEL Linux and Windows Server 2008**

There are 3 Nos. of HP Proliant DL160 Rack mount servers. One of those is deployed as Public web service where other is used as hardware accreditation portal is hosted. One server used as intranet server where various services are running like DNS, DHCP, Web, FTP, Telnet, etc. Authentication server is configured in Windows environment as Active Directory Server.

OPTO-ELECTRONICS LAB

1. **Expo Make AX-110 all fiber OTDR**:

The OTDR is having the facility to measure at 830/1300/1550 nm with accuracy of 24/37/35 dB.

It can take MM 50/125 7 62.5/125 um and SM9/125 um fiber

2. **Connecterisation Kit**

Kit containing number of tools to be used for preparation of optical Fiber ends and connectors

3. **Splicing Machine:**

Sumitimo Electric Make Core Alignment Fusion Splicing Machine

4. **Transmitter/ Receiver (Model 310 And Model400):**

BCP make high speed transmitter and receiver, which transmit at the rate of 1.2 Gbits. Model works at 850 and 1300nm and separate receiver are available with Si and Ge detectors

***5.* Mixed Domain Cro 30 Mhz**

Mixed Domain CRO at 30 MHz, which can act as 8 bit logic Analyzer also

POWER ELECTRONICS LAB

Objectives

The lab aims at imparting practical knowledge of Power Electronics to the students at various levels i.e. DEPM, B.Tech and M.Tech. It is accordingly well equipped with equipment's and trainer kits to teach practical from fundamentals to high level concepts to the students.

Main Equipment's Available

1. Triac AC Phase Control

All Components are terminated with a connector for the study of Students. One potentiometer is provided to vary the firing angle of SCR. Another potentiometer is provided to vary the firing angle of TRIAC.

2. Single Phase Converter

Power circuit with a DC shunt motor 2SCRs/4SCRs and 2 power diodes. A circuit breaker, a bridge rectifier for field supply.1 phase converter firing circuit. SCR converter with open/close loop with motor rpm indication, mech. Loading load regulation = 1% with tacho F/B

3. SCR Lamp Flasher

Scientech PE40 SCR Lamp Flasher is compact, ready to use experiment board for lamp flasher using SCR circuit. This board is useful for students to study and understand operation of SCR controlled lamp flasher circuit and measurement of frequency, time, and voltage.

4. DC Chopper

DC Chopper Using SCR Trainer is very much useful for the students, to understand the principle of working and operation of the chopper. Output voltage can be controlled electronically by variation of Duty Cycle.

5. DC to AC Inverter

Power Electronic Training Board has been designed specifically for the study of working of inverter. A Battery 12V 80AH (Any car battery) is required to operate this apparatus. Different test points have been provided to check wave shape and amplitude of pulses how DC supply is changed to AC supply.

6. SCR Triggering Trainer

SCR trigger trainer system. UJT triggering circuit24Volt 10W Lamp load24 Volt ac supply for Circuit inputs LED indication for supply R-trigger circuit with phase angle control 5 degrees to 90 degrees R-trigger circuit half wave with phase angle control up to 180 degree maximum._ UJT is an excellent triggering device which provides narrow gate pulses. Control is very accurate and from 0 Deg. to 180 Degree.

PRINTED CIRCUIT BOARD LAB

Objectives

Printed Circuit Board laboratory caters to the need of Electronic Designer. It brings out the importance of quality and reliability to Electronic Manufacturing Industries. The Printed Circuit Board are designed by considering DFM (Design for Manufacturing)/ DFA(Design for Assembly) and DFT (Design for Testing). Students are getting real world experience in PCB design and Manufacturing processes involved in Electronic Manufacturing and assembly Techniques.

Main Equipment's available

1. Dip Coating Machine:

Dip Coating Machine is used to coat photosensitive emulsion on Laminate surface to transfer the photographic image/Photo tool. By applying the photo resist on the metal surface, the surface becomes photo sensitive.

2. Reflow Oven

Reflow soldering is a process in which a solder paste (a sticky mixture of powdered solder and flux) is used to temporarily attach one or several electrical components to their contact pads, after which the entire assembly is subjected to controlled heat, which melts the solder, permanently connecting the joint.

3. U.V.Exposure Unit:

This Unit is used to expose photo tool /Film master /Image on photosensitive coated board. By exposing with proper wavelength, exposing time, light intensity, Temperature, type of photo tool. The light source affects the degree of polymerization of photopolymer.

4. Smd Components Pick And Place

SMT (surface mount technology) component placement systems, commonly called pick-and-place machines or P&Ps, are manual assisted or robotic machines which are used to place surface-mount devices (SMDs) onto a printed circuit board (PCB).

5. Stencil Printer

Stencil printer is use to deposit solder paste on the Printed Circuit Boards (PCB's). The laser etched screen allows to dispense a set amount of solder paste required for soldering the component.

VLSI LAB

Objective

This Laboratory is equipped with Cutting-_Edge Technology EDA Tools such as Synopsys for IC design and validation, Xilinx ISE for IP-core design and validation, and advanced equipment's which support for conducting the UG/PG labs and also research activities in M.S and PhD level.

Main Equipment's Available

1. Synopsys Tool

Synopsys is one of the world's most advanced tools for silicon chip design, verification, IP integration, and application security testing.

2. Altera DE2-115 Development and Education Board

DE2-115 offers an optimal balance of low cost, low power and a rich supply of logic, memory and DSP capabilities

3. Basys-3 FPGA Board

Board has complete ready-to-use hardware, a large collection of on-board I/O devices, all required FPGA support circuits, and development tools.

4. Analog discovery 2 with parts kit_

Digilent Analog Discovery 2 is a USB oscilloscope and multi-function instrument that allows users to measure, visualize, generate, record, and control mixed-signal circuits of all kinds.

EMBEDDED SYSTEM LAB

Objectives

Studying a range of topics of immediate relevance to industry makes a student suitable for working in industries engaged in Embedded System and Electronic Product development.

The purpose of this lab is to provide an excellent foundation for those wishing to engage in application research in this rapidly developing area

Main Equipment's available

1. High-end multipurpose embedded Development board

This board is very useful for students to learn ARM7, AVR, 8051 and its interfacing with Micro SD Card interface, Graphical LCD, 8 LEDs, On board, LDR On board

2. ARM processor

An ARM processor is one of a family of CPUs based on the RISC (reduced instruction set computer) architecture developed by Advanced RISC Machines (ARM). ARM makes 32-bit and 64-bit RISC multi-core processors

3. AVR

Learn how to interface any sensor or input output device with ATmega32 microcontroller. Here we teach the students all input output interfacing.

4. 8085 Microprocessor

The PS-8085 board which demonstrates the capabilities of the 40-pin 8085(various families). All programs are provided to demonstrate the unique features of supported device.

5. 8051 Microcontroller

The Intel MCS-52 (commonly termed as 8085) is an internally Harvard architecture, complex instruction set, and single chip microcontroller series developed by Intel in 1980 for use in embedded systems.

Other Amenities / Facilities:

Lecture Halls	LAN with 100 (100 Mbps) Nodes, (NKN Connectivity)	Guest House
Seminar Hall	Smart Virtual Class rooms	Cafeteria
Conference Hall with Video conferencing	Sports grounds	Boys' Hostel
Auditorium	Jogging Track	Girls' Hostel
Gymnasium	Karate (for female students only)	Mess (@affordable rate)

ACADEMIC BLOCKS

The institute, having a beautiful building of 12,200 square meters (1,31,272 sqft) on 18.65 acres of hill side land, is located within the campus of Dr. B. A. M University , Aurangabad. The campus is self-sustained and is well equipped with requisite amenities to meet the needs of institute such as classrooms of different sizes, laboratories, library, Air conditioned conference hall, administrative block, medical room and a seminar halls.

LECTURE HALLS& CONFERENCE HALL

The Institute possess neoteric classrooms, lecture halls and conference hall. Each one of them is well equipped with modern facilities such as Multimedia Projector, LAN & Wi-Fi connectivity, etc., which go along well with today's digital age of teaching. It is made sure that the students get an atmosphere which is comfortable, enhances learning and foster their young minds.

INFORMATION SCIENCE (LIBRARY)

Rich library caters to the information needs of the students, researchers and scientists with its well managed information resources housed in two floors spread over an area of 331 Sq.Mtr. The library has a huge collection of books, reference books, periodicals, and electronic resources. The mission to facilitate creation of new knowledge through acquisition, organization and dissemination of knowledge resources.

Major Library Resources

1. MeitY Library Consortium

The Centre is part of MeitY Library Consortium and has access to an inventory of latest e-Books, Research Papers and e-Journals including **IEEEXPLORE among others**. The purpose of NKN goes to the very core of the country's quest for building quality institutions

2. National Knowledge Network

The purpose of NKN goes to the very core of the country's quest for building quality institutions The Centre is part of NKN and can seamlessly connect at gigabit speed and enables students, scientists, researchers to work together for accessing information to stimulate research and create next generation applications & services in critical and emerging areas.

3. National Digital Library

_The Centre is also part of National Digital library of MHRD, India. The students and staff can access and download 6.5 million books in vernacular languages of multiple national and international digital libraries.

4. Rich Collection of Books

The library possesses rich collection of more than 14000 latest books covering subjects such as Electronics, Computer Science, Microcontrollers, Embedded systems, Internet of things, Bioinformatics, Information Security, Precision-Agriculture, Bio technology, Control Engineering, Instrumentation, Networking, Communication, Robotics.

5. Journals, Theses and Periodicals

More than 20 National Journals/Magazines of repute are being subscribed by the library.

6. Magazines and Newspapers

Library is subscribing to all leading newspapers in English, Hindi and Marathi

Facilities to Students

1. Book Bank

Six books are given to each student per Semester.

2. Book Request

Students can give recommendation for procurement of any Books, Journals and Magazines (Foreign as well as National). The requests are examined and procurement of the same is done.

3. Open Access

Students have unrestricted access to all shelf of books and Journals.

4. Facility for Downloading

There is adequate seating facility besides stack of computers for downloading research papers, e-Journals, e-Books and other reading material.

5. Miscellaneous Services

Reprographic service, Circulation, Curriculum Support for training programs and other User awareness services

Student Life at Institute:

Institute believes in nurturing talent and provides with unique course curriculum & Learning Environment of academic excellence, leadership, ethical guidelines and life-long learning needed for a long/successful career in industry. Hands - on training is an integral part of curriculum at NIELITA. Strong and equal emphasis is laid on academic, co-curricular and extra-curricular activities to ensure an all-round development of the student while providing multiple platforms for students to improve their soft skills which are imperative for one to excel in his/her domain. NIELIT transforms the students into efficient and effective human being both at personal and professional level.

The course work is project based and students get ample time to work on innovation. There are various sports and cultural clubs that are being managed by the student community on campus which serve for various extra-curricular activities:

1. Cricket
2. Badminton

3. Lawn Tennis
4. Basket-Ball
5. Body Building
6. Drama Club
7. Music Club
8. Athletics
9. Literary and Fine Arts
10. Photography

Financial Assistance:

Scheduled Caste & Tribe students are exempted from paying Tuition fee & Examination fee in all semesters only once (i.e. repetition of exam/semester due to any reason the fee is not exempted) under the scheme of Scheduled Caste Sub Plan (SCSP) and Tribal Sub Plan (TSP) of Deity,GoI. For fee exemption necessary certificate as per GOI order to be produced from time to time. We encourage all other students to apply for scholarship from different organisations.

Training & Placement:

The Placement Cell of the Centre offers all assistance to the students for employment / self-employment. Most of the students passing out from the Centre have good opportunities to build their career.

Some of Companies who have come for Campus Placement : SIEMENS,BAJAJ,Videocon, Godrej Infotech Ltd.,Tata Steel, Varroc, Trimax, Rucha Engineering Ltd., ENDURANCE,VOLTAS LIMITED, L&T Infotech,TCS,Starion Ltd., Bharat Iron Sindicate Ltd., Bosch,**Sterlite, IT Cubes,Global websoft,GRIND MASTER Absolute Engineering.Man Diesel & Turbo etc.**

Placement Assistance and Support

Students of the Centre are trained to become R&D engineers. In Course curriculum there is emphasize on Innovation, Design and Development of Electronic Product. The Centre has also sign an MoU with Chamber of Marathwada Industries and Agriculture (CMIA) to platform to Startup Aspirants students. In association with Directorate of Employment, Ministry of Labour & Employment (MoLE), a Model Career Centre is also functioning to provide a variety of employment related services.Apart from this an independent Placement Cell is providing Placement support and assistance to all the students. Almost all the students of the Institute gets career opportunities of their choice.

1. MoU with CMIA

CMIA is a group organization representing around 650 small scale / medium scale / large scale industries including the Multinational Companies (MNC's) of the Maharashtra. An MoU was signed with CMIA in November, 2017 for referral of Students Projects which have potential of developing into scalable business models and also adoption of their business startup ideas. The support for internship and employment to our students in member companies of CMIA was another goal of the MoU.

2. Model Career Centre

In association with Directorate of Employment, Ministry of Labour and Employment (MoLE), NIELIT is providing a variety of employment related services to students of the region. The students of the institute are by default members of National Career Services (NCS) of Government of India. The Model career Centre apart from organizing multiple Job Fairs every year is also conducting counselling sessions to improve Soft Skills and presentation skills of the students. Leading Experts and Industrialists are invited for these counselling sessions to share their views.

3. Industrial Tie-up

Multiple visits of the students are arranged in leading Industries of the region so that they can get well versed with current Industrial trends. The students also get a chance to take up real Industrial issues as their project work. The bright students are also provided with mentoring support for establishment of their own start-up by Industrialists.

Industry And Alumni Relations:

Industry Interaction:

The institute is also providing the services like product design & development, product engineering, proto-type development, process automation, consultancy, etc. to industries. The institute is also making all efforts to create best infrastructure to provide quality services to industry in servicing and maintenance of sophisticated instruments / machines, support in technology absorption and procurement of latest equipment/ machines.

Alumni Associations:

Alumni Association creates and maintains a life-long connection between the Institute and its alumni. The Alumni Association works to connect alumni, support students and build an unforgettable Institute experience through a diversity of events, programming and services. The mission of the Association is to foster strong bonds between alumni, students and the Institute, to keep alumni informed, and create a network enabling them to remain engaged with their alma mater and help shape it's future through the Association's programmes and services.

Recreational/Extra Curricular activities:

Beyond Academics:

We lays great emphasis on holistic development of students. The Institute provides a range of opportunities outside the classroom as well - be it industry interaction for project work,

cultural activities, sports competitions, entrepreneurial pursuits, socially relevant activities through NSS etc.

To enhance the student's confidence, leadership qualities, attitude, management, communication and creative skills, the institute encourages a variety of activities. NIELIT Aurangabad organized its II Annual Technical festival ELE-CHROME-2018 in March 2018 which was attended by students from all over Maharashtra.

We offers students opportunities to interact with and learn from corporate professionals, Leaders of the business, representatives of government and non-government organizations, artists and intellectuals regularly visit our campus on invitation to deliver talks and presentations that provide insights to the careers and personal attributes of these role-models.

Apart from that, in order to provide students an exposure of the outside world, a number of technical events like seminars and workshops have been conducted. Clubs are an important part of the co-curricular sphere of NIELITA. Various clubs give students an opportunity to exercise their extra-academic skills and to keep with the tradition of engineering. This initiative also provides the student community with an opportunity to exercise their autonomy in a responsible manner.

Sports & Games:

Institute is having well equipped Gym, Karate (for female students only), Lezim sports, jogging track, Football/Hockey, Cricket, Volleyball, Badminton Basketball and large green spaces etc. NIELIT proximity to SPORTS AUTHORITY OF INDIA gives the ample opportunity for training, round the year, in various sports and games. NIELIT was able to prove its mettle when the students were able to bag medals at inter college sports meet. The institute also hosts its annual sports event KHELO NIELIT, in which all the departments of the institute actively participate to claim the shining trophy. Sports Week is also conducted at NIELIT Aurangabad where students participate in different indoor and outdoor games throughout a week.

Art & Culture:

In order to cope up with the academic rigour, equal emphasis is put on cultural activities. A healthy campus life plays a pivotal role in the all-round development of students. Along with the healthy academic schedule and the brain-storming class hours, the students of NIELIT immerse themselves in various extra-curricular activities. Hailing from diverse social and cultural backgrounds, they manage various clubs, events and festivals, which build ability to work in teams, endow them with leadership qualities and make them all-rounder's. Institute also organizes Foundation day Program, Poster Presentation, Good governance Day, Ganpati Mahotsav, Debate ,Essay writing, Paper Reading Competitions, Group Discussion Competitions, Hindi Pakhwada etc. Debating Forum at NIELIT Aurangabad is famous among the students.

Location and Accessibility:

Aurangabad is located in Central Maharashtra and has always been a prominent region on the Deccan Plateau. Having been inhabited since the stone age, it has a long artistic and cultural history with various monuments like Bibi a (replica of Taj Mahal), Panchakki, Daulatabad Fort (Second Capital of the Delhi Sultanate), Tomb of Mughal Emperor

Aurangajeb" and Aurangabad Caves, etc..Apart from these, the city is surrounded with world heritage sites like Ajanta (101 km) and Ellora (27 km), holy places like Paithan 60km) and Shirdi (120km). The industrial area of the city has developedrapidly and was he fastest growing industrial city. Aurangabad, about 388 km north- east of Mumbai, has Airport and Railway Station and is connected to Mumbai and New Delhi by Air and Rail. Pune is about 230 km and is well connected by road to all major cities. The institute, having a beautiful building of 12,200 square meters (1,31,272 sqft) on 18.65 acres of hill side land, is located within the campus of Dr. B. A. M University at a distance of 05 km from the Central Bus Stand and 8 km from the Railway Station.

NIELIT Aurangabad

Dr Babasaheb Ambedkar Marathwada University Campus,

Aurangabad,

Maharashtra-431004

Website: https://nielit.gov.in/aurangabad/index.php

Landline: (+91-240) 2982021, 2982022

Telephone/Fax: (+91-240) 2982050

Academic Program wise Breakup:

Academic Program Name	**State /All India Seats**	**Seat Pool**	**OPEN**	**OPEN-PwD**	**SC**	**SC-PwD**	**ST**	**ST-PwD**	**OBC-NCL**	**OBC-NCL-PwD**	**GEN-EWS**	**GEN-EWS-PwD**	**Total(includes Female Supernumerary)**	**Program-Total** Seat Capacity	Female Supernumerary
Electronic Engineering	All India	Gender-Neutral	21	3	9	0	5	0	16	0	6	0	60	60	0
		Female-only (including Supernumerary)	0	0	0	0	0	0	0	0	0	0	0 (including "0" Supernumerary)		
		Total Seats	**21**	**3**	**9**	**0**	**5**	**0**	**16**	**0**	**6**	**0**	**60**	60	0