







Curriculum enriched with Artificial Intelligence & Machine Learning

Mechanical Engineering

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A Place to Grow, Excel, Invent & Innovate!

About DSU

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























OUTSTANDING UNIVERSITY WITH BEST PLACEMENTS

About School of Engineering



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

It has emerged as the top choice for students who want to become the next- generation technocrats, innovators, developers, and creators. Our advanced and exceptional M.Tech programs are meticulously designed to propel you into the forefront of evolving technologies. It offers specialised majors, allowing students to delve deep into their areas of interest and expertise, whether its in computer science, electronics, or other engineering disciplines. The students are exposed to knowledge beyond their specialisation, which helps broaden their horizons of thought.

About Mechanical Engineering

At Dayananda Sagar University, the Department of Mechanical Engineering is distinguished by its dynamic curriculum that seamlessly blends emerging technologies like AI and ML, Robotics, and 3D printing. The department's commitment to technological advancement is further exemplified by its partnerships with industry leaders such as Autodesk and Bosch Rexroth in their state-of-the-art innovation labs. This synergy between academia and industry not only enriches the curriculum but also ensures it remains at the forefront of technological relevance and innovation.

The department also boasts a faculty with rich industry and academic experience, bringing a research-oriented approach to their teaching. This combination of practical experience and academic excellence ensures that students receive an education that is both theoretically sound and aligned with current industry trends.

Vision

To be a renowned Department in Mechanical Engineering where education and research synergize to fulfill the requirements of industry and society with an emphasis on sustainable solutions.

Mission

The Department of Mechanical Engineering is Committed to:

- Excellence in education through new-age pedagogical methods, critical thinking grounded in sustainable learning practices, professional ethics and leadership qualities
- Foster a culture of interdisciplinary research and to establish collaboration with industry and academia to solve critical problems
- Produce Engineers and techno-entrepreneurs to meet societal needs

Program Overview

Welcome to the Department of Mechanical Engineering, where we redefine the boundaries of traditional engineering by seamlessly integrating the latest advancements in Artificial Intelligence (AI) and Machine Learning (ML), Robotics and Automation and 3D printing. Our commitment to excellence is reflected in our unique offerings, exceptional faculty, and unparalleled opportunities for students.

Curriculum that Transcends Boundaries: Our curriculum is meticulously crafted to blend classical Mechanical Engineering principles with cutting-edge Al and ML applications. From robotics to smart systems, our students are equipped with the skills needed to thrive in the evolving technological landscape.

Admission Eligibility Criteria

Pass in PUC / 10+2 examination with Physics and Mathematics as compulsory subjects along with one of the Chemistry / Biotechnology / Biology / Computer Science / Electronics / Technical Vocational subjects and obtained at least 45% marks (40% in case of candidate belonging to SC/ST & OBC category) in the above subjects taken together, of any Board recognized by the respective State Governments / Central Government / Union Territories or any other qualification recognized as equivalent there to.

University offers prestigious merit scholarships based on your IIT-JEE Scores as per university cut off

Program Duration: 4 YEARS (8 Semesters)

Specialised Electives

- > Artificial Intelligence and Machine learning
- > Robotics and Automation
- > Additive Manufacturing

Specialised Courses

- Courses like Robotics and Automation, Computer Vision, and AI for Sustainable Energy Systems demonstrate how AI and ML can be applied in specific mechanical engineering contexts
- » Deep Learning and Natural Language Processing provide insights into more complex areas of Al, preparing students for high-tech industries.
- Capstone Project, A significant feature of the curriculum, allowing students to integrate their mechanical engineering knowledge with AI and ML techniques to solve real-world problems

Artificial Intelligence and Machine Learning (AI/ML)

Al/ML focuses on creating systems that can learn, adapt, and make decisions, emphasizing advancements in algorithms, neural networks, and data analytics to simulate intelligent behavior in machines.

Key Focus Areas

Natural Language Processing (NLP): Developing Al systems that understand, interpret, and generate human language in a meaningful way.

Predictive Analytics: Using statistical algorithms and machine learning techniques to identify the likelihood of future outcomes based on historical data.

Reinforcement Learning: An area of machine learning focused on making decisions and learning through trial and error, often used in robotics, gaming, and navigation.





Robotics and Automation

This field concentrates on designing, constructing, and operating robots and automated systems, with key areas including human-robot interaction, autonomous navigation, and the integration of Al for improved efficiency and precision.

Key Focus Areas

Human-Robot Interaction: Improving the ways in which robots and humans communicate and collaborate, ensuring safety, efficiency, and ease of use.

Autonomous Navigation: Developing robots that can move and navigate independently in various environments, including urban settings, industrial spaces, and unstructured terrains.

Robotic Process Automation (RPA): Using software robots or Al to automate highly repetitive and routine tasks traditionally performed by humans.





Additive Manufacturing

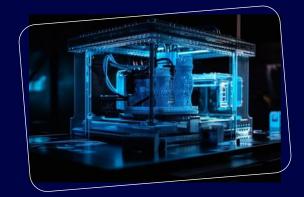
Additive Manufacturing, commonly known as 3D printing, revolves around creating objects by layering materials. It emphasizes customization, complex geometry, and material innovations, significantly impacting prototyping, tooling, and direct part production.

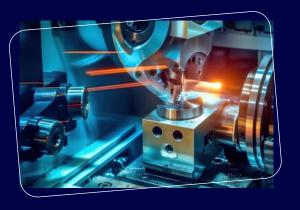
Key Focus Areas

Material Science: Innovating and developing new materials suitable for 3D printing, including polymers, metals, and composites.

Precision and Quality Control: Enhancing the accuracy, resolution, and consistency of 3D printed products, ensuring they meet specific standards and requirements.

Customization and Complex Geometries: Exploiting the capability of additive manufacturing to create complex and customized products that are difficult or impossible to produce with traditional manufacturing methods.





Electives

We offer following specialisation based on emerging technology and current industry demands

3D Printing

3D Printing, also known as additive manufacturing, revolutionizes traditional manufacturing processes by building objects layer by layer using digital models. In mechanical engineering, this specialization focuses on harnessing the capabilities of 3D printing technologies to create intricate and customized components, prototypes, and even finished products.

Key Focus Areas

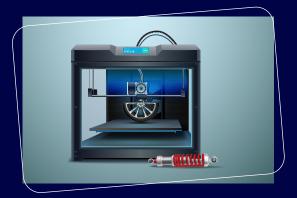
Design Freedom: The technology allows for the creation of intricate and complex geometries that may be difficult or impossible to achieve with traditional manufacturing methods.

Prototyping Efficiency: Engineers can rapidly iterate and test designs, leading to reduced development time and improved product iteration.

Material Innovation: 3D printing has led to advances in materials, such as metal alloys, polymers, <u>ceramics</u>, and <u>composites</u>, expanding the range of possibilities for manufacturing.

Customization: With 3D printing, tailored products can be produced more feasibly, facilitating a shift towards personalized manufacturing to meet specific needs.





Robotics

It is an interdisciplinary field that intersects mechanical engineering, electronics, and computer science. In the realm of mechanical engineering, this specialization focuses on developing and implementing robotic systems tailored for diverse applications, from industrial automation to healthcare and beyond.

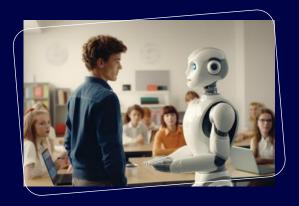
Key Focus Areas

Mechanical Design: Creating robust and efficient mechanical structures for robotic systems.

Automation: Developing systems capable of autonomous or semi-autonomous task execution.

Sensor Integration: Incorporating sensors to enable perception and decision-making capabilities.

Human-Robot Interaction: Designing robots that can safely and effectively collaborate with humans.





Hybrid & Electric Vehicles

The growing emphasis on sustainable transportation has spurred a notable increase in the advancement of Hybrid & Electric Vehicles (HEVs). This specialized field within mechanical engineering centers on the creation, enhancement, and optimization of vehicles that integrate electric power systems with traditional internal combustion engines to boost efficiency and minimize environmental impact.

Key Focus Areas

Powertrain Integration: Creating seamless systems that merge electric and internal combustion powertrains for optimal performance.

Energy Storage: Enhancing battery technologies to improve energy density and efficiency

Vehicle Dynamics: Adapting vehicle dynamics to accommodate the unique characteristics of electric drive trains.

Sustainability: Playing a role in reducing greenhouse gas emissions and decreasing reliance on fossil fuels.







Autodesk and Bosch
Rexroth Innovation centres

Innovation Labs Set up In the Campus with Assistance from





100+
EXPERTS ENGAGED

1000+
APPLICATIONS

125+ JOBS CREATED 25+
PARTNERS

Student Projects

Students from the Mechanical Engineering Department have not only actively participated in various clubs, such as the Society of Automotive Engineers (SAE), the Indian Society of Heating, Refrigerating and Air Conditioning Engineers (ISHRAE), and a Robotics club, but they have also achieved remarkable success by winning several awards at national levels. This notable accomplishment underscores their dedication, skill, and excellence in their respective fields, greatly contributing to the prestige of their department.



Students securing First Prize in TIFAN —SAE at National Level

Our Department students have bagged First runner up and 2nd runner up positions in the National level Design and Innovation Clinic organized by Central Manufacturing and Technology Institute, Govt of India (CMTI). Design & Innovation Clinic is aimed at inspiring young minds to nurture scientific and engineering temperament to build a better India.



The details of the winners are as follows...

1)Vikram Manivannan ,Faisal Ali , Derin C John-1st Runner up

Project Title: Heavy load self stabilizing cargo bed Guide: Prof Sudhadeepthi

2) Maheshchandra S, Bharath Yadav B R, Abhishek B M, Bharath M -2nd Runner up Project Title: Design and Fabrication of corn sheller machine Guide: Prof Bharath Shekar

Career BOOOM in Mechanical Engineering? (Industry Insights)

Job Growth

According to the U.S. Bureau of Labor Statistics (BLS), employment of mechanical engineers was projected to grow 5 percent from 2020 to 2030, about as fast as the average for all occupations.

Advanced Manufacturing and Industry 4.0

The rise of smart factories and the fourth industrial revolution (Industry 4.0) is creating a demand for mechanical engineers with expertise in automation, robotics, additive manufacturing (3D printing), and the integration of cyber-physical systems.

Renewable Energy

With a global focus on sustainability, there is a growing demand for mechanical engineers in the renewable energy sector. This includes designing and optimizing wind turbines, solar panels, and energy storage systems.

Autonomous Vehicles

The development of autonomous and electric vehicles requires mechanical engineers to work on designing efficient propulsion systems, lightweight materials, and advanced safety features.

Internet of Things (IoT) in Mechanical Systems

The integration of IoT in mechanical systems is on the rise. Mechanical engineers are involved in developing intelligent and connected devices, optimising equipment performance, and implementing predictive maintenance strategies.

Nanotechnology

In materials science and engineering, nanotechnology is growing. Mechanical engineers contribute to designing and developing nanomaterials for applications in various industries, including electronics, medicine, and manufacturing



Job Profiles for Mechanical Engineers

There is tremendous scope for mechanical engineers in automobile engineering, aeronautical, steel, power, heavy engineering, manufacturing, mining, petroleum and cement industries besides process industries and defence. Now-a-days they are also required in the environmental and biomedical fields. There are exciting times ahead for mechanical engineers as transport technologies like Hyperloop, electric vehicles, flying cars, drone technologies, an intelligent system like robots and additive manufacturing including 3D printing are gaining importance.

A beginner in Mechanical Engineering can opt for various job openings such as:

Design Engineer

Job Profile: Design Engineers are responsible for creating detailed designs and plans for mechanical systems, components, or products. They use computer-aided design (CAD) software to develop prototypes and ensure that the design meets engineering principles and specifications

CAE Analyst (Computer-Aided Engineering)

Job Profile: CAE Analysts use computer simulations and modelling techniques to analyze and optimize mechanical designs.

Manufacturing Engineer

Job Profile: Manufacturing Engineers focus on optimizing production processes and ensuring efficient and cost-effective manufacturing. They work to improve product quality, reduce production costs, and implement lean manufacturing principles.

Quality Assurance Engineer

Job Profile: Quality Assurance Engineers are responsible for maintaining and improving product quality. They develop and implement quality control procedures, conduct inspections, and work to identify and resolve issues in the manufacturing process.

Maintenance Engineer

Job Profile: Maintenance Engineers oversee the upkeep of mechanical systems and equipment. They develop maintenance schedules, troubleshoot issues, and perform preventive maintenance to ensure the reliability and longevity of machinery.

Safety Engineer

Job Profile: Safety Engineers focus on ensuring workplace safety in manufacturing and industrial settings. They assess potential hazards, develop safety protocols, and implement measures to prevent accidents and injuries.

Production Planner

Job Profile: Production Planners coordinate and schedule the manufacturing processes. They analyze production specifications, capacity, and resource availability to create production schedules that meet demand and optimize efficiency.

Project Engineer

Job Profile: Project Engineers manage engineering projects from conception to completion. They coordinate project teams, develop project plans, monitor progress, and ensure that projects are completed on time and within budget.

R&D Engineer (Research & Development)

Job Profile: R&D Engineers work on innovative projects to develop new products or improve existing ones. They conduct research, design experiments, and collaborate with cross-functional teams to bring new ideas to fruition.

Automation Engineer

Job Profile: Automation Engineers design and implement automated systems to streamline manufacturing processes. They work with robotics, control systems, and programmable logic controllers (PLCs) to enhance efficiency and reduce manual labor.

Curriculum enrichment

VERSATILITY IN COURSES

Specialization: Al and ML in Mechanical Engineering.
Broad spectrum of elective baskets: Robotics, Automation, and Additive Manufacturing:
VERSATILITY IN COURSES

INNOVATION LAB SUPPORTED MINI/MAJOR PROJECTS

Mini/Major Projects with AUTODESK and BOSCH REXROTH.
Explore Generative Design, Manufacturing,
PLC, and Industry 4.0 innovations.
PROJECT WORK - MINI/MAJOR

VALUE ADDITION COURSES

Cutting-edge certification courses tailored to meet the industrial demands and market requirements, offered by industry leaders.

VALUE ADDITION COURSES

FORUM-BASED ACTIVITIES

Dynamic Forum Activities: SAE EFFICYCLE, TIFAN, BAJA, GO KART featuring design and build projects, case competitions, and hackathons.

STUDENT FORUM-BASED ACTIVITIES

Program Educational Objectives (PEOs) -

After few years of graduation, the graduates of Mechanical Engineering will be able to:

PEO1:

Design, manufacture and evaluate mechanical components and systems using both conventional and cutting-edge IT tools and technologies catering to the industry needs

PEO2:

Exhibit continuous professional growth, leadership skills, lifelong learning and the ability to work effectively in multidisciplinary teams

PEO3:

Embody a strong commitment to ethical and social responsibility, placing paramount importance on safety, sustainability and making meaningful contributions to society & well-being

Program Outcomes (POs)

PO1. Engineering knowledge

Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2. Problem analysis

Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3. 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.

PO4. 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.

PO5. 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.

PO6. 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.

PO7. 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.

PO8. Ethics

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

PO9. Individual and team work

Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10. 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.

PO11. 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.



Program Specific Outcomes (PSOs)

Engineering graduates will be able to:

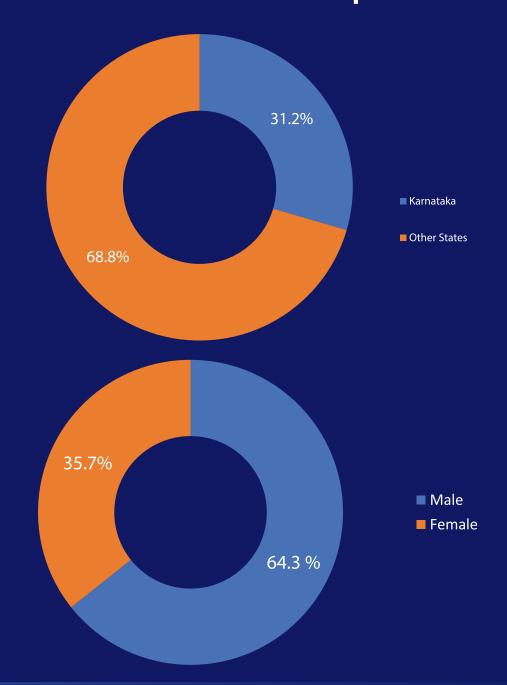
PSO₁

Develop and implement new ideas on product design and development with the help of modern computer aided tools, while ensuring best manufacturing practices

PSO₂

Develop, design & amp; analysis tools to solve problems in the domains of structural, thermal, fluid mechanics, materials and manufacturing in an efficient, safe and cost-effective manner

DSU B.Tech 2025 – A Glimpse into Our Diverse Student Landscape



University offers prestigious merit scholarships based on your IIT-JEE Scores

Scholarship Highlights

2025- INR 6.24 Cr. awarded to 780 Students

2024- INR 6.79 Cr. awarded to 905 Students

2023- INR 5.80 Cr. awarded to 806 Students

B.Tech Placement Record (2024-25)

450+

COMPANIES **VISITED**

10L

AVERAGE PACKAGE (LPA) 56L

HIGHEST PACKAGE (LPA)

Top Recruiters (National & International)

Some of the top recruiters for Mechanical Engineers operate on both national and international scale, with a strong presence in countries leading the tech industry. They range from major tech giants to specialized startups and staffing agencies.

International Recruiters





































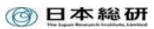
























National Recruiters































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
	I .



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



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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



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+

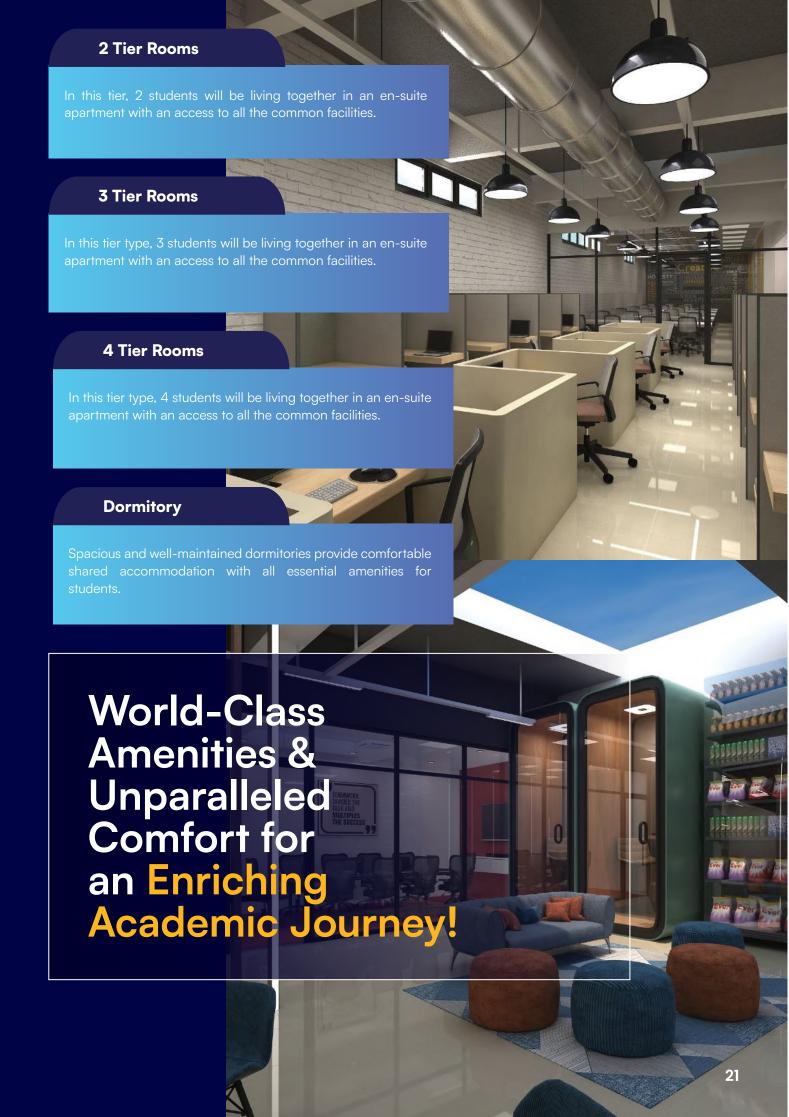
BUILDINGS

5000+

STUDENTS ACCOMMODATION

100%

SATISFACTION













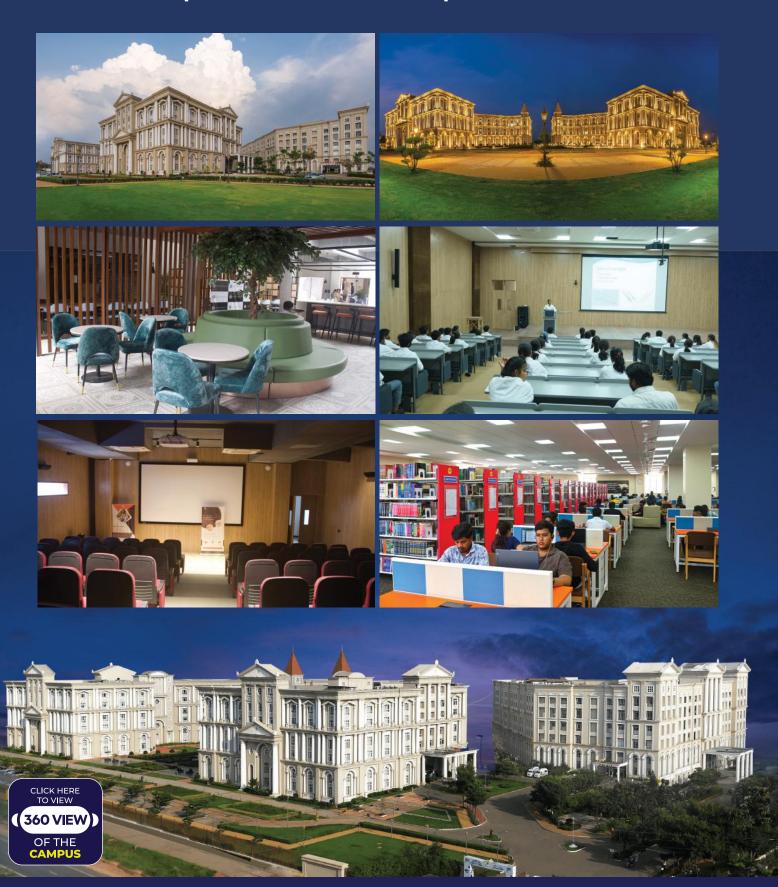








Glimpse of DSU Main Campus at Harohalli



DSU Main Campus: Devarakaggalahalli, Harohalli, Kanakapura Road, Bengaluru South – 562112



