

Response:**1. Title of the Practice: “Industry Readiness Programme”****Objectives:**

- To bridge the skill gap and make the graduates ready for the industry.
- Acquire right skillset and knowledge to become employed and stay productive in current industries.
- Strengthening the skills of students to prepare them for the changing roles and demands of Industry.
- Improve Soft Skills and Professional Readiness.
- To Facilitate Industry Connections and Employability

The Context:

Appropriate teaching and training methods had to be adopted which will inspire students to acquire the skills needed for the workforce in industry. Our institution is dedicated in enhancing the employability skills in students. The major challenge is to plan the activities meticulously as part of academic calendar. Identifying suitable resource persons requires significant time and effort and had to be balanced with regular curriculum work.

The Practice:

Some of the major activities taken up by the institution in achieving this goal are:

- **LEAP (Learn Engineering by Activity with Products)**

LEAP provides IIT Style, industry-oriented Project Based Learning to Engineering students by focused programs from 1st Year to 4th Year B.Tech. IIT Madras Incubation Cell functions as the Nodal Centre which coordinates the activities under LEAP in engineering colleges. All LEAP activities involve building products and learning by doing. LEAP enables engineering students to work on real-world projects during the semester in their colleges. They work in multi-disciplinary teams to solve real problems of society and deliver working prototypes within given time and cost constraints. As the LEAP initiative sets sail, students are poised to embark on a journey of enriched learning experiences, armed with the tools and knowledge to shape the future of technology and innovation. 119 students attended the program in this year.



Inauguration of LEAP Programme



Students involved in Reverse Engineering

▪ **START -2024 (Space Science and Technology Awareness Training)**

SCTCE hosts a Space Training programme for final year students START-2024 which is organised by Indian Institute of Remote Sensing, ISRO, Dehradun. The programme is conducted through ISRO E-CLASS platform <https://eclass.iirs.gov.in>. In this year START was conducted from 24 April to 10 May. START is an introductory level online training in space science and technology for the final year under-graduate and post-graduate students. The programme covers various domains of space science, including Astronomy & Astrophysics, Heliophysics & Sun-Earth interaction, Instrumentation, and Aeronomy. It will be delivered by the scientists from Indian academia and ISRO centres. Under the expanding programs in space sciences, ISRO encourages greater participation from academia, which was found to be in-line with our institutions practice of imparting the industry readiness for our students.



Space Science and Technology Awareness Training

- **LEARN GERMAN at SCTCE**

SCTCE organises German language training program. Learning a foreign language helps to improve brain and memory functions, boost creativity and self-esteem and increased career opportunities. Engineers are highly in demand in Germany, especially electrical, mechanical and civil engineers. This high demand is due to the flourishing automobile and machinery industry in Germany. Moreover, there is ample opportunity for higher studies in Germany for engineering graduates. 31 students registered for the program in this year. Students were able to clear the examinations conducted for A1 and A2 levels by SCTCE.

- **PYTHON FOR DATA SCIENCE**

Python is the top preferred language for data science and research with hundreds of libraries and frameworks. It is highly suited for big data, machine learning and cloud computing, and offers lot of avenues in industry for experts in Python. SCTCE organises course on PYTHON FOR DATA SCIENCE. The course aims at equipping participants to be able to use python programming for solving data science problems. The participants are benefitted with a thorough understanding of data science principles, including statistics, data manipulation, and machine learning. 90 students registered for the course in this year.

- **ADVACNED PYTHON COURSE**

SCTCE organises course on Advanced Python Programming. Those students who are successful in the course *Python for Data Science* join this programme. Topics such as advanced loop concepts, multithreading and multiprocessing, list comprehensions, and intermediate data structures are covered in this course.

▪ **SOFT SKILL DEVELOPMENT**

CGPU cell of SCTCE conducts soft skill development program every year to enable students to become self-confident individuals by mastering interpersonal skills, team management skills, and leadership skills. It also helps students to develop all-round personalities with a mature outlook to function effectively in different circumstances. The training program commences in the first year and ends with exhaustive training in sixth semester. In addition, we offer industry specific training programme prior to campus recruitment.



Soft Skill Development Training



Soft Skill Development Training

▪ **BOOTCAMP ON DRONE/UNMANNED AIRCRAFT SYSTEM**

In association with National Institute of Technology (NIT), Calicut, SCTCE organises Bootcamp on Drone/Unmanned Aircraft Systems (UAS), Learning by Doing. The workshop is a 40 hours programme, which comprises lectures on Drone/UAS technologies, basic simulation of the fluid flow and structural analysis of an aero-foil to understand the concepts of aeromechanics, hands-on session on quad-copter assembly and glider making.

Evidence of Success:

- **LEAP** emphasizes experiential learning, providing students with opportunities to actively engage with products relevant to their studies. Students experienced a hands-on training on reverse engineering. This collaborative approach enriched their learning experience and prepared students for success in an interconnected world.
- SCTCE is an approved nodal centre for **ISRO START**. A total of 48 students registered under our nodal centre. Out of the 48 students, 17 students satisfied attendance criteria for appearing for the final examination. Out of the 17 students who appeared for the exam, 16 have passed with high grades.
- 90 students registered for the course on *Python for Data Science* in this year.
- 14 and 4 students qualified the examinations conducted for A1 and A2 levels respectively of German language training.
- The student placement success rate has been consistently good and remained strong even during economic downturns.
- 42 students registered for the bootcamp on drone/unmanned aircraft system

Problems Encountered and Resources Required:

One of the difficulties faced in START-2024 program was that the eighth semester classes were coming to an end within three days of the start of the program. Such difficulties including the timing and the conduct of the program was communicated by many nodal centres including SCTCE, during the feedback session of ISRO START.

As a subsequent activity of LEAP, SCTCE has been offered a Tinkerer's Lab sponsored by Maker Bhavan Foundation for which 1500 sq. ft. building space is to be earmarked. As the College has just enough building space to conduct the academic programmes, we are trying to lease a building nearby to SCTCE.

2. Title of the Practice: “ICT Enabled Academic Management System”.

Objectives:

- Offer an integrated suite of software application to automate the campus giving an edge in addressing all the academic and administrative requirements of the institution.

The Context:

Contextual features that demands this practice are

- To enable teachers and administrators to increase their productivity by reducing the time involved in data management, thereby improving the quality of education
- Transparency in teaching-learning process for improving student performance.
- Effective implementation of Outcome based education to achieve academic goals.

The Practice:

All the curricular and non-curricular activities of our institution is planned in accordance with college academic calendar which is in adherence with the university academic calendar. The teaching learning process of the institution is facilitated with the help of a tool named SCTCE ET-Lab. The tool consists of Web application and Mobile application for Staffs, Students and Parents.

Every faculty in the institution should maintain a separate course file for theory, practical, project and seminar courses handled by them. It contains the complete details of the course such as syllabus, course outcomes, CO-PO/PSO mapping, subject plan, subject coverage, attendance, assignment questions, internal tests, details of students' performance etc. With the help of the tool faculties can generate the course file. Faculty feedback is collected after 4th class and at the end of the semester. The Teacher's performance index for the respective subject handled is computed. The feedback details are forwarded to the faculty member for corrective measures, thus aiming continuous improvement in the teaching learning process. Feedbacks and surveys are conducted using ETLab software.

Student attendance is marked using the tool so that the students as well as the parents can monitor the same. Faculties make use of this tool for uploading study materials also.

Under the HOD direction, the staff advisor evaluates the academic progress of students. The staff advisors maintain periodic interaction with the parents about the performance of slow learners. An intermediate report on performance of the ward is sent to parents in the mid of the semester. The report includes both attendance and their academic performance. ET lab has

SMSalert/Email facility. Remedial classes are arranged for helping weak students. Class PTA meetings are convened by HOD together with staff advisor and other faculty members. CO based mark entry is done for assignment and internal tests. Once the university exam results are announced the subject wise attainment can be calculated using the tool thereby setting target for the next year.

Evidence of Success:

After introducing ET Lab, the following improvements are noted.

- Timely planning, execution and monitoring of academic activities.
- Automating many of the tasks associated with admissions and enrolment, makes the process more efficient and reducing the likelihood of errors.
- Structured monitoring has instilled in students' strong code of conduct leading to improved attendance and better academic performance.
- Easy access to student details and monitoring helps faculty to enhance their rapport with both students and parents.

Problems Encountered and Resources Required:

- Effective implementation of remedial activities based on attainment is not possible due to delay in university examination results.
- Proper quantitative assessment of co-curricular and extracurricular activities cannot be done as such activities are not incorporated in the curriculum.
- Software needs to be updated with change in University regulations.