

Best Practices

Title of the Practice 1: CO Teaching (Industry Driven Electives)

Objectives

Rapid developments are happening in technology, which is transforming every possible domain. Thus, there is a need for strong partnerships between academic institutions and the industry. The best way to bridge the gap is to collaborate with the industry and get them involved in the teaching learning process. **Co-teach** is a new offering for students which gives an opportunity to learn from industries Subject Matter Experts and Practitioners. This practice aims to make students industry ready by providing application-oriented exposure to fundamental concepts, and by exposing them to industry best practices.

Context

Co-teaching with Industry personnel is introduced in every department for at least a single course in a year. All departments are mandated to invite an Industry expert to teach one elective course, wherein up to 100% of syllabus is delivered by the Industry associate. This brings an industrial flavor to the course, and unique and novel feature of teaching and learning in the academic model.

To bridge the gap between industry and institution, and to introduce latest industry trends, elective courses with a credit of 3 for UG and PG have been introduced and are taught to students by experts from industry. This concept has attracted good quality students in all the disciplines of engineering to get the job in the industry and they will be industry ready by the time they complete their degree. At the college level, a co-teaching approach is one way for experts in different content areas to merge their expertise to help the learning process

The process of framing the curriculum starts with its design. During curriculum design, industries and academic institutions carefully choose the components and structure to be included. Well known and popular industries design their own courses as per their needs and offer them as Electives to final year students. This is one of the finest and fruitful models working successfully. Students who opt for those electives will undergo training and qualify in the examination. This training mode provides a near classroom experience including white boarding, lab exercises, and course materials. Also, they develop Course Slides, Facilitator Guides, Student Exercises, Case Studies and Lesson Plans. Some industries also develop Student Project wherein, registered students get assistance to do their projects.

Practice

- A three-credit course titled 'Industry-Driven Elective' is offered.
- Departments assign a faculty member who handles evaluation process and interacts with students and industry person.
- Elective syllabus contents created by industry partner.
- Targeting 100% delivery of the overall 40-hour course by industry subject matter.
- Co-teach sessions are planned based on the inputs received from the institution.

Evidence of Success

- Direct interaction of students with industry experts by experiencing technology
- Students will improve the application-oriented knowledge and will get an exposure to industry best practices
- Students get exposed to industry methods of teaching and learning
- Case study-based learning will strengthen the basic problem-solving skills

Problems Encountered and Resources Required

- Scheduling of common planning time
- Maintaining successful partnerships from year to year

Title of the Practice 2: Paper Seeing

Objectives

- Lends transparency to the Examination Process and Evaluation.
- The system should provide a feedback:
 1. To the students regarding their strengths and weaknesses; and
 2. To the teacher as to how far she/he has been able to satisfy the students and to improvise his/her approach and evaluation method.
- A student who is not satisfied with SEE evaluation can apply for grievance valuation which makes the process open and student friendly.

Context

- The institute ensures that the evaluation system serves as a resource in the process of learning. The evaluation system, along with teaching, acts as an integral part of facilitating learning by the student. The evaluation process should involve Continuous Internal Evaluation (CIE), the conduct of Semester End Examination (SEE), the evaluation of answer scripts, and displaying the performance of students. It is in this context that the paper seeing practice is chosen and introduced for SEE exclusively.
- The faculty needs to be more observant to conduct the evaluation process and efficiency.

The Practice

- Provision of SEE paper seeing is only for theory papers.
- The time and venue for showing the answer scripts of various courses of the programme shall be announced by the office of CoE.
- All the students are eligible to see their answer script within the notified time. The attendance forms are made available in the department and students must put their signature on the attendance form prior to the answer script see.
- Question paper along with a detailed Scheme and solution for all the courses shall be issued to the respective course instructors in designated classrooms.
- There is no provision for the student to interact with fellow students during the paper seeing process. Students only must interact with the faculty to get clarifications for further action.

- The students are not allowed to carry any other type of electronic gadgets inside the paper seeing room.
- The students can approach the course instructor one by one.
- The Rooms allotted for paper seeing are installed with two CCTVs
- Students are not permitted to write or mark anything on the answer scripts. If such attempts are made, disciplinary action are initiated.
- During the process, if there are any corrections in marks awarded, the course instructor shall submit the same to the HoD, which in-turn shall be submitted to CoE through the DC of the respective departments for accommodating change in marks/grades.
- Grievance Redressal: If student is not satisfied regarding evaluation or award of grades, even after the paper seeing the student can make an appeal to the HoD in the prescribed format. After approval from HoD, the grievance valuation will be conducted by an expert committee.

Evidence of Success

- Paper seeing System opened and strengthened transparent communication channel between teachers and students.
- Student involvement in the process has improved.
- Transparent and fair evaluation is done.

Challenging Issues

- Students take this opportunity to pressurize the junior faculty to get the marks increased if they find an opportunity to move to higher grade by one or two marks.

Title of the Practice 3: Time Efficient Automated Practice Oriented Teaching/Learning Aid

Objectives

- Available 24/7 – Accessible anytime and anywhere through cloud service.
- Practice oriented learning – Involves Solving of real time examples and follows Industry best practices
- Assessment and Auto-Evaluation – Provides facility to conduct lab and theory internals. The system involves an auto evaluation tool which provides accurate and instantaneous results.
- Positive Competitive Environment – By providing ranking, it creates a competitive environment among students.
- Reports & analysis– Generates various reports such as performance, participation, attendance etc. based on students' performance.
- Digital records – Captures student performance and generates records as maintained in labs.
- Virtual Classroom – Faculty can monitor and mentor the labs remotely

Context

- Lab conventional timings – Students implement the concept learned only during the lab hours.
- Burden on faculty – Faculty could hardly concentrate on every individual due to the time constraint as well as the routine work.
- Less industry best practices and application-based learning – As the implementation was only during the lab hours could not allocate much time for the best practices and application-based learning.
- Need for continuous internal evaluation and manual data recording – Manual evaluation on student performance and participation required to exhibit student progress.

Practice

To relish the experience of learning, we have 5 different learning components for each topic in a Course. Each of these components is unique and contributes to a deeper understanding of the course.

- i-Analyse -- This session offers an exciting way of learning through analyzing and exploring code snippets. This component comprises numerous brainstorming exercises like Code fill-ups, Code Jam, Predict the output, etc., These exercises help students to improve their logic building skills, testing skills, Code maintainability skills and Code debugging skills.
- i-Practice – This session is the warehouse of engaging and educating scenario based, situational based, application based, theme based and game-based problems. The essence of learning through the practice-based approach is achieved through this component
- i-Lab – This session constitutes all the college prescribed lab programs. The regular lab sessions are conducted through this session. Also, the lab internals and the lab viva are carried out by the same with full control on the student cheat threat.
- i-Apply – This session is built with a motto of exposing the students to the industry-oriented problems as well as developing them according to the industry needs. This session provides the student an opportunity to implement his conceptual knowledge as well as logical reasoning.
- i-Assess - Through this component, students are tested and measured for their understanding in the Course. The students' performance metrics are tracked throughout the course using data visualization and reporting features motivate them.

Problems encountered and Resources required

- Desktop / PCs
- Good internet speed.
- Updated web browser