



G.S. Mandal's
Marathwada Institute of Technology
Aurangabad

Best Practice-I

Title of the practice:

Student development through participation in co-curricular activities and value added courses.

Objectives of the practice:

- The initiative aims to involve the engineering students in various co-curricular activities like industry specific training modules, technical competitions and activities and providing them with real-world, hands-on exposure to technology.
- To improve the employability of engineers and reduce the time and resources spent by companies on re-training the graduate engineers.

The Context:

According to the United Nations Development Program's (UNDP) India Skills Report 2018, 1.5 million engineers graduate every year, but only 52% are employable. The report also highlights the fact that engineering courses which are linked with industry or corporate through internship or training usually score high on employability as compared to others. Also, student can learn the technology through the co-curricular activities which are closely related to technical specific domain.

The Practice -A: Ready Engineer

Ready Engineer Program is Tata Technologies CSR initiatives to make engineering graduates industry-ready. Students from 2nd and 3rd year mechanical engineering discipline are identified for the training under this program. The program imparts application-based training by industry experts in technical domain training, soft skill training, employability assessment and National Programme on Technology Enhanced Learning (NPTEL) courses to meet the future opportunities of Industry 4.0.

NPTEL, KRACKIN and Aspiring Minds have been selected as the implementation partners for this program. NPTEL provides e-learning through digital and video courses in engineering, the sciences, technology, management and humanities. It is a joint initiative by seven Indian Institutes of Technology (IITs) and the Indian Institute of Science (IISc) Bangalore. KRACKIN, a startup based out of the NASSCOM 10000 Startup warehouse in Bengaluru, is a platform to help improve the industry-readiness of engineering students with timely industry interventions through their web and mobile platforms. Aspiring Minds, a talent assessment organization, helps to enhance soft skill and personality development through credible assessments and training.

The Practice -B: SAEINDIA BAJA / E-BAJA

It is an intercollegiate design competition for undergraduate and graduate engineering students run by the Society of Automotive Engineers (SAE). A team of 25 students from different branches of engineering are participating for this event. Every year near about 350-400 teams from different engineering colleges of India are participating in this event.

A team of students have to create the e-vehicle and the actual working of an all-terrain car at college level and have presented it in front of BAJA committee judges (from different automobile companies). After selection of design through the judging panel students have to fabricate the complete car in the college workshop. They have to test it as per different road conditions and does the iteration in the designs for sustain the car for rough conditions.

After that different team from all over the India have to bring their vehicles at event place and also the different types of technical inspection , static and dynamic testing will get done. After passing the entire test at event place finally the teams will appear for final racing.

Evidence of success:

- Through the Ready Engineer program, students are undergoing the basis training module.
- Students successfully designed, tested the an all-terrain car and a robot at college level and participated at the competition at national level.
- Students team “Squadron” bagged 8th All India Rank in e-BAJA 2020 Competition organized by SAE India, to present virtual prototype of e-vehicle at Chitkara University Chandigarh.

- Team Squadron got 2nd prize in business presentation at national level championship- “ATVC 2020”. ATVC-2020 (Aravalli Terrain Vehicle Championship) is organized on 14th to 18th February 2020 at Vadodara Gujrat. This is a National championship earmarking all the techno freaks across the country.



▪ **Problems encountered:**

- Students get challenged to reduce the cost of manufacturing which subsequently lead to attain accuracy in operation due to low cost material.
- Students face difficulty to manage the timing apart from routine academic schedule
- Students are mostly facing the problem of team work, designing the vehicle and also the manufacturing it.
- They required the proper training for fabrication work, proper resources of availability of material/ components/ parts/ suppliers.

Resources required:

- Around 1000 Sqft area is required with power backup, advanced tools and machines like 3D printing machine, Arena etc.
 - A digital computer lab and class room equipped with high speed broadband internet connectivity and a projector and Mechanical design domain softwares for hands on practice.
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Best Practice-II

Title of the practice:

Innovative practices in teaching-learning student learning using Information and Communication Technology (ICT)

Objectives of the practice:

- The use of ICT aims to improve the teaching-learning methodology/ pedagogy
- To improve the understanding of students through simulation, animation and virtual laboratories.

The Context:

Information and Communication Technology (ICT) in education is the mode of education that uses information and communications technology to support, enhance, and optimise the delivery of information. Worldwide research has shown that ICT can lead to an improved student learning and better teaching methods.

Various ICT Techniques have been implemented at the Institute levels in the teaching learning process. Their specific objectives and practices are very instrumental during the Covid-19 Lockdown situation.

The Practice:

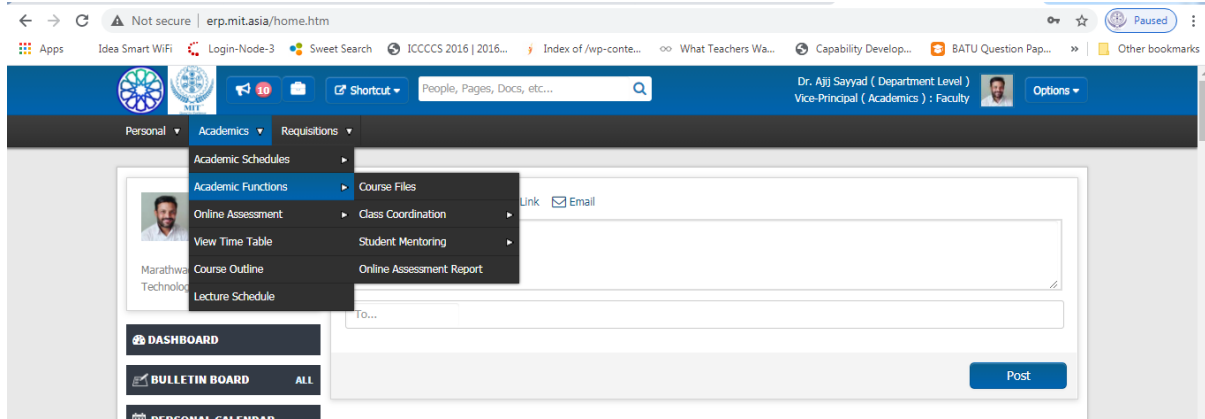
Due to the prevailing conditions arising out of the COVID-19 pandemic in the country and the subsequent advisory issued by the competent authority of Government of Maharashtra, the Institute has suspended all academic, co-curricular, and extra-curricular activities. In view of that, students have been informed accordingly. . It is decided to conduct online activities for students.

Objective of Practice:

1. To provide guidance & support to our students in the current situation when they are out of campus.
2. To help the faculty to supervise the teaching learning process on a routine basis.

Evidence of success:

- Through the online conducted feedback from faculty and students, it has been observed that it helped student to remain engaged during the off-campus situation.
- Faculty put their efforts to identify the challenges and bring connectivity through online mode and minimized their academic loss.



Screenshot of Faculty dashboard available at ERP Solution

Problems encountered and resources required:

It was observed that a few students were unable to connect in online mode through ERP System. Faculty provided the alternative to get teaching material and assessment through Google forms, whatsApp and other online mode.

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