BEST PRACTICES

1. Title of the Practice I : Student Centered Teaching & Learning

2. Objectives of the Practice:

- To enhance teaching learning process in Engineering Education.
- To adopt innovative teaching methodologies.
- To promote use of ICT in teaching learning process.

3. The Context

In any formal educational system, classroom teaching happens to be an inevitable somewhat irreplaceable component of the teaching-learning process. The classroom time is the dedicated time, during which students are expected to be actively engaged. Effective learning can only be ensured if the students understand and apply the knowledge sought in the classroom through teaching and other learning activities.

In an attempt to enable students to absorb and understand concepts thoroughly, the classroom environment should be conducive for mutual interactions between students and teachers. Learning in classrooms improves significantly if there are meaningful interactions between inquisitive learners and experienced teachers. Such meaningful interactions can systematically be introduced during teaching with the help of ICT tools and innovative teaching methodologies.

4. The Practice

- Use of ICT Tools -
  - MKCL LearniCo (SuperCampus) – It is an ICT tool which allows a teacher to immediately pose questions based on the concepts taught during a lecture. Students can individually answer this question through a mobile application. Teacher can assess the understanding of the students based on the correctness level of all collected answers. The use of this tool was incorporated in the teaching of all the UG / PG subjects during online lectures. Teachers of these classes prepared topic wise question banks to be used during lectures.
  - Use of other ICT tools like Google Classroom, Edmodo, Youtube channels, Technical Blogs, ERP.
- Use of other Innovative Teaching Methodologies – Teachers are using suitable innovative teaching method like Cross word activity, One Minute Paper, Think Pair Share, Blended Learning, Team-pair-solo Strategy, Role Play etc.

5. Evidence of Success

- Over the period of time there is a significant improvement in creativity and the quality of teaching.
- Significant improvement in student participation.
- Gradual improvement in student learning.
- Improved Results in University Examination.

6. Problems Encountered and Resources Required

Problems Encountered

- Familiarity of the tools and their proper usage during lectures.
- Some of the problems faced by students during online learning were connectivity issues, availability of Android mobile sets, power cut and heating of electronic devices etc.

- Due to COVID pandemic lockdown from 16th March 2020, regular offline lectures and practicals were suspended till the end of Sem-I of 2021-22. The institute incorporated use of various online platforms for completion of syllabus, assessment and submissions. Details of the activities done during the academic year are as follows -
    - Number of Online lectures conducted - 10437 (2021-22, Sem-I)
    - Number of Videos prepared by teachers - 552
    - Number of online assignments provided on ERP/Google Classroom - 2521
    - No. of Youtube Video Links shared -9745
    - No. of LearniCo sessions conducted – 5822

Eighteen second/third year Engg. and eleven first year teachers were felicitated for effective use of ICT tools including LearniCo. Following tables show the details of usage by these teachers.

Sr. No.	Name of Department	Name of Teacher	Class	Total LearniCo sessions conducted	Average of learners
1	Chemical Engg.	Prof. Varsha Parashar	TEChemical	27	41
2	Civil Engg.	Prof. Suhas Pandit	TEACivil	26	70
3	Civil Engg.	Prof. Prakash Pathak	TEACivil	32	42
4	Computer Engg.	Prof. Priya Rakibe	TEACOMP	29	25
5	Computer Engg.	Prof. Reshma Dhurjad	TEACOMP	38	22
6	Electrical Engg.	Prof. Nayana Jangle	SEAElectrical	38	48
7	Electrical Engg.	Prof. Tanuja Date	BEBElectrical	36	24
8	E & TC Engg.	Prof. Deepali Shimpi	TEETC	26	38
9	E & TC Engg.	Prof. Pooja Patil	BEETC	35	29
10	IT Engg.	Prof. Rupali Bora	BEIT	38	35
11	IT Engg.	Dr. Preeti Bhamre	SEIT	49	52
12	Mechanical Engg.	Prof. Mugdha Bhadak	SEAMECH	33	28
13	Mechanical Engg.	Prof. Pritamkumar Ahire	SEBMECH	36	23
14	Mechanical Engg.	Prof. Ramesh Bhandare	BEAMECH	56	17
15	Production Engg.	Prof. Mangesh Khalkar	TEProduction	25	7
16	AI&DS	Prof. Smita Patil	SEAAIDS	20	45
17	Robotics &	Prof. Nanasaheb Gurule	SERA	21	27
18	MCA	Prof. Mariyam Maniyar	SYMCA	22	24

Sr. No.	Name of Teacher	Class	Total LearniCo sessions conducted	Average of learners
1	Prof. Pankaj Ranade	FE B Mech	33	46
		FE H Civil	26	34
2	Prof. Atulkumar Patil	FE C Comp	29	45
3	Prof. Dr. Ganesh Dabhade	FE C Comp	12	66
		FE F Mech	14	53
4	Prof. Shital Ajnadkar	FE D Comp	11	48
5	Prof. Supriya Ghirnikar	FE D Comp	16	48
		FE S Civil	16	30

		FE V CSD	12	39
6	Prof. Nayana Jangle	FE E E&TC	20	59
7	Prof. Dinesh Chavan	FE F Mech	13	41
8	Prof. Dr. Preeti Bhamre	FE I IT	30	48
9	Prof. Vasant Chavan	FE S Civil	11	45
		FE W AIDS	10	27
10	Prof. Manoj Sonawane	FE W AIDS	14	28
11	Prof. Tanuja Date	FE W AIDS	24	36

Resources Required

- Computer System, LCD Projector, Wifi Devices in each classroom
- Appropriate Software and ICT tools

1. Title of the Practice II : Service Learning through Volunteering and Internships

2. Goals

- To work closely with the industry to understand new or improved products, techniques, processes, systems or services.
- To create awareness about social needs and real life problems.
- To develop transferable and life skills through service learning.

3. The Context

Typically, an Engineering graduate lacks confidence and experience while applying his/her knowledge. The best experience comes from internships by observing working life from different perspectives. An internship provides an opportunity to understand the role, the task and the industry. One can learn by watching and working closely with experienced people on projects. Internships help students to build confidence through practice thereby promoting personal growth. Internship allows students to get a feel for different industries in a small period of time.

Voluntary social activities allow students to understand various social issues and inspire them to contribute for social needs. In doing so, they need to communicate and interact with the people of different sections of the society.

Internships and Voluntary services thus provide an opportunity for development of communication skills, team work, professional skills and abilities.

4. The Practice

- Students are allowed to undergo internships in industries of their choice, typically either in their second/third/final year of graduation during vacations. At the end of the internship, students submit a report of the work done in the industry.
- NSS organizes two types of activities, regular activities at institute level and special camp of seven days at nearby villages. Regular activities include blood donation camps, tree plantation, health check-up camps, road safety and social awareness programmes. The renowned social workers and activists guide the students in the camp. The special camp in villages, help students to understand the rural life, problems of villagers and to provide probable engineering solutions.
- NSS volunteers (250) are encouraged to participate in inter collegiate, state level and national level activities.

- **5. Evidence of Success**
- 1166 students have undergone Internships in 2021-22. Department wise count of internships is as follows –
    - UG Chemical Engg -89
    - UG Civil Engg -174
    - UG Computer Engg -165
    - UG E&TC Engg -77
    - UG Electronics Engg -48
    - UG Electrical Engg -157
    - UG IT Engg -83
    - UG Mechanical Engg -243
    - UG Production Engg. -31
    - MCA -40
    - MBA -59

- 1425 students have participated in 11 NSS activities in 2021-22.
- Several socially relevant projects were undertaken by students.

6. Problems Encountered and Resources Required

Problems Encountered

- Identification of suitable industries for relevant internship for around 1200 students.
- Managing NSS unit of 250 students and NSS camp in village.
- Finding suitable time slot for internship as per the requirements of industries.

Resources Required

- Logistics and travel support for social activities.

8. Contact Details:

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Institutional Distinctiveness

The institute is known as a premier institute in engineering education with distinctive characteristics like senior and stable faculty force, continuous upgradation of labs with latest configuration of computers, software and peripherals, rich collection of books and online journal subscriptions, efforts for enhancing overall personality and communication skills and research and consultancy activities. The institute follows ethical practices and encourages Indian culture and value system. Research projects are undertaken by faculty and students for societal problems.

The institute is permanently affiliated to Savitribai Phule Pune University. Most of the programmes offered by the institute have been accredited by NBA, AICTE, New Delhi. In year 2003, six programmes and in year 2012, five programmes were accredited respectively. The Institute has been accredited by NAAC with grade A in 2018. Eight programmes have been accredited by NBA in 2019.

Mechanical UG Programme has been accredited from 2021-22 to 2023-24 (upto 30/6/2024). Five UG programmes - Chemical Engg., Civil Engg., Computer Engg., Electrical Engg. and E&TC Engg. were re-acrredited from 2022-23 to 2024-25 (upto 30/6/2025). MCA programme was accredited for 2021-22 (upto 30/6/2022)

UGC has granted Autonomous status from 2022-2023 to 2031-2032.

The institute has been recognised by NIRF (Ranked 9th in Maharashtra state and 85th in India) in year 2016. The institute was placed in Platinum Category (highest) through joint survey by AICTE-CII in 2016, 2018, 2019, 2020 and Gold Category in 2017. The institute was placed at 11th position among Engineering Colleges of Maharashtra in the Digital Learning Survey for Top engineering institute ranking 2020 with AAAA+ Rating.

The institute has been ranked 5th in state and 142nd at national level in the survey conducted by EDU-RAND in Nov. 2014. This was an internet based survey and colleges were ranked on the basis of accreditation score, faculty qualifications, research productivity, fill rate and placement score.

The strengths of the institute therefore are –

- Good quality of students
- Significant number of University rank holders
- Well qualified and experienced staff members dedicated to quality improvement
- Excellent teaching learning environment
- Rich collection of books and digital library access in central library
- State of the art laboratories and infrastructure
- Efficient training and placement cell
- State of the art sports facilities and gymnasium
- Conducive environment for overall development of students
- Strong presence of alumni in industry at national and international level
- MoUs with industry for overall development of students
- Clean and eco friendly green campus
- Recognition from various accreditation agencies

Hence, the institute aims at becoming a leading autonomous institute with courses aligned with industrial and societal needs.