

PLACEMENT BROCHURE MTECH 2015-16



INDIAN INSTITUTE OF
INFORMATION TECHNOLOGY
ALLAHABAD

About us

The Indian Institute of Information Technology Allahabad (IIIT-A) was established in 1999, as a center of excellence in Information Technology and allied areas. The institute was conferred the "Deemed University" status by Govt. of India in the year 2000.

The Institute has been conceived with the ambitious objectives of developing professional expertise and skilled manpower in Information Technology (IT) and related areas.

Mission

The mission of IIIT, Allahabad is to be a unique and world class nucleating "Apex Center of Excellence" in the area of Information Technology and Allied Sciences, so as to enhance India's Technological strength in IT and for become a pace-setting institution for other similar institutes to be established in the future. IIIT seeks to derive its strength from a linkage with sound Indian traditions of centuries past, and sets out to create knowledge-based resources in regional languages.

Post Graduation Program

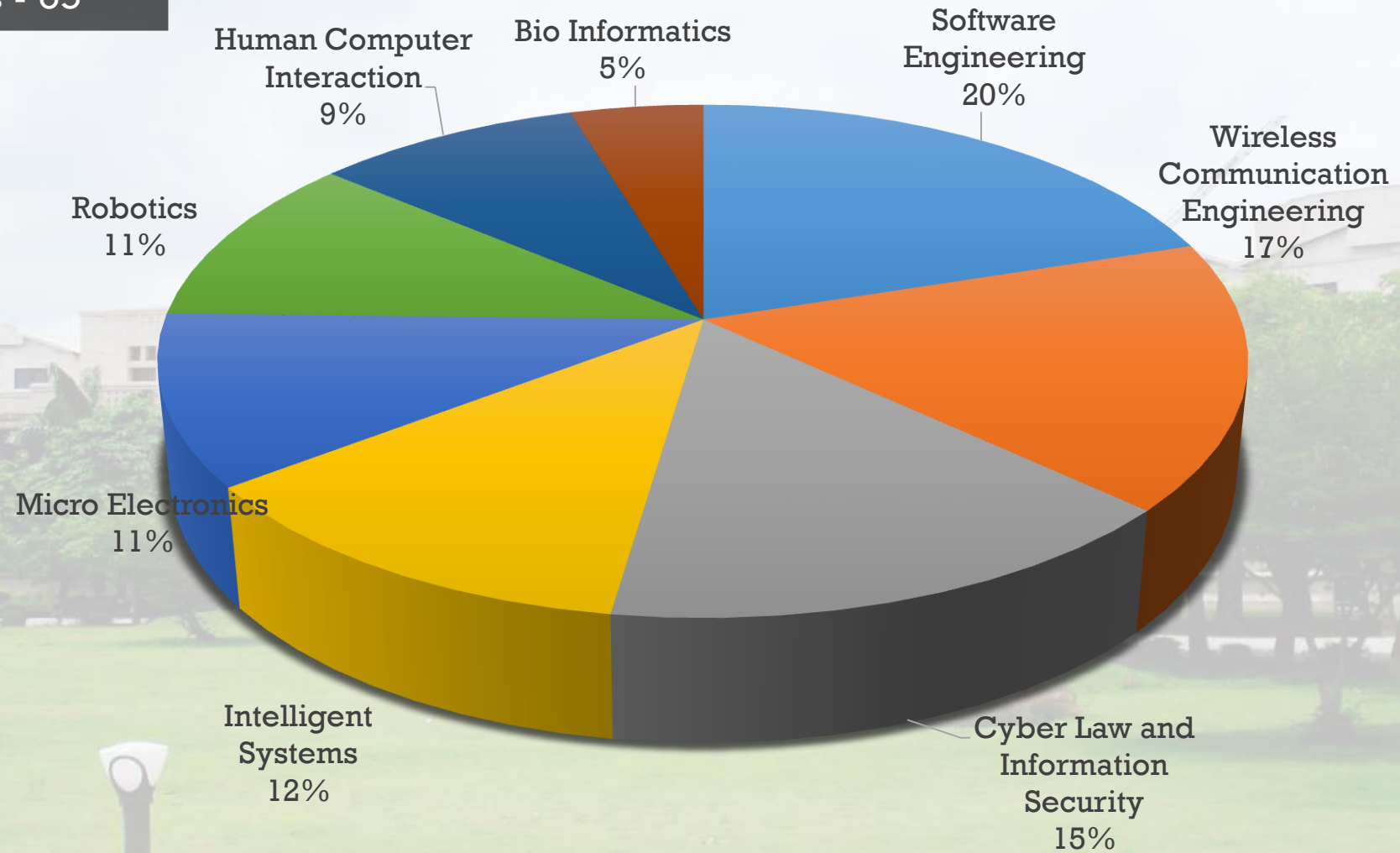
IIIT Allahabad provides excellence of specialization in the field of information technology and electronics and communication in India. The objective of MTech is to prepare quality professionals to work high end technologies in IT who can meet challenges, make better use of technologies and understand the need of modern IT services. Here students are trained to work in team, lead it, allowing the students to have the capability to turn the dreams of business leaders and visionaries into reality. The curriculum is designed in such a manner that student get the excellent knowledge of the specialized field. "Dissertation work" provides an opportunity to students to create and develop new concept, techniques, methods and applications in the real world.

For More information Visit:

✓ MTech (<http://mtech.iiita.ac.in>)

Demographics

Total MTech Students - 65



- Software Engineering
- Cyber Law and Information Security
- Micro Electronics
- Human Computer Interaction
- Wireless Communication Engineering
- Intelligent Systems
- Robotics
- Bio Informatics

Bio Informatics

Bioinformatics is a multidisciplinary science that analyses and creates the model of life as an evolving information processing phenomenon for maximizing natural energy utilization. It uses the principles and models of mathematics, medical and pharmaceutical concepts, computer programs and tools for understanding and analyzing biological processes, human diseases and identifying new molecular targets for drug discovery.

Course Structure

1. Introduction to Genomics and Proteomics
2. Bioinformatics and Statistics
3. Systems Biology
4. Biological Databases and Structure
5. MSPV and CADD
6. Language Algorithm and Tools
7. Data Structure
8. Data Mining in Biological Systems

Research & Projects

1. Development of New Method and algorithms to identify Exon-Intron boundary and finding signatory signal pattern for genetics abnormalities like autism.
2. Development of new methods and algorithms for pathophysiological characterization of coronary blockade by processing ECG and similar quasiperiodic biomedical signals and biomedical images.
3. Development of a Fractal and Soft Computing simulation based methodology to predict protein surface-roughness-map to help pharmaceutical designing of best possible small binding molecules.
4. Development of a Computer-aided Microscopic Tool for Structural Derivation of Pathologically Significant Proteins.
5. Application of EMF for evaluation of health of vital organs.

For More information Visit: <http://bi.iiita.ac.in>

Cyber Law & Information Security

This course consists of varied subjects covering various aspects of Cyber law and Information Security related topics which are essential to create a successful cyber security workforce for organizations. The curriculum has been designed to provide the students an in-depth understanding of core concepts with major thrust on functional competencies wherein students are exposed to real life situations.

Course Structure

1. Internet Protocols
2. Cyber Law and Security
3. Advanced Cryptography
4. Network Security
5. Security Architecture
6. Wireless Sensor Networks
7. Information Systems Security and Audit

Research & Projects

1. Cloud Security
2. Lattice Based cryptography
3. Big Data Security
4. Verification Of Security Protocol
5. Light weight cryptography for Wireless Sensor Networks
6. Privacy issues
7. Ad hoc Networks

For More information Visit: <http://clis.iita.ac.in>

Human Computer Interaction

HCI is also sometimes referred to as Man-Machine Interaction (MMI). The goal of this course is to develop designs, methods and systems to improve the interactions between *users* and *computers* to make computers more usable and receptive to users' needs. Since the study of HCI involves humans and machines in conjunction, this course encompasses knowledge and perspectives of both the machine and the human sides.

Course Structure

1. Cognition and Cognitive Process Modelling
2. Virtual Reality
3. Image, Digital Signal and Vision Processing
4. Advanced Graphics and Animation
5. Speech and Language Technology
6. Soft Computing
7. Humanoid Robotics
8. Speech & Language Technology
9. Computational Intelligence

Research & Projects

1. Detecting Cognitive States of human brain given FMRI data.
2. Three level Security based on Eye Gaze Tracking for Computer and computer based application.
3. Target detection in Synthetic Aperture Radar images
4. Video Summarization.
5. Enabling amputees and archeiopodies to use text application using eye gaze tracer.
6. Posture recognition for safety driving.
7. Android Mobile Game and Cafeteria App.
8. Human action recognition in video stream
9. Content based Image Retrieval using Trademark Database
10. Image Forgery Detection
11. Facial expression recognition from Audio-Visual information using Wavelet and Curvelet transform

For More information Visit: <http://hci.iiita.ac.in>

Intelligent Systems

Intelligent Systems(IS) is a term to describe computational systems & methods, which simulate aspects of intelligent behavior. IS extend conventional technologies to make them fast, dynamic & adaptive. The intention is to learn from nature & human performance in order to build more powerful systems. To train & educate at postgraduate level, engineers of outstanding quality who may become leaders in the IT industry & research.

Course Structure

1. Computational Intelligence
2. Image and Vision Processing
3. Advanced DBMS
4. Data Mining and Warehousing
5. Wireless Sensor Network
6. Soft Computing
7. Distributed Systems
8. Information Retrieval

Research & Projects

1. EEG Signal Classification for Motor Actions
2. Font Independent OCR
3. Machine Translation
4. Eye Gaze based on-screen virtual keyboard
5. Visual attendance system
6. Intelligent surveillance and tracking system
7. Information Retrieval for Indian Languages
8. Universal Digital Library (MCIT Project)
Computer based Training (WARDEC Project)
9. Satellite Image Processing using Parallel Computing

For More information Visit: <http://is.iiita.ac.in>

Micro Electronics

Microelectronic Engineering is the department focusing on designing and fabrication of electronic, bioelectronics and electro-mechanic devices & their applications in the broad areas of electronics, energy, life sciences, and environment. It covers also the expanding interdisciplinary field of "more than Moore" and "beyond Moore" integrated nano-electronics and micro-nano systems.

Course Structure

1. Modeling and Analysis of VLSI devices
2. Fundamental of Digital VLSI design
3. VLSI Technology
4. Computer Architecture & Embedded System
5. Hardware Design Methodologies using HDL
6. Test and Verification
7. Advance Analog VLSI Design
8. Mixed Signal VLSI Design

Research & Projects

1. Design and Verification using System Verilog and Assertions of an SOC having RISC processor connected to slave devices using AMBA BUS Protocols Like APB, AHB.
2. Circuit Technique for reduction in power dissipation for nanoscale SRAM.
3. Mixed signal design & verification of Sigma-Delta ADC.
4. FPGA implementation of Image & Video compression by Discrete Cosine Transform.
5. FPGA of discrete wavelet transform.
6. Digital hardware implementation of real time water marking system on FPGS with camera interface.
7. Stress induced degradation in sputtered Y2O3 thin films on Si.
8. Design and fabrication of an electrically actuated MEMS based drug delivery system.

For More information Visit: <http://mi.iita.ac.in>

Robotics

Robita is the official Robotics club of IITA. The club is presently housed in the Robotics and AI Laboratory of the Institute. Beyond the classroom, our students get plenty of opportunities to put their passions and talents into action. Robotics is the branch of technology that deals with the design, construction, operation and application of robots and computer systems for their control, sensory feedback, and information processing.

Course Structure

1. Mathematical formulation of robotics
2. Artificial Life Simulation
3. VLSI Technology
4. Image Processing and Computer Vision
5. Wireless Sensor Network
6. Humanoid Robots
7. Nonlinear Dynamics
8. Robot Motion Planning

Research & Projects

1. Human Gait Oscillation Detector.
2. Adaptive Modular Active Leg (AMAL).
3. Human Gait Biometric System (HGBS).
4. Autonomous testbed of mobile manipulation(ATOM).
5. Indian Sign Language Gesture Recognition.
6. Social Mobile Advance Robot Testbed(SMART).
7. Humanoid Open Architecture Platform (HOAP)
8. Interactive Graphics Robot Instruction Program(IGRIP)
9. Humanoid & Mobile robot simulation platform(WEBOTS)
10. Implementing Programmable Logic Controller (PLC) for designing industrial Automation
11. d-Space
12. Bioloid kits and Hexapod robot

For More information Visit: <http://ro.iita.ac.in>

Software Engineering

This department promises to deliver future project leaders and architects, who can meet the challenges, make better use of technologies. Here students are trained to work in a team, lead it, allowing exposure to the practical abilities and difficulties involved in the projects of varying complexities to make sure that the students have the capability to turn dreams of business leaders and visionaries into realities.

Course Structure

1. Software Requirements and Estimation
2. Advanced Programming Engineering
3. Architecture of Software Systems
4. Software Metrics
5. Software Testing and Quality Management
6. Data Mining
7. Distributed Systems
8. Mobile Software Engineering

Research & Projects

1. Cloud Computing Services using building block architecture.
2. Web Services in Cloud Computing.
3. Multi Relational Data Mining with user guidance.
4. A Fuzzy Clustering approach for Large data sets.
5. Efficient processing of Location Dependent Queries.
6. Scientific Social Network Mining.
7. Data Mining in graph based Sensor Networks.
8. Exploring Associatives Classification Techniques for Predictive Analytics.

For More information Visit: <http://se.iita.ac.in>

Wireless Comm. Engineering

This course consists of cutting-edge knowledge and latest developments in the essential areas and topics of wireless communications. It gives relevant skills and core knowledge of the latest methods, tools and technologies combined with time-tested issues such as information theory, advanced wireless communication systems, communication networks, signal processing, and radio engineering.

Course Structure

1. Communication systems
2. Data Communication & Computer networks
3. Wireless network protocols
4. Wireless sensor networks
5. Graph theory
6. Optical networks
7. Telecommunication & switching networks
8. Distributed systems

Research & Projects

1. Enhancement Of Energy Efficiency In Heterogeneous Wireless Sensor Network Using Multi-Hop Transmission Method
2. Cross Layer Optimization In Adhoc Network Using A Directional Antenna
3. Physical Layer Optimization In Next Generation Wireless Sensor Network.
4. Wireless Sensor Networks In Rescue Operations Using 3D Localization
5. A Dynamic Traffic Monitoring System Using Wireless Sensor Networks
6. Handoff Optimization In VANET
7. Distributed Hash Tables In Peer-To-Peer Networks
8. Design & Evaluation Of Wide Band Antennas For Mobile & Wi-Fi/WLAN Application
9. Data Aggregation In Wireless Sensor Network Using Fuzzy ARTMAP Neural Network

For More information Visit: <http://wce.iiita.ac.in>

BIOINFORMATICS LAB

In Bioinformatics there are two labs. IRCB (Indo -Russian Centre for Biotechnology) and HPC (High performance computing lab) :

- ✓ In IRCB the Russian institutions have been offering technologies for commercialization in India. Technology transfer activities under IRCB are Bioinformatics based prediction tool/Server developments; Genetic engineering/Molecular biology based new Genes and Construct development has been carried out.
- ✓ In HPC lab the computational task is carried out.

The software available are

Wet Lab

- (1) Isolation of Genomic DNA (Plant / Bacteria)
- (2) Bacterial culturing and Plasmid isolation.
- (3) Vector Construction
- (4) PCR / Gel-Doc
- (5) Transformation / Cloning
- (6) Culturing / Colony Screening
- (7) Gel Documentation Expression (Protein Profiles)
- (8) Plant/ Animal Tissue Culture
- (9) Site Directed Mutagenesis

Commercial Software

- (1) Schrodinger
- (2) GCG Wisconsin Package - Genome Analysis
- (3) MATLAB



Incubator Shaker & Centrifuge(-20°C)

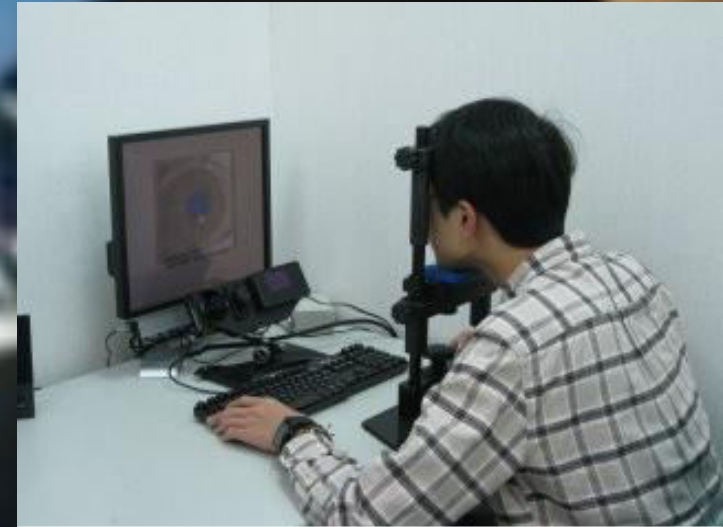
Human Computer Interaction Lab

There are two labs under HCI department.

- ✓ Speech Image Language Processing Lab specially deals with most of the signal processing. Signals of any type such as Image, Video, Vision, Speech, EEG, ECG etc. Equipment that are available in this lab are 6D mouse, Data Gloves, Eye Tracker, Head Mounted Display.
- ✓ Graphics and Visual Computing Lab is equipped with high end graphics processing systems like CUDA Systems.

Image and Visual Processing Lab

IVP lab is dedicated to understanding visual processes and finding solutions for the outstanding problems in image and video processing and intelligent systems. The laboratory hosts unique and modern hardware for imaging, vision sensors, object scanning, high performance computing and visualization. The laboratory is equipped with the latest in information technology.



Eye Tracker



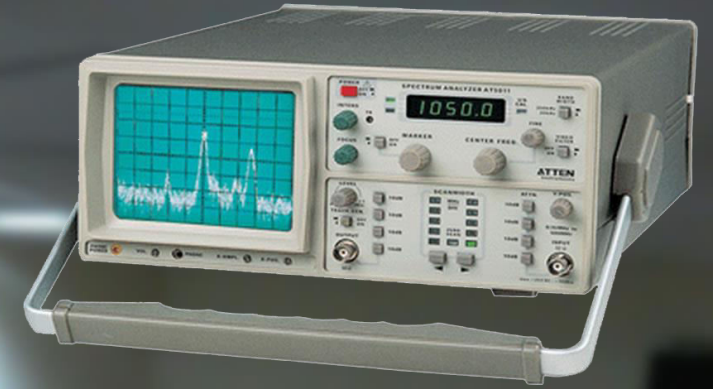
6D Mouse



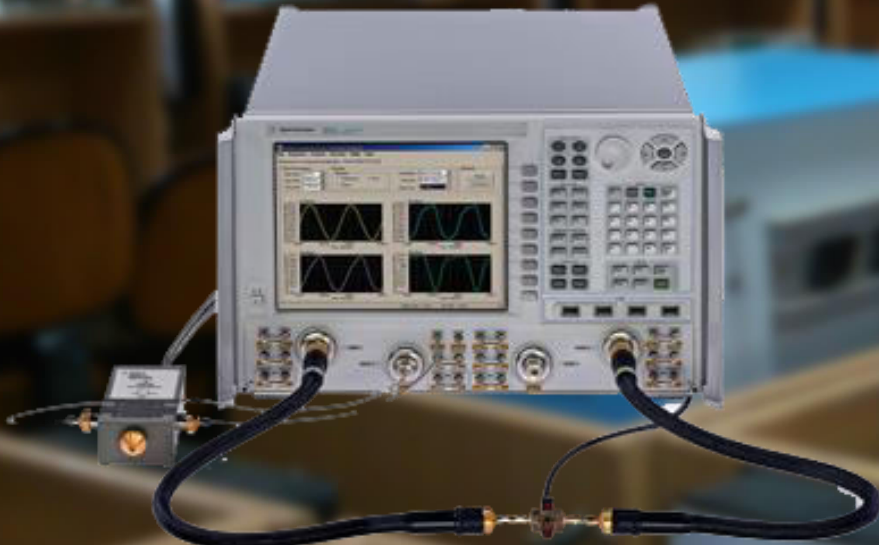
Head Mount Display

COMMUNICATION SYSTEMS LAB

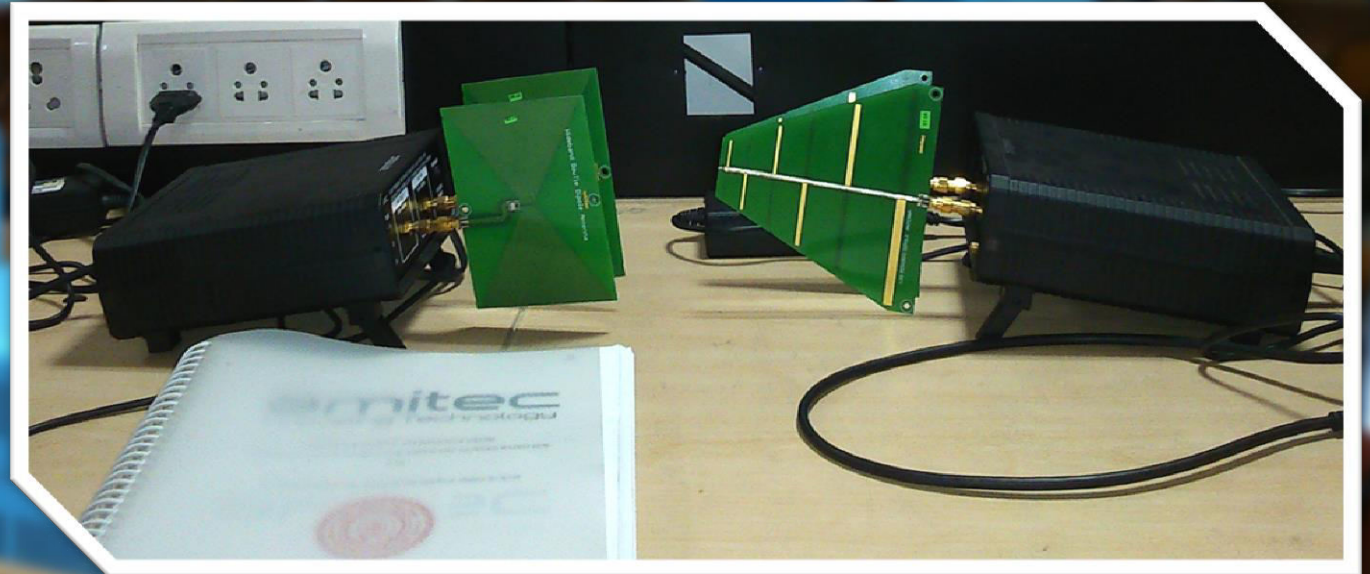
The lab help us in developing the skills to work upon different RF range and communication protocol and makes us understand the theoretical concepts through experiments. Purpose of this lab is to understand generation, transmission, reception, and analysis of radio frequency signal based upon multiple frequency and multiple protocol for communication. Lab is equipped with SDR (Software defined radio), RF testing instruments, vector signal generator, spectrum analyzer and vector network analyzer.



Spectrum Analyzer



Network Analyzer



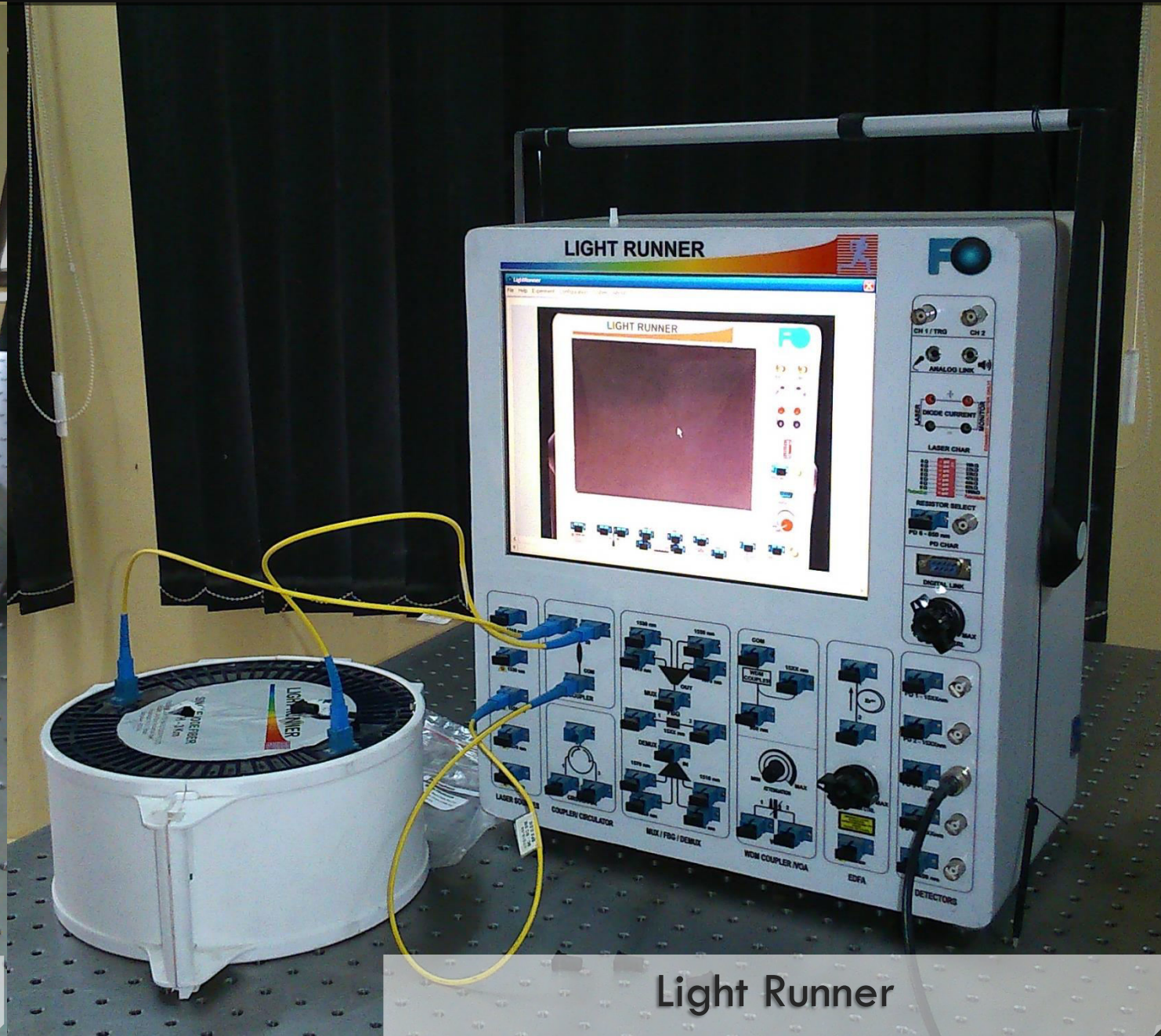
Software Defined Radio(Amitec)

FIBER OPTICS LAB

Fiber optics lab has been designed to give practical exposure in installation & maintenance on fiber networks. Lab is equipped with optical time domain reflectometer, visual fault locator, optical power meter, helium neon laser, light runner kit, arc fusion splicer, fiber optic connection / termination kit and different types of fiber.



Optical Splicer & Kit



Light Runner

WIRELESS SENSOR NETWORKS LAB



Telos B



MicaZ Mote

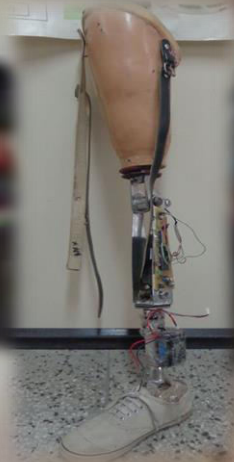
This lab has been designed to give us hands on experience on using wireless sensor network motes. Motes are deployed and data from it can be gathered using appropriate tools like TinyOS, Contiki etc. Many applications like multihop communication, target tracking application etc. can be demonstrated using these motes. Lab is equipped with sensor MOTES like (Telos B, Micaz), spectrum analyzer, network analyzer and Bluetooth kit.

ROBOTICS LAB

Providing a roof under which students can nurture their research projects related to robotics and motivating them to take part in various competitive and non-competitive events within and outside IIIT-A . We aim to guide the students in their activities under the society in whatever way possible. The Society will be open to all the students of IIIT-A irrespective of their batch or branch. Robotics is the branch of technology that deals with the design, construction, operation and application of robots and computer systems for their control, sensory feedback, and information processing.



GAIT



AMAL



SMART



ATOM



FABRICATION & NANOSCALE ELECTROTHERMAL LAB



Photo Lithography



Oxidation Chamber

Fabrication Laboratory consists of the comprehensive facilities for the fabrication and testing of silicon microcircuits of small to medium complexity, housed in a moderate clean room environment maintaining class 1000 conditions. The laboratory comprises of four sections viz. Wafer Cleaning & Etching, Oxidation & Diffusion, Photolithography, Thin Film / Metal Deposition and Device Characterization.

NANOSCALE ELECTROTHERMAL lab focuses strongly on electro-thermal properties of emerging materials and devices, both in bulk as well as in the nanoscale order. Lab conducts theoretical research to explain electronic and thermal transport properties like electrical and thermal conductivity, Seebeck coefficient, interface physics, noise and RF modelling and Joule-heating effect in interconnects and vias, using physics based advanced analytical models and mathematical and computational tools like Green's function, first principle techniques, etc.



Sputtering by plasma

VLSI DESIGN LAB

CIRCUIT SIMULATORS

- ✓ **Mentor Graphics : Eldo**
- ✓ **Cadence : Spectre**
- ✓ **Tanner : T Edit**
- ✓ **Synopsis**

The lab has the facility to design and simulate devices using 180nm CMOS technology. Full- custom Application Specific Integrated Circuits (ASIC) design facility. Front end and Back end designing is carried out. Complete design flow and various verification are carried out like DRC, LVS and GDSII. Additionally, it maintains a very popular VLSI Design and Simulation Lab, Computer and Electronic Simulation lab and MEMS Design Centre cum lab for UG & PG students and faculty.

LOGIC SIMULATORS

- ✓ **Mentor Graphics : Questa Sim 10.0b; ModelSim; Advance MS**
- ✓ **Cadence : NCsim**
- ✓ **Synopsys : VCS**

LOGIC SYNTHESIS

- ✓ **Xilinx : XST**
- ✓ **Synopsys : Design Compiler**
- ✓ **Mentor Graphics : Precision RTL Synthesis 2011a_update 1.7.0**
- ✓ **Cadence : RC**

PDPA TOOL

- ✓ **Mentor Graphics:- Calibre,**
- ✓ **Cadence:-Assura**
- ✓ **Synopsys: Hercules, Prime Time, Star (RC and L extraction)**

Message from TPO

IIIT, Allahabad has been established in 1999 to encourage the study of information technology. We aim to prepare a knowledge workforce comparable to the best in the world through instruction in the cutting edge technology.

Our students have been continuously proving their mettle in terms of their grasp of core competencies, their potential to innovate, their arduous nature and well-rounded personalities. The alumni of our institute are doing excellent work and proving to be an asset for their organization. We therefore receive a very positive industry response from our recruiters every year and their feedback about our students has always been very encouraging

The institute offers campus placement for students graduating with Bachelor of Technology and Master of Technology. For the year 2015-16 around 65 students from MTech are expected to be available for campus placements and like every year we are expecting a large number of organizations to participate in our placement program. Our institute has excellent facilities and provides all necessary help for our campus recruiters to conduct a successful placement session.

We take this opportunity to invite your esteemed organization to visit our campus for recruitment. It will be a privilege for us to welcome you at IIIT Allahabad.

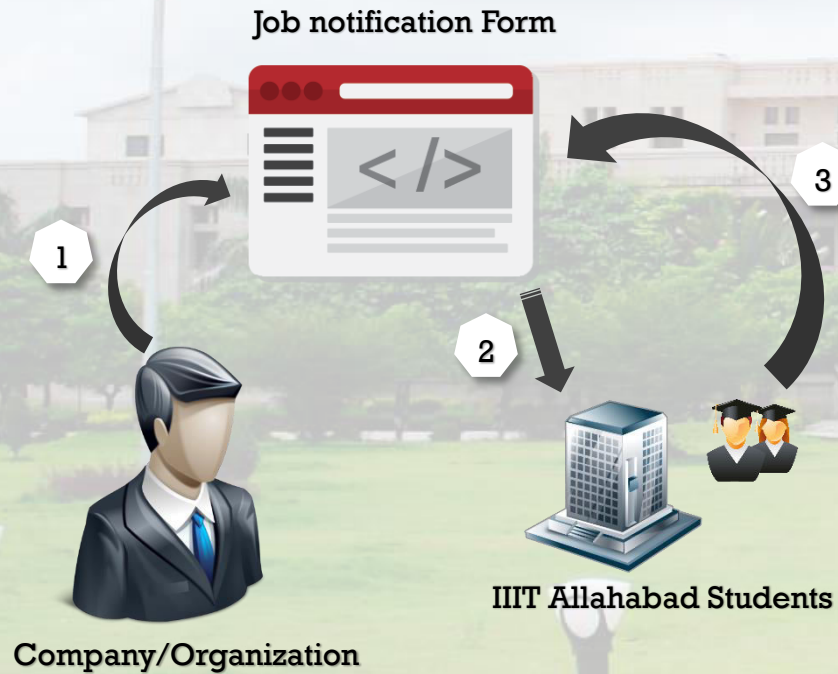
With Best Wishes,

Dr. Shirshu Varma

Faculty In-charge, Training & Placements



Placement Procedure



The placement office sends invitations to the companies/organizations along with relevant information.

A Company or organization fills an job notification form containing details of job profile and offer and forwards it to placement office.

The job notification form is provided to the eligible students, along with any other information furnished by company or organization. Students apply to companies' job profiles.

Interested and eligible students register to appear for the recruitment process of the company by filling it's JNF. The verified resumes are sent to the organization.



Placement office allots dates for recruitment procedure. Organization visit the campus on the allotted dates and conduct tests/interviews according to their recruitment process.

The placement office also coordinates the signing of offer letters/letter of intent by the students who have been selected to ensure that they reach the company/organization as soon as possible.

Placement Facilities

The Institute has world class facility to meet the needs of placement and its procedure. The placement process has always been congenial owing to the pre-requisites that are met by our institute which include:

- World-class Auditorium with seating capacity of 800+.
- Fully furnished AC Rooms.
- Conference-Rooms with audio visual setup.
- Well-Equipped Computer Labs.

The placement office ensures its best hospitality to the recruiters and our records have been remarkable with no issues and controversies in past

Our Recruiters

- ✓ Accenture
- ✓ Accolite
- ✓ Adobe
- ✓ Apigee
- ✓ Arista
- ✓ Avanti
- ✓ Amadeus Labs
- ✓ Amazon
- ✓ Amdocs
- ✓ American Express
- ✓ Belzabar
- ✓ CISCO
- ✓ CITI
- ✓ DeShaw
- ✓ DevFactory
- ✓ DIRECTI
- ✓ EXL
- ✓ Delhivery
- ✓ Flipkart
- ✓ Fractal
- ✓ FUTURES FIRST
- ✓ Google
- ✓ HashedIn
- ✓ HeroMoto
- ✓ Hike
- ✓ HTMedia
- ✓ IBM
- ✓ Infoedge
- ✓ Infosys
- ✓ IBM
- ✓ Ittian
- ✓ Jigsaw
- ✓ Kritikal
- ✓ Kuliza
- ✓ Samsung
- ✓ MAQ
- ✓ Microsoft
- ✓ Morgan Stanley
- ✓ Mu Sigma
- ✓ Nagarro
- ✓ NEC Tech
- ✓ Nucleus Software
- ✓ OFSS
- ✓ PAGALGUY
- ✓ PAYU
- ✓ QUALCOMM
- ✓ SAP labs
- ✓ Sapient Nitro
- ✓ TCS
- ✓ Thorogood
- ✓ Verizon
- ✓ Walmart
- ✓ XPEDIA
- ✓ ZS
- ✓ Zscaler
- ✓ Factset
- ✓ Mahindra Comviva
- ✓ VIZ

Why Recruit at IIITA

➤ India's Best Talent

The students of MTech are admitted through GATE and represents top 1% of the candidates that appear for the exam nation-wide.

➤ World Class Curriculum

The academic curriculum of the institute is one of the best in our country and designed academicians and industry experts keeping in mind the dynamically changing world of technology.

➤ Cutting Edge Research Infrastructure

The infrastructure and research facilities of the institute are among the best in the field of IT and EC. The students here get a hands on experience by working in world class labs with cutting edge equipment.

➤ Superlative Thinkers Coders

Our students every year take part in renowned programming competitions like ACM-ICPC, Google Summer of code, Google Code Jam and in Electronics competitions like TI ADC, Freescale and Cadence Design Contests etc. , and have always made their presence felt by securing high ranks. We also have a large number of students honing their coding skills on websites like topcoder, codechef, hackerank etc.

➤ Successful Alumni

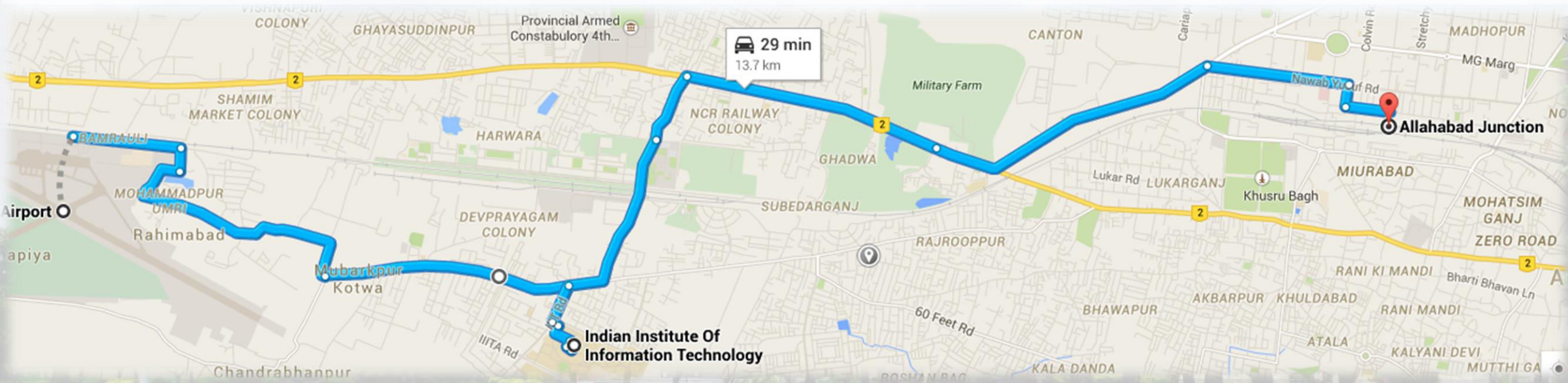
The alumni of our institute have gone on to become the leaders in their fields and are doing excellent work both by contributing to their organization's development and creating their own start-ups. Our Alumni are actively engaged with the institute and the students, motivating them to perform and excel at whatever they do.

➤ All Round Development

The Institute is committed to provide students the opportunity to develop an all rounded personality. The much important soft skills that include communication skills, conflict resolution and creative problem solving, strategy thinking, team building etc. are inculcated in the students through class room presentation and open ended learning components.

REACH US

Accommodation and Conveyance in Allahabad can be arranged by Institute on prior notification



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