

7.3 Institutional Distinctiveness

7.3.1 Portray the performance of the Institution in one area distinctive to its priority and thrust within 1000 words

As society transforms and become more interconnected, educational models beyond conventional class rooms is a necessity. This aims to inculcate research, innovation and entrepreneurship in young minds. Disruptive technologies such as IoT, artificial intelligence, robotics and 3D printing prepare the students to become more open minded and collaborative with their design process which finds huge demand from industries. As one of the leading institute in this state running NBA accredited courses, Sree Chitra Thirunal College of Engineering (SCTCE) aims to expose the students to a global way of thinking, future technologies and working across disciplines.

One of the institution's distinct priorities is the integration of experiential learning into its curriculum. This commitment is exemplified through our active participation in LEAP (Learn Engineering by Activity with Products). Originally developed by Dr. TA Gonsalves, Former Director of IIT Mandi is an innovative educational framework aimed at bridging the gap between academic concepts and real world engineering applications. LEAP is designed to enhance engineering education through hands-on activities and product based learning, fostering a culture of innovation and practical application. The programme emphasizes experiential learning, encouraging students to engage in activities that result in the creation of tangible products. This approach not only reinforces theoretical knowledge but also develops critical thinking, creativity and problem solving skills, essential for a successful engineering career.

One of our key strategies has been the seamless integration of experiential learning into our existing curriculum. By embedding project-based learning activities within various courses, we ensure that students can apply theoretical concepts in practical scenarios. This integration spans across multiple disciplines, allowing students to gain hands-on experience in fields such as mechanical engineering, bio technology and bio chemical engineering, electronics engineering and computer science.

To effectively implement this program, we have prioritized faculty development. Our faculty members participated in the specialized training sessions provided by LEAP to equip them with

the necessary skills and methodologies for guiding students through hand-on projects. This continuous professional development ensures that our educators are well-prepared to facilitate experiential learning and mentor students effectively.

Engaging students is a central focus at SCTCE. We encourage active participation of students in this new form of learning, through various initiatives such as workshops, seminars and hackathons. These events provide students with opportunities to collaborate, innovate and apply their knowledge in practical settings. By fostering an environment that promotes creativity and teamwork, we aim to nurture the next generation of innovative engineers. The hands-on projects require them to apply engineering principles, use advanced tools and technologies and engage in critical thinking. Moreover working in teams helps them develop essential skills such as collaboration, communication and project management. As a result, our graduates are well prepared for the demands of the engineering industry and possess a competitive edge in the job market.

Our engagement with experiential learning has also facilitated stronger ties with industry partners. We collaborate with numerous organizations to provide students with practical exposure and mentorship from industry experts. By aligning our educational objectives with industrial needs, we ensure that our graduates are equipped with relevant skills and knowledge. To continually improve our participation in such programmes, we have established a robust evaluation and feedback system. SCTCE is committed to further enhancing the experiential learning initiatives through the following:

Integrate multidisciplinary modules: Students are offered with training in latest technological breakthroughs such AI through their offering as Minor Courses. New activity modules such as Drone making workshops are also introduced to enhance these skills.

Advanced facilities: Investing in state of the art laboratories and maker spaces to support hands-on projects and innovation. The Government of Kerala has recently sanctioned 80 lakhs for the establishment of a Facilitation Centre for Student Innovation and Entrepreneurship in this connection. The government has also established other sophisticated labs in specialized domains to further improve the capabilities of the institute.

Industry sponsored PG courses: SCTCE has joined hands with TATA Elxsi to commence a new M. Tech programme in Auto-electronics in this year.

Global collaboration: Establishing partnerships with international institutions and organizations to provide students with global exposure and collaborative opportunities. The twinning programme envisioned in collaboration with Birmingham City University is about to take off in the near future.

Research and Development: Encouraging faculty and students to engage in research projects that address pressing engineering challenges and contribute to societal development. Several funded projects in this connection are under different stages of execution.

Proficiency in soft skills: The career opportunities of the students are enhanced by specialized training in global languages under the aegis of Career Guidance and Placement Unit of SCTCE. Training classes in German Language has started recently in connection with this.

SCT College of Engineering's involvement in the incorporation of experiential learning to the curriculum exemplifies our commitment to providing a distinctive and impactful engineering education. Through hands-on learning, innovative projects and industry collaboration, we are preparing our students to become leaders in their fields. As we look forward to the future, we remain focused on enhancing our educational offering and contributing to the advancement of engineering knowledge and practice.