

7.2 Best Practices

7.2.1 Provide the weblink on the Institutional website regarding the Best practices as per the prescribed format of NAAC:

Title of the Practice 1 - Alternative Assessment Tools

Objectives of the Practice

To analyse the course outcome through alternative assessment method like conducting various activity, filed visit and their discussions, taking courses in online platform, and submitting the assignments, model making based on various concepts etc. as a part of the course.

The Context

The practice was bit time consuming and proper planning and scheduling of these activities must be from the beginning of the semester.

The Practice

Following are the details of the Practice by different faculty members:

- a. Mechanical Engg. Dept. - Introduction of Coursera course Machine Design Part I by Georgia Tech as part of CIE component for 5 marks
- b. Civil Engg. Dept. - Course; Environmental Studies-students were asked to select one topic from a course, conduct field visits and submit the details in the form of reports/presentations/live demonstrations.
- c. Electrical and Electronics Engg. Dept. - Agriculture Engineering Open Elective – Activity for 10 Marks

Sample Activity

Keenly observe any plant/ crop in your field or garden or near your habitable space (house/hostel room) for one week and answer the following questions

- a. Name of the plant/ crop also mention its scientific name and classification it belongs.
- b. Identify the type of soil in which the plant/ crop is grown.
- c. Identify the water requirements of the plant/ crop.
- d. Identify the components required to build a system to continuously monitor the plant/ crop (Just mention the names).
- e. On what basis u have choose the above components.
- f. With a block diagram indicates the proposed system
- g. Expected cost (cost analysis) for the system.

The students got a chance to step in and interact, understand the ecosystem. Agriculture plays an important role in Indian economy and through this activity the students understand how everyone can be self-sustained in their own ways by doing at least garden farming.

Limitations: Majority of the students fails to understand the type of soil, water requirements etc. and how to interface each module to make a smart agriculture system even though they were well in their own domains in the initial phase. Through keen watching and understanding later they cope up the same.

Evidence of Success

Provide evidence of success such as performance against targets and benchmarks, review/results. What do these results indicate? Describe in about 40 words.

The students were able to design a smart agriculture system, that the plants/crops can be continuously monitored from remote locations. The system can be easily implemented during the major project phases. Students were able their activities to the theoretical aspects covered in the classes.

Problems Encountered and Resources Required

Following problems were observed during the process:

- a. The process is time consuming
- b. Identification of field in real time
- c. Field visit

Notes (Optional)

In the 92nd Annual General Meeting of the ICAR Society, officials have informed that the New Education policy will be helpful in making agriculture sector more prosperous by implementing agriculture and allied courses in all higher institutions. So basic courses like Agriculture Engineering can be implemented with more experiential learning component.

Title of the Practice 2: CO-Teaching (Industry Driven Electives)

Objectives of the Practice

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.

The 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 flavour 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.

The 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