

## **Innovative and Creative Teaching-Learning Methods**

Student centric teaching methods such as experiential learning, participative learning and problem solving methodologies are used to enhance learning experiences. The biggest challenge for any teacher is capturing each student's attention, and conveying ideas effectively enough to create a long lasting impression. To tackle this challenge effectively, the teacher implements innovative ideas that make the learning experience much more interesting for the students. Course-in-charges strive diligently to bring innovations while imparting knowledge.

Course-in-charges along with the regular lecture method use charts, graphs and diagrams to explain the complex concepts. They use both inductive and deductive methods, experimental methods to develop scientific approaches among the students. Problem solving sessions including the heuristic method and participative methods are used to engage students individually or in groups. The Teaching-Learning activities are made effective through illustrations and special lectures.

Students are engaged in different activities which help them to acquire first-hand knowledge of the subjects and current practices. They are motivated to enhance their knowledge through educational portals.

At MAEER'S MIT Arts, Commerce and Science College, Alandi, teachers implement following student centric methods to keep students actively engaged in the learning.



**Figure:** Innovative and creative teaching-learning methods used

## **Experiential Learning Methods**

**Mock Interview:** A mock interview is an imitation of a job interview used for training purposes. The conversational exercise usually resembles a real interview as closely as possible, for the purpose of providing experience for a candidate. The mock interviews of students are conducted by the departments on technical and non-technical topics. The training given to the students during Mock interview activity help the students to understand what is expected in a real job interview. This activity helps them to reduce stress and anxiety about interview and to prepare them for the campus interviews.



### **Mock Interviews that boost the confidence of the students**

**Simulation:** A problem or an event has been presented in artificially created situation similar to the real ones. Use of simulations promotes the critical and evaluative thinking of the students. Simulations are ambiguous or open-ended, they encourage students to contemplate the implications of a scenario. The situation feels real and thus leads to more engaging interaction by the learners.

Department of Science and Computer Science (Statistics) conducts practical sessions on drawing model samples from various distributions which are required in simulations. YouTube videos that explain the procedure of drawing random samples for simulation purpose are prepared by the faculty.

<https://youtu.be/MECUhyojaf0>

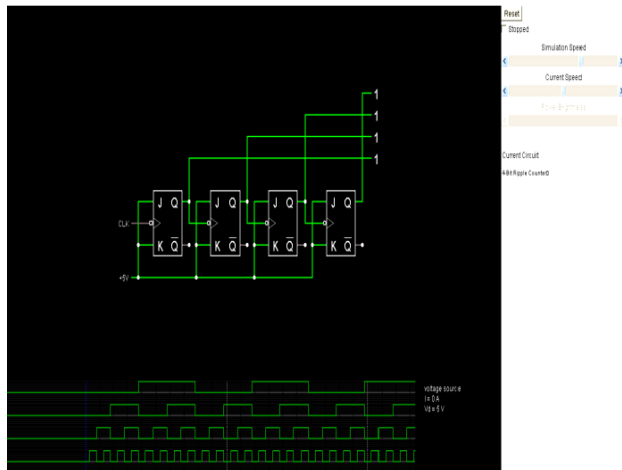
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Department of Science and Computer Science (Electronics) has conducted the lab-based hands-on learning sessions for the students. In these sessions, students are trained on how to use MATLAB, PSpice, CircuitMod softwares for simulation purpose.



**Students doing simulations on MATLAB software**



**Circuit prepared by the students on CircuitMod software**

The students from the Department of computer Application make use of simulation techniques for preparing their own Apps which are available on Google Play Store.

- **Android Apps:**

1) One stop language learning app is prepared by the student which fulfill the goal of learning language to meet the thrill of a quiz game for an overall fun experience.

V2 Language lab: <https://play.google.com/store/apps/details?id=com.v2.languagelab>

2) A sticker app containing fun stickers is prepared and available on Google Play Store

The lovincibles: <https://play.google.com/store/apps/details?id=com.kiaandrew.app>

- **Windows Applications:**

1) An offline image optimizer for all image compression which works totally offline and optimizes all selected images in as little as two sections is developed by a student.

V2 Image optimizer: <https://www.microsoft.com/en-us/p/v2-image-optimizer/9nx5bjp9mmth#axctivetab=pivot:overviewtab>

2) An offline language learning application is prepared by a student.

V2 Language lab: [https://www.microsoft.com/en-in/p/v2-language-lab/9njtsxrrhwx2?cid=msft\\_web\\_chart&activetab=pivot:overviewtab](https://www.microsoft.com/en-in/p/v2-language-lab/9njtsxrrhwx2?cid=msft_web_chart&activetab=pivot:overviewtab)

Department of Business Administration takes the help of tools to stimulate creativity which include playful games or forms of visual exercises that will excite young minds and capture their interest.



**Students at the game & simulation management**

**Field Visit:** Learning from curriculum is not sufficient so all the departments arrange the field visits for students for better understanding of work processes and business functions.

Department of Business Administration organizes industrial visits for the students to expose them to real working environment and to provide practical exposure.



**Visit to Mahindra & Mahindra, Chakan**



**Visit to Force Motors & Jai Hind Industries**





**Visit to Parle-G, Khopoli**



**Visit to Sakal office, Hadapsar, Pune**



**Visit to KISSAN Exhibition, Moshi**



**Visit to Workshop, MIT AOE, Alandi**

Department of Computer Science & Science (Physics and Chemistry) organizes study to visit for the students to make them aware about the scientific research going on in the institutes of national importance.



**Study visit to IISER, Pashan, Pune**



**Study visit to C-MET, Pashan, Pune**

Department of Science and Computer Science (Electronics) organizes field visits to make aware the students about the day-to-day workings of particular industry and understand its operational issues.



**Visit to C-MET, Pashan, Pune**



**Visit to All India Radio Station, Shivaji nagar, Pune**

Department of Science and Computer Science (Mathematics) organizes field visit for the students.



**Visit to Mapro Food Industry, Satara**

Department of Arts and Commerce organizes study visits for the students to give exposure and hands on experience on the functions related to commerce, industry, trade etc.





**Visit to Malegoan Sahakari Sakar Karkhana**



**Visit to Vasantdada Sugar Institute Manjri, Pune**



**Visit to CottonKing, Baramati**

**Model Making Sessions:** Model making sessions encourage students to brainstorm and come up with new ideas which develop their critical thinking.

Department of Business Administration organizes Model Making Competition on various topics such as 'Marketing Management', 'Waste management', 'Financial Management', 'IT Management', 'Disaster Management', 'Travel & Tourism Management', 'Production & Operation Management', 'Stress Management', 'International Business Management', 'Forest Management', 'Human Resource Management (HRM)', 'E – Business', 'Total Quality Management', 'Supply Chain and Distribution Management', 'Retail Management' etc.





**Students explaining their model.....**

Department of Science and Computer Science organizes Model making competitions in which students came with new ideas. The department organized Model Making Competition on 'Digitalized India', to make students aware about the Digital India plan and boost them about E-commerce across country.



**Students giving demonstration of their model .....**

**Project Method:** Projects are assigned to an individual or a group of students to get the natural experience of learning.

The Computer Science and Computer Application students implement knowledge of programming language and newly learned concepts for the development of Software projects like ERP, EDP, Payroll, Advanced Computer Laboratory, Management system of school, college, sports, club, hospital, hotel etc.

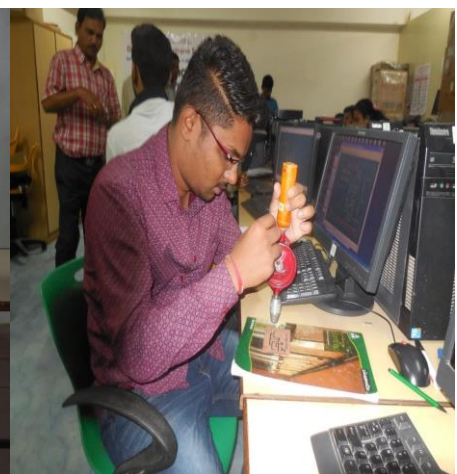


**Students demonstrating their computer projects...**

Electronics projects are assigned to encourage the students to design and test their hardware and software skills and to initiate innovative ideas.



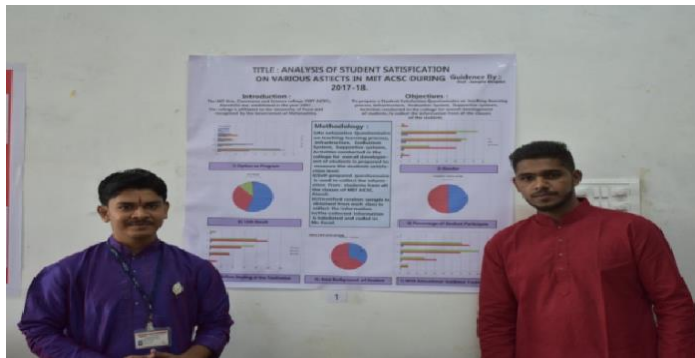
**250 Watts PMPO PA system with 2 Speakers has been developed as a project by 30 students**



**Students Preparing PCB layout using Express PCB Software**



In the Statistics projects, the students conduct surveys and analyse the data by using appropriate statistical tools and techniques.



**Students explaining their statistics projects.....**

The commerce students work on the projects such as financial analysis, Banking and Finance, Cost analysis etc.

The Business Administration Students work on the projects related to human resource management, marketing, finance etc.



**The students conducting surveys for their projects....**



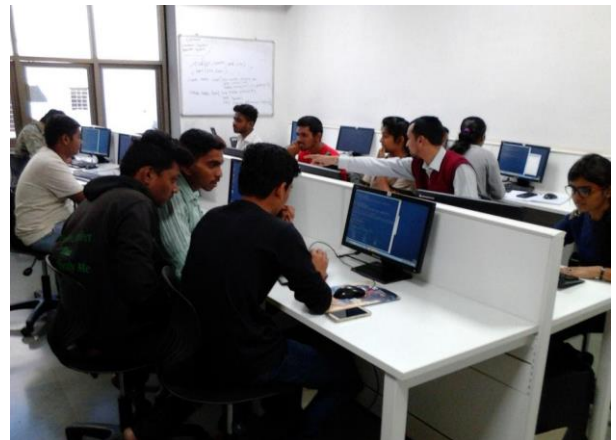
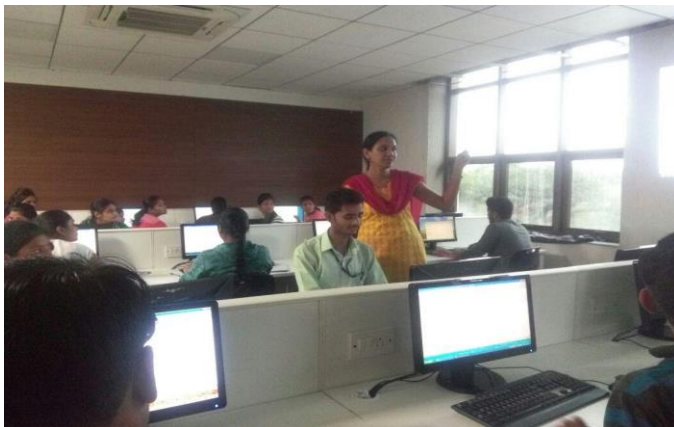
**Hands on Activities:** The hands on training sessions are conducted by the various departments to give experience to the students on learning by doing.

Department of Science and Computer Science (Electronics) organizes hands on activities such as Robotics Training using Arduino to develop practical knowledge of Microcontroller, Robotics Programming and assembling of Robot etc. to give exposure to the students in Robotics field.



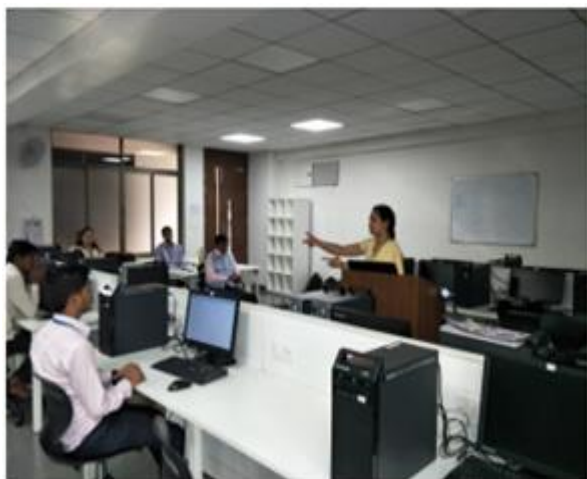
**The students racing the robots prepared by them ....**

Department of Computer Application organizes hands on training on Website Development, HADOOP etc.



**Hands on training on Website Development and HADOOP**

Department of Science and Computer Science (Mathematics) organizes hands on training on mathematical softwares.



**Hands on training on SCILAB Software**

Department of Science and Computer Science (Physics and Chemistry) organized hands on activities on 'Making Solar Lamp'.



**Hands on training on 'Making Solar Lamp'**

**Poster Making Activity:** All the departments organize poster making and presentation competition in which students prepare the posters on the given theme and deliver the presentation on it. It enhances creativity and presentation skills of the students and creates awareness about given theme.





**Poster Making and Presentation Competitions organized by various departments**



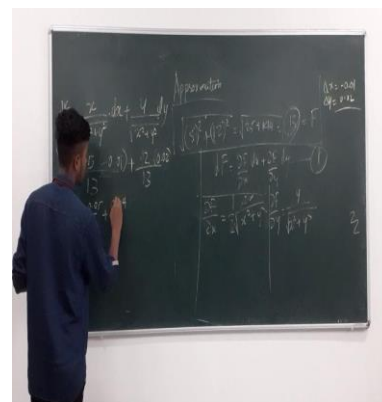
## **Participative Learning Methods**

**Group Discussion:** This method allows students to exchange ideas accompanied by active learning and stimulates reflective thinking through co-operative deliberation of problems. Group discussion of students on various topics are conducted by all the departments to develop the divergent thinking, communication skills, interpersonal skills, leadership skills, team building skills, listening skills, presentation skills, analytical and logical thinking etc. It helps the students in technical and non-technical interview sessions.



**Students sharing their views in Group Discussion on various topics .....**

**Presentations:** All the departments organize seminar presentations/ power point presentations of the students on various innovative topics. It helps to develop the presentation and communication skills of the students which ultimately boost the confidence of students.



### Seminar and Power Point Presentations by students on various topics

**Role play & Drama:** Students act and perform according to the roles assigned to them. It enhances their confidence and language and literary skills. Department of Arts and Commerce conducts Role play activity on different issues.





**Students performing in Role play activity....**

**Guest Lecture:** Departments invite experts from various fields, to expose the students to real-world life experiences and to get the insight of a particular field.



**Mr. Frank Hoffman, Regional Director, Indo German Chamber of Commerce, (IGCC)**



**Mr. Keerthi Kadam, Ex – President, CEO, 100rupees.com**



**Guest lecture on Opportunities for Mathematics graduates in industries**



**Guest lecture by Mr. Bawa, MIGHTY IT**





**Expert Talk by Industry Professionals**

**Book Review:** Department of Computer Application and Department of Arts and Commerce organize Book Review competitions to develop reading and review skills of the students.



**Book Review Competition**

## **Problem Solving methods**

**Case studies:** Department of Business Administration and Department of Arts and Commerce conduct case study activity to develop logical thinking and analytical skills of the students. The students analyze the case and explore the exact nature of the problem as well as the causes leading to them. This method trains students to acquire the technique of in depth analysis and to take the decision that can be applied in future for smooth functioning.



**Case Study discussion**

**Research Projects:** Guidance and assistance are given to participate in State, Inter-University Research competitions like **Avishkar** and **Hackathon**. Guidance and directions are given to present and publish research papers in conferences, seminars and journals.





**Statistical and Mathematical Quizzes:** Department of Science and Computer Science (Statistics and Mathematics) conducts classroom quizzes and quiz competitions to develop the analytical thinking of the students.







### **Classroom Quizzes and Statistics Quiz Competition**

#### **Use of ICT tools in Teaching**

- **Google classroom:** Faculty members of various departments use Google Classroom to share and distribute study material. The college is authorized G suite users and hence make use of the Google tools extensively which effectively streamlines teaching learning.
- **E- learning:** E-learning resources are used to encourage the students to be in touch with current facts. Students are asked to search subject related reference material, scholarly e-resources while preparing for their assignments and projects. Faculty members also provide links of e-references to make them familiar with the use of the latest technology. Students are advised and encouraged to access digital repository developed by the faculty members and study material available on the online platforms in the form of PPT, word file, videos, You Tube Bites etc. The college is an active local chapter of SWAYAM/NPTEL.
- **Digital Library Facility:** The college has availed memberships of DELNET, INFLIBNET and NDL. Individual login IDs and passwords for the students and faculty

members are provided to access the e-journals. Faculty members encourage the students to refer to these e-journals in order to enhance their academic knowledge and inculcate research aptitude.

- **You Tube Video:** Faculty members have developed their own videos using Screen-o'matic, OBS studio and website through wordpress.
- **Language Lab:** The language lab sessions are conducted to develop English communication skills of the students. The English language software and online resources are used effectively to create interest in English language learning and to develop English language competencies and performances among the students.



- **LCD Projectors:** As per the requirement of the course content, course in-charges make use of LCD projectors to simplify the content through photographs, graphs, charts, online videos etc. This makes learning appealing, interactive and interesting.
- **Moodle:** Some of the course in charges make use of Moodle learning platform as a part of course management system to keep track of the entire teaching and learning process. Through the systematic and organized way it creates a personalized learning environment.