

7.2 Best Practices



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7.2 – Best Practices

1. Best Practice: (A) Project-based Learning

2. Objectives of the Practice:

Self-directed learning: During the slots, students are facilitated to self-formulate their learning objectives for specific topics, and they are then required to review their goals periodically.

Solving problems: This helps students become more motivated to learn, think critically, write better, and improve their communication abilities. This could be done by having students study data and draw conclusions from case studies.

Teamwork: During discussions, the students are expected to collaborate and work as a team.

3. The Context

Project Based Learning is a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge. It is an instructional approach designed to give students the opportunity to develop knowledge and skills through engaging projects set around challenges and problems they may face in the real world. The project-based learning system is the upcoming trend of learning best suited for the technical branches of engineering.

4. The Practice

Minor and Mini Project: (These projects are different from projects developed at a course level). In the autonomous curriculum, the institute has started these projects from the second-year level. We are offering a multidisciplinary approach to the project. Students of different disciplines can perform in a team to complete the project work. For example, a group of 3 students may have students from Chemical Engineering, Mechanical Engineering and Electronics & Telecommunication Engineering.

Major Project: General practice for the projects of the UG program starts in the 7th semester and ends in the 8th semester (final semester). It is observed that if the student has to work on innovative project ideas or industry-sponsored projects; this span is too small and many projects cannot be completed with good results. Hence, we have extended the span of this major project to 02 years. (Third year to Final year)

During the 6th semester a course “Mini Project” is offered to the students. The mini-project can be a part of a major project with a condition that at least 30 % of work of the Final year major project should be completed in the TE Mini project.

5. Evidence of Success

Students that participate in PBL acquire valuable knowledge about how to handle projects. Their capacity for empathy grows over the course of their development. They become able to think of things in terms of systems, come up with answers to difficulties, and set off on a path of discovery. They become more committed to the process of learning and are ready to participate in the research-oriented platforms as a result of this growth. Students participating in PBL are given the opportunity to practise a mode of thinking that can lead to varied thinking. In addition to this, a significant number of students discover remarkable connections between seemingly unrelated ideas.



6. Problems Encountered and Resources Required.

The first distribution of project guides, selection of subjects, and organisation of student groups were not without its difficulties. When it comes to anything that is student-directed, low productivity is one of the most typical difficulties that might arise. Teachers do provide them with freedom and choice. It is empowering for students to have choice and autonomy, however, they may not know what to do with this freedom, especially if they are new to student-directed project-based learning (PBL). Because of this, they frequently opt to do nothing further with it.

1. Best Practice: (B) Technical and Non-Technical Clubs

2. Objectives of the Practice:

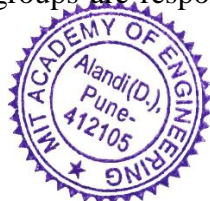
Technical and Non-technical clubs create small communities on campus. They attract people who share the same interests such as in robotics, aeromodelling, language, music, arts, sports, etc. Club activities help students develop a sense of unity and teamwork, learning how to work with others in reaching the same goals. It strengthens their co-curricular activities which are carried out outside the normal classrooms. They supplement the academic curriculum and help in learning by doing. The various clubs enable students to develop problem-solving, reasoning, critical thinking, creative thinking, communication, and collaborative abilities.

3. The Context

The actual need of the hour is to raise responsible, sensitive, creative, and civilized citizens. Our fundamental goal is to create an environment conducive to the development of such citizens. MITAOE's student development initiatives strive to give all of the necessary facilities and infrastructure to transform an engineer into an ideal citizen. The main aim is to provide and maintain a secure, healthy, favourable environment and culture that integrates students' intellectual, technical, physical, social, emotional, and ethical growth. The institute has 16 clubs in all. Each club has a well-defined organization that is overseen by a faculty member. Each club has a semester plan for the events that it will arrange. In addition, each club seeks prestigious contests in its specific domain. Achievements, publications (including technical and non-technical), product developments, creative models, artifacts, or performances are examples of club outcomes.

4. The Practice

The institute is home to 16 clubs that are divided into two categories: technical and non-technical. Technical clubs include things like robotics, Hacker Rank (which is a programming club), the Robotics Club, the Automotive Club, the Design Club, Google Student, and Firefox Club, and so on. Drama Club, Music and Dance club, singing club, Art Elated club, Ignited Minds (A social club), Shutterbugs Photography Club, Vidyudanu – Electronic Hardware club, Prakruti - the life Club, Literary Writing and speaking Club, Yoga and Meditation Club, and MIT Master Blasters' Sports Club are the non-technical clubs that are offered at MIT. Other non-technical clubs include Prakruti - the life Club. Every one of the clubs follows a set of procedures and guidelines to run its operations. Along with a faculty coordinator, each club is given a secretary and president to lead its activities. For the purpose of ensuring that all of a club's events and activities run smoothly, there is always a provision for an annual budget. At the local, state, and national levels, these groups are responsible for organising a variety of events



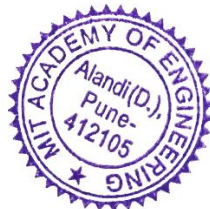
and activities. The entire operation of all the clubs is planned, managed and efficiently executed by students which leads them to develop their leadership skills in a holistic way.

5. Evidence of Success

The clubs have put together a huge quantity and range of different events and activities. The students take part in a wide variety of events and competitions on both the state and national levels. Students have accomplished a great deal, as seen by the accolades and prizes they have received.

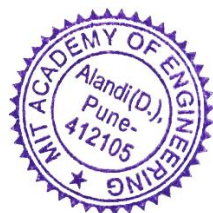
6. Problems Encountered and Resources Required.

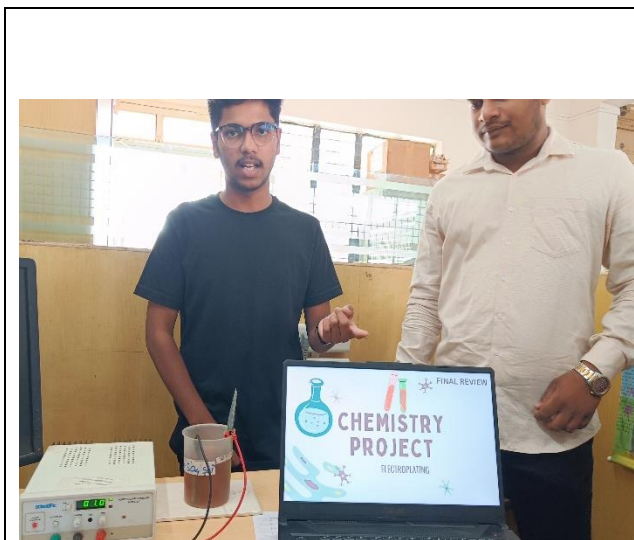
One of the most prevalent challenges that club faculty coordinators come up against is students' lack of awareness regarding the clubs. They need to start by getting the students to sign up for the clubs and participate in them. As soon as people become aware of the club's activities and the benefits associated with those events, the clubs are inundated with participants. Because there are a restricted number of seats available, the faculty coordinator is required to conduct interviews as part of the selection process.



Evidences: (A) Project-based Learning

	
<p>Project presentation in Conference @ Uttarakhand</p>	<p>Project presentation in Conference @ Uttarakhand</p>
	
<p>CFD Project Review</p>	<p>CFD Project Review</p>





FYBtech Science of Nature (Chemistry) Project Final Review



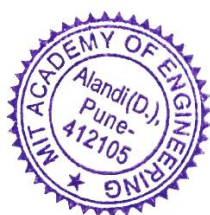
FYBtech Science of Nature (Chemistry) Project Mid sem Review



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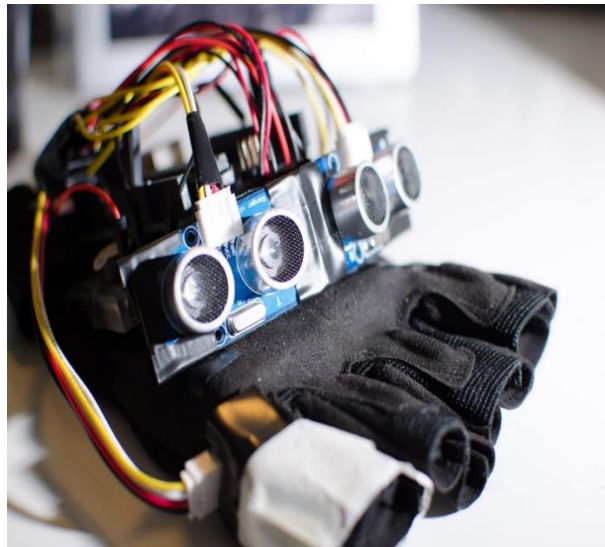


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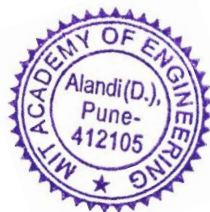




Design Thinking Projects: **"Audito"** Hearing aid for Deaf



Design Thinking Projects: **Blind Navigator:**

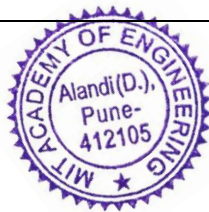


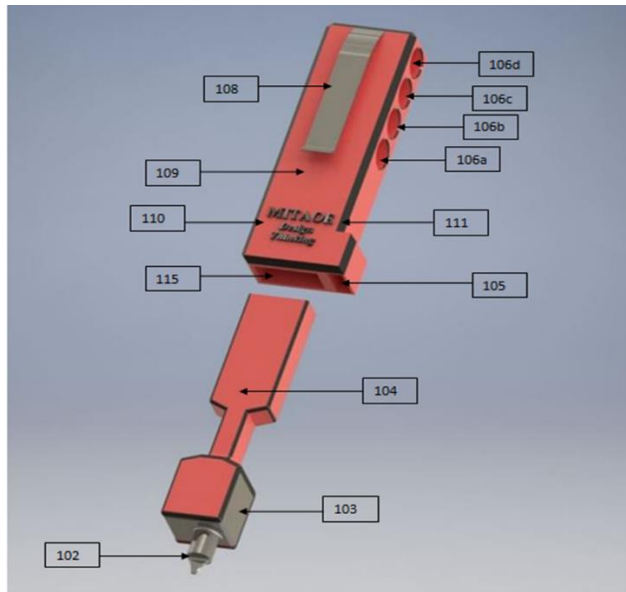


Design Thinking Projects: **Pet Feeder**



Design Thinking Projects: **Water Carrier**

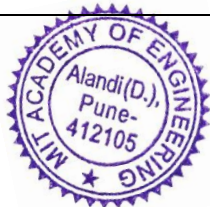




Design Thinking Projects: **Screw Driver**



Design Thinking Projects: **Walker Cum Chair for Elderly people.**





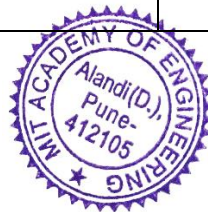
Design Thinking Projects: **Multi-Purpose Ladder**



Design Thinking Projects: **Coin Separator**

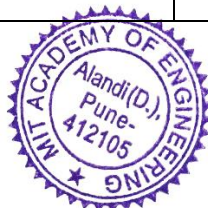


Design Thinking Projects: **Modular fan for Ladies working in Kitchen**



Evidences: (B) Technical and Non-Technical Clubs

 <p>VEHICLE DYNAMICS WORKSHOP</p> <p>18th and 19th March 2017</p> <p>REGISTRATION FEES: 500/- GROUP REGISTRATION: 400/- (GROUP OF 4 PERSONS)</p> <p>TOPICS TO BE DISCUSSED:</p> <ul style="list-style-type: none"> • CHASSIS • SUSPENSION SYSTEM • STEERING SYSTEM • BRAKING SYSTEM • POWERTRAIN • CAE(CATIA & ANSYS BASICS) • RACE ELECTRONICS & DATA ACQUISITION • PRACTICAL SESSION <p>WE ARE RECRUITING !!!! (FOR ALL BRANCHES)</p> <p>Team selection for TEAM NIYUDRATH 2018 will be based on this workshop.</p> <p>LAST DATE FOR REGISTRATION - 17/03/2017</p> <p>Contact: Akshay Ghodke (770957540) Kiran Mane (7083750175)</p>	
<p>Vehicle made for Baja 2017-18 by <i>Auto sports Club</i></p>	<p>Vehicle made for Baja 2017-18 by <i>Auto sports Club</i></p>
	
<p>Student Council 2017-18</p>	<p>Firodiya karandak: Reputed multi-talented cultural contest in Maharashtra. MITAOE has qualified as Top 20 teams in Firodiya. Received the Best Actor award (Mr. Makarand Kendre) and Best Sculptor award (Tushar Dewre) (<i>Drama , Music, Art and Dance Club</i>)</p>





College magazine “Ajaanvriksha” Team with Prizes and certificates, for best Magazine in Savitri Bail Phule Pune University consecutively second time. *(Ajaanvriksha club)*



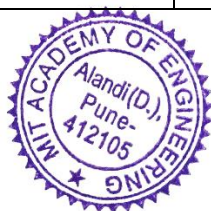
Google developer days (GDD): Three students selected for a conference in Bangalore BIC , Namrata More, Nokhil Chchrkar, and Amy Nerkar Got hands-on training on emerging technologies. Amey Nerkar on the Desk of google developer community. *(Google developer club)*



Cricket Team of 2017-18 Reach the quarter final of SPPU Cricket Event *(Sports club)*



Basket Ball Girls Team 2017-18 won the fourth place in the event organize by SPPU. *(Sports club)*





Badminton Team won the 3rd place at SMJoshi college pune (*Sports Club*)



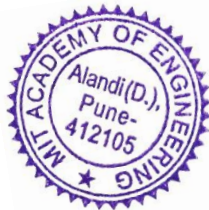
Photography Exhibition by Shutterbugs (*Photography Club*) MITAOE



Pada-thon organized by *Social Activity Club*



Musical concert by *Music and Singing club* MITAOE.





Junior Robocon Organized by *Robotics club*



Online Test was conducted by NSDC as the first round of India skill 2018. Then Tyre 2 – 3 competitions are conducted between shortlisted candidates at MITAOE where 5 teams have participated. Winners are selected for regionals. MITAOE teams secured 1st & 2nd Positions. MITAOE was a winner at national and represented India at Brazil. (*Robotics club*).

City-based duo wins award for skills in mobile robotics

The team competed against Singapore, Germany and Brazil

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TWEETS @ThePuneMirror

Making the country proud, city-based students Samarth Goudar (22) and Vibhor Meshram (19) have won the title Medallion of Excellence at the 44th edition of the WorldSkills Abu Dhabi 2017. The duo from the MIT Academy of Engineering, Pune was selected in June to represent the country under the skill of mobile robotics.

Even though their selection was confirmed in June by the National Skill Development Corporation (NSDC) under the Ministry of Skill Development and Entrepreneurship (MSDE), the duo had started preparing for the theme of Playground Monitoring Robot in January. While Vibhor, who hails from Wardha, is still in college in his final year of electronics, Samarth on the other hand had graduated two years back and would come to the academy after office hours for almost 10 months to work on the project.

At the competition, the robot that the youngsters made had to get children (billiard balls) back to parents (specific place allocated in the arena). They used myRIO for controlling the robots, where they would feed the programming and used DC motors and grippers as well. The students also used the studica kit in their robot and the rest of the parts were built and fabricated by them at the college.

Talking about his experience in Abu Dhabi, Samarth said, "As I interacted with the students from Russia and Korea, I realised that they are studying robotics from a young age, and even if they were 18, this was in their curriculum. They used very advanced technologies. For instance, they had used laser cutting machines which made their robot more and precise for the mechanical structure. Also, they use the Laboratory Virtual Instrument Engineering Workbench (LabVIEW), a programming language that is yet to be added in the Indian curriculum."

The team would set daily targets and every day would stay up till 3-4 am. "I would start

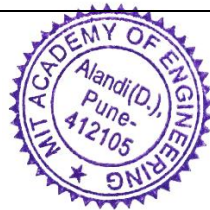


Samarth Goudar (22) and Vibhor Meshram (19)

working in the morning itself and was on it from the last nine months. When we were given the theme, it was mentioned that it can be changed by 30-100 per cent and we had to prepare accordingly," shared Vibhor.

In mobile robotics, the Indian team scored higher than Singapore, Germany and Brazil competitors.

A total of 11 members representing India won prizes at the WorldSkills that concluded on October 18. These prizes were won in categories like patisserie and confectionery, prototype modelling, mechatronics, brick-laying, restaurant service, automobile technology, jewellery, graphic design technology, beauty therapy and car painting. Over 1,300 candidates participated from 59 countries.





Litracy drive By *Ignited minds Club*



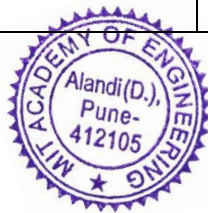
Blood Donation by *Ignited minds Club*



Tree plantation by *Prakruti Club*



Eco-Friendly workshop by *Prakruti club*





Invitation Card, Musical Concert 2017-18 at MITAOE



Singing club students' performance during Musical concert 2017-18 at MITAOE



Dance Club Student's Performance during Musical concert 2017-18



News of Musical concert 2017-18 in Newspaper





Dance Club Performance during Annual social Gathering 2017-18



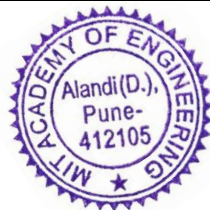
Literary club Students won awards at Akhil Bharatiya Vidyarthi Sahitya Sammelan



Fort Making Competition Organized by Social Club-Ignited Minds in March 2018 during Shiv-Jayanti



Yoga and Meditation club :Yoga day Celebration





A session on Privacy with Mozilla



Apps Development with Firefox



Womoz (Women and Mozilla)



Mozilla Quiz

Various workshops by *Firefox Mozilla Club*

