Ahmedabad University

School of Engineering and Applied Science

| Bachelor of Technology

- Chemical Engineering
- Computer Science and Engineering
- Mechanical Engineering

Ahmedabad University

Ahmedabad University is dedicated to rigorous academic pursuit with a focus on building inquiry as a value through interdisciplinary learning. We provide liberal education that prepares students to think deeply and creatively across fields and emerge as independent thinkers and compassionate leaders who can innovatively engage with the complex challenges of our society.

As a research university we are committed to the discovery of ideas than enhance our understanding of the issues that face our society.

We are building an environment where students and faculty explore by reflecting, challenging views and assumptions of each other through data and rigorous discussions, the collaborating to develop insights. This learning process is mediated by projects, field work and a belief that good theory leads to good practice.

Located in one of the India's most vibrant cities, Ahmedabad University has a unique mind-set to develop cultural and entrepreneurial abilities in our graduates. It was established in 2009 by the Ahmedabad Education Society which is an 85 years old foundation.
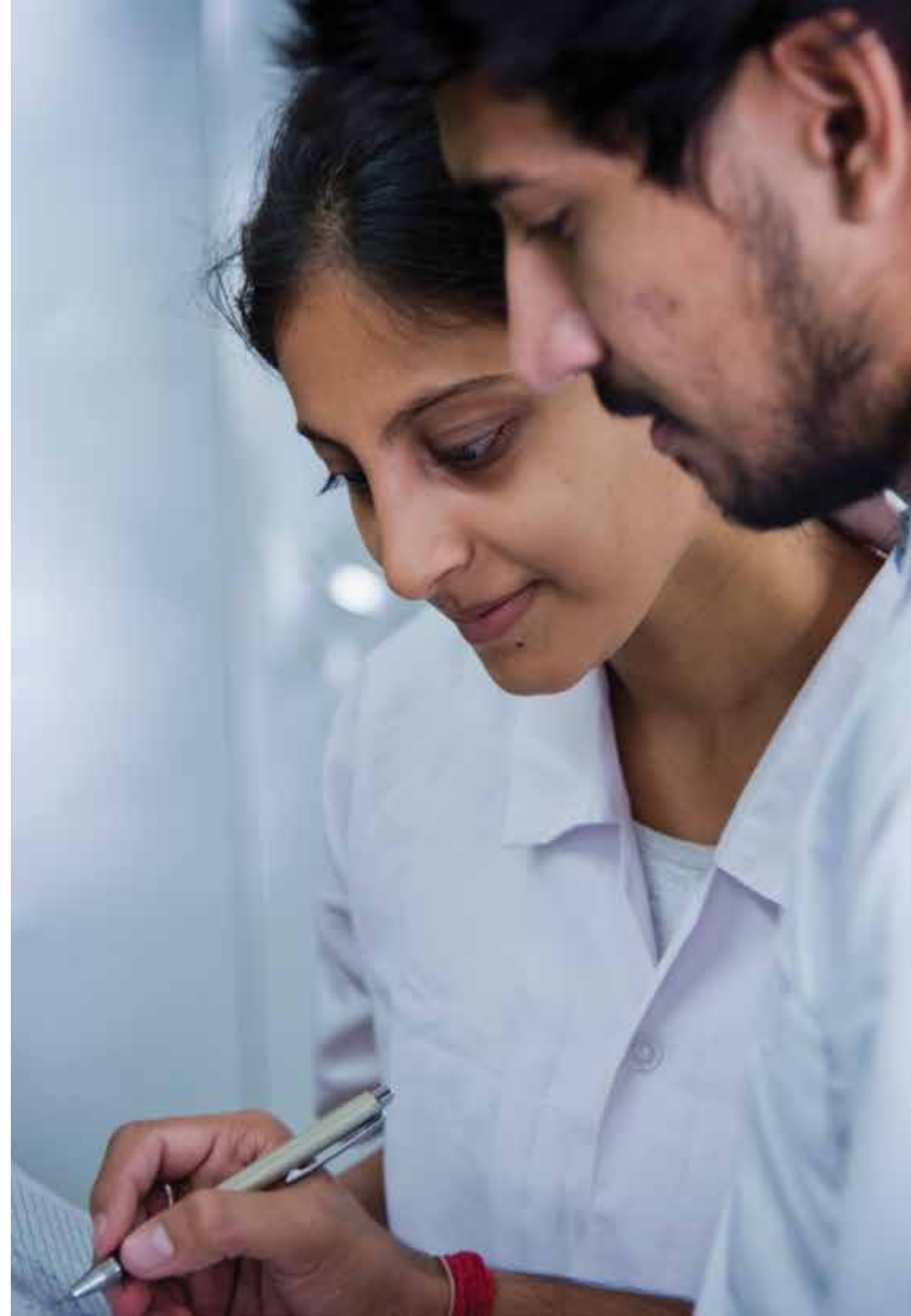
School of Engineering and Applied Science

The School of Engineering and Applied Science, Ahmedabad University was established in 2012 to impart modern and futuristic engineering education.

The school delivers undergraduate and graduate engineering programmes with extensive students-centric pedagogies to produce excellent learning outcomes. Our project-based educational approach creates dynamic and pro-active graduates with capabilities for lifelong learning, complex problem solving, design and innovation and relating technology to society. We not only teach technology; we actively infuse the use of technology in ways that are impossible with conventional approaches.

Bachelor of Technology Programme

The Bachelor of Technology programme at Ahmedabad University offers an entry point for careers and further studies in engineering and technology, while also preparing students for future roles as entrepreneurs and innovators. The unique curriculum offers a wholesome education, providing in-depth focus through Majors in different branches of engineering, alongside a robust multidisciplinary foundation in engineering, the humanities and the social sciences. Strong emphasis is laid on teamwork, design, learning-by-doing, project-based learning and developing communication skills. The education is contextualised within broad societal issues with sustainability being a common theme.

The underlying focus is on strong and rigorous fundamentals and concepts, application to engineered equipment and systems, and hands-on learning about products and equipment in a multi-subject setting within each Major. The pedagogy emphasises questioning, experimenting and developing learning skills that will enable students to face careers where change is the norm. Apart from classroom instruction, students are provided exposure to the engineering of products and design methodology in a laboratory setting, using contemporary tools of analysis and design, including software packages widely used in engineering industries.

Programme Structure

The School of Engineering and Applied Science offers three Majors within the Bachelor of Technology programme: Chemical Engineering, Computer Science and Engineering, and Mechanical Engineering. The core courses of each Major provide in-depth knowledge specific to the concerned branch, while a set of courses called Engineering Foundation, which is common to all Majors, imparts foundational knowledge and skills in topics fundamental to Engineering in general. These courses are complemented by practice-based, hands-on training in visualisation and graphics, product realisation along with design, innovation and making.

The essential prerequisite for Engineering Majors is Mathematics, which is taught in the first two semesters. During this time, students are also exposed to visualisation and product realisation and dissection. From the third semester, the Engineering Foundation curriculum builds the base for subsequent branch core courses, continuing into the seventh and eighth semesters. These courses are complemented by General Education Requirements courses. The summer following the sixth semester is earmarked for industry internship, followed by a Capstone Project spread over two semesters that will be executed in a multidisciplinary team setting. In the Capstone Project, students will identify a societal need and develop a comprehensive solution, while also addressing trans-engineering aspects, such as those related to the business model, costing, human interfaces, environmental impact and societal impact. Alternatively, students can plan their coursework such that they can execute an Off-campus Project in an industry in the final (eighth) semester in lieu of summer internship and two semesters of Capstone project. A student may also work on a Thesis aligned with his/her Major area of study or electives. The category-wise breakup of credits is as follows:

CREDITS

I	Foundation Programme	12
II	General Education Requirements	30
III	Major Engineering Requirements	86
	Engineering Foundation	20
	Major Core	45
	Major Electives	12
	Internship	3
	and Capstone/Thesis	3+3
	OR Off-campus Industry Project	9
IV	Free Electives	18
V	Volunteerism Required	
	TOTAL	146

Note: A student can take a Minor in any Engineering discipline or in any other area designated as Minor in any other School or Centre of the University.

Infrastructure and Facilities

Campus

The expansive camps of the School of Engineering and Applied Science, Ahmedabad University houses state of the art facilities. The campus has wi-fi connectivity, an auditorium, cafeteria, large and small reconfigurable classrooms to facilitate Project Based Learning activities, many informal spaces for students' interaction, high-tech labs, a library, an incubation centre and many more.

Laboratories

The school offers state-of-the-art laboratory facilities, providing excellent opportunities to test conceptual knowledge, pursue original research and advance students' understanding of the scientific method. All lab facilities follow the highest safety standards. Labs in the following areas are already established:

- Mechanical Operations Laboratory
- Electronics Laboratory
- Embedded Systems and VLSI Laboratory
- Networks and Operating Systems Laboratory
- Data Analytics and Cloud Computing Laboratory
- Communication Laboratory
- Computation Laboratories
- Central Instrumentation and Research Laboratory
- Projects and Research Laboratory
- Fluid Mechanics Lab
- Heat Transfer Lab
- Mass Transfer Laboratory
- Physical and Inorganic Chemistry Laboratory
- Organic Chemistry Laboratory
- Chemical Reaction Engineering Laboratory
- Control System Design Lab
- CAD Lab
- Robotics Lab
- Dynamics of Machines Lab
- Mechanical Engineering Laboratory
- Fabrication Shop
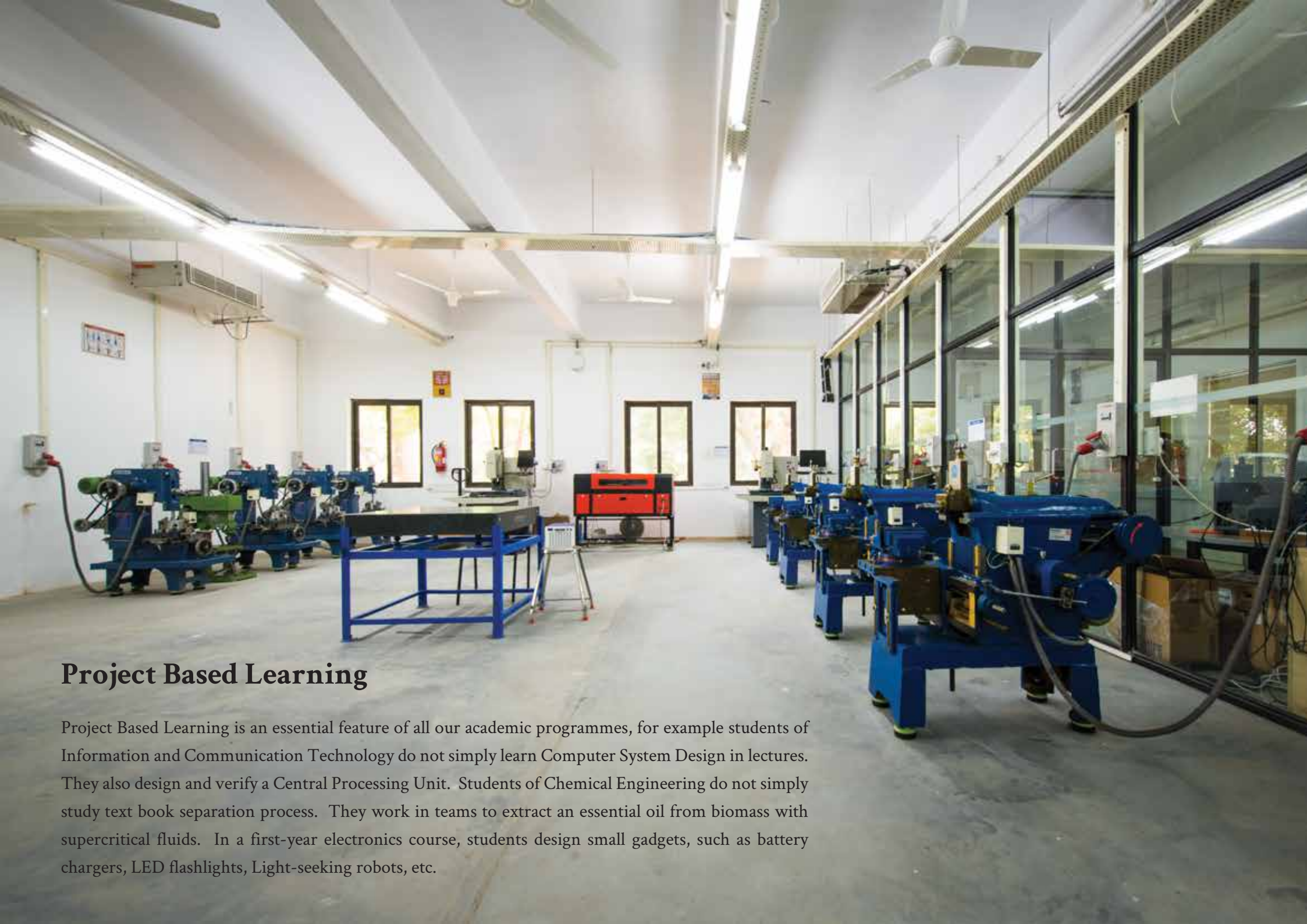
Project Based Learning

Project Based Learning is an essential feature of all our academic programmes, for example students of Information and Communication Technology do not simply learn Computer System Design in lectures. They also design and verify a Central Processing Unit. Students of Chemical Engineering do not simply study text book separation process. They work in teams to extract an essential oil from biomass with supercritical fluids. In a first-year electronics course, students design small gadgets, such as battery chargers, LED flashlights, Light-seeking robots, etc.

Placements and Higher Education

The Career Development Centre, or CDC, at Ahmedabad University provides services, resources and relevant experience to faculty and students. The Engineering School places special emphasis on its students' careers after graduation. To this end, the school's CDC is headed by a dedicated training and placement officer. It also comprises faculty representatives, student committee members and others who collaborate closely to make training and placement accessible and useful to every student.

The CDC handles all placement related information and activity, including contacting companies interested in hiring, student-industry interaction, on and off campus tests and interviews, placement sessions, pre-placement talks and general industry visits.

As placement is a continuous effort, we engage with industries throughout the year, not just in designated windows of time. We also welcome industry participation in our curriculum building process, and encourage feedback from the industry as we prepare students to research and work in the world outside Ahmedabad University.

BTech in ICT (2015 - 2019)

- 47 students were placed against 51 students participated for placements (about 92% placements ratio). Highest salary offered to these students were 10.00 LPA

- Some of the new key recruiters participated in the placement process this year are CodeNation, BYJU's, Qualitrol Corp, Tata Consultancy Services, AllinCall, OrbisVis, Thomson Reuters, Toppr, Delhivery, Decathlon, Merkel Sokrati, Zycus, Knowledge Foundry

BTech in Mechanical Engineering (2015 - 2019)

- The Second Batch of Mechanical Engineering Batch was offered highest CTC of 4.50 LPA against 3.25 LPA the previous year (First Batch).

- Some of the new key recruiters participated in the placement process this year are Gridbots, Sriram Value Services, PAPP Automotive, Secure Meters, AM Designs, Harsha Engineers, Bosch Rexroth

BTech in Chemical Engineering (2015 - 2019)

- The Second batch of Chemical Engineering Batch was offered highest CTC of 5.00 LPA against 2.44 LPA the previous year (First Batch).

- Some of the new key recruiters participated in the placement process this year are Galaxy Surfactants, GNFC, Gulbrandsen, Mate Motherson.

Higher Education

Students are admitted to Master of Science programmes as well as management programmes at various globally renowned Universities and Institutes including following:

• Arizona State University, USA

• Boston University, USA

• BITS Pilani

• Carnegie Mellon University

• Carnegie Mellon University

• Colorado State University, USA

• Indian Institute of Management Calcutta

• Indian Institute of Technology, Madras

• North Carolina State University (NCSU), USA

• North Eastern University, Boston, USA

• North Eastern University, Boston, USA

• Rochester Institute of Technology, New york, USA

• Stanford University

• University of Colorado Boulder, USA

• University of Illinois, Chicago, USA

• University of Maryland College Park, USA

• University of Pennsylvania

• University of Pittsburgh

• University of Texas, Dallas, USA

Admissions

The Admission Committee for Professional Courses (ACPC) formed by the Government of Gujarat overseas admissions to BTech programmes. For further information kindly refer to their website (www.jacpcldce.ac.in). Admissions to 50 percent of the seats will be based on ACPC rankings and the remaining through JEE (Main) rankings and direct applications.

For the Academic Year 2020-21, the intake in the BTech programmes of School of Engineering and Applied Science, Ahmedabad University is as under:

Programme	50% (ACPC)	50% (JEE)	Total Seats
Chemical Engineering	23	22	45
Computer Science and Engineering (CSE)	60	60	120
Mechanical Engineering	30	30	60

Students applying for admission on the basis of JEE (Main) rankings can visit the below website link to submit the application:
www.ahduni.edu.in/seas/admissions/btech-programme-2020-21

Financial Aid

Ahmedabad University is committed to providing financial aid to deserving students. The amount of financial aid provided is determined by the family's annual income to ensure access to quality education to all eligible students. Aid ranges from a partial waiver of tuition fee to a complete coverage of educational costs.

Merit Scholarship Scheme

Scholarships are awarded to undergraduate and graduate students during admissions. Students eligible under the Financial Aid scheme will be excluded from this scheme. A detailed policy is available in the School's website. For further details, please contact the Office of Admissions and Financial Aid, Ahmedabad University.

Collaborations and MoU

Ahmedabad University and Olin College of Engineering, Boston has formed a partnership to promote innovation in education. The partnership includes a faculty exchange programme to integrate Project Based Learning and Design Thinking into our engineering curriculum, offering a new model for education in India. School has also an active academic and research collaboration with Wright State University, Ohio and University of Valladolid, Spain.

Ahmedabad University in collaboration with the Harvey Mudd College, USA has completed a one year project on "Reducing Energy Consumption in Wet-Dry Cycles" in the academic year 2018-19. The project was aimed at significantly reducing energy consumption involved in fabric processing; improve efficiency of the drying process.

Dean's Message

Ahmedabad University is committed to providing an education that prepares students to think critically and creatively to emerge as independent thinkers and compassionate leaders. The School of Engineering and Applied Science (SEAS) has created a curricula that helps students grow intellectually, personally and professionally, so they may thrive and help others thrive. The School's infrastructure is congenial to learning and comprises contemporary facilities, well-equipped laboratories and fast growing library.

Our students are also supported and mentored by a robust team of faculty, who are active researchers and engage students in their academic pursuits whenever possible. Additionally, the school facilitates professional and personal development through workshops, conferences and other extracurricular events organized on campus.

We are confident that studying at School of Engineering and Applied Science will ensure a sound engineering education and a nuanced approach to real world challenges.

Sanjay Chaudhary
Professor and Interim Dean,
School of Engineering and Applied Science,
Ahmedabad University

One of the leading academics in the field, Professor Chaudhary is a known expert in Distributed Computing, Cloud Computing, Data Analytics, and ICT Applications in Agriculture and Rural Development.

He has an extensive list of publications in peer-reviewed journals in India and abroad. Before joining Ahmedabad University, he was the Dean (Academics) at DA-IICT, Gandhinagar. Professor Chaudhary is also holding the position of Dean of Students, Ahmedabad University.

Faculty

One of the most important elements in building an excellent educational Institution is a highly qualified faculty. A majority of our faculty members have PhD degrees from well-known international and national universities, making them our greatest strength. Our faculty members have degrees from the following universities / institutions:

- Clarkson University
- Cornell University
- Gujarat Vidyapith
- Indian Institute of Science
- Indian Institute of Technology
- Institute of Chemical Technology
- Inter-University Centre for Astronomy and Astrophysics (IUCAA)
- National Technical University of Ukraine
- Nirma University
- North Gujarat University
- Queen's University at Kingston
- Rutgers University
- Sardar Patel University
- South Gujarat University
- Stanford University
- University of Oslo and UiT
- University of Kent
- University of Pittsburgh
- University of Texas at Arlington
- University of Virginia

Student Activities

At Ahmedabad University, students learn not only within their classrooms and laboratories, but also from their community of peers and faculty. The community includes scholars and academics from across India and around the world, which bring with them a wide range of perspectives, experiences, and cultures. This diversity enables and encourages respect, compassion, and empathy – values we take very seriously – among our students.

These activities are largely navigated through our student clubs, which help students to connect and gain exposure to a wide variety of skills and interests: Environment Club, Entrepreneurs Club, Heritage Club, Social Service Forum, Fitness Club, Dance Club, The Management Club, Theater Club, Photography Club (Shutterbugs), Music Club, Food Club, Sports Club, Literary Club, Fine Arts Club, Quiz Club, Coding Club, Magazine Club etc.

In addition to the above clubs, following student chapters are active at the school of engineering and Applied Science:

• Ahmedabad University Student Branch of IEEE
• Student Chapter of American Institute for Chemical Engineers (AIChE).
• Student Chapter of the American Society of Mechanical Engineers (ASME)

Ingenium – Annual Technology Festival of Ahmedabad University
It celebrates the spirit of innovation and engineering solutions hosting a wide array of competitions and workshops. We see active participation from various universities across the state, gathered to compete with the best.

Student Achievements

Within a very short span students of School of Engineering and Applied Science have achieved many accolades and laurels. Few of the recent achievements are given below:

Parth Patel, a second year Chemical Engineering student has been elected as the Programming Director of AIChE-ESC (American Institute of Chemical Engineering-Executive Student Committee). The Programming Director is an Executive Committee position, serving alongside the Chair, Vice Chair, Global Director, and National Director. The Programming Director oversees four ESC subcommittees: -Conference Experience Subcommittee, Publications Subcommittee, K-12 Outreach Subcommittee and Sister Chapter Subcommittee

Bhargav Patel, student of BTech third year was selected as a Young Reporter for Environment(YRE) to attend the 10th World Environment Education Congress (WEEC) from 2nd to 7th November in Bangkok, Thailand.

Google has organized Intern Connect for Technology Interns on 30th June 2018 at their Bangalore, Gurgaon, Hyderabad & Mumbai offices. The objective is to get Tech interns to network with each other and learn more about the technology industry from some of Google's leaders. It will involve interacting with interns from more than one hundred different organizations and across more than fifty campuses. **They have invited to seven students of School of Engineering and Applied Science, Ahmedabad University** for the event held at Mumbai and Hyderabad.

Anushree Ranawat, (BTech in ICT, 2015 batch) has done Google Summer of Code 2018 at CERN-HSF for the project of "Generative Adversarial Networks for Particle Physics Applications". It is a Machine Learning/Deep Learning based project where she needs to include the functionality of Generative Adversarial Networks (GANs) in their scientific software framework – ROO.
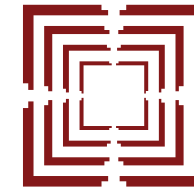
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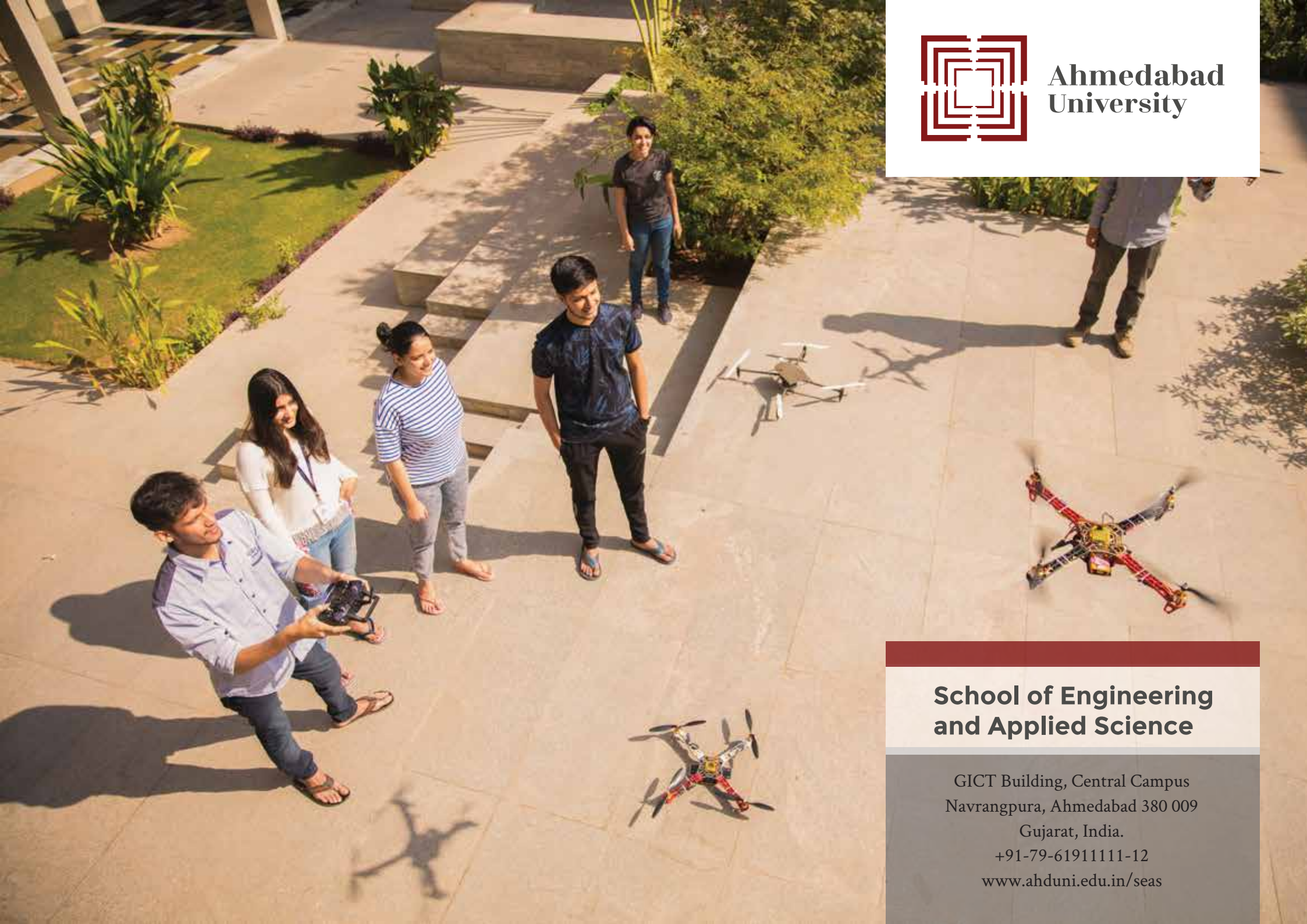
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