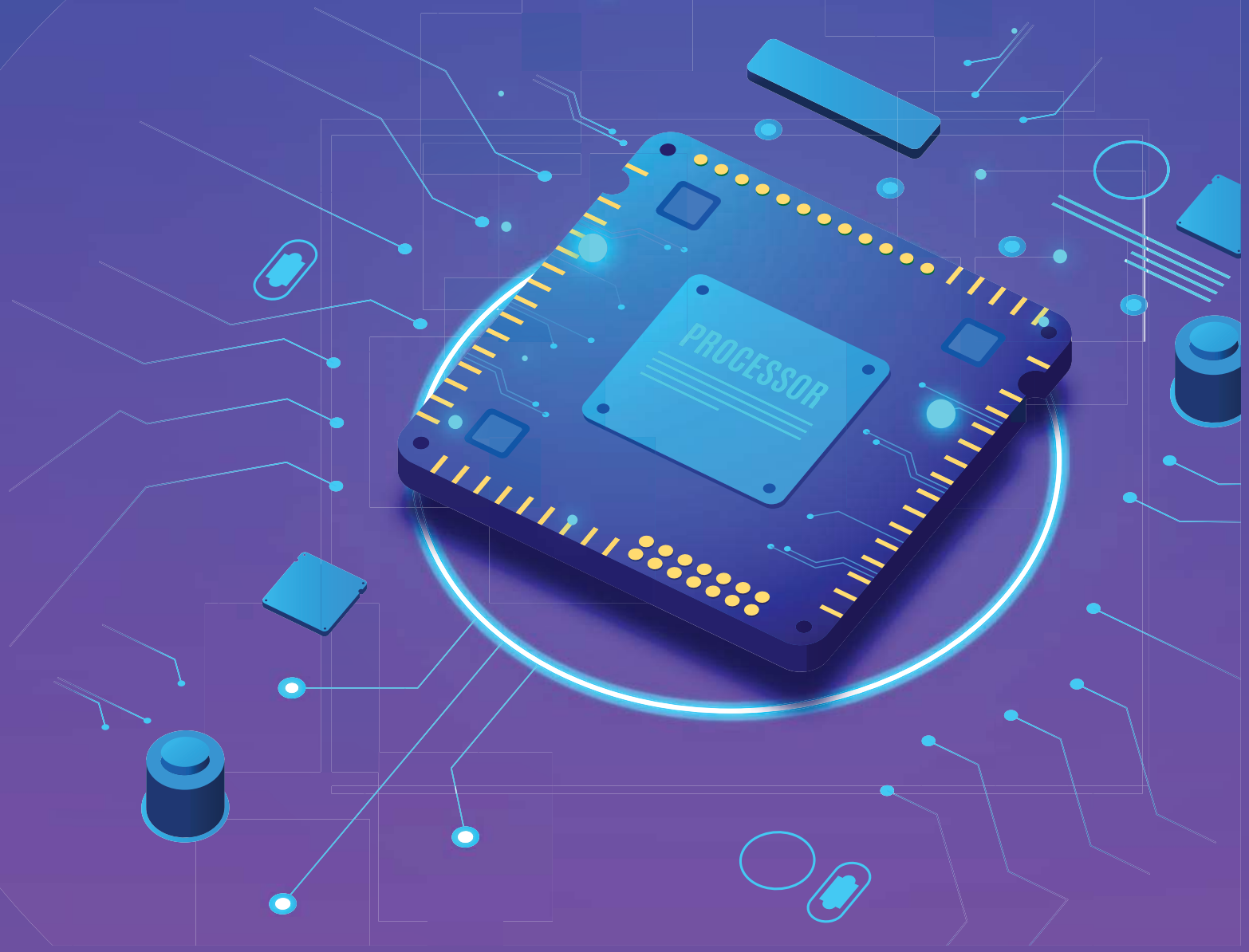
DAYANANDA SAGAR UNIVERSITY

7 DECADES LEGACY IN EDUCATION & HEALTHCARE

A+ GRADE ACCREDITED BY NAAC

Build Embedded Systems that Drive Innovation!



M.Tech

Embedded System

Index

A Place to Grow, Excel, Invent & Innovate!

Dayananda Sagar Institutions founded in the 60's by a visionary, Late Sri. R. Dayananda Sagar (Barrister-at-Law) committed to take knowledge to the people, transforms today's students into responsible citizens and professional leaders of tomorrow. Dayananda Sagar University created by an Act of the Karnataka State in 2014, built on this adorable legacy and inspired by its own milestones, meeting the needs of quality higher education in this part of the world.

This main campus is thoughtfully planned on 130 acres, with a picturesque site and a blossoming green environment, making it free from city crowds and pollution. Being a completely self-contained campus adjacent to Harohalli Kanakapura Road, Bengaluru South District., it is equipped with all the modern state-of-the-art infrastructure, creating a conducive environment for progressive experiential learning and transforming you into next-generation innovators, explorers, leaders, and researchers.

University Accreditation and Rankings

Times Engineering — Times All India Engineering Institutes Ranking Survey 2023 — Number One
- Top Emerging Engineering Institutes
- Emerging Engineering Institutes - Placement
- Emerging Engineering Institutes - Research Capability

IIRF -2025 — Education Impact Award — Promising Private University for Academic Excellence & Learning

ICARE Ratings KSURF — Teaching Excellence ★★★★★ — Research Excellence ★★★★★

- Emerging engineering institute
- Emerging engineering Institute Placement 2022
- Emerging Engineering Institute Research Capabilities

DSU has Rank No. 1 — By Times of India 2022

ET The Economic Times 2023 — Excellence in Academic Facilities & Learning Resources

IIRF -2024 — National Rank– 9 — Top Private Universities in India (Overall)
State Rank 3 | South Zone Rank 3

IIRF -2026 — Education Impact Award — Excellence in Employability & Placement Performance

Times Business Awards — Best Emerging University 2021

34th eLets World Education Summit 2025 Chennai — 01st November 2025 — Outstanding University with Best Placements

About School of Engineering (SoE)

Welcome to the cutting-edge realm of engineering excellence at the School of Engineering (SoE), Dayananda Sagar University (DSU). The School of Engineering (SoE) at Dayananda Sagar University (DSU) provides world-class education and experiential training in engineering, with a strong focus on innovation across various disciplines such as Computer Science, Artificial Intelligence, Robotics, and more. The unique and multidisciplinary learning environment is supported by state-of-the-art infrastructure, job-role–based emerging specialisations, innovative pedagogy, a contemporary curriculum, multifaceted faculty, strong industry collaborations, and impeccable placements.

It has emerged as the top choice for students who aspire to become next-generation technocrats, innovators, developers, and creators. Our advanced and exceptional M.Tech programs are meticulously designed to propel students to the forefront of evolving technologies. These programs offer specialised majors that allow learners to explore their areas of interest and expertise in depth—whether in computer science, electronics, or other engineering disciplines. Students are also exposed to knowledge beyond their chosen specialisation, helping them broaden their perspectives and enhance their intellectual horizons.

School Vision

Transform lives through excellence in engineering education, research, and innovation with an emphasis on sustainability, inclusive technologies, and global needs.

School Mission

1. Design and deliver contemporary engineering curricula to address regional and global needs while emphasizing ethics, values, integrity, and regional relevance.

2. Carry out high-impact academic research, industry projects, and innovation activities with active student engagement to advance science and engineering knowledge and state-of-the-art industry practices.

3. Develop regional and national leaders to advance the society and economy.

Message from the Dean

BE YOU
BE THE DIFFERENCE!!!

Welcome to the new way of learning at School of Engineering (SoE) of Dayananda Sagar University (DSU). At SoE, we are committed to helping you to make a positive difference in the world. We at SoE are immensely proud to provide all of our students with an outstanding education that equips them with the skills, experience, and confidence required to stand out from the crowd. The School promotes Culture of Excellence including the culture of Interdisciplinary, Research, Creativity, Innovations, and Entrepreneurship on various Cutting-Edge Technologies. We at SoE, provide the World-Class Education that is Student-centric, Research-centric, and educational space where all of our students will have a transformative education, learn to be independent critical thinkers, be societally and ethically responsible, and to have a broad understanding of the world.

We value ability, not background, and we support all of our students to achieve their potential. We want you to enjoy your time here, confident that, upon completion of Engineering degree program under SoE, you will have the knowledge, expertise, and employability skills to set you on your chosen career path. The decision you make about where to study is an extremely important one. I am pleased you are considering the School of Engineering at DSU, and hope that you choose to continue your education with us.

BEST WISHES!

Dr. Udaya Kumar Reddy K R
Dean, School of Engineering

Department of ECE

The Electronics and Communications Engineering Programme seamlessly articulates the concepts from basic sciences to technology with relevant practice through labs and projects for building the problem-solving skills, keeping industry requirements in view. Students will develop competence in areas like Signal Processing, Communication Systems, VLSI Design, Embedded systems, and Robotics.

The ever-increasing pace of development in electronics, audio, and video communication systems and the automation in industry have made an electronic engineer a catalyst for the change of the modern society. Electronic gadgets and communication systems of the present age have tremendously improved the quality of life today.

The department offers Masters in Electronics & Communication Engineering with specialization in Embedded Systems. The highlight of this Masters program is that an exclusive BOSCH ETAS lab is integrated into the curriculum and students have the opportunity to work in this niche lab to carry out projects. The industry sponsored Analog Devices Lab also provides students with opportunities to carry out research in the Communication Domain.

The strength of the department lies in its staff. A majority of the faculty have Ph.D from elite universities and institutions from India and abroad and many come with a strong R&D background. The Ph.D program offered by the department with this high quality research faculty will provide the best platform for research students to carry out quality Ph.D work.

Vision

To excel in developing engineers, and techno-entrepreneurs through quality technical education, imbibing societal and ethical values by leveraging interdisciplinary research for sustainable solutions.

Mission

The Department of Electronics and Communication Engineering (ECE) is committed to:

- Design and deliver contemporary Electronics and Communication Engineering curricula to offer quality technical education centered on experiential learning, ethical values, and leadership qualities.
- Inculcate interdisciplinary research and innovative culture in partnership with industries and premier institutions.
- Create engineers and techno-entrepreneurs to meet societal needs by upholding moral principles.

Program Overview

The M.Tech program prepares the students to become leaders in knowledge driven profession.The following M.Tech program have been developed with a philosophy of covering the breadth of domain areas and providing an opportunity to students to specialize in one of the cutting-edge technologies that are driving the next wave of innovation and growth. Specialization helps candidates acquire requisite skills and development experience to ensure a journey of accelerated growth in technology leadership. Core subjects give the advanced foundation; the electives give a wide scope to specialize in the area of Embedded Systems.

The internship will provide real time learning. Seminars, mini projects and dissertation help to temper the innovative and research capabilities. The ECE department has linkages with the industry in curriculum design and delivery by Adjutant faculty.

- The programme offers a set of courses that allow learners to gain and apply knowledge of various Embedded Systems, and design fault-tolerant, Safety Critical systems for real-time processing
- Semesters 1st, 2nd, and 3rd cover core courses. The 4th semester covers Dissertation/ Project Work.
- The Dissertation (Project Work) in the final semester enables students to apply concepts and techniques learnt during the programme to solve Real World Problems.
- The education delivery methodology is a blend of classroom and experiential learning. Experiential learning consists of lab exercises, assignments, case studies and work integrated activities.

Program Duration

Two years (4 Semesters)

Program Eligibility

Pass in BE/ B.Tech in Mechanical Engineering, Industrial Engineering, Production Engineering, or related disciplines with minimum 50% marks in aggregate (45% in case of candidates belonging to SC/ST & OBC).

Program Educational Objectives

After a few years of graduation, the graduates from Electronics and Communication Engineering (ECE) will be able to:

- Gain the ability to formulate and analyze complex technical problems by applying a strong understanding of Electronics and Communication Engineering.
- Foster a desire for higher education or professional expertise to strengthen their intellectual capacity, teamwork abilities, and commitment to lifelong learning.
- Attain leadership roles in their profession as a morally upright individual who puts up a lot of effort and produces results that benefit society.

Programme Outcomes

Engineering Graduates will be able to:

- Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- Design / Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

- Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

- The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

- Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

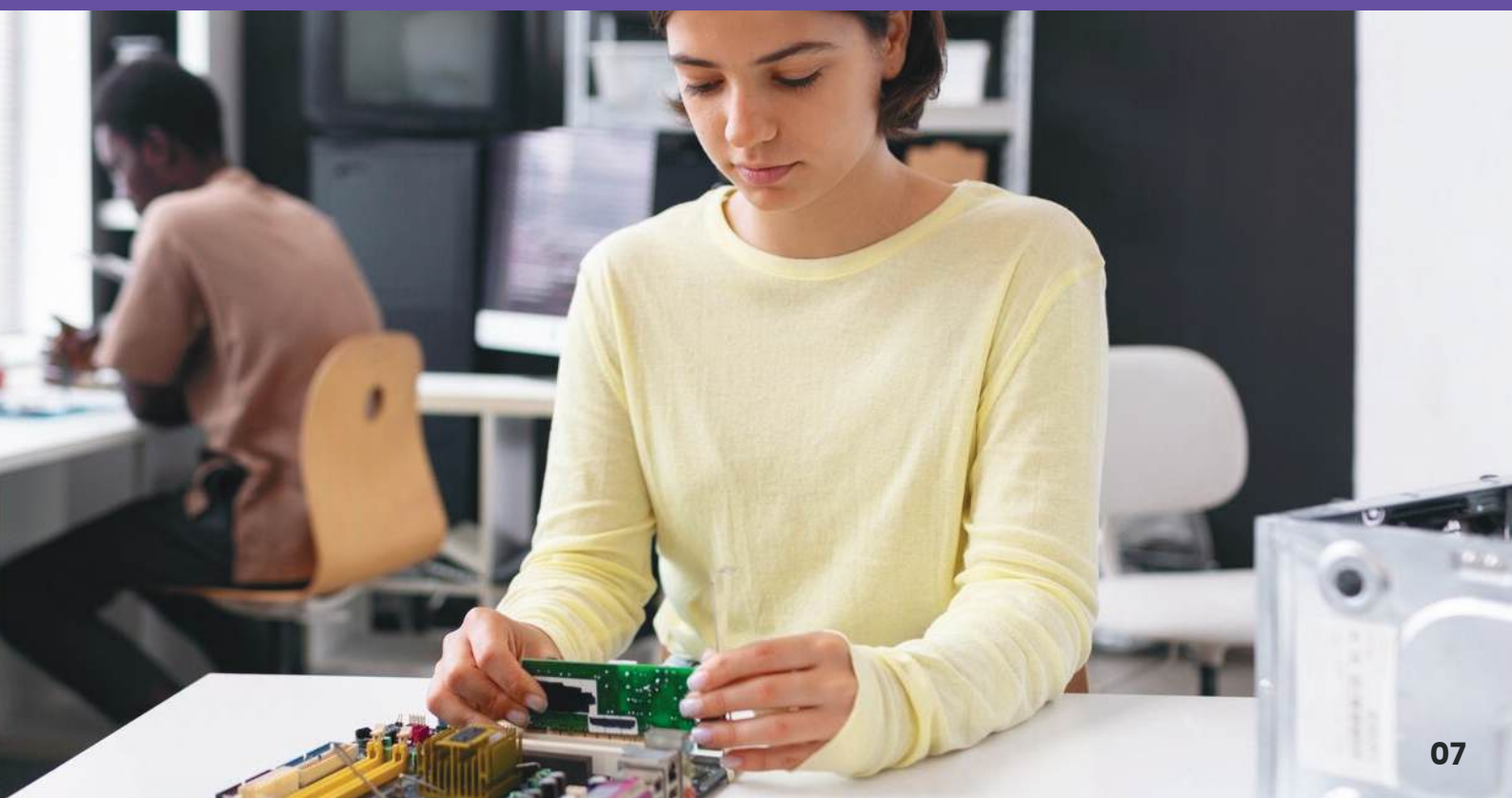
- Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

- Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

- Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

- Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

- Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

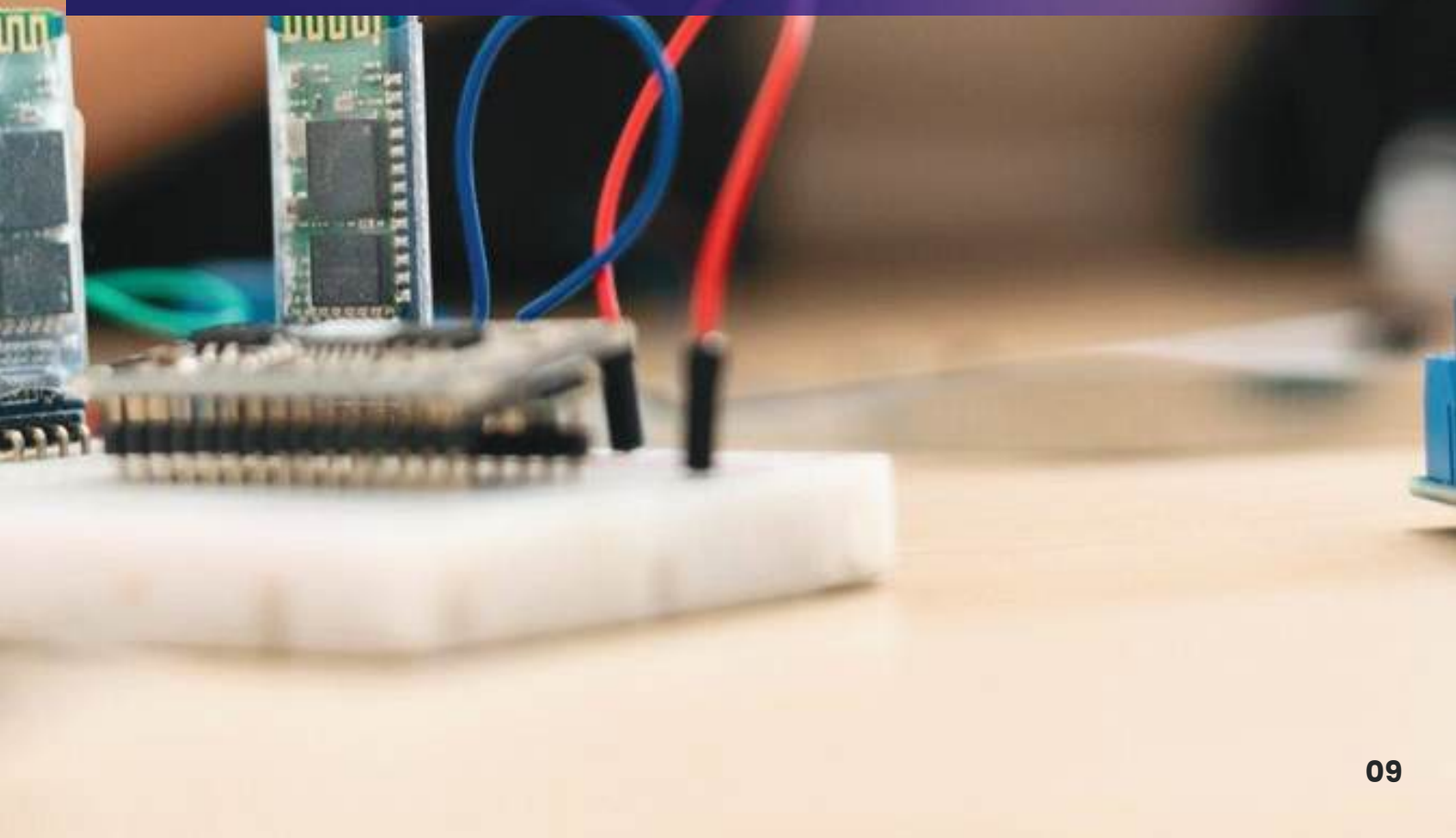


Program Unique Features

- Industry-aligned curriculum covering Embedded Systems, VLSI, RTOS, Reconfigurable Computing, Automotive Electronics, IIoT, and Embedded Machine Learning.
- Strong hands-on orientation with well-structured laboratories in Advanced Microcontrollers, Digital CMOS VLSI, RTOS, and Reconfigurable System Design (FPGA/SoC).
- Model-Based Design (MBD) using MATLAB/Simulink with MIL, SIL, and HIL validation, preparing students for industry-standard development workflows.
- Advanced electives & domain clusters including Robotics, Automotive Networks (CAN, LIN, FlexRay, MOST), Industrial IoT, Linux Device Drivers, and Hardware–Software Co-design.
- Embedded AI & Edge ML focus with quantization, PEFT techniques, accelerator awareness, and ML Ops concepts tailored for resource-constrained systems.
- Reconfigurable & SoC expertise with Verilog HDL, Vivado HLS, Zynq SoC, AXI interfacing, timing analysis, and high-level synthesis.
- Automotive specialization through modern automotive electronics and in-vehicle networking aligned with current industry practices.
- Research & innovation orientation via Research Methodology & IPR, seminars, and dissertation phases encouraging publications and patents.
- Mandatory industry internship to enhance employability, real-world problem solving, and industry exposure.
- Flexible learning pathways with MOOC/NPTEL integration and open electives.
- Outcome-based education (OBE) with CBCS structure, continuous assessment, and project-centric evaluation.

Unique Features of Curriculum

- Industry-aligned curriculum with Automotive, IIoT, Robotics, and Edge AI focus
- Model-Based Design methodology used extensively in embedded and automotive domains
- Strong laboratory and hands-on orientation (Microcontrollers, VLSI, RTOS, FPGA)
- Embedded AI & Edge ML including quantization, PEFT, accelerators, and ML Ops
- Reconfigurable computing using FPGA & Zynq SoC with HLS exposure
- Mandatory industry internship enhancing employability
- Research & innovation focus with IPR, publications, and patents
- CBCS & Outcome-Based Education (OBE) aligned with NBA/NAAC
- MOOC/NPTEL credit integration for continuous upskilling



Curriculum Overview

Core Courses

Advanced Microcontroller and Programming, Digital CMOS VLSI Design,Advanced Microcontroller and Programming Lab,Digital CMOS VLSI Design Lab,Research Methodology and IPR, Model Based Design,Reconfigurable System Design, Real Time Operating System,Real Time Operating System Lab,Reconfigurable System Design Lab.

Specialisation Tracks

The M.Tech Embedded Systems program offers domain-focused specialisation tracks through electives, enabling students to tailor their expertise. The following specialisations are integrated (new-age & industry-relevant)

- **Embedded Systems & Robotics**
- **Automotive Embedded Systems & In-Vehicle Networking**
- **Industrial Internet of Things (IIoT) & Cyber-Physical Systems**
- **Embedded Machine Learning & Edge AI**
- **VLSI & Reconfigurable Systems (FPGA/SoC)**

Professional Elective Courses

S. No	Course Type	Subject	Course Code
1	PEC 1	Embedded System for Robotics	24ESE5107
		Modern Automotive Electronics Systems	24ESE5108
2	PEC 2	Embedded Machine Learning	24ESE5109
		Linux System	24ESE5110
3	PEC 3	PLC SCADA	24ESE5207
		Advanced Control Systems	24ESE5208
		Embedded Systems in Health Care	24ESE5209
4	PEC 4	Industrial IoT (IIOT)	24ESE52010
		Electronic Hardware System Design	24ESE52011
		In Vehicle Network	24ESE52012
5	PEC 5	Linux Device Driver	24ESE6303
		Hardware Software Codesign	24ESE6304
6	PEC 6	Industrial Safety	24OEO027
		Operations Research	24OEO028

Project / Thesis Components

Industry Internship – Mandatory

Exposure to real-world embedded/automotive/IIoT problems

Project Phase I (Dissertation – I)

Literature survey, problem formulation, system design

Project Phase II (Dissertation – II)

Implementation, testing, validation, and thesis submission

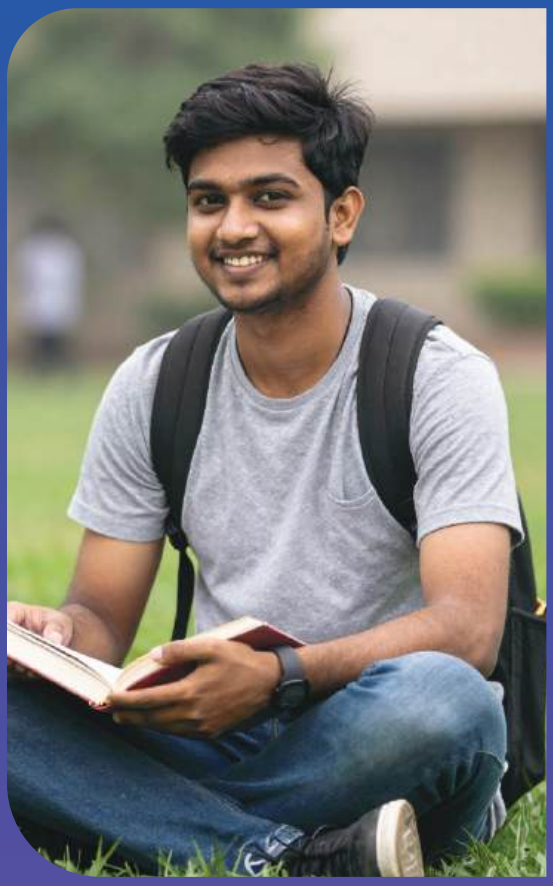
Outcome Expectations

Research paper / patent / product prototype encouraged

Program Industry Insights (Market Demand)

Embedded Systems market is growing rapidly driven by

- Automotive electronics & EVs
- Industry 4.0 & IIoT
- Robotics & automation
- Edge AI and smart devices



High-Demand Roles

- Embedded Systems Engineer
- Automotive ECU / ADAS Engineer
- FPGA / SoC Design Engineer
- Edge AI & Embedded ML Engineer
- IIoT & Industry 4.0 Engineer
- Robotics & Control Engineer

Internship Opportunities

Students have an opportunity to take up the Internship Program in reputed industry/academic institute/R&D/Government organizations

Category	Duration	Period of engagement
Internship	6 Months to 12 Months	3rd semester (onwards) (after completion of 1 year)

Placement

Pre-Placement Training

It provides the following training for all students

- Aptitude Training
- Soft Skill Training
- Technical Training

Placement Support

- Counselling and personality development
- Resume building and interview preparation
- Recruitment drives with 50-60 companies
- Wide network of M.Tech alumni
- Support for Ph.D and international master's programs
- 6-month internship coordination

Highest package offered	Average package
₹ 12 LPA	₹ 5 LPA

VLSI Training Collaboration

The Department of Electronics and Communication Engineering, Dayananda Sagar University, has collaborated with VinyanaTech, a Bangalore-based company specializing in VLSI circuit design and testing. Guided by Dr. C.P. Ravikumar, a renowned VLSI expert with decades of academic and industry experience at IIT Delhi and Texas Instruments, this program offers hands-on training with industry-standard tools. With India's semiconductor industry expanding rapidly through initiatives like ISM and PLI, this collaboration will equip DSU students with the skills required to excel in the growing VLSI and semiconductor ecosystem.

Memorandum of Understanding (MoU) with MIT Square, London

Sponsorship support of USD 1200 received from MIT Square, London, in connection with the Memorandum of Understanding (MoU) established between our institution a MIT Square Group of Companies. This support was extended towards our participation and execution of ROBOSOCCER, a prestigious national-level robotics competition to showcase AI-driven soccer-playing robots developed by top engineering minds across the country.

Under the "Scholar in Residence at SOE" program organized by DSU International Affairs with the ECE Department the Value-Added Programs conducted in the Department.

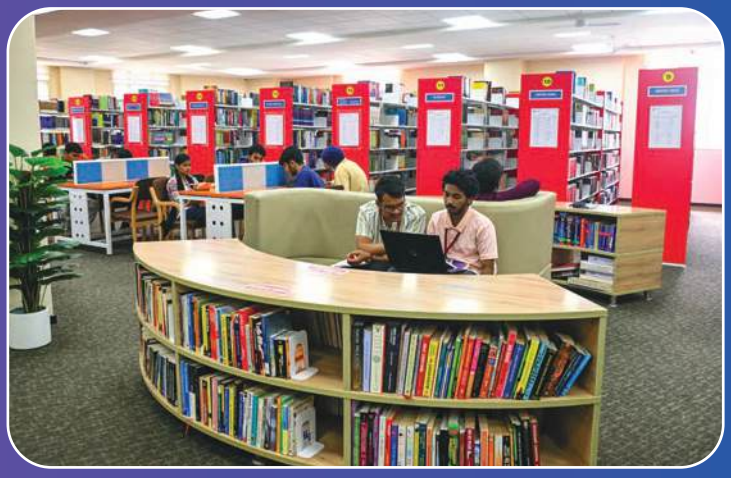
- Dr. Stefano Rinaldi, an Associate Professor at the University of Brescia offered a 10-day extensive value-added program on "Mastering Industrial IoT: A comprehensive Exploration" to fourth-semester students from March 5-15, 2024.
- Dr. Pavelyev, Vladimir S, Head-Department of Nano engineering, Samara National University, Russia offered a Value-Added Course on "Diffractive Micro-Optics."

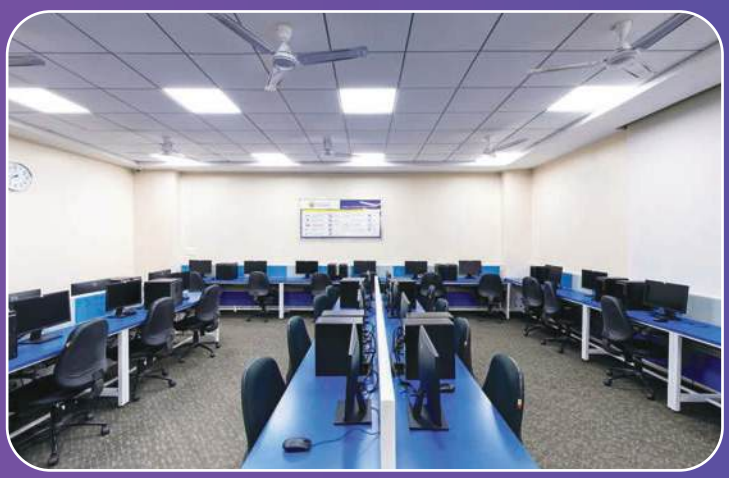
Foreign university collaboration for student exchange and internship opportunities*

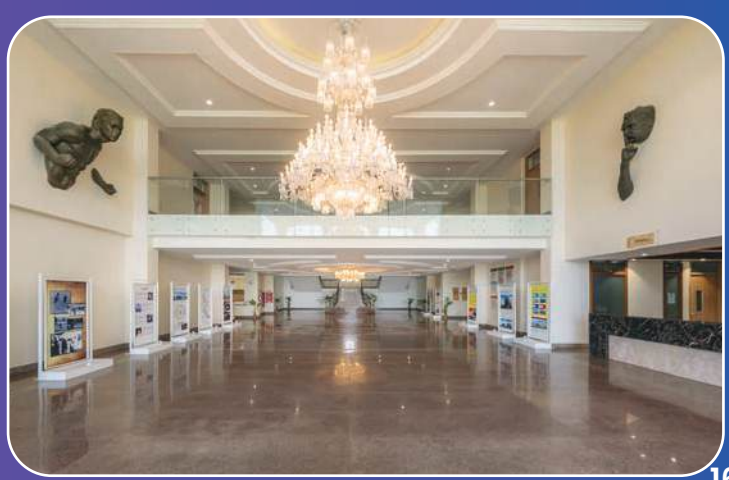
UNIVERSITY	COUNTRY
University of South Carolina Aiken	USA
The University of Wisconsin–Madison	USA
Northeastern University	USA
German Varisty, Aachen	Germany
Steinbeis University	Germany
RWTH Aachen University	Germany
Indo Eurosynchronisation Pvt Ltd	Germany
Samara National Research University	Russia
The University of Brescia	Italy
Limkokwing University of Creative Technology	Malaysia
James Cook University	Australia
Ming Chi University of Technology	Taiwan
Amazon College International	Srilanka
Worcester Polytechnic Institute	USA
Western Connecticut State University	USA
The University of Huddersfield	England
TUM Asia Pte Ltd	Singapore
THE UNIVERSITY OF WOLVERHAMPTON	UK
Southern Connecticut State University	USA
DSTI - School of Engineering	France
The University of Liverpool	UK
The University of Worcester	UK
Illinois Tech	USA
Dniprovsky State Technical University	Ukraine
Visayas State University	Philippines
Nelson Marlborough Institute of Technology	New Zealand
New Jersey Institute of Technology	New Jercy
INTI International University	Malayasia
Relaince College	Malayasia
Hasanuddin University	Indonesia
LeTourneau University	USA
MIET, Moscow	Russia
Daffodil University	Bangladesh
University of Liberal Arts ULAB	Bangladesh
Multimedia University (MMU)	Malaysia
Mangosuthu University of Technology MUT	South Africa
University of Lay Adventists of Kigali (UNILAK)	Rwanda
Atyrau University	Kazakhstan
MENDEL UNIVERSITY IN BRNO	Czechia
Ernst Abbe University of Applied Sciences Jena	Germany
King Ceasor University	Uganda
Algebra University	Crotia
University of Evansville	USA
Nizhyn Mykola Gogol University	Ukraine
Dmytro Motornyi Tavria State Agrotechnological University	Ukraine
Széchenyi István University	Hungary
Southern Federal University	Russia
Uni La Salle Polytechnic Institute	France

*Applicable as per university terms and conditions

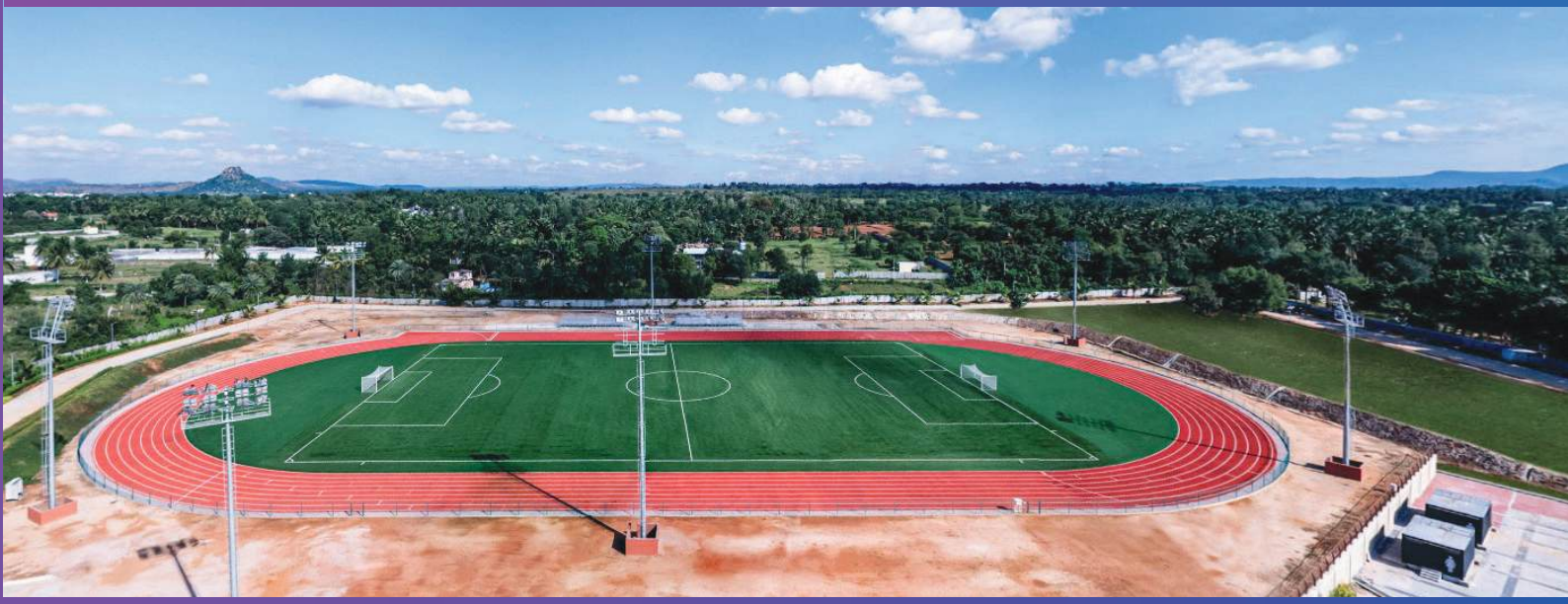
Infrastructure and Facilities







Sports Facilities



Library

About Library

The Library, established alongside DSI and expanded with Dayananda Sagar Institutions (1969), Dayananda Sagar College of Engineering (1979), and Dayananda Sagar University (2014), was envisioned by the founder, Late Sri R. Dayananda Sagar, as a world-class knowledge hub. Built systematically, it accommodates 560 users and houses an extensive collection of books, CDs, DVDs, periodicals, and digital resources. Serving undergraduates, postgraduates, research scholars, and faculty, the Library reflects the University's academic excellence and is managed by a team of skilled and dedicated professionals.

School of Engineering Collections

Titles	6385
Volumes	21305
Book Bank	433
Bound Volumes	139
Book CD's	643
Periodical CD's	17
Educational Video's	47
National & International Print Journals	60
News Papers	10
Magazines	15
E-Books	12579

DSU Main Campus Hostel



About Hostel

Our hostel, located within the heart of the DSU main campus, offers a perfect blend of comfort, safety, and convenience. Designed to meet the needs of today's students, our state-of-the-art facilities ensure that you have everything you need for a successful and fulfilling college experience. With a secure environment and a focus on student well-being, our hostel provides the ideal space for both academic focus and relaxation. Whether it's modern amenities, dedicated support for your studies, or a community that fosters growth, our hostel is your home away from home—helping you thrive every step of the way!

Facilities

- 24/7 Assistance
- 24/7 Handyman
- 24/7 Concierge
- Face recognition & Biometric
- 24/7 Handyman
- Upper/lower bunk bed
- 24/7 Handyman
- Wi-Fi
- Vending Mechines
- RO Drinking Water
- CCTV Monitoring
- Study Zones
- Business Center
- Break-Out Zones
- F & B Partners
- Retail Cafeteria
- Gym Room
- Meditation Room
- Theatre
- Scenic natural views
- Sports Facilities
- Cupboard with a locker
- Parking
- Music Room
- Yoga Room
- Indoor Game Rooms
- Discussion Rooms
- Parcel Service

7+
BUILDINGS

5000+
STUDENTS ACCOMMODATION

100%
SATISFACTION

2 Tier Rooms

In this tier, 2 students will be living together in an en-suite apartment with an access to all the common facilities.

3 Tier Rooms

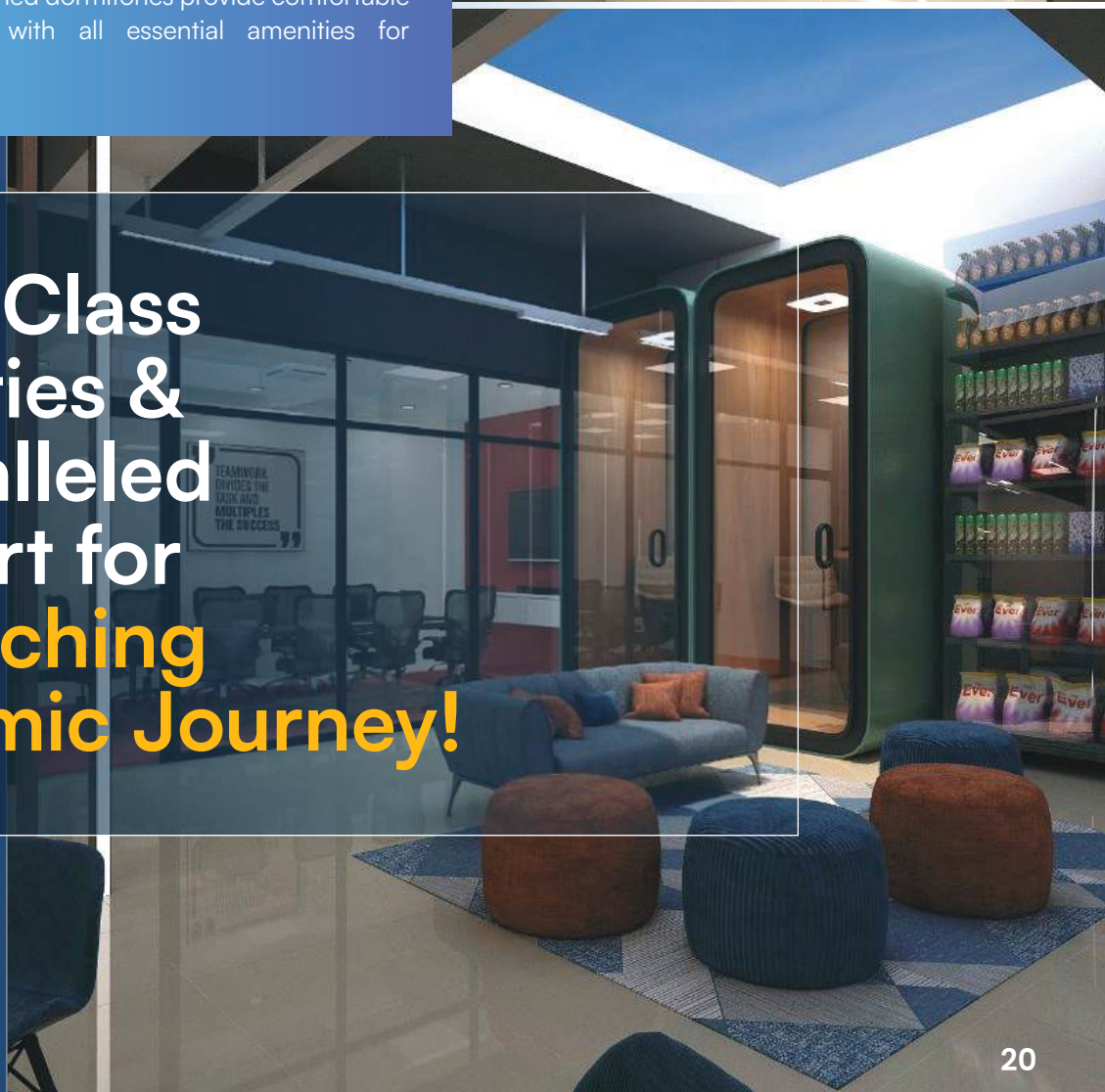
In this tier type, 3 students will be living together in an en-suite apartment with an access to all the common facilities.

4 Tier Rooms

In this tier type, 4 students will be living together in an en-suite apartment with an access to all the common facilities.

Dormitory

Spacious and well-maintained dormitories provide comfortable shared accommodation with all essential amenities for students.



World-Class Amenities & Unparalleled Comfort for an Enriching Academic Journey!

Labs

Digital Circuit Lab

Common Computer Lab

Analog Circuits Lab

Structures Lab

Electronic Lab

Composites Lab

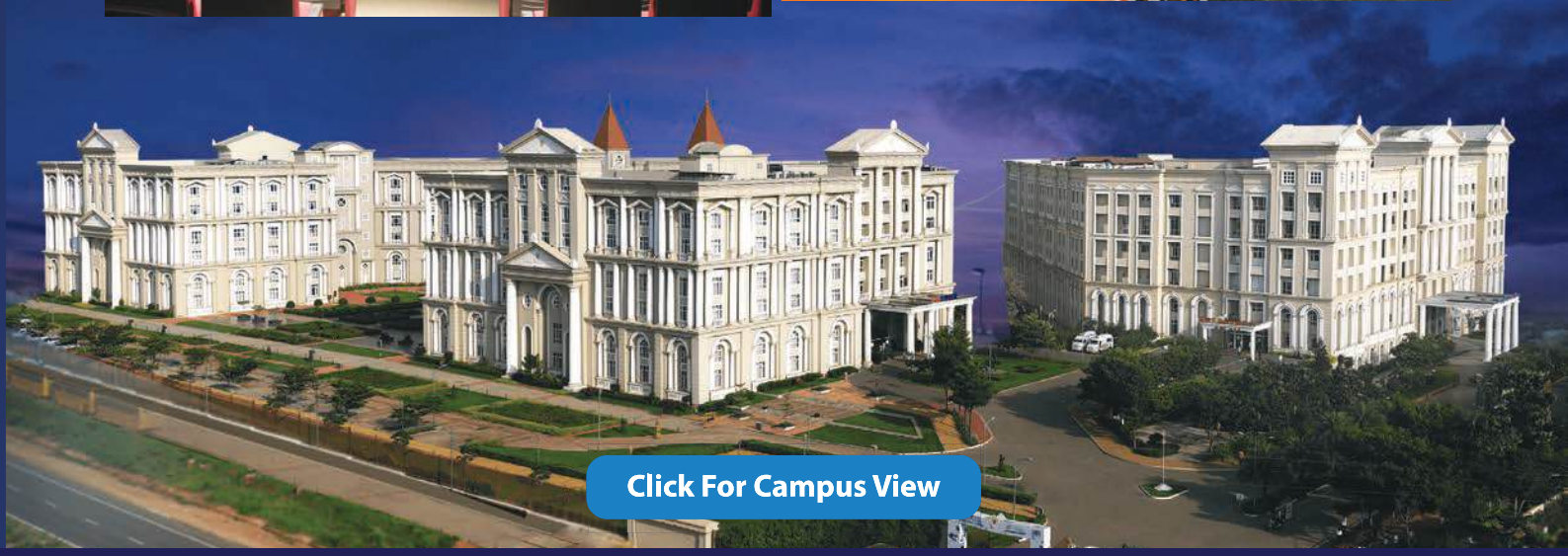
Physics Lab

Tutorial Room

Glimpse of DSU Main Campus at Harohalli





DSU Main Campus : Devarakaggalahalli, Harohalli, Kanakapura Road, Bengaluru South – 562 112

Admissions Helpline Nos: 080 4646 1800 +91 636 688 5507

www.dsu.edu.in admissions@dsu.edu.in