

INSTITUTE OF TECHNOLOGY NAAC ACCREDITED 'A+' GRADE



# PROSPECTUS BTech Admissions 2 0 2 2

Institute of Technology Nirma University

# THE FUTURE IS HERE

Email: ugadmissions.it@nirmauni.ac.in

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### VISION

Shaping a better future for mankind by developing effective and socially responsible individuals and organisations.

### **MISSION**

Institute of Technology emphasises the all-round development of its students. It aims at producing not only good professionals but also good and worthy citizens of a great country, aiding in its overall progress and development.

It endeavours to treat every student as an individual, to recognise their potential and to ensure that they receive the best preparation and training for achieving their career ambitions and life goals.

### **Quality Statement**

To develop high quality professionals who reflect and demonstrate values that the University stands for, through innovation and continuous improvement in facilitation of learning, research and extension activities.



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# **Nirma Education & Research Foundation (NERF)**

Nirma University was established by the initiative of Nirma Education and Research Foundation (NERF). The renowned industrialist and philanthropist Dr Karsanbhai K Patel, the founder of Nirma Group of Industries, established the NERF in 1994 with a view to promote and support higher education in India.



The NERF chaired by Dr Karsanbhai K Patel is a trust that crystallized his long cherished

dream of providing world-class education and inculcating the spirit of social relevance among the young students of the country.

#### **Institute of Management** Institute of Technology 996 199 (earlier known as Nirma (earlier known as Institute of Technology) Nirma Institute of Management) तमसो मा ज्योतिर्गमय **Institute of Pharmacy** 2004 2003 **Institute of Science Institute of Architecture Institute of Law** 2007 2014 & Planning Institute of Design Institute of Commerce 2016

The following institutions have been established under the aegis of the NERF

All of the above institutes are the constituent units of Nirma University that was established by the NERF in 2003.



### Nirma University

Nirma University is one of India's leading universities based in Ahmedabad (Gujarat). The University was established in the year 2003 as a Statutory University under a special act passed by the Gujarat State Legislative Assembly. It is recognised by the University Grants Commission (UGC) under Section 2 (f) of the UGC Act. The University is duly accredited by National Assessment and Accreditation Council (NAAC). The University is a member of Association of Indian Universities (AIU) and the Association of Commonwealth Universities (ACU). The University received the Centre of Excellence (CoE) status from the Government of Gujarat in January 2022.

Dr Karsanbhai K Patel, Chairman, Nirma Group of Companies and Chairman, NERF is the President of the University. Under his leadership, the University is expanding every passing year and moving from strength to strength.

Functioning under the aegis of NERF (Nirma Education and Research Foundation), the University consists of Faculty of Engineering and Technology, Faculty of Management, Faculty of Pharmacy, Faculty of Law, Faculty of Science, Faculty of Architecture & Planning, Faculty of Commerce, Institute of Design and Faculty of Doctoral Studies and Research. Centre for Advanced Instrumentation, Centre for Continuing Education, Centre for Entrepreneurship, Centre for Family Business and Entrepreneurship, Centre for Quality Assurance and Academic Development, Centre for Robotics and Automation and Centre for Excellence in Data Science.

The eight constituent institutes and centres, spread across a lush green 115-acre campus of the University, have set the bar high in delivering quality education. The graduate, postgraduate and doctoral level programmes offered by these institutes are rated highly by accreditation agencies, industry, business magazines and students. Apart from these, the University also offers several certificates and diploma programmes.

The University is acclaimed for its holistic education that strives to develop not only academic competence but also human character. Today, it is identified with cutting edge research, robust academic programmes, quality teaching-learning process and over-all personality development interventions of its students. The state-of-the-art campus provides refreshing environment, stimulates intellectual growth and creativity.



## **NIRMA UNIVERSITY**

### **BOARD OF GOVERNORS**

#### Dr Karsanbhai K Patel

Chairman, Nirma Limited, Chairman, Nirma Education and Research Foundation, President, Nirma University

**Shri K K Patel** Vice President, Nirma University

**Shri Rakeshbhai Patel** Vice Chairman, Nirma Limited

Shri Hirenbhai K Patel Managing Director, Nirma Limited

**Dr P N Bhagwati** Industrialist and Educationist, Chairman, Bhagwati Sphero Cast Limited

**Dr Pankaj Patel** Chairman and Managing Director Zydus Cadila Health Care, Ahmedabad

**Prof D P Agrawal** Former Chairman UPSC, New Delhi

**Prof. Sarat Dalai** Dean, Faculty of Science, Nirma University **Dr Anup K Singh** Director General, Nirma University

**Shri S J Haider, IAS** Principal Secretary, Higher and Technical Education, Education Department, Government of Gujarat, Gandhinagar

**Shri R D Shah** Chartered Accountant, Trustee Nirma Education and Research Foundation

**Shri Kamalbhai Trivedi** Advocate General Gujarat High Court, Ahmedabad

**Shri Vipinbhai S Parikh** Advocate

**Prof Sangita Shroff** Dean, Faculty of Design, Nirma University

**Shri G Ramachandran Nair** Executive Registrar, Nirma University



### President Nirma University

Dr Karsanbhai K Patel, Chairman, Nirma Limited and founder President of Nirma Education and Research Foundation (NERF) and Nirma University, is globally recognised, both as an industrialist and as a visionary in the field of education.

Dr Patel is conferred upon the Padma Shri Award in the year 2010, Udyog Ratna Award in 1990, Gujarat Businessman Award in 1998, Ernst & Young Lifetime Achievement Award in 2006, Sardar Vallabhbhai Patel Vishwa Pratibha Award in 2009, Baroda Sun Lifetime Achievement Award in 2009 and Chemtech Award of Hall of Fame, among others.

Dr Patel was awarded an Honorary Doctorate of Humane Letters by Florida Atlantic University, USA for Business and Marketing acumen and philanthropy in the year 2001. He has been conferred upon Honorary DLitt by Devi Ahilya Vishwavidyalaya, Indore in 2007. He received the Life Time Achievement Award from the Gujarat Chamber of Commerce and Industry in 2019.



Dr Karsanbhai K Patel President Nirma University



Vice President Nirma University



Shri K K Patel Vice President Nirma University

Shri K K Patel, Vice President, Nirma University, did his BS in Chemical Engineering from Tennessee Technological University, the US. Mr Patel began his corporate career as the Managing Director of MASCOT (India) Instruments Pvt Ltd, a company manufacturing Control Valves under US Technical Collaboration at Naroda, Ahmedabad and served the organization for sixteen years. He is also the Director of the Kalupur Commercial Co-operative Bank Limited (KCCBL), a scheduled bank having several branches; President of the Gozaria Kelvani Mandal in Mehsana District, which is an Educational Public Charitable Trust managing educational activities from KG level to College level; and also the Trustee of the Gozaria Sarvajanik Hospital, having 120 beds with all modern facilities.



# **Director General's Message**

**Nirma University** 



Dr Anup K Singh Director General Nirma University

Welcome to Nirma University, a not-for profit professional education university, known for its commitment to academic excellence and creation of intellectual capital.

I am pleased to announce that Nirma University has been recognised as 'Centre of Excellence' by the Government of India.

India is fast emerging as a knowledge society and becoming integrated with other knowledge societies of the world. A university is the engine of a knowledge society. Higher education is a significant contributor of national development and growth. The Indian youth are increasingly participating in higher education. The Indian talent is today internationally sought for providing leadership to business organisations.

Nirma University develops leaders in different fields who would provide leadership to different organisations. We inculcate global competencies among them and help them realise their full potential. Our rankings and achievements are testimony to our commitment to academic excellence and student centricity. We endeavour to develop employable and entrepreneurial graduates, who would not only be outstanding achievers, but would also be known for their contribution to the society. Our curricular, co-curricular and extra-curricular activities are designed to help students meet their personal and career ambitions.

I am confident that all our stakeholders find their relationship with us as value adding and satisfying. You will get high quality education and employability, you would become responsible citizen, and nation builder.

I urge you to join the community of Nirma University and contribute to creating a better society.







## **Director's Message**

**Prof (Dr) Rajesh N Patel** Director-School of Engineering & Director (i/c)-Institute of Technology



With great pleasure, I welcome you to one of the most reputed institutes of the country; an institute with a firm vision of the overall development of students, a place that will enrich you with technical and life skills and will provide the opportunity to compete with world-class students. The Institute is NAAC 'A+' grade accredited in 2022 which endorses the quality standards followed in every aspect of education delivery. All the BTech Programmes are accredited by the National Board of Accreditation (NBA) under Tier-I category. Since its inception in 1995, Institute of Technology, Nirma University has upheld its vision of shaping a better future for mankind by developing effective and socially responsible individuals and organisations. In a short span of time, the Institute is recognised as one of the leading centre of higher education in the country. It is also known for the outstanding calibre of its students, wellqualified faculty dedicated to teaching and research and excellent infrastructure. Institute aims to provide a learning environment that promotes excellence in academic and professional standards. The Institute is equally responsible for sensitising its students towards societal activities, environmental sustainability and equal opportunity to nurture.

Keeping in mind the graduate skill-set desired by the industry, the Institute focuses on the teaching-learning process, curricula and evaluation away from lower-order thinking skills to higher-order skills. We at institute impart the experiential learning with a strong foundation of core courses with an interdisciplinary flavour along with supplementary courses aiming to hone thinking skills, such as design thinking, critical thinking, yoga, etc. The courses are designed and delivered in such a way that they add significant value to a student not only restricted to technology, but also core human values. The main focus of the institution is to empower students with sound knowledge, experience, and training so that they can achieve heights both at the academic level and highly competitive global industrial market respectively.

I once again welcome you, and wish you a bright success in your academic pursuit.

# **About The Institute**

#### Institute of Technology

#### Institute of Technology

Founded on the vision of Padmashri Dr Karsanbhai K Patel, the Institute of Technology, Nirma University, earlier known as Nirma Institute of Technology, established in 1995, was the first self-financed engineering college in Gujarat.

The Institute is identified with robust academic programmes, quality teaching-learning process overall personality development and interventions of its students. A blend of the young and experienced faculty, committed to teaching and research and have proven to be the best mentors to budding engineers. The Institute offers multidisciplinary undergraduate, postgraduate and doctoral programmes in Engineering and Technology. An ethical, professional work culture discipline, and commitment to providing quality education are the hallmarks that define the Institute.

The Institute is ranked 154 by the National Institute Ranking Framework (NIRF-2021) making its mark amongst four thousand plus engineering colleges in the country. The Institute figures in the top 15 self-financed colleges in the country and amongst top 3 in the state as positioned by top rated ranking agencies. The Institute is known for its prowess in the field of Artificial Intelligence and Machine Learning and has established a Centre of Excellence in Data Science in collaboration with the State University of Binghamton and another in Robotics and Automation.

The Institute gives ample opportunities to its students and strives to equip its students in terms of providing the skills, ability and knowledge required for life-long learning and accolades.



### Accreditation

The Institute of Technology is a constituent Institution of Nirma University. Nirma University and its constituent Institutions are accredited by National Assessment and Accreditation Council (NAAC), an autonomous institution of the University Grants Commission, Government of India with 'A+' grade.

Institute of Technology, Nirma University takes pride in announcing that all its undergraduate programmes are accreditated by NBA under Tier-I category.



Within a short span of time, the Institute has been recognised as one of the leading centre of higher education in the country. In addition to offering robust academic programmes and quality teaching-learning process, the all-round development of students is planned through a blend of co-curricular, extra-curricular, societal and professional activities.

#### Over the years, the Institute has worked towards achieving excellence and is now known for -

- Excellent national reputation
- More than 150 companies enrolled for campus placements; excellent placement record across all branches
- Learner centric approach along with personalised attention to the students
- Focus on synergy between teaching and all-round development of the students
- Meritorious students with geographical diversity in undergraduate programmes
- Well placed closed-loop feedback system for curriculum development encompassing all the stake holders
- Globally compatible academic credit system with emphasis on continuous evaluation
- Well-disciplined conducive academic environment and ambience
- Active linkages with industries and research organizations
- Continuous emphasis on faculty and staff development
- Strong commitment and dedicated efforts towards continuing education and pedagogy

### The Institute also offers a wide range of choices to cater to the diverse interests of students and provide additional opportunities to fast learners. Some of the initiatives to that effect are –

- Interdisciplinary minors in Marketing, Finance, Robotics, Entrepreneurship Development, Design and more
- Minor in Computer Science and Engineering for students other than those pursuing BTech in CSE
- Large basket of Electives leading to specialization in a chosen area within the discipline
- Opportunity to work with faculty members on funded research projects from DST/ISRO/IPR and others
- Choice of Internship in the industry / foreign university or R & D organisation for six months
- Value added courses like Design Thinking, Critical Thinking, ICT Tools, Cyber Security, Yoga & Meditation, Ethics & Values, Applied Literature and more
- Opportunities for Internship and enrolling in pre-approved MS programmes in top-league US and Canadian universities such as University of Southern California, Iowa State University, Carlton University, Florida Atlantic University, etc.
- Funding and guidance for innovative ideas to promote start-up ventures
- Connect with the community through the community service programme



### Learning at the Institute of Technology, Nirma University

https://technology.nirmauni.ac.in/

### **Academic Programmes**

#### **BTech (Four years, Eight semesters)**

- Chemical Engineering
- Civil Engineering
- Computer Science and Engineering
- Electrical Engineering
- Electronics & Communication Engineering
- Electronics & Instrumentation Engineering
- Mechanical Engineering

#### **BTech (CSE)-MBA (Five Years Integrated)**

#### **MTech (Two years, Four semesters)**

- Civil Engineering (Computer Aided Structural Analysis & Design)
- Civil Engineering (Construction Technology and Management)
- Computer Science and Engineering (Computer Science & Engineering)
- Computer Science and Engineering (Cyber Security)
- Computer Science and Engineering (Data Science)
- Electrical Engineering (Electric Vehicular Technology)
- Electronics & Communication Engineering (VLSI Design)
- Electronics & Communication Engineering (Embedded Systems)
- Mechanical Engineering (CAD/CAM)
- Mechanical Engineering (Design Engineering)

#### MCA (Two Years, Four Semesters)

Masters in Computer Applications is a two year programme imparting comprehensive knowledge of computer applications through emphasis on theory and practice and is designed to meet the growing demand for qualified professionals in the field of Information technology.

#### **PhD Programmes**

PhD Programmes in Engineering are offered by all the departments on full-time and part-time basis.



# Shape your Career @ IT-NU

# Wide range of choices to shape your career

- Shape your career through a wide range of choices; pursue interdisciplinary minors in Computer Engineering, Marketing, Finance, Robotics, Entrepreneurship and more along with a BTech degree in your chosen discipline.
- Realize your MS dream through our preapproved admission programme at University of Southern California, Iowa State University, Carlton University, Florida Atlantic University, etc. and take advantage of our MoUs with many foreign Universities.
- Choose internship in the industry or in topleague US / Canadian Universities in the final Semester.
- Avail Supercomputing facility for conducting high-end advanced computing studies and research.
- Be a part of the data science team at the Centre of Excellence in Data Science in collaboration with the State University of New York, Binghamton
- Develop your creativity and problem solving skills through courses like Design Thinking, Critical Thinking, ICT Tools, Cyber Security, Yoga & Meditation, Ethics & Values, Applied Literature and more.
- Add to your knowledge through the NPTEL Study Center and MOOC courses.
- Join our winning teams for Robocon, SAE-BAJA, Mitsubishi Electric Cup and many more.
- Enjoy a vibrant campus life buzzing with year round activities like TEDx, Music & Drama, Technical, Sports and Cultural fests, Story Telling, NSS, NCC, and more.



### **Networking initiative** Memorandum of Understanding

#### **MoU with Industries**

- Azure Knowledge Corporation Pvt.Ltd
- B&R Industrial Automation Pvt Ltd.
- Dr Fixit Institute of Structural Protection and Rehabilitation
- Finecure Pharmaceuticals Ltd.
- Larsen & Toubro Limited
- NVIDIA Corporation
- Tata Motors Limited, Mumbai
- NORD Drive Systems Pvt. Ltd., Pune
- Mitsubishi Electric India Pvt. Ltd., Pune
- Secure Meters Limited, Udaipur
- INFOSYS Technologies, Bengaluru

#### **MoU with Foreign Universities**

- The University of Dundee, UK
- Coventry University, UK
- Universidad Publica de Navarra Nafarroako Unibersitate Publikao, Spain
- Curtin University, Australia
- University of Newcastle, Australia
- Royal Melbourne Institute of Technology, Australia
- Carleton University, Canada
- Iowa State University, USA
- University of Southern California, USA
- USC Viterbi School of Engineering, USA

#### • enti INNOVATIONS Pvt. Ltd., Bengaluru

- Robert Bosch Engineering and Business
   Solution Pvt. Ltd. (RBEI), Bengaluru
- IBM Technologies, Bengaluru
- Tata Consultancy Services iON
- Confederation of Indian Industries (CII)
- J K Lakshmi Cement Limited, Gandhinagar
- Gujarat Industrial Development Corporation, Gandhinagar
- InspirOn Engineering Pvt. Ltd., Ahmedabad
- e-infochips, Ahmedabad
- University of Wyoming, USA
- Binghamton University, USA
- University of Georgia, USA
- Wadhwani Operating Foundation, USA
- Florida Atlantic University, Board of Trustees, USA
- Changwon National University, South Korea
- Universiti Teknologi MARA, Malaysia
- Makerere University, Uganda
- Kampala International University, Uganda
- University of Nairobi, Kenya
- Wolkite University, Ethopia

#### **MoU with Research Organisations/Educational Institutions**

- Central Building Research Institute, Roorkee
- Advanced Materials and Processes Research Institute (AMPRI), Bhopal
- National Chemical Laboratory (NCL), Pune
- ITER India, Gandhinagar
- Institute of Plasma Research, Gandhinagar
- Satellite Application Centre, Indian Space Research Organization, Ahmedabad
- Ahmedabad Textile Industry's Research
   Association (ATIRA), Ahmedabad

- Physical Research Laboratory, Ahmedabad
- Central Salt and Marine Chemicals Research Institute (CSMCRI), Bhavnagar
- Sardar Patel Renewable Energy Research Institute (SPRERI), V.V.Nagar
- INS Valsura, Jamnagar, Gujarat
- Building Energy Efficiency Project (BEEP)

### Pedagogy









The institute makes use of an appropriate mix of pedagogical tools to train students. This includes lectures from in-house and visiting faculty and experts, seminars, discussions and industrial visits. Continuous evaluation and counselling are important features of each academic programme.

#### The Approach To Learning

The institute synthesizes traditional methods of learning with interactive teaching-learning aids like field-based projects, interaction with practitioners, use of computers and multimedia, creative co-curricular activities for a holistic development of students. The institute lays emphasis on continuous evaluation and credit-based system with weightage on different components of study.

#### **Teaching Learning Process**

The institute has a credit-based evaluation system which motivates students for systematic and continuous study and appraises students on the basis of project work, problem solving, classroom assessment methods, examinations and other tools to evaluate both cognitive as well as applied learning. Self-development, communication skills, societal and environmental awareness, project-based learning are salient features of the teaching learning process. Through projects and internships, students are given sufficient opportunities and support to apply their learning in real life situations.

#### **Discipline- The Keyword**

The academic calendar for the whole year of study is notified in the beginning of each year and is strictly adhered to. Student's attendance is compulsory and students are expected to conduct themselves with discipline both inside and outside the classroom.

#### Counselling

Each faculty is assigned about 15-18 students with whom the faculty meets periodically and reviews their attendance, submissions and academic performance and provides necessary guidance. The services of a professional psychological counselor are also available for the students.

# Achievements

# Ranking

#3	Nirma University Ranked 3 <sup>rd</sup> among the Universities in the State of Gujarat with 5 star Rating Source: Gujarat State Institutional Ranking Framework (GSIRF) Govt. of Gujarat, 2021	NATIONAL BOARD OF ACCREDITATION
#1	Ranked 1 <sup>st</sup> among all Engineering Colleges in Gujarat Source: CSR, 2021	#2 Ranked 2 <sup>nd</sup> among all Central/Deemed/State Private Universities in Gujarat State and is listed AAAA Category Source: Careers 360, 2021
#2	Ranked 2 <sup>nd</sup> among all Engineering Institutes (overall) in West Zone Source: Times of India Ranking 2021	#4 Ranked 4 <sup>th</sup> in Top 125 Private Engineering Institutes in India Source: Times of India Ranking 2021
#4	Ranked 4 <sup>th</sup> in Top Leading Engineering Colleges of Super Excellence in India Source: CSR, 2021	#4 Ranked 4 <sup>th</sup> in Top Engineering College for Placements, USP, Social Responsibilities, Networking & Industry Interface Source: CSR-GHRD, 2021
#4	Ranked 4 <sup>th</sup> among Top Engineering colleges of Super Excellence in India Source: CSR-GHRD, 2021	<ul> <li>#4</li> <li>Ranked 4<sup>th</sup> in Top Engineering College for Faculty, Research, Consultancy, EDP and Other Programmes Source: CSR-GHRD, 2021</li> </ul>
#11	Ranked 11 <sup>th</sup> among top 175 Engineering Institute (overall) Rankings in India Source: Times of India Ranking 2021	#15 Ranked 15 <sup>th</sup> in Private Engineering Colleges in India Source: India Today, 2021
#16	Ranked 16 <sup>th</sup> among Best Private Engineering Colleges in India Source: The Week-Hansa Research Survey 2021	#41 Ranked 41 <sup>th</sup> among Best Engineering Colleges in India Source: The Week-Hansa Research Survey 2021



## **Awards**

#### 2021-22

- Institute has won Best ISTE Students Chapter
   (First Position) Award
- Institute library has been awarded with "Shri. Pravinkaka Ratilal Maniar Best Knowledge Centre (Library) Award" by ISTE, New Delhi
- Institute is awarded with ISTE-HJD Institute, Kutch award for "Best Institute for contributing in Social Activites" by ISTE, New Delhi
- Team Nirma Robocon has been consistently participating in the event since its inception. The team has won the National Championship 9 times so far and represented India at international events hosted by Japan (2002), Thailand (2003, 2011), Malaysia (2006), India (2008, 2014), Indonesia (2015), Vietnam (2018) and China (2021).
- Team Robocon secured 7<sup>th</sup> rank out of 21 teams from different countries at International Robocon 2021. Also won the Nagase Award for Excellence.
- The "Team Stallions" (Nirma SAE Collegiate Club) representing Nirma University has won following awards in ESVC 2021 (Electric Solar Vehicle Challenge) organized by ISIE India at Chandigarh on December 24-28, 2021 and cash awards of more than Rs.1.50 lakhs.
- The "Team Arrow" received the 1<sup>st</sup> position in the Overall Performance Award Category and 2nd position in the Best Design Report Award Category in the SAE India Southern Section Aero Design Challenge 2021 in the Micro Class Category in August 2021.
- First position in event "Azadi Ka Amrit Mahotsav", Online Patriotic Solo Song Competition "Deshraag" organized by the NSS Unit and Students Welfare Board, Nirma University.

- 4<sup>th</sup> rank at the global level on project 'REC governance using AI ' organized by Intel<sup>®</sup> AI Global Impact Festival 2021.
- A team received an honorable mention award in the finals and would also be receiving complete Incubation support from IIT Gandhinagar in a startup idea presentation competition- Icon (Innovation Conference), an event of Amalthea organized by IIT Gandhinagar.
- Students of Electronics & Instrumentation Engineering department received Globalink Research Internship in Canada funded by MITACS GRI 2022(mathematics in Information technology and complex systems) for the summer 2022.
- Students of Electronics & Instrumentation Engineering department received the prestigious ISA Educational Foundation Scholarship Award 2021 worth \$4000. In addition to these, one student, also received the prestigious ISA Analysis Division's Scholarship(\$825).
- Students of Electronics & Instrumentation Engineering department received ISA PMCD Scholarship Award worth \$3900 for the year 2021-2022.
- The "Team Stallions" (Nirma SAE Collegiate Club) representing Nirma University has won following awards in E-BAJA 2022: Best Acceleration Award, Raftar Award, 1st Runner up in Suspension and Traction organized by SAE India at Pithampur, Indore on June 01-05, 2022 and cash awards of more than Rs.50,000.

# **Academic Infrastructure**

#### **The Campus**

The Institute of Technology is situated in the Nirma University campus on the Sarkhej - Gandhinagar highway, Ahmedabad. The 115 - acre campus is Wi-Fi enabled and is nestled amidst green, refreshing environment and an ambience that motivated students to grow. The campus has seven buildings, modern sports facilities and an atmosphere that is distinguished by serenity.

#### Classrooms

The classrooms are well ventilated, spacious and equipped with modern audiovisual equipment and internet connectivity to facilitate effective learning and promote maximum interaction between faculty and students.

#### **Computing Facilities**

The computing facilities at the campus includes:

- 1900 + computers with the latest configuration, modern software, and high-speed servers with Lease line: 1.5 Gbps for the campus.
- 37 High-End NVIDIA GPU workstation with K-20, K40, K-80, and P-100 GPU cards.
- Three dedicated servers with NVIDIA GPU card for practical performance on machine learning and high-performance computing.
- Government of Gujarat has allotted one super computer "Param savak" for high computing tasks and research purposes.
- Wireless Sensor Motes and various CISCO networking components to simulate real-time networking scenarios.
- HP/Aruba Local Area Fiber Network (in Ring Connectivity) having a capacity of 10 Gbps and Aruba Access Points having the capacity of 1 Gbps on Wi-Fi added to strengthen then Network.
- Windows and Linux platform servers. 400+ Systems are working on the Linux Platform.





# **DEPARTMENTS** SCHOOL OF ENGINEERING & SCHOOL OF TECHNOLOGY

#### **Role of Departments**

- Departments play a pivotal role in developing and implementing academic programmes. School of Engineering constitutes of Chemical Engineering (CH), Civil Engineering (CL), Electrical Engineering (EE), Mechanical Engineering (ME) Departments.
- School of Technology constitutes of Computer Science and Engineering (CSE) including the programme of Masters of Computer Application, Electronics and Communication Engineering (EC) and Electronics and Instrumentation Engineering (EI), Mathematics (MH) and Humanities & Social Sciences (HSS) Departments.
- Each department has different sections according to the programmes/specialties handled by it.
- The institute has evolved a participatory model of administration through which all proposals of budgetary allocation, academic development, curricular reforms, laboratory updates etc. first originate at the section level and then finalised at the department and higher level. In this context the role of the faculty in the total process of teachinglearning assumes great importance.

#### Faculty

- Through a judicious recruitment policy and enlightened approach, University has ensured that the institute is staffed by a well-qualified and competent faculty to shoulder the responsibilities of maintaining high standards of education in the institute.
- In keeping with the aims outlined in the mission statement, the faculty members remain fully conscious of their dual role both as teachers to impart efficiently technical knowledge to students as well as counselors to guide them for their overall development.



#### Faculty Development Programmes

The teachers are encouraged to update their knowledge and skills through various training and learning modes. Constant efforts are being made by the Management to achieve this aim. Some of the initiatives taken in this direction are listed below.

- 1. Deputation for higher studies for MTech and PhD in India and abroad.
- 2. In-service registration to pursue PhD programmes.
- 3. Participation in reputed conferences and seminars on technical subjects.
- 4. Participation in collaborative research projects.
- 5. Promotion of consultancy.
- 6. Training in industries and specialised testing work etc.
- 7. To organise and conduct national/state level training programmes for professionals.

### CHEMICAL ENGINEERING

The formula for success

https://ch.nirmauni.ac.in/



#### **ROLE OF CHEMICAL ENGINEERS IN ENGINEERING PROFESSION**

From the foods we eat to the clothes we wear, from different automobiles to day in day out utensils, chemicals play a major role in our life. Chemical Engineers convert scientific discoveries into marketable products. Chemical Engineers are involved in many aspects of chemical production, research and design as well as construction and operation of chemical plants. They play a vital role in curbing environmental pollution and plant safety. Chemical Engineers are also main team players in improving the efficiency of a process plant.



Chemical Engineers design chemical plant equipment and devise processes for manufacturing chemicals and products, such as gasoline, synthetic rubber, plastics, detergents, cement, paper, colours etc. by applying principles of chemistry, physics and engineering. Chemical Engineers run the industries and are present in every field of engineering.

#### **CHEMICAL ENGINEERING: WHERE WOULD I BE WORKING?**

Gujarat is known as the Chemical Engineers Paradise with big Industries like Reliance, GSFC, GNFC, and plethora of pharmaceutical industries present. Multinational firms like Linde, UOP, Mott MacDonald, L&T and others are always looking for process engineers. Apart from industrial placements, Chemical Engineers also find themselves in environment, energy, R&D organisations and other sectors.

PROGRAMMES OFFERED	ΙΝΤΑΚΕ
BTech in Chemical Engineering	68
PhD in Chemical Engineering	√

The four-year curriculum leading to the BTech in Chemical Engineering enables the graduate to enter professional practice as an engineer or to continue his or her studies in programmes leading to advanced degrees in the following broad fields of specialisation

- Reaction and Separation
   processes
- Catalysis
- Process Simulations
- Process Synthesis
- Pollution abatementProcess integration

#### **PROGRAMME SPECIFIC OBJECTIVES**

A graduate of Chemical Engineering Programme will have an ability to

- model, simulate and validate the chemical engineering problems.
- design or develop chemical processes incorporating impact of economic, environmental, social, health, safety and sustainability.
- practice or apply chemical engineering principles, communication and other skills in a wide range of industrial and professional employment areas.

#### **STRENGTHS OF THE DEPARTMENT**

- Well established laboratories and state of the art computational facilities
- Well established Research Culture
- Funded projects on wastewater treatment, air pollution control, simulation studies, hydrogen
  production to name a few
- Pool of electives in curriculum so that a student can mould his/her career in various relevant fields.
- Department has a blend of highly motivated, young and experienced faculty members. There are total 14 faculty members (3 Professors, 2 Associate Professors and 9 Assistant Professors) in the department.
- Expertise in Environmental Auditing

Chemical Engineers contribute to the industrial sector the most; keeping this in mind the department emphasis is on project work at all levels and exposure to the students through industrial tours, industrial internship and projects.

#### **MAJOR STUDENT ACTIVITIES**

- Chemical Engineering Students' Association (ChESA) is a student organisation in Chemical Engineering Department. ChESA is in its 21st year, and organises co-curricular and extracurricular activities throughout the year.
- Team of students from the department are very active in SAE BAJA competition and are always front runners in getting the "Go Green" prize for reduction in air pollution.
- Students showcase outstanding performance at Thermax Storm Case Challenge conducted on National Level. Every year 1st & 2nd Prizes are won by the Chemical Engineering Students.

- Renewable Energy
- Process integration
- Process Control and Optimization



### Curriculum

#### FIRST YEAR

0

#### Semester-1/2

- Mathematics-I
- Mathematics-II
- Statistics
- Physics
- Chemistry
- Environmental Science
- Electrical Science
- Computer programming
- Introduction to AI & ML
- Engineering Drawing & Workshops
- General English
- Written Communication
- Health, Wellness and Yoga

#### SECOND YEAR\*

#### Semester-3

- Heat Transfer Operations
- Fluid Flow Operations
- Solid Fluid Operations
- Organic Chemistry
- Applied Mathematics for Chemical Engineering
- Principles of Management

#### **Supplementary Course**

Community Services

#### Semester-4

- Mass Transfer Operations-I
- Chemical Process Industries
- Instrumentation and Process Control
- Chemical Engineering Thermodynamics
- Process Calculations
- Principles of Economics

#### THIRD YEAR\*

#### Semester-5

- Mass Transfer Operations-II
- Environmental Pollution Control and Safety
  Management
- Modeling and Simulation
- Department Elective –I
- Open Elective-I
- Open Elective-II

#### Semester-6

- Chemical Reaction Engineering-I
- Process Equipment Design
- Department Elective-II
- Department Elective-III
- Open Elective-III
- Humanities Elective

#### FOURTH YEAR\*

#### Semester-7

- Chemical Reaction Engineering-II
- Plant Design, Economics and Project Management
- Department Elective-IV
- Department Elective-V
- Open Elective-IV
- Open Elective-V
- Minor Project
- Summer Internship

#### Semester-8

• Major Project/Internship

#### **ELECTIVE SUBJECTS**

Food Technology, Pharmaceutical Technology, Nanotechnology in Chemical Sciences, Dye and Dye Intermediates Technology, Fertilizer Technology, Polymer Technology, Advanced Separation Techniques, Advances in Chemical Process Control, Process Integration, Air Pollution Control Engineering, Renewable Energy Sources, Wastewater Engineering, Applied Chemical Engineering Thermodynamics, Process Optimization, Unit Processes, Process Plant Utilities and Energy Efficiency, Bioprocess and Bioseperation Engineering, Fundamentals of Piping Design, Environmental Impact Assessment, Transport Phenomena.

### **Research @ CHEMICAL ENGINEERING**

The faculty members are highly qualified and involved in the collaborative/joint projects with Industry/R&D institutes and also undertake funded research projects from various agencies like DST, GUJCOST, Green Environment Services etc. A good number of research papers are published in referred international as well as national journals of repute by faculty members and research scholars. Department is having Fifteen PhD students working in the thrust area of Chemical and Environmental Engineering area.

Apart from the regular academic work, the faculty members of Chemical Engineering Department are also actively involved in the consultancy such as

- Environmental Audit [GPCB recognized Schedule –I Auditor]
- Energy Audit [BEE Certified Energy Auditor]
- Process Problem Solutions & Process
   Modification
- Process Equipment Design
- Determination and Prediction of Phase Equilibrium and other Thermodynamic Properties

- Cleaner Production and Cleaner Technology
- Petroleum Product Testing and Characterisation
- System Analysis & Modelling and Simulation
- Water & Waste Water Testing and Analysis
- Effluent Treatment Plant Design
- Analytical Chemistry based Testing
- Software Development



please visit https://ch.nirmauni.ac.in/academics/people/faculty/ for faculty details

## CIVIL ENGINEERING

The building blocks of your future http://cl.nirmauni.ac.in/



Civil Engineering encompasses design and development of infrastructure. It stimulates creativity and innovation in civil engineers, to cater to the ever-changing need of the society. Outcomes are iconic structures such as Tall Buildings, Smart Cities, Sea Links, Intelligent Transport Systems, Tunnels, Stadiums, Statues, Monuments, etc. Civil Engineering plays a vital role in building the nation by boosting economy, standard of living, sustainable environment and civilization. Civil engineering includes domains like Structures, Geotechnical, Construction Project Management, Transportation, Environment, Water Resources and Irrigation, Building Materials, Urban Planning, Geomatics, etc.



#### **CAREER OPPORTUNITIES**

The Civil Engineering profession provides wide scope for an illustrative career in Planning, Design, Construction, Research & Development, Operations & Maintenance, Academics and Entrepreneurship, etc. Apart from the obvious choice of pursuing postgraduate studies in core and inter-disciplinary courses, one may build a career in Government/Public/Private sector such as ISRO, DRDO, HAL, BARC, ONGC, CSIR-CBRI, CSIR-SERC, CSIR-CRRI, CSIR-AMPRI, Road and Building Department, CPWD, L&T, Adani Group, ONGC, NTPC, BHEL, etc.)

PROGRAMMES OFFERED	INTAKE
BTech in Civil Engineering	135
MTech in Computer Aided Structural Analysis and Design	18
MTech in Construction Technology and Management	18
PhD in Structural Engineering, Geotechnical Engineering and Geomatics	V

#### **PROGRAMME SPECIFIC OBJECTIVES (PSO)**

A graduate of Civil Engineering programme will have an ability to

- Apply principles of Civil Engineering to propose application-centric solutions utilizing modern tools and techniques.
- Plan, design and construct sustainable infrastructures satisfying economic, environmental, social, ethical and safety constraints.
- Communicate effectively with stakeholders and add values to multi-disciplinary domains in addition to Civil Engineering.

#### **STRENGTHS OF THE DEPARTMENT**

- BTech. Programme has been granted NBA accreditation
- Qualified and Experienced faculty members, who strive to impart quality education
- Faculty and students have won several prestigious awards and recognitions
- Full semester major project at construction site/consultancy firm/ R&D organization
- Ever evolving laboratory facilities and computing facilities
- Strong networking with nationally reputed R&D organisations
- Collaboration with reputed institutions/organisations/universities across the globe
- Inviting renowned academicians and eminent professionals across the globe for conducting short courses / expert talks
- Funded research projects awarded by nationally and internationally renowned agencies
- Active involvement of students in research related activities
- Consultancy for reputed projects and numerous testing assignments by faculty
- Environmental Audit team approved by Gujarat Pollution Control Board, GoG

#### STUDENT ACCOMPLISHMENTS

- Students' chapters of professional organizations such as Indian Concrete Institute, Indian Green Building Council, The Institution of Engineers (India).
- Organisation of Civil Engineering Students (OrCES) organises technical and non-technical activities/competitions for value addition and skill development
- Department facilitates student participation in various co-curricular and extra-curricular activities
- Participation of students in various activities of NSS& NCC unit
- Students have won awards for best paper during National/International conferences
- Students have won several State/National level technical competitions
- A team of students secured 2nd position in National level Competition 'Lightest Concrete Canoe'organised by IIT Madras
- Students are awarded with best BTech and MTech Projects by ISTE, New Delhi
- Good numbers of students have secured relatively high AIR in GATE and successfully cleared competitive exams like CAT, GMAT, GRE, TOEFL, IELTS, etc.
- Numbers of students have secured admission for higher studies at IITs, IISc and high ranked global universities
- Few UG students have been recognized as "IGBC Accredited Professional" by Indian Green Building Council.

#### **PLACEMENT SCENARIO**

- Students are well placed in the industries and consulting firms i.e. Larsen & Toubro Limited, Linde Engineering, Tata Consultancy Services, Gammon India, Tata Consulting Engineers, Adani Group, Tata Power, Ultratech Cement, Worley, Reliance, Shapoorji Pallonji & Co., Flipkart, Essar, Ambuja Cement, Howe (Adani), Techture, RKC Infrabuilt Pvt. Ltd, Infinite Civil Solutions, etc.
- Entrepreneurs and well placed Alumni supports placement activities

### Curriculum

#### FIRST YEAR

#### Semester-1/2

- Mathematics-I
- Mathematics-II
- Statistics
- Physics
- Chemistry
- Environmental Science
- Electrical Science
- Computer programming
- Introduction to AI & ML
- Engineering Drawing & Workshops
- General English
- Written Communication
- Health, Wellness and Yoga

#### SECOND YEAR\*

#### Semester-3

- Structural Mechanics I
- Surveying

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- Construction Materials
- Applied Mathematics for Civil Engineering
- Principles of Management
- Civil Engineering Drawing and Building Planning
  - Community Services Semester-4
  - Structural Mechanics II
- Fluid Mechanics
- Construction Technology
- Geotechnical Engineering
- Transportation Engineering
- Principles of Economics

#### **THIRD YEAR\***

#### Semester-5

- Design of Concrete Structures
- Environmental Engineering
- Foundation Engineering
- Department Elective I
- Open Elective I
- University Elective
- Computational Tools and Techniques

#### Semester-6

- Water Resources and Irrigation Engineering
- Construction Project Management
- Department Elective II
- Department Elective III
- Open Elective II
- Humanities Elective
- Construction Workshop

#### **POOL OF DEPARTMENT ELECTIVE COURSES**

#### FOURTH YEAR\*

#### Semester-7

- Design of Steel Structures
- Professional Practice
- Department Elective IV
- Department Elective V
- Open Elective III
- Open Elective IV
- Minor Project
- Summer Internship

#### Semester-8

Major Project/Internship

Advanced Concrete Technology, Advanced Solid Mechanics, Advanced Structural Mechanics, Advanced Design of Concrete Structures, Prestressed Concrete, Maintenance and Rehabilitation of Structures, Earthquake Resistant Design of Structures, Port and Harbour Engineering, Airport Engineering, Traffic Engineering and Road Safety, Pavement Engineering, Infrastructure Management, Urban Transportation Planning, Urban Planning and Management, Advanced Construction Technologies, Sustainable Building Technologies, Building Systems, Safety and Services, Geomatics, Advances in Construction Management, Advanced Soil Mechanics, Applied and Engineering Geology, Advanced Foundation Design, Geo-environmental Engineering, Ground Improvement Techniques, Air and Noise Pollution, Solid Waste Management, Industrial Wastewater Treatment and Management, Environmental Management System, Advanced Fluid Mechanics, Hydraulic Structures, Irrigation & Water Management.

#### **Research @ CIVIL ENGINEERING**

The Department is actively involved in Research and Consultancy activities and is currently undertaking research in diversified areas of Civil Engineering like Analysis and Design of Structures, Concrete Technology, Earthquake Engineering, Remote Sensing & GIS, Geotechnical Engineering and Environmental Engineering. Department has successfully undertaken research projects funded by SERB-DST, ISRO, GUJCOST, The Institution of Engineers (India), IC-IMPACTS, Global Challenges Research Fund (GCRF), Innovate UK, etc. Some of the projects carried out are as follows:

- 'Development of a low-carbon cementitious material by recycling Calcium Carbide Residue (CCR) waste from foundation industries to decarbonise construction sector', funded by Innovate UK in association with Liverpool John Moores University(LJMU), UK
- 'Use of recycled C&D waste, fly ash, dredged marine waste and gypsum for construction of sustainable salt pan beds for enhancement of salt productivity through prevention of brine percolation', funded by DST
- 'Experimental Investigations on RC Girder Model of Bridge with Half-joint and Retrofitting Strategies', funded by Global Challenges Research Fund (GCRF) in association with Liverpool John Moores University (LJMU), UK
- 'Torsional Behaviour of Reinforced Concrete Elements Strengthened with Stainless Steel Wire Mesh' funded by SERB-DST
- 'Calibration and Validation of RISAT-SAR Satellite', funded by SAC, ISRO
- 'Identification of Existing Road Material, Condition and Potential Parking Area of Ahmedabad City using AVIRIS Data and Updation Plan of Undeveloped Road', funded by SAC-ISRO
- 'Development of Low Cost Methodology for Surveying and Mapping with IRNSS – NavIC', funded by SAC-ISRO (under NavIC-GAGAN Utilization Programme)
- 'Identification of road material and distress for major roads of Gujarat using L and S band airborne SAR (NISAR)', funded by SAC, ISRO
- 'Identification of perched water table areas in irrigated tracks using airborne SAR data

(NISAR)', funded by SAC, ISRO

- 'Application of precast products made using bottom ash and fly ash for rural pavements and other infrastructure in India', funded by IC-IMPACTS
- 'Study the behaviour of precast beamcolumn junction under progressive collapse scenario - an experimental and analytical investigation', funded by DST-SERB
- 'Development of passive damping surface coating for advance material based structural system using PZT(Piezo) powder', funded by ISRO-RESPOND
- 'Development of reinforced aerated blocks with innovative composite ingredients as compression members for structural applications with stringent design specifications', funded by ISRO-RESPOND
- 'Enhancement of torsional resistance of R C Beams using fibre reinforced polymer composite', funded by The Institution of Engineers, India (IEI)
- 'Dynamic characterisation of shock table', funded by GUJCOST
- 'Use of marine sand in concrete construction', funded by Adani Projects
- 'Strengthening precast beam column connections using stainless steel wire mesh (SSWM) - experimental and numerical study', funded by Nirma University
- 'Studies and prototype development for recycle and reuse of waste streams from stainless steel industries', funded by GUJCOST
- 'Faculty members undertake Minor Research Projects (MRP)', funded by Nirma University in various domain of civil engineering

Department has well-developed laboratory facilities in various domains like Strength of Materials, Construction Materials, Concrete Technology, Structural Mechanics, Surveying, Geotechnical Engineering & Geology, Transportation Engineering, Environmental Engineering and Hydraulics & Water Resources. Heavy Structures Laboratory (HSL) is the state-of-art facility, recently developed to conduct experimental studies on structural elements / structures under gravity and lateral loading conditions. The laboratory measures about 800 sq. meters and comprises of a 6 m × 28 m strong floor with number of loading frames & other advanced instrumentation for facilitating destructive and non-destructive testing.

Consultancy and Testing services are offered by the department to various professional organizations in areas such as Structures, Foundation, Environment and Transportation. Following are the areas in which consultancy services are offered:

- Proof checking for structural Design
- Damage Assessment of Fire affected buildings
- Non-destructive Evaluation of Structures
- Structural Health Monitoring
- Seismic Analysis and Design of Structures
- Repair and Retrofitting of Structures
- Finite Element Analysis of Structures

- Environmental Engineering and Pollution Control
- Environmental Analysis and Monitoring
- Environmental Audit of Industries
- Soil Investigation, Foundation Design and Ground Improvement Techniques
- Quantity Surveying
- Surveying and Geodesy work

MoUs have been signed with several research & professional organisations in order to enhance research contributions and to conduct continuing education programmes.



please visit https://cl.nirmauni.ac.in/academics/people/faculty/ for faculty details

### COMPUTER SCIENCE AND ENGINEERING

Computing for Smart Living

https://cse.nirmauni.ac.in/



Department of Computer Science and Engineering was established in 1997 and since then is the most sought-after Department of the Institute. The BTech Programme is accredited by the National Board of Accreditation (NBA) under the Tier-I category. The Department has always kept pace with the rapid advancements in the field. Computer Science and Engineering have revolutionized the world and have brought the world closer. The digital age needs more and more Computer Scientists and Engineers. Through this programme, students learn and explore the design and applications of computing systems, ranging from hardware and software components to networking, intelligent systems, and multimedia with the help of modern tools and technologies like Machine Learning, Deep Learning, Cloud Computing, Big Data Analytics, etc. This programme endeavors to meet the challenges of changing technology and industry 4.0.

PROGRAMMES OFFERED	INTAKE
BTech in Computer Science and Engineering	338
MTech in Computer Science and Engineering	18
MTech in Cyber Security	18
MTech in Data Science	18
Master of Computer Applications	71
PhD in Computer and Science Engineering	√
BTech (CSE)-MBA (intergrated 5 years Programme)	60

#### **PROGRAMME SPECIFIC OUTCOMES**

A graduate of the Computer Science and Engineering Programme will have an ability to -

- apply the theoretical concepts of computer engineering and practical knowledge in analysis, design, and development of computing systems and interdisciplinary applications
- work as a socially responsible professional by applying computer engineering principles and management practices

#### **HIGHLIGHTS**

- Regularly updated curriculum structure oriented towards logic and skill development.
- Establishing linkages with foreign Universities/Industries and Research organisations for various student exchange programmes
- Excellent placement records with the highest package worth 88.20 Lakhs
- The first choice of meritorious students across the state.
- Excellent platform to avail internships in reputed foreign Universities and Research Organisations and Industries
- Recipient of various academic and research awards at the National and International level
- The most happening place on Campus with recently hosted National level online Hackathon (MINeD)
- Centre of Excellence in Data Science in association with Binghampton University, USA.
- Active research collaborations/research funding with premier research organisations viz. ISRO, IPR, DAE, DST, GUJCOST above 200 lakh rupees.
- Department of Computer Science and Engineering recently signed an MoU with JK Lakshmi Cement, Ahmedabad.
- Young and dynamic faculty members

#### **SPECIALISED LABORATORIES**

The Department has well-furnished specialised laboratories with the latest amenities for the needs of students belonging to diversified programmes.

- State of Art infrastructure under Centre of Excellence in Data Science
- NVIDIA Supported Deep Learning Laboratory
- SuperComputing infrastructure with Param Shavak
- Networking and Internet of Things Laboratory
- Information and Network Security Laboratory
- CISCO Laboratory





### Curriculum

#### FIRST YEAR

0

#### Semester-1/2

- Mathematics-I
- Mathematics-II
- Statistics
- Physics
- Chemistry
- Environmental Science
- Electrical Science
- Computer programming
- Introduction to AI & ML
- Engineering Drawing & Workshops
- General English
- Written Communication
- Health, Wellness and Yoga

#### **SECOND YEAR\***

#### Semester-3

- Data Structures and Algorithms
  - Object Oriented Programming
- Digital Electronics
- Digital Communications
- Discrete Mathematics
- Principles of Economics

#### Supplementary Course

Community Services

#### Semester-4

- Computer Architecture
- Database Management Systems
- Operating Systems
- Programming for Scientific Computing
- Probability and Statistics
- Principles of Management
- Web Technologies

#### **THIRD YEAR\***

#### Semester-5

- Machine Learning
- Computer Networks
- Design & Analysis of Algorithms
- Software Engineering
- Open Electives

#### Semester-6

- Theory of Computation
- Department Elective-1
- Department Elective-2
- Department Elective-3
- Open Elective
- University Elective

#### **FOURTH YEAR\***

#### Semester-7

- Compiler Construction
- Information Security
- Department Elective –IV
- Department Elective –V
- Open Elective
- Open Elective
- Minor Project

#### Semester-8

Major Project/Internship

\* under revision

#### For a detailed syllabus please visit https://cse.nirmauni.ac.in/academics/programmes/curriculum/



### **Research @ COMPUTER SCIENCE AND ENGINEERING**

#### **CAREER OPPORTUNITIES**

As a Computer Science and Engineering graduate, a plethora of lucrative opportunities are available to students, such as:

- Data Analyst
- Database Administrator
- Network Administrator / Designer/Architect
- Computer Hardware Engineer
- Application Developer
- Security Auditor
- Software Testing
- Computer System Analyst
- Firmware Developer
- Software Developer
- Hardware Interface Designer
- System Analyst
- Entrepreneur
- Academician
- Information Security Analyst




#### **MAJOR CAMPUS-PLACEMENT RECRUITERS**

- Amazon
- Morgan Stanley
- MAQ Software
- Mu Sigma
- Goldman Sach Services Pvt Ltd.
- Oracle
- Samsung
- Searce
- HSBC
- Future First Info Services
- Creast Data Systems

- Infosys
- Cognizant
- Wipro
- TCS
- Intel
- Bloomberg



#### **MAJOR STUDENT ACTIVITIES**

- Students Association clubs like ACM, IEEE-ACES, AMS, CodeAdda, Google Ambassador
- Industry exposure through industry visits, internships, workshops, seminars and expert talks etc.
- Active engagement through Competitive coding competitions, Hackathon, technical festivals and many more technical events
- Remarkable campus placement records
- Global opportunities through summer internships and projects
- Infosys Campus Connect Program



please visit https://cse.nirmauni.ac.in/academics/people/faculty/ for faculty details

### ELECTRONICS AND COMMUNICATION ENGINEERING

Chip into your Future https://ec.nirmauni.ac.in/



BTech in Electronics and Communication Engineering degree provides a foundation to move into creative management positions in design & creation, engineering analysis, product development, research & development, operations, and maintenance with a broad scope for entrepreneurship. Electronics and Communication Engineering continues to dominate the world of entertainment, automation technology, IT, health care systems, automotive electronics, home automation, Internet of Things (IoT), robotics, and global communications. The department has the latest curriculum, a highly talented pool of faculty members, and state-of-the-art laboratory facilities.

PROGRAMMES OFFERED	INTAKE
BTech in Electronics and Communication Engineering	135
MTech in VLSI Design	18
MTech in Embedded Systems	18
PhD in Electronics and Communication Engineering	√

#### **PROGRAMME SPECIFIC OBJECTIVES:**

A graduate of the Electronics & Communication Engineering programme will have the ability

- To understand and analyse the principles of electronics devices, circuits, communication systems, tools, and techniques.
- To apply the knowledge acquired in the Electronics and Communication Engineering domain in the design and development of electronic circuits and systems with specific end utility.
- To carry out research in Communication Engineering and Electronics System Design. The Department
  has a large number of research projects from external agencies like SAC-ISRO, IPR, DRDO, GUJCOST
  in the field of Embedded Systems, VLSI Design, MIMO Communication Technology, Optical Systems,
  RF & Microwave Engineering, etc.

#### CAREERS

- R & D Engineer \_
- Entrepreneur
- Analysis & Design Engineer
- **Product Developer**
- Software/IT
- **Application Engineer**
- **Problem Solver**
- Govt. Public Services

#### **Higher Studies**

#### **SPECIALISATION**

- **VLSI** Design
- Embedded System Design
- **Electronic Communication**
- **RF and Microwave** Engineering
- Image Processing and **Computer Vision**
- Internet of Things (IoT)

### **MAJOR STUDENT ACTIVITIES**

The Electronics and Communication Organisation (ECO) is a student club actively engaged in various curricular and extracurricular activities. The Club is an active partner in the Annual Technical Festival-NUTECH. The students are encouraged to participate in several international and national project competitions like ROBOCON, Freescale Cup, Texas Instrument Contest, iCreate, SAE BAJA, Hackathon, etc. By now, the students have won many awards.

#### **MAJOR FACILITIES**

The department has state-of-the-art laboratories and all necessary facilities to enhance the quality of the teaching-learning process. The department is enriched with the latest electronics test and measurement equipment like Spectrum Analyzer, Vector Network Analyzer, Logic Analyzer, Digital Storage Oscilloscopes, Anechoic Chamber, PCB Making Machine, Sputtering Unit, and many trainer kits. The department has also procured the latest software tools like MATLAB, HFSS, CHAMP, CST Microwave Studio, Genesis, Multisim, NS2, Xilinx, ALTERA Quartus Pro, Mentor Graphics, FPGA Advantage, Cadence, TCAD, Modelsim, Proteus VSM, etc.



#### RECRUITERS

- ARM
- Bombardier
- Bosch
- Broadcom
- **BSNL**
- Cadence
- Cognizant
- **Crest Data Systems**

- Cypress Semiconductor •
- DRDO
- DSP Group
- elnfochips
- Hitachi Hi-Rel Power Electronics
- GE
- Infosys

- INTEL
- ISRO
- Nokia •
- NVIDIA
- NXP
- Oracle
- Philips
- Qualcomm

- Samsung R&D
- Searce
- Secure Meters
- ST Micro
- Suzuki Motors
- TCS
- XILINX
- **ZS** Associates



### Curriculum

#### FIRST YEAR

#### Semester-1/2

- Mathematics-I
- Mathematics-II
- Statistics
- Physics
- Chemistry
- Environmental Science
- Electrical Science
- Computer programming
- Introduction to AI & ML
- Engineering Drawing & Workshops
- General English
- Written Communication
- Health, Wellness and Yoga

#### THIRD YEAR\*

#### Semester-5

- VLSI Design
- Digital Signal Processing
- Digital Communication
- Department Elective I
- (with lab)
- Open Elective I
- Humanities Elective

#### Semester-6

- Computer Architecture
- Machine Learning
- Department Elective–II
- (without Lab)
- Department Elective-III
- (with Lab)
- Open Elective II
- University Elective

#### **SECOND YEAR\***

#### Semester-3

- Electronic Devices and Circuits
- Signals and Systems
- Digital Logic Design
- Network Theory
- Vector Calculus, Complex Variable and Probability Distribution
- Principles of Economics
- Digital Design Laboratory

#### Supplementary Courses

Community Services

#### Semester-4

- Electromagnetics and Wave Propagation
- Analog Circuits
- Communication Systems
- Microprocessors and Microcontrollers
- Control Systems
- Principles of Management

#### **FOURTH YEAR\***

#### Semester-7

- Microwave and Antenna Engineering
- Computer Networks
- Department Elective-IV
- without lab)
- Department Elective-V
- (with Lab)
- Open Elective-IV
- Open Elective V
- Minor Project
- Summer Internship #

#### Semester-8

Internship

Image Processing, Fiber Optic Communication, Mobile Programming, System on Chip Design, Scripting Language, Speech and Audio Processing, Satellite Communication, Optical Devices and Networks, Analog CMOS Integrated Circuits, Electronic System Design, Multimedia System, Wireless Communication, Information, and Coding Theory, Testing and Verification of Digital Circuits, Embedded Systems

### **Research @ ELECTRONICS & COMMUNICATION ENGINEERING**

The faculty members of the Department of Electronics and Communication Engineering are actively involved in research activities and have pursued their PhD from renowned institutes like IITs and NITs. They have undertaken many R&D assignments and worked on consultancy projects in the following areas:

- Electronics Circuit Simulation, Analysis, Design, and Testing
- Microprocessor and Microcontroller Related Developments
- Digital Signal Processing Hardware and Software Design
- Digital Logic Design on FPGA
- Wireless Communication and Networks
- RF Circuits Design and Testing

- Antenna System Design and Testing
- Optical Communications and Networks
- Analog and Digital VLSI Design
- Image Processing
- Testing and Verification of VLSI Design
- Embedded System Design
- Computer Vision and Machine Learning
- Computational and Experimental Condensed Matter Physics at Nanoscale



#### **RADIATION HARDENED CHIP DESIGNED BY THE EC DEPARTMENT**

The faculty members have successfully designed a radiation-hardened test chip under the ISRO-RESPOND Project which is specially designed to work in the radiation environment of space. SCL, Chandigarh fabricated the chip.

### **Research @ ELECTRONICS & COMMUNICATION ENGINEERING**

# Design, Fabrication and Testing of a Corrugated Horn Antenna for Millimeter-Wave Plasma Diagnostics

The faculty members have designed and fabricated a Corrugated Horn Antenna operating in D-Band (110-170 GHz). The fabrication of the corrugated horn antenna was quite challenging due to its inner structure with grooves of millimeter dimensions. The prototype antenna was handed over to the Institute for Plasma Research (IPR), Bhat.



please visit https://ec.nirmauni.ac.in/academics/people/faculty/ for faculty details

# ELECTRICAL ENGINEERING

"Watt" is Power https://ee.nirmauni.ac.in/



Electrical Engineering is a discipline that encompasses visualization, conceptualization, design, analysis and operation of the small electrical circuits to large power plants. Per capita electrical energy consumption is one of the basic, measuring the quality of life across countries and providing electricity to each corner without interruption is the focus of the engineering studies. The various ways of utilizing this electrical power supply, operating electrical machines and controlling it through power electronics is an integral part of the electrical engineering course. The curriculum focuses on traditional and modern resilient and smart power systems incorporating advanced electrical machines, HIL controlled electronics, IoT and AI.

PROGRAMMES OFFERED	INTAKE
BTech in Electrical Engineering	135
MTech in Electric Vehicular Technology	18
PhD in Electrical Engineering	$\checkmark$

A well-crafted curriculum leading to BTech in Electrical Engineering enables the graduates to enter professional practices as an engineer or to continue their studies in a programme leading to advanced degrees in the domains of core electrical engineering as well as in the interdisciplinary domains of engineering.



### **ELECTRICAL ENGINEERING CAREERS**

The Electrical Engineering degree offers a wide range of opportunities in research and development in the areas of energy sector, power grid, electronics, control and automotive industry. Opportunities are available in planning, operations, maintenance and commissioning of electrical apparatus and systems; consultancy services, electrical contracting and energy auditing. Jobs in the state and private utility sector, engineering and administrative services, automotive industries, navratna and maharatna companies, Indian railways. The sector is open in product design, manufacturing and the entrepreneurship in solar panel designing and installation.

It is well known that thrust of every government is a shift to green energy and green mobility. The indispensable impact is on sustainable and renewable energy system, blockchain and Electric Vehicle technology which are the part of Electrical Engineering. Countries around the world are recognizing the importance and potential of electrical vehicles, hence the automobile industries are expected to generate large employability by year 2030.

Electrical engineers can choose to work in variety of industries including telecommunication, Information Technology, and aerospace etc. With right technical and managerial skills, electrical engineer are excelling in the role of management positions. There are limitless possibilities to pursue higher studies in Electrical and Computer Science domain, Communication and Control domain, Business Administration etc. post the UG degree.

The BTech in Electrical Engineering offers possibilities to explore -

- Traditional, Smart and Restructured Power Systems
- Analog and Digital Electronics
- Power Electronics and Drives
- Conventional and Advanced Electrical Machines
- PROGRAMME SPECIFIC OBJECTIVES

A graduate of Electrical Engineering will have an ability to -

- demonstrate dexterity in the domains of Electrical Engineering viz. network analysis, control systems, electrical machines, electronics and electrical power systems.
- understand specifications and requirements, apply laws, analyze, simulate circuits, interpret results and design appropriate solutions in various areas of electrical engineering with evident validation.
- contemplate and contribute for energy efficient use of electricity through acquired knowledge.

#### **HIGHLIGHTS OF THE DEPARTMENT**

The 'NBA' accredited department of Electrical Engineering was established in 1995 and has been ranked high since then. Dedicated faculty members and rich laboratory facilities are behind the success of motivated and industrious students. Many faculty members have pursued their PhD from renowned institutes like IISc, NITs, and are involved in research, development and consultancy. The faculty members are well-recognized across the fraternity and have won accolades at the national and international levels. The students of the department have also proved their mettle at competing at the national level in the interdisciplinary domain and winning awards. A consistent placement record at leading multinationals and core companies; a vast alumni network and rapport with the leading industries itself speaks about the department standing and competencies.

- Micro-Controllers and Digital Signal Processors
- Renewable Energy Systems
- Electric Vehicular Technology, IoT and Al Applications in Electrical Engineering

#### LABORATORY FACILITIES

Well-developed laboratories, having latest equipment being used by various industries are available. High-end tools like OPAL – RT and dSpace and programmable power supply are available for advanced research work. The high voltage laboratory; electrical machines laboratory and; switchgear and protection laboratory are built with latest equipment explaining schemes of over current, distance, and differential protection relaying system, synchronization of alternators, and high voltage generation. The software laboratory is equipped with latest computing facilities including software tools like NEPLAN, MATLAB, Motorsolve, PSCAD, MAGNET, Altair Solid thinking, ANSYS, PSIM, ETAP, SPEED etc.

#### The following laboratories are existing with the latest equipment.

- Switchgear and Protection Lab
- High Voltage Lab
- Electrical Machines Lab
- Power Electronics and Drives Lab
- UG Software (Computer Centre) Lab

- Network and Electrical Measurement Lab
- UG Project lab
- Basic Electrical Engineering Lab
- Electrical Workshop

The electrical engineering students are placed through campus placements in leading industries like Torrent Power Ltd., Tata Power Ltd., Reliance Industries Ltd., L & T Technology Services, Schneider Electric, ABB Ltd., Adani Group, Tata Chemicals Ltd., Bosch (I) Ltd., Hyundai Motors, MG Motors Ltd., Ford India, Secure Meters Ltd., Electrotherm (I) Ltd., ERDA, Infosys, Wipro, Cognizant, TCS, Deloitte, HCL Technologies, Amazon Web Services, Goldman Sachs Group, Inc., MU Sigma Pvt. Ltd., Oracle Corporation, Bank of America, Cypress Semiconductors Corporation, TCS Digital, ZS Associates, Mphasis Ltd, Atul Ltd., Adani Total Gas, Adani Green Energy Ltd., Arcelor Mittal Nippon Steel (I) Ltd., DCM Shriram Consolidated Ltd., Essar Steel Ltd., Galaxy Surfactants Ltd., Gujarat Ambuja Exports Limited, Gujarat State Fertilizers and Chemicals Ltd., Gujarat State Petronet Ltd., Hindustan Unilever Ltd., Ceat Ltd, Linde Engineering India Pvt.Ltd., MG Motors Ltd., Searce Inc. etc. The alumni of Electrical Engineering have pursued their higher studies in top universities of US, Germany and Australia, and other countries across the globe.

#### **STUDENT ACTIVITIES**

The department extends its support in the well-rounded development of students. The students involve themselves in various clubs to hone their extracurricular skills like photography, writing, debating and innovations. The EESA, the students' Association of Electrical Engineering, focuses on technical activities like guidance for competitive examinations, workshops on autonomous robots and PCB designing, sessions on selecting career options, etc. It organises an annual technical symposium, 'Scintilla', which organises technical events like technical quizzes, circuit debugging, workshops, mock placements etc. The students' associations jointly organise an annual tech-fest 'NUTECH' in which students compete with the other students of the country. EESA also participates in societal and community services. Some of the activities include 'Big brother' and 'Initio'. Teaching to ITI and Higher secondary school students and spending quality time with the children of construction workers are some of the activities undertaken. The department also arranges industrial visits and organises expert talks by eminent speakers to know the ongoing industrial trends and technology.

### Curriculum

### FIRST YEAR

0

#### Semester-1/2

- Mathematics-I
- Mathematics-II
- Statistics
- Physics
- Chemistry
- Environmental Science
- Electrical Science
- Computer programming
- Introduction to AI & ML
- Engineering Drawing & Workshops
- General English
- Written Communication
- Health, Wellness and Yoga

#### THIRD YEAR\*

#### Semester-5

- Rotating AC Machines
- Electrical Power System Analysis
- Microprocessor and Microcontrollers
- Department Elective-I
- Open Elective I
- University Elective

#### Semester-6

- Power System Protection and Switchgear
- Electric Drives
- Department Elective II
- Department Elective-III
- Open Elective II
- Humanities Elective

#### SECOND YEAR\*

#### Semester-3

- Network Analysis and Synthesis
- Signals and Systems
- Electromagnetic Field Theory
- Analog and Digital Electronics
- Applied Mathematics for Electrical Engineering
- Principles of Management
- Analog and Digital Electronics Laboratory

#### **Supplementary Courses**

Community Services

#### Semester-4

- Control Systems Engineering
- Electrical Measurements and Transducers
- Fundamentals of Power System
- Transformers and DC Machines
- Power Electronic Converters and Applications
- Principles of Economics
- Power Electronics Laboratory

#### FOURTH YEAR\*

#### Semester-7

- Power System Operation and Control
- Electrical Machine Design
- Department Elective-IV
- Department Elective-V
- Open Elective III
- Open Elective -IV
- Minor Project
- Summer Internship

#### Semester-8

• Major Project / Internship

#### Elective Subjects (Department Elective Courses to be Offered in Semester 5 & 6).

Electrical Power Supply Design, Modern Control Theory, Utilization of Electrical Power, DC Drives, High Voltage Engineering, Modelling of Electrical Machines, Distributed Generation and Microgrid, Smart Grid, Electrical Distribution and Automation, Multi-Level Inverters, Special Electrical Machines, Advanced Controllers In Power Electronic Systems, Testing and Commissioning of Electrical Equipment, Power Electronic in Renewable Energy Conversion, Advanced Microcontrollers.

#### **Proposed Department Elective Courses in Semester 7\*.**

Digital Signal Processors, Condition Monitoring of Electrical Machines, Artificial Intelligence in Electrical Engineering, Power Quality and Custom Power Devices, IoT in Electrical Systems, Design of Special Electrical Machines, Electric Vehicle Technology, EHVAC and FACTS Devices, Power System Optimization, HVDC Transmission, Electromagnetic Interference and Electromagnetic Compatibility, Control of Electric Drives, Restructured Power System.

### **Research @ ELECTRICAL ENGINEERING**

The faculty members of Electrical Engineering Department are actively involved in research, training and development. Many faculty members have pursued their PhD from renowned institutes and at the same time, many of the faculty members are pursuing their doctoral research. Following are some of the areas in which faculty members have expertise and consultancy assignments have also been successfully undertaken in the same

- Software Development for Various Industrial Applications
- Power Electronics, Industrial Drives, Industrial Process & Control
- Switched Mode Power Supplies, UPS, Control of Converters and Inverters
- Energy Conservation, Power Factor Improvement, Load Calculations
- Power Quality, Active and Passive Power Filters
- Electrical Machines and Component Designs
- Transmission Line Design

- Power System Analysis, Congestion Management
- Impact Analysis of Renewable Source Penetrations
- Optimization Studies
- Microprocessor and Microcontroller Related Developments
- Testing: Induction Motor up to 5 HP Rating
- Transformers and insulators up to 11 kV
- LV Cable, Relay Testing, Transformer Oil Testing





please visit https://ee.nirmauni.ac.in/academics/people/faculty/ for faculty details

# **ELECTRONICS AND INSTRUMENTATION ENGINEERING**

Accuracy is Everything http://ei.nirmauni.ac.in/



Electronics and Instrumentation engineering is an interdisciplinary branch which includes, measurement, control and automation of every important system or process that governs modern life. "You Build, We Control" - Electronics and Instrumentation is undoubtedly the backbone behind the existence of technological marvels. The concept of control itself is the gift of instrumentation to the world which has turned many dreams into reality. Electronics and Instrumentation engineers are innovators, entrepreneurs, problem solvers and global leaders. They look into the future and invent the technologies to convert the ideas into reality.

![](_page_47_Picture_4.jpeg)

#### ELECTRONICS AND INSTRUMENTATION ENGINEERING CAREERS

An Electronics and Instrumentation engineering degree provides a foundation to have a successful career in a widespread domain of innovation, research and development, manufacturing, designing, operations and maintenance in various industries ranging from petrochemicals to biomedical, building construction to space programmes. Entrepreneurs to provide customized solutions in the field of automation are high in demand.

#### The BTech Programme in Electronics and Instrumentation Engineering offers expertise in:

- Electronic Instrumentation

- Control Engineering
- Sensors & Smart Instruments
- Robotics

- Process Automation

- Industrial Drives

PROGRAMMES OFFERED	INTAKE
BTech in Electronics and Instrumentation Engineering	68
PhD in Instrumentation and Control Engineering	√

The four-year curriculum leading to the BTech in Electronics and Instrumentation Engineering enables the graduate to enter professional practice as an engineer or to continue his or her studies in programmes leading to advanced degrees in the following areas of specialisation:

- Control and Automation
- Industrial Engineering & Management
- Robotics

- Biomedical Instrumentation & Engineering
- Power Electronics
- Sensors

Electronics and Instrumentation Engineers contribute to the society in numerous way; thus the philosophy of the department is to lay a strong foundation of core subjects and offer a large basket of electives that mold students as interdisciplinary experts for the industries.

#### **PROGRAMME SPECIFIC OBJECTIVES**

A graduate of Electronics and Instrumentation Engineering will have an ability to:

- understand, analyse, design and develop control system for industrial automation applications
- select, commission, troubleshoot and maintain various instruments and associated systems
- apply conceptual knowledge to undertake research in the areas of (but not limited to) advanced control, sensor technology, biomedical engineering, industrial automation, navigation and control

#### **HIGHLIGHTS OF THE DEPARTMENT**

- Electronics and Instrumentation engineering is an interdisciplinary branch
- Blend of well qualified, experienced and dynamic pool of faculty members
- International and National Awards Winner Faculty members
- Equipped with state-of-art laboratories and provides excellent facilities to carry out teaching and research
- ISA Student Chapter has won Best Student Chapter Award [2015, 2016].
- ISA scholarship Awards of 250 USD to 5000 USD (2001 2021)
- Active MoU with Mitsubishi Electric India Pvt Ltd, since 2014
- Department won Gold cup in the prestigious National level automation competition: Mitsubishi Electric Cup [2020]. Earlier in the same competition, silver cup was won in the three consecutive years [2017,2018,2019]

![](_page_48_Picture_22.jpeg)

#### LABORATORY FACILITY

- Measurement & Robotics Laboratory
- Process Control Laboratory
- Factory Automation Laboratory
- Industrial Electronics Laboratory
- Computerized Process Control Laboratory
- Industrial Instrumentation Laboratory
- Project Laboratory
- Instrumentation Software Laboratory

![](_page_48_Picture_32.jpeg)

#### **PLACEMENT**

Students got opportunities for the placement in the following companies:

- Tata Chemicals Limited
- GE Research Center
- Relience Industries Ltd.
- Xylem
- Mitsubishi Electric India Pvt. Ltd.
- Essar
- Infosys
- Tata Consultancy Services

- Hindustan Unilever Limited
- GSFC
- National Instruments
- Xion Multiventures Pvt. LtdEvosys
- Thermax
- Cognizant
- TCS Ninja
- PI Industries Ltd.
- Linde

- L&TLimited
- Reliance Industries Ltd
- Coromandel
- Kloeckner Desma India
- Transasia Bio-Medicals Ltd.
- Mu Sigma
- Torrent Power
- Tata Power
- TCS Digital
- Flipkart

#### **STUDENT ACTIVITIES**

Student Association of Electronics & Instrumentation Engineering, under ISA (International Society of Automation) organises various extra and co-curricular activities regularly. ISA Students Chapter and IC department successfully organised MECUP2018 – a National level automation competition during 15th-17th February, 2018 where in 35 Best teams from entire India showcased their technical excellence. Every year, ISA student's chapter, IT, NU, organises its flagship annual events like All Gujarat Instrumentation & Control Engineers Meet (AGICEM) and "TECHNOFORA", the national level technical festival. ISA's other flagship events include SPRINTZ, ROBOSAPIANS, technical workshops, expert lectures, Mock placement drives and many other technical as well as social activities. ISA student chapter also publishes its annual magazine – "MAG-IC".

![](_page_49_Picture_31.jpeg)

### Curriculum

#### FIRST YEAR

#### Semester-1/2

- Mathematics-I
- Mathematics-II
- Statistics
- Physics
- Chemistry
- Environmental Science
- Electrical Science
- Computer programming
- Introduction to AI & ML
- Engineering Drawing & Workshops
- General English
- Written Communication
- Health, Wellness and Yoga

#### **SECOND YEAR\***

#### Semester-3

- Control Theory
- Microprocessors and Micro Controllers
- Basic Electronics
- Circuit Theory
- Applied Mathematics for Electronics & Instrumentation Engineering
- Principles of Economics

#### **Supplementary Courses**

Community Services

#### Semester-4

- Signals and Systems
- Industrial Electronics
- Electrical and Electronics Measurement
- Control System Design
- Linear Integrated Circuits
- Principles of Management

#### **THIRD YEAR\***

#### Semester-5

- Process Control
- Transducers and Measurement
- Machine Learning
- Department Elective I
- Open Elective I

#### Semester-6

- Industrial Drives and Control
- Industrial Instrumentation
- Instrumentation Laboratory
- Department Elective II
- Department Elective III
- Open Elective II
- Open Elective III

#### FOURTH YEAR\*

#### Semester-7

- Process Automation
- Nonlinear and Digital Control
- Minor Project
- Open Elective IV
- Open Elective V
- Department Elective IV

#### **Supplementary Course**

Practical Training

#### Semester-8

• Major Project

\* under revision

![](_page_50_Picture_61.jpeg)

#### **ELECTIVE SUBJECTS**

#### Elective Subjects

Advanced Microcontrollers and its Applications, Advanced Microprocessors and its Applications, Embedded Controller based Design, Biomedical Instrumentation, Mechatronics, Advanced Sensors Building Automation, Data communication and Industrial Networking, Deep learning for vision systems, Robotic control system, Programming with Python & MATLAB, Introduction to R programming, Fuzzy Control, Maintenance of Instruments and systems, Power Plant Automation, Soft Sensors, System Identification, VLSI Design, Advanced Process Control, Digital Design for Instrumentation, Digital Signal Processing, Image Processing and its Applications, Factory Automation.

### **Research @ ELECTRONICS AND INSTRUMENTATION ENGINEERING**

The faculty members of Electronics and Instrumentation Engineering Department are actively involved in activities related to research and development. Four faculty members have pursued their PhD from renowned institutes and at the same time, other faculty members are pursuing PhD Over the years, department has become one of the top 'Electronics and Instrumentation' working group with strong and consistent engagement with process & manufacturing industries and government R&D labs via students' internship projects, campus placements, invited lectures by industry experts, industrial visits, industry participation in board of studies/ academic council in curriculum design, alumni etc.

# Following are some of the areas in which faculty members have expertise and consultancy assignments have also been successfully undertaken:

- Industrial Automation
- Control and Optimization
- PLC and SCADA based Systems
- Electronics Circuit Simulation, Analysis, Design and Testing
- Microprocessor and Microcontroller based circuit Design
- Digital Logic Design on FPGA
- Image Processing
- Embedded System Design
- Sensor Design and Measurement Techniques

![](_page_51_Picture_12.jpeg)

please visit https://ei.nirmauni.ac.in/academics/people/faculty/ for faculty details

## MECHANICAL ENGINEERING

Ahead in top gear http://me.nirmauni.ac.in/

![](_page_52_Picture_2.jpeg)

Mechanical engineering is among the most diverse and versatile of the engineering disciplines and is the innovative application of science and technology to the design, production and operation of mechanical devices, machinery and systems. The stream of Mechanical engineering touches virtually every aspect of modern life, from mobile phones and biomedical devices, to aircrafts and power plants and involves designing things, especially complex items like racing yachts, robots, sawmills and aircrafts, industrial machinery and processes, etc. It also involves the efficient design and use of energy and energy conversion systems such as heating, refrigeration and air-conditioning systems, turbomachines, etc.

If you are intrigued by how things work, fascinated by fully automated robots and high speed automobiles, mega-machines that can dig mountains or spaceships that crosses boundaries of planets to the tiniest machines like nanobots then mechanical engineering is the profession for you. In addition to physics and mathematics, it encompasses key elements of aerospace, electrical, civil, chemical and even materials science and bio-engineering. Since mechanical engineering is involved in almost every design imaginable, one finds mechanical engineers associated with almost any field of interest.

PROGRAMMES OFFERED	INTAKE
BTech in Mechanical Engineering	135
MTech in CAD/CAM	18
MTech in Design Engineering	18
PhD in Mechanical Engineering	√

#### ABOUT THE BTECH PROGRAMME IN MECHANICAL ENGINEERING

The four years of curriculum aims to develop a broad set of skills and apply that knowledge into varied fields of mechanical engineering. The programme is designed to develop practical, analytical, creative and design skills in the students through interactive classroom sessions; hands on experiences during workshops; design and creative skills in laboratories and through major projects.

#### **PROGRAMME SPECIFIC OUTCOMES**

- To apply the concepts of material science and engineering, computer aided engineering, thermal engineering and manufacturing technologies for design, development, analysis and maintenance of mechanical systems or processes.
- To work as a professional or as an entrepreneur by applying mechanical engineering principles and management practices.

![](_page_53_Picture_3.jpeg)

#### **STUDENT ACTIVITIES**

#### STRENGTH OF THE DEPARTMENT

- The Department is a blend of highly motivated and experienced faculty members possessing research qualifications and/or industrial exposure. The faculty members regularly update their knowledge and skills through various training and learning modes and keep themselves abreast with the stateof-the-art knowledge and emerging trends in science and technology.
- The Department has well established laboratories in areas such as Dynamics of Machines, Fluid Mechanics and Fluid Power, Heat Transfer, Alternate Energy Sources, Refrigeration and Air Conditioning, I.C. andAutomobile Engines Engineering, Materials Technology, Metrology and Instrumentation, Production Technology, Processes, Manufacturing Workshop, CAD/CAM Centre, Robotics, etc. along with a unique Thermal Insulation Testing Laboratory. The Computer Centre includes networked terminals with software such as Creo, ANSYS, AutoCAD, Design Studio, Hyperworks, HTRI, Solidworks, Robocell, SciLab, CATIA, Automation Studio, MathCAD, Originlab, DynaForm, EES, TecPlot, etc.

The student activities are vibrant in the Department and conducted through a dedicated club of Mechanical Engineering Students Association (MESA) run by the student fraternity which organizes national level competitions, symposiums and extension activities. The student teams of Society of Automotive Engineers (SAE India Nirma University Chapter), regularly participate in the All Terrain Vehicles (ATV) competitions and have won prizes in various categories of the national level SAE BAJA event. The robotic team has won the national level robotics competition ROBOCON for a record eight times and has represented India at the international robotic event. The ASHRAE Western India Student Chapter at Nirma University is very active and conducts various activities for the promotion of refrigeration and air conditioning engineering.

#### **CAREERS FOR MECHANICAL ENGINEERS**

The Mechanical engineering graduates are sought by employers in almost all sectors of the engineering industry. These include industries involved with aerospace, automotive, chemicals, construction, defense, consumer goods, marine, materials and metals, oil and gas, pharmaceuticals, power generation, rail, utilities, automation etc. among several others.

The students have found placement in industries such as: Larsen & Toubro Ltd, Elecon Engineering Co. Ltd, Tata Consultancy Services, ABB Limited, Linde India, Mahindra & Mahindra Ltd, Jyoti CNC Automation Pvt Ltd, Siemens Ltd, Ingersoll Rand (I) Ltd, KHS Machinery, INOX, Zeppelin and many more.

### Curriculum

#### FIRST YEAR

#### Semester-1/2

- Mathematics-I
- Mathematics-II
- Statistics
- Physics
- Chemistry
- Environmental Science
- Electrical Science
- Computer programming
- Introduction to AI & ML
- Engineering Drawing & Workshops
- General English
- Written Communication
- Health, Wellness and Yoga

#### **THIRD YEAR\***

#### Semester-5

- Material Science and Engineering
- Manufacturing Processes-I
- Thermodynamics
- Theory of Machines
- Mechanics of Solids
- Principles of Management
- Introduction to Computer Aided Drafting

#### Supplementary Courses

Community Services

#### Semester-4

- Metrology & Quality Control
- Fluid Mechanics & Hydraulic Machines
- Manufacturing Processes-II
- Dynamics of Machines
- Mathematics for Mechanical Engineering
- Principles of Economics
- Introduction to Machine Design

#### **DEPARTMENT ELECTIVE COURSES**

Advanced Thermodynamics, Basics of Flight and Aerodynamics, Stress Analysis, Process Planning & Cost Estimation, Composite Materials, Foundry Technology, Experimental Methods, Robotic Engineering, Industrial Design, Mechanism Analysis and Design, Maintenance Engineering and Asset Management, Gas Dynamics, Micro Electro Mechanical Systems, Machine Tool Design, Fatigue Creep Fracture, Advanced Metal Forming, Advanced Welding Technology, Quality And Reliability Engineering, Surface Engineering, Fundamentals of Computational Fluid Dynamics, Heat Exchangers, Refrigeration Engineering, Automobile Engineering, Condition Monitoring of Mechanical Equipment, Basics of Machine Learning, Mobile Robotics, Tribology, Failure Analysis, CNC Technology And Programming, Hydraulics and Pneumatics, Work Study, Air-Conditioning Engineering, Theory and Design of Steam and Gas Turbines, Advanced machining Methods, Computer Integrated manufacturing, Operations Research, Supply Chain Management, Rapid Prototyping, Tool Engineering, Advanced Mechanical Vibrations, Optimization Techniques, Finite Element Analysis, Mechatronics

\* under revision

#### **SECOND YEAR\***

#### Semester-3

- Material Science and Engineering
- Manufacturing Processes-I
- Thermodynamics
- Theory of Machines
- Mechanics of Solids
- Principles of Management
- Introduction to Computer Aided Drafting

#### **Supplementary Courses**

Community Services

#### Semester-4

- Metrology & Quality Control
- Fluid Mechanics & Hydraulic Machines
- Manufacturing Processes-II
- Dynamics of Machines
- Mathematics for Mechanical Engineering
- Principles of Economics
- Introduction to Machine Design

#### **FOURTH YEAR\***

#### Semester-7

- Manufacturing Technology and Management
- Energy System II
- Department Elective IV
- Department Elective V
- Open Elective III
- Open Elective IV
- Minor Project

#### Semester-8

• Internship/ Major Project

### **Research @ MECHANICAL ENGINEERING**

#### The Department offers consultancy and testing services to the industries in various areas such as

- Redesign of Heat Setting Chambers for Stenter machine
- Design of Transportation System for Stenter machine
- Materials of Construction for Ammonia / Urea Plant
- 3D Geometric Modelling using CAD Software
- Re-design of the Flyer (a component in Roving Frame of Textile Machine).
- Thermal Conductivity Determination of Thermal Insulations as per ASTM/ISO Standards.
- Testing of various properties of Thermal Insulations such as Compressive Strength, Water Absorption,
   Vapour Transmission, Thermal Resistance, Linear Shrinkage, etc. as per ASTM/BIS Standards.
- Finite Element Analysis of Machine components and systems such as Cryogenic Vessel,
- Gate Valve, Ball Valve, etc.
- Vibration analysis of spindles of ring frame.
- Mechanical and Electrical Design & drawing verification for EPC projects.

# The Department has undertaken various research projects funded by ISRO, Dept. of Science and Technology (Govt. of India) and GUJCOST such as:

- Process development for minimization of springback deformation and enhancement of profile accuracy of CFRP reflectors.
- Experimental investigation on ultrasonic single point incremental forming
- Understanding of immersed friction stir welding of aluminum alloys.
- Experimental Investigation of life cycle analysis and combustion characteristic of CI Engine operating on Esterified Oil and its blends with Bio Additives.
- Experimental Investigations on Pump as Turbine (PAT) for Micro Hydropower Plants.
- Experimental and Theory studies on Effect of Particle Size of Lignite on Kinetics, specific Gasification Rate, Calorific Value of Gas and Conversion Efficiency of Gasifier Fueled with Lignite.

![](_page_55_Picture_20.jpeg)

### NATIONAL LABORATORY FOR TESTING AND DEVELOPMENT OF THERMAL INSULATIONS

This laboratory is first of its kind in the country established for the testing and development of thermal insulations as per various National and International Standards. The Laboratory is the outcome of a project under the National Facilities in Engineering and Technology with Industrial Collaboration (NAFETIC) Scheme of the All India Council for Technical Education (AICTE), New Delhi. The Laboratory has MoUs with more than twenty-five industries associated with thermal insulations for the utilisation of the test facilities. The prestigious setup in the Laboratory include a Guarded Hot Plate System used for thermal conductivity determination in the temperature range of -10°C to 350°C according to ASTM C177 and ISO 8302. The laboratory facilities are being actively utilized by various industries for the testing of the quality of thermal insulations.

![](_page_56_Picture_2.jpeg)

please visit https://me.nirmauni.ac.in/academics/people/faculty/ for faculty details

# DEPARTMENT OF MATHEMATICS

Maths Matters http://mh.nirmauni.ac.in/

![](_page_57_Picture_2.jpeg)

Mathematics is a diverse field and finds its application in various disciplines of sciences, engineering and technical domain. The Department of Mathematics serves as the ancillary department to the Institute of Technology. It plays a diverse yet very unique and distinctive role because of its talented faculty pool. The department strives to churn the students to be active analytical thinkers and problem solvers so that they can contribute positively to the world in which they live and learn. The department endeavours to stimulate and augment the student's knowledge of analytical, logic and problem solving thereby endowing them with skills to become proficient engineers. The department offers courses at undergraduate, postgraduate and doctoral levels. The Department of Mathematics, earlier known as the Department of Mathematics and Humanities was established at the inception of the Institute with a vision to build the base and create a solid foundation of engineering courses. Three levels of courses are administered; core courses, discipline-specific applied mathematics and open electives courses. The Department also handholds lateral entry students by offering bridge courses. The department offers a Doctoral programme in Mathematics.

The department has highly qualified, dedicated and experienced faculty members involved in an active and ideal teaching-learning process. Student engagement is always achieved through content/ pedagogy and innovative assessment. Various pedagogical tools are used for the effective teaching-learning process such as active learning, ICT based learning, Flipped Classroom, Muddiest Point etc., which gives conceptual clarity and engages the students to make learning effective.

The Department regularly conducts pedagogy sessions to enhance the teaching and learning process. Besides teaching, faculty members are published authors and are actively involved in research activities.

please visit https://mh.nirmauni.ac.in/academics/people/faculty/ for faculty details

# DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

Unleashing Human Potential http://hss.nirmauni.ac.in/

![](_page_58_Picture_2.jpeg)

The Department of Humanities and Social Sciences under the aegis of the Institute of Technology provides students with well-grounded intellectual resilience and a disposition toward lifelong learning. The department delivers and augments the understanding of aesthetic, literary, and cultural importance in human life. It gives them fundamentals of economics, finance and organisational behaviour for future workplaces.

Aligning with the vision and values, this multidisciplinary department offers a wide range of courses to the students of Technology, runs a PhD programme, and contributes to augmenting the frontiers of knowledge in Humanities and Social Sciences. The department strives to incite the students to be active analytical thinkers and problem solvers, and develop them as global citizens to contribute positively to the world in which they live and become lifelong learners. The well-published faculty members represent a rather eclectic group, that promotes and supports intellectual robustness and dexterity.

The courses run by the department are administered to undergraduates and postgraduates students of the Institute of Technology. The department integrates and inculcates language skills, communication skills, human values, social concerns, and critical thinking with technical education. Over the years, it has developed into a vibrant department, encompassing teaching-learning courses in the areas of English Language Teaching and Learning, Gender and Culture Studies, Design thinking, Ethics and Values, and Developmental Economics, Management, Organisational Behaviour, Technology and Socio-economic development The department has highly qualified, dedicated and experienced faculty members involved in a constructivist, collaborative, integrative, reflective, and inquiry-based teaching-learning process. The Department regularly conducts pedagogy sessions to enhance the teaching-learning process. Besides teaching, faculty members are also involved in research activities.

The department is home to proficient and robust educators. Student engagement is achieved through content/ pedagogy and innovative assessment. Pedagogy like role–plays, case studies, games, active learning, ICT based learning, Flipped Classroom, and Muddiest Point are employed during the teaching-learning process, which gives conceptual clarity and provides the students with tools that can be used in their professional lives in future. The department is instrumental in enabling students in honing their communication, life skills, personality, teambuilding and leadership skills which are prerequisites to every field.

The faculty members are actively involved and mentor activities like TEDx talks, Storytelling sessions, and motivational lectures by experts. They sit on various committees and act as resource persons and panellists in various renowned forums.

please visit https://hss.nirmauni.ac.in/academics/people/faculty/ for faculty details

![](_page_59_Picture_0.jpeg)

# **LIBRARY RESOURCE CENTRE**

The Library aims to facilitate learning, teaching, research, training and consultancy activities at the Institute. The Institute of Technology Library is one of the best engineering libraries in the State. Institute of Technology Library has been awarded "The Best Knowledge Centre (Library)" Award (Shri Pravinkaka Ratilal Maniar Best Knowledge Centre (library) award) of the State for the year 2020 by ISTE Gujarat Section (Indian Society for Technical Education).

Web based open source library software KOHA has been adopted to make the resource centre fully automated. A web based catalogue is also available on the internet for inquiring about the books.

929 m <sup>2</sup>	#1564 lakhs	<b>61,410</b>	<b>864</b>
Total	worth	Collection	Online Journals
Area	library resources	of Books	(Science direct, IEEE, ACM, ASCE)
537 Video & 358 Web Courses NPTEL	<b>1,65,000</b> E-Books	<b>4400</b> CDs/DVDs	<b>Scopus</b> Online Database

The center has adopted latest information technology mediums like CD, DVD, text as well as graphic scanners. The Library portal gives access to journals, magazines, videos, CDs and also links to the Central Library Resource Center of the university. Library also introduced KIBO XS device. It scans and reads printed and handwritten text across 10 Indian languages in audio (which includes Gujarati as well).

#### **Services Offered**

Circulation, reference, online catalog access, audio visual resources viewing, users' personal profile access, In-house reading, reprography, orientation programs, Media Clipping, Resources sharing via Inter library loan across the country, current awareness service for new arrivals and new happening, worldwide access via remote login, space Knowledge Repository. Institute library also organises the other activities like Screening TED Talks, Book Review, Storytellers, Celebration of National & International Days, Training of online Databases etc.

### **Digital Library**

Keeping in tune with global developments, we create Knowledge Repository, archival of Intellectual property of Nirma University Community by use of DSpace where the collection like faculty publication, Maters Dissertations, Ph.D Thesis etc. are available in PDF format and can be accessed and downloaded from anywhere in the campus.

### **Institutional Membership**

#### The Library is an Institution Member of:

- Institute of Engineers Kolkata,
- Indian Society for Earthquake Technology (IETE)
- Developing Library Network (DELNET)
- Indian Geotechnical Society (IGS)

![](_page_60_Picture_8.jpeg)

# **Facilities @ ITNU**

#### **STUDENT SECTION**

The student section looks after admission, registration, student records, semester end examinations, scholarships, concessions, issue of identity cards, bonafide certificates, provisional passing certificate etc.

#### **Stationery & Book Store**

The university campus houses a stationery & book store which is located in the K Block. The store provides books, stationery items, and other essential commodities for the convenience of the students. Just above the student store is a full-time Xerox facility available for the students, employees and other visitors. The students use this facility for various projects and assignments.

#### **BANKING AND ATM SERVICE**

To serve the banking needs of the students within the campus, a full-fledged branch of the Kalupur Commercial Co-operative Bank Limited, a scheduled bank operates at the campus in K-Block. Along with this, for the convenience of the students, two ATM machines are also provided within the campus.

#### **TRANSPORTATION**

The Institute provides transport facility for the convenience of students from the area of their residence to the Institute and back on payment basis. For this, the Institute has its own fleet of 39 buses that ply on pre-decided routes.

![](_page_61_Picture_9.jpeg)

#### CANTEEN

The Institute has a well-maintained central canteen facility located in the K-block. Besides providing breakfast, lunch, high tea, snacks and beverages, the canteen has facility to arrange food for any events organised on the campus.

Apart from the central canteen facility, two food courts are also available in the campus; one near the Institute of Law and the other near the Institute of Science. They provide snacks and beverages throughout the day.

These places not only provide fresh and healthy food, but also double up as a meeting and social interaction joint for students. It is their favourite hangout zone, be it after a hectic day or an important event or session. The place is thronged by students, busy over discussion along with food.

#### **SAFETY & SECURITY**

To ensure proper safety & security in the campus, a team of trained guards and supervisors remains available round the clock within its premises. The university is under 24x7 surveillance with the help of hitech CCTV surveillance and they are monitored by designated officers from time to time.

#### HEALTH CENTRE AND AMBULANCE

The Institute has made special arrangement to provide Medical Facilities on the campus by appointing a fulltime doctor who is available at Health Centre, and the campus has 24x7 Ambulance facility.

#### **OUTDOOR SPORTS**

The Institute campus has well-developed infrastructure to facilitate almost all outdoor sports activities.

It has a well-maintained cricket ground with three hard bowling pitches. Training nets are also provided during the practice sessions. Further, there is a running track, three lawn tennis courts, two volleyball courts, two basketball courts, and space for football and kho-kho as well. Students of the Institute are encouraged to make use of these facilities on regular basis.

#### **INDOOR SPORTS**

The Students Activity Centre near the University hostels has ample space for a host of indoor sports activities. It has facilities for several indoor games, including carom, chess and table tennis, to name a few.

Students of the Institute participate in various competitions, both, at Intra-college level and Inter-college level.

![](_page_62_Picture_14.jpeg)

#### **GYMNASIUM**

The Institute has a well-equipped modern gymnasium. The gymnasium is open for students during 4:00 pm to 8:00 pm on all working days. A trainer is also available to provide guidance and assistance, wherever necessary. The gymnasium facility is complimentary for students staying in University hostels and is provided at a very nominal fee to other students.

#### **YOGA HALL**

The Institute lays due emphasis not only on the academic growth of its students but also on their holistic development. Yoga is the art of controlling ones mind, body and soul. It helps in managing stress and anxiety, thereby relaxing the individual. It brings flexibility to the body.

Keeping these benefits of practicing yoga in mind, the Institute has a spacious Yoga Hall, where students, faculty members and staff members practice yoga and meditation.

#### **COUNSELLING CENTRE**

Keeping the academic, psychological-social, and emotional needs of its students in mind, the Institute has a dedicated Counselling Centre at its campus. The counsellor systematically studies and discusses the student's problems and facilitates the student to find an appropriate solution. The counsellor helps the student address his problems in a positive way by helping him clarify the issues, explore options, develop strategies and increase self-awareness.

The counsellor also conducts group sessions on topics of general importance, like stress management, prevention of drug addiction, etc. to create awareness among the students. The Counselling Centre is located in the Institute of Management building, ground floor, opposite to library.

#### **GIRLS HOSTEL**

The University has a separate girls' hostel facility. The hostel rooms are spacious and well-furnished, and the rooms have Internet connectivity round the clock

#### **OTHER FACILITIES**

In order to provide round the clock electricity, two generators sets of 500 kVA each and one generator of 250 kVA, remain operational in the campus. Cleanliness in the campus is given importance & maintenance activities are continuously monitored by the estate department. Campus is also has sewage treatment plant and also uses its canteen waste to generate compost for gardening purposes.

![](_page_63_Picture_12.jpeg)

# **Student Activity LAB's & Centre's @ ITNU**

### **ROBOTIC LAB**

Robotic Lab of Institute of Technology is a facility developed to encourage and support the students of the Institute to take part in various Robotic competitions. The major event wherein the students take part is ABU (Asia Pacific Broadcasters' Union) Asia-Pacific Robot Contest – Robocon. It is an International Robotic Contest organised by ABU every year since 2002 hosted by various member countries. Being a member of ABU, Doordarshan organises a national level contest in India and the winner of the national event gets an opportunity to represent India at International event. Team Nirma Robocon has been consistently participating in the event since its inception.

Team Nirma Robocon has won the National Championship 9 times so far and represented India at International event hosted by Japan (2002), Thailand (2003, 2011), Malaysia (2006), India (2008, 2014), Indonesia (2015), Vietnam (2018) and China (2021). Team Nirma Robocon stood 7th at International Robocon 2021 competition and also won Nagase Award.

Another event where the separate team takes part is Autonomous Underwater Vehicle (AUV) competitions. Team Nirma AUV takes part in National Level event organized by National Institute of Ocean Technology (NIOT), Chennai at IIT Madras and also in an International Event held at Singapore every year.

#### **IDEA LAB**

Institute of Technology. Nirma University has started an innovative programme called the "Idea-Lab" to support, nurture and cultivate the spirit of innovation, design, and research towards technology for meaningful purposes amongst the students. The idea-lab provides a small seed-funding for early-stage exploration of an innovative R&D project idea which can be used to build quick and simple proto-types. The ideas funded are mainly technical, exploratory, innovative in nature with a potential to impact science and society. Many of these ideas are multi-disciplinary, involving students from different departments and institutes. Some of our idea projects have been presented at national level, winning accolades and awards in national level competitions held by Wipro, awarded and further funded by national scientific journals or international organisations like IEEE or winning national level competition.

In this endeavor, the students are guided technically and logistically by faculty-members as mentors. The Idea-Lab thus serves as a "Technology Incubator" and also aims to support ideas with good technology product and commercial potential to the next business incubation stage through interested entrepreneurs via external funding.

![](_page_64_Picture_8.jpeg)

#### **CENTRE FOR CONTINUING EDUCATION (CEE)**

Nirma University established the Centre for Continuing Education to cater to the needs of today's world by arranging outcome based programmes for skill development of the community. Various institutes of the university contribute to the centre by arranging specialised programmes for the benefit of students, industry and society. Among all the institutes, Institute of Technology offers customised programmes in the state of the art technology for the external and internal participants.

The programmes cover most of the areas of Engineering. The focus of the programmes is to work with modern software tools with hands on training, updating the knowledge by offering customised programmes, motivating research scholars by offering programmes on research domains, training employees of industry by offering specific programmes according to the requirement of Industries etc. The duration of the programmes is flexible and it facilitates the participants to attend the programme without disturbing their daily schedule. Such programmes are arranged either in the evening(s) or during the weekends.

Apart from the technical programmes, long term programmes are also offered in order to guide and train the students for competitive examinations such as GATE and GRE.

All the programmes are offered by the CCE with the help of internal faculty members as well as experts from outside organisations and industries.

#### **CENTRE FOR ENTREPRENEURSHIP**

The Centre for Entrepreneurship aims at promoting entrepreneurship among the students of the University by creating an effective ecosystem to start scalable new business ventures. The Centre has been conceptualised to formulate standard procedures for identification, selection and development of potential entrepreneurs. It serves as an innovation promotion platform involving academics, entrepreneurs and researchers. It mentors innovators through ideation, proof-of-concept and the business creation process. It emphasises on venture opportunities that are the most viable and have the highest impact potential.

#### **Objectives of the Centre**

- To inculcate a culture of innovation and entrepreneurial spirit on the campus through various activities and campaigns
- To nurture potential ideas through proof-of-concept and business creation
- To train the students to use their talents to turn opportunities into reality
- To develop training for entrepreneurial success

![](_page_65_Picture_12.jpeg)

#### Activities

The Centre for Entrepreneurship organises various workshops/events/seminars/training /interaction to increase awareness about entrepreneurship and to assist potential ideas by providing necessary resources and mentoring in all aspects of setting up and running a venture to potential ideas. Below is the list of activities done under the Centre:

- Entrepreneurship awareness camp
- Alumni meet
- Startup weekend
- Hackathon
- Workshop and Seminar

- Entrepreneurship week
- Business plan competition
- Hult prize competition
- Expert session/Guest session
- Boot camp

• Field visit

#### How the students can benefit from the Centre

The Centre for Entrepreneurship has set up an E-cell to foster entrepreneurship among the students. The E-cell is run by the students. At the E-cell, the students learn important and useful aspects of entrepreneurship. The Centre helps students nurture entrepreneurial skills, organising skills and teambuilding skills by conducting various entrepreneurial awareness programmes, such as workshops, seminar, interaction with successful entrepreneurs, alumni meet, business plan competition, hackathon, etc. The Centre encourages and motivates the students to participate in various entrepreneurial activities conducted on the campus. The Centre also guides the students to take part in the various events organised nationally and internationally.

#### **INCUBATION CENTRE**

To support the innovations and ideas of young students and provide a conducive environment for the optimum harnessing of their creative pursuit, an Incubation Centre is established at Nirma University. It is recognised as a nodal agency of the Government of Gujarat under the Student Startup Innovation Policy (SSIP). The student's projects having commercial value are funded and guided from the ideation to pre-incubation to the Proof-of-Concept stage, and finally turned into a startup company by providing technical, financial, legal, and marketing mentorship. Any current student or alumnus of Nirma University for up to 5 years can apply and be a part of this scheme. Based on the initial scrutiny of the application, applicants are asked to submit a detailed business plan. The centre is incubating startups from different domains like Waste Management, Clean tech, Renewable energy, Digital marketing, IT, and, IoT, among others. The centre provides continuous mentorship to the registered incubate through multidisciplinary mentors.

![](_page_66_Picture_17.jpeg)

#### **CENTRE OF EXCELLENCE IN DATA SCIENCE**

Data Science is an interdisciplinary field consisting of methods and systems to extract knowledge and insights from data. It encompasses statistics, machine learning, visualization, business analytics, data analytics, and scientific computing. India has shown rapid and sustained economic growth over the last decade and recent developments suggest that the need for the hour is to focus on data science. Computer Science & Engineering (CSE) Department, Institute of Technology, Nirma University has established a Centre of Excellence in Data Science in collaboration with SUNY, Binghamton University, New York, USA in January 2020 as an effort in this direction. More than 10 PhD faculty members work in the broad area of data science and are involved in various data science related consultancy assignments and funded research projects. The centre hosts contemporary computing facility to support these initiative. The CSE department and the Institute also has strong tie-ups with the industry that are utilized for internships and students placement and offering consultancy and training programs across the entire spectrum of data science resulting in mutual benefits.

#### **Objectives of the Centre**

- Offering a research hub for undergraduate, postgraduate and doctoral students, attracting international expertise and practitioners
- Stimulating collaboration between academics, partners and stakeholders
- Demonstrating the relevance of the centre for innovation, job creation and economic prosperity
- Securing resources to stimulate multidisciplinary collaborative research projects

#### For more details visit https://ceds.nirmauni.ac.in/

#### **CENTRE FOR ROBOTICS AND AUTOMATION**

The Center for Robotics and Automation has been established as a center of excellence with the state-of-the-art learning and research facilities like 6 Axis Collaborative Manipulator UR10e, Humanoid Robot NAO 6, Mobile Robot Platform, TurtleBot3 Waffle Pi, 4 Omni Drive Robot, PLC Trainer Kit, Hydraulic & Pneumatic Trainer Kit, 3D printer, Arduino Sensors kit, NVIDIA Jetson Nano 2 GB Developer board and RPLIDAR A2M8. Robots and automation are need of manufacturing, healthcare, service, education and the entertainment industries for mass production and human safety view point. In order to cater to the need of automation industries there is a requirement of continuous research and up-gradation in the field of robotics and automation.

#### **Objectives of the Centre**

- To provide an interdisciplinary environment and bring together the research groups involved in robotics, control engineering, embedded systems, industrial automation, computer coding, machine learning and other upcoming technologies.
- To facilitate research activities in the area of Robotics and Automation.
- To provide innovative solutions to automation industries.
- To provide consultancy and development services to industry.
- Offer new and innovative interdisciplinary Doctoral and Master's Programme
- To motivate and support the student's community to participate in various technical competitions of national and international level.

Under the aegis of Centre for Robotics and Automation, the Nirma Robotech club has participated in The Robocon cup, Robofest – GUJCOST and Underwater Robotics Competition and has won many prizes and medals to its accolade.

# **Looking Beyond Curriculum**

### STUDENT ASSOCIATIONS/CLUBS

Institute of Technology believes in giving its students a holistic experience by providing a vibrant campus buzzing with a variety of activities. Students are encouraged to explore their talents, indulge in hobbies and develop a well-rounded personality. A number of student organisations across various departments provide the right platform to students to organise and engage in these activities. Ranging from technical to cultural to sports to literature to drama to music to social and more, the plethora of activities make life on campus enjoyable and fun.

#### The following associations/clubs are presently functioning:

![](_page_68_Figure_4.jpeg)

### **CURRICULAR ACTIVITIES**

The institute hosts industrial visits, training, seminars, and conferences for the overall development to the students. National level competitions like ROBOCON, SAE-BAJA, etc. gives students opportunities to work beyond the classroom and engage in interdisciplinary areas. Such engagement enhances the students researching, reading, writing, critical thinking and presentation skills.

![](_page_69_Picture_0.jpeg)

# **Cultural & Other Activities**

Cultural activities bring out the creative side of the students and the participation and organisation of these are the best learning experience a student can have. VAUDEVILLE is the biggest annual cultural festival of the Institute. Every year, this festival marks the confluence of music, dance, art, culture, literature and loads of talent. The fest includes events like solo-duet classical singing, solo-duet-group dance, debate, extempore, drama, mono-acting, cartooning, Mr and Miss- Institute of Technology. This event is planned as a 'for the students, of the students, by the students'. The Institute also organise a "First Year Cultural Talent Hunt" especially for first year students, to showcase their talents.

Additionally, the University level cultural festival 'NUZEAL' and the Ras-Garba Mahotsav (RAMZAT) organised after Navratri festival are star attractions planned during the year.

![](_page_70_Picture_3.jpeg)

#### The events of the Cultural Festival are:

- Drama
- Cartooning
- Skit
- Group Dance
- Mime
- Solo Dance
- Mono Acting/Mimicry - Folk Dance
- Debate
- Singing Solo
- Elocution
- Singing Duet
- Collage
- Group Song
- Vocal
- Rangoli
- On the spot painting
- Instrumental

![](_page_70_Picture_22.jpeg)

# **Fresher's Orientation**

The Institute organises a unique orientation programme for the new entrants to foster interaction between students and ensure a smooth transition from an environment of school life to professional studies. Various lectures on Time Management, coping with stress, Human relations, Positive attitude, Communication skills, etc. are delivered by eminent speakers to the students.

# **Social Activities**

- Blood Donation camp
- Literacy campaign in slum areas or nearby villages
- Educational campaign in nearby schools

![](_page_71_Picture_6.jpeg)




## **Other Activities**

- NCC (National Cadet Corps)
- NU Tech (Technical Fest)
- International Yoga Day

### **Adventure Activities**

- Mountaineering activities
- Basic rock climbing course
- Tracking in the forest of Gujarat

- NSS (National Service Schemes) for Girls and Boys
- National Days Celebration
- Special days Celebration like Flag Day, Communal Harmony Day etc.
- Tracking in Himalaya
- Desert trekking camp
- Know Your Border Programme

### **NSS (National Service Scheme)**

The Institute of Technology offers NSS programme to its students. A strong and vibrant 400 plus students NSS unit organises a number of activities all through the years such as teaching children at the adopted villages of Miroli and Motipura, organising residential camps, awareness drives on societal issues, mentoring and teaching construction workers children, cleanliness drive and many more.

### NCC (National Cadet Corps)

The National Cadet Corps (NCC) has sanctioned a Boys Battalion and a Girls Battalion in Nirma University since 2016 with an aim to motivate students towards nation building. There has been enthusiastic and committed enrollment of students from the Institute of Technology. Various activities like Combined Annual Training Camp (10 days), Army Attachment Camp (15 days), Disaster Management drills, etc. are conducted throughout the year. Cadets of the Institute have won various competitions during NCC camps at Ahmedabad group level. Cadets also actively coordinate The University level activities like celebration of national festivals, Yoga Day, Sports Day and Convocation.

# **Recruiters @ IT-NU**

- Accenture India Private
   Limited
- Adani Group
- Aditya Birla [Birla Cellulosic]
- Amtech Electronics (India) Limited
- Aqua Gel Chemical Private Limited
- Argusoft India Limited
- Asea Brown Boveri Limited
  [ABB]
- Asia Motors Private Limited
- ATUL Limited
- Bayer India Limited
- BGR Energy Systems
   Limited, Chennai
- Bhagwati Associates Pvt. Limited
- Bloomberg LLC
- Cadila Healthcare Limited
- Capgemini India Co. Private Limited
- Caterpillar India Pvt. Ltd.
- Cinemeta Entertainment (India) Private Limited
- CMC Limited
- Cognizant Technology Solutions India Private Limited
- Crompton Greaves Limited
- CSSI [Computer Solutions & Software International]
- Cybage Software Private Limited
- Cyberverx Software
   Solutions Private Limited
- Deloitte Consulting India Private Limited
- Denag Cranes & Components India (P) Ltd.
- DLF Limited
- Dolcera ITES Pvt. Ltd.
- DOLPHIN Steel
   Construction LLC

- Doshi ION Exchange & Chemical Industries Limited
- Dresser Rand India Private
   Limited
- eClinical Works
- Eicher Motors Limited
- E-Infochips Limited
- Elitecore Technologies
   Limited
- EMCO Limited
- Emerson Process
   Management (1) Private
   Limited
- Entity Solutions Limited
- Erhardt + Leimer (India) Limited
- Erricson India Private Limited
- Essar Limited
- ETA Engineering Private Limited
- Evolutionary Systems Pvt. Ltd.
- FAG Bearings India Limited
- Feast Software Private Limited
- Fiserv
- FLD Smith Limited
- Freescale Semiconductors Limited
- Future First Info Services Private Limited
- Galaxy Group
- Gammon India Limited
- Gannon Drunkenly & Co. Limited
- Gateway Technolabs Private
   Limited
- GEA Process Engineering
   (India) Limited
- Geometrics Global
- GHCL Limited
- GIFT [Gujarat International Finanace Tech City Co. Ltd.]

- GMMCO Limited
- GNFC [Gujarat Narmada
   Fertilizer Valley Corporation]
- Godrej & Boyce Mfg. Co. Limited
- GSFC [Gujarat State Fertilizers Corporation]
- Gujarat State Petronet
   Limited
- Hewlett Packard India Sales
   Private Limited
- Hindustan Construction
   Company Limited
- Hindustan Uniliver Limited
- Hirel Electronics Private
   Limited
- Hitachi Home & Life Solutions (India) Limited
- IBM India (P) Limited
- ICICI Bank Limited
- IFB India Private Limited
- I-Flex India Private Limited
- I-many Software Private
  Limited
- Impetus InfoTech (India)
   Private Limited
- Indian Oil Corporation
   Limited
- Indian Rayon and Industries
   Limited
- Indusa Infotech Pvt Limited
- InfoStretch Solutions Pvt
  Ltd
- Infosys Technologies
   Limited
- Ingersoll Rand
- Intel India Pvt. Limited
- Jacobs Engineering Private Limited
- JK Laxmi Cement
- JMC Projects India Limited
- Jubilant Organosys Limited
- Jyoti Limited
- KABRA Extrusion Technik

Limited

- KAEFER Punj Llyod Limited
- Kalpataru Power
   Transmission Limited
- KEC International Limited
- Kothari Infotech Limited
- Linde Engineering Pvt. Ltd.
- Maharshi Electronics Private
   Limited
- Mahindra & Mahindra Limited
- Mahindra Gears & Transmissions Pvt. Ltd.
- Mechartes Researchers Pvt. Ltd.
- Microsoft India Private Limited
- Misys International Financial Services Private Limited
- Modiarc Electrodes Co. Limited
- Mother Dairy India Limited
- Motorola India Private
   Limited
- Morgan Stanley
- National Instruments Systems (India) Private Limited
- Neilsoft Limited
- NIELSEN
- Nirma Limited
- NK Shah Consulting Eng.
- Nokia Siemens Limited
- nVidia Graphics Pvt. Limited
- Oracle India Private Limited
- Pacific Pipe Systems Private
   Limited
- Pankaj Patel Associates
- Patni Computer System
   Limited
- Philips Limited
- PMI
- Prima Automation India Private Limited

- Real Soft (Intl) Private Limited
- Reliance Industries Limited
- Reliance Infocomm Limited
- RFID-Radio Frequency
   Identification
- Sabarmati Gas Limited
- SABIC Innovative Plastics India Pvt. Ltd.
- Samyak InfoTech Private Limited
- Sasken Communication Technologies Limited
- Satyam Computer Services
   Limited
- Schneider Electric India Private Limited
- Secure Meters Limited
- Shapoorji Pallonji & Co. Limited
- Sheladia Associates
- Shriram Alkali & Chemicals
- SHV Energy Private Limited
- Siemens Limited
- Solu-Soft India Private Limited
- ST Microelectronics Private Limited
- Synopsys (India) Private Limited
- Syntel Limited
- Tata Autocomp Limited
- Tata Chemicals Limited
- Tata Consultancy Engineers
   Private Limited
- Tata Consultancy Services
   Limited

- Tata ELXSI Limited
- Tata Motors Limited
- Tata Power Company
   Limited
- Tata Teleservices Limited
- Teach for India
- Tech Mahindra Limited
- Thermax Limited
- Thorogood Associates
- Torrent Pharmaceuticals Limited
- Torrent Power [AEC] Limited
- Transpek Industries Limited
- TVS Motor Company
- Ultratech Cement Limited
- Unigraphics Software
- Unikaihatsu Software
   Private Limited
- UPL Environmental
   Engineers Limited
- UST Global
- Vardhman Acrylics Limited
- Vavni Services Private
   Limited
- VC-ERP Consulting Private
   Limited
- Vedanta Resources
- Veeral Controls Private
   Limited
- Viraj Profile Limited
- Vodafone India Private Limited
- Wellspun India Limited
- Wipro Limited
- Zensar Technologies Limit
- Zeus Systems Private Limited



### **Testimonials @ Recruiters...**

#### **Richard Luptovsky** Infosys Technologies Limited

Top of form. We recruited from Nirma University because the students here are really hard working and they were eager to learn from their internships.

### Paddy Timmons

Mahindra & Mahindra Limited

Thank you for all your help and assistance, was a pleasure dealing with you, you gave/displayed the utmost professionalism at all times and a credit to yourself.

#### John Murphy Wipro

We selected Nirma University because of their innovative approach to sourcing candidates that are not on job boards, eliminating the need for consultants due to the quality of their onsite team and recruiters.

### **Jody Briggs**

Microsoft India Private Limited

We are impressed with the calibre and quality of the candidates which have been sourced by Ultimate Skills.

#### Mr Sanjay Patel Adani

We have always been able to rely on your Company to be discreet and find suitable candidate who fit our needs. Candidates have been honest, hardworking people which is very important in the countries we operate in.

### Mr Sunil Despande

Tata Consultancy Services

We are happy with the services provided so far by you.

### Avinash K Jain Infosys

Nirma University has a huge reputation and I was very keen to see their facilities and training systems. I was happy to learn about the good work they are doing and wish them all the best.

#### Tech Mahindra

It is a pleasure for me to write to you as we have been enjoying the services. We like to appreciate your good services.

#### Sadath Factset Research Systems

We are very excited and happy to recruit students from NIRMA. The entire recruitment process was good. Students were disciplined, wellgroomed and to be world class software engineers. We look forward to a continued mutually enriching relation with Nirma.

#### Harleen Infosys

Being one of the TOP engineering colleges in the country, Nirma University is Infosys' preferred Recruitment partner since several years. True to its name and word, Nirma produces some of the most employable engineers in India. Year on year, we source a very large number of promising candidates from the Institute. The students are sincere, hard-working and disciplined. Perhaps this is why students from Nirma figure as Top/High performers in Infosys' rigorous and robust training programme.

### Bakul Avarani SAI Consulting Engineers Pvt Ltd

We, Sai Consulting Engineers Pvt Ltd has been conducting at placements Nirma University since last more than eight years for engineering students for our freshers requirments. We have found the placement cell to be on their toes always in order to ensure 100% placement. This cell works out placement strategies based on current as well as future job markets and takes into account the emerging job profile so that these may provide upward mobility in the career-graphs of their students.

### **Dr Gopalji Sinha** Essar Learning Centre and Talent Acquisition

We feel privileged in selecting students of Nirma University. The students are sincere, intelligent and hardworking and undertake various responsibilities. In some areas they have become pillars and are sharing kev responsibilities. We feel that prior to joining Essar, they have been specially groomed by the faculties of Nirma University and that learning is making them to seek various challenging responsibilities.



### **Industry Institute Interaction (III) Cell**

The Industry Institute Interaction Cell (III Cell) of Institute of Technology aims to promote closer interaction between the academia and Industries to enhance industry academia relations and facilitate in establishing strong linkages with industries. The purpose of the cell is to bridge the gap between industry and academia. The cell connects the competent talent pool available in the Institute with the industry. III Cell was established with the inception of the Institute to facilitate its students in their training and placement need. It provides professional platform to its students by connecting with the organisations and bridge the gap between demand and supply. III Cell ensures that industries across the regions regularly visit campus for the interaction focusing on engaging students into various domains such as inviting eminent speakers and industry experts to conduct various workshops, seminars and expert sessions to share their rich experiences about latest Industry trends which help students to develop in-depth understanding about current industry demand. Apart from this they are also invited for curriculum design, skill development programs, workshops, providing training, internships and campus hiring to students. III Cell offers young engineering aspirants real time industry exposure which ultimately make these students industry ready and enhance their employment prospects.



Year-wise Highest Salary for the B Tech Programmes



### INTERNSHIP AND CAMPUS HIRING

III Cell of Institute of Technology, invites best of the recruiters at campus so as to ensure that students get the right platform to start their professional career. It has enhanced its reachability by overcoming barriers of regional boundaries by putting special efforts on industries situated within and out of Gujarat so that students get quality companies with lucrative stipends, pay packages and better exposure. After the years of hard work III Cell with the active support of departments including Heads of Departments and Faculty Placement Coordinators is able to create preferred destination for many prominent industries pan India and abroad. Organisations like Amazon, Bank of America, Deutsche Bank, Media.Net, Oracle, ARM, Samsung, Infineon Technologies, Intel, Reliance Industries, Milacron India, etc. provide excellent internship opportunities to the students.

The quality of industries is improving with better brands recruiting from us. A notable feature is the involvement of Top Management from many industries. At the same time their expectations from our students have also increased. Good Companies expect the quality of students to be at par with the other Top Institutes. They also expect students to be market ready with high quality of technical and employability skills. Graduating students are absorbed by prominent organisations into IT, Banking, Consulting, Manufacturing, Core Engineering, Fintech, Service sectors.

### PLACEMENT GUIDANCE AND TRAINING

III Cell Offers guidance to fresh talent Pool on how to find a best career through various initiatives. Industry always prefers students who are strong in their domain and have business acumen, street smart, well equipped with verbal and written communication skills, who are good in attitude and aptitude. To make students market ready we focus on their domain knowledge and Life Skill Training. Special focus is given on Resume Writing, Aptitude & Technical Test preparation, GDPI preparation, Business Etiquettes, Verbal & Written communication skills, Dressing & Grooming, Body Language etc. Continuous monitoring of students while in training, we continuously strive hard towards working on developing mechanism to keep the track of our students' progress so as to ensure that they are well trained, market ready and deployable from day one of their joining. Various inputs have been given to the students so as to ensure that students are well equipped with industry relevant skills & trained on specific skills.

Critical Skills Training is required to get success in the campus placement process for the graduating students every year. These skills and significant in boosting the performance levels of students during the selection process as they are just entering into the corporate world. These skills equip students with team effectiveness, leadership development, communication and wise use of time and resources.

### **INFRASTRUCTURE AND AMENITIES**

The Institute have state-of-the-art infrastructure facilities to facilitate recruitment activities in a very professional manner. The III cell is fully equipped with all modern amenities. The rooms are air-conditioned and equipped with multimedia and audio-visual equipment to facilitate effective interaction. Additionally, the following facilities are also available for Recruiters on campus:

- Dedicated access to Computer Lab for conducting online tests
- Air-conditioned halls for presentations
- Conference Rooms
- Interview Rooms
- Skype / Video Conferencing
- Internet / Wi-Fi access
- Guest House for Corporate Visitors
- Food Court
- ATM Facilities
- Health Club and Gym

# INDUSTRIAL TRAINING FOR THE STUDENTS

Training is an integral part of learning. It makes them industry ready to face the real world problems. Students are placed at various industries for a period 6 to 8 weeks and under supervision and guidance of respective industry personnel.

Students also go to Industry for full time projects in 8th Semester. The faculty guide is assigned during the same for regular monitoring and evaluation.



# **Alumni Association**

### Nirma Institute of Technology Alumni Association (NITAA)

NITAA has been established by the Institute to maintain regular contacts with Alumni and subsequent interaction with students and institute faculty. Active participation of Alumni members is the strength of NITAA. It is noteworthy that the Alumni are spread all across the globe for higher studies as well as for jobs.



# **Testimonials**

### Amar Patel

### Chief Technical Consultant, Powerdyn Energy, Ahmedabad

My decision to pursue Mechanical Engineering was a pivotal decision of my academic career. I attribute my academic success as a post-graduate of a top US university and my professional success as a former Senior R&D Engineer of a Fortune 500 company to the rigorous classroom teachings and laboratory sessions at Nirma University. The state of the art facilities here are in the hands of world class well trained faculty members. The professors have years of teaching experience under their belt and together this creates an ideal environment to mould young aspiring engineers to become professionals that can hit the ground running. Nirma is the place I can consider my future generation(s) to become part of.

### Moksh Udani

### Founder & President – Lewens Labs

My 4 years in Nirma-Chemical Engineering laid the foundation of what I ended up doing for life. The opportunities I got not only to understand the nitty-gritty of chemical engineering but also to explore and lead various clubs such as ISTE has played a pivotal role in my career. The fact that after 10 years, I am still writing this testimonial at the behest of our faculty also shows the love and care they have for each one of us. After Nirma, I did a summer program at Stanford followed by an MBA from Rutgers before founding Lewens Labs which today has emerged as India's fast growing API manufacturing companies. My association with Nirma continues year after year and I can only hope and wish that I will be able to give back to it in my own small way in years to come.





#### Vishal Bhavsar

### *Head – Corporate Sustainability, Ultratech Cement Limited (Aditya Birla Group)*

It has been a wonderful experience to be a part of Nirma Institute. It's difficult, to capture the memories, learnings and experience of college years in a few lines. The time spent at the college and getting exposed to best of the faculties, various technical & social events and field trips left an indelible mark on my development as a professional. It has been an unforgettable journey. The time that you spend here prepares you for the real world. Nirma Institute played that role in preparing me by providing the overall learning experience.

### Ujjaval Modi

#### Senior Executive Engineer, Linde Engineering India

The four years at Nirma totally changed my life. As the cliché goes, I went there as a boy and when I graduated, I was a man ready to take on the world. Nirma, apart from the academics also honed me to take on the challenges life presents. The satellite named Ujjaval Modi was launched into the space named real world in the year 2013 with a tag plate BTech (Instrumentation and Controls) from the launch pad named Nirma University. Let me share how this satellite was developed at Nirma!

Expert professors and Veterans of Engineering patented the Concepts of Instrumentation and Controls Engineering (now Electronics and Instrumentation). Regular laboratory, project work, alumni talk, Industry expert lectures, tutorials and industry visits blended with soft skills, effective communication skills, team work and leadership skills acted as fuel that gave the necessary thrust to this satellite. The tech and cultural fests acted as GPS that guided the path for the satellite so that it could be put into orbit. At Nirma, we were not only taught engineering, but also motivated and inspired to explore the possibilities and opportunities.

For me, the ambience of this place is truly sublime. The four years at Nirma were, are and will be like four life stages of a man. First year is like childhood- you go out and explore the world. The second year is like teenage- you try and understand yourself, your capabilities, and what all you can do. Third year is the adulthood- you know what you can do, you know your limits and you build onto that. And the fourth year is like nirvana- you've done everything you could and you sort of relax. It's like living a complete lifetime.

# **Admission Process**

### [A] BTech (Undergraduate Programme)

### **ELIGIBILITY**

The Candidate must have passed the qualifying Class-XII (Science) Examination from a recognised board with the minimum percentage of marks as prescribed by the Admission Committee for Professional Courses (ACPC, GoG)/AICTE from time to time.

### **SELECTION CRITERIA**

Admission is based on the All India Rank in Paper-I of Joint Entrance Examination, JEE (Main) 2022, which is conducted by the National Testing Agency, Government of India. Candidates who are appearing for JEE (Main) 2022 can apply for admission to the BTech Programme.

### Admission to the BTech Programme shall be given as under:

### 1. State Quota Seats-ACPC

Admissions to these seats can be secured through the Admission Committee for Professional Courses (ACPC, GoG). Candidate must apply to ACPC, GoG, separately. For eligibility and admission process, please visit the website of ACPC: http://www.jacpcldce.ac.in

### 2. All India Seats

Admissions to these seats are filled-in by the Institute. Candidates must register and apply online on the Institute website separately.

These seats shall be filled from the candidates who have passed the qualifying examination from the schools located in India (including Gujarat State) and secured an All India Rank in Paper-I of JEE (Main) 2022.

### 3. NRI/NRI-Sponsored Seats

Candidate must separately fill-up the online application form for NRI/NRI-Sponsored category on the Institute website.

### **For NRI Candidate**

- The candidate who has passed the qualifying examination from the schools located abroad are exempted from appearing in the JEE (Main)-2022.
- If candidates having NRI status but passed the qualifying examination from a school located in India, must appear for the JEE (Main) 2022.

### For NRI-Sponsored Candidate

- Candidate must have passed the qualifying examination from the schools located in India (including Gujarat State) and secured an All India Rank in Paper-I of JEE (Main) 2022 examination.
- NRI Sponsored candidates must produce a sponsorship letter from an NRI, who will furnish an undertaking to pay all tuition and other fees for the entire degree program.
- Documentary evidence of NRI status of the Sponsor must also be produced.

### All admissions to BTech (Undergraduate Programme) are purely on merit and merit list will be prepared as per the guidelines of ACPC.

## **Admission Process**

### [B] BTech (CSE)-MBA (Integrated 5 Years Programme)

### 1. All India Category

- Admissions to these seats will be filled-in by the Institute. Candidates must register and apply online on the Institute website separately.
- 85% of the total in-take shall be filled from the candidates who have passed the qualifying examination from schools located in India (including Gujarat State) and have appeared for JEE (Main) 2022.
- The candidates seeking admission in the first year of Integrated BTech (CSE)-MBA shall have passed the HSC or equivalent examination with minimum 60% marks along with Physics, Chemistry and Mathematics.

### **Selection Procedure**

 Candidates shortlisted on the basis of their performance in the Admission Test i.e. JEE (Main) 2022 will be called for Personal Interview. The candidates will be finally selected for admission based on the candidates' performance in the admission Test, Personal Interview and Academic Performance in class XII.

### 2. NRI / NRI Sponsored Category

• Admissions to these seats will be filled-in by the Institute. Candidates must register and apply online for NRI/NRI Sponsored Category on the Institute website separately.

### For NRI Candidate

- Candidates should have passed Higher Secondary Certificate (HSC) Examination (10+2) or any other equivalent examination recognized by Nirma University with minimum 60% aggregate marks at first attempt.
- Candidate will have to produce equivalence certificate of qualifying examination from Association of Indian Universities (AIU), New Delhi.

### **Selection Procedure**

• The candidates applying in the above category are not required to appear for Admission Test [JEE-Mains]. Admission selection process will be purely based on the merit of qualifying examination.

### For NRI Sponsored Candidate

- The candidates seeking admission in the first year of Integrated BTech (CSE)-MBA shall have passed the HSC or equivalent examination with minimum 60% marks along with Physics, Chemistry and Mathematics.
- Candidate must have appeared for JEE (Main) 2022 examination.
- NRI Sponsored candidates must produce a sponsorship letter from an NRI, who will furnish an undertaking to pay all tuition and other fees for the entire degree program.
- Documentary evidence of Sponsor's NRI Status must be produced.

#### **Selection Procedure**

 Candidates shortlisted on the basis of their performance in the Admission Test i.e. JEE (Main) 2022 will be called for Personal Interview. The candidates will be finally selected for admission based on the candidates' performance in the admission Test, Personal Interview and Academic Performance in XII.

#### Note

The candidate must submit an online application form with required application form fee and upload scanned copies of required documents on or before the due date. Incomplete application form and without required supporting documents will not be accepted.

### Visit our website to know more about the required supporting documents for NRI/NRI-Sponsored Category.

### Supernumerary PIO/FN/CIWGC- SEA/SAARC Students

The University has, in all programmes, separate intake of 5% for Children of Indian Workers in Gulf and South-East Asia Countries (CIWGC-SEA). In addition, the students who fall under the category of Persons of Indian Origin (PIO) and Foreign Nationality (FN) can apply under a separate intake of 10% in all programmes. The applicants are suggested to visit the admission pages of different institutes for more information.

Contact

Dr Mehul R Naik Head, Office of International Relations Email:ir.nu@nirmauni.ac.in Phone: 07971652499/ 421

### **APPLICATION FORM FEE**

BTech (Undergraduate Programme)	₹ 413/- (Rs. 350/- + 18% GST- non-refundable)	For the candidates who have appeared for the 12 <sup>th</sup> board examination from a school located in the State of Gujarat (including Daman and Diu or Dadra Nagar Haveli (UT).	
	₹ 1416/- (Rs. 1200/- + 18% GST - non-refundable)	For the candidates who have appeared for the 12 <sup>th</sup> board examination from a school located outside the State of Gujarat.	
BTech (CSE)-MBA (Integrated 5 Years Programme)	₹ 1500/- (non-refundable)	For All India & NRI/NRI-Sponsored Seats	



### **PAYMENT MODE**

All India Seats Online Payment through Credit Card / Debit Card / Net Banking NRI / NRI-Sponsored Seats

Candidates are required to follow admission procedure and schedule, declared from time to time at the office of the Institute and website.

(https://technology.nirmauni.ac.in/admission aid/undergraduate/b-tech/).

### **IMPORTANT DATES**

 BTech (Undergraduate Programme)

 All India and NRI/NRI-Sponsore/ category Seats

 Online Application starts from
 15<sup>th</sup> April 2022

 Last date for Online application
 Refer Website

 Descent (CSE)-MBA (Integrated S Programme)

 Online Application starts from
 15<sup>th</sup> April 2022

 Online Application starts from
 15<sup>th</sup> April 2022

 Last date for online application
 Refer Website



# Fee Details for the Year 2022-23

### (excluding NRI/NRI Sponsored)

No.	Ра	rticulars		Amount (in Rupees)	
1	*FI	EE (Per Annum)		₹190050	
2	OTHER FEES				
	а	Initial Enrollment Fee	(One Time)	₹1000	
	b	Examination Fee, Semester Grade Report	(Per Annum)	₹7000	
	с	Seminar, Orientation, Welcome Kit	(One Time)	₹1200	
	Total Other Fees (a+b+c)		₹9200		
3	DEPOSIT				
	Re	fundable Security	(Refundable)	₹7000	
			Total (1+2+3)	₹206250	
4	Eli	gibility certificate (if required)		₹1000	

\* Fees are subjected to revision by the Competent Authority While paying Fees Cheques or DD should be as per CTS-2010

Note: Transportation Charges will be extra, if applicable



# **Scholarship Schemes**

To encourage the meritorious students and help the meritorious students on the basis of merit –cummeans, the following scholarships are available:

A. Category – I (Based on merit only)			
Details	₹ Per Annum		
Top 5 students	1,00,000/- each		
Next 20 students	90,000/- each		
Next 25 students	50,000/- each		
B. Category – II (Merit cum Means)			
Details	₹ Per Annum		
Top 25 students (Annual income upto ₹ 2.5 lakhs)	90,000/- each		
Next 25 students (Annual income unto ₹ 4.0 lakhs)	50 000/- each		

The above scholarships will be renewed every year as per the University rules

Next 25 students (Annual income upto ₹ 6.0 lakhs)

### Two different merit lists will be prepared and the number of scholarships will be distributed proportionately to each category. The merit list will be as under:

25,000/- each

- 1. The list of the students admitted on the basis of the merit of JEE only which is 35%
- 2. The another merit list will be prepared on the basis of the students admitted through ACPC

The number of scholarships as mentioned above is maximum and may vary from year to year depending upon the number of NRI seats filled – in every year.

The students admitted under the Non Resident Indian (NRI) or Person of Indian Origin (PIO), Foreign Nationals (FN) or Children of Indian Workers in Gulf Countries (CIWGC) categories will not be eligible for such scholarships.

The President will have power to make any exception in the above rules framed. However, in case of doubt, if any, in interpretation of any clause, the decision of the President will be final.



## **Financial Assistance**

### **INTEREST FREE LOAN SCHOLARSHIP (IFLS)**

The Nirma University offers financial assistance, by way of loan, to the needy students of the Institute of Technology. The main purpose of this service is to help the needy meritorious students.

- 1. Assistance of 100% interest subsidy on the loan, limited to the amount of tuition fees, obtained from the scheduled bank to a maximum of 5% of the total intake of students, and to the students whose family income does not exceed Rs.3.00 lakhs per annum.
- 2. Assistance of 50% interest subsidy on the loan, limited to the amount of tuition fees, obtained from the schedule bank to a maximum of 5% of the total intake of students, and to the students whose family income does not exceed Rs.5.00 lakhs per annum.





### **BOOK BANK SERVICE**

The Library Resource Centre also provides book bank facility to the students of Institute of Technology. The main purpose of this service is to help the needy meritorious students.

### NITTA SCHOLARSHIP

NITAA started free scholarship to the needy students from the NITAA fund since year 2008-09.

### EARN WHILE U LEARN SCHEME

- To enable meritorious and needy student to earn a reasonable amount every month to meet their expenses.
- Explore the potential of student as a valuable human resource.
- Gives students hands on experience and develop them for future job.
- Encourage students for diversification of activities beyond syllabus to needy students.



# **Ragging - Zero Tolerance**

Ragging is strictly prohibited inside and outside the University campus.

As per UGC guideline, student will be required to give an undertaking in the proforma and signed by the candidate and his/her parent/guardian to the effect that he/she is aware of the University's approach towards ragging and the punishment to which he/she shall be liable, if found guilty of ragging.

### **Prevention of Sexual Harassment of Women at Work Place**

In pursuance of the directions of the Hon'ble Supreme Court of India, the University has constituted a Complaints Committee for the solution, settlement or prosecution for the acts of sexual harassment to women. The sexual harassment include:

- Physical contact and advances
- A demand or request for sexual favours
- Sexually coloured remarks
- Showing pornography
- Any other unwelcome physical, verbal or non-verbal conduct of sexual nature.

Any such act will be viewed very seriously and stern action will be taken against the person concerned.

### We Care About You



### **Women Development Cell**

In pursuance of the directions issued by the UGC and MHRD, Govt. of India the Nirma University has set up a Women Development Cell (WDC) and prescribed norms to sensitize the community with regard to gender related issues and create a gender friendly environment at the campus.

### **Equal Opportunity Cell**

To cater to the disadvantaged section of the society, especially those belonging to the scheduled castes, scheduled tribes, other backward classes, women, minorities and differently abled persons, an Equal Opportunity Cell is set up at Institute level.

Equal Opportunity Cell is set up with an aim to ensure equality and equal opportunities to the disadvantaged group through proper implementation of policies, skills and programmes. The Cell works under the guidance of University level Advisory Committee and follow the framework and guidelines prepared by the Advisory Committee.



# **Other Programmes @ NU**

The University has a host of institutes including Institute of Technology, Institute of Management, Institute of Pharmacy, Institute of Science, Institute of Law, Institute of Architecture & Planning, Institute of Commerce, Institute of Design. These institutions offer numerous undergraduate, postgraduate, and doctoral programmes.

### **INSTITUTE OF MANAGEMENT**

- BBA-MBA
- Master of Business Administration
- Master of Business Administration (Family Business & amp; Entrepreneurship)
- Master of Business Administration (Human Resource Management)
- Master of Business Administration (Communication)

### **INSTITUTE OF PHARMACY**

- Bachelor of Pharmacy
- MPharm in Pharmaceutics
- MPharm in Pharmaceutical Analysis
- MPharm in Pharmacology
- MPharm in Regulatory Affairs

### **INSTITUTE OF SCIENCE**

- MSc in Biotechnology
- MSc in Microbiology
- MSc in Biochemistry

### **INSTITUTE OF LAW**

- BA, LLB (Hons)
- BCom, LLB (Hons)
- LLM in Constitutional and Administrative Law
- LLM in Criminal and Security Law

### INSTITUTE OF ARCHITECTURE AND PLANNING

- Bachelor of Architecture
- Master of Architecture

### **INSTITUTE OF COMMERCE**

• Bachelor of Commerce (Hons)

### **INSTITUTE OF DESIGN**

- Bachelor of Design (Communication Design)
- Bachelor of Design (Industrial Design)

For further information regarding eligibility, admission procedure, application process etc. please refer to the Nirma University website (www.nirmauni.ac.in)







The Admission Officer UG Admission Committee 2022

ID-Block, ID-210, Nirma University, Sarkhej-Gandhinagar Highway, Ahmedabad – 382481, Gujarat- India **Phone No. (admission office)** 

+91-079-71652585, +91-02717-241911/12/13/14/15 (Ext. 585)

E-mail ID: ugadmissions.it@nirmauni.ac.in

Website URL: https://technology.nirmauni.ac.in/admission-aid/under-graduate/b-tech/ Admission Office Timings

11.00 a.m. to 4.00 p.m. (Monday to Friday & Odd - Saturdays)



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