TULSIRAMJI GAIKWAD-PATIL College of Engineering and Technology

Wardha Road, Nagpur - 441108
Accredited with NAAC A+ Grade
Approved by AICTE, New Delhi, Govt. of Maharashtra
(**An Autonomous Institution Affiliated to RTM Nagpur University**)

Department of Information Technology

Innovations by the faculty in Teaching and Learning

GOALS:

In order to improve students' learning experience aside from traditional classroom teaching, the department uses novel concepts and their subsequent execution by means of quantifiable programs. The department will continuously strive to:

- Enrich student learning by innovative practices.
- Develop students' comprehension and expertise of creative methods and strategies.
- Broaden students' perspective of emerging technologies and tools in academics, and Contemporary and social issues by innovative strategies.
- Motivate students to innovatively think, formulate and perform through different club activities.

List of initiatives in teaching and learning process followed by the department:

Given below is a listing of some of the noticeable initiatives taken by the faculty of the department.

1. Multimedia Learning Process:

Tools	Methods	Resource
Power Point Presentation by referring E-learning videos	Easy to prepare and it can be prepared with many of The popular multimedia Techniques.	Slide based
Demonstration Videos and Lectures, Digital Notes	Videos from various good quality source are demonstrated along with digital notes for better Understanding.	Web Based learning /NPTEL Lecturer

Various Innovative Methodologies are used in teaching which are tabulated below

Sr. No.	Innovations in teaching and Learning	Resource/reference	Impact on Teaching & learning
1	Learning via online certifications Promoting online student certifications	Online NPTEL Courses	students learning various courses through online portal
2	Learning with group discussions, aptitude development, mock interviews	Part of our teaching learning process	Helps in all round development of students
3	Learning with classroom presentations Each student is allocated one topic for each of the subjects. Student presents his topic in class covering the learnt concepts in innovative Manner	Contents from covered syllabus	Confidence building for public speaking

4	Student counseling Allocation of small group of students to each faculty Faculty counselor involves their students in individual viva voce & their academic monitoring Allocation of group projects to students Faculty counselor maintains the student portfolios which records all the academic activities of students	Well formatted & documented student portfolios	Confidence building to students & more involvement of students in teaching learning process
5	**Smart classroom** A smart classroom is a technology- enhanced learning classroom that enhances the way of teaching and learning digitally. The classroom is integrated with the Interactive Boards, whiteboards, other audio/visual components that make lectures easier, engaging, and more interactive	Part of our teaching learning process	Helps in all round development of students also makes lecture more interactive
6	**Learning through industrial visit** Industrial Visit helps in enhancing practical knowledge of students with keen interest in the subject	Industrial resources are studied for subject related interaction	Practical knowledge is improved with creating more interest in the subject
7	**Google class room** Link of Google classroom is shared on what"s group. Assignment, Tutorial, MCQ, Subjects Notes are uploaded by Faculty.	Students are asked to submit assignment and tutorial on Google class room within deadline.	Enhancement of overall quality of teaching learning

Through

Advance topic Learning through NPTEL Online Certification	Faculty prepare the students for National and International level Competition (students Participation at National Level RBI Quiz, Mumbai)
Fig 5.5 a	

06	Program Outcomes
07	Infrastructure
08	Activities
09	Students Placed
10	News Article
11	Photo Gallery
12	Syllabus
13	Open Elective
14	Subject Notes

Sr. No	Subject	Semester	Download
1	ADS	IV	DOWNLOAD
2	CAO	IV	DOWNLOAD
3	DOM	IV	DOWNLOAD

Digital platform provided to students (Notes Available on College Website)

Real Time Teaching and Learning: The department encourages faculty to adopt methods of teaching through real time examples such as industry visit.

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**Faculty adopt the method of teaching through real time example
(Computer Network Subject OSI Layer Demonstration)**

1. Student Chapter/Club Activities: The department has four professional chapters, as listed below, which provide a good platform for the students to take active part in the various competitions, seminars and lectures arranged by the society. The activities help the students to showcase their talents in terms for team building, communications skills, team work, target work and overall development in professional activities. One faculty advisor is associated with each student chapter for mentoring, guidance and overall governance.

    i.   Tech-Odyssey Student Club

   ii.   IEI Student Chapter

  iii.   ISTE Student Chapter

  iv.   CSI Student Chapter

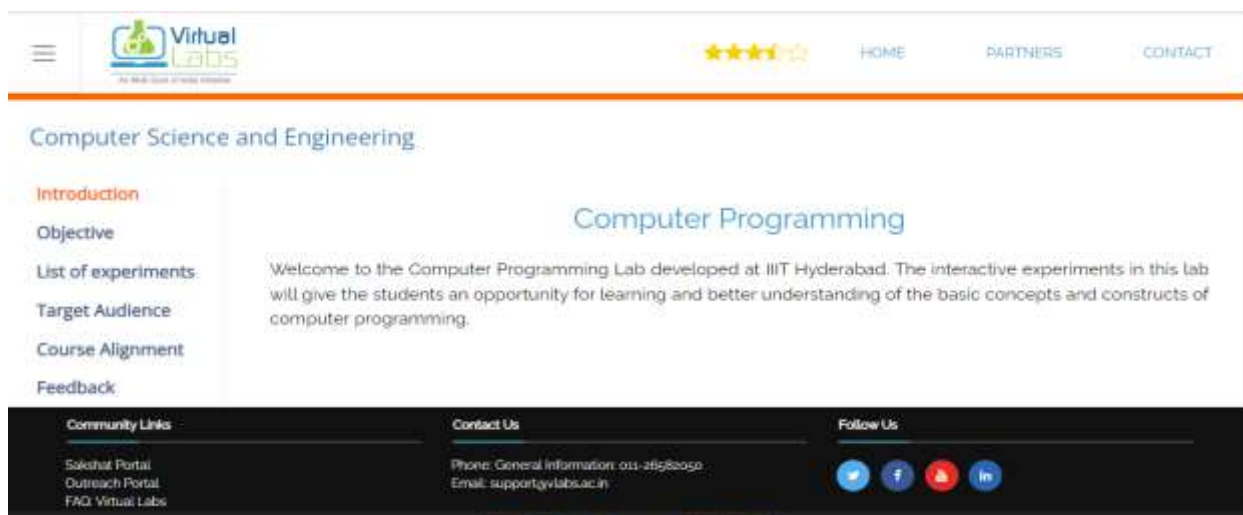|	
Teaching by industry expert and Utilization of ICT tools at Visit	Enhance the students skill through real time Industry practical knowledge (visit to Click2Cloud at Mihan Nagpur)
Enhance the students skill through Industrial Visit at RTMNU, Robotics Centre	Innovating teaching Learning technique of Brainstorming activity (Technical Debate Competition)

Outcome: Enrich students learning skills like communication, presentation, leadership etc.

2. Virtual labs: In certain labs like the Computer Programming lab, some relevant experiments are conducted online on web browsers with the help of simulators. Such online facilities are called as virtual labs (http://www.vlab.co.in/), and are a part of an excellent innovative initiative taken by the MHRD of India.

3. Use of Animations/ Mini projects/PPTs/CASE studies/notes: The department has simulation for IOT mini-projects. Department also has license software for developing application software. Some faculty members develop applications as well as mini projects with the help of students. All the classrooms are well-equipped with high quality projectors ready for use any time.

Digital media utilization by faculty to enhance the students' knowledge through PPT/ animation

4. E content on Google Classroom and YouTube Channel: Faculty have also created their own Google classrooms and YouTube channels where they upload study material relevant to their own subjects. The links are shared with the students and the contents are openly accessed by all students. Faculties used google classrooms for giving assignments and taking online submission during pandemic.
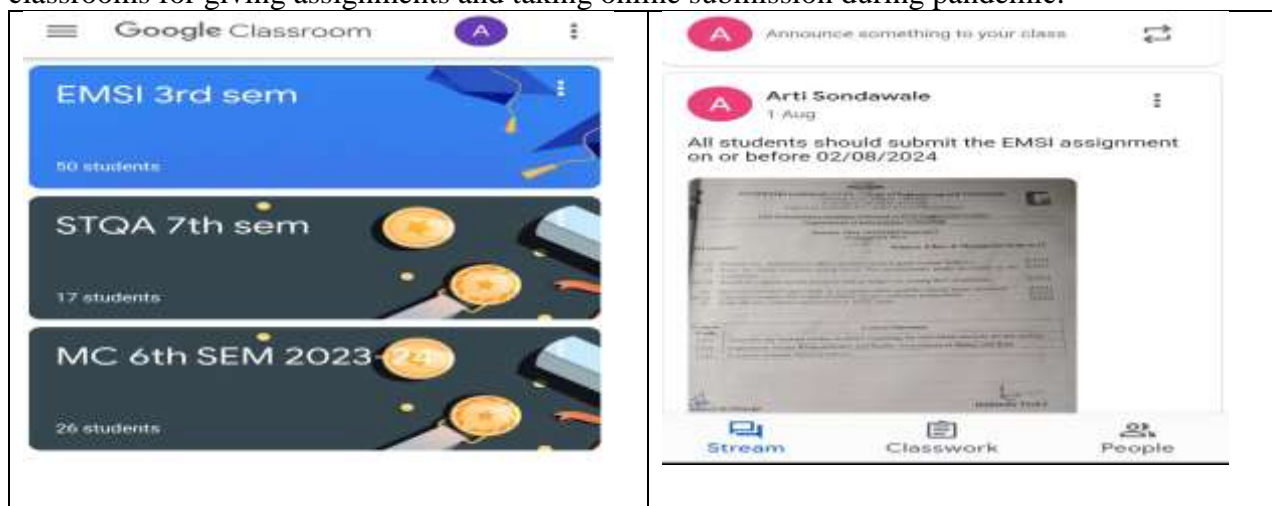

Fig: Enhancement of overall quality leaching learning through Google classroom

Fig: Enhancement of overall quality leaching learning through uploading study material on website
Outcome: Improve student's understanding and learning

Fig: YouTube channel of faculty

Outcome: It contributes to students' knowledge and opportunity for self-study

5. Classroom quiz sessions: These help in creating interest by breaking monotony of regular classes while enhancing the learning experience during pandemic

6. Industry Visits: Students are exposed to latest developments through regular visits to industry. Faculties organize industrial visits under One Faculty One Industry Programme.

Outcome: It contributes to students' knowledge and opportunity for self-study

7. Cutting-edge initiative: Today's education system is rapidly evolving in order to introduce new teaching techniques and strategies that promote a culture of diversity and inclusion. Similarly, each teacher has a distinct teaching style. However, all teachers have the same goal: to instill a love of learning in their students. Department have a few Cutting- edge initiatives as given below that use modern technology. More than 50 students register for Eduskill certification and successfully completed their course

- Eduskill by AICTE

- Hackathon

- Unnat Bharat Abhiyan

Received AICTE Eduskill 61th rank throughout the country for highest number of internship-2024