International Institute of Information Technology Bangalore
(A Deemed University)
Last Updated: 13 March 2015

The graduate programmes at IIITB are among the best in the country, offering education oriented towards producing highly-qualified practitioners and researchers. As an independent institution and a deemed university, IIITB collaborates with the IT industry, leading academic institutions abroad as well as India, and eminent scientists and industry leaders to offer students the best possible education. Our students have been well received by the industry, and have been placed with some of the leading companies in the field; in fact, IIITB can boast of 100% placement for all its graduates. Some of our Masters students are also pursuing doctoral degrees both in India and abroad, with a view to enter academic / research careers.

Students are encouraged to ask questions, pursue their research interests, and gain membership and respect in the select club of high-achieving IT professionals. The infrastructure and interactions that IIITB offers students and faculty makes possible the pursuit of individual and joint projects, industry-sponsored research, and study that is of the highest standards required for global competitiveness.

The institute has a relaxed, friendly atmosphere, but with a constant buzz of excitement due to many well-known visitors including giants from the industry, well-known scientists, and leaders of government from all over the world.

Admission is selective but not restrictive. We are very proud of the achievements of our alumni, and strive to gain good students who will achieve their potential and continue this trend. We thus warmly welcome applicants from different backgrounds who share our vision of excellence.

S. Sadagopan
Director

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Genesis

The International Institute of Information Technology Bangalore, a Deemed University, popularly known as IIITB, was established in 1999 with a vision to contribute to the IT world by focusing on education and research, entrepreneurship and innovation. The Institute is a registered not-for-profit society funded jointly by the Government of Karnataka and the IT industry.

Since its inception, IIITB, with its unique model of education, research, and industry interaction, has grown in stature to become an institution of considerable repute in academic as well as corporate circles. The Institute works in partnership with the corporate sector, while retaining the freedom of an academic institution. It is inspired by other renowned institutions, and also strives to emulate an academic culture that is on par with the best international institutions.

Why IIITB?

The IT industry in India as a whole is seeing an increasing shift from low-end programming or service-oriented jobs to high-end research and design that competes with the best worldwide. Many young people seeking entry to the IT sector find that they do not have the necessary technical or research background to obtain the types of roles they seek in their careers and must settle for unfulfilling work, and industry as well is frustrated by the lack of quality in the talent pool from which it must create tomorrow's exciting innovations and products. IIITB offers students a unique environment that provides them with state-of-the-art knowledge in multiple disciplines beyond traditional computer science, covering the wider spectrum of Information Technology. IIITB equips students to provide thought leadership and gain the satisfaction of fulfilling their creative and intellectual potential by becoming full peers to the brightest minds in the world.

Considering the pervasive nature of IT in all walks of life, IIITB encourages and admits students from a wide variety of academic disciplines into the programmes. About half of our students in recent years have been bright young men and women who already have some work experience, but have decided to take a break from their careers to pursue our M.Tech. programme in order to shift their careers on to more stimulating and rewarding paths. Strong interaction with the industry is built into our academic programmes because IIITB believes in equipping students to become productive right from the day they enter the industry. For those aspiring for academic goals, IIITB provides a research environment as well. Students have the opportunity to get financial aid in the form of scholarships and internships to help meet tuition and other expenses, so a bright student is limited only by his or her own vision and ambition.

Location

Bangalore is often called the Silicon Valley of India. With the pleasant climate, the urban amenities, the rich tradition of technical education, and the highly professional ambience, numerous global and local corporate big-name entities have found a home here. The IIITB campus is located in the heart of Electronics City, one of the prestigious IT destinations in Bangalore, with excellent infrastructure, facilities, and services.

The list of companies located in the high-tech area close to the Institute is a virtual Who's Who of the IT business. IIITB is situated opposite the Infosys corporate headquarters, and is within easy walking distance of other major companies like HP, Siemens, Wipro, HCL, GE, Tata, and others, giving students and faculty opportunities for productive interaction with the industry.

Campus & Housing

The Institute moved to its present Electronics City campus in 2003. The campus features well-maintained lush green lawns, musical fountains, and a small pond, creating an ideal learning environment to stimulate intellectual and personal growth.

Designed and built in compliance with the highest global standards, the teaching and learning infrastructure features the most advanced elements of contemporary academic tools. With addition of a new floor to the main academic block, the institute now has over 120,000 square feet of air-conditioned space, uninterrupted power supply, and a well-crafted interior, the Institute offers a world-class environment for students and faculty.

All the classrooms are "smart," with high-speed data networks and large projection systems for audio and video. The well-designed main classroom comfortably seats in excess of 150 students. Video conferencing capabilities are built in using state-of-the-art audio-visual equipment. They include electronic smart boards, location-sensing microphones, and multiple LCD projectors, thus enabling an enriching learning experience.

All the academic programmes are residential in nature. Separate hostel facility is available for men and women. A majority of the students get individual rooms. Meals are available at the Food Court located in a separate building (the food that our students have is the same food that is also had by faculty and staff, and offered to visitors including distinguished dignitaries, thus ensuring high quality). A separate cafeteria is available for small snacks during working hours.

For recreation inside the campus, indoor games (carrom, chess and table tennis) and a limited number of outdoor games (cricket, football, volleyball and basketball) are available. All the hostel blocks are equipped with a reading room and a music/meditation hall and gymnasium facility.

Programmes at a Glance

The Institute is an exclusive graduate school that offers programmes that lead to post-graduate degrees. The graduate study programmes offered lead to (a) course-based outcomes, namely the Integrated Master of Technology (Integrated M.Tech.), and the Master of Technology (M.Tech.) in Information Technology and Electronic Systems Design, and (b) research outcomes, namely, the Master of Science by Research/ Master of Science (Research), and the Doctor of Philosophy (Ph.D.). These programmes offer training that is comparable to the best anywhere, and cater to different needs. The course-based degree programs are full-time resident programs that offer the students a comprehensive learning in an area of specialization. The research degree programs, which may be undertaken as a full-time or a part-time registration, train the students to undertake quality research work in a specific research domain. The course-based degree programs have a fixed timeline whereas the research degree programs are student-paced. Working professionals employed as research scientists/engineers at reputed organization or government agencies are encouraged to pursue part-time research degree programs.

Integrated M.Tech. (iM.Tech)

Integrated M.Tech. (iM.Tech) Programme is a five-year full time programme intended for students who have passed or are appearing for Senior Secondary (Plus Two) examination with Mathematics or equivalent subject. Further details about the programme will be made available by April 1, 2015.

M.Tech. in Information Technology (IT)

M.Tech. in Information Technology (IT) Programme is intended to provide education for students who wish to work in the IT industry as practitioners. It is awarded upon successful completion of a 4-semester broad-based academic programme in IT, going beyond traditional computer science. Apart from imparting technical knowledge, the programme teaches managerial and other life skills that are essential for a successful career in today's competitive IT industry. All students enrolled in the M.Tech programme are residential, full-time students. The M.Tech programme is primarily intended for those who have a bachelor's degree in engineering. Please see the eligibility criteria for further details.

M.Tech. in Electronic Systems Design (ESD)

M.Tech. in Electronic Systems Design (ESD) is a programme launched by IIITB in 2014. It is awarded upon successful completion of a 4-semester broad-based academic programme, with specialization either in System-on-Chip (SoC) or Embedded Systems. With the onset of a new wave of revolution being unleashed by the Internet of Things (IoT) due to the availability of extremely low cost and low power hardware platforms in the form of SoCs and Embedded System boards, we are seeing the emergence of a new convergence between hardware and software. Its potential is limited only by human imagination and its impact is being seen in the rapid evolution it is fostering in different domains, such as, automation, e-health, mobile communication, smart home, automotive sector, consumer electronics, pervasive computing, computer architecture, etc. The new M. Tech. (ESD) program is being launched to meet the above vision.

Master of Science by Research/ Master of Science (Research)

Master of Science by Research/ Master of Science (Research) degree is intended for professionals with bachelor's degree to learn and perform research in a supportive academic environment. It is awarded upon successful completion of a graduate-level research programme, usually lasting four semesters. Beyond the satisfaction of a relatively small number of coursework requirements, the major focus of the programmes on developing research skills, leading to the completion of a Master's thesis describing significant original results.

Ph. D.

Ph. D. (Doctor of Philosophy) degree is a terminal, research-oriented degree in the subject, intended to prepare students for research, teaching, and scholarly careers in academic settings or research laboratories. It connotes a superior comprehension of the field and a high aptitude for research, and is awarded upon completion of a programme that takes from 3 to 5 years. Beyond the satisfaction of a relatively small number of coursework requirements, the major focus is on carrying out a significant body of original research and the writing and defense of a doctoral dissertation describing this work.

Master of Science (Digital Society) **NEW!**

Master of Science in Digital Society degree helps recognizing the socio-economic potential of Information and Communications Technologies (ICTs), and the increasing need to train professionals in harnessing this potential. This is an interdisciplinary Master's program intended for graduates from any background who are interested in designing, developing, deploying and managing large ICT solutions for an inclusive and sustainable digital society.

Course Structure

Fundamental to Information Technology is the integration of different technologies and the integration of technologies into organizations. The uniqueness of the IIITB curriculum is that it makes for a broad-based programme going beyond traditional computer science, and enables students to function well in the industry, while keeping the rigorous learning expected of a classical programme.

M.Tech. (IT)

The M.Tech programme in IT is a four semester programme. The first three semesters of the programme constitute academic course work. During the fourth semester, a student can either take up an industry internship or academic research at the institute leading to a thesis.

The M.Tech programme also includes a unique 3-week period during the beginning of the programme called "Preparatory Semester." The preparatory semester is intended to give uniform background to all the students irrespective of their technical background. This semester covers introductory programming, mathematics and statistics and an optional course on basic electronics. After the 3-week preparatory term, the first semester of the M.Tech programme consists entirely of required "core" courses. These teach the new student the common foundational elements required, such as advanced programming principles, mathematical background, data structures and algorithms, computer networks, digital communication, databases, and fundamentals of software engineering. The second semester builds on this foundation with two more core courses. In addition to doing the core courses, the student now has the freedom to begin focusing in one of four areas, namely:

➢ Computer Science   ➢ Networking and Communication

➢ Data Sciences   ➢ Software Engineering

Across the second and third semesters, the students take at least five elective courses in their area of specialization and an additional three open elective courses (some of which may include research and other individual or group projects supervised by a faculty member). The final semester is designated for industry internship, or the writing and defense of a research thesis. The following table summarizes the overall course structure of the M.Tech.

Prep-Term 3 weeks	• Prep 1: Introductory Programming 1 • Prep 2: Introductory Programming 2	
Semester I 15 weeks	• Core 1: Data Structures and Algorithms • Core 2: Mathematics for IT • Core 3: Operating System	• Core 4: Database Systems • Core 5: Networking & Communication
Semester II 17 weeks	• Core 6: Software Engineering Practices • Elective 1 • Elective 2	• Elective 3 • Elective 4
Summer Session 9 weeks	• Peri-IT 1: Technical Communication • Peri-IT 2: Marketing and Strategy • Project • Seminar	
Semester III 17 weeks	• Elective 5 • Elective 6	• Elective 7 • Elective 8
Semester IV 26 weeks	**Industrial Internship/Research Thesis**	

The M.Tech in ESD programme is a four semester programme. The first three semesters of the programme constitute academic course work. During the fourth semester, a student can either take up an industry internship or academic research at the institute leading to a thesis.

The M.Tech programme also includes a unique 3-week period during the beginning of the programme called "Preparatory Semester." The preparatory semester in intended to give uniform background to all the students irrespective of their technical background. This semester covers introductory programming, and principles of electronics. After the 3-week preparatory term, the first semester of the M.Tech programme consists entirely of required "core" courses. These teach the new student the common foundational elements required, such as Analysis and design of CMOS Digital IC, CMOS Technology and CMOS Analog design, Maths for ESD, Operating Systems, and Embedded Systems. The second semester builds on this foundation with a core course on ESD principles and practices. In addition to doing the core courses, the student now has the freedom to begin focusing in one of two areas, namely:

➢ System on Chip

➢ Embedded Systems

Across the second and third semesters, the students take at least five elective courses in their area of specialization and an additional three open elective courses (some of which may include research and other individual or group projects supervised by a faculty member). The final semester is designated for industry internship, or the writing and defense of a research thesis. The following table summarizes the overall course structure of the M.Tech.

Prep-Term 3 weeks	• Prep 1: C Programming • Prep 2: Principles of Electronics	
Semester I 15 weeks	• Core 1: Analysis and design of Digital IC (4 credit hours) • Core 2: Introduction to CMOS fabrication and analog CMOS VLSI design (4 credit hours) • Core 3: MATHS for ESD (4 credit hours)	• Core 4: Principles of Embedded Systems (2 credit hours) • Core 5: Operating Systems (2 credit hours)
Semester II 17 weeks	• Core 6: ESD Practices (2 credit hours) • Elective 1 (4 credit hours) • Elective 2 (4 credit hours)	• Elective 3 (4 credit hours) • Elective 4 (4 credit hours)
Summer Session 9 weeks	• Technical Communication (3 credit hours) • Marketing and Strategy (3 credit hours) • Seminar (1 credit hour) • ESD Project (2 credit hours)	
Semester III 17 weeks	• Elective 5 (4 credit hours) • Elective 6 (4 credit hours)	• Elective 7 (4 credit hours) • Elective 8 (4 credit hours)
Semester IV 26 weeks	**Industrial Internship/Research Thesis** (16 credit hours)	

Following is a list of indicative list of elective courses for M.Tech. (ESD):

Electives for System on Chip stream

- SoC Electives
- Semiconductor Device Physics
- Introduction to Nanoelectronics and MEMS/NEMS devices
- Low Power CMOS VLSI
- Static Timing Analysis and Digital Circuit Optimization
- High Level Synthesis and Optimization of Digital Circuits
- Testing and design for testability
- Deep submicron design issues
- Introduction to RF electronics
- Mixed-signal design
- Functional Verification of SoCs

Electives for Embedded systems stream

- Interdevice Communication
- Digital Signal Processing
- Cyber Physical Systems
- Real time systems- Design, Analysis and Verification
- Actuators, Sensors and Robotics
- Computer Vision
- Embedded Systems for healthcare
- Computational perception using multimodal sensors
- Machine learning
- Model based hardware-software co-synthesis of Embedded Systems
- Principles of multimedia and multimedia archietcture
- Design and analysis of Embedded Software systems
- Principles of Intelligent systems
- Wireless sensor networks
- Embedded Software Verification and Validation
- Image signal processing

Master of Science (Digital Society):

An Interdisciplinary Masters Programme for the Digital Society

At a glance:

With the use of Information and Communication Technologies (ICTs) permeating and shaping every sphere of our public and personal experience, we find ourselves in an increasingly digital society. If ICTs have opened up immense possibilities for economic and social change, they also raise many questions, especially as India actively claims membership in the digital society.

- How transformative will these changes be?
- Will they be equitable and sustainable in addition to enhancing efficiency?
- Will they amplify existing social divides and create new ones in the process?

Answering these questions call for insights into the digital ecosystem. It demands interdisciplinary skills combining an appreciation of technological possibilities along with a nuanced understanding of the economic, political, and socio-cultural context. But, more often than not, well-intentioned technologists and social scientists attempt to answer these questions within the narrow confines of their own disciplines. Consequently, the public, private, and development sectors face a capacity gap in leveraging ICTs for an efficient, equitable and sustainable digital society. This impels us to ask: Are we prepared to design for a complex digital society? How should we train those designing, developing, deploying, and managing these technologies? Recognizing the socio-economic potential of ICTs, and the increasing need to train professionals in harnessing this potential, IIIT-B offers a unique and innovative two-year Masters Programme for the Digital Society.

The programme is designed to create a group of professionals who will:

- Contribute to the design, development and deployment of digital technologies for diverse social groups;
- Provide and manage solutions that address persistent developmental challenges in domains such as education, governance, and health;
- Engage in policy making and in advocacy for deploying digital technologies; and
- Enrich interdisciplinary research on the digital society.

Programme overview:

- **A two week preparatory semester on Designing the Digital**: This consists of a series of sessions, including lectures, readings, and audio-visual media to expose students to the foundational logic of the programme and its interdisciplinary underpinnings. It also provides an overview of the conceptual toolkit for designing a digital society.

- **Core Courses and Electives**: This is specifically designed for a heterogeneous student group to learn about and address various challenges of the digital society, including:
  - Developing, deploying and managing large-scale digital systems;
  - Designing interfaces for diverse populations;
  - Socio-historical aspects of the "digital";
  - Policy issues in the contemporary digital society;

- Quantitative and qualitative research methods, tools, and techniques, to examine user needs and outcomes, and to evaluate the impact of ICTs;
- Technologies such as cloud or mobile platforms, data analytics, social media, human-computer interaction, and spatial-information systems; and
- Domain-specific understanding of the technology-society interface, including issues pertaining to education, governance, gender, identity, poverty, and public health.

- **Project-based learning**: This involves small-group projects to address challenges of the digital society by applying learnings from the courses. The presentation of the research process and project findings will be integrated with modules on technical communication.

- **Thesis/Internship**: In the final semester, students are required to either: a) work on a Masters thesis to hone their research skills; OR b) undertake an internship to sharpen their professional skills.

Master of Science by Research/ Master of Science (Research)

Research domains for which Master of Science by Research/ Master of Science (Research) programme is available at IIIT-Bangalore are:

(a) Computer Science,

(b) Data Sciences,

(c) Electronic Systems Design,

(d) Information Technology & Society,

(e) Networking, Communication & Signal Processing, and

(f) Software Engineering.

The student chooses a research domain as well as thesis supervisor(s), and undertakes coursework required for preparing for research in the chosen research domain. Once the coursework is completed, the student undertakes research work leading to original research outputs (publications, patents, etc.), which will culminate in a thesis. Upon successful completion of writing of the thesis and subsequent oral examination, the student will be granted a Master of Science by Research/ Master of Science (Research) in I.T. degree.

Ph.D.

Research domains for which Ph.D. programme is available at IIIT-Bangalore are:

(a) Computer Science,

(b) Data Sciences,

(c) Electronic Systems Design,

(d) Information Technology & Society,

(e) Mathematics & Basic Sciences,

(f) Networking, Communication & Signal Processing, and

(g) Software Engineering.

The student chooses a research domain as well as thesis supervisor(s) and undertakes coursework required for preparing for research in the chosen research domain. Once the coursework is completed, the student undertakes the comprehensive examination. On successful completion of the comprehensive examination, the student advances to candidacy, which is required for continuing in the programme. The student then undertakes research work in a structured format leading to original research outputs (publications, patents, etc.) which will culminate in a thesis. During the programme, the student is expected to give programme-milestone seminars at the Institute, which indicates the progress of the student in the programme. Upon successful completion of writing and defense of the thesis, the student will be granted a Ph.D.

Academic Infrastructure

The infrastructure for IIITB's fully networked campus consists of a high-speed fiber-optic backbone connected to the internal network through a high-end gigabit Ethernet switch. Dedicated network equipment includes printers, scanners, and other equipment. Connectivity in the campus is established at two levels. First, the local intranet implements a "virtual classroom," where all the visual material, such as presentation slides used by professors in class, is made available electronically to students. All assignments and projects are announced and submitted online. The intranet also enables knowledge sharing among students.

At the second level, 24x7 Internet access is available throughout campus, in both wired and wireless modes. IIITB is one of the few institutions in India to have an active wireless LAN (and was the first to have this technology way back in 1999). Wireless-mode access is available throughout campus academic and hostel blocks using the 802.11b/g protocol. In addition, high-speed Ethernet ports are installed at various locations in the building, providing wired Internet access through a proxy web server.

All students use a Wi-Fi enabled laptop for their exclusive use. This ensures a student to machine ratio of better than 1:1, implying complete accessibility. Moreover, the institute has high end computational servers. The servers provide an in-house private cloud computing infrastructure through virtualization. This in turn allows for an individual approach to learning, providing the freedom to learn at one's own pace and focus on one's chosen domain of specialization.

The Institute has an academic library with an excellent collection of books, journals, and magazines both in print and electronic form. Students have privileged free access to numerous online research resources (such as the ACM Digital Library, IEEEXplore, JSTOR).

Electronics Systems Design Infrastructure

HiDes Laboratory

At the High Density Electronic Systems Lab at IIIT-Bangalore, we focus on research and development in the area of high density and low dimensional electronics. Our area of research includes 3D electronics, magnetic logic devices, interconnects, and antennas. We focus on all aspects of Systems on Chip. HiDES is affiliated to Center of Electronics and Embedded systems lab (CEEMS) and Computational Sciences Lab (CSL) at IIITB. It is well equipped and has the following equipment - **Agilent Parametric Analyzer**, **DC Probe stations**, Carl Zeiss High resolution **optical microscope**, Makerbot **3D Printer**. It is also equipped with the following Software Tools - Ansys HFSS, NI Multisim and Electric layout. Research students are working on several interesting projects listed below using the above infrastructure in conjunction with several startups in the IIIT Bangalore Incubation Centre.

1. Microfabrication of a 3D antenna by lithographic and self-assembly process
2. Electric current driven nanomagnetic logic device
3. Computer program generated music
4. Next wave for women safety

CEEMS Laboratory

This laboratory was established in IIIT Bangalore with funding from the Government of Karnataka as a recognition of the need for skilled manpower in the emerging area of smart systems under the broad area of Electronics and Embedded Systems in its Semiconductor Policy 2010 to enable research, education and training at IIITB which is well connected to the IT and ITES partners in India and globally. The mission of CEEMS laboratory is to foster excellence by nurturing talent and focusing on research in the areas of VLSI, embedded system design, Wireless Communications and Computer vision. It is well equipped with the following to meet this objective - FPGA Tools from Xilinx, Virtual Instrumentation tools, Wireless test bed for developing and testing communication systems, Labview and Matlab licenses, Computer vision experimentation platform, Microcontrollers, DSPs, Channel simulator, Spectrum Analyzer and Oscilloscopes, Battery testers and Solar array simulators, Wireless Sensor nodes, Digital Design Tools from Mentor Graphics. The following interesting projects have been carried out in the past by graduate and research students using the CEEMS lab facilities -

1. Electronics aid for the visually handicapped
2. Thought controlled human computer interface
3. Time critical protocols for wireless sensor networks
4. Car parking place locator application with wireless sensor networks

Research at IIIT-Bangalore broadly covers the following domains:

- Computer Science

- Data Sciences

- Electronic Systems Design

- Information Technology & Society

- Mathematics & Basic Sciences

- Networking, Communication & Signal Processing

- Software Engineering

At IIITB, we follow the notion of research labs and centers which is an abstraction of a particular theme/area. A research lab encompasses people, projects, physical facilities, and activities. A research center or a center of excellence is an abstraction either in terms of the broader set of research themes being followed or in terms of hierarchy of research activities. The following description of each research domain specifies the focus of research, faculty members involved, and the active labs and centers.

COMPUTER SCIENCE (CS):

If Computer Science is about the use of computational techniques and thinking for solving problems, it stands to reason that computer science in turn can and must be applied to address the many critical problems of the 21st century, of which we may mention the need for smart machines and complex systems that can work with humans seamlessly and improve society as a whole, and sustainable development and usage of systems to make effective use of scarce and expensive resources such as energy. The tools and paradigms used to address such problems can themselves be new ones, other than merely the ones traditionally found in the repertoire of computer scientists. To this end, our work in the computer science research domain covers diverse topics dealing with theory as well as application areas, such as smart grids, supply chains and their optimization, algorithms, machine learning, cloud computing, and renewable energy. With the tremendous rise in distributed computing applications, the issue of security and privacy in distributed applications has got tremendous attention from the research community in the past decade. A major theme of the cryptographic research at IIITB is secure distributed computing, with emphasis on secure multi-party computation (MPC) and verifiable computation, both at the theoretical as well as applied level. While we strive to be rigorous and thorough in all our research, whether theoretical or applied, we are also aware of the multi-disciplinary context and significance of our work, and strive to address issues that are relevant to society in general and industry in particular.

FACULTY INVOLVED: Prof. Meenakshi D'Souza, Prof. V. N. Muralidhara, Prof. G. N. S. Prasanna, Prof. G. Srinivasaraghavan, Prof. Shrisha Rao, Prof. Ashish Choudhury.

Computational Sciences Laboratory (Prof. G. N. S. Prasanna)

CSL at IIIT-B is interested broadly in the areas of Algorithms, Optimization, and Robotics. Major focus areas include:

1. Robust optimization under uncertainty, with applications to supply chains, real time search, banking, smart grid, transportation, gaming and allied areas. This work couples algorithms with information theory.
2. Approximation algorithms, machine learning, cryptography and linguistics.
3. Novel robot skeletons using generalized mechanisms, incorporating magnetics distributed throughout.
4. Algebraic number theory.
5. Electronic design automation including statistical timing analysis and optimization for digital circuits, power analysis and optimization and formal verification, semiconductor manufacturing, statistical optimization, combinatorial optimization, and design and analysis of algorithms.
6. Visualization (scientific and information), high-performance computing, computational geometry and topology.
7. Others, such as, various aspects of power line communication for AMR over low voltage power lines, which include channel modeling, transceiver design and MAC layer design.

Computing Systems Lab (Prof. Shrisha Rao)

This lab focuses on systems research, with a focus on contemporary issues such as virtualization, security, reliability, energy-aware computing, high-performance computing using multicore systems, and cloud computing. There are diverse architectures and operating systems in use, such as SPARC, Mac Minis running Mac OS X 10.6, Cell Broadband Engines on Sony PS3s running Yellow Dog Linux, dual-core 64-bit AMD Opterons running FreeBSD, Open

SUSE, Open Solaris, and Windows 7/XP.

SNIA - IIITB Laboratory (Prof. G. N. S. Prasanna)

IIIT-Bangalore, in collaboration with the Storage Network Industry Association, hosts the SNIA IIITB Lab, an inter-industry centre for training, education network and research in all aspect of storage technology. The centre functions as a model centre in this area for academics and industry in India and South Asia in general.

DATA SCIENCES (DS):

The Data Sciences research domain focuses on all aspects of data management, processing, modeling, and information retrieval. The current areas of interest include: Database Design, Information Retrieval, Network Analysis, Mining Latent Semantics, Data Mining and Data Warehousing, Knowledge Representation and Reasoning, Linked Data and Semantic Web, NoSQL Databases, Stream Data Management, Analytics, Graphics & Visualization, and GPU Computing, Applied Machine Learning, Computational Social Sciences.

FACULTY INVOLVED: Prof. Chandrashekar Ramanathan, Prof. Dinesh Babu Jayagopi, Prof. Jaya Sreevalsan Nair, Prof. Srinath Srinivasa, Prof. G. Srinivasaraghavan, Prof. T. K. Srikanth.

Computational Social Sciences Lab (Prof. Dinesh Babu Jayagopi)

This lab builds and validates computational models for understanding human interactive behavior, rooted in Social Psychology. These models not only contributes to the theories of human behavior perception, but are also used in applications that facilitate behavior training, and social media analysis; and enable human-robot interactions (HRI). Probabilistic graphical models form the backbone of the underlying formalism.

Document Engineering Lab (Prof. Chandrashekar Ramanathan)

Documents still constitute a significant content type in the enterprise today. Document Engineering deals with developing algorithms, techniques, tools and processes that help in creating and manipulating the content, format, and representation of documents. There are several challenges being addressed as part of Document Engineering. The DocEng lab explores the various standards and tools available in this space. Following are some of the projects from the Lab:

- Pralekhasaara (for interactive content chunking and assembling)
- ORCA (Online Repository for Content Assembly)
- DocuBhasha (translation of documents, supported by Microsoft Research)

Graphics-Computing-Visualization Laboratory (Prof. Jaya Sreevalsan Nair)

The Graphics-Computing-Visualization Laboratory (GVCL) at IIIT Bangalore works in the broad areas of graphics, visualization, and scientific computing. The GVCL is currently involved in projects related to three-dimensional visualization of LiDAR data, analytics work-flow visualization, small-world-network visualization, volume visualization, and GPU computing. The lab is funded by various projects from government agencies and the industry, namely, DST, Nvidia and EMC.

Information Convergence Lab (Prof. Chandrashekar Ramanathan)

The revolution of mobile phones made media convergence possible. Today we don't need separate devices for talking on the phone, listening to music, watching videos, surfing the Internet, reading/sending e-mails. Information convergence is a similar concept that is focused on interoperability of information scattered across multiple dimensions and multiple sources and destinations. The focus of the Information Convergence Lab (I-COG Lab) is to first identify and define various information convergence challenges that are relevant to the real world. The current focus of the lab is to start with a study of information convergence challenges specifically targeted at large enterprises and the

government. Based on this understanding of the needs and contexts of information convergence, the lab will specify reusable frameworks that address these challenges in a unified and integrated environment. The focus would be to develop standards-based solutions that can be applied widely.

Web Sciences Laboratory (Prof. Srinath Srinivasa)

The Web Sciences Lab (WSL) at IIITB is focused on understanding the web in all its aspects. Reasearch interests of the WSL include enabling technologies for the web, web-scale data management, web mining, network analysis and socio-cognitive models of web dynamics.

Center for Data Sciences

The Center for Data Sciences is a formal conglomeration of all the labs under the Data Sciences research domain, which takes care of overall activities at a higher hierarchical level of operation. This involves pooling in resources, conducting biannual student workshops, etc.

ELECTRONIC SYSTEMS DESIGN (ESD):

The Electronic Systems Design domain encompasses a broad range of topics covering several aspects of both, digital and analog hardware systems, implemented using FPGAs and custom fabricated VLSI circuits, design methodologies around EDA flows, verification and validation, and system prototyping; realization of real time embedded systems where both the hardware and the software components are treated agnostically based on end system requirements. Emphasis is also placed on emerging technologies based on Micro and Nano-electro mechnical devices – fabrication of 2D/3D structures, characterization and system applications.

FACULTY INVOLVED: Prof. Dinesh Babu Jayagopi, Prof. Madhav Rao, Prof. P. G. Poonacha, Prof. Srinath Naidu, Prof. Subajit Sen, Prof. Subir K. Roy.

Center for Electronics and Embedded Systems (Prof. P G Poonacha)

The Center for Electronics and Embedded Systems (CEEMS) Lab's objective is to nurture talent by focusing on Embedded Computing, Wireless Communication and Computer vision. Facilities available in the lab will enable world class research and education and will be seen as an extension of the strong Information Technology (IT) Core competence already available at IIITB. CEEMS Lab collaborates with public and private organizations to do research and development in the emerging areas of embedded systems to bridge the gap between academia output and industry requirements thus providing every learner an equal opportunity to become industry ready.
CEEMS lab is funded by the government of Karnataka.

Electronic System Design and Manufacturing Lab (Prof. Madhav Rao)

Electronic system design and manufacturing (ESDM) lab is sponsored by Government of Karnataka. The lab involves design and limited fabrication facilities to develop interconnects, wiring, and micro-scale soldering. State of art optical microscope which is used to capture high resolution images of around 1 micron. The design facilities includes mentograhics commercial software, electric MOSIS compatible open source softwares, and Matlab softwares. The lab includes semiconductor characterization facilities and 3D printer. Currently research projects such as nanomagnetic logic gates in collaboration with IIT-Bombay, 3-D high frequency antenna in collaboration with IISc is in progress. The lab will be used for Graduate students enrolled for IC design and fabrication course taught in Spring semester.

High Density Electronics System Lab (Prof. Madhav Rao)

HIDES lab is a part of CEEMS project sponsored by Government of Karnataka. The lab is extensively used by undergraduates (IMTECH) students for their basic electronics laboratory course and physics course. IMTech students build various analog circuits, digital circuits, and sequential circuits. High end Oscilloscopes, function generators, power supplies are available to test the circuits. The lab activities include various projects derived from Arduino controller. Graduate students use this lab to perform research experiments using ABB commercial robot. HFSS, commercial electromagnetic software to design high frequency antenna is also available in the lab.

INFORMATION TECHNOLOGY & SOCIETY (ITS):

The Information Technology and Society research domain at IIIT Bangalore is broadly concerned with the social role of information and communications technologies (ICTs) with a focus on the policy challenges and the institutional demands posed by technological change. Teaching and research in the stream focuses on three inter-related areas. First, it seeks to understand innovation and the organization of production in the ICT industry, or how, why and where ICTs are produced. A second area of interest is in how ICTs can be used to harness the legitimacy and the powers of bureaucracies and markets to address needs in different social domains. Of special interest are the domains of governance, education, health and manufacturing. A third area is the tools and analytical techniques that can be deployed to understand the production and consumption of ICTs. These include geographical information systems, modeling, simulation and visualization. The domain encourages inter-disciplinary research and has associated faculty members with expertise in social sciences, including in economics, economic geography, sociology, development, management, governance and public administration.

FACULTY INVOLVED: Prof. Amit Prakash, Prof. Balaji Parthasarathy, Prof. Bidisha Chaudhari, Prof. Niveditha Menon, Prof. S. Rajagopalan, Prof. Vinod Vyasalu, Prof. Jillet Sarah Sam, Prof. V. Sridhar, Prof. Janaki Srinivasan.

Center for Information Technology and Public Policy (Profs. Amit Prakash & Balaji Parthasarathy)

The Center for Information Technology and Public Policy (CITAPP) at IIITB focuses on the policy challenges and the organizational demands made by technological innovation. The Center is interested in interactions between technology and society and is particularly concerned with how technological advances, along with institutional changes, address the needs of under-served communities. It seeks to provide a means to nurture and transform public policy through the use of IT by engaging with academic faculty and researchers, policy planners, political leaders and community representatives, technology vendors, public officials and civil society organizations. The Center brings together best-practices demonstrating the power of IT and analytical tools for information management, modelling, and forecasting. It engages in research and evaluation studies of topics where IT and public interest intersect.

Center for Spatial Information Sciences (Prof. S Rajagopalan)

The Center for Spatial Information Sciences (CSIS) at IIIT Bangalore was established in October 2006. The centre carries out basic and applied research in Geographic Information Sciences Domain, like Geographic Information Retrieval. GIR can be considered as a specialization of Information Retrieval, it takes into account the spatial and Object Oriented Spatial Databases; Geographic Ontology- the study of geographic objects and the relationship between them and sensor maps.

MATHEMATICS & BASIC SCIENCES (MBS)

The research at IIITB in Chemistry, Mathematics and Physics is as follows:

In **CHEMISTRY**, the research at IIITB primarily is in the area of electronic structure calculations. Particularly, weak interactions (pi-pi, CH-pi etc.) present in various systems (small model systems, protein-ligand systems, DNA bases, nanotubes etc.) are investigated using quantum chemical methods (HF, MP2, CCSD(T) & DFT). Additionally, the work entails unravelling the role of such weak interactions in the field of drug-design, polymers, nano-devices and in new materials. Some of the recent research works show that pi-pi and CH-pi interactions are invariably present in the crystal structures of bio-molecules and play important role in their structure as well as functions.

FACULTY INVOLVED: Prof. Brijesh Kumar Mishra.

Research in **MATHEMATICS** is principally in the area of Number Theory; in particular, Algebraic Number Theory, Galois Representations, Modular Forms, Iwasawa Theory. Diophantine Equations, Galois Module structure and Elliptic curves. Research is also conducted in the fields of Algebraic Complexity Theory and Cryptography. The following two problems are representative of the mathematics research in IIITB: Let E be an elliptic curve over number field K. For every prime P where E has good reduction at P, we get one imaginary quadratic field associated to E. We are trying to see if we can get all imaginary quadratic fields by this procedure?

FACULTY INVOLVED: Prof. Manisha Kulkarni.

In **PHYSICS**, the principal areas of research in IIITB at the Centre for Complex Systems & Soft Matter Physics are theoretical soft condensed matter physics, complex systems and dynamical systems theory, with studies of instabilities & synchronization in nonlinear systems (both physical and biological), and polymeric & micellar systems. Problems include modelling nonlinear oscillations of a charged microbubble under ultrasound, dynamics of intermittent force fluctuations in vesicular nano-tubulation, dynamic properties of polyelectrolyte solutions, combustion, phase transitions in computationally hard problems, models of sensory systems, precipitation phenomena, etc.

FACULTY INVOLVED: Prof. Balakrishnan Ashok.

Center for Complex Systems & Soft Matter Physics (Prof. Balakrishnan Ashok)

The principal areas of research in physics at IIITB at the Centre for Complex Systems & Soft Matter Physics are theoretical soft condensed matter physics, complex systems and dynamical systems theory, with studies of instabilities and synchronization in nonlinear systems (both physical and biological), and polymeric and micellar systems. Problems include modelling nonlinear oscillations of a charged microbubble under ultrasound and the enhancement of the temperature in the gas bubble, dynamics of intermittent force fluctuations in vesicular nanotubulation, studies of synchronization phenomena & instabilities in nonlinear systems, dynamic properties of polyelectrolyte solutions, combustion, phase transitions in computationally hard problems, models of sensory systems, modelling of precipitation phenomena, etc.

NETWORKING, COMMUNICATION & SIGNAL PROCESSING (NCSP): The Networking, Communication and Signal Processing research domain focuses on all aspects of networking, communications, and signal processing. The current topics of interest are: Computer Networks, Network Security, Wireless Communication, Signal Processing, Medical signal processing, Computer vision.

FACULTY INVOLVED: Prof. Debabrata Das, Prof. Dinesh Babu Jayagopi, Prof. Jyotsna Bapat, Prof. Neelam Sinha, Prof. P. G. Poonacha, Prof. Tricha Anjali.

Mobile Computing and IMS Innovation Lab (Prof. Debabrata Das)

In this lab the projects are sponsored by HP and Nokia. The R&D focus on video and audio streaming including handheld devices, as also Video Media Platform, Charging , Service Delivery in IMS using Application Servers, XDMS, HSS and Presence servers. Moreover, this lab addresses issues related to quality of service modeling in IMS architecture with respect to differential traffic.

Multimodal Signal Processing Lab (Prof. Dinesh Babu Jayagopi)

This lab focuses on human-centered sensing and multimodal signal processing methods to observe, measure, and model human behavior. These methods are used in applications that facilitate behavioral training, and social media analysis; and enable human-robot interactions (HRI). The focus is mainly on vision and audio modalities. Probabilistic graphical models form the backbone of the underlying formalism.

Wireless Network lab -- WNL (Prof. Debabrata Das)

The lab focuses on research involving networking standards and technology. Current research work concentrates upon latest broadband wireless access technology – WiMAX/LTE. Major areas of work include, medium access control (MAC), QoS, QoE, power management, media independent handover (MIH). Microsoft Research India and TCS Research Ph.D fellowship students work in this lab.

Wireless Sensor Network (WSN) Lab (Prof. Jyotsna Bapat)

Machine to machine (M2M) communication is going to be one of the major areas of R&D in networking and communication specialization. M2M faces multiple challenges and some of the major issues related to efficient communication between sensors, protocols, power saving in sensor, etc. In IIITB we have a WSN lab which supports multiple R&D projects on sensor networks. This lab has been sponsored by Govt. of Karnataka for development in embedded systems.

SOFTWARE ENGINEERING (SE)

The mission of the Software Engineering research domain at IIITB is two-fold: firstly, to educate the students to be high quality software engineers, with strong hands on experience and with strong foundations in computer science concepts; secondly, to contribute original and ground-breaking ideas to the state-of-the art in SE by actively involving in research. Software engineering (SE) brings together interesting avenues of both fundamental and applied research contributing to the broad spectrum of activities involved in the creation of large, complex, industrial strength software systems having high quality, dependability and within reasonable resources. The current research in this domain at IIITB covers a wide variety of areas ranging from empirical to formal aspects of SE. Our research covers both upstream (requirement and design) and downstream (testing and maintenance) SDLC activities cutting across a variety of application domains (enterprise, embedded etc). Here is a list of some of the broad areas in which our faculty members are working: Pattern oriented software engineering, software architecture, distributed software engineering, model driven software engineering (MDSE), software testing, verification and validation (V&V) of web-services and V&V of embedded software (cyber-physical systems and adaptive systems) among others.

FACULTY INVOLVED: Prof. K. V. Dinesha, Prof. L. T. Jayprakash, Prof. Meenakshi D Souza, Prof. Sujit Kumar Chakrabarti.

Software Design Laboratory (Prof. K. V. Dinesha)

The research focus here is on the design and architecture of software. Design patterns approach for the software development process is studied, with special emphasis on the impacts of design principals and patterns on the flexibility as one of the prime focus.

Software Engineering Laboratory (Profs. Meenakshi D' Souza, Sujit Kumar Chakrabarti, S. Ramesh (adjunct faculty member))

Primary research focus of SE lab at IIITB is on formal aspects of software engineering. Current projects that we are working on involve:

- architecture analysis, testing, verification and program analysis for embedded software,
- verification and validation of web software, and
- Software testing.

The aim of the lab is to expand the scope to include all aspects of software engineering, from requirements and design to testing and verification. Software specification and programming languages are two areas under consideration for exploring.

Programme	Year of Admission	Fees per semester Years 1 and 2	Fees per semester Years 3 and 4	Fees per semester Year 5	Summer Term Fees
iM.Tech	2015	90000	108000	128000	-
M.Tech	2015	90000	-	-	45000
Master of Science	2015	90000			45000
Master of Science by Research/ Master of Science (Research) & Ph.D.	One third of fee payable by iM.Tech based on year of admission till the submission of thesis				

In addition, residential students pay Rs. 3000 towards hostel rent per month and approximately Rs. 4000 per month for food expense. Other costs for books and supplies, travel, purchase of a laptop, etc., need to be factored by students depending on their individual circumstances.

Most M.Tech and Integrated M.Tech students receive bank loans at fairly generous terms that cover all their costs. About 25% of the students are eligible for merit-based, industry-sponsored scholarships. Teaching assistantship opportunities, which provide a financial incentive besides valuable experience for future careers, are available to senior M.Tech students based on their academic performances in the first year. Students can also apply for various central sector scholarships.

Employed students who undertake studies at IIITB are expected to cover their own costs, including tuition. Many such students are sponsored by their employers.

Scholarships for Master of Science by Research/ Master of Science (Research) and Ph.D. Students

Full-time Master of Science by Research/ Master of Science (Research) and Ph.D. students may obtain institutional fellowships in the form of teaching assistantships. For full-time Master of Science by Research/ Master of Science (Research) students, the fellowship amount is Rs.12,000/- per month for the first 18 months and Rs. 15,000/- for the next six months.

For full-time Ph.D. students, a fellowship is of Rs.25,000/- per month for the first 3 years (extendable to 1 more year in deserving cases). Such funding for our Ph.D. students comes from within IIITB or with industry support from HP, IBM, Intel, Infosys, Motorola, Siemens, Microsoft, and other companies.

Full-time Master of Science by Research/ Master of Science (Research) and Ph.D. students may obtain fellowships, in the form of research assistantships, provided by specific faculty members (usually their respective thesis supervisor) from sponsored research projects. The fellowship amounts will be the same as the institutional fellowships.

Scholarships for M.Tech Students

The Institute has offered about 11 scholarships (out of about 160 students admitted in 2014) to meritorious students joining the M.Tech programme. In addition, about 50 GATE-qualified students have obtained fellowships from AICTE. The institute expects to students to obtain a similar number of scholarships and fellowships in 2015 as well (across IT and ESD programmes). The scholarship amount covers almost all student expenses over the duration of their M. Tech. The selection for institute scholarships is carried out by the industry representatives along with IIITB faculty.

2014-15 scholarship sponsors include; Infosys, ABB, and SocGen. IIITB is constantly working with Industry to bring in more scholarships. Similar scholarship schemes are planned to be extended for Integrated M.Tech students as well in the future.

Scholarships for iM.Tech Students

IIITB offers limited scholarships in two categories for Integrated M.Tech students: merit based and need based. The scholarships are awarded for one year and may be renewed based on the students' academic performance. The need based scholarships cover the tuition in its entirety (full scholarship) or partially (half scholarship) along with a monthly stipend. The merit based scholarships offer a monthly stipend.

Internship

For M. Tech. students, the Institute's internship programme gives the students an opportunity to get hands-on exposure in real-world projects as part of the final semester. Many of the companies that participate in the final Placement Programme also participate in the Internship Programme. This allows students to spend one whole semester in the industry working on live projects prior to graduation. The companies provide students with stipends for the duration of the internship and also the opportunity to work with their teams, at their premises, on challenging real-life projects. The internship programme is an avenue for placement, as many interns who perform well are given job offers by the companies they work for in the final semester.

In addition to the industry-sponsored internships based out of India, there is also an opportunity to do research and project work at many foreign universities with which IIITB has signed a Memorandum of Understanding (MoU). Some of the universities to which students have gone for internship in 2013 are HOF university of Applied sciences, Germany, Freie Universitat Berlin, Germany, The University of Nottingham, UK and University Of West Indies.

Some of our students have also gone to National University of Singapore as Research Assistants during their internship tenure. The internship includes financial aid to cover travel and living expenses during the course of internship.

Integrated M. Tech. students will be pursuing a summer internship at the end of third year. This will provide them with an exposure to work on industrial projects.

Placements

The Institute has a strong placement programme that has achieved 100% placement of all its graduates. The graduates have found challenging assignments with several multinational and Indian giants of the IT industry. A broad-based curriculum coupled with strong bonds with the industry ensures that the students are equipped with the right skills to be highly productive and ready to take on real-world IT challenges when they graduate.

IIITB has enjoyed excellent placement for all the twelve batches of M.Tech students who have graduated so far. Of the 1556 alumni, a few have gone for doctoral studies at MIT, UC Berkeley, Indiana University, University of Washington and Syracuse University in USA, Paderborn and University of Kaiserslautern in Germany, Trento in Italy, National University of Singapore in Singapore, IIITB and BITS Pilani in India. The rest have taken up positions in a spectrum of firms that represent established IT giants to exciting new start-ups. The list of firms where IIITB students are placed include:

Accenture Labs • ABB • Accolite • Airvana Networks • Amazon • Amex • Azul Systems • Cerner • Cisco • Citi • CommonFloor • DataWeave • DreamWorks • EMC • EduSoft • Fiberlink • Flipkart • Funds India • GE Healthcare • Haggle • HSBC • IBM • InfoEdge • Informatica • Infosys • Intalio • Intel • Intergraph • Just Eat • Kodiak • Ma Foi • Markettelligent • Meridium • Morgan Stanley • Mu Sigma • Nalaasha Solutions • NetApp • NXP Semiconductors • Oracle • Qualcomm • RedMed • RealBridge • Samsung • Siemens • Srishti ESDM • Synopsys • Texas Instruments • TCS R&D • Thorogood • Velankani Group • VMWare • Xerox

Academic Outreach Activities

IIITB exposes its students to the industrial outlook through a multitude of conferences, workshops and other events. Some major outreach activities at IIITB in 2013:

- The students of our Institute continued to be blessed with a 100% placement record
- Several new companies, such as VM Ware, DreamWorks, Amazon, Cerner, Texas Instruments, etc., apart from the regular ones, recruited from our campus
- Cisco, Intel, IBM, Infosys, Fiberlink, American Express, and others recruited from our campus and continued to show their confidence with our students
- A number of our industry partners visited the campus for delivering guest lectures. Such sessions gave an opportunity for our students to interact with senior industry executives.
- Companies such as Cisco ad ABB invited our students for a visit to their facility, to give them a feel for cutting edge lab infrastructure in the country.
- Leading companies such as IBM invited our students and entrepreneurs to participate in their webcast series on topics of current and emerging technology trends.
- Our alumni have now reached a figure of around 1500, a critical mass to bond together and make a difference to their professional growth and academic connect.
- The first elected Alumni Association Council took office, with Naveen Goudar as its President. Dr Das advises the alumni as the faculty in charge of alumni affairs.
- The alumni council drew up its charter and developed a 3 year plan. The Alumni Day was celebrated with the first of the 'Star Lecture' series, delivered by Mr. Ashok Soota, the Chairman of Happiest Minds, and an industry statesman. The second Star Lecture was addressed by noted entrepreneur, Mr. Madan Padaki.
- To enable students and working professionals to upgrade their skills continuously, IIITB is planning a series of courses in emerging, high growth technologies.
- The first Certificate course in Business Analytics was conducted at the Institute premises. It was a weekend program to enable working professionals to leverage this opportunity.
- The Institute recognizes that it needs to play an important role in the development of entrepreneurship, especially around development of IT products. Towards this objective, a discovery workshop was conducted with the participation of senior corporate leaders, and their suggestions and ideas were sought as to how our Institute could contribute to the growth of product related entrepreneurship.
- This was followed by a course on 'product engineering and innovation' in collaboration with industry practitioners, for the benefit of IIITB alumni and incubated companies.
- An approach paper was developed to establish a Centre of excellence in 'IT for SMEs'. This approach was discussed with GIZ / Ministry of SME for potential collaboration.
- The IIITB Innovation Centre continues to be an incubation centre that attracts IT entrepreneurs who are at an idea stage, for the value of the technology ecosystem that it offers.
- Prof. Kumar from IIMB and Mr. C S Murali from IISc joined the Board of the Innovation Centre as independent Directors.
- Bulk of the funding from the TIDE scheme of the Dept of Electronics and IT has been invested in IT startups. Two news companies – Hudooku and Srishti ESDM – were accepted into the incubation centre.

The companies that are currently being incubated at the IIITB Innovation Centre are:

- o **Kenapps** – Cloud based solution for educational institutions

- o **Redmed** – low cost, non-invasive medical diagnostic device

- o **Chipmonk** – smart energy meters

- o **Kollabia** – online collaboration of music

- o **Srishti ESDM** – solutions for inclusive banking

- o **Hudooku** – search and direct connect social media solution

- o **Radix Learning Pvt Ltd (Radix) –** online assessment solutions for academia and industry

The 1st Batch of companies that are currently in the I-MACX (IoT –to- Mobility Apps for Community Excellence) Accelerator Program are:

- o **Tradedoot** - Marketplace for agriculture / EXIM pricing / other information

- o **EasyM2M** - An enterprise grade wearable device for identifying "man down" and other such emergency scenarios

- o **OnlineRTI** - A facilitator for filing and receiving replies under the RTI act

- o **AbSimpl** - A chromecast-like device and associated software that facilitates consumption of education / healthcare video content on TVs

- o **QueryHome** - A platform that enables interaction between both citizens / customers and employees with the enterprise / government

- o **Clytics** - An Energy-analytics firm that aims to offer a "personalized recommendation" on your electricity consumption (more on the lines of a personalized telephone bill - with detailed breakup and recommendations)

- o **MyPhotoBiography** - A mobile app that helps Doctors / Nurses track the progress of pregnancy and child growth

IIITB organizes intra-collegiate sports fest, "Spandan". Students and alumni participate in the fest. Spandan includes events like cricket, badminton, volley ball, football, carroms, chess, online gaming contests and so on.

IIITB understands its social responsibility and has its students working for it under the name AIKYAM. Our mission includes giving back to the underprivileged children of our society. Some of our activities include teaching spoken English, spreading computer awareness and organizing theater workshop for these children.

Along with Infosys, IIITB conducted a Special Training Programme (STP) that helped nearly 100 students belonging to the underprivileged sections of the society. The experiment undertaken in 2007-08 got repeated at IIITB in 2008-09. A similar programme titled "Udaan" is being conducted for promising young graduates from Jammu and Kashmir.

Admissions

IIITB will announce the admission to the Integrated M.Tech programme in the month of April. Prospective candidates for the Integrated M.Tech programme should have done their 10+2 or equivalent level with Mathematics and must have obtained first class or equivalent. Students expecting to complete 10+2 or equivalent by August 2015 may also apply.
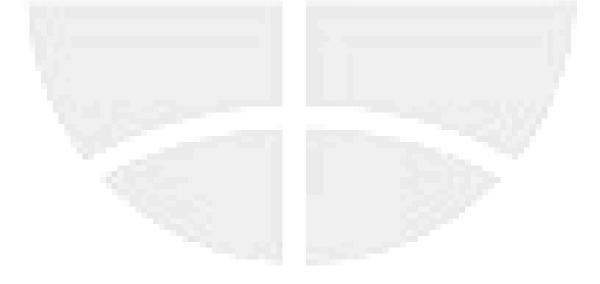
Typically IIITB admits about 125-150 students every year into the flagship M.Tech programme in Information Technology (IT). The minimum qualification for admission to M.Tech programme in the Institute is a first-class four-year bachelor's degree in engineering (i.e., B.E., B.Tech, or equivalent). M.Sc./MCA degree holders can also apply. Final-year students expecting to graduate by August 2015 may also apply.

Since 2014, IIITB has been offering M.Tech programme in Electronic Systems Design (ESD). The specialized programme with specific focus areas in System-on-Chip (SoC) and Embedded Systems will admit about 20 students.

Starting 2015, IIITB is announcing admissions to a new inter disciplinary programme Master of Science in Digital Society.

IIITB is announcing admissions to Master of Science by Research/ Master of Science (Research) and Ph.D. programmes specific to vacancies in research domains.

Admissions are generally made to Indian citizens living in India. However the Institute is open to receiving applications from outstanding foreign applicants.

Eligibility

Minimum Requirements

The minimum qualification for admission to the M.Tech programme at IIITB is 65% in engineering (i.e. B.E., B.Tech., or equivalent). Degree holders in 3-year undergraduate programmes (with 65%) followed by Masters Degree with 65% in any of the physical sciences, or an MCA degree (with 65%), can also apply. Final-year students expecting to graduate by August 2015 may also apply. First class or equivalent is required in 12th (or equivalent) grade as well.

Selection Procedure

Admissions to the M.Tech programme is on the basis of performance in the GATE examination. GATE scores (valid as of June 1, 2015) from the following disciplines will be considered for this purpose:

➢ CS - Computer Science and IT

➢ EC - Electronics and Communication Engineering

➢ EE - Electrical Engineering

International Students

Foreign nationals (FNs) and non-resident Indians (NRIs) who have a 4-year undergraduate engineering degree in computing–related branches (CS, EE, EC) are welcome to apply for the M.Tech programme. Such applicants can apply with valid GRE and TOEFL scores. Only those students whose undergraduate education was in an Anglophone country (i.e. Australia, Canada, New Zealand, Singapore, UK, and the US) are exempt from TOEFL. Shortlisted FNs and NRIs applicants have to go through an online interview,

Working Professionals

Working professionals applying for the M.Tech programme must get leave for the duration of the M.Tech programme. Such applicants have to submit a letter, during the admission, from a supervisor or other authorized representative of the employer stating that there is no objection to the applicant's joining IIITB as a student. Working students will also need sponsorship from the employer, or obtain support from other sources to meet their costs, as scholarships and other financial support are not available to working students.

M.Tech. (IT) – Important Dates

Online Applications	
Last date for applying online	April 30, 2015
Selection and Joining	
Notification of selection	May 8, 2015
Remittance of acceptance fee	As noted in offer letter
Remittance of balance fee (Term I, hostel, etc.)	July 10, 2015
Joining date for new batch	July 10, 2015
Classes begin	July 13, 2015

M.Tech (ESD)

The M.Tech in ESD degree is intended to provide training for students who wish to work in the ESD industry as practitioners. It is awarded upon successful completion of a 4-semester broad-based academic programme in ESD, going beyond, but incorporating essential elements of, traditional electronics, system on chip and embedded systems. Apart from imparting technical knowledge, the programme teaches managerial and other cognate skills that are essential for a successful career in today's competitive industry. All students enrolled in the M.Tech programme are residential, full-time students.

Eligibility
Minimum Requirements

The minimum qualification for admission to the M.Tech. programme at IIITB is 65% in engineering (i.e. B.E., B.Tech., or equivalent). Degree holders in 3-year undergraduate programmes (with 65%) followed by Masters Degree with 65% in any of the physical sciences, or an MCA degree (with 65%), can also apply. Final-year students expecting to graduate by August 2015 may also apply. First class or equivalent is required in 12th (or equivalent) grade as well.

Selection Procedure

Admissions to the M.Tech programme is on the basis performance in the GATE examination. GATE scores (valid as of June 1, 2015) from the following disciplines will be considered for this purpose.

- EC - Electronics and Communication Engineering
- IN - Instrumentation Engineering

International Students

Foreign nationals (FNs) and non-resident Indians (NRIs) who have a 4-year undergraduate engineering degree in electronics–related branches (EE, EC) are welcome to apply for the M.Tech. programme. Such applicants can apply with valid GRE and TOEFL scores. Only those students whose undergraduate education was in an Anglophone country (i.e. Australia, Canada, New Zealand, Singapore, UK, and the US) are exempt from TOEFL. Shortlisted FNs and NRIs applicants have to go through an online interview.

Working Professionals

Working professionals applying for this M.Tech. programme must get leave for the duration of the M.Tech. programme. Such applicants have to submit a letter, during the admission, from a supervisor or other authorized representative of the employer stating that there is no objection to the applicant's joining IIITB as a student. Working students will also need sponsorship from the employer, or obtain support from other sources to meet their costs, as scholarships and other financial support are not available to working students.

M.Tech. (ESD) Important Dates

Online Applications	
Last date for applying online	April 30, 2015
Selection and Joining	
Notification of selection	May 8, 2015
Remittance of acceptance fee	As noted in offer letter
Remittance of balance fee (Term I, hostel, etc.)	July 10, 2015
Joining date for new batch	July 10, 2015
Classes begin	July 13, 2015

Master of Science (Digital Society)

Recognizing the socio-economic potential of ICTs, and the increasing need to train professionals in harnessing this potential, IIIT-B offers a unique and innovative two-year Masters Programme for the Digital Society.

Eligibility

Minimum Requirements

An under-graduate degree (of at least 3 years duration) in any discipline with a first division/class from a recognised University. Those expecting to graduate by 1st August 2015 may also apply. Prior certification of computer application/ programming from a recognised institute (an added advantage, but not mandatory). Relevant work experience (an added advantage, but not mandatory).

Selection Procedure

Selection for the programme is on the basis of an entrance examination that will be conducted by IIIITB following by a personal interview to be held at IIIT campus. The entrance examination will test numerical/quantitative, analytical, and verbal abilities, as well as design, social, and information technology awareness. Further details about the entrance examination along with sample questions will be made available in the admissions website.

Master of Science (Digital Society) Important Dates

Online Applications	
Last date for applying online	April 5, 2015
Date of Exam	April 26, 2015
Notification for call for Interview	May 4, 2015
Selection and Joining	
Notification of selection	June 1, 2015
Remittance of acceptance fee	As noted in offer letter
Remittance of balance fee (Term I, hostel, etc.)	June 15, 2015
Joining date for new batch	July 17, 2015
Classes begin	July 20, 2015

Master of Science by Research/ Master of Science (Research) & Ph.D.

Admissions to the M. S. by Research and Ph.D. degree programmes are based on the openings in the research domains. Both programs have full-time as well as part-time registration options. The admissions criteria are applicable to both full –time and part – time registrations. For the admissions cycle in July 2015, the following table gives the openings (There is no offering of Master of Science by Research/ Master of Science (Research) program in the Mathematics & Basic Sciences domain):

Research Domain	Indicative Research Areas
Computer Science	Algorithms; Cryptography; Machine Learning, Optimization; Microprocessor Design, Robotics.
Data Sciences	Data Visualization, GPU Computing; Modeling urban mobility, inferencing, simulation; Knowledge management and analytics.
Electronic Systems Design	Fast Monte-Carlo methods for yield estimation and optimization; CNT modelling for 3D integrated circuits or wideband antenna design; Analog VLSI circuits
IT & Society	ICT regulations and public policy, techno-economics of information network, ICT for development/health/education/agriculture, gender and ICTs, e-Governance for development, innovation systems in the ICT industry, ICT and work practices in organizations, urban systems, political economy of information, right to information in practice, digital groups and identities, governance analytics and toolkits
Mathematics & Basic Sciences	Chemistry: Computational chemistry, electronic structure calculations, structure & energetics of van der Waals complexes Mathematics: Number theory; in particular, algebraic number theory, Diophantine equations, Galois module structure and elliptic curves Physics: Complex systems & soft matter physics including complex fluids, cavitation & bubble dynamics, studies of instabilities & synchronization innonlinear systems (both physical, biological & polymeric systems)
Networking, Communications & Signal Processing	MAC protocols and Green Communication for IoT as well as Wireless Broadband, SDN, IMS, Network Security; Image reconstruction and analysis, Semantic image analysis, EEG time series classification; Audio Visual Analysis of Group Interactions
Software Engineering	Formal Specification of Web Applications; Specification based test generation for RESTful web-services; Natural language software specification to formal specification; Symbolic testing of embedded software; Formal verification of embedded software architectures; Test case generation from requirements

Eligibility

Eligibility requirements vary across the research domains.

For applicants to **Computer Science, Data Sciences, Electronic Systems Design, Networking Communication & Signal Processing, and Software Engineering,** a four-year bachelors degree in engineering (B.E., B.Tech. or equivalent) is required for the Master of Science by Research/ Master of Science (Research) program; and a masters degree in engineering (M.E., M.Tech. or equivalent) is required for the Doctor of Philosophy program. Additional specific requirements are as follows:

Computer Science Research Domain:

1. Master of Science by Research/ Master of Science (Research) applicants should have a valid GATE score of at least 600;
2. Doctor of Philosophy applicants should have written/taken GRE or GATE in the last five years.
3. Screening/ shortlisting will be based on GATE score and other application details furnished by the applicant, followed by an interview.

Data Sciences Research Domain:

1. Applicants should have taken one of the following examinations:
   - GATE examination for Computer Science,
   - A 45-minute written examination conducted by the research domain at IIITB exclusively for applicants to Data Sciences.
2. Screening/ shortlisting will be based on the afore-mentioned score and other application details furnished by the applicant, followed by an interview.

Electronic Systems Design Research Domain:

1. Applicants should have a GATE or GRE score taken in the last five years.
2. Screening/ shortlisting will be based on GATE score and other application details furnished by the applicant, followed by an interview.

Networking, Communications & Signal Processing Research Domain:

1. Applicants are encouraged to take GATE or GRE examination.
2. Exceptional applicants without a GATE or GRE score may be required to take a written examination or an oral examination at IIITB, as decided by the faculty in the domain.

Software Engineering Research Domain:

1. Applicants should have a GATE or GRE score taken in the last five years.
2. Screening/ shortlisting will be based on GATE score and other application details furnished by the applicant, followed by an interview.

Mathematics and Basic Sciences Research Domain:

For Physics and Chemistry:
Candidates should have satisfied the following requirements:

1. The minimum qualification required is an M.Sc. in Physics or Chemistry, respectively, or a masters degree (M.Sc., M.E., M.Tech. or equivalent) in related disciplines.
2. Candidates should have appeared and qualified in a national entrance test (CSIR-UGC NET, UGC-NET, or JEST examination).

Screening/ shortlisting will be based on the scores obtained in these examinations and other application details furnished by the applicant followed by an interview.

For Mathematics:
1. The minimum qualification required is a Masters degree in engineering (M.Tech., M.E. or equivalent) or a Masters degree in Mathematics.
2. Candidates should have appeared and qualified in one of the two national entrance examinations: CSIR-UGC NET or NBHM.

Screening/ shortlisting will be based on the scores obtained in these examinations and other application details furnished by the applicant followed by an interview.

IT & Society Research Domain:

1. Candidates with a masters degree in any of the social sciences are eligible to apply for Master of Science by Research/ Master of Science (Research) and Doctor of Philosophy in the ITS domain.

2. In addition, candidates with a four-year bachelors degree in engineering (B.E., B.Tech. or equivalent) can apply for the Master of Science by Research/ Master of Science (Research) program;and those with a masters degree in engineering (M.E., M.Tech. or equivalent) can apply for the Doctor of Philosophy program.

3. Candidates are encouraged to provide a valid score in GATE, JRF, NET, GRE, or GMAT along with their applications. Those without such a score may apply as well.

4. Shortlisted candidates may have to take a written examination at IIITB when called for interview.

3. Fellowships/Scholarships & Tuition Fees:

For **full-time Master of Science by Research/ Master of Science (Research) students, a fellowship of INR 12,000/- per month** for the first 18 months and INR 15,000/- for the next six months, is available in the form of teaching assistantships.

For **full-time Doctor of Philosophy students, a fellowship of INR 25,000/- per month** for the first 3 years (extendable to 1 more year for deserving cases) is available in the form of teaching assistantships.

Such funding for the Ph.D. students comes from within IIITB or with industry support from HP, IBM, Intel Infosys, Motorola, Siemens, Microsoft, and other companies.

Master of Science by Research/ Master of Science (Research) and Ph.D. – Important Dates

Online Applications		
Opening date for applying online		March 16, 2015
Last date for applying online with fee remittance		April 13, 2015
Last date for receiving recommendation letters		April 20, 2015
Selection and Joining		
Notification of selection for onsite evaluation		May 15, 2015
Onsite evaluation (written exam, if any, and interview)		June 01-05, 2015
Notification of final selection		June 12, 2015
Remittance of acceptance fee		June 26, 2015
Joining date – orientation and course registration		July 31, 2015
Classes begin		August 03, 2015

Integrated M.Tech, M.Tech (ESD), M.Tech (IT)

Online Application Portal

http://iiitb.in OR http://iiitb.campusmetalink.com/CmlPortal/login.cml

Access the IIITB Online Application portal and fill in the online application form.

Step a)   Click on **Register as New Applicant** and create your User ID and Password for IIITB Online Admissions Portal. You will receive an email notification with your User ID and Password after successful registration. This User ID and Password can be used to login to the Online Admissions Portal to Apply for relevant programme at IIITB, to check the status of your Application Fee payment and to Download the Admit Card once it is generated.

Step b)   Login to the portal using your User ID and Password.

Step c)   Read the **Instructions** to fill the application form. Also read the **Terms and Conditions**.

Step d)   Click on the "**Apply**" link corresponding to the programme you are applying (M.Tech, Integrated M.Tech.,) from the "**Application Form**" page to go to the corresponding Online Application Form.

Step e)   There are 3 pages for the application form – The "**Personal Information**" page, the "**Enrollment Information**" page and the "**Competitive Exam Details**" page. You may "Save" the partially filled application form, logout and come back to it later to complete it. All the mandatory fields need to be filled before the final submission of the application form. A unique Candidate ID gets assigned to the application on the first Save of the Application Form. Once the Application Form is submitted - it cannot be edited.

Applicants can change their Password or Email Address in the system from the "**User Information**" page.

Payment Information

1. Application fees can be paid only via NEFT as per the instructions below. Payment via Cash, Demand Drafts, challan or any other form is NOT acceptable.
2. Candidates can pay application fees through any of the banks via NEFT. Note that NEFT can be done either using online banking or by going to your bank branch (any bank).
3. If you are paying via NEFT via netbanking, you need to add a third party beneficiary as per the given details as required by the online banking system you are using
4. For doing Fund Transfers from HDFC Bank accounts netbanking, you need to choose Third Party Transfer option and select - Transfer to eCMS Account (Virtual Account) in transaction type.
5. Once the payment is done, no need to update online application or send us any copy. We will collect the details directly from the bank.
6. For the purpose of deadlines, payments done via online NEFT will be accounted as per the policies of the bank where the payment is being made. Payment cutoff time generally is 12 PM for the transfer to happen on the same day. Please contact your bank for exact cutoff period and ensure you are able to make payments on time as per IIITB deadlines.
7. There is no provision for return or reimbursement of application fee for any reason (even if the application is rejected for any reason including delayed payment of application fee).

NEFT Details

Account Number :
<Your full online **16 character** alpha-numeric application id>

Beneficiary Name :
INTERNATIONAL INSTITUTE OF INFORMATION TECHNOLOGY BANGALORE

Bank Name : HDFC BANK LTD
Branch Name : Sandoz Branch, Mumbai
IFSC Code : HDFC0000240

Queries can be sent to admissions-mtech@iiitb.ac.in.

Master of Science by Research/ Master of Science (Research) & Ph.D.

At the admissions website, http://www.iiitb.ac.in/admissions-new, applicant shall find instructions, by Mar-15-2015, to access the online application form, fill it, and submit a completed application form as per the instructions given on the form. All applicants need to pay a non-refundable application fee of INR 1000/- as per the instructions for Master of Science by Research/ Master of Science (Research)/Ph.D. online applications.

All queries may be sent via e-mail to the Institute: research.admissions@iiitb.ac.in.

Master of Science (Digital Society)

You can apply online by visiting http://iiitb.online-ap1.com/. Please visit http://www.iiitb.ac.in/master-science-digital-society for additional information including an introductory video and a detailed brochure. You can send queries to admission-ds@iiitb.ac.in

Address for Correspondence

All correspondence must be sent to the following address:

Registrar
International Institute of Information Technology, Bangalore
26/C, Electronics City,
Hosur Road, Bangalore - 560100

Tel. (080) 4140 7777 / 2852 7627 Fax: (080) 28527636

E-Mail for admissions queries:

iMtech / M.Tech.: admissions-mtech@iiitb.ac.in

Master of Science by Research/ Master of Science (Research)/PhD Admissions: research.admissions@iiitb.ac.in

Master of Science in Digital Society: admission-ds@iiitb.ac.in

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Prof. B. Ashok did his Ph.D. from the University of Massachusetts, Amherst, specializing in theoretical polymer physics, followed by postdoctoral work at the Lorentz Institute for Theoretical Physics, Leiden, The Netherlands, and at the Materials Research Centre, IISc., Bangalore. Prior to joining IIIT-B in July, 2012, he was an Assistant Professor at the central University of Hyderabad since April, 2007. His research interests are principally in theoretical soft condensed matter physics, complex systems and dynamical systems theory.
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Jyotsna Bapat *(Ph.D., Penn State University, USA)*
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Prof. Bapat received her Ph.D. from Penn State University. Her thesis was in the area of semi-blind equalization applied to communication systems. After graduation, she worked on de-sign and implementation of voice-band (V.34) and DSL (G.lite) modems at Ariel Corp and Lucent Technologies respectively. Her area of interest is Digital Signal Processing as applied to communication systems. In particular, she is interested in semi-blind identification as applied to OFDM systems.

Sujit Kumar Chakrabarti *(Ph.D., IISc)*
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Prof. Sujit Kumar Chakrabarti has a PhD from the department of Computer Science and Automation, Indian Institute of Science, Bangalore. Prior to that he has a masters from University of Roorkee (now IIT Roorkee) in measurement and instrumentation, and a BE in electrical engineering from Nagpur University. His research interests are centred around software engineering, formal methods and software testing..

Bidisha Chaudhuri *(Heidelberg University, Germany)*
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Prof. Bidisha Chaudhuri has joined the institute as consulting faculty in the Centre for Information Technology and Public Policy (CITAPP) w.e.f. 5th September, 2013. She has completed her PhD from the South Asia Institute at the Heidelberg University, Germany in 2012. The title of her doctoral thesis was Hybridising (e) Governance in India: The Interplay of Politics, Technology and Culture. She received an M.A in Sociology from Delhi School of Economics, University of Delhi and a Joint European Masters in Global Studies from University of Leipzig (Germany) and Vienna University (Austria).

Meenakshi D' Souza *(Ph.D., Institute of Mathematical Sciences, India)*
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Prof. D' Souza did her Master's in Mathematics from University of Madras, Chennai and her Ph. D. in Theoretical Computer Science from The Institute of Mathematical Sciences, Chennai. She joined the research department of Honeywell Technology Solutions, Bangalore soon after completing her Ph. D. and worked there in the areas of Formal Verification of Software Design, Model Based Development and Physical Access Control. Her research interests are in Formal Methods, Model Based Development, Automata Theory and Enterprise Security. She is also interested in Research and Technology Strategy and Intellectual Property Rights Management.

Debabrata Das *(Ph.D., Indian Institute of Technology, Kharagpur)*
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Prof. Das received his Ph.D. degree from the Indian Institute of Technology, Kharagpur (IIT Kharagpur). At present he is serving as Hewlett Packard Chair and Associate Professor at IIIT Bangalore. Before joining IIITB, he had served at G S Sanyal School of Telecommunication at IIT Kharagpur and later at Kirana Networks in New Jersey, USA. At present he is PI of Department of Information Technology, Government of India Sponsored project on Green Broadband Wireless Net-work and a Nokia sponsored project in the area of Mobile Computing and Hewlett Packard supported on IP Multimedia Services (IMS). His areas of teaching interest are, Wireless Access Network, Mobile Computing with IMS and Internet-working. His main areas of research interest are Wireless Access Network's MAC, QoS, Power saving and IP Multi-media Subsystems.

Dr. Das has more than 70 peer reviewed papers in different journals and International conferences. He and his wireless network team had contributed three ideas to IEEE 802.16m Broadband Wireless Standard. He is also currently the Dean (R&D) of IIITB.

Srinivasaraghavan G. *(Ph.D.,IIT Kanpur)*
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Prof. G. Srinivasaraghavan, PhD is a Partner at Performance Engineering Associates. He has a PhD in Computer Science from the Indian Institute of Technology Kanpur and has over 18 years of industry experience. At Infosys Technologies, India's premier IT firm, he was responsible for the delivery of large, performance-critical IT systems for Fortune 500 clients in the telecom, BFSI and logistics spaces. He has over a dozen published papers in several reputed international fora, including journal of Algorithms, International Journal on Computational Geometry and Applications and Foundations of Software Technolgy and Theoretical Computer Science. In his previous position he was Chief Technology Officer at Aztecsoft Ltd(now a part of Mindtree Ltd).

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Prof. Dinesh Babu obtained his doctorate from Ecole Polytechnic Federale Lausanne (EPFL), Switzerland, beginning of 2011. His research interests are in Audio-Visual Signal Processing, Machine Learning, and Social Computing. Prior to joining IIITB as an assistant professor, he was a Postdoc at the Social Computing Lab, Idiap Research Institute (EPFL) for 2.5 years. Prior to his PhD, he worked as a Senior Research Engineer at Mercedes-Benz Research and Technology, Bangalore for 3 years. He completed his M.Sc.(engg) from I.I.Sc, Bangalore in 2003, specializing in System Science and Signal Processing; and B.Tech in Electronics from Madras Institute of Technology in 2001.

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For the past 20 years, Prof. Dinesha has been involved in teaching, research and consultancy in Information Technology. He has been developing scientific and commercial soft-ware. His areas of interest include Software Engineering, Quality Systems (ISO and SEI CMM Models), Cryptography, Object Technology and Data Structures.

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Professor Manisha Kulkarni did her masters from Shivaji University, Kolhapur, Maharashtra and her PhD in the field of Number Theory from The Institute of Mathematical Sciences, Chennai. She worked on Galois Module Structure problems in Algebraic Number Theory for her thesis. After that she has been working in the field of Diophantine equations. She is also Principal Investigator of Department of Science and Technology sponsored project on the distribution of Galois groups and class groups. Her areas of interest include Diophantine equations, elliptic Curves, Galois groups and Class groups.

Jayprakash Lalchandani *(Ph.D., Indian Institute of Technology, Kharagpur)*
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Prof. JayPrakash joined the institute in January 2012. He completed his PhD in Computer Science (specialization: Software Engineering) from the Indian Institute of Technology Kharagpur (IITKGP) in 2010. Before joining IIITB, he was associated as a post-doctoral researcher with the General Motors Collaborative Research Laboratory in the Department of Computer Science and Engineering at IITKGP. His current research interests include program and model analysis, testing, requirements engineering, etc.

Nivedita Menon *(Ph.D., Penn State, USA)*
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Prof. Niveditha Menon received her doctorate from Penn State University in Sociology and Demography with a minor in Women's Studies. Her broad areas of interest are gender, poverty, violence, community development, and research methodology. In particular, she has worked in the areas of local participatory development, rural poverty, and urban homelessness.

Brijesh Kumar Mishra *(Ph.D., Indian Institute of Technology, Kanpur)*
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Prof. Brijesh Kumar Mishra did his M.Sc. (int.) and PhD at the Indian Institute of Technology Kanpur, Kanpur India. Subsequently, he spent three years as a post-doc at the Swiss Federal Institute of Technology Lausanne, (EPFL), Switzerland in the environmental chemistry laboratory and two year at Umeå University, Umeå, Sweden in the drug-design lab. His broad area of research has been in Quantum chemistry: electronic structure calculations. He has extensively investigated weak interactions (pi-pi, CH-pi, cation-pi) in hetero-aromatic dimers and trimers and in protein-ligand systems. He has more than 15 publications in international and national journals.

Srinath R. Naidu *(Ph.D., Eindhoven University of Technology, Netherlands)*
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Prof. Naidu obtained his B. Tech. degree from the Institute of Technology, BHU in 1996. After completing his Master's degree from the Indian Institute of Science, Bangalore in 1998 he went on to finish his Ph.D. in the area of statistical timing analysis for digital integrated circuits from Eindhoven University of Technology in 2004. After completing his Ph.D., he worked for Magma Design Automation Inc in the area of statistical timing analysis. His last work assignment before joining IIITB was with Cadence Design Systems in the area of low power synthesis. His research interests are mainly in the area of electronic design automation including statistical timing analysis and optimization for digital circuits, power analysis and optimization and formal verification. He is also interested in combinatorial optimization, and design and analysis of algorithms.

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Prof. Nair obtained her Ph.D. in Computer Science from University of California, Davis; after a B. Tech in Aerospace Engineering from IITM and a M.S. in Computational Engineering from Mississippi State University. Prior to joining IIITB, she worked as a scientific programmer at Enthought Inc. Austin and as a research associate at Texas Advanced Computing Center, University of Texas at Austin. Her areas of interest are scientific computing, visualization, computer graphics, and computational geometry.

Poonacha P. G. *(Ph.D., Indian Institute of Technology, Kanpur)*
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Prof. Poonacha received B.Tech degree in Electronics and Communication Engineering from KREC (now known as NITK) Surathkal in 1978, M.Tech and Ph. D. degrees in Electrical Engineering from IIT Kanpur in 1981 and 1987 respectively. He is a Senior member of IEEE. He has been working in Signal and Image processing and digital communication areas for the past 24+ years which includes 10 years at IITB and 14 years in industry.

He was a faculty member in the EE Department at IIT Bombay between 1986 and 1996.During that period he taught PG level courses in the area of Digital communications, Adaptive signal processing and Neural Networks and worked as Principal as well as co-investigator on MHRD projects by government of India. He was with Sasken from 1996 to 2002. At Sasken he became Vice President of its R&D division in 2001,responsible for R&D initiatives and patents in the area of 4G wireless, MPEG7 and Software Defined Radio (SDR). He was also a member of the management council at Sasken in 2001. Prior to that, he was the head of 3G wireless program at Sasken responsible for development of 3G protocol stack and baseband. Before joining Epigon he worked as a Senior Technologist at Texas Instruments, Bangalore. He worked as Chief Technology Advisor and Director at Epigon Media Technologies from 2003 to 2011.At Epigon he worked on development of H.264 codec, Worldspace hybrid radio receiver, DAB receiver and OFDM based modem development. Research Interests: Computer Vision Problems, Wireless Communications and Wireless Sensor Networks, Software Defined Radio, Neural Networks and their applications.

Balaji Parthasarathy *(Ph.D., University of California, Berkeley, USA)*
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Prof. Parthasarathy obtained his Ph.D. from the University of California at Berkeley. His research broadly focuses on the relationship between technological innovation, economic globalization, and social change. Within this broad focus, his work follows two threads. One thread examines the impacts of public policy and firm strategies on the organization of production in the ICT (Information and Communications technology) industry. Another thread deals with "ICTs for Development," or ICTD. Here his interests lie in under-standing how ICTs are being deployed in various domains of activity to transform social relationships, especially in economically underdeveloped contexts. He is currently the Dean of Faculty.

Amit Prakash *(Ph.D., IIM Bangalore)*
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Prof. Amit's research and consulting interests are in the areas of Information Systems and Public Policy, particularly where they intersect with Development Sectors such as Public Health & Nutrition, Education & Skill Development and Livelihoods. Amit has a graduate degree in Civil Engineering from the Indian Institute of Technology, Roorkee and a doctoral degree in Information Systems from the Indian Institute of Management Bangalore.

G. N. S. Prasanna *(Ph.D., MIT, USA)*
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Prof. Prasanna did his B. Tech at IIT Kanpur, and MS and Ph.D. at MIT, USA. He has worked at Lucent Microelectronics and Lucent Bell Laboratories, for about 11 years. At Lucent he worked in a variety of fields, including VLSI, switching, optical networking, etc. He was responsible for the signal processing system design of a major access product for Lucent's 5ESS switch, accounting for 30 million lines world-wide. Recently his research interests have included optical networking and robust optimization. He has published about 35 papers, and holds about 15 patents. He has been on several technical program committees and has served as a referee for several journals. He is interested in communication systems (optical, wireless, power line), robust optimization, electromechanical systems, animation and mathematics.

Chandrashekar Ramanathan *(Ph.D., Mississippi State University, USA)*
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Prof. Chandrashekar received his Ph.D. degree from Mississippi State University. His thesis was in the area of object-oriented databases. He has extensive application software development experience in large multinational organizations. Most recently, he was working as a senior architect at Hewlett Packard. His current focus is in the area of databases and software engineering. Application architectures, enterprise content management and knowledge management are his other areas of interest.

Shrisha Rao *(Ph.D., University of Iowa, USA)*
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Prof. Rao obtained his Ph.D. in computer science from the University of Iowa, and also has an M.S. in logic and computation from Carnegie Mellon University. His primary research interest is in the area of distributed computing, specifically algorithms and formal methods for concurrent and distributed systems. He also has interests in problems such as distributed fair division and demand-side management. He occasionally dabbles in Mathematics. He is also a regular reviewer for the ACM Computing Reviews journal.

Madhav Rao *(Ph.D., University of Alabama, USA)*
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Prof. Rao completed his Masters in Microelectronics from University of Arkansas in 2007 and Ph.D in Electrical Engineering from the University of Alabama in 2012. His major research contribution involves developing a solder based self assembly technology for 3D integration of VLSI circuits. He has published multiple journal articles and has given multiple talks on the same in international conferences. His other research interests include fabricating CNT (Carbon nanotubes) in through silicon vias, developing nanomagnetic devices to emulate logic gates, and developing human readabale audio for educational purposes.

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Prof. Roy got his B.E., M.Tech. and Ph.D. degrees from University of Pune, IIT Madras and IIT Bombay in 1982, 1984 and 1993, respectively. Prior to 1993 he worked in Semiconductor Complex Limited, Chandigarh and the VLSI Design Centre, Department of Computer Science and Engineering, IIT Bombay. From 1993 to 2001 he was with the faculty of Electrical Engineering, IIT Kanpur. From 2001 to 2003 he was with Synplicity Inc, Sunnyvale USA & Bangalore. From April 2004 to January 2013 he was with the Center of Excellence, System on Chip, Texas Instruments India, Bangalore. He spent 2 years from 1998 to 2000 carrying out research on formal verification in Fujitsu Laboratories Limited, Kawasaki, Japan, on a sabbatical from IIT Kanpur. His research interests are in hardware formal verification, power estimation, performance analysis, CAD for VLSI and embedded systems.

S Sadagopan *(Ph.D., Purdue University, USA)*
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Prof. Sadagopan, Director of IIITB, is a product of Madras University, India and Purdue University, USA. He taught for 25+ years at IIT Kanpur, IIM Bangalore, IIT Madras and IIITBangalore in addition to short teaching assignments at RUTGERS, USA and AIT, Bangkok. He has wide research interests that include Operations Research, Multi-criteria optimization Decision Theory, Simulation, Enterprise Computing, Programming Languages, Databases, Multimedia and e-Governance. He has authored seven books, several book chapters and papers. He is also a Fellow of IEE (UK) and Computer Society of India. He is a Senior Member of IEEE, ACM and AIS.

Prof. Sadagopan consults widely across different industry segments (Auto, Manufacturing, Banking, IT and Social Sector) and lectures extensively at corporations, industry events and Universities in North America, South America, Europe, Middle East, Asia, Australia and New Zealand on all aspects of IT.

S. Rajagopalan *(Ph.D., Indian Institute of Technology, Kanpur)*
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Prof. S. Rajagopalan received his B. Tech degree from IIT Delhi, PGDM from IIM Bangalore and Ph.D. from IIT Kanpur. He was the Chief Executive Officer of the Karnataka State Council for Science and Technology from 1982 to 1993 and was involved managing innovations that addressed the problems of Karnataka. In 1993 he along with a few colleagues founded Technology Informatics Design Endeavour (TIDE) a non-profit development society which focused on developing and disseminating technologies that are economically attractive, environmentally sustainable and socially acceptable in rural areas of Karnataka. He was its Chairman till 2007. For his work in TIDE, he was awarded the Ashoka Fellow (1994), Fellow of the Salzburg Seminar (1999), one of the four finalists of Social Entrepreneur of India award (2006) and one of the 50 pioneers of India chosen by India Today Magazine (2008). TIDE was awarded the International Green Oscar, the Ashden Award in 2008.

Prof. Rajagopalan has been working in the area of Geographical Information Systems since 1989 and founded a Company Spatial Data Private Limited in 1999. This company was pioneer in developing user-friendly digital maps of Indian Cities under the Brand Name Mapcue. Dr. Rajagopalan's areas of interest include innovation dissemination, economics of innovations, Geographical Information systems, and Economics of Information Technologies. He also heads the IIITB Innovation Centre, which aims at incubating and promoting innovations in the area of Information and Communication Technologies.

Subajit Sen *(Ph.D., University of Waterloo, Canada)*
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Prof. Subhajit Sen passed with B.Tech in Electronics Engineering from Institute of Technology, Banaras Hindu University, Varanasi, India in 1984, M.S. from Louisiana State University, U.S.A. in 1991 and with Ph.D in Electrical & Computer Engineering from University of Waterloo, Ontario, Canada in 1997. His Ph.D thesis was in the area of design of Analog-Digital converters for wireless communications. Between 1984 to 1988 he worked at Semiconductor Complex Ltd., Chandigarh, India on analog CMOS circuit design. Subsequent to his Ph.D studies and till 2009 he has worked in the Indian semiconductor industry (Arcus Technologies, Cypress Semiconductors, Cirrus Logic, Sasken Communications, SiRF Technologies) both as a senior level individual contributor as well as project manager for the design of analog modules and sub-systems for fiber-optic communication, audio, video, defense-electronics and GPS related products. Some of these projects have been implemented as successful fabricated chips for commercial products. He has two U.S. patents in the areas of trans-impedance amplifier(TIA) and PLL charge-pump. He worked at Dhirubhai Ambani Institute of Information & Communication Technology (DA-IICT), Gandhinagar as Associate Professor from April 2009 – May 2013. His general interests are in analog and mixed-signal VLSI integrated circuit & system design, digitally-assisted analog circuit design, embedded-systems for biomedical and energy-harvesting applications. He is also interested in history of Indian science and technology.

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Prof. Neelam received her PhD from IISc, Bangalore. Her thesis was on strategies for rapid MR imaging. Her previous stints include MILE Lab, IISc and MR Imaging group at GE Healthcare, Bangalore. Her research interests are in medical imaging and processing.

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Prof. Srinath Srinivasa holds a Ph.D. in Information Systems from the Berlin-Brandenburg Graduate School for Distributed Information Systems, Germany, and an MS from IIT-Madras. He works in the broad areas of web information retrieval, distributed computing, and modelling of non-linear systems. Currently, he is a member of various technical and organizational committees for international conferences, a life member of the Computer Society of India (CSI), and a member of the Board of Studies at Goa University. He is also the recipient of various national and international grants for his research activities.

Srikanth T. K. *(Ph.D., Cornell University, U SA)*
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Prof. Srikanth obtained his Ph.D. in Computer Science from Cornell University in 1986, and has a B.Tech (Mech. Eng) from the Indian Institute of Technology, Madras. He has over 28 years of experience in the software industry. Prior to joining IIITB, he was at Sasken Communication Technologies, where he handled business, technology and product management roles, and lead various product and R&D initiatives, especially around wireless and multimedia technologies and mobility. Earlier, he co-founded and lead software development for a startup in the US, focusing on geometric modelling with applications in mechanical design and geo-sciences.

V. N. Muralidhara *(Ph.D., Indian Institute of Technology, Delhi)*
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Prof. V. N. Muralidhara has done PhD in Computer Science and Engineering at Indian Institute of Technology Delhi. His thesis was in the area of Algorithms. He has done M.Tech. in Computer Application at IIT Delhi and M.Sc. in Mathematics at University of Hyderabad. Before Joining IIIT Bangalore, he has worked as Research Associate at SERC, Indian Institute of Science Bangalore for few months. He is interested in the theory of algorithms and complexity, and its applications. More specifically, his broad areas of research interest include combinatorial optimization, approximation algorithms, randomized algorithms, on-line algorithms, cryptography, algebra and coding theory.

Vinod Vyasulu *(Ph.D.,University of Florida, USA)*
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Prof. Vinod Vyasulu has joined as an Advisor in the Centre for Information Technology and Public Policy (CITAPP) in the institute in 2013. He has Ph.D. in Latin American Studies and Economics) from University of Florida. His areas of interest include federal system, federal finances, especially the working of local governments, and the process of urbanisation. He has taught at the Universidad de las Americas in Mexico, Indian Institute of Management, Bangalore, and XLRI Jamshedpur.

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Many senior members from the Industry and Academia spend time at IIITB as adjunct / visiting faculty members. Following are some of the adjunct / visiting faculty members at IIITB:

Hema Krishnamurthy

Roland E Hass, Ph.D.

Shakeel Ali

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