



Shri Gajanan Shikshan Sanstha's
**SHRI SANT GAJANAN MAHARAJ COLLEGE OF ENGINEERING
SHEGAON – 444203, DIST. BULDANA (MAHARASHTRA STATE), INDIA**

"Recognized by A.I.C.T.E., New Delhi" Affiliated to Sant Gadge Baba Amravati University, Amravati
"Approved by the D.T.E., M.S. Mumbai"

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STUDENT-CENTRIC LEARNING

Student-centric learning allows for flexibility and personalization, enabling students to choose their learning paths and explore topics that align with their interests and goals. At SSGMCE, Student-Centric Learning encompasses a wide range of teaching methods and techniques designed to prioritize the individual needs and abilities of students.

This approach encompasses a variety of learning methods, including hands-on, experiential learning, participatory learning, engagement in project-based activities, both individually and in groups, and the integration of technology to enrich and facilitate the learning process. The primary objective is to nurture critical thinking skills and a genuine passion for learning while creating an inclusive and supportive environment that fosters student success. Additionally, the institution offers opportunities for students to collaborate closely with faculty members, participate in research projects, and engage in real-world problem-solving, all of which contribute to the development of a student-centric learning environment.

In this student-centric approach, the learning experience is tailored to meet each student's unique requirements. In such an environment, teachers serve as facilitators; guiding students through their learning journey and helping them develop critical thinking skills, rather than merely transmitting knowledge. The ultimate goal of student-centric learning is to cultivate independent, self-directed learners who are motivated, engaged, and capable of taking ownership of their own education. This approach prioritizes student choice, allowing for a more flexible and personalized learning experience.

Student Centric Learning at SSGMCE includes:

Experiential learning:

Experiential learning is an educational approach that emphasizes learning through direct, hands-on experiences and reflection on those experiences. It is a highly effective method of learning that goes beyond traditional classroom instruction and textbooks. Instead, experiential learning engages students in real-life situations, encouraging them to actively participate, make decisions, and learn from the outcomes of their actions.

Experiential learning activities include:

Hands on learning

Hands-on learning experiences and activities allow students to apply theoretical knowledge to real-world situations. This could include laboratory experiments, workshops, or simulations that help students gain practical skills and insights relevant to their field of study.



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Internships

Internships are structured work experiences that students undertake with organizations or companies related to their academic discipline. During internships, students have the opportunity to work on real projects, gain industry experience, and develop professional skills under the guidance of experienced professionals.

Field Industry Visits

Field industry visits involve taking students on tours to various industries or businesses related to their field of study. These visits provide students with first-hand exposure to industry processes, practices, and operations, helping them connect classroom learning with real-world applications.

Industry Integration Initiatives

Industry Integration Initiatives includes partnerships between educational institutions and industries or businesses. These programs often involve joint projects, research initiatives, or curriculum development efforts that bridge the gap between academia and industry, ensuring that students are well-prepared for the demands of the job market

Skills Enhancement Hub

The Skills Enhancement Hub, situated within Shri Sant Gajanan Maharaj College of Engineering, is a specialized department dedicated to empowering students by enhancing their skills and competencies, aligning them with the demands of the modern job market. This multifaceted hub provides an array of workshops, training sessions, and resources aimed at fostering skill development.

Within SSGMCE, the Skills Enhancement Hub comprises the following specialized centres

Solar Research Centre: This cutting-edge facility is equipped with a range of advanced tools and equipment's. These include a Heat Seal Machine, which ensures secure sealing of components in solar applications, a Sun Simulator that replicates solar conditions for accurate testing and analysis of solar panels, and a Curing Oven crucial for the longevity and durability of solar panels. Additionally, the Centre features a Laminator for encapsulating and protecting solar cells, a Solar Cell Test Apparatus for precise performance measurement, and a Diode Pump Laser Scrambling Machine for specialized solar research processes.

VLSI and Embedded System Design Centre equipped with world-renowned Cadence VLSI Design EDA tools, Agilent's ADS RF Design tools, Xilinx EDA Tools, FPGA, and CPLD Boards, this centre empowers students to excel in digital, analogue, and mixed-signal VLSI design. It serves as a launch pad for future innovators in the field.



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SAP ERP Centre boasts a dedicated SAP ERP Laboratory staffed by experts proficient in FICO, MM, SD, ABAP, and BASIS. Students receive comprehensive training in SAP systems, preparing them for careers in enterprise resource planning.

Electric Vehicle Lab equipped with Trainer Kits for BLDC Drive, Simulators, Battery Management Systems, and a Solar-based Charging Station, this lab immerses students in the emerging field of electric vehicles and sustainable transportation.

FAB Lab: Students can explore their creativity and innovation in the Fab Lab, which features state-of-the-art digital fabrication tools like 3D printers, laser cutters, CNC routers, electronics workbenches, PCB milling machines, and vinyl cutters. This space empowers students to bring their ideas to life using cutting-edge technology.

PLC Automation Lab: This lab provides practical experience in Programmable Logic Controllers (PLC), an essential component of industrial automation. Students learn to design, program, and troubleshoot PLC systems, preparing them for careers in manufacturing and process control.

Dr. Georg H Endress Laboratory: This facility is equipped with advanced instruments for Pressure Measurement, Temperature Measurement, Flow Rate Measurement, and Level Measurement. Students gain valuable experience in precision instrumentation and measurement techniques.

Project Expos

Project exhibitions are events where students can showcase their projects, innovations, or research to a wider audience, including industry professionals and potential employers. These events provide students with networking opportunities and a platform to demonstrate their capabilities.

Students Chapters/ Clubs

Student Chapters are dedicated units within the institution that focus on specific areas of interest or academic disciplines. These groups often organize events, workshops, seminars, and activities related to their respective fields, allowing students to deepen their knowledge and skills in a supportive community.

Participative Learning

Participative learning, also referred to as active learning, is an educational approach in which students actively engage in the learning process through a variety of activities and interactions. Our institute, wholeheartedly embrace participative learning as a fundamental element to enhance students' educational experiences. It includes



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Collaborative Group learning

Group learning activities at SSGMCE are designed to foster collaboration, problem-solving skills, and effective communication among students. These activities encourage students to work together to tackle engineering challenges and enhance their understanding of complex concepts. This includes following initiatives.

Group Projects: Institute assign group projects that require students to work together to design, build, or solve engineering problems. These projects simulate real-world scenarios and help students develop teamwork and project management skills.

Design Competitions : Participating in design competitions, either within the college or at external events, encourages students to collaborate and innovate. These competitions often involve designing and building prototypes or solutions for specific engineering challenges.

Laboratory Experiments: Many courses incorporate group-based laboratory experiments. Students work together to conduct experiments, collect data, and analyse results, reinforcing their understanding of theoretical concepts.

Clubs and Societies : Students clubs or societies related to specific fields, which provides an opportunity for group projects, workshops, and networking.

Hackathons: Hackathons are intense, time-limited events where students work in teams to develop innovative software or hardware solutions. They promote creativity, problem-solving, and quick thinking.

Interdisciplinary Projects: Institute encourage collaboration between students from different engineering disciplines, promoting a holistic approach to problem-solving.

Guest Lectures/ Workshops

Guest lectures and webinars featuring industry experts and corporate professionals provide students with an enriching participative learning experience

Seminars:

Seminars and paper presentations conducted by students serve as powerful tools to foster a participative learning experience for both the presenters and the audience. When students take on the role of seminar presenters, they assume the responsibility of comprehensively understanding and explaining the topic. This sense of ownership motivates them to conduct thorough research and meticulous preparation, resulting in a deeper level of understanding of the subject matter.

Paper Publication:

Student research publications serve as dynamic and participatory learning opportunities, offering numerous advantages. This process sharpens their communication abilities, helping



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them express ideas clearly, structure arguments logically, and use appropriate academic language effectively. At SSGMCE, the publication of a paper in a conference or journal is a mandatory requirement for final-year students, emphasizing the institution's commitment to fostering research and academic development.

Self-Learning

At SSGMCE, students adopt self-directed learning by actively engaging in a diverse range of MOOCs offered by prominent platforms such as SWAYAM, NPTEL, Coursera, Udemy, and others. These courses enable them to acquire valuable knowledge and skills across various disciplines, broadening their horizons and nurturing a culture of ongoing self-improvement

Problem-Solving Methodology

The problem-solving methodology is a foundational approach to learning in our institute, providing students with the skills and mindset required to effectively tackle intricate engineering challenges. This approach encompasses various components, including:

Project-Based Learning (PBL)

PBL is an innovative and transformative educational approach that places students at the centre of their learning experience. In PBL, students engage in hands-on projects designed to address real-world problems or challenges. They often work in teams, simulating real-world engineering environments where collaboration and teamwork are essential. This promotes effective communication and the development of interpersonal skills. PBL equips them with practical skills, nurtures critical thinking, fosters innovation, and prepares them to address complex engineering challenges in their future careers.

Aptitude Training

Aptitude training enhances students' cognitive abilities, mathematical skills, and logical reasoning competencies invaluable in engineering problem-solving. At SSGMCE, aptitude training courses are provided to students to enhance their skills.

Innovation and Incubation Centre (IIC) Activities

IIC activities promote innovation, creativity, and entrepreneurial thinking. These initiatives empower students to apply their problem-solving skills in real-world situations and potentially launch their own projects or ventures.

Dr. S. B. Somani
Principal




PRINCIPAL
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