Nawab Shah Alam Khan
COLLEGE OF ENGINEERING & TECHNOLOGY
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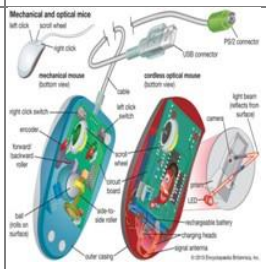
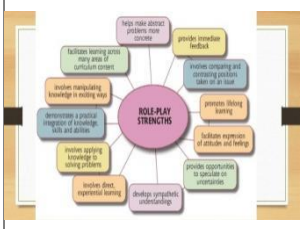
Innovations by the Faculty in Teaching and Learning

The teaching/learning process is given immense importance in the institute and motivates the faculty to adopt innovative processes in Teaching and Learning process. These innovative teaching approaches which are a combination of the traditional lecture method alongwith other methods helps the young minds to increase their learning capacity.

Following are the best and innovative practices undertaken by the faculty members for improving teaching and learning experience

- Usage of ICT infrastructure to prepare computer aided teaching and learning material. Conduct of Student Seminars.
- Conduct of Assignments, tutorials, Class room tests and Group discussions on Case studies.
- Conduct of add on courses like C Programming , Soft Computing , Spoken English to acquire additional knowledge.
- Establishing MOUs with industry and academia so as to conduct certification programmes like **CISCO,HACKATHON,WORKSHOPS** etc which helps the students to bridge the gap between the industry requirements and the concepts they obtained as a part of the core curriculum.
- Through Organizing Industrial/Educational tours and visits to various companies, industries help students to gain real experience about the outside world. Conduct of Co curricular activities like TECHNO FEST, TECHNO VISION, to build competitive and organizational skills in the students.
- Conduct of remedial /backlog classes and special classes for slow learners so as to improve the learning skills of the student.

- Deputation of students to conferences,
- seminars and workshops which inturn helps the students to acquire paper presentation /preparation, communication and event participation skills. To teach content beyond the syllabus and to encourage Peer teaching to enable students to attain self learning skills.
- Lifelong learning skills and interest in research activities can be developed in students through Eminent Scientists and experts lectures.

S.No	Innovative Practices	Goals	Context
1.	Case Study Demonstration	Case studies involve in-depth research into a given subject, in order to understand its functionality and successes.	1. A case study is a research method to gain a better understanding of a subject or process. 2. Students are given a case study to conduct the investigation and reports are made to generate by the students after investigation.
2.	Demonstration through working model/computer Peripherals		The students of second year were taken to ITWS lab to explain about the principles of working of **computer peripheral** devices namely **input-output device** Also, they were shown different types of storage and. equipment of modern digital computer systems.
3.	Computer Day	The Department operates on the computer and digital gadgets.	1. Computer Day is observed to promote the awareness about the computer and electronic devices. 2. It is indeed vital to educate students about digital literacy. 3. The celebration of Computer Day encourages Students to use them efficiently with a range of skills ranging from primary use to the programming level and advanced problem-solving. 5. Take this Day as the best opportunity to learn in detail about the computer and its related technology.
4.	Role Play		1. Role play is an educational technique in which people spontaneously act-out problem of human relations and analyses the enactment with the help of other role players and observers. 2. Role playing is effective when the topic involves person to person communication or interactions. 3. Role play can allow everyone to participate.

The Best and Innovative Practices are mentioned below in table:

Sr. No	Best & Innovative Practices	Goals	Context
1.	Power Point Presentations	To enhance the overall comprehension of students and allows teachers to present their lessons in a more dynamic way.	➢ It provides the ability to equip presentations with different types of media - including images, sounds, animations, and much more. ➢ This enhances the students abilities to retain what is being taught, especially to those who are visual learners.
2.	Student Seminars	The overall objective of this activity is to motivate students for self Study and Group Study	➢ This best practice enhances the Listening ability, communication skill, Time Management skill and Team Leadership quality of students builds up. ➢ Student takes responsibility while working in a team and learn to deal with conflicting opinions. ➢ Sharing of Knowledge uplifts while preparing.
3.	Group Discussion	To develop skills in interpersonal communication and in expressing views in a clear and concise manner.	➢ Learn from other peoples experiences and background knowledge. ➢ Gain perspective and point of view which increases the listening and interpersonal skill.
4.	Sessional and pre-university examination	To broaden knowledge, create competitions, develop personality and confidence, enhance learning	➢ Balanced and fair evaluation of individual student. ➢ Accurate judgment to classify weak and strong students.
5.	Contents beyond syllabus	To bridge the gap between syllabus & recent trends in Engineering & Technology	➢ Students shall be encouraged to work with innovative ideas and shall focus on current technological trends to do their Seminars and Projects.
6	Open ended experiments (Extended Lab hours)	To inculcate self-thinking and encouragement to develop their own experiments related to their topic of study.	➢ Students are expected to formulate their own strategies, with appropriate reasoning, knowledge background and logical justification. ➢ Develop self-directed, reflective, lifelong learners who can integrate knowledge, think critically and work collaboratively.

Web Based Learning Process

Web-based learning teaching learning approach (WBTLA) has increasingly become dominant in the educational landscape, in higher education institutions. It provides teachers, lecturers and students with a new and wide range of teaching-learning experience such as accessing information at any time and place, online presentation of information, interactive task-based activities, effective dissemination of information, and long distance education that is less possible in traditional classrooms. The students are able to learn better, which would make them more motivated to pay more attention to the information presented and retain the information better.

Goals

- Students can quick understood the given topic
- Increase the student understanding level
- Enhance student pass percentage in academics
- Giving tips for on campus placement competition

Methods

- Use of digital data.
- Use of online tools.

S.No	*Name of the faculty*	*Subject*	*Year-semester*	*A.Y.*
1	Ms.Firdous Rehana	Web Technology	III-I	2019-20
2	Ms. Munawar Khatoon	Design & Analysis Of Algorithms	II-II	2019-20

2. Flipped Learning Process:

Flipped classroom is an idea to reverse the instructional practice of the traditional classroom. Instead of entering the classroom with a clean slate, learners go through prior online training. This way learner will get direct instruction moves from the group learning space to the individual learning space, and the resulting group space is transformed into a dynamic, interactive learning environment.

Goals

- To make the **classroom** an active **learning** environment.
- To enable students to learn at their own pace, and.
- To give the instructor more time to teach each student individually, rather than the class as a whole.

Methods

- Students will prepare the question from given data by faculty.
- Use of research online tools.

S.No	*Name of the faculty*	*Subject*	*Year-semester*	*A.Y.*
1	Ms. Syeda Farhath Begum	Data structure through C++	III-II	2019-20
2	Ms.Firdous Rehana	Programming Languages	II-I	2019-20
3	Ms.Firdous Rehana	Programming for Problem solving	I-I	2019-20

3. Virtual Reality:

VR in the Classroom Allows All Students the Opportunity to Explore. When **virtual reality** tools were first introduced into the **classroom**, the technology was marketed as a way to go beyond the walls of a school and take students places they would otherwise not be able to go.

GOALS:

- Explore the depth of the subject.
- **Allow students to share their world with others by creating their own VR content.**

S.No	*Name of the faculty*	*Subject*	*Year-semester*	*A.Y.*
1	Mr. Mohammed Khaleel Ahmed	Computer Networks	III-II	2018-2019
2	Mrs. Waseema Masood	Computer Forensic	III-I	2018-2019

4. Laboratory Improvement for Future Trends (LIFT):

Laboratory instruction is considered essential because it provides training in observation, supplied detailed information, and aroused pupils' interest. Keeping this in the view, LIFT has been introduced to provide practical hands on experience for each student by making them with good exposure to different experiments and uplift the knowledge levels of student in various fields with different applications.

Goals:

- LIFT programme is to innovate, modify the existing facilities in labs
- To create awareness among the students and develop Industry –Institution interactions and reach the standards in laboratories.

S.No	*Name of the Laboratory*	*Year-Semester*
1	Data structures Lab	II – I
2	Operating System Lab	III – I
3	Compiler Design Lab	III – I
4	Case Tools Lab	IV – I
5	Software Testing Lab	III – I
6	Linux Programming Lab	IV – I
7	Data Mining & Ware housing Lab	IV – I
8	Database Management System Lab	II –II
9	Java Programming Lab	II –II

S.No	*Name of the Laboratory*	*Year-Semester*
10	Case Tools and Web Technologies Lab	III –II
11	Advanced Communication Skills Lab	III –II

5. Rebus learning Process:

Rebus teaching learning that combines the use of illustrated pictures with individual letters to depict words or phrases. The students will able to learn the subject through pictures. Students are able to grab the technical words and phrases with rebus learning.

S.No	*Name of the Laboratory*	*Year-Semester*
1	Cryptography and network security	III – I
2	Operating System Lab	III – I
3	Compiler Design Lab	III – I