

Institutional Best Practices

Best Practice: 1

1. Title of the practice: MOOC Online Certification Courses: A move to enhance the technical strength of students.

2. Objectives of the practice:

- To inculcate ability of self-learning among students.
- To impart sound technical knowledge into principal stakeholders of Institute i.e. students and faculty
- To groom students with innovative trends in the field of Engineering.
- To help students in preparing competitive examinations like GATE, etc.

3. The Context

Engineering students face challenge of proving their technical competencies. As the competition for job is becoming more intense, students have to gain technical expertise in specific areas. The industry expects ready to use resources. They expect students from Institute who can start project assignments without undergoing any training. To bridge the gap between the industry demands and university curriculum, The Institute should invest time in students to make them technically compatible and employable. In MOOC courses, quality lectures by recognized speakers and Institutes help students to make basic fundamentals of domain area crystal clear.

4. The Practice

The Institute encourages a large number of platforms for online learning(MOOC courses) that include NPTEL, SWAYAM, COURSERA, edx, NASSCOM future skills Prime, Udemy, IBM Edunet, Matlab onramp, IIT Spoken Tutorials.

A detailed analysis of course contents and students requirements for to attain required outcome technical job skill, technical knowledge, Communication Skills, R&D, Entrepreneurship is performed and a group of courses are identified for students, specific to their department and class.

The students are encouraged to complete these courses and necessary support is provided to complete these courses.

The students are made aware about the importance of these MOOC courses and the benefits of completing and acquiring certificates. A large number of students usually appear for these courses. The courses from reputed institutes and companies are included.

5. Evidence of Success

Hundreds of candidates including students and faculty have enrolled for different courses. Candidates solve assignments and quiz independently referring video lectures indicates improved pace of self-learning. Students gained confidence in facing technical interviews. Thus, this activity has resulted in substantial increase in placement of the students.

Following are the some Prominent Achievements

- 1315 Students placed in various multinational companies in last 4 years
- NPTEL Local Chapter secured 2nd Rank in Maharashtra and 56th Rank in India with 89 Toppers and Gold Certificates in NPTEL Examinations and 3 times in Top 100 Rank in India
- Faculty and students published more than 541 papers and 17 books
- 754 internships completed by students in various fields in last two years
- 10th position in 'Red Hat-IT Aptitude Test India 2021'-Ms. Pooja Chavan
- Two teams of students got selected for SIH-2022 Final Round
- 21 patents have been filed and published by faculty and students and they have also registered for their start-ups

6. Problems Encountered and Resources Required

In order to reserve time for this activity in busy schedule, students and faculty have to take extra efforts.

Best Practice: 2

1. Title of the practice: Skill Development Program

2. Objective of the practice:

All the Departments are striving for excellence in skill-based learning. To serve this purpose, various Departments incorporated the use of such a learning platform to the Students.

Skill Development Program has predetermined objectives as listed below:

- To provide an effective learning platform to Student.
- To sharpen a set of skills of the students.
- To inculcate professional values as required in employment and corporate world.
- To develop creativity/ ability amongst the students to think out of the box and organize that thinking to create something useful
- To involve the students into an extracurricular activity with exclusive tool
- To explore the conservational thoughts and activities which are beyond the core curriculum

3. The context:

The Skill Development Program introduced by the Institute was an attempt to provide a learning platform to the Students. We have a Center of Excellence on emerging area and technology. With an excellent initiative from the faculty and good response from the students, the institute has started more than 75 centers in diverse areas from Artificial Intelligence and Data Science to Mathematics, English and Ethical Values.

This was an overall development program exclusively developed for the students in order to develop a technical and communication skills as required for their employability as well as entrepreneurial abilities. The program covers lectures, seminars and training mainly focusing on the Soft Skills, Technical Skills, Scientific Point of View, Communication Skills, Readings Skill, etc.

4. The practice:

These centers primarily focus the thrust areas viz. AI & ML (Artificial Intelligence and Machine Learning), DS (Data Science), Cloud Technologies, IoT (Internet of Things), Robotics & Automation, Agricultural Technologies, Cyber Security, Mobile and Web Development, Woman Empowerment, and even on the R&D related activities through MATLAB & Simulink. Various programs like Internships, hands-on-trainings, expert sessions, skill development programs, project competitions etc. are organized to encourage and skill developments of the students and faculty with in-house financial support. The students are encouraged to participate in various project competitions and Hackathons.

A large number of regular courses have been started as a result of the establishment of these centers in the institute. These include the

- UG and PG courses in AI & DS
- PG course in Robotics and Automation
- B.Voc. courses in Cloud Computing and Robotics and Automation
- Five Honor/Minor Degree Courses in AI & ML, Data Science, IoT, Cybersecurity and Robotics and Automation.

5. Evidence of success

These centers have been quite successful so far in terms of the activities conducted and the achievements. For example, in a recent Hackathon conducted by NASSCOM (in collaboration with Analyttica) 1137 students (out of total 1400) participated in the prerequisite course and 903 students qualified for the Hackathon. Two of our students were in top 20 ranks in India (second and second prize in Maharashtra state and NASSCOM has identified our institute as the best performing institute in India and invited the Principal for the award ceremony). Students participate in various technical events.

6. Problems encountered and resources required:

- Interest and involvement of faculty and students
- Motivating students to be the part of this enchanting and appealing journey
- To create a balance between Extra work and regular studies
- The activities of these centers are currently carried out in the departmental laboratories which do not have the adequate computing and other facilities required. Hence, we wish to either modernize these laboratories or establish new centers with state-of-the-art computing and other facilities as per the requirement of the center.
- We plan to connect the centers with the relevant industries and agencies for the benefits of the students and mutual benefits. We also plan to introduce advanced courses through these centers.