

The best practices are benchmarks established by Industry and Institutes of eminence .LTCE has been continuously aiming to attract such best practices for improving the quality of Engineering education .Though many of our students are bringing laurels through their individual achievements , we want to introduce certain best practices which will benefit the student community at large .Amongst the best practices followed by LTCE , e.g. ERP , Alumni network , Research labs , MOU's with industry and Institutes of eminence , the following two are yielding better results.

From year 2020-21 the institute has introduced 3 new courses in emerging areas ,which is the need of hour .The following new courses have been added

I) BE (CS with Artificial Intelligence & Machine Learning)

II) BE (CS with Data Science)

III) BE (CS with IoT , Cybersecurity & Blockchain Technology)

Following best practices followed by LTCE have contributed towards the achievement of the vision / mission and objectives as well as improvement of quality of under graduates of LTCE. These activities have also served the purpose of socio-economic development and inclusivity on a macro level , thus adding value to the student progress.

Best Practice 1. Title of the Practice : Strengthening of Student Support and Welfare through Project Based Learning. (PBL)

Goal :

- To extract leadership qualities and technical outcome of students through financial and nonfinancial assistance.
- To develop managerial capabilities through project management.
- To develop holistic approach for the engineering problems.
- To practice time management.
- To address the issues of socio-economic development inclusivity.
- To add value to the student performance.

The Context

- Engineers seem to thrive on competition at student level due to resonant energy present inside them. This is in reference to provide platform for students to show their intellectual skills and talent in the events organised at National and International levels.
- To develop techno-commercial acumen in the learner.
- To develop inquisitiveness about how stuff works and develop penchant for research.
- The students learn the whole gamut of designing , developing fabricationg the vehicle & testing of integrity under static / dynamic conditions.

The Society of Automotive Engineers (SAE) and ROBOCON club is established at institute level and students from different branches are participating enthusiastically. Institute provides inhouse resources financial support for participating in different events and competition. Students are passionate about these activities and participate whole heartedly. The activity consists of developing a CAD model prototype under the guidelines given by SAE . The students have to qualify the virtual design competition first then they are allowed to make a prototype. On qualifying in virtual design they are given an engine of 500 cc . The students have to develop / build all terrain vehicle which is tested in static / dynamic events.

Similarly ROBOCON gives theme every year . Students have to design develop the robot in line with the theme .

Evidence of Success : We have participating groups every year . This tradition shows the passion for the activity.SAE members develop the car and compete in the events.i.e. Formula SAE (Team SCHNELL RACING), BAJA (Team TT), ROBOCON India and other super mileage competitions organised at National and International levels. Many students are attracted to our institute owing to encouragement of ours to this activity. Many passionate students have been appointed by companies like Mahindra Mahindra Ltd. . Some students have pursued higher education in the fields of robotics , automobile abroad .Some students have been appointed as SAE coordinators globally. Team TT Racing India (SAE BAJA) Our SAE BAJA Team got an opportunity to participate in SAE CHINA competition after their success in MARYLAND , USA in April 2018. Our team stood third amongst 90 teams all over world. It was the only Indian team to participate. Subsequently our students Shubham Mhapankar and Bhoomik Momaya have been appointed as liaison officers for SAE CHINA for internationalising the competition. Shubham Mhapankar has joined Oxford university to pursue masters in Motorsports. SAE BAJA Team selected for USA Event Our BAJA Team stood 6th among 450 colleges in SAE BAJA virtual 2017 held at Christ University, Bangalore in June 2016. The team was selected for SAE BAJA INTERNATIONAL USA among top 100 universities all around the globe and became one of the 5 Indian teams to represent the nation at worlds toughest competition to be held at MARYLAND, USA. In Enduro Student India 2017, which was held at Coimbatore, the team stood overall 22nd among 74 institutes and also stood AIR 7th in Business presentation, AIR 20th in Cost event, AIR 24th in Manoeuvrability and AIR 19th in Endurance race and achieved top 15 ranking in Design at SAE BAJA India held at Indore. Conceiving, designing, building and testing a formula race car at student level and then competing against various other teams from different universities all over the country is a challenging task but exciting as well. Its a demonstration of creativity, engineering expertise and engineering skills by a group of passionate students and that's what a team of 10 engineering students known as team Schnell Racing. The team has participated in FORMULA BHARAT 2017 which was held in Kari Motor Speedway, Coimbatore from 26-29th January 2017. Team was ranked overall 19th among 68 teams that participated in the competition and this being a student engineering design competition the team managed to hold 9th position in the design event. This is what team Schnell Racing is doing since 2014 and did it in 2017 with their car SR38. ROBOCON India: It is an international robotics competition where two teams compete each other on a set of hurdles or problems given in the problem statement. It is broadcasted by the Asia Pacific Broadcasting Union (ABU). Robocon 2015 was the first attempt of Lokmanya Tilak College of Engineering in this

prestigious competition. In its very first endeavour, the team earned praises from colleges from all around India. The team secured a commendable 23rd ranking all over India and 5th all over Mumbai. The team also boasts of being the only team to have a match tied with the 7 time defending champions – Nirma University. Robocon 2016 was the second attempt of LTCE in this prestigious competition. This year 105 teams from all over India participated in this event, among them we stood 6th all over India, 3rd in Maharashtra and 1st in Mumbai. That was the first huge achievement for the team. The team was even awarded with the “BEST ECONOMICAL ROBOT 2016”. Robocon Team (201415) This year theme takes inspiration from Japan’s traditional game Tosenkyo. The theme revolves around the word “asobi” (play), which is also a fundamental philosophy behind Robocon. In “asobi,” playful, unique, original show of skills is often more important than winning or losing, as everyone – friend and foe alike – can applaud and enjoy them. So, in the “asobi” spirit, the theme encourages playful, unique and original robot designs and strategies. The positive result of the competition is still to come.

Problems Encountered and Resources Required : The main problem which the team faced was the testing of the vehicle which requires a proper area with different types of hurdles which are used in the racing track. Team faced problem in the transportation of the vehicle as well as for testing robot due to space constraints. The team had to tow/transport the vehicle everyday for the testing to the nearest open ground that is almost 34 km away which incurred additional costs. Notes (Optional) By participating in these national level competitions the members had a subsequent boost in their confidence level as they interacted to some of the finest engineers from the automotive industries. Being able to represent the nation at the world’s biggest competition is the most appraisable achievement which makes our institute proud of this successful feat. This is the biggest motivation for other nonparticipating students to think out of the box and apply the theoretical knowledge in real life. Students were encouraged to file their own patents as well.

Best Practice 2 . Title of the Practice : Comprehensive Evaluation , emphasis on formative assesment use of ICT tools

Goal :

- Continuous evaluation of students performance.
- To develop punctuality To give chance to student to improve performance
- To enable the student optimize performance through ICT tools.
- To facilitate easy learning A move towards autonomy.

Context :

- Improvement in CO attainment
- Improvement in results
- Improvement in Placements
- Students learn how to connect dots.

The Institute has taken following steps to achieve the goal. Direct and indirect assessments are conducted as per COs. Various tools and performance indicators are used for assessing the level of

understanding of the students. Typed manuals of the experiments (performance) are issued to students. Conducting remedial classes for slow learners and absentees. Maintenance of log book for conducting labs smoothly. Internal answer scripts are shown to the students. Conducting GATE classes for students interested in pursuing higher education / Jobs. Provision of multimedia lab in library for access to publications other study material. Around 650 computers in LAN having internet and bandwidth of 160 mbps. Campus wify with 32 access points Provision of downloadable Springer e-books. Introduction of google classrooms subject wise by teachers. NPTEL Chapter for certification courses. .

Evidence of Success : Continuous improvement of grade by the end of the semester, which in turn helps students in tracking their own progress. Uniformity and clarity of the experiment during explanation of theory by the faculty during laboratory session. Enhancing the learning capability of slow learners and updating students with important topics/ revision of topics with respect to examination. Uniformity of experiments with respect to results achieved by a particular batch and cross verification with the previous batch. Also to make faculty aware about the status of experiments performed. More and more students are registering for GATE examination in the academic every year. Students are getting jobs based on the certification courses completed.

Problems Encountered and Resources Required : Due to continuous evaluation process students gets less time for cocurricular /extracurricular activities. Lack of familiarity with the evaluation system of newly appointed faculty. Problems encountered due to climatic condition and unforeseen circumstances. Less time for faculty to concentrate on research activities and administration work. Changing trends of learning evaluation.

The Year 2019-20 was more or less eclipsed by Covid-19 pandemic , therefore the planned activities could not be conducted. The management had sanctioned a budget of Rs 2.50 lakh for SAE car building competition. Eventhough the activities were planned in odd term of 2019-20 i.e. July to October 2019 , the proposed competitions were in the even term i.e. January to April 2020. Therefore the students could not participate.