Appendix-I

Best Practice–I

1. Title of the Practice

SWAYAM- NPTEL (National Programme on Technology Enhanced Learning) Online Certification Courses: A move to enhance the technical strength of students.

2. Goal

The goals of offering NPTEL Online Certification Courses at Institute are as follows:

1. To inculcate the ability of self-learning in students.
2. To impart sound technical knowledge into principal stakeholders of Institute i.e. students and faculty.
3. To groom students with innovative trends in the field of engineering.
4. To help students in preparing competitive exams like GATE.

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. Industry demands ready to use resources means they demand students from Institute who can start project assignments without undergoing any training. To bridge the gap between the industry demands and university curriculum, Institute should invest time in students to make them technically compatible and employable. NPTEL online courses strive to provide excellent technical knowledge through video lectures of IIT professors. Quality lectures by recognized speakers and Institutes help students to make basic fundamentals of domain area crystal clear.

4. The Practice

NPTEL announces the commencement of different online courses every semester. NPTEL introduces more than 120 online courses for aspirants. Institute has formed local chapter of NPTEL. Special Point of Contact (SPOC) performs following activities:

1. Registration of candidates to course.
2. Communicating the schedule of course and online examination to candidates.
3. Getting sanctions on concessions for online certification.
4. Communicating result and dispatching certificates to candidates.

After the start of course, instructor of course uploads video lectures for candidates. Based on the content of video lecture, candidates solve quiz and assignments. Assignments are evaluated weekly. Course progression of candidate is monitored on regular basis by mentor. Online forum of candidates all over India is formed to share views, ask queries about the topic elaborated in video lecture. Cumulative result of assignment and online examination is announced after the course completion. Candidates appreciated for their special achievement. Candidates are honoured with certificates from NPTEL according to final accumulative score. The different types of certificates offered are Elite+Gold Medal, Elite and Course certification certificate as per the score.

Institute has a dedicated server for storage of all NPTEL Course Videos. This server "Local Guru" provides a facility of offline video streaming of all NPTEL Courses in the college campus.

5. Evidence of Success

Institute has successfully completed two phases of NPTEL online courses. 9660 candidates including students and faculties have enrolled for different courses. 751 candidates have successfully completed the certification. **31 candidates appreciated with Gold certificates, 35 with topper certificates**, 396 with Elite certificates. Technical content of video lectures belonging to IIT instructors is of worth quality. Candidates get benefited from NPTEL online course by means of strengthening their basic fundamentals of particular topics from different subjects, scoring good in GATE exam. Candidates solve assignments and quiz independently referring video lectures indicates improved pace of self-learning. Students gained confidence in facing technical interviews

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-II

1. Title of the practice: Best out of Waste

2. Objective of the practice:

All the departments are striving for excellence in skill based leaning. To serve this purpose, various departments incorporated the use of Models prepared with the scrap materials as an efficient tool in teaching methodology with following objectives:

- To develop creativity amongst the students.
- To improve teaching methodology
- To impart knowledge to the students with practical applications.
- To help students to understand the theoretical concepts with prototype models.

3. The context:

The staffs get an easy way to teach theoretical concept pertaining to various Engineering subjects and various laws as well as principles related with the technical processes. During practical hours, staff also gets an opportunity to perform experiments based on the concepts learned in classrooms with the use of models. Moreover, the problems encountered in the class and laboratory during the transformation of technical knowledge to the students is resolved effectively. Hence, the use of Models prepared with scrap materials in teaching process as a regular practice has taken an initiative to promote innovation on small scale amongst the students.

4. The practice:

Various departments encourage and support faculties for use of models made up from scrap materials. As per curriculum of SPPU, Pune, the generated models are used by faculties to effectively explain any fundamental concept in engineering. It further helps students to understand fundamental laws and principles with respect to particular subject. The students and staff get contentment in understanding the concepts as well as develop cordial relationship for small innovations. Department of

Civil, Mechanical and Electrical Engineering in particular are actively adapting this practice.

5. Evidence of success

1. Staff and students of the departments like Civil Engineering, Electrical Engineering are getting inspiration to participate in model making competitions at various levels.
2. Staff encourages students to take projects for utilization of waste material in various practices.
3. The staff and students are made aware about the recycling of waste materials to save environment from degradation.
4. Students participate in various technical events along with their designed models using scrap materials on regular basis.
5. Students spread messages to the society through poster presentation competitions to save environment and to develop creativity amongst the student community.

6. Problems encountered and resources required:

1. Handling of models is without any damage and breakage is essential. Care need to be taken while handling all such created models.
2. Designing of model depends on interest and involvement of faculty and students