



MARATHWADA MITRA MANDAL'S
COLLEGE OF ENGINEERING

Karvenagar, Pune - 411052

(Accredited with 'A' Grade by NAAC)

YANTRADNYA

*Department of Mechanical Engineering
Accredited with NBA*

Newsletter

Issue 10 Dec.2020

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Marathwada Mitra Mandal's
COLLEGE OF ENGINEERING

Karvenagar, Pune

Permanently affiliated to SPPU | Accredited with 'A' Grade by NAAC
Recipient of 'Best College' award in 2018-19 by SPPU

Vision

To aspire for the Welfare of Society
through excellence in Science and Technology.



Mission

Our Mission is to

- ❖ **M**ould young talent for higher endeavours.
- ❖ **M**eeet the challenges of globalization.
- ❖ **C**ommit for social progress with values and ethics.
- ❖ **O**rient faculty and students for research and development.
- ❖ **E**mphasize excellence in all disciplines.



Mechanical engineering is one of the basic and most diverse and versatile engineering branch that touches virtually every aspect of modern life, including the human body and highly complex machines. The role of a Mechanical Engineer is to take a product from an idea to the marketplace. Mechanical engineers play key roles in a wide range of industries including automotive, aerospace, biotechnology, computers, electronics, robotics and automation, microelectromechanical systems, energy conversion and manufacturing. Mechanical Engineering Department is one of the finest and biggest departments of the institute established in 2006 with the present intake of 180 students for UG programme. The department is very well equipped with workshops, laboratories, departmental library and digital library facilities. The classrooms are well designed rooms that incorporate everything needed for a pleasant learning atmosphere. It persistently seeks and adopts innovative methods to improve the quality of education on a consistent basis. Qualified and Experienced faculties are strongly encouraged to nurture the students. Realizing the importance of learning beyond class rooms, the department encourages students to indulge in co-curricular activities. Department has established student chapters in association with International and National professional bodies like SAEINDIA, ISHRAE, ASHRAE, Institution of Engineers, ISTE, QCFI etc. Many of the students in department participate in technical, non- technical and cultural events on regular basis. To name few eminent technical competitions are BAJA, SUPRA, Efficycle, GoKart, ROBOCON, Techno Chill, e-Yantra, Utkranti etc. Department has "Center of Excellence" in Robotics and Automation which provides the platform to students for showcasing their technical talents through various project development. Our strong industry liaisoning and MoUs with various industries and organizations help to enhance teaching, learning and research in the department. The goal of the department is to achieve excellence in the field of Mechanical Engineering with the development of skilled, employable and industry ready engineers. All eligible students are placed in well-known industries. Many students have been recommended for higher studies overseas after their Graduation. Mechanical Engineering is rightly called Evergreen field, owing to its relevance and linkage with other branches of Engineering. Hence, there is a wide range of scopes and opportunities for students who pursue this field. You must love machines and be comfortable working with tools!



Dr. P.S. Purandare
(Head of Department)

Welcome to the Department of Mechanical Engineering of Marathwada Mitra Mandal's College of Engineering Karve nagar, Pune. We started our journey in the year of 2006. Over the last fourteen years, we have grown our expertise and competence in the core Mechanical Engineering curriculum. The primary focus of our curriculum is to impart technical know-how to students, promote their problem-solving skills and innovation of new technologies. The students are encouraged to undertake various research projects. A We have state of the art research facilities in the constitution with industry to support our academic programs. Our department has a distinguished record in both teaching and research. Faculty members have excellent academic credentials and are highly regarded. Our department looks forward to contributing to solving the technological challenges of the society with active participation from all sections of the society.

Sr. No.	Memorandum of Understanding (MoU)	Date
1.	Associated Chambers of Commerce & Industry of India (ASSOCHAM)	19/08/2020

Paper Published:

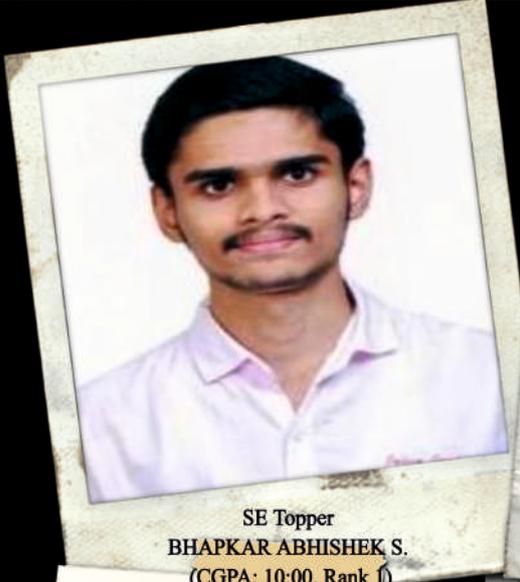
1. Purandare Pramod S. , Pradip K Tamkhade ,Lele Mandar M., Gupta Raj K., “Thermal Analysis and Performance Evaluation of triple Concentric Tube Heat Exchanger.”, in International journal of engineering and advanced Technology (IJEAT) ISSN:2249-8958,Vol,-X,Issue -X Published: 2019 (SCOPUS)
2. R. J. Yadav - “Experimental study on direct, indirect and open air drying of Kiwifruits using a hybrid cabinet type solar dryer” (IJEAT) ISSN: 2249 – 8958, Volume-X, Issue-X .Published 2019
3. R. J. Yadav. ,Kore S.S., Raibhole V.N., “Effect of Dimpled Surface with straight Spoiler Turbulators on Heat Transfer and Fluid Flow Characteristics for Channel”, ISSN:2278-3075,Volume-8 Issue-12, Published oct.2019 (SCOPUS)
4. Deulgaonkar V. R. , Kulthe R., Mekhe V., More M., Nandwadekar S., “Finite Element Analysis of Centre Pin and Bracket of Jig – Fixture Assembly”, International Journal of Mechanical and Production Engineering Research and Development, Volume:9, pp. 643-648, Published: Aug 2019 (SCOPUS)



- Department of Mechanical Engineering organizes Expert Session on "Effective Use of Social Media for Personal Branding and Marketing" by Sumit Zarkar (Digital Marketing Manager) Ultra skills IT Soulation,Pune on 25 /08/2020.
- Department of Mechanical Engineering organizes Expert Session on "Bharat Stage Emission Standards & Successive changes in Powertrain" by Mr. Vikrant Bhalerao (Sub Regional officer) Maharashtra Pollution Control Board, Govt. of Maharashtra on 20/08/2020.
- Department of Mechanical Engineering Centre of Excellence in Automation & Robotics Presents on line webinar on "IMPORTANCE OF ADDITIVE MANUFACTURING TO MAKE SELF - DEPENDENT INDIA" In Association with Institution of Engineers(India) Pune Local Centre by Dr.Sanjeev Kumar, Business Development Group Manager, Renishaw Metrology Systems Limited, Pune on 29th May 2020.
- Department of Mechanical Engineering in association with Mechatol Engineering Solutions organizes Expert Session on "Discover the Value of Geometric Dimensioning and Tolerancing (GD&T) for Mechanical Engineer" by Mr. Anand Bhise (ASME Certified Sr.GDTP) Director Mechatol Engineering Solutions on 15/06/2020.
- Make it Happen for Inveation,Innovation, and Incubation(MCIII) A Joint Collaboration of Tata Technologies Ltd., Science & Technology Park and Marathwada Mitramandal, Pune by Mr. Naresh Jain and Mr. Shihash Kunju on "Blockchain Technology" on 4th July 2020.
- Department of Mechanical Engineering organizes Expert Session on "Design Thinking of Mechanical Engineering" by Akash Alegaonkar (lead Designer) Voltrix mobility, Chennai on 16/07/2020.



1. Two days hands on workshop using "CATIA software" sponsored by M CAD solution" on 28/01/2020 and 29/01/2020
2. One day workshop on "Advanced composites Design Analysis and Manufacturing" in association with MechAero Foundation for Technical Research and Education Excellence, Chennai on 07/02/2020
3. Two days Hands on Workshop on "Autodesk AutoCAD and Fusion 360" in association with Blueprints Design services consultant Pvt Ltd Organising Team on 24/02/2020 and 25/02/2020.
4. Mechanical and E&Tc department hosting E-yantra ideas competition -2020 Regional Final and Industry Conclave on 28/02/2020 and 29/02/2020.
5. One day workshop on "Build Solar Panels from Fruit Juices and Produce Electricity" in affiliation with PC Technologies, USA on 11/10/2019
6. Two days workshop on 'Computer Aided Engineering using Altair Hyperworks HyperMesh Software' is organized by G2G innovation for BE Students. Dated 24/09/2019 & 25/09/2019
7. Two days workshop on 'Mastercam' is organised by IMTMA for BE Students. Dated 20/09/2019 & 21/09/2019
8. Mechanical Department has organized "Two days hands on workshop using CATIA software sponsored by M CAD solution", Dated 28/06/2019 & 29/06/2019



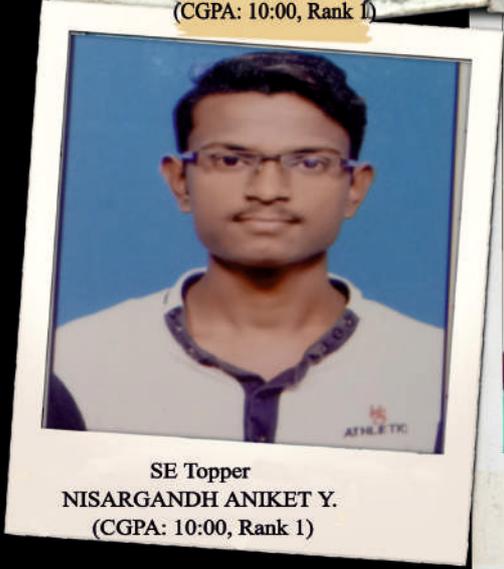
SE Topper
BHAPKAR ABHISHEK S.
(CGPA: 10:00, Rank 1)



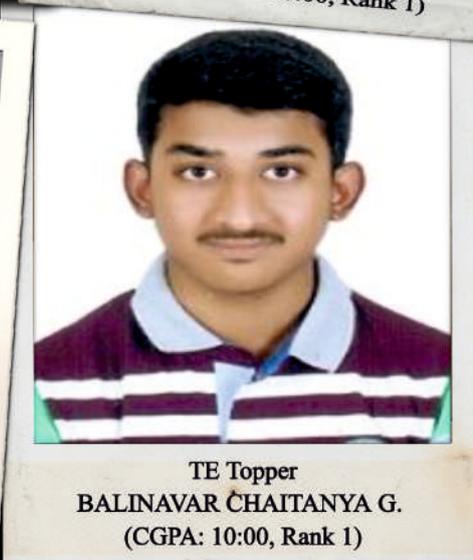
SE Topper
GAVHANE UDDHAV K.
(CGPA: 10:00, Rank 1)



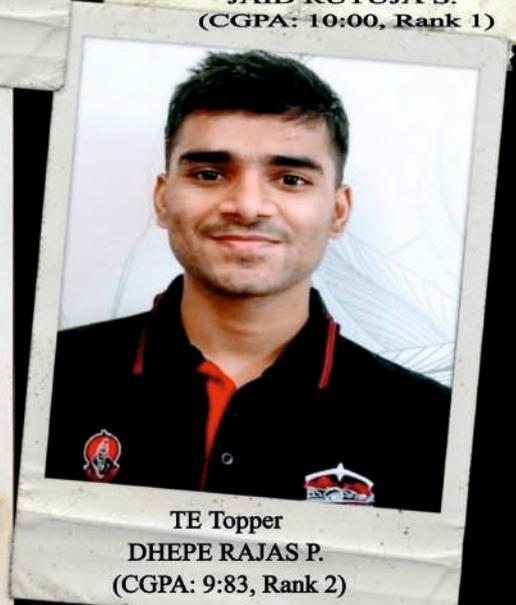
SE topper
JAID RUTUJA S.
(CGPA: 10:00, Rank 1)



SE Topper
NISARGANDH ANIKET Y.
(CGPA: 10:00, Rank 1)



TE Topper
BALINAVAR CHAITANYA G.
(CGPA: 10:00, Rank 1)



TE Topper
DHEPE RAJAS P.
(CGPA: 9:83, Rank 2)



Sr. No.	Name of the Event	Date
1.	Online Technical Presentation Competition	26/04/2020
2.	Online Project Poster Competition	26/04/2020
3.	ACR Project consults and Rotary club (North) Scholarship	06/06/2020
4.	Online Technical talk on "Current reasearch areas in Heat Exchanger Design".	19/04/2020



Academic Year/ Date	Event Name	Department
2019-20	Guru Pournima and Teachers Day Function	Mechanical Department
2019-20	Donation camp to help out needy people in Sangli and Kolhapur flooded region	Mechanical Department
2019-20	SE welcome Function	Mechanical Department
2019-20	PUC camp	Mechanical Department
15/02/2020	Add on course on Geometric Dimension and Tolerancing as per ASME GD&T standard by CADCAMGURU Solution Pvt. Ltd.	Mechanical Department
20/07/19	Add on course on German Language	Mechanical Department



Sr.No	Name of students/ Group	Achievements	Academic Year
1.	SAE BAJA ARIZONA 2020 held at Tucson, USA	Virtual Round 1. Overall International Rank - 25 2. Design International Rank - 21 3. Sales International Rank - 23	2020-21
2.	Siddarth Power, Digvijay Sawant, Akshay Power, Saurabh sawant	Published Patent on Design and Development of Liquid Food dispenser Assembly (Application number: 202021020276 A Date of Publication- 17/07/2020)	2020-21





Sr.No	Name of students/ Group	Achievements	Academic Year
1.	BAJA 2020	1) Suspension and Traction Award, Runner up (Trophy and Cash Rs. 40,000/-) 2) Go Green Event, Runner up 3) Endurance Rank - 5 4) All India Rank - 4	2019-20
2.	Parth Bhalerao	Third place in the inter collegiate chess championship, Pune city zonal sports committee	2019-20
3.	Shreyash phapale	Got state level 1st rank in Elocution & state level 2nd rank in poetry	2019-20
4.	Mr. Salil Deshpande	Secured 3rd place in SPPU, Pune City Zone Intercollegiate Best Physique Competition (in 65 KG)	2019-20
5.	Mr.Sagar Uge, Mr. Nityanand Yewale, Mr. Dipak Misal	Won Consolation Prizes in Project Presentation at TechnoChill Event	2019-20
6.	BAJA 2019	1) Design Evaluation Award, Runner up 2) Winner Overall Static Events 3) Endurance - 10 4) All India Rank - 12	2019-20
7.	SUPRA 2019	1) Acceleration Award, Runner up (Trophy and Cash Rs. 20,000/-) 2) All India Rank - 14	2019-20
8.	Efficycle 2019	1. Acceleration Award – Winner 2. CAE Award – Winner 3. Gradient Simulator – Winner 4. Cost Award – Runner Up 5. Design Award – Runner Up All India rank - 6	2019-20



TATA TECHNOLOGIES



Make It Happen

Center for Invention, Innovation and Incubation (MCIII)

Joint Collaboration of Tata Technologies Ltd., Science & Technology Park and Marathwada Mitramandal, Pune

Marathwada Mitramandal's College of Engineering, Karvenagar, Pune - 52



The India Story

Technology is changing the game in every industry

The Essential Eight

Technologies that matter most for business today

Artificial intelligence	Augmented reality	Blockchain	Drones
Internet of things	Robotics	Virtual reality	3-D printing

Evolution in technology is changing the way of doing business. Corporate India is going through a transformation, with disruptive innovations constantly at its doorstep in today's digital ecosystem. Technology is also playing a critical role in the Government of India's key initiatives such as GST, Digital India, smart cities, and cybersecurity programs, enabling transformation and supporting India's growth. Technological innovations are the means to derive a competitive advantage as they open up new revenue streams and transform business models. Companies are therefore actively entering into strategic tie-ups to gain synergies. With billions of connected devices and the resultant exponential data growth across all sectors, companies are being forced to adopt technology transformation with a view to harvesting data to gain and monetise insights. India's Technology sector is on the cusp of unprecedented growth, as the companies in this sector will be at the forefront of this revolution, partnering with players from various industries in their digital transformation.

Unleash Innovation & Fostering Growth

This **Make It Happen Center for Invention, Innovation and Incubation (MCIII)** established by Marathwada Mitramandal, Pune in collaboration with Tata Technologies Ltd. and Science & Technology Park.

Tata Technologies Ltd. (TTL) a flagship company of Tata Group is inter alia engaged in the business of Information Technology consulting in the area of Enterprise Solutions, Engineering & Design, Product Lifecycle Management

Services and IT Enabled Services Management having its registered office at 25, Rajiv Gandhi InfoTech Park, Phase I, Hinjewadi, Pune.

Science & Technology Park (STP) an institute set up jointly by Department of Science and Technology, Ministry of Science and Technology, Govt. of India and University of Pune having its office at Savitribai Phule Pune University, Ganeshkhind Road, Pune.

Marathwada Mitramandal (MMM) Pune established in 1967 with the vision of 'येथे बहुतांचे हित' (Yethe Bahutanche Hit - Welfare of Masses). Mass education, co-education and dedication towards overall development of the region are watchwords of the trust. At present the trust has four educational campuses in Pune area at Deccan, Karvenagar, Lohgaon and Kalewadi. At its various educational campuses the trust has created excellent facilities in the fields of Architecture, Interior Design, Management, Law, Commerce, Pharmacy, Engineering etc., which provide state of the art education to over 12,000 students.

One Stop Shop

- Convert innovative ideas to products and become entrepreneur.
- Help Innovators to develop new products.
- Promote various (technical/non-technical, Bio / Fintech / Agree / Pharmacy) startups.
- Make people deployable
- Provide high-end and Industry specific training.
- Provide customized co-working spaces to young entrepreneurs and incubate them.
- Provide mentor ship to those who want to invent new products, services and processes.
- Provide guidance for Intellectual Property Rights (IPR) and technology management – patents, copyrights, and design registration.
- Total solution provider for innovative ideas upto mass production.

Salient Features

- The MCIII Project investment is about INR 200 million excluding space and infrastructure.
- Research facilities for industries, institutions and individuals.
- Training Modules designed by Tata Technologies Ltd.
- Training by Experts from Tata Technologies Ltd. and other Industry partners.
- Joint Certification from TTL, STP and MMM.
- Domain Specific Placement opportunities.
- Plug and play startup incubator.

There are four cells under MCIII :

Cell 1 : Nerve Center of Technology R&D

Leveraging advanced technology to transform ideas into virtual product design, development and validation.

Enablers

- High-end workstations and Industry grade softwares (Commercial usage) to enable innovators to build complete solutions.
- Transforming ideas to virtual build and beyond, using latest technology tools which are used across industries.

Benefits

- New opportunities for innovators/student to enter in the fields of Design, Research, Verification & Validation.



Cell 2 : Nerve Center of Advance Manufacturing

Enabling students/innovators to work on assemblies and components to enhance their understanding of the design and mechanism of machines.

Enablers

- 3D printer & 3D Scanner for reverse engineering and up-gradation.
- Industrial robotic cell for Arc welding.
- Vertical Milling Center (VMC).
- CNC Lathe Machine.
- Well equipped mechanical workshop.

Benefits

- Students / innovators can utilize this common facility to upgrade their skills and convert their ideas into physical products.



Cell 3 : Nerve Center of Domain Exploration

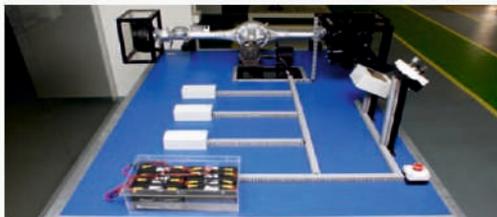
Enabling students/innovators to understand the basic principles of engineering and implement the same for developing innovative products.

Enablers

- Sports Utility Vehicle (SUV) working cut section with 30 assemblies.
- Complete Electric Vehicle (EV) kit.
- Electrical & Electronic Accessories.

Benefits

- Enabling domain exploration through working principles, application and hands-on experience.



Cell 4 : Incubation Center

Making innovators to Startpreneur to Entrepreneur.

Enablers

- Access to Prototyping Lab.
- Mentor ship for Incubation, Start-ups and Accelerators.
- Co-working space & Technology guidance.
- Peer network & other assistance.

Benefits

- Innovators will convert ideas into product.
- Generating entrepreneurs and wealth creators.



Present Training Modules

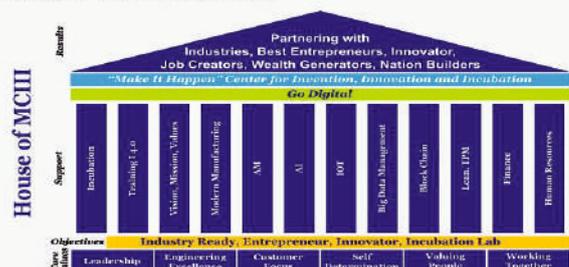
Good opportunity for the students, faculties, industry persons and innovators to upgrade their skills with high end technology tools and industrial experiential learning.

Sr.	Module Name	Module Duration
1	Product Design & Development	45 Hours
2	Design Engineering	45 Hours
3	Advanced Automobile Engine	45 Hours
4	Advanced Manufacturing	45 Hours
5	Virtual Verification & Analysis	45 Hours
6	E-Vehicle	30 Hours
7	Application Building with Desktop Robotic Arm	30 Hours
8	IoT Application Development	30 Hours
9	Python Programming	30 Hours
10	3D CAD Modelling and Additive Manufacturing	30 Hours
11	Industry Ready Training	30 Hours

Course Module Highlights

- Training Modules are designed by Tata Technologies Ltd. as per the Industry needs.
- Training and Mentorship by experts from Tata Technologies Ltd.
- Focus on Skill Development through hands on training.
- Training on High-end workstations, softwares and advanced manufacturing equipment such as Industrial robot arc welding, VMC, 3D printer, 3D scanner, domain exploration products etc.
- Joint certification from Tata Technologies Ltd., Science & Technology Park and Marathwada Mitramandal under the banner of MMCIIL.
- Domain specific placement opportunities.

Note : Those who are interested for the above Modules kindly visit our website www.mmcoe.edu.in and fill up the Module registration form under the tab "TTL-STP-MMM's CIIL"



Contact Details : Dr. C. R. Talathi
 Phone No. : (020) 7720097780 - 82, Ext. : 292
 Website : www.mmcoe.edu.in, www.mciil.in
 Email : ciii@mmcoe.edu.in

हे मायभूमी
हे मायभूमी तुझे,
फेडू कसे उपकार...?
कुतज होत तुझे मावू कसे आभार...?
संताची वू भूमी संतभूमी..
नाही राहीली त्याची कुणास जाणीव..
पापकर्म वाढले ह्याच भूमीवर...
भासते पुण्यकर्मांची आता उणीव..
हे मायभूमी फेडू कसे तुझे उपकार...!?

शहमाडीच्या संगेत, गिरिजेच्या कुशीत बसलेली वू..
शमुद्र किनाऱ्यांनी वेढलेली वू...
विद्यार्थ संपत्तीने परिपूर्ण वू!!
धार्मिकतेचा पाया ही वू,
हे माय भूमी तुझे फेडू कसे उपकार...!?

हे मायभूमी मावू, कसे तुझे आभार...?
गड किल्ल्यांचा इतिहासही वू...
अभयारण्याचा विभाग ही वू...
हे मायभूमी तुझे मावू कसे आभार...
कुतज होऊन तुझे फेडू कसे उपकार..

—संजना

हे जीवन पुन्हा नव्याने खुलू दे!

प्रवास हा नव्या वळणांचा,
अंधारातल्या लख्ख दिव्यांचा,
पाश ह्या संकटांचे अनेकदा तुटू दे!
पाखरांतले कोवळे जीवन पुन्हा नव्याने खुलू दे!

संकटांशी लढण्याचे बळ माझ्यात रूजू दे!
अंत असो वा जरी सत्य मनी वसु दे!
घायाळ जाहलो जरी आमुचें धैर्य ना तुटू दे!
वादळ सरुनी सारे जीवन पुन्हा नव्याने खुलू दे!

रंग, रूप, धर्म, एवय समानतेने नटू दे!
कर्म रूपी बलिदान आमुचें सौख्ययाने फळू दे!
वैविध्यदायी वसुंधरा ही सौंदर्याने फुलू दे!
संस्कृतीतले हे जीवन पुन्हा नव्याने खुलू दे!

अर्थ या साऱ्या चरांचे सर्वदा कळू दे!
वणवा नको तेज जन्मी प्रकाश हा सरू दे!
वाण या नव्या सुखांचे सर्वतः लुटू दे!
पुन्हा एकदा हे जीवन नव्याने खुलू दे!

- अभिषेक येनपुरे



College ची चाहल

Online Learning ता Internet ने
आचार दिता खरा,

पण काही म्हण आपला College
मधल्या शिक्षकांचा फळा-खडूच बरा!!
१!!

कधी उपटलील ती कुलुएबंद दारे,

अन वर्गा वर्गा तुन वाहतिल शिकवणीचे
खारे!!२!!

आतुरते कान आता त्या कलकलाटाला,
टोळे ही लागले आमुचे College च्या
बाटेना!!३!!

Carteenच्या चहा - सामोसा

ची लागलीये आम,

जरी आई करतोये परी रोज

पदार्थ खासा!!४!!

मन माझे लागेना या धराच्या चौकटीत ,

College मधलेच हवेत मज ते मित्र
दवटवीत!!५!!

- राजस प्रमोद डेवे

(BMA113)

आयुष्य

कामध्यांवर जेवण जायत,
जवळ करी बसत नाही.
एकच चालत राहून काही
एकेकडे विरत नाही.

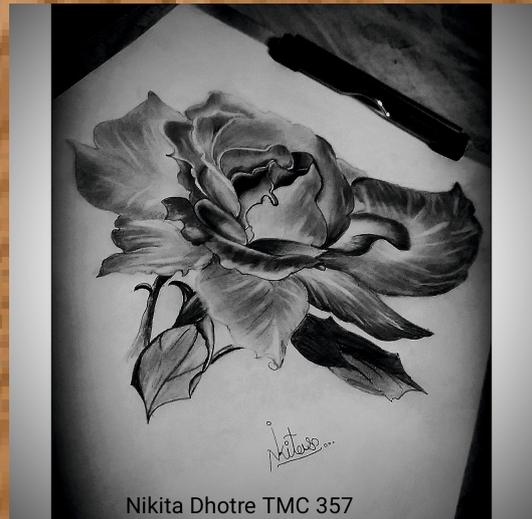
हरकता येत आपापला
शिवायचा अंगद
एकेकडे वेग वेगून
गेल्या चाले कायविनाद

चाव चाव रावतो कधी,
दिसा मात्र कळत नाही,
इतरांचे पाकळ कधी,
इतरांकडे तळत नाही.

दुर्लभ जेवण बगल पण,
अवाचकच वेळ नाही.
जमते काहीत करासाठी
काहीत करला वेळ नाही

वृणा एक वेळिल करला,
सेवून जाईल हा कास
अहर्दावरच रागिलेला
फसिले जीवन प्रवास

S.D.





Experience : What does it mean to a kid?

This starts with me and my third grader cousin brother, when we were returning back from a dinner date at McDonald's. He was sitting next to me and I casually asked him "Did you like the food?" and before he answered I dropped another question "How was your experience?". The word "experience" was inappropriate in that question and situation though, I realized just a fraction of second after I asked, but he replied, "was good". And this triggered me for the next one, I asked, "What does an experience mean to you?", and I stared at him to note his reaction, he was not shocked by listening to such out of the syllabus question by my side, but he thought for a while and answered, "this.. is an experience. The burger, fries and the ice-cream and you, were an experience altogether". He was technically right and that was the exact moment, I got zoned out. What a raw brain! That's the reason I love spending time with kids.

Page No. 1

This is what I thought when I got zoned out:

Even though the kid answered the question technically right, which of course was just an example, but I thought draw it further taking his example. We might know that the word "experience" means - an event or occurrence which leaves an impression on someone. But let me tell you that, this word shall and totally different than "event", "occurrence", "incident", "happening", "moment" and all that we have in the list.

How?

You must have heard this proverb - Learn from your experiences. I honestly feel that the guy who coined this proverb must had good marketing skills, because he differentiated the words "learn" and "experience", put it in a sentence and made it famous. And for what I think about the same is, as "experience means - an event which leaves an impression on someone, eventually means that, that someone "learns" something about the happening

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in that particular event. Which consequently means, learning should come absolutely free with the experience, or else it will be just a "happening", "moment" or whichever is easy to pronounce. I've even saw people talking about the Experience Letters from their companies about their jobs, which mainly focuses on what did they do while they were in that position. But, the words on that letter holds the weight of what you have "learnt" being on that position and just not what you worked on. Well, this was just an example that I took to express my thinking, but what exactly I want to promote through this article is: Let's not just be in the moment where-so-ever we are, we must observe the things which are around us, question why are they so, find the details and logic behind it and build a chain of thoughts around it, so that we can learn about it - and that's how, we shall experience it.



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I would like to rephrase the proverb "Learn from experience" with - "Learn while experiencing the things". So don't just be - in the moment, experience it. I hope you will remember this when you will be staring at some sea or mountains while being in the moment. And yes, about the story I stated about the kid. I shall remind you that his complete answer to the question "How was your experience?" and "What does experience mean to you?" was, "was good.. The burger, fries and the ice-cream and you, were an experience altogether", if we read the second sentence before the first one, he meant, and learnt, and eventually I understood that - the time he spent with me, was good.

- Rhushikesh Bhosale

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**Marathwada Mitra Mandal's
COLLEGE OF ENGINEERING**
Karvenagar, Pune

Permanently affiliated to SPPU | Accredited with 'A' Grade by NAAC
Recipient of 'Best College' award in 2018-19 by SPPU



Department of Mechanical Engineering

Vision

Excellence in Mechanical Engineering for global competency and social welfare.

Mission

- ❖ To develop professional skills through student centric activities and the industry interactions
- ❖ To prepare students for higher education, research and innovation
- ❖ To make globally competent and socially committed Mechanical Engineers with morals and ethical values

Program Educational Objectives (PEOs)

Graduates from our program will :

- ❖ Become competent engineers for successful career in higher studies, research and industries
- ❖ Acquire knowledge based skills to solve the problems in mechanical engineering and related fields
- ❖ Achieve professional ethics and managerial skills
- ❖ Respond to growing demands of society through lifelong learning and extension activities

Program Outcomes (POs)

Engineering Graduates will be able to :

1. **Engineering Knowledge** : Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems
2. **Problem Analysis** : Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences
3. **Design / Development of Solutions** : Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations
4. **Conduct Investigations of Complex Problems** : Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions for complex problems
5. **Modern Tool Usage** : Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations
6. **The Engineer and Society** : Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
7. **Environment and Sustainability** : Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
8. **Ethics** : Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and Team Work** : Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
10. **Communication** : Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
11. **Project Management and Finance** : Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments
12. **Life-long Learning** : Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change

Program Specific Outcomes (PSOs)

Graduates from our program will :

- ❖ PSO-I : Identify, formulate and analyze engineering problems by applying the principles of thermal, design, manufacturing, interdisciplinary and allied engineering
- ❖ PSO-II : Contribute to the project in the core and associated domain by using add-on skills like CAD, CAM and CAE