

About ATAL Faculty Development Programme

The AICTE Training and Learning (ATAL) Academy is a flagship initiative of the All India Council for Technical Education (AICTE) aimed at enhancing the teaching, research, and professional competencies of faculty members in higher education. ATAL Faculty Development Programmes (FDPs) provide a platform for educators, researchers, and industry professionals to gain insights into emerging technologies, innovative teaching methodologies, and current research trends through expert lectures, hands-on sessions, and collaborative learning. The programme promotes interdisciplinary knowledge, industry-academia collaboration, and research-driven education, enabling participants to integrate advanced technologies into teaching, curriculum development, and innovation. Aligned with the vision of NEP 2020 and Viksit Bharat 2047, ATAL FDPs empower educators to develop future-ready graduates, foster impactful research, and contribute to India's rapidly evolving technological ecosystem. This version is compact, visually balanced, and ideal for one panel of a tri-fold brochure.

About the FDP

The Faculty Development Programme on "Advanced VLSI Design, Memristor Technologies and Neuromorphic Computing" is designed to equip faculty members, researchers, and industry professionals with the latest advancements in semiconductor technologies and next-generation computing architectures. The programme provides comprehensive exposure to the complete VLSI design flow, including analog and digital IC design, physical design methodologies, verification techniques, and emerging trends in AI-enabled hardware systems. The FDP features expert lectures, hands-on sessions, case studies, and interactions with eminent academicians and industry experts from leading organizations such as IISER, IIT (ISM), SCL Chandigarh, VIT, Alif Semiconductor, LeadSoC Technologies, and Ducom Aerospace. Participants will gain practical insights into cutting-edge EDA tools, memristor-based computing, FPGA design, and neuromorphic architectures, while exploring current research challenges and industrial practices. The programme aims to strengthen participants' technical expertise, foster collaborative research, and enable the integration of emerging semiconductor technologies into teaching, curriculum development, and innovative research initiatives.

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AICTE Training and Learning (ATAL) Academy,
AICTE New Delhi, India
Sponsored

6 Days
Faculty Development Programme
On

Advanced VLSI Design, Memristor Technologies
and Neuromorphic Computing



7th - 12th September 2026

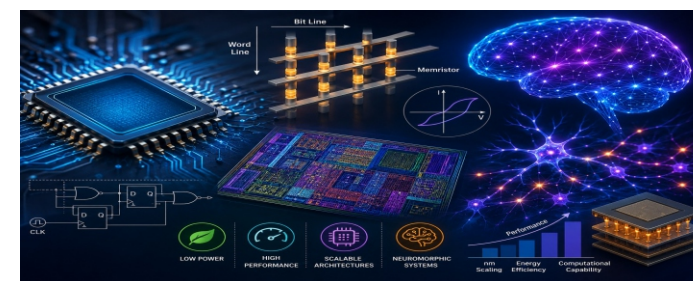
Organized by
Department of
Electronics and Communication Engineering
In association with



B. N. M. Institute of Technology

An Autonomous Institution under VTU. Approved by AICTE

Accredited as 'A' Grade Institution by NAAC till 31.12.2026
All Eligible UG branches – CSE, ECE, EEE & ISE Engg. Accredited by NBA till 30.06.2028
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Objectives of the FDP

- To provide comprehensive knowledge of advanced VLSI design methodologies, covering the complete ASIC design flow from RTL to GDSII.
- To introduce participants to memristor technologies and their applications in next-generation memory and intelligent computing systems.
- To explore the principles and applications of neuromorphic computing for AI-driven, low-power hardware architectures.
- To offer practical exposure to industry-standard EDA tools, FPGA design, verification techniques, and semiconductor design practices.
- To promote industry-academia collaboration, enabling participants to understand emerging trends, research challenges, and innovations in semiconductor technologies.
- To empower faculty members to integrate advanced semiconductor technologies into teaching, curriculum development, research, and student innovation projects.

Topics to be Covered

- Semiconductor Technology Trends and India's Semiconductor Mission
- Advanced Digital IC Design: RTL to GDSII Flow
- Analog and Mixed-Signal IC Design Methodologies
- ASIC Physical Design and Sign-off Techniques
- Design Verification and Validation using Industry Practices
- FPGA-Based System Design and Prototyping
- Memristor Technologies and Emerging Non-Volatile Memory Devices
- Neuromorphic Computing for Next-Generation AI Hardware
- Low-Power VLSI Design and Design-for-Testability (DFT)
- Hands-on Sessions using Industry-Standard EDA Tools
- Research Trends, Industry Practices, and Career Opportunities in VLSI

About BNMIT

Since 2001, B.N.M. Institute of Technology has emerged well-established in Karnataka, led by the philanthropic and visionary ideas of Founder and Managing Trustee Shri. N. Raghunath Rao Maanay and Founder Secretary Prof. Sunanda P Jadhav, and further expanded by Shri. Narayan Rao Maanay, Secretary, BNM Educational Institutions. BNMIT is an Autonomous institution since 2021. This most sought-after institution located in the heart of Bangalore city set on a lush landscaped green campus. BNMIT offers UG programs in Computer Science, Electrical & Electronics, Electronics & Communication, Mechanical, Information Science and Artificial Intelligence & Machine Learning, apart from M Tech and MBA programs. The institute's state-of-the-art infrastructure includes Wi-Fi network, digital classrooms, highly sophisticated laboratories with latest equipment, Industry supported Centers of Excellence, Skill labs, fully furnished and equipped conference/seminar halls and a large auditorium. BNMIT has adopted a unique outcome-based education system by employing project-based teaching-learning techniques with more emphasis on skill development. Centres of Excellence and specialized labs like Engineering Exploration Lab and Experiential Learning Lab help carry-out projects effectively. Implementation of LMS with Microsoft TEAMS ensures exceptional online education. QS-IGauge has certified BNMIT with E-Lead certification for excellence in E-Learning and Academic Digitization. The Career and Professional development cell create global professional through structured training programs, enabling 95% of eligible students to be placed across over 150 companies with attractive salary packages. BNMIT is ranked by ARIIA in B band category of Private Self-financed institutions (26-50 band) Also, BNMIT is NAAC accredited with "A" grade and all eligible programs are NBA accredited. Most of the surveys conducted by agencies like TIMES, OUTLOOK, Dataquest and India Today have ranked BNMIT one amongst top Institutions in the country.



About the Department of ECE

The Department of Electronics and Communication Engineering (ECE), established in 2001, currently offers an undergraduate program with an intake of 120 students and a postgraduate program (M.Tech in VLSI & Embedded Systems) with an intake of 24 students. The department is supported by a VTU-recognized R&D Centre, fostering innovation, research, and academic excellence. The department has a dedicated team of 25 experienced faculty members, including 19 doctorates and 4 faculty members pursuing Ph.D., contributing significantly to student success in academics, placements, research, and higher education. The department takes pride in its students' achievements, with 23 VTU university ranks and numerous accolades, including gold medals in cultural and sports activities. To enhance learning and industry readiness, the department regularly organizes IEEE Conferences, Faculty Development Programmes (FDPs), Workshops, Skill Development Programmes, and Industrial Visits for both students and faculty members. The department has successfully secured research and infrastructure grants from various funding agencies, including VGST, VTU, and AICTE (under MODROBS during 2019–2021), along with an ICSSR grant of ₹12 lakhs during 2023–24, ₹6.5 lakhs from Infineon during 2024–25, and ₹10 lakhs from Eurofins during 2026–27. Since 2015, the department has filed around 16 patents and established 20 MoUs with reputed industries and organizations to strengthen academic-industry collaboration and promote interdisciplinary research. Key collaborators include Institute of Health Management Research, Samsung Pvt. Ltd., Advanced Electronic Systems and Solutions, XelerAIT Solutions Private Limited, SkyBrain NeuroTech, Maven Silicon, SensoPart, Metiskill Global Solutions Pvt. Ltd., Nexstem, GTTC, Robomanthan Pvt. Ltd., GTM4Health, Autoyos Pvt. Ltd., Renalynx Health Pvt. Ltd., and SVYASA University, among others. The department has also established a Centre of Excellence in Healthcare & Smart Technology and is actively involved in impactful research initiatives, including the funded "Sanjeevani-Drone" project for medical organ logistics, demonstrating its commitment to technological innovation for societal benefit.

About Entuple Technologies

Entuple Technologies was founded in 2010 by professionals with a combined experience of over 80 years in the electronics Industry. Entuple technologies is suggestive of enabling multi-dimensional possibilities and growth for all their stakeholders. The management team with its experience in different sectors such as Aerospace & Defence, Small & Medium Business, Research & Academia has joined together to build a world class team of Next Generation Solution Enablers in system design technologies. Entuple is committed to bridge the ever-growing gap in the industry and academia by bringing in expertise to meet technological challenges by introducing cutting edge platforms, tools and solutions, technologies and enablement to the campuses. IT also provides solution for Ansys, Cadence, MITS, WAVECT, Voltera, Xilinx, EOS and Nanotom.

Distinguished Resource Persons

Dr. Ayan Banerjee

Professor & Department Chair
Department of Physics
Indian Institute of Science Education and Research (IISER), Kolkata

Dr. H. S. Jatana

Scientist/Engineer 'SG'
Semiconductor Laboratory (SCL), Chandigarh

Er. M. N. Kumar

Chief Strategy Officer
LeadSoC Technologies

Dr. Sakthivel Ramachandran

Associate Dean & Professor
School of Electronics Engineering (SENSE)
Vellore Institute of Technology (VIT), Vellore

Dr. Subindu Kumar

Professor & Head
Department of Electronics Engineering
Indian Institute of Technology (ISM), Dhanbad

Dr. Rajeev Kumar Ranjan

Associate Professor
Department of Electronics Engineering
Indian Institute of Technology (ISM), Dhanbad

Ms. Nishanthi

Verification Engineer
Alif Semiconductor

Er. Tarun Kumar Sharma (Scientist)

FPGA Engineer – I, R&D
Ducom Aerospace Technology Pvt. Ltd.

Expected Outcomes of the FDP

At the end of the programme, participants will be able to:

- Gain a comprehensive understanding of advanced VLSI design methodologies, including ASIC design, physical design, and verification flows.
- Acquire practical knowledge of memristor technologies and their applications in next-generation semiconductor devices and computing systems.
- Understand the concepts and design principles of neuromorphic computing for developing energy-efficient AI hardware.
- Develop hands-on experience with industry-standard EDA tools, FPGA platforms, and semiconductor design practices.
- Identify emerging research opportunities and strengthen industry-academia collaboration in advanced semiconductor technologies.
- Integrate the acquired knowledge into teaching, curriculum development, sponsored research, and student innovation projects.

Who can participate?

Professors/Associate Professors/senior Assistant Professors/professionals from industry / Research Scholars, who have exposure to the subject.

Accommodation & Transportation

Eligible external participants will be provided lump-sum Travel Allowance as per AICTE ATAL guidelines (for travel exceeding 20 km one way and subject to minimum 90% attendance). Accommodation will not be provided. The BNMIT campus is centrally located and easily accessible by Namma Metro and BMTC buses.

Eligibility of Participants

1. No registration fee for the participants.
2. Register through: <https://aicte-india.org/atal> and Click on signup or login as a participant.
3. The Faculty members of the AICTE approved Institutions, Research Scholars, PG Scholars and Faculty of host Institutions are also eligible to attend the program
4. The number of participants is limited to 50, and accepted registrations will be based on a first-come, first-served basis.
5. Selected candidates will be intimated by email only.
6. Faculty Members selected for the programme should have their authorisation certificates signed by the Principal.
7. The Certificates shall be issued by ATAL academy to those participants who have attended the program with a minimum of 80% attendance, 3-4 page write up of article summary, successful completion of project/live industry problem solving, report writing on industrial visit, reflection journal and to be obtained with a score of minimum 70% marks in the test conducted at the end/ during FDP.

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NO REGISTRATION FEE

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