A.Y. 2020 - 21

Departmental E-Magazine

MECHARDOUR

together we evolve...

PCET's & NMVPM's

Nutan Maharashtra Institute of Engineering & Technology

Mechanical Engineering Department

Published by:
Mechanical Engineering Department
Nutan Maharashtra Institute of Engineering & Technology, Talegaon , Pune

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Dr. Pranav Charkha
HOD, Mechanical Engg. Dept. NMIET

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Mr. Spandan Waghmare
Asst. Professor, Mechanical Engg. Dept.

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Mr. Spandan Waghmare (Asst. Professor)

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Inside this Issue

Inside this Issue

Messages

Principal's Message

Nurturing innovation & creativity are key elements of a successful education system & this E-Magazine of Mechanical Engineering Department is a perfect blend of both. I am extremely happy to see this edition of E-Magazine & do appreciate that faculties and students have taken efforts to bring out this edition of E-Magazine in this pandemic situation.

Through this magazine I would like to highlight that our students are performing very well in the academics as well as in the various events at state & national level. We are at NMIET trying to inculcate the best technical as well as best analytical skills in our students, to make them technologically superior and ethically strong. We at NMIET are committed towards creating opportunities.

This E- Magazine is a good platform for our students as well as faculties to show their creative abilities. I am sure that this platform will bring out an array of creativity with various distinct flavours.

I wish good luck and congratulations to all...

Dr. Lalitkumar Wadhwa
Principal

HOD's Message

It is a matter of pride to pen down the message for Mechanical Engineering departmental e-magazine. This is a platform for the students to express their creative pursuit which develops in them originality of thought and perception. Department as well as college provides an ocean of opportunity for the students to exhibit their hidden talents and get a spotlight t for their efforts. Besides, this particular magazine inspires the young minds to view the world in a broader perspective. I congratulate the students as well as faculties who used this forum to present their ideas. As long as our ideas are expressed and thoughts are kindled we can be sure of learning, as everything begins with an idea.....

My best wishes to all.....

Dr. Pranav Charkha
Academic Coordinator & HOD Mechanical Engg.

Welcome to our E- Magazine

Faculty Editor's Message

A good reader always hungry for the new content & here we are proudly presenting this second edition of our magazine.

Like the last year, we are still facing the pandemic situation but the enthusiasm for crafting the magazine is still high. With the past experience of editing & designing all students of magazine committee have worked very creatively to bring this edition.

This edition is mixture of concepts of Past, Present & future of the Mechanical Engineering. I am sure that variety of content available in this edition of magazine will attract the readers.

Your valuable feedback & suggestions are important to us, please do share with us.

Thank you...

Mr. Spandan Waghmare
Assistant Professor, Mechanical Engg.

Student Editor's Message

"A pen is mighter than the sword "they say. Every article in the magzine has beautifully justified the saying & crafting a college E-magzine was like making visible the shining tip of sword sharpened at our institute to all .

"Drop - Drop makes the ocean " we all know every drop has contribution in making ocean so immense and beautiful . Every article and content of the magzine was like a drop making this magzine "the ocean" so beautiful and enjoyable. It was a cumulative efforts of all the authorities and students in crafting this beautiful "college E-magzine."

It was a great opportunity and all together a great experience and pleasure in crafting a magzine for such a aknowledged and beautiful institute "Nutan Maharashtra institute of engineering and technology ".

Student Editorial Team
Mechanical Engg. Department

Editorial & Design Team

Yash Dhore
BE

Irfan Sikilkar
BE

Prabhjyot Singh Suri
BE

Akash Yadav
BE

Shubham Patil
TE

Sandesh Donapurge
TE

Kunal Patil
TE

MESA's Message

The MESA was formed to bring about the technical development of students by organizing seminars, workshops and other activities. Also to improve non-technical abilities of students by engendering good communication skills, presentation skills and team work. To encourage & to develop their personal skills, like event management and time management by organizing inter & inter collegiate Events.

Although the events were mainly a team effort by the MESA members, the responsibility of leading the events were shared by many members. The students have always been given freedom of working in their own style and exercising new ideas. This phenomenon may lead to few compromises here and there however it helps the students towards building their confidence. We received great appreciation and constructive suggestions as well as uncomforting comments over the year & we are enjoying equally all of them. We must appreciate the support and guidance provided by staff during the tenure of this MESA team.

We request all students through this magazine to participate with enthusiasm in all activities that are planned by MESA.

MESA Committee
Mechanical Engg. Department

About the Department

The Mechanical Engineering Department is the one of Best Department of Nutan Maharashtra Institute of Engineering & Technology (NMIET). The department believes in delivering the best Market value recent practical based education to there students. The department has highly qualified and experienced faculty with expertise in the areas of Design, Production, Manufacturing, CADCAM and Thermal. The Department continuously encourages their students to participate in various activities like Industry Based Project Work, VLCI, GIZ. Apart from placement, The Department provides platform to students for Higher Education as well as Entrepreneurship.

Overview of Department

Year of Establishment: U. G. : 2012-2013

Intake: 60 Seats

DTE Code : EN6310

Affiliated to: Savitribai Phule Pune University, Pune.

VISION & MISSION of
Department of Mechanical Engineering

"To be a renowned mechanical engineering education provider for serving needs of industry and society"

1. To provide quality technical education with an effective teaching learning process.
2. To bridge the gap between industry and academia by collaborative activities.
3. To develop students with research, innovation and entrepreneurship activities.
4. To advance graduates with professionalism and a sense of gratitude towards society.

Programme Educational Objectives (PEO's)

PEO1 To impart engineering & technical skills along with lifelong learning to make aware about latest trends.

PEO2 To build strong foundation in engineering fundamentals to synthesize innovative solution

PEO3 To develop technical professional to solve complex engineering problem

PEO4 To inculcate the spirit for professional & social ethics.

Programme Specifics Outcomes (PSO)

PSO 1 A student will be able to apply knowledge of thermal and mechanical design along with manufacturing processes to cater industry and society.

PSO 2 A Student will be able to be a promising entrepreneur imparting technical knowledge towards development of society.

Programme Outcome (POs)

1.Engineering Knowledge:

An ability to apply knowledge of computing, mathematics including discrete mathematics as well as probability and statistics, science, and engineering and technology;

2.Problem Analysis:

An ability to define a problem and provide a systematic solution with the help of conducting experiments, as well as analyzing and interpreting the data;

3.Design / Development of Solutions:

An ability to identify, formulate, and provide systematic solutions to complex engineering problems;

4.Conduct investigations of complex problems:

An ability to use the techniques, skills, and modern engineering technologies tools, standard processes necessary for practice as an IT professional;

5.Modern Tool Usage

An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modelling and design of computer-based systems with necessary constraints and assumptions;

6.The Engineer and Society

An ability to analyze the local and global impact of computing on individuals, organizations and society;

Programme Outcome (POs)

7. Environment and Sustainability

An ability to understand professional, ethical, legal, security and social issues and responsibilities;

8. Ethics

An ability to function effectively as an individual or as a team member to accomplish a desired goal(s);

9. Individual and Team Work

An ability to engage in life - long learning and continuing professional development to cope up with fast changes in the technologies/tools with the help of electives, professional organizations and extra - curricular activities;

10. Communication

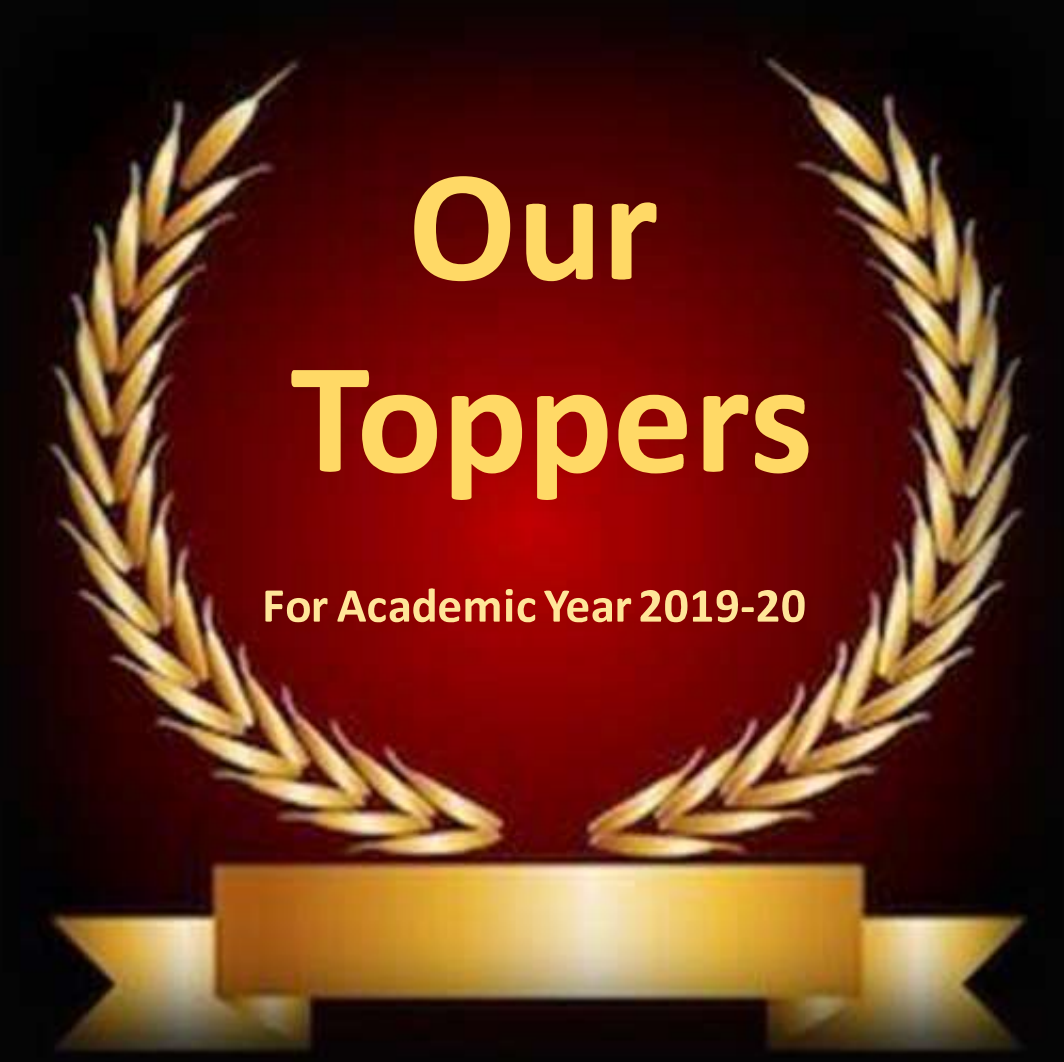
An ability to communicate effectively in engineering community at large by means of effective presentations, report writing, paper publications, demonstrations;

11. Project Management & Finance

An ability to understand engineering, management, financial aspects, performance, optimizations and time complexity necessary for professional practice;

12. Lifelong Learning

An ability to apply design and development principles in the construction of software systems of varying complexity.


Our
Toppers
For Academic Year 2019-20

Final Year Student

Jinesh Doshi

9.73/ 10

Suraj Kadate

9.5/ 10

Akshay Lunawat

9.48/ 10

Pavan Dhawale

9.34/ 10

Abhishek Shinde

9.34/ 10

Dhananjay Godse

9.30/ 10

Third Year Student

Omlesh Yadav

9.80/ 10

Prajwal Gulhane

9.61/ 10

Rushikesh Chavan

9.57/ 10

Dileep Kumar

9.52/ 10

Nitin Kanhurkar

9.37/ 10

Second Year Student

Sandesh Dongapure

9.36/ 10

Sonali Kala

9.26/ 10

Bhushan Budhbaware

9.24/ 10

Ved Bhalerao

9.16/ 10

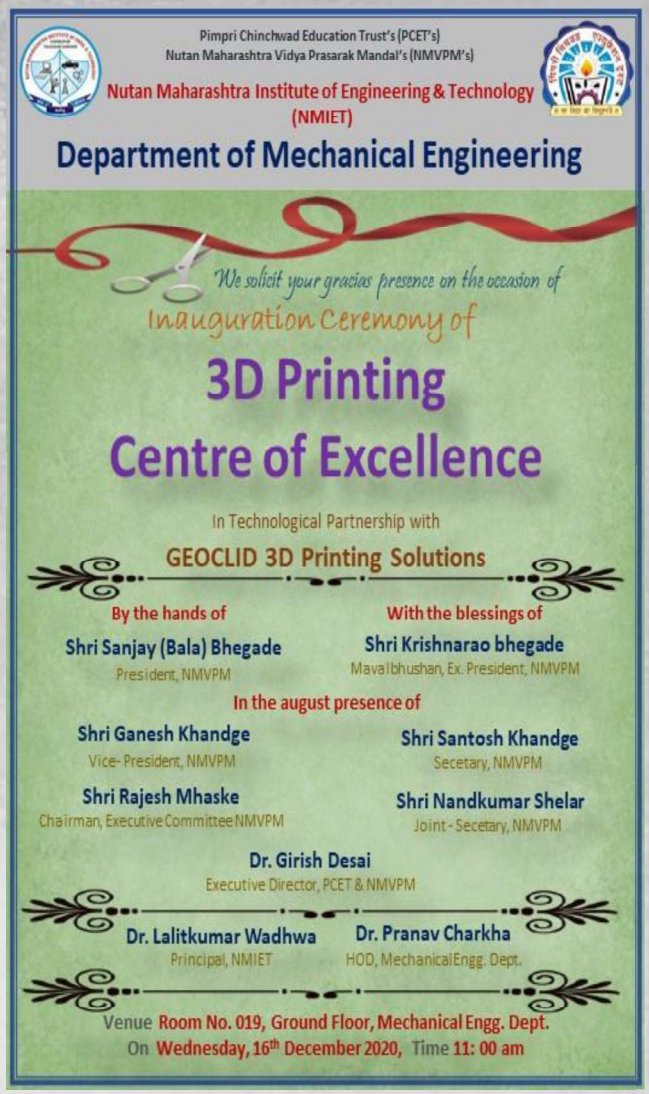
Bhavik Date

9.12/ 10

Happening at Department

3D Printing Centre of Excellence

Department has started 3D printing centre of Excellence from 16th December 2020, it was inaugurated by Shri. Sanjay (Bala) Bhegade (President NMVPM)



1. Importance of 3D printing (Additive manufacturing)

- Additive manufacturing often referred to as 3D printing, is a new way of making products and components from a digital model. Like an office printer that puts 2D digital files on a piece of paper, a 3D printer creates components by depositing thin layers of material one after another ,only where required , using a digital blueprint until the exact component has been created that cannot be manufactured by other means.
- 3D printer only uses the exact amount of material for printing. This enhances the efficiency. If the material is very costly, 3d printing techniques can be used to reduce the wastage of material.
- 3D printer came with immense number of applications. The use of additive manufacturing can potentially benefit a wide range of industries including defence, aerospace, automotive, biomedical, consumer products, and metals manufacturing.

We signed MoU for Training, Technical Support, Project & Consulting support from M/S GeoClid 3D Printing Solutions, Pune for Workshops and Training.

2. Benefits:

2.1 Academic:

- For an academic institute it will have added advantage as this is latest technology in rapid prototyping. Faculty can teach concepts of reverse engineering very effectively taught with this 3D Printing machines. As an additional lab it will give additional advantage from NBA point of view.

2.2 Research:

- As this is emerging technology scope of research work can be find out for process variable study in 3D printing machine along with material optimization.

2.3 Students Project:

- As students explore and grow their imaginations, it cultivates innovation where the student creates their own unique 3D projects.
- Graphics students of mechanical engineering can print out 3D versions of their project work
- Chemistry students can print out 3D models of molecules
- Mechanical Students can build 3D prototype of final year project and mini project also in defence, aerospace, automotive, biomedical, consumer products fields.
- It will be cost effective for projects of final year students.

2.4 Consulting Services.

- Additional short term training program for 1-2 days can be arranged on 3D printing for nearby institute students along with our institute students with minimal fees.
- With this dental implant can also be manufactured at this lab
- Other institutes students can do 3D project on this on chargeable basis.

3. 3D Printers we have in Center of Excellence

The CoE will be set up with 2 3D Printers of two different technologies. This will help expand the horizon of students exposure to the future of manufacturing, 3D Printing.

- **FDM 3D Printer:** These are the most common 3D Printers and are most widely used for economic prototype amongst other purposes

- **DLP 3D Printer:** These uses liquid resin as the raw material delivering smoother finish and faster output. These are used to get castable models in dental and jewellery industry.

SAEIndia

Society of Automotive Engineers

SAEINDIA

COLLEGIATE CLUB CERTIFICATE

SAEICCWIS278

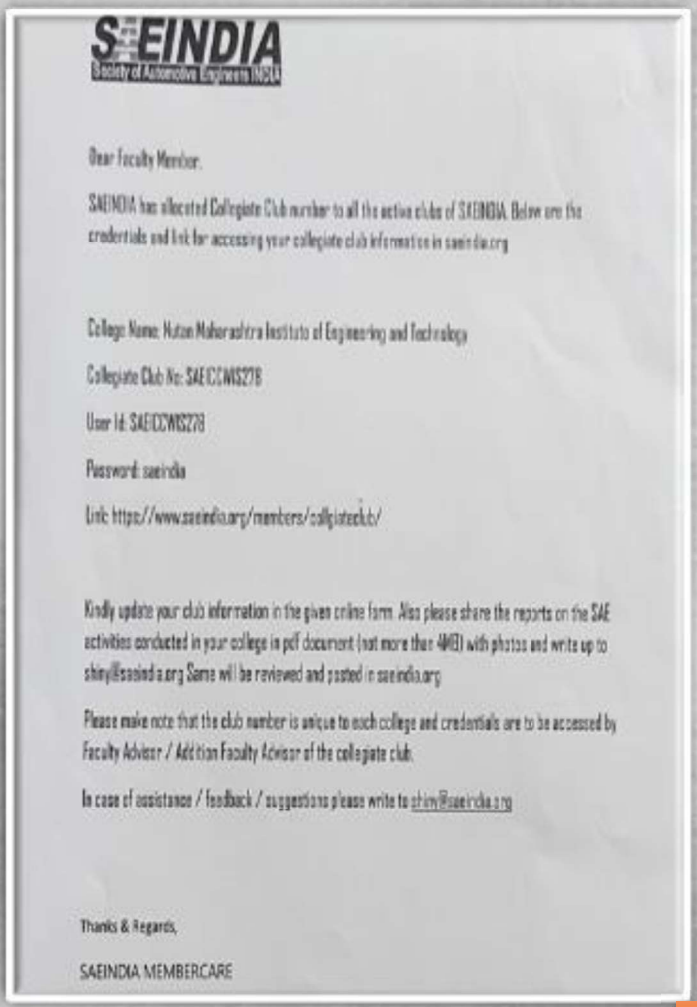
SAEINDIA Recognizes the formation of

SAEINDIA COLLEGIATE CLUB

of

NUTAN MAHARASHTRA INSTITUTE OF ENGINEERING & TECHNOLOGY

for academic Year 2020 - 2021



SAEINDIA

Dear Faculty Member,

SAEINDIA has allocated Collegiate Club number to all the active clubs of SAEINDIA. Below are the credentials and link for accessing your collegiate club information in saeindia.org

College Name: Nutan Maharashtra Institute of Engineering and Technology

Collegiate Club No: SAEICCWIS278

User Id: SAEICCWIS278

Password: saeindia

Link: https://www.saeindia.org/members/collegiateclub/

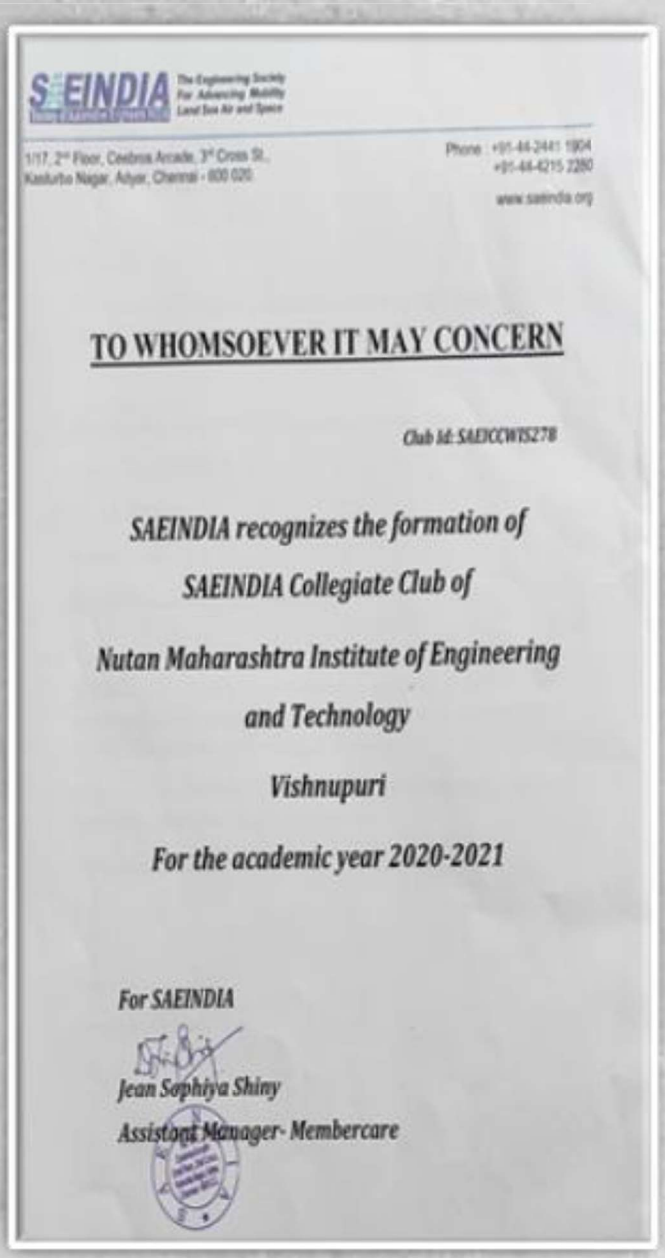
Kindly update your club information in the given online form. Also please share the reports on the SAE activities conducted in your college in pdf document (not more than 4MB) with photos and write up to shiny@saeindia.org Same will be reviewed and posted in saeindia.org

Please make note that the club number is unique to each college and credentials are to be accessed by Faculty Advisor / Addition Faculty Advisor of the collegiate club.

In case of assistance / feedback / suggestions please write to shiny@saeindia.org

Thanks & Regards,

SAEINDIA MEMBERCARE



SAEINDIA

The Engineering Society For Advancing Mobility Land Sea Air and Space

1/17, 2nd Floor, Cenbros Arcade, 3rd Cross St., Kasturba Nagar, Adyar, Chennai - 600 020

Phone: +91-44-2441 1904, +91-44-4215 2280

www.saeindia.org

TO WHOMSOEVER IT MAY CONCERN

Club Id: SAEICCWIS278

SAEINDIA recognizes the formation of

SAEINDIA Collegiate Club of

Nutan Maharashtra Institute of Engineering

and Technology

Vishnupuri

For the academic year 2020-2021

For SAEINDIA

Jean Sophiya Shiny

Assistant Manager- Membercare

Department has SAE club named as **"SAE India Collegiate Club of NMIET"** , we have 50 active students under this club.

➢ About SAE India Collegiate Club of NMIET

SAE India Collegiate club of NMIET is Mechanical Engineering Students club which affiliated with Society of Automotive Engineers (SAE) . We work to enhance the knowledge base of members who are mobility practitioners within institute. Also we provide access to SAE International magazines and encourage members to participate in different competitions of SAE like BAJA , SUPRA , EFFICYCLE , Report Writing , Presentation of technical papers , etc. which enhances their skills and provide a platform to exchange their ideas on National / International level with outside Automobile world.

Achievement

Our student Mr. Sahil Vekhande of BE Mechanical secured Second Runner Up position in national level competition of Automotive Styling.

FPSI

Fluid Power Society of India


Pimpri Chinchwad Education Trust's (PCET's)
Nutan Maharashtra Vidya Prasarak Mandal's (NMVPM's)

ACHIEVEMENT

Nutan Maharashtra Institute of Engineering & Technology

NMIET

Becomes Institutional Member of

FLUID POWER SOCIETY OF INDIA
FPSI

One of the Premier Institute Working in the Field of

Fluid Power

Membership No. INST- 4621

Prof. Mangesh Kale
Institute Representative

Prof. Shridhar Limaye
HOD, Mechanical Engineering

Dr. Pranav Charkha
Academic Coordinator

Dr. Lalitkumar Wadhwa
Principal

As a FPSI member, you have the benefit of FPSI's 40 years of expertise and experience representing the fluid power Fluid Power industry in India. Your membership supports a non-profit organization dedicated to the unique interests of fluid power Industry and professionals

•Free subscriptions to The Fluid Power Journal.

•You will also have access to the "Members Only" section of the FPSI Web site to access all these material.

•You will have access to Indian fluid power industry and professionals.

•You can participate in various events organized by FPSI.

•You can contribute article which will be published in Journal if found suitable.

•As a industrial member you can advertise your product and service in Fluid Power Journal and website at nominal cost.

•For Industrial members we can organize "Meet The Manufacturer" event. This is an unique event organized by FPSI to the benefit of manufacturers and buyers. For more detail contact secretariat.

•Training Program - FPSI organizes periodical Technical Training Program on basics of Fluid Power, including Hydraulics, Pneumatics and Mechatronics.

•Social Media - Connect with FPSI on Facebook, LinkedIn and Twitter

Objectives and Activities of Student Chapters:

1.The primary objective of a Students' Chapter shall be to promote among Students of degree in Mechanical Engineering, Civil Engineering or Industrial Production or Chemical Engineering or Metallurgy Engineering or Any technology institute covering Fluid Power engineering, a feeling of fraternity and brotherhood and to complement the objectives and activities of the Institute. It shall also render all possible assistance to the Regional Centres in matters relating to Student Members. The activities of the Students' Chapter may specifically include the following:

2.To arrange Lectures, Film shows and Video shows related to the Fluid Power Engineering Education and Profession.

3.To arrange Seminars, Workshops, Group Discussion and Debates and to promote interaction of the Institute with Industry.

4.To establish and operate magazines for the use of its Members.

5.To arrange Excursions and Plant Visits of interest to the Student Engineers.

6.To assist and guide Student Engineers in their career planning and placement.

7.To assist any other activities of social, technical and educational interest to Student Engineers.

Primary Objective

1. The primary objective of a Student Chapter shall be
2. To promote the interest in Fluid power subject among Engineering Students.
3. Create awareness on Fluid power applications and the latest developments.
4. Explore the career opportunity for the student's community in this area.
5. Provide an opportunity to students in networking and organizing.

Student Chapter Activities

1. Periodic technical talk,
2. Guest lecture from industry expert,
3. Industrial visit,
4. Presentation ,case study
5. One day workshop and certification on fundamentals of Hydraulics/Pneumatics'/Mechatronics

VLCI

Visionary Learning Community of India

Principle

The VLCI transformation is based on **Fish Bowl Principle** by **Prof Shoji Shiba**.

The fish bowl principle is as follows:
The different genus of fish jump into common fish bowl & they follow their own intuition to dive. The different fish swim mutually in fish bowl & then jump away to see the new region after getting conversant with unknown area by learn & practice.

Objectives

- To introduce the concepts, principles and framework of contents of Toyota Production System (TPS).
- To acquaint the students with various productivity enhancement techniques.
- To acquaint the students with different aspects of Production Planning and Control and Standardization.
- To introduce the concepts of material flow, tier structure as applied in industries.
- To acquaint the students with different aspects of industries shop floor activities and Industrial Safety rules.

VLCI
Module 1 & 2

On 17th and 20th April 2021

Topics Covered:-

1. Aspects of cleanliness and safety

2.Study of modern manufacturing

Participants:

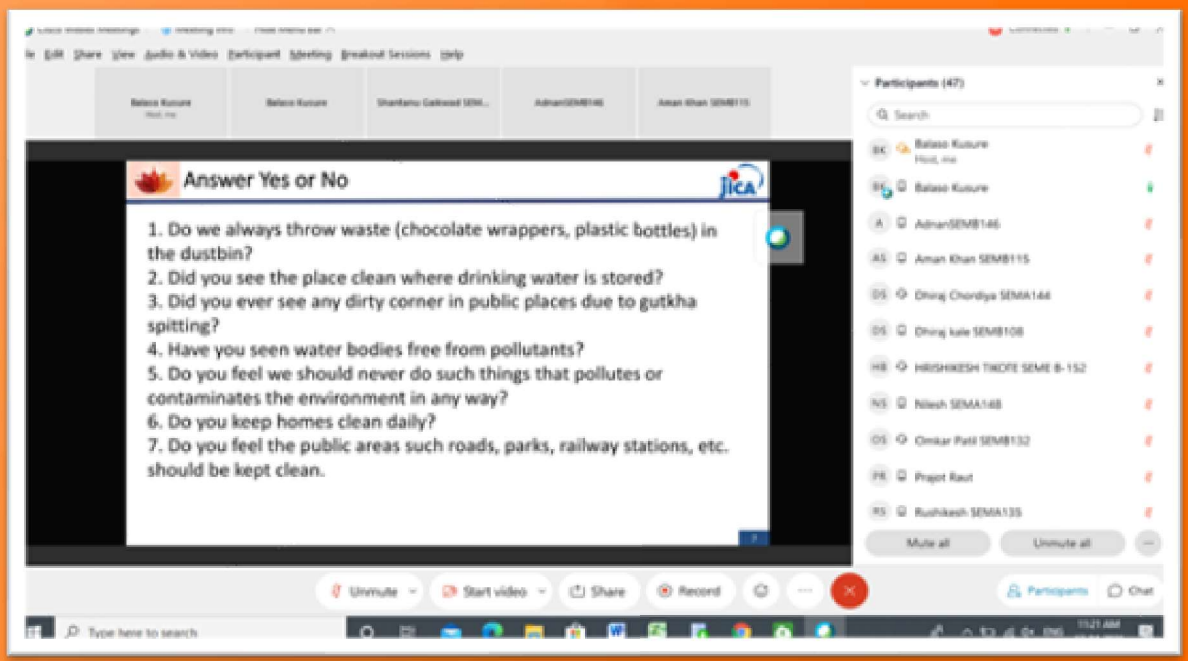
Students of SE Mechanical

No. of Participants Present: 65

Platform: WebEx

Faculty Coordinator:

Mr. Kusure Balasao



VLCI
Module 3

On 30th Jan 2021

Topics Covered:-

1. Self discipline & Time Management
2. Team work and Brain Storming

Participants:

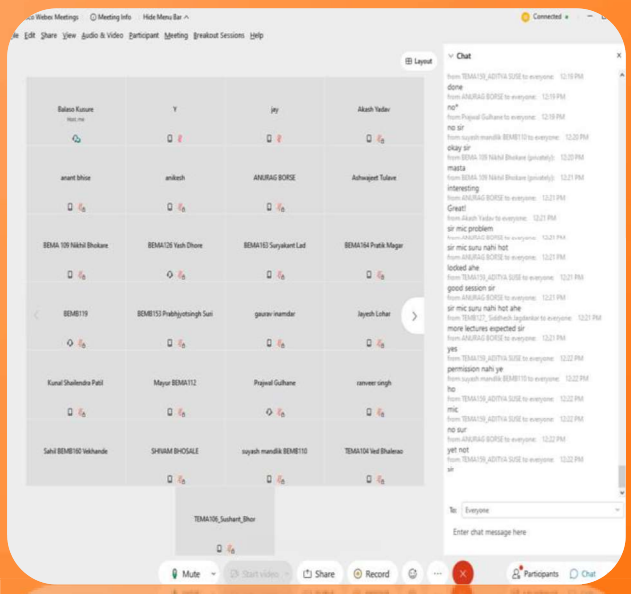
Students of BE & TE Mechanical

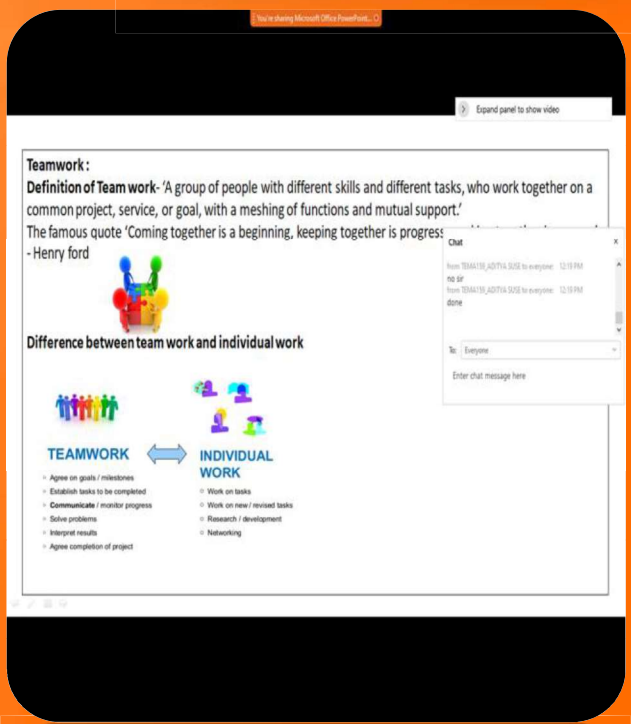
No. of Participants Present: 50

Platform: WebEx

Faculty Coordinator:

1. Dr. Pranav Charkha
2. Mr. .Kusure Balasao





VLCI
Module 4 & 5

On 4th and 08th August 2020

Topics Covered:-

1. Overview of Module 1 to 4by students
2. Question –answer session
3. Module 5 study
4. Question –answer session on Module 5

Participants:

Students of BE Mechanical

Platform: WebEx

No. of Participants Present: 22

Name of Mentors Present:

1. Mr. Chandrakant Patel
2. Mr. Subodh Korde
3. Mr.Kakasaheb Dhere
4. Mr.Rahul Yadav
5. Mr.Ashish Patil

Name of Staff Present:

1. Dr. Pranav Charkha
2. Mr.Shridhar Limaye
3. Mr.Biradar V.V.
4. Mr.Nilima Bawne

Webinar

VLCI Journey: Sustenance & Way Forward

A **webinar** was organized on **15 August 2020.**

1. Overview of the Program

1.1 Phase 1 2017 to 2020:

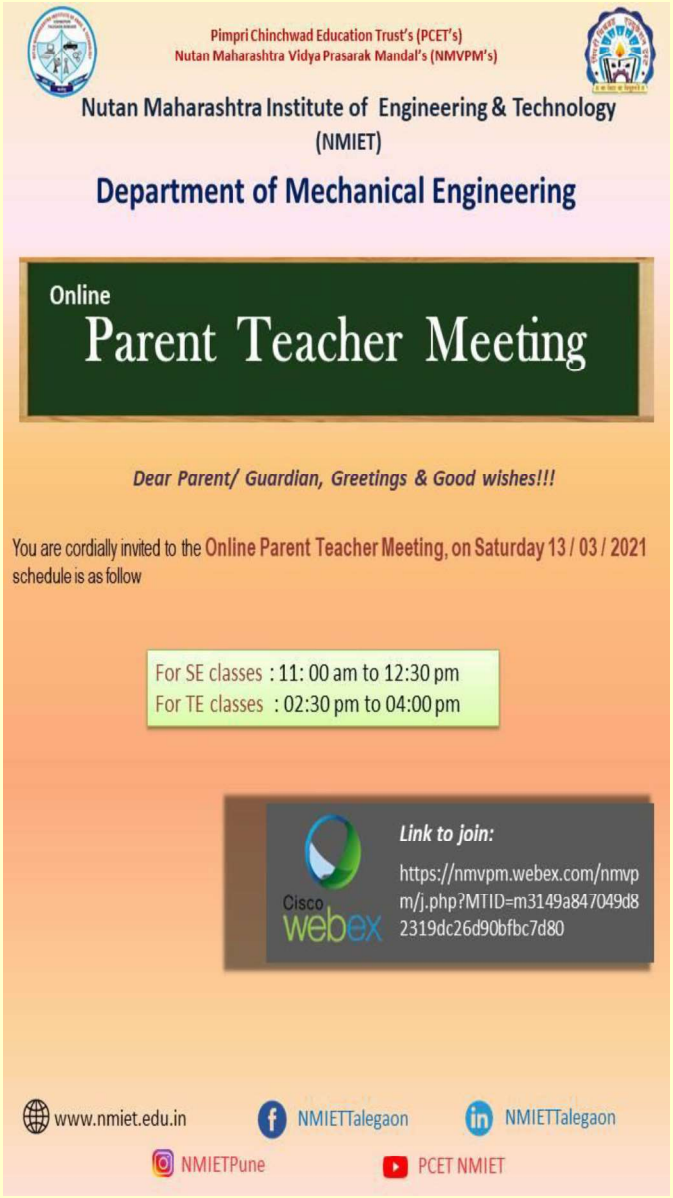
Promotion, Development of Curriculum and Faculty, Voluntary Demonstrators and Industry Supporters.

1.2 Phase 2 2021 to 2024:

Self Sustenance.

.


Parent
Teacher
Meeting



- **Title of Activity –**

Parents Meet of SE & TE class

- **Objective of Activity: -** Academic improvement

- **Number of Parents Involved: -** 58

Faculty Coordinator:

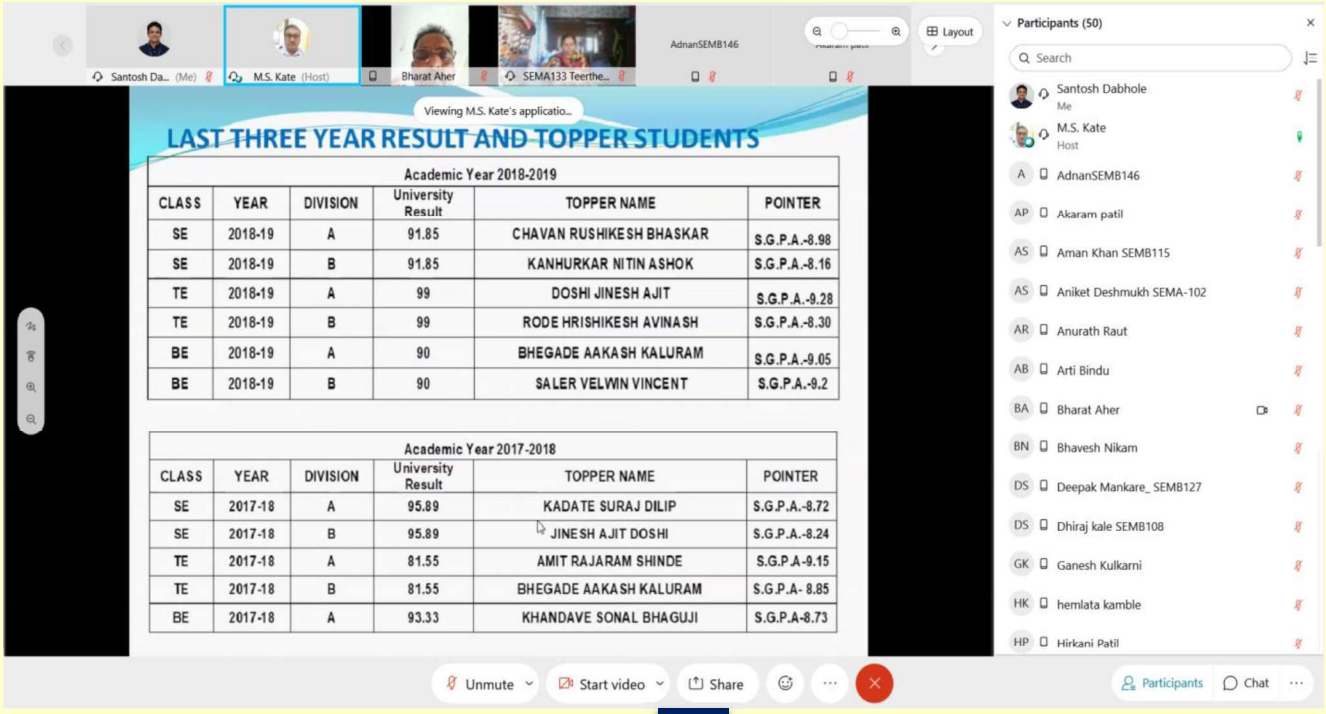
Prof M.S. Kate

Brief Description of Activity.

1. Academic presentation given by Prof MS Kate.

2. Dept. activities and future plans are explained by HOD Dr. Pranav Charkha.

3. 3D printing center of excellence information is given to parents by Prof. Santosh Dabhole.

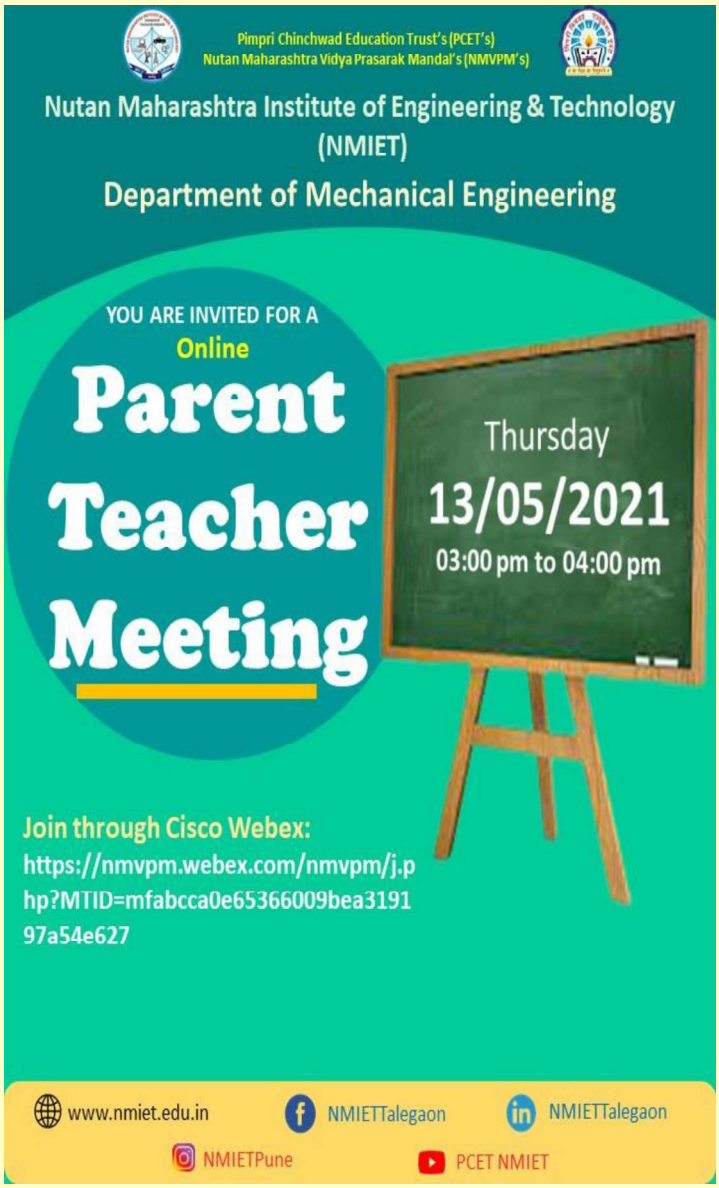


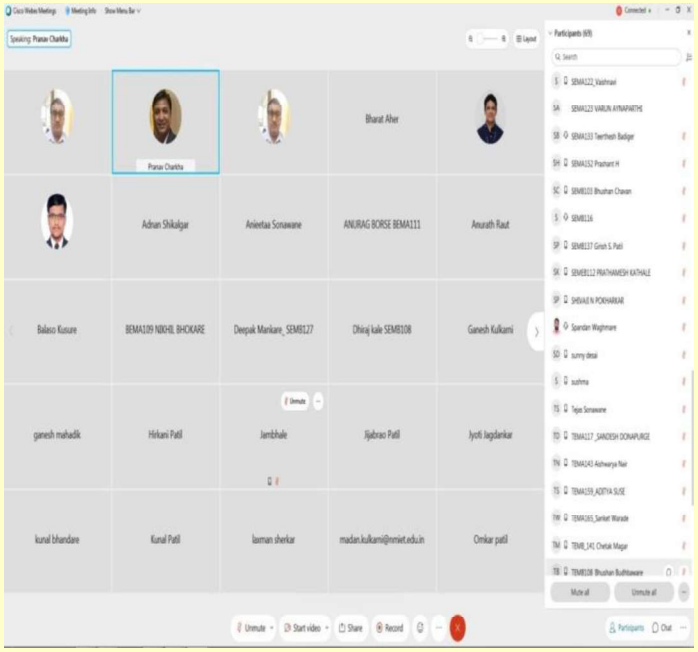
Academic Year 2018-2019

CLASS	YEAR	DIVISION	University Result	TOPPER NAME	POINTER
SE	2018-19	A	91.85	CHAVAN RUSHIKESH BHASKAR	S.G.P.A.-8.98
SE	2018-19	B	91.85	KANHURKAR NITIN ASHOK	S.G.P.A.-8.16
TE	2018-19	A	99	DOSHI JINESH AJIT	S.G.P.A.-9.28
TE	2018-19	B	99	RODE HRISHIKESH AVINASH	S.G.P.A.-8.30
BE	2018-19	A	90	BHEGADE AAKASH KALURAM	S.G.P.A.-9.05
BE	2018-19	B	90	SALER VELWIN VINCENT	S.G.P.A.-9.2

Academic Year 2017-2018

CLASS	YEAR	DIVISION	University Result	TOPPER NAME	POINTER
SE	2017-18	A	95.89	KADATE SURAJ DILIP	S.G.P.A.-8.72
SE	2017-18	B	95.89	JINESH AJIT DOSHI	S.G.P.A.-8.24
TE	2017-18	A	81.55	AMIT RAJARAM SHINDE	S.G.P.A-9.15
TE	2017-18	B	81.55	BHEGADE AAKASH KALURAM	S.G.P.A- 8.85
BE	2017-18	A	93.33	KHANDAVE SONAL BHAGUJI	S.G.P.A-8.73





Title of Activity –

Parents Meet of SE TE BE class

Objective of Activity: -

Academic improvement

Number of Parents Involved: -

70

Faculty Coordinator:

Prof M.S. Kate

Brief Description of Activity:

1. Academic presentation was given by Prof M S Kate, information regarding Semester 1 in-sem, end-semester and Oral exams was given.

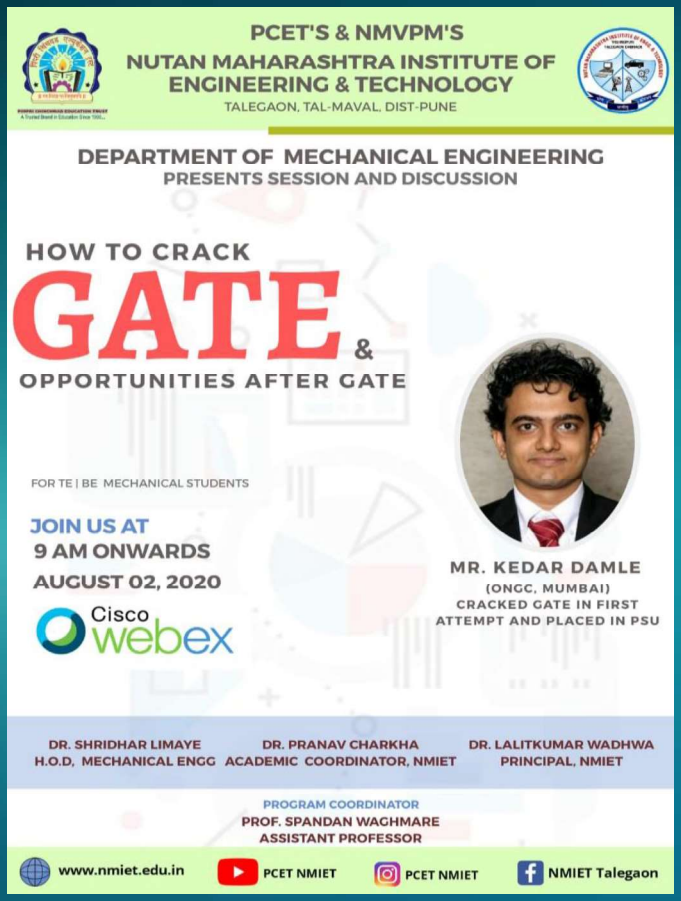
2. Tentative schedule of Sem 2 academics and exam plan presented.

3.Placement activities information is given to parents. Presentation shared with parents.

4. Dept. activities, future plans of department are explained by HOD Dr. Pranav Charkha. Student's attitude issue was discussed by sir.

5.Question, answer and suggestion session conducted at the end of program.

Guest Lectures



1. No. of Participants

113

2. Organised For

BE Students

3. Speaker

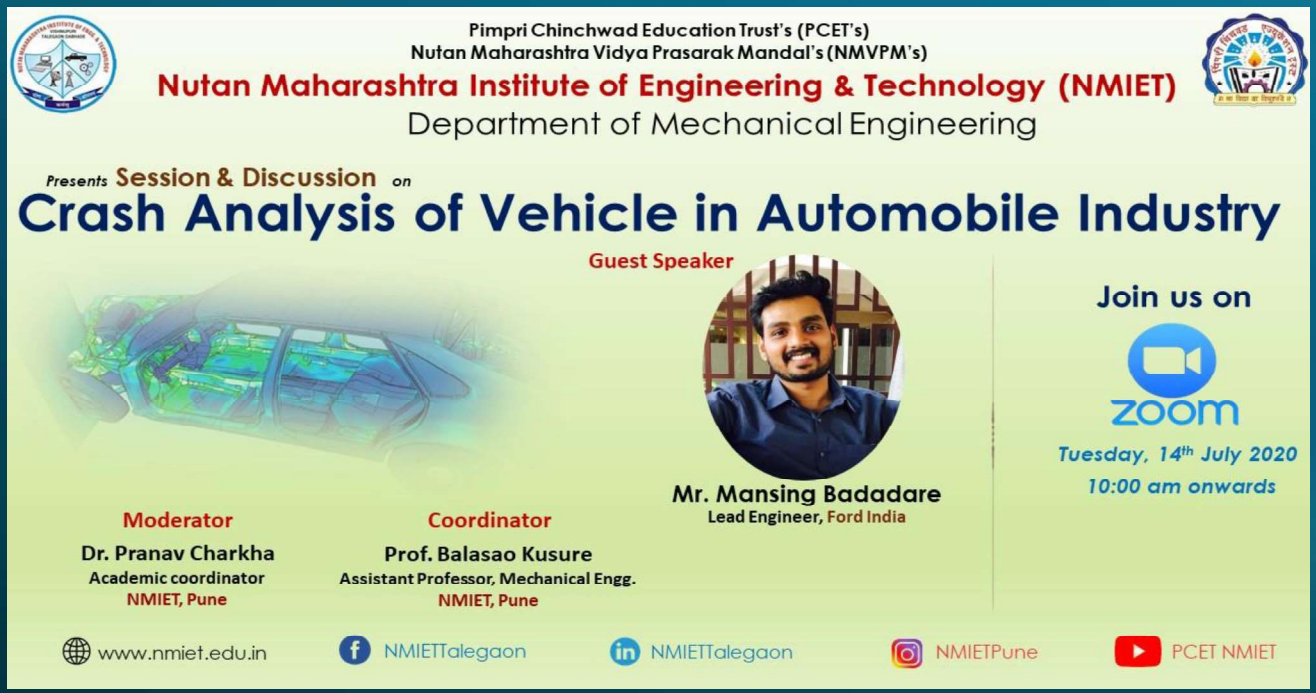
Mr. Kedar Damle, ONGC.

4. Coordinator

Prof. Spandan Waghamre.

5. Key Point Highlighted :-

- Marking Scheme for the subjects
- Strategies to score the marks
- Opportunities in PSU



1. No. of Participants : 165

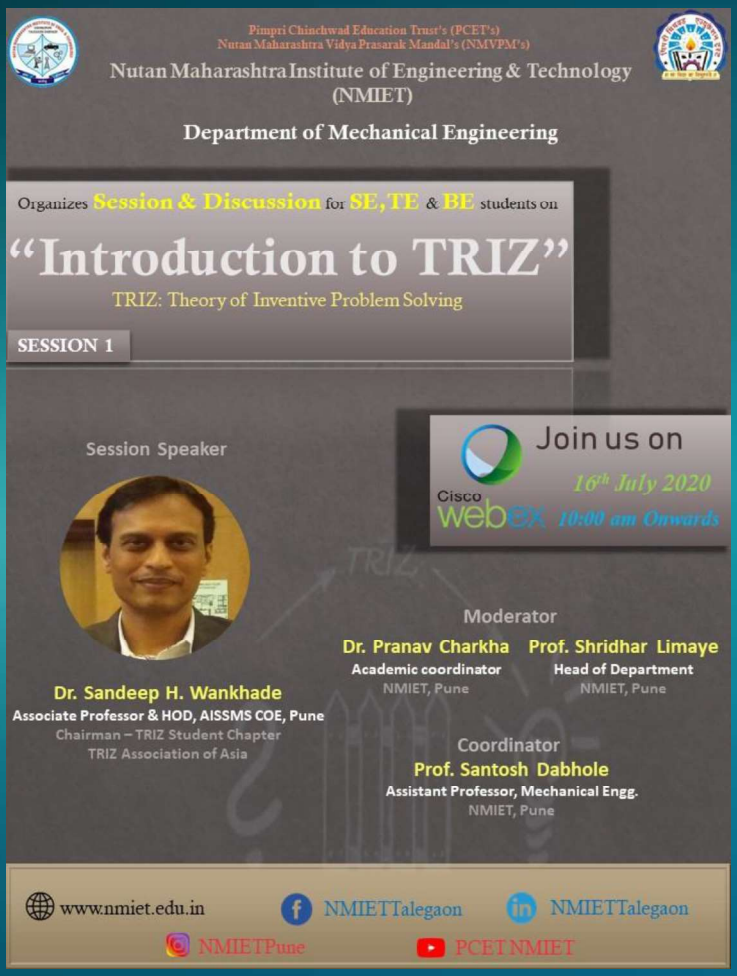
2. Organised For : TE,BE Students

3. Speaker : Mr. Mansing Badadare

4. Coordinator : Prof. Balasao Kusure .

5. Key Point Highlighted :-

- What is safety
- How rating of vehicles are given based on safety criteria.



1. No. of Participants
212

2. Organised For
SE,TE,BE Students

3. Speaker
Dr.Sandeep Wankhade

4. Coordinator
Prof. Santosh Dabhole

5. Key Point Highlighted
- Start & development of the TRIZ
- Techniques of the TRIZ
- Examples of the TRIZ

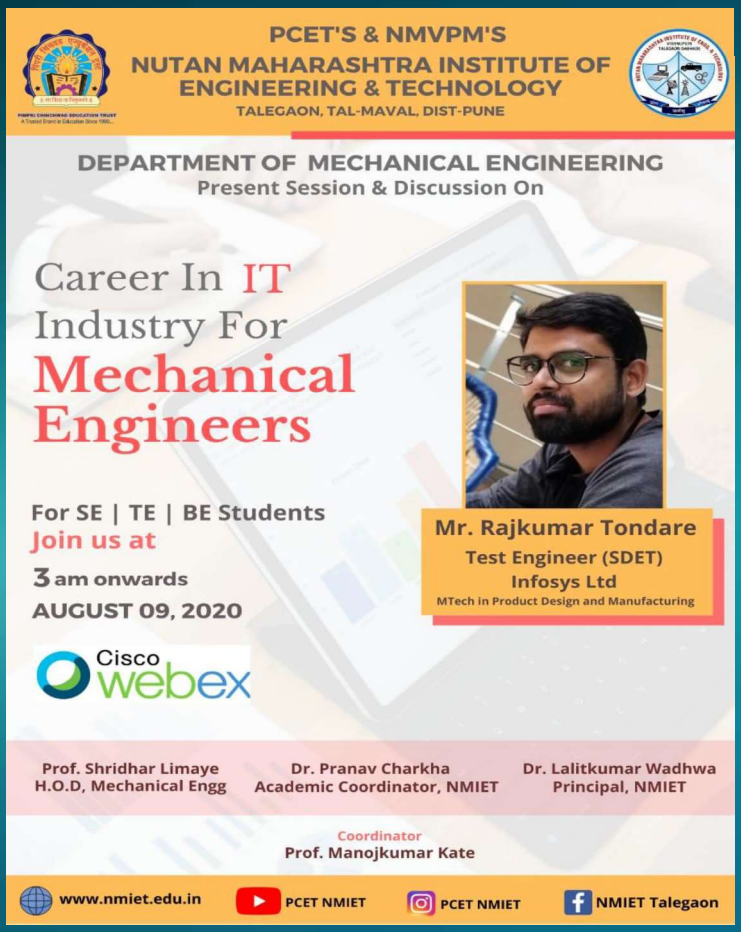
1. No. of Participants
159

2. Organised For
TE, BE Students

3. Speaker
Mr. Suraj Vaishanav

4. Coordinator
Prof. Mangesh Kale

5. Key Point Highlighted
- What is simulation
- How it is useful
- Examples of Simulation



1. No. of Participants

56.

2.Organised For

SE, TE,BE Students

Speaker

Mr. Rajkumar Tondare.

Coordinator

Prof. Manojkumar Kate.

Key Point Highlighted :-

- Software to be studied
- Development of technologies & programs

1. No. of Participants : 115

2. Organised For : TE,BE Students

3. Speaker : Mr. Mayuresh Shete

4. Coordinator : Prof. Mangesh Kale.

5. Key Point Highlighted :-

- History of the ISRO
- New projects of the ISRO
- Work opportunities in ISRO

1. No. of Participants

146

2.Organised For

SE, TE,BE Students

3. Speaker

Dr. Bhushan Bibwe

4. Coordinator

Prof. Rohit Jadhao

5.Key Point Highlighted :-

- What is Mechanization
- Importance of Mechanization

1. No. of Participants

170

2.Organised For

SE, TE,BE Students

3. Speaker

Mr. Swapnil Kadam

4. Coordinator

Prof. Balaso Kusure

5. Key Point Highlighted:

- How to crack RTO exam
- Precaution while driving

1. No. of Participants

70

2.Organised For

SE, TE,BE Students

3.Speaker

Mr. Santosh Awasarkar

4.Faculty Coordinator

Prof. Balaso Kusure

5.Key Point Highlighted

- What is Six Sigma
- How it is useful

1. No. of Participants : 75

2. Organised For : BE Students

3. Speaker Dr. Santosh Jaju

4. Coordinator : Prof. Mangesh Kale.

5. Key Point Highlighted :-

- What is #D printing
- Importance of 3D printing in Medical field

PLACEMENT RECORD

"CONGRATULATIONS TO OUR PLACED STUDENTS"

SR NO	NAME OF STUDENT	NAME OF COMPANY	Photo
01.	Mr. PRABHJYOTSINGH BALVINDERSINGH SURI (Business Development Trainee)	1. BYJU's (5LPA) 2. FACE Prep.	
02.	Mr. MAYUR FAKKADRAO CHAUDHARI (Associate Analyst)	1. Rudder Analytics (4LPA)	
03.	Mr. ARNAV DOKE	FACE Prep. (Placement Mentor-3LPA)	
04.	Mr. SAHIL VEKHANDE	FACE Prep. (Placement Mentor-3LPA)	
05.	Mr. CHAITANYA PAWAR	FACE Prep. (Placement Mentor-3LPA)	
06.	Mr. NIKHIL BHOKARE	FACE Prep. (Placement Mentor-3LPA)	
07.	Mr. OMKAR MULE	3EA (Business Analyst-5LPA)	
08.	Mr. VAIBHAV MAHULE	3EA (Business Analyst-5LPA)	

Placements till 1st of May 2021, opportunities are still in pipeline…


Internship
Offered to Students

Name:- Shubham Mandagave
Year of study:- BE
Duration:- 3 months
Company Name:- Spicer India Pvt. Ltd., Chakan.

Name:- Surykank Lad
Year of study:- BE
Duration:- 3 months
Company Name:- Spicer India Pvt. Ltd., Chakan.

Name:- Ankit Naphade
Year of study:- BE
Duration:- 4 months
Company Name:- Spicer India Pvt. Ltd., Chakan.

Name:- Prajwal Gulhane
Year of study:- BE
Duration:- 4 months
Company Name:- Spicer India Pvt. Ltd., Chakan.

Name:- Arnav Doke
Year of study:- BE
Duration:- 4 months
Company Name:- Cleanstar Machines.

Name:- Siddhesh Jagdankar
Year of study:- TE
Duration:- 4 months
Company Name:- Internshala.

Name:- Shubham Chaudhari
Year of study:- BE
Duration:- 8 months
Company Name:- Force Motors Pvt. Ltd.

Name:- Anurag Borse
Year of study:- BE
Duration:- 13 months
Company Name:- Vardhan Consulting Engineers

Name:- Aditya Sonavani
Year of study:- BE
Duration:- 6 months
Company Name:- Badve Engineering Ltd.

Name:- Swapnil More
Year of study:- BE
Duration:- 6 months
Company Name:- Badve Engineering Ltd.

Name:- Sanjay Patil
Year of study:- BE
Duration:- 6 months
Company Name:- Badve Engineering Ltd.

Name:- Prithviraj Awate
Year of study:- BE
Duration:- 2 months
Company Name:- S S Engineers.

Name:- Anurag Borse
Year of study:- BE
Duration:- 5 months
Company Name:- Sirius Motorsports/ ReynLab.

Name:- Roshan Chahad
Year of study:- TE
Duration:- 2 months
Company Name:- Internship Studio.

Name:- Anurag Borse
Year of study:- BE
Duration:- 1 month
Company Name:- Jhon Holland

Name:- Saiom Bhosle
Year of study:- TE
Duration:- 2 months
Company Name:- Internship Studio.

Name:- Harivansh Yadav
Year of study:- BE
Duration:- 1 month
Company Name:- Allied Blenders & Distillers.

Name:- Mayur Chaudhari
Year of study:- BE
Duration:- 3 months
Company Name:- NIMKO.

Name:- Sandesh Bhosale
Year of study:- BE
Duration:- 2 months
Company Name:- Parc Robotic System.

Name:- Sujit Jadhav
Year of study:- BE
Duration:- 2 month
Company Name:- Tata Motors

Name:- Ajay Dagade
Year of study:- BE
Duration:- 2 months
Company Name:- Tata Motors.

Name:- Vilas Pachre
Year of study:- TE
Duration:- 12 months
Company Name:- L & T Limited Defence.

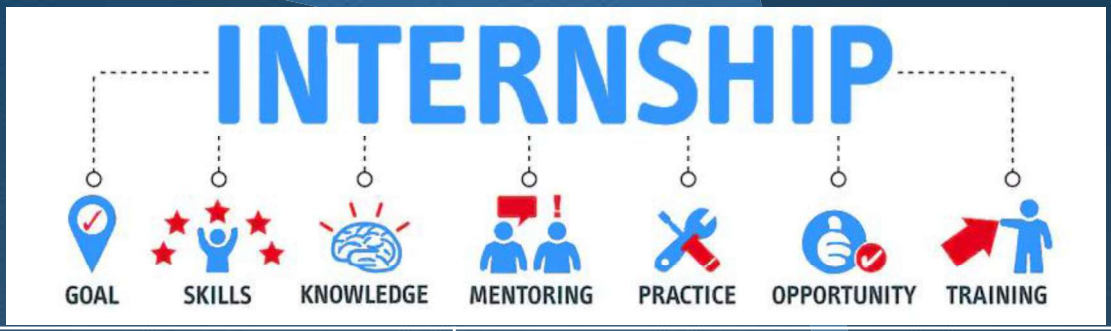
Name:- Vaibhav Mahule
Year of study:- TE
Duration:- 3 month
Company Name:- Aakar Foundary.

Name:- Anirudha Dustakar
Year of study:- BE
Duration:- 3 months
Company Name:- Aarav Construction

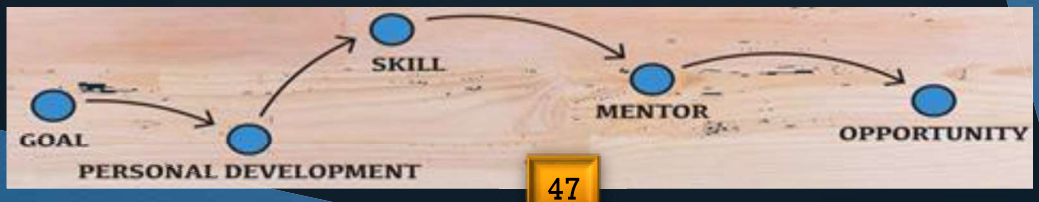
Name:- Nagesh Halole
Year of study:- BE
Duration:- 5 months
Company Name:- India HVAC Enterprises.

Name:- Amol Patil
Year of study:- BE
Duration:- 2 month
Company Name:- Manasvi Engineers.

Name:- Nitin Khanurkar
Year of study:- BE
Duration:- 2 months
Company Name:- Spark Minda.



Sr. no	Name	INTERNSHIP DETIALS	
1.	Sanket Laxman Warade	Bajaj Auto Ltd. (1 Month)	May – June 2019
2.	Prajwal Prafulla Gulhane	Spicer India Pvt. Ltd. (5 Months)	Oct 2020 – Feb 2021
3.	Ashwin Ingole	Starways Precisions Pvt. Ltd. (3 Months)	Sep – Nov 2020
4.	Ankit Manoj Naphade	Spicer India Pvt. Ltd. (3 Months)	Nov 2020 – Feb 2021
5.	Vaibhav Keshorao Mahule	Aakar Foundry Pvt. Ltd. (4 Months)	Dec 2020 – March 2021
6.	Saurabh Bhandari	Nestle Milkybar Chocolate Unlock Potential (1 Month)	Sep 2020
		Cranfield University (summer project) (4 Months)	June – September 2020
		Fluid Systems Group in Department of Mechanical Engg, IITM (1 Month)	April – May 2020



Nestlé India Limited

Nestlé
Good Food, Good Life"

DATE: October 09, 2020

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Saurabh Bhandari has undergone a one month internship with Nestlé India Ltd. under the Nesternship Programme from 1st September 2020 to 30th September 2020.

Saurabh Bhandari worked on a Project titled **'Nestle Milkybar Chocolate - Unlock Potential'** and was able to successfully complete the same in due time.

We wish Saurabh Bhandari all the best for future endeavors.

NESTLÉ INDIA LIMITED

AMIT NARAIN
DIRECTOR-HR

This is an electronically generated report and does not require physical signature

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Department of Mechanical Engineering,
Indian Institute of Technology, Madras, Chennai

Chennai,
18-7-2020

To,
Saurabh Bhandari,
Third Year, Mechanical Engineering
Nutan Maharashtra Institute of Engineering and Technology,
Savitribai Phule Pune University, Pune

From,
Dr. Vishal V. R. Nandigana,
Assistant Professor,
Head of Membrane Technology and Deep Learning laboratory
Fluid Systems Laboratory,
Department of Mechanical Engineering,
Indian Institute of Technology, Madras, Chennai 600036.
email: nandiga@iitm.ac.in

This is to certify that Mr. Saurabh Bhandari has performed a work from home informal internship in my group at Membrane Technology and Deep Learning Laboratory at Fluid Systems Group in Department of Mechanical Engineering, IITM, from the dates between 21-4-2020 to 21-5-2020. He had undertaken the task of performing computer simulations as part of crowd sourcing exercise from my group at IITM in generating data using CFD based ANSYS commercial based software.

Thanking You

Yours Sincerely,

Dr. Vishal Nandigana

DANA **SPICER**

SPICER INDIA PRIVATE LIMITED

Date: 27 Feb 2021

CERTIFICATE

This is to certify that **Mr. Ankit Manoj Naphade** a student of Nutan Maharashtra Institute of Engineering & Technology Pune has completed his internship in our organization during the period of 30th November 2020 to 27th February 2021. He has worked in the capacity as an Intern at our company Spicer India Pvt Ltd in Chakan, Pune for **3 months**

He has worked in "Manufacturing Engineering" Department under the guidance of Mr. Kirankumar Ise (DGM- ME), Mr. Ranjit Suryavanshi (Manager- ME).

He also worked in "Human Resources" Department under the guidance of Mr. Roshan EP (HOD- HR), Mr. Anushka Lakam (Asst. Manager- HR), Mr. Ashish Shingne (Asst. Manager- HR).

During his internship he has taken interest and successfully completed the projects. The topic of project was **"Creation and Implementation of Process FMEA with Focus on Risk Reduction".** Also, he worked on project **"Safety Training Module" & "Poka-yoke To Avoid Job Mix-up Under PFR".** He has studied the process thoroughly and completed the project and training very well, within the time given to him.

During his stay with us we found him to be sincere and hardworking.

We wish him all the best for his future career.

For Spicer India Private Limited

Mr. Sudarshan Ch.

Plant HR Head

ANAND

AAKAR
FOUNDRY PVT. LTD.

Ref: Aakar/03/2021

Date :30th March 2021

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Mr. Vaibhav Keshorao Mahule have successfully completed his **Semester Internship at Aakar Foundry Pvt. Ltd.** from 2nd December 2020 to 9th March 2021.He is student of "Nutan Maharashtra Inst. Of Eng. And Tech. Pune, Maharashtra currently studying in final Year of Mechanical Engineering.

This certificate is issued to him on completion of his Semester Industrial Internship.

Aakar Foundry wishes best regards for the future of him.

For Aakar Foundry Pvt Ltd.

Jitendra Parekh
Sr. Manager – HR & Admin

Registered Office : Survey No. 341/2 , Somatane Phata, Talegaon - Dabhade, Tal - Maval, Dist. Pune 410 506, Maharashtra, India .
Office Telephone : +91 (02114) 239500, Email : sales@aakarfoundry.com, Web : www.aakarfoundry.com

Certifications

Sr.no	Name	Course	Platform (Duratation)
1	Sanket Karkare (BE)	Ansys	INTERNSHALA (8 WEEKS)
		CATIA V5 3D DESIGN & MODELING	UDEMY (11.5 HRS)
2	ANURAG BORSE (BE)	Overview of Planetary Geosciences with special emphasis to the Moon and Mars.	Indian Institute of Remote Sensing (4 DAYS)
		Autodesk CAD/CAM/CAE for Mechanical Engg	COURSERA (3 Months)
5	Pratik Magar (BE)	Electric Vehicles	pupilfirst & Micelio (1 Month)
6	Aditya Jadhav (TE)	C Tutorial	SOLOLEARN (1 WEEK)
		Programming for Everybody	COURSERA (7 WEEKS)
		Introduction to Self-Driving Cars	COURSERA (7 WEEKS)
		Python Data Structures	COURSERA (7 WEEKS)
		Arduino Platform and C Programming	COURSERA (7 WEEKS)
		Object-Oriented Programming Java	COURSERA (7 WEEKS)
		Cooperation in Autono -mous Vehicles	IEEE (4 DAYS)


INTERNSHALA TRAININGS

Certificate of Training

Sanket Karkare,

student of PCET's Nutan Maharashtra Institute of Engineering And Technology, has successfully completed a eight weeks online training on **Ansys**. The training consisted of Introduction to Finite Element Analysis (FEA), Understanding Concepts at Work & Installing Ansys, Introduction to Ansys Software, Static Structural Analysis, Modal, Thermal, & Buckling Analysis, Case Studies and Final Project modules.

We wish Sanket all the best for the future.

Sarvesh Agarwal

FOUNDER & CEO, INTERNSHALA


UNIVERSITY OF MICHIGAN

COURSE CERTIFICATE

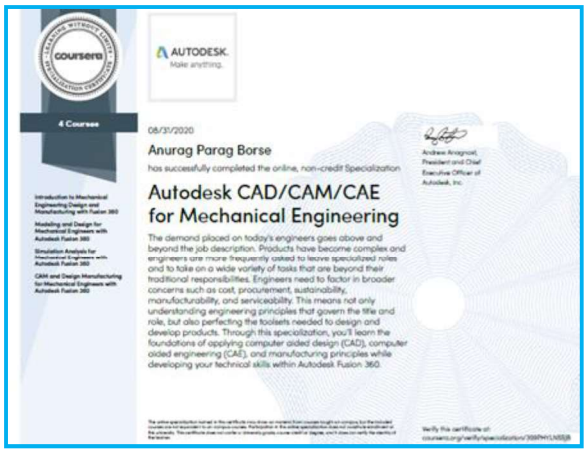
Aditya Sadanand Jadhav

has successfully completed

Python Data Structures

an online non-credit course authorized by University of Michigan and offered through Coursera

coursera


coursera
AUTODESK.
Make anything.
4 Courses
08/31/2020
Anurag Parag Borse
has successfully completed the online, non-credit Specialization
Autodesk CAD/CAM/CAE for Mechanical Engineering
The demand placed on today's engineers goes above and beyond the job description. Products have become complex and engineers are more frequently asked to receive specialized roles and to take on a wide variety of tasks that are beyond their traditional responsibilities. Engineers need to factor in broader concerns such as cost, procurement, sustainability, manufacturability, and serviceability. This means not only understanding engineering principles that govern the title and role, but also perfecting the toolsets needed to design and develop products. Through this specialization, you'll learn the foundations of applying computer aided design (CAD), computer aided engineering (CAE), and manufacturing principles while developing your technical skills within Autodesk Fusion 360.


UNIVERSITY OF TORONTO
COURSE CERTIFICATE
Aditya Sadanand Jadhav
has successfully completed
Introduction to Self-Driving Cars
an online non-credit course authorized by University of Toronto and offered through Coursera
coursera


Certificate of Completion
This is to certify that Sanket Karkare successfully completed 11.5 total hours of CATIA V5 3D Design & Modeling Course for Beginner online course on Feb. 4, 2021
The Edu2
The EduQ, Instructor
&
Udemy
#BeAble


micelio
pupilfirst
Certificate of Completion
This certificate is awarded to
Pratik Sunil Magar
for successfully completing the course
Electric Vehicles Open Program
conducted between April 23, 2021 to May 16, 2021.
The student received beginner level training on mathematical modelling of an Electric Vehicle.
Shreyas Shibulal
Founder & Chairman
Micelio
Swapnil Mankame
Program Coach
CEO & Founder, Mankame Automotive
Gautham
Co-founder & Director
Pupilfirst


UCI University of California, Irvine
COURSE CERTIFICATE
Aug 1, 2020
Aditya Sadanand Jadhav
has successfully completed
The Arduino Platform and C Programming
an online non-credit course authorized by University of California, Irvine and offered through Coursera
coursera


coursera project network
COURSE CERTIFICATE
May 14, 2020
Aditya Sadanand Jadhav
has successfully completed
Object-Oriented Programming with Java
an online non-credit course authorized by Coursera Project Network and offered through Coursera
coursera

Technical Articles

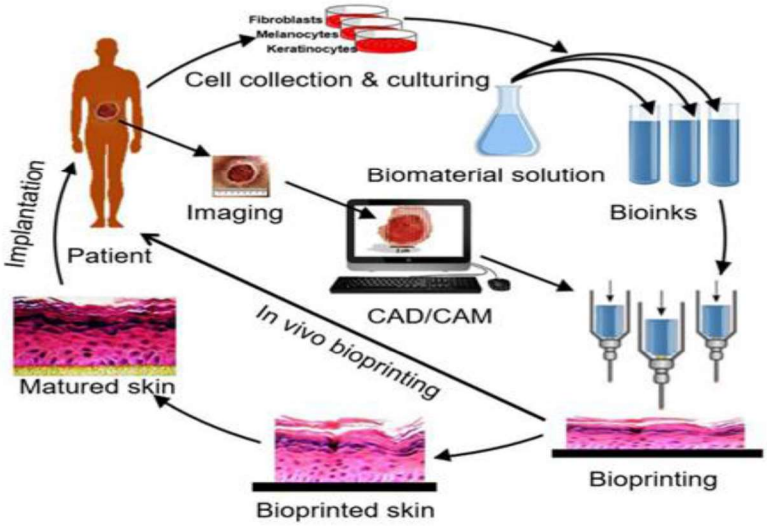
Technology is best when it brings people together.

___ Matt Mulenweg

3D Bioprinting: An emerging technology.

-Maheswari Pardeshi
(BE Mechanical)

Bioprinting technology has emerged as a powerful tool for building tissue and organ structures in the field of tissue engineering. This technology allows precise placement of cells, biomaterials and bio molecules in spatially predefined locations within confined three-dimensional (3D) structures. Various bio printing technologies have been developed and utilized for applications in life sciences, ranging from studying cellular mechanisms to constructing tissues and organs for implantation.



AM(Additive Manufacturing) is a manufacturing technique that produces complex 3D structures by selectively adding materials and it is categorized into stereolithography, fused deposition manufacturing and selective laser sintering. This technology is able to Control the size, shape, distribution and interconnectivity of pores of the scaffold. Moreover, AM technology can be used to fabricate biomimetic-shaped 3D structures from medical images, such as magnetic resonance imaging (MRI) and computerized tomography (CT) using computer aided design and manufacturing (CAD/CAM) technologies

Although scaffolds fabricated using AM technology may yield a controllable architecture, the utility is often limited due to difficulties in placing multiple cell types, biomaterials and bioactive molecules within the scaffold. Bioprinting technology overcomes these limitations by its ability to construct 2D and 3D structures with proper placement of cells, biomaterials and biomolecules in defined locations . Bioprinting is based on AM technology and it allows direct cell deposition in organ typic architecture. Furthermore, it can be combined with CAD/CAM technology to fabricate a structure that has an accurate anatomical shape . As a result, bio-printing technology is gaining

attention as an advanced fabrication method for engineered tissue construction . In this review article, we introduce the general principles and challenges of the most widely used bio-printing technologies, including jetting- and extrusion based, and highlight representative research on tissue regeneration, including applications in the field of cardiothoracic surgery.

Various bioprinting technologies have been developed and utilized for applications in life sciences, ranging from studying cellular mechanisms to constructing tissues and organs for implantation. These technologies have shown to safely deliver cells, biomaterials and biological molecules to target locations in a precise manner.

Studies have shown that bioprinting simple tissue structures is possible; however, constructing a more complex and composite tissue structures such as solid organs remains a challenge.

Bioprinting technology has gained enormous attention as a fabrication methodology for producing 3D structures. Multiple cells, biomaterials and biological molecules can be printed simultaneously in defined spatial locations, yet many challenges remain for building complex tissues consisting of multiple cell types in a confined microarchitecture. More importantly, hydrogel development, resolution enhancement and vascularization are necessary to apply bioprinting technology clinically

A Framework for Innovation in COVID-19 Era and Beyond

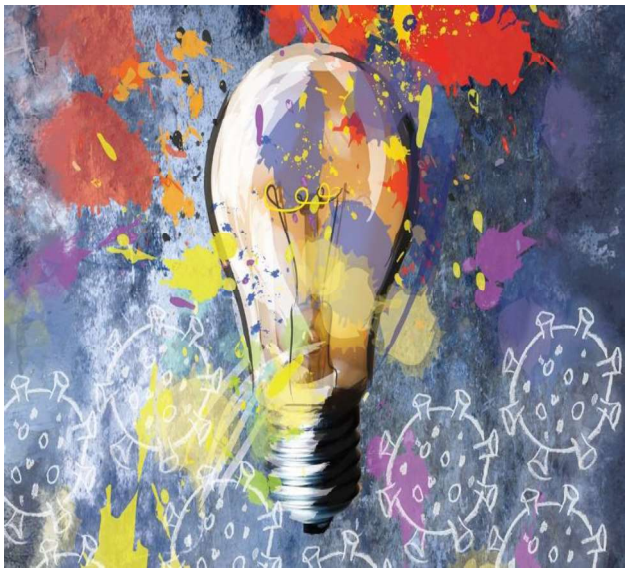
-Rupesh Desale
(TE Mechanical)

COVID-19 pandemic has created a havoc since past year, but as it is well said "Victory comes from finding opportunities in problems"; this created a remarkable innovation across different industries. Some innovations have helped reduce exposure to the coronavirus, such as alcohol distilleries producing hand sanitizer, and do-it-yourself makers 3D printing face shields. Other innovations have helped increase health care capacity, such as engineering firms creating new ventilator machines, and pharmaceutical companies repurposing existing drugs to alleviate COVID-19 symptoms. At first glance, the adaptations businesses have made in response to COVID-19 may appear to be nothing more than entirely reactive responses to an unprecedented situation. However, innovation has always been a turbulent process of venturing into the unknown.

Following are the four types of approaches/frameworks implemented by organizations in response to the pandemic.

1. The Trailblazers

Throughout the pandemic, we've seen many examples of Trailblazer companies — those that use existing resources to solve new problems they had never tackled before. Dyson is famous for its innovation; they identified the need of ventilator during the pandemic. They interestingly had to use the existing resources which made them think, they came up with an entirely new design that needed fraction of cost.
Although they will step out of this once this pandemic becomes a memory; but the workforce of Dyson gained an everlasting experience.



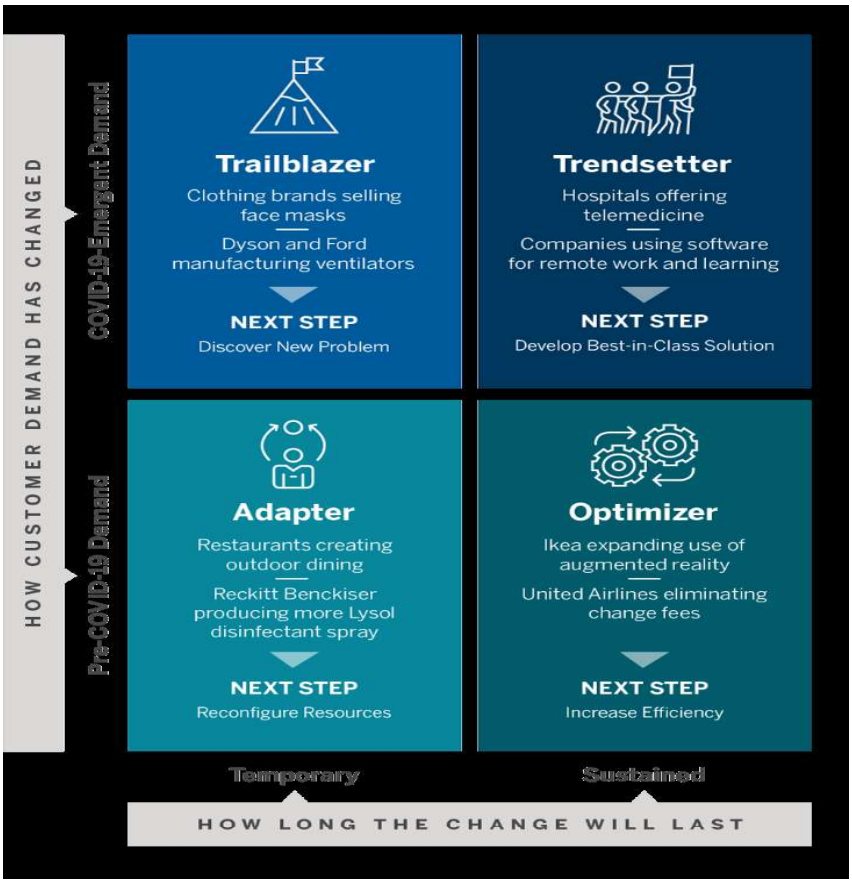
2. The Trendsetter

Trendsetter companies counter by working on entirely new idea that will help them grow post pandemic. For example, many health care providers worked on the concept of telemedicine in which enabled doctors to consult their patients by using video-conferencing tools also use of telemedicine has been shown to allow for better long-term care management and patient satisfaction; it also offered a new means to locate health information and communicate with

practitioners. However, doctors and nurses were required to learn and adapt the new technology.

3. The Adapter

"Adaptability is the simple secret of survival" well said by Jessica Hagedorn, this quadrant is for the business which saw a temporary change in demand of products and services. This includes



restaurants creating outdoor dining's, companies like Reckitt Benckiser focusing mainly on Lysol disinfectant spray satisfy the demand and sustain as well. Many successful companies in this technique learned to produce the output in fewer resources available.

Although these changes are expected to be temporary, the organization gained new problem-solving skills that can be reapplied to other challenges in the future.

4. The Optimizer

Last but not the least many companies learned to modify their idea which they applied before the pandemic; they must sift their focus in increasing the efficiency by which they delivered their products and services. For example Ikea which is a Swedish founded, Dutch multinational conglomerate that designs and sells ready-to-assemble furniture, kitchen appliances and home accessories, among other useful goods and occasionally home services, they had previously invested in augmented reality to help customers choose furniture without physically going to an Ikea store before the pandemic; invested more in this new technology and added 2,000 more products so that costumers could visualise their home from their comfort zones.

COVID-19 is a dynamic, uncertain, and wicked problem that must be addressed with an extensive suitcase of creative and innovative solutions

This pandemic situation has forced businesses to innovate, also during this unpredicted movement many have found new business and some are facing an everlasting defeat others have learned new skills that can be applied to their business to solve the problems, but at the last we should remember that, "Every problem is a gift—without problems we would not grow."

References:

1. A.K. Cohen and J.R. Cromwell, "How to Respond to the COVID-19 Pandemic With More Creativity and Innovation," Population Health Management, forthcoming.
2. S. Sonenshein, "How Organizations Foster the Creative Use of Resources," Academy of Management Journal 57, no. 3 (June 2014): 814-848.
3. . Sonenshein S. How organizations foster the creative use of resources. Acad Manage J 2014;57:814–848.

Hydrogen (H_2) Fuel Cell Electric Vehicle

-Mayur Chaudhari
(BE Mechanical)

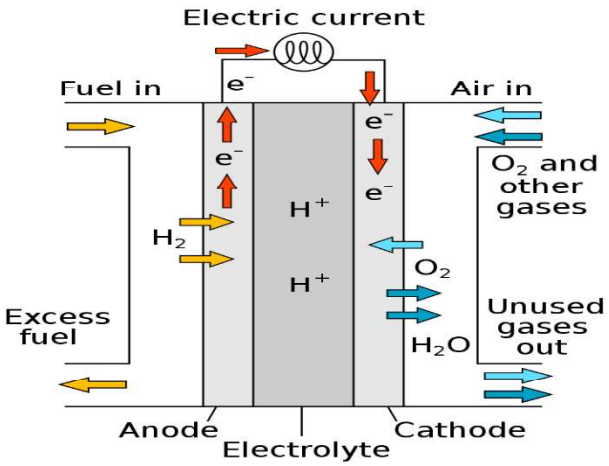
Electric vehicles market is growing day by day, due to many advantages of electric vehicles over Internal Combustion engine vehicles. Electric vehicles work on the principle of battery discharging and recharging again, which is probably time consuming and the process of battery disposal is hazardous for environment and Human Health. We have alternative for this, Hydrogen fuel cell electric vehicles.

This article will help to understand different Components, Working, pros, cons and comparison of H_2 Fuel Cell Electric Vehicle, will be abbreviated as FCEV. Electric vehicles market is growing day by day, due to many advantages of electric vehicles over Internal Combustion engine vehicles. Electric vehicles work on the principle of battery discharging and recharging again, which is probably time consuming and the process of battery disposal is hazardous for environment and Human Health. We have alternative for this, Hydrogen fuel cell electric vehicles.

This article will help to understand different Components, Working, pros, cons and comparison of H_2 Fuel Cell Electric Vehicle, will be abbreviated as FCEV.

What are the Components of H_2 Fuel Cell Electric Vehicle?

H_2 Fuel Cell:



Fuel Cell work as battery but they do not need recharging. They produce electricity as long as fuel is supplied. A fuel cell contains two electrodes anode and cathode, with electrolyte in between. Fuel Hydrogen is supplied to anode and air is supplied to the cathode. The hydrogen breaks and separates into Protons and electrons. The electrons are now attracted towards the cathode and that's why they start finding path to cathode and flow through external circuit, due to this electron flow, electricity is generated. The protons pass through electrolyte and combine with oxygen and electron to produce water and heat. This is how we get electricity from hydrogen full cell.

Fuel Cell Stack:

As electricity generated by single cell is not at all enough to run a vehicle. Hence, we use fuel cell stack which is nothing but the combination of multiple cells. Now

this combination of multiple fuel cells generate enough amount of electricity required to run vehicle.

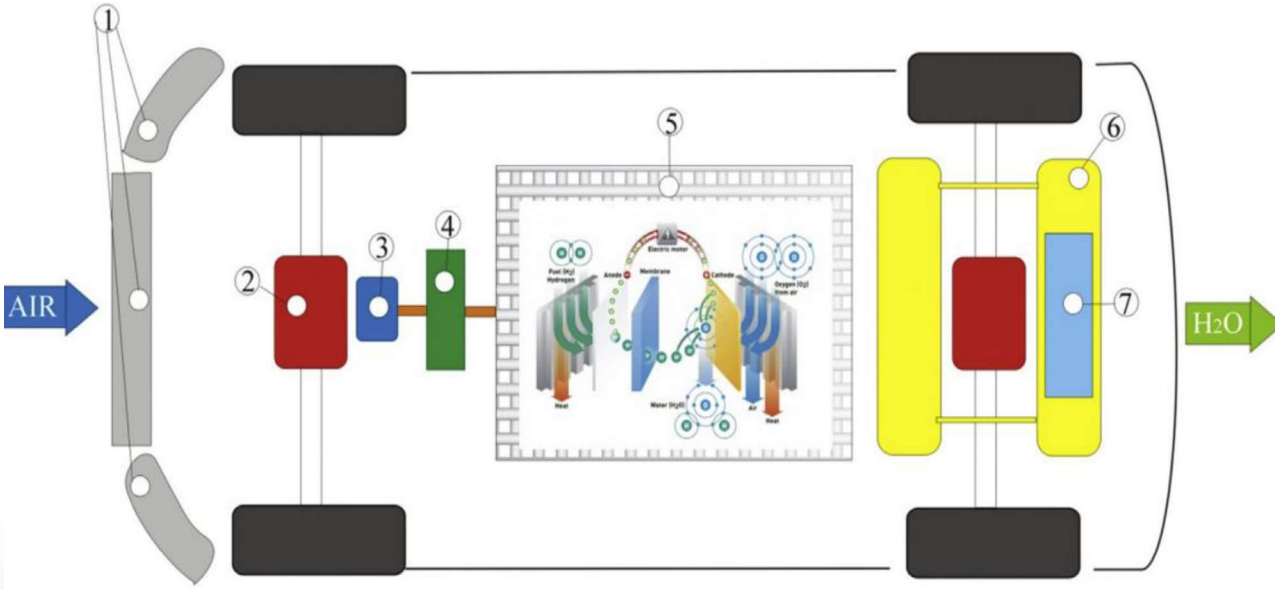
High Pressured Hydrogen Tank:
Hydrogen has high energy content by weight not by volume, which is a challenge for storage. It is stored in compressed and pressurized form so that we can store enough amount in a tank. Hydrogen is compressed to 300 bar to 700 bar to store in a tank of FCEV. For safety hydrogen tanks are equipped with pressure relief devices that prevents the pressure becoming too high.

DC to DC Converters:
DC to DC converter is used to convert source of Direct Current from one voltage level to another, by storing the input energy temporarily and then releasing that energy at different voltage level.

Power Control Unit:
A power control unit converts the voltage direct current from fuel cell stack into alternating current, which is then used to operate the electric motor. It also controls the rotating speed and torque of the motor.

Electric Motor:
It is coupled with the wheels of FCEV. It is the important unit which converts electrical energy into rotating kinetic energy which causes the wheel rotation.

How H_2 Fuel Cell Electric Vehicle works?
The Hydrogen gas from **Pressured Tank** flows to **Fuel Cell Stack**. The main source of electricity is H_2 Fuel cell stack, electrical energy generated from them can be directly fed to the traction motor of vehicle, or it can be stored in **Battery**. This electrical energy from cell stack is



1- Cooling Systems (Radiators); 2- Electric Motors; 3-Power Control Unit; 4- DC/DC Converter;
5- Fuel Cell box (Stack); 6-High Pressured Hydrogen Tank; 7-Battery Pack

then supplied to **DC/DC converter**, which converts voltage from one level to other level. Then this electrical energy is passed to traction **Motor** of vehicle through the **Power Control Unit**. Power control unit controls the rotating speed and torque of motor. And at end, we get rotating wheels.

How Fuel Cell Electric vehicle is different from other vehicles?

The Internal combustion engine vehicles use gasoline as working fuel, which emits the pollutants in air through exhaust.

Hybrid Vehicles use both Gasoline as well as electrical energy for working. They also emit pollutants in air but less than the Internal Combustion engine.

Electrical Vehicles (EV) use electrical energy through charged batteries, which requires recharging after limited use. They do not emit any pollutants in air. The batteries disposal of these electric vehicles is hazardous for environment and human health.

Hydrogen Fuel cell Electric Vehicle (FCEV) uses hydrogen gas (H_2) as working fuel. The electricity generated through number of fuel cells is used for electric motor. They do not emit pollutants in air, they actually produce water in output.

What are the advantages of FCEV?

Hydrogen is renewable and readily available.
H_2 supports zero-carbon energy strategies.
More powerful and energy efficient than fossil fuels.
Almost zero emissions.
No noise pollution.

What are the disadvantages of FCEV?

Hydrogen needs to be extracted from water via electrolysis or separated from carbon fuels.
Cost of raw materials in fuel cell.
Storage and transportation of H_2 is complex.
Hydrogen is highly flammable need safety concerns.

Water Rocket

-Prajwal Gulhane
(BE Mechanical)

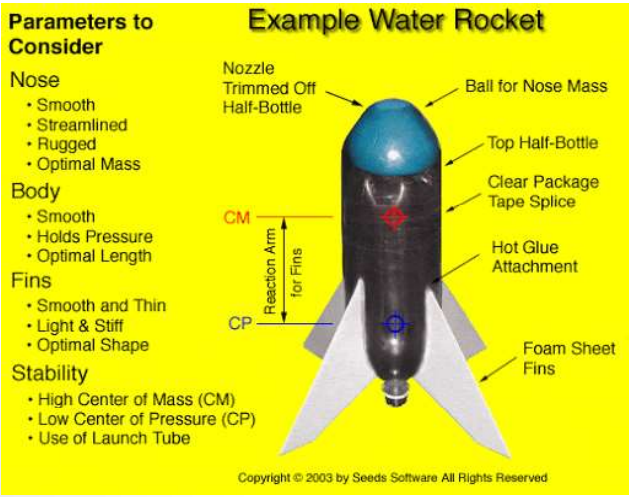
WHAT IS WATER ROCKET ?

A **water rocket** is a type of model rocket using **water** as its reaction mass. The water is forced out by a pressurized gas, typically **compressed air.** Like all rocket engines. it operates on the principle of **Newton's third law of motion.**

WHY WATER IS USE TO FLY THE WATER ROCKET ?

Before launch, the bottle is filled with some amount of water, which acts as the "**propellant**" for the launch. Since water is about 100 times heavier than air, the expelled water produces more thrust than compressed air alone. Because of that water is used in Water Rocket.

WHAT ARE THE PARAMETERS REQUIRED TO BUILD WATER ROCKET ?



WATER ROCKET ?

- Use higher pressures.
- Keep weight to a minimum.
- Increase rocket volume.
- Streamline the body of the rocket to reduce drag.
- Use a launch tube on the launcher.
- Use the right amount of water.
- Use an optimum sized nozzle.
- Use multiple stages stages & Use a less dense liquid.
- Optimize stage release timing.
- Streamline the leading and trailing edges of your fins.
- Use 3 fins instead of 4 or more.
- Use optimally shaped & sized Fins.
- Ensure smooth internal water flow through the nozzle.
- Use a rounded nosecone.
- Point the launcher as vertically as possible.

WHAT ARE THE COMPONENTS WE USE TO MAKE WATER ROCKET ?

Water rockets consist of five basic parts which are: nose cone, payload section, body, nozzle, and fins.

1) **Nose Cone**: This is the extension of the bottle and it can come in different shapes. It is responsible for improving the aerodynamics of the water rocket.

2)**Payload Section**: This is an optional part of a water rocket. It can hold a

parachute or a payload. This may also help the water rocket to land safely preventing damage.

3) **Body**: The body serves as the engine of the rocket. It is made of a two-liter soda or pop bottle.

4) **Nozzle**: This is the part that goes into the bottle's opening. It affects the thrust made by the rocket and provides the mounting point for launchers. It has two main classes:

- Open – An open nozzle is also known as the standard nozzle because it has a diameter of 22mm which is the typical size of a soda bottle's neck opening.
- Restricted – A restricted nozzle is smaller than the standard in which the diameter is usually about 9mm.

The larger the diameter of the nozzle, the faster its acceleration will be with a shorter thrust phase. Meaning, smaller nozzles provide slower acceleration with a longer thrust phase.

5) **Fins**: This part helps in stabilizing the water rocket to qavoid tumbling end over end which causes a decrease in speed.

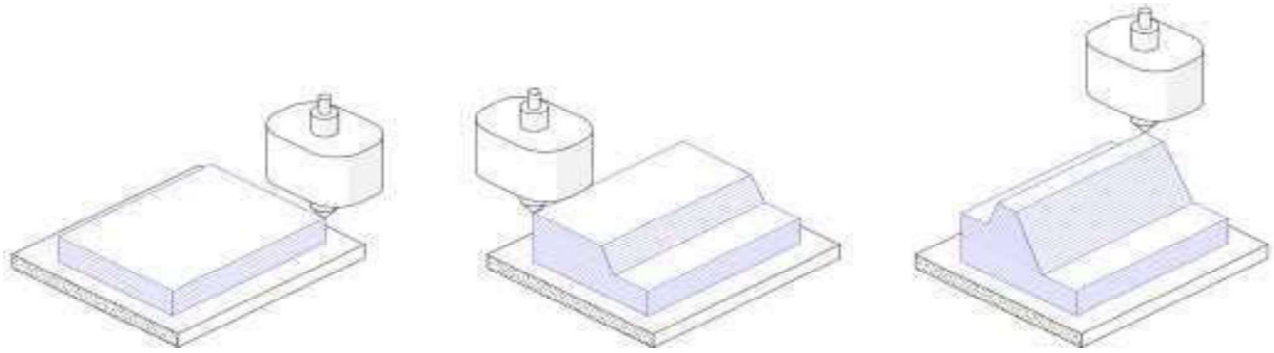
Aside from these parts, some water rockets have launch tubes as well. A launch tube helps to increase the speed and height achieved by the rocket.

3D PRINTING TECHNOLOGY

-Anurag Borse
(BE Mechanical)

What is 3D Printing?
Three-dimensional (**3D**) **printing** is an **additive manufacturing** process that creates a physical object from a digital design. The process works by laying down thin layers of material in the form of liquid or powdered plastic, metal or cement, and then fusing the layers together.

3D printing uses computer-aided design (CAD) to create three-dimensional objects through a layering method. Sometimes referred to as additive manufacturing, **3D printing** involves layering materials, like plastics, composites or bio-materials to create objects that range in shape, size, rigidity and color.



Basic definitions and benefits of 3D printing

Professionals use 3D printing for two main purposes:
• A prototyping solution to accelerate product development.
• A manufacturing technology for low-run production, and one-off custom parts.
Here are the key benefits offered by 3D printing for each use-case

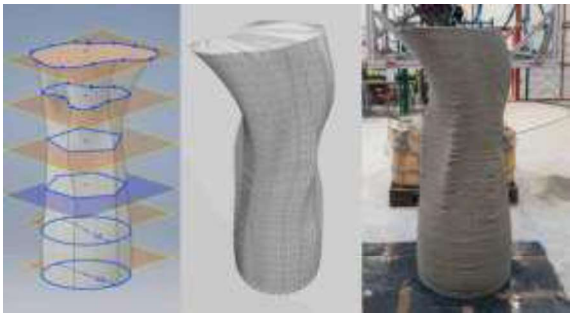
3D Printing for Prototyping	Additive Manufacturing for Production
Rapid Design Iterations	Fewer Design Restrictions
Low Costs, Functional Prototypes	On-demand production
Widely accessible solution	Mass customization
Effective design communication	Distributed manufacturing

Implementation of 3D Printing (Area of Focus)

In previous part we have taken an idea of 3D printing and its use in mechanical applications but

further we will discuss its use in various fields and applications: -

1. Civil/Architecture Engineering
2. Small Scale Manufacturing
3. **Bio-Medical Engineering**
4. **Aviation**



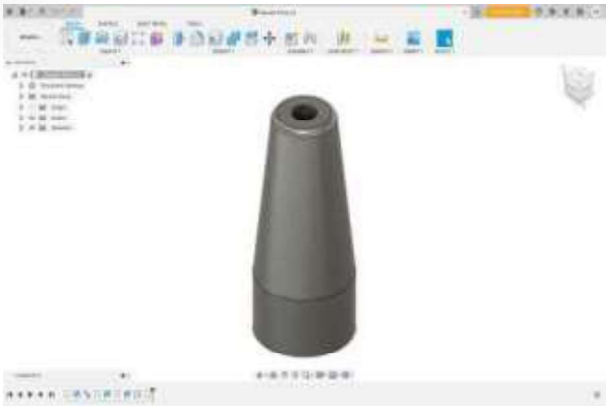
3D-Printed Construction Products

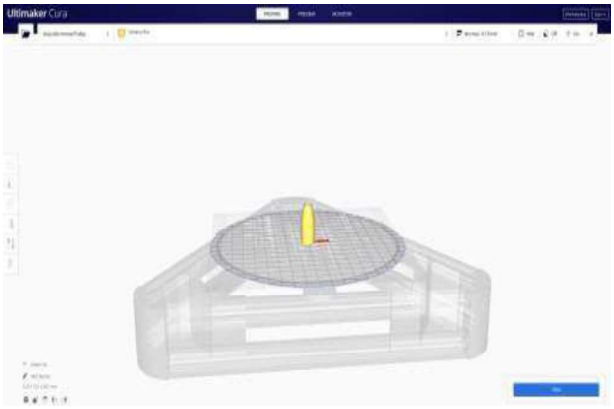
3D Printed Bio-Medical Products

World's First 3D Printed Aero plane

CAD Software Used - Fusion 360/Catia V5

- 3D Printing software used – Ultimaker Cura
- 3D Printer used – Anycubic Kossel Pulley





PRINTING	Linear Plus	Pulley
Build Size	■330 × 330 mm	● 180 × 300 mm
Printing Technology	FDM (Fused Deposition Modeling)	
Layer Resolution	0.1–0.4 mm	
Extruder Quantity	Single	
Travel Speed	60mm/s	
Print Speed	20–60mm/s	
Nozzle Diameter	0.4 mm	
Positioning Accuracy	X/Y 0.0125mm, Z 0.0025mm	
Supported Print Materials	PLA, ABS, HIPS, Wood	
ELECTRICAL		
Input Rating	110/220V AC, 50/60Hz	

PHYSICAL	Linear Plus	Pulley
Printer Dimensions	360(▲) × 680(H) mm	315(▲) × 680(H) mm
Net Weight	~7kg	~5.8kg
TEMPERATURE		
Operational Print Bed Temp	100℃	
Operational Extruder Temp	Max 260℃	
Ambient Operating Temp	8℃ ~ 40℃	
SOFTWARE		
Slicer Software	Cura	
Input Formats	STL, OBJ, AMF	
Cura Output Formats	GCode	
Connectivity	SD card, USB link	

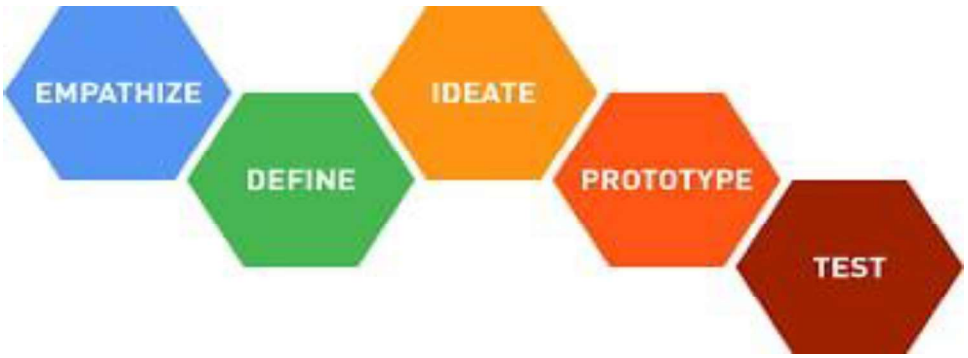
Procedure

1. Initially we designed the cad model on CAD software as shown in figure.
2. Next step was to extract the file in STL format.
3. The file was then extracted in the 3D printing software "Ultimaker Cura".
4. Generation of G-Codes for the 3D Printer in "Ultimaker Cura".
5. Extracting G-codes in SD Card for Printing.
6. Final Print Procedure.

Product Design: Core Concepts

-Saurabh Bhandari
(BE Mechanical)

As the name suggests, product design refers to the process of creating a new product to solve or address a specific problem. This definition seems abstract and, in fact, for several years, there has been no universally accepted definition for **product design.**
Generally speaking, **product design** covers everything from the process of identifying a market opportunity, defining the statement of the problem that you intend to solve,



developing an appropriate solution for the problem, and testing out the model or prototype with real users. After getting a positive response from the target audience, you start mass production of the particular product.

Who Is a Product Designer?
The term product designer refers to anyone who takes charge of the entire process mentioned above and, in particular, identifying a problem and creating possible solutions. Product designers bring together design skills and technical knowledge to make the customer's life simpler by developing products that get a particular job done efficiently.

A product designer can also modify an existing product to change the way it is used or to solve a new problem; they need not necessarily make a product from scratch. Any entity that we use, from everyday items like kitchen cutlery and electronics to specialized objects like medical equipment and software tools, was designed by product designers to address a particular issue.

Current Trends
In the domain of **product design** today, there are seven key trends that every aspiring designer should know:

Sustainable Product Design: Making products that do not harm the environment
Portable Product Design: Designing of lightweight products, making it easy for the customers to carry it around
Multi-Functional Product Design: Combining several entities in one, thereby increasing the customers' convenience

Designing for Additive Manufacturing: Making the most of novel manufacturing techniques that bring down the time and cost of creating products

Product Design for IoT (Internet of Things): IoT improves connectivity, helping you to realize more applications and ideas for your product(s)

State-of-the-Art Learning

The unique aspect of **product design** is that it is a highly effective way to explain concepts and ideas to others. The progress in this domain is so rapid that coming up with innovations is necessary, making you undergo continuous learning.

The process of converting an idea to a real product helps you explain the utility of the product to others because you can demonstrate its usage in real-life situations. A product designer, thus, enlightens everyone, including the others who proposed the idea and the end customer.

Today, product designers have adequate software and hardware support to design and visualize their creations better. These tools ultimately make the end-users' experience more realistic and understandable.

Technical Overview: Process

Empathize: The first technical step is to understand the problem at hand from the customer's point of view. Conduct surveys and research to understand your customers.

Define: Using that understanding, define the problem statement.

Ideate: Come up with creative and novel solutions to the problem at hand. You can develop new products or modify existing ones appropriately.

Prototype: Convert your most feasible idea into a prototype. Doing so also gives the designer an idea if they are on the right track.

Test: Select a target audience and ask them to try the prototype you have created. If it works fine, send the model for mass production. If not, use the audience feedback to improve it further.

Conclusion

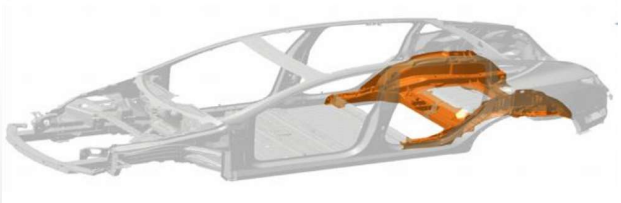
The **fundamentals of product design** are useful in a wide range of engineering sectors, so mastering the concepts at an early stage opens up plenty of career prospects. There is no end to improving the lives of people; you can always find out a new problem that people are experiencing and find out a solution to solve it.

TESLA CASTS A NEW STRATEGY FOR LIGHTWEIGHT STRUCTURES

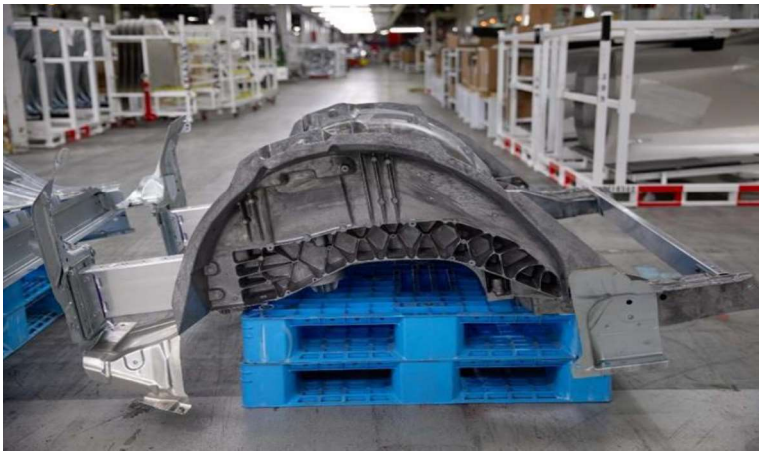
-Ved Bhalerao
(TE Mechanical)

The Elon Muck's Tesla means innovation, the vision for the new era of engineering and technology. His dynamic and vibrant personality is eye catching and the thinking beyond the imagination is marvelous. So Yes, yet another innovation for the futuristic and ecologically sustainable EV vehicle platform from Tesla.

Tesla has brought up a new technique to make light weight structure. So the question arises how did they do that? The answer is simple applied one of the traditional methods, that is casting. Again the question comes into play why casting ? and How can it be useful in making light weight structures for
EV vehicles ? The part inside here is the formation of a light weight alloy made up with mixture of aluminum which will be used for casting. Tesla has now the biggest casting machine in the world. Which is made up by IDRA group.



Tesla had made up the process quite simple i.e casting the rear part differently the front part differently and underbody part differently and it goes in for one time assembly. Most efficient and easy way to make light weight structures. How does this technique so efficient and what are it's benefits ?



One side of rear body made of aluminum.

It reduces the 35% of the floor space required in a company. Gives the 55% reduction in investment PER GWH making it simpler, smaller, spectacular design + Body factor of the future. Reduces 20% of the labour cost . 370 fewer parts . 10% mass reduction. 14% increase in opportunity making it a revolution in body structures produced so far. It will be used in Tesla's Y Model.

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Casting machine by IDRA Group.

Understanding The Innovation Landscape in India

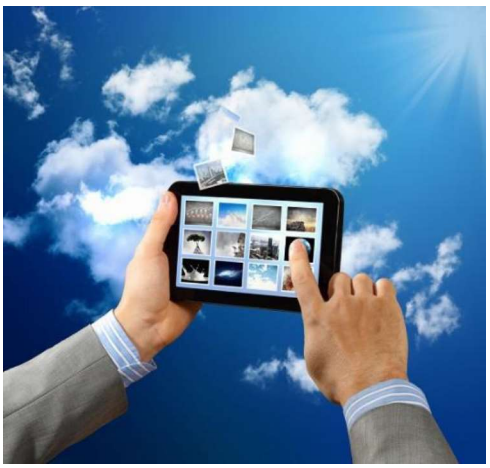
-Bhushan Budhbaware
(TE Mechanical)

India boasts of a young, increasingly educated, workforce in a booming economy with a government that is desirous of enabling an environment conducive to faster economic growth and development.

New start-ups with innovative ideas are being encouraged by the government and businesses are trying to acquire more and more patents to lead the race for competitive advantage. Academic institutions, such as the Indian Institutes of Technology (IITs) are also shifting their focus from non-commercial research and patents to ones that have commercial viability and appeal. Taking the lead on innovation will go a long way in putting the Indian economy on the forefront of the world's developmental story.

Sincere efforts have paid off in terms of improvement in the country's performance on competitiveness and innovation. **India lies at the 40th position on the Global Competitiveness Index (GCI) 2017, which is a jump of 31 ranks from 2014**. Similarly, India lies at the 60th place on the Global Innovation Index (GII) 2017, which is again a jump of 21 spots from the 2015 rankings. India also ranked first in terms of the largest percentage improvement made by any country measured on the sixth edition of the 2018 U.S. Chamber International Intellectual Property (IP) Index. **Ranking 44 out of 50**, for the first time India has broken free of the bottom ten percent of economies measured. India's performance is further evidence of a country whose innovation-driven economy is on the move.

The **Global Entrepreneurship Summit** (GES) held last year in Hyderabad brought together 1500 entrepreneurs from around the world along with PM Modi and Ivanka Trump, U.S presidential adviser. The conversations and discussions at the summit showcased an India that is ready to scale up innovation and entrepreneurship in the country.



However, India still lags considerably in terms of an **R&D** and Innovation ecosystem (research publications, patent

productivity, R&D budget, etc.) as compared to the leading global economies such as USA, Japan, S Korea, China, and the major European countries. For example, the number of patents filed in India is around 17 per million people. This patent productivity is considerably low as compared to the figures in other countries like Japan (3716), S. Korea (4451), USA (910), and China (541). Another example is the EU Scoreboard 2016, in which only 22 Indian companies are listed among the Top 2500 R&D spenders. These companies belonged to three sectors:

pharmaceuticals and biotechnology, automobiles, software and computer services. This implies a narrow state of R&D spending in India when compared with global companies. There also remain some fundamental challenges that our country needs to address, in order to make the radical advancements that are necessary to drive innovation.

The **first challenge** relates to the significant investments that are required in patenting activity and the perception among Indian companies of the limited role of patents in gaining competitive advantage. Patenting involves a considerable investment of time, cost and capital and there is a general belief that returns are not commensurate with investment. Moreover, India still lacks a world-class Intellectual Property Rights (IPR) ecosystem. There is a need for a two-step action plan in this case. First, the Government of India needs to focus on setting up a higher number of incubators, accelerators, and centers of excellence to drive the innovation ecosystem in India. Immediate steps are also required to enable the ease of patenting in India by streamlining the resource constraints and strengthening IP rights.

The **second challenge** relates to the socio-cultural mindset and the sheer scarcity of talent that has the aptitude, motivation and appropriate skill required for research work. The socio-cultural mindset persuades highly skilled students to opt for a secure, high-paying job rather than taking up research as a career option. Also, the university system in India lacks any focus on research and innovation in line with the changing market landscape and technologies. Institutions like the IITs and the Indian Institute of Science (IISc), Bangalore are among the very few in India that focus on continuous research and innovation. A number of steps are needed here. The government need to strengthen the innovation ecosystem in India by ensuring pay-outs and recognition for graduates taking up research as a career. The government should collaborate with leading academic institutions and launch courses aligned with the futuristic skill related needs of corporate India. Finally, the government

should aim at bringing the IITs into the top 50 ranking of the global academic institutions.

The **third challenge** involves complexity in the commercialization of patents, primarily by start-ups. The primary reason can be attributed to the lack of awareness and confidence of licensees, on the functionality of new technology without first trying a prototype. So, there arises a significant challenge for these start-ups to get access to initial funding and mentoring for building a working prototype of their inventions. As previously discussed, public and private incubators, start-up investors and accelerators can play a major role in facilitating the access to funding, industry expertise, market linkages and early prototypes.

To conclude, **India is at an exciting point of inflection,** when it comes to a viable research and innovation ecosystem. More and more companies in India are realizing the significance of innovation over imitation and have started looking at **"R&D"** as a long-term strategic investment. There is an increasing focus on the collaborative mode of research by building research and innovation oriented partnerships with universities, global companies and government institutions.

The times ahead present both a challenge and an opportunity for Indian companies to become R&D leaders and make a quantum jump in terms of high-value offerings at the global scale.

Reference :-

1.Dr.Amit Kapoor and Sandeep Goyal , "Understanding the innovation landscape in India" on 26th March 2019.

Internship Experience

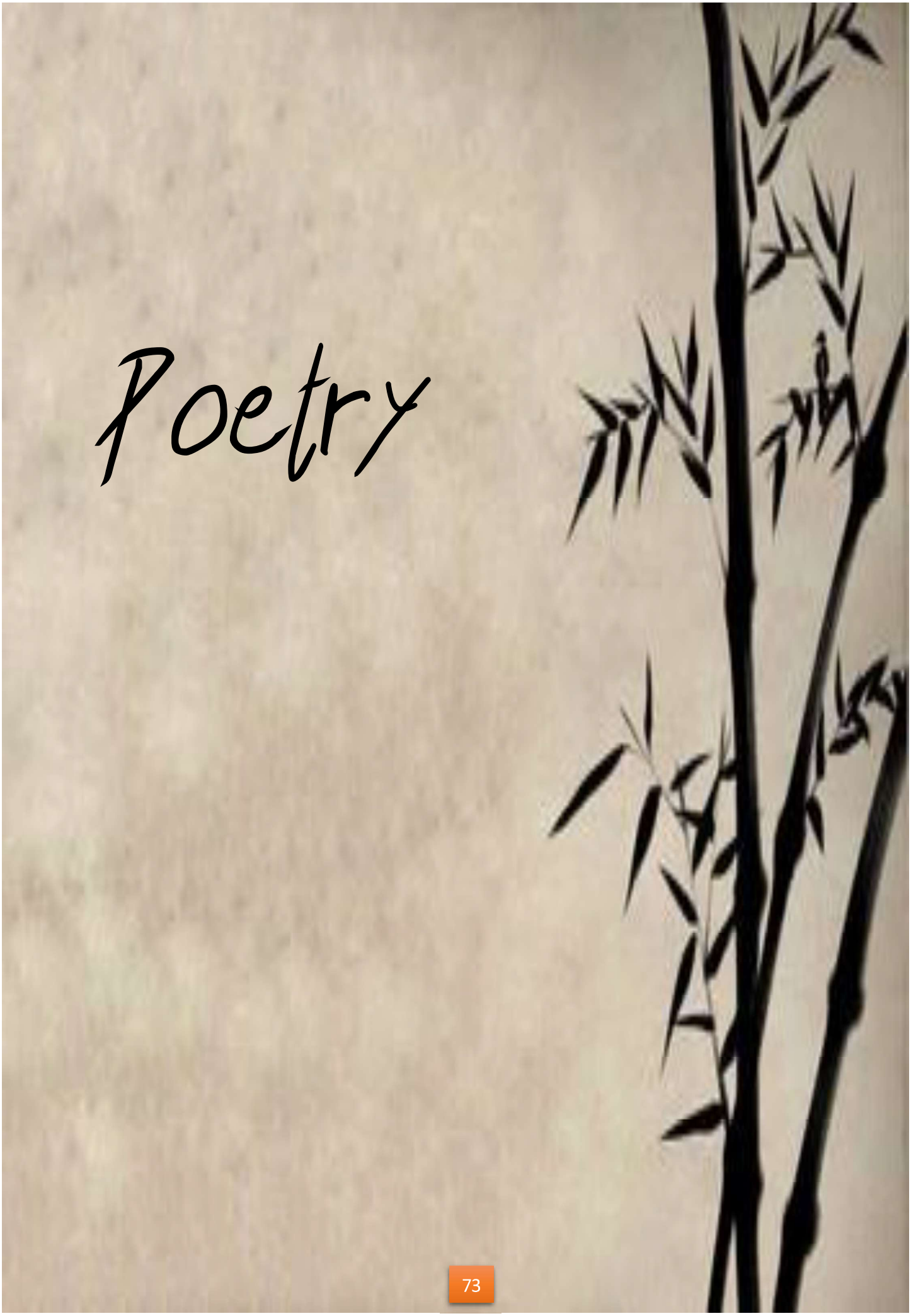
-Vaibhav Mahule
(BE Mechanical)

First of all, I would like to Thankyou Nutan Maharashtra Institute Of Engineering & Technology for providing such Internships for the students. And special thanks to Prof. Vijay Navle sir & Dr. Pranav Charkha Sir (HOD) for always believing in me and supporting me in all aspects. I have successfully completed three months of Internship in

Aakar Foundry Pvt. Ltd. in the Quality Department under the guidance of Mr. Tushar Patil Sir. I have worked in Final inspection, In-process inspection and callibration department and learned a lot of things working with them. During my Internship period, I have increased my capacity of working sometimes seven days a week. And I gained the basic information related to quality control which is used in many industries. Also I have build up some of my capabilities in these 3 months of my internship like I have increased my Decision making skill, Relationship development, Punctuality and Discipline. I was able to handle 10-12 leak testing machines in a day. I have learned all the parameters of the LT machine which is to be checked by a quality engineer. Daily, I used to update the board and monthly product file. I usually used to observed the campany employees and the worker that, how they handle the situation when any problem arises like customer complaints, material dispatching problem or any type of problems. I noticed them that, in a very short period of time they try to minimize that problem so that production should not be stopped. I have also learned working with workers that how to handle the machines (especially small problems by which the production may be delayed or stopped) because some time supervisor has another work to do so they can't solve each and every problem. And I have tried to implement all my theoretical knowledge into practical knowledge for the success of the organization.

AAKAR

Poetry



एक तरफ़ा

हर कोशिश किये हम...
तुम्हारी हर परीक्षा मे,
पास हुए हम...
सहा नहीं जाता अब,
तुमसे दूर जाने का गम...
तुम्हारे लिए कितना भी करू
सब पड़ जाता था कम...
केहना तो नहीं चाहता था पर
अब तुम्हारे दिल और जिंदगी से
दूर चले जायेंगे हम...
इतना दूर..
की ढूंढ़ने से भी नहीं मिलेंगे हम...
आखिर मे बस इतना केहना चाहता हु
की तुमसे प्यार किया था
तुम्हारी खूबसूरती से नही
केवल तुम्हारे साथ वक्त बिताना था
कोई छोटा सा सफर नहीं...
पर तुम्हे कब ये बात समझ आएगी पता नहीं
देर तो अब बोहत होगयी...
आशा करता हु आपको प्यार करने वाला मिले
पर मुझे आप जैसा बेवफा नहीं !!!!!

-वैभव k mahule (Jr Polya)

Ludo

हम दोनों मिले थे किसी खेल के ज़रिये

कब करीब आये पता नहीं,

जब जब उस्से बाते करने का दिल करता था

कैसे वो समझ जाती थी पता नहीं

हम कभी मिले तो नहीं,

पर जब कभी मिलेंगे तो उस्से क्या कहूँगा पता नहीं!!!

कभी कभी तो डर लगता है, कही ये दोस्ती प्यार मे ना बदल जाये!

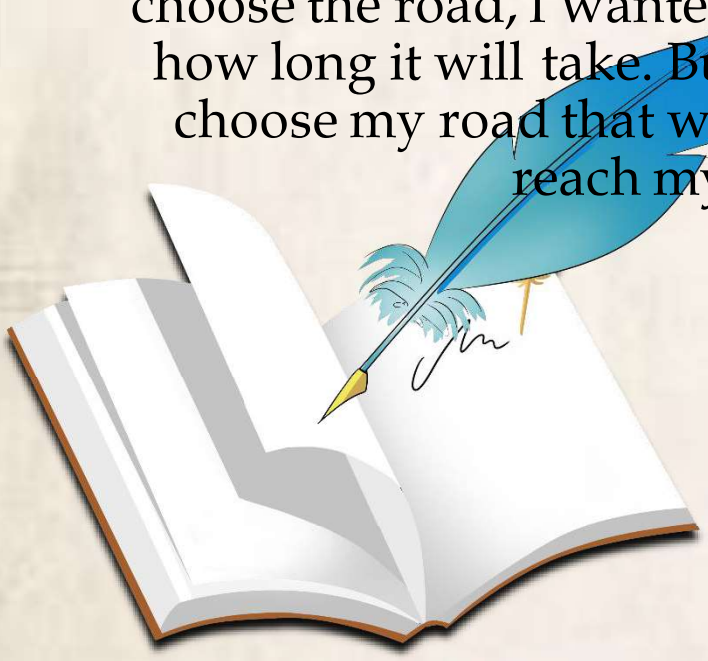
क्युकी तब उसका क्या जवाब होगा,

पता नहीं !!!

-वैभव k mahule (Jr Polya)

Life is a Road

I was walking on a Road. Suddenly I started running, I ran very fast. I reach very far, Far From Home. I lost my navigation. My network was not working properly. I was confused. I was not aware, where to Go, Whom to Ask. Everyone were showing me different roads. Some move ahead and reached their home. Some were planning to choose the correct road. And some offered me to go with them. But I was in middle. N no. Of roads, I was able to see But unable to choose. To choose the correct one. At one moment, first time in my life I think to give up like some people. They started walking on footpath. They themselves do not know where they will finish. But my mind was not accepting this, Because I wasn't thinking just to choose the road, I wanted to run on it. No matter how long it will take. But I know one day I will choose my road that would surely take me to reach my Home.

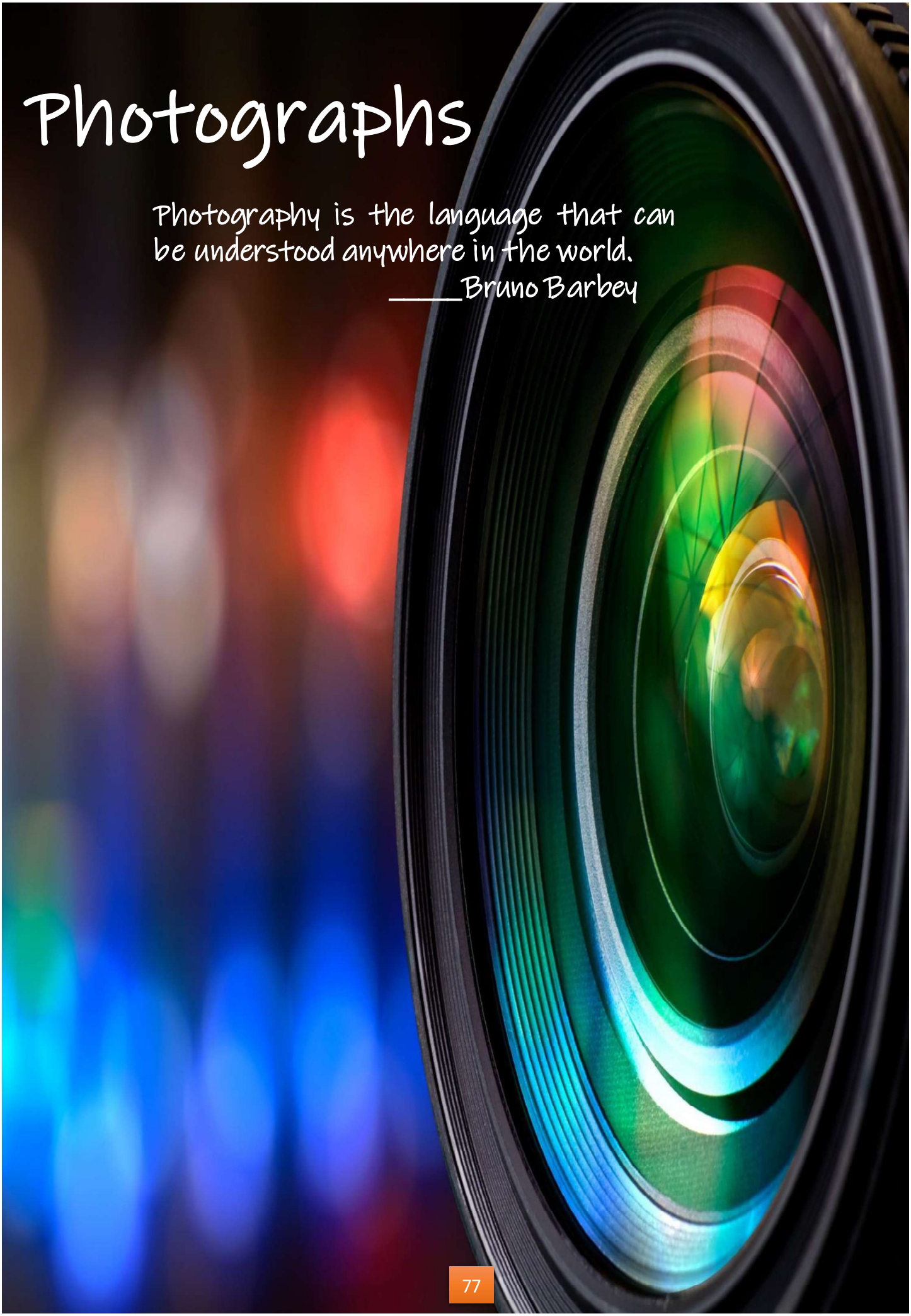


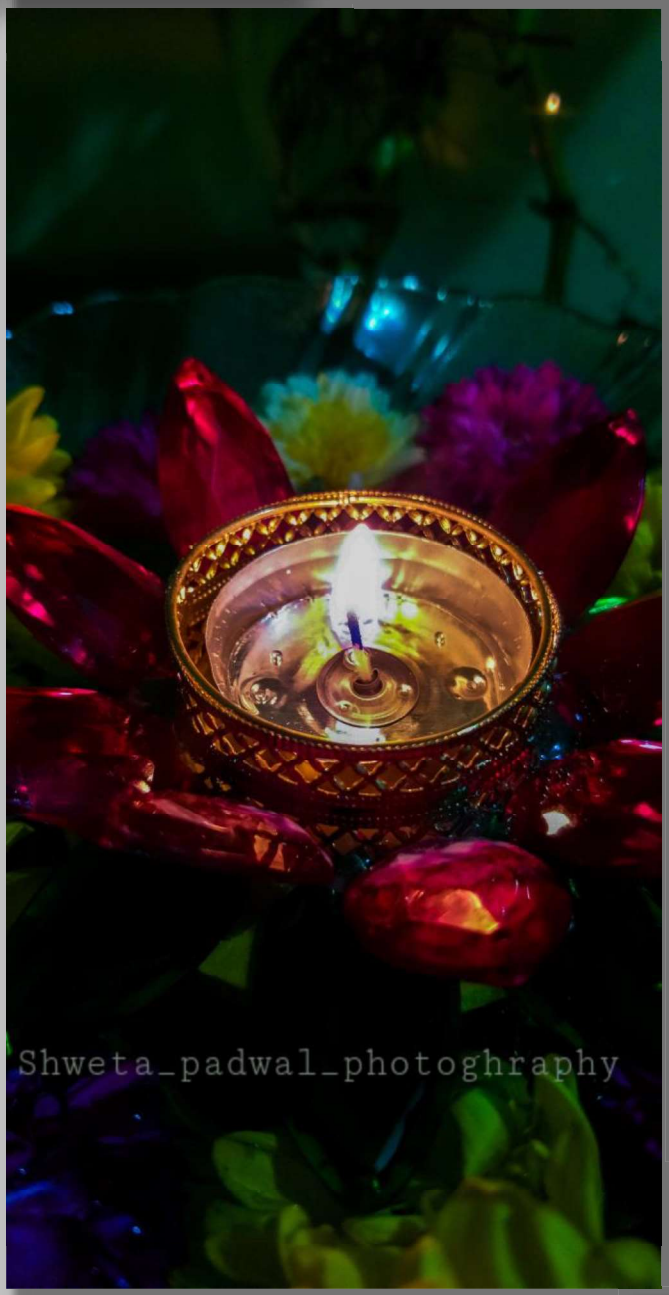
- वैभव k mahule (Jr Polya)

Photographs

Photography is the language that can be understood anywhere in the world.

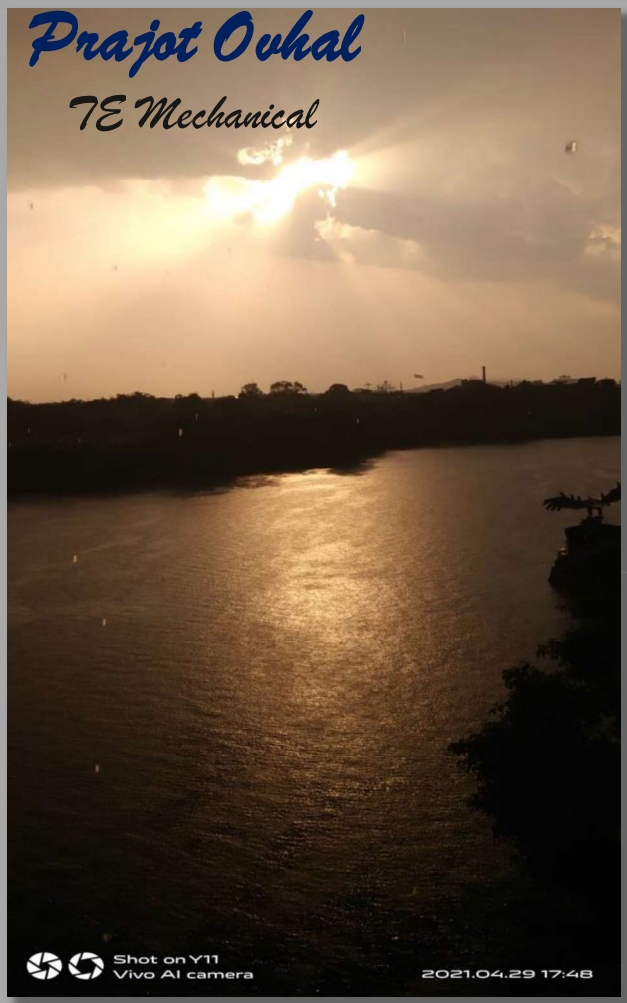
_____Bruno Barbey





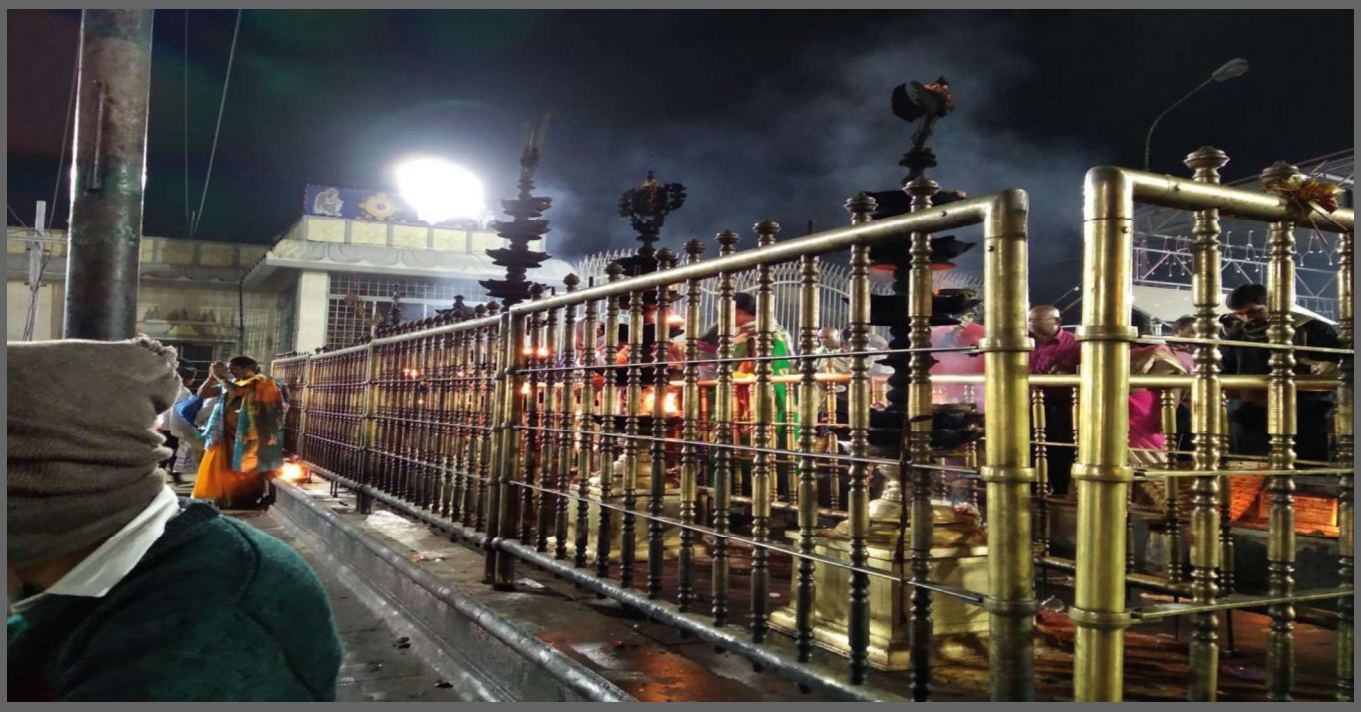
Shweta Padwal

SE Mechanical



Prajwal Gulhane

BE Mechanical



Sketching is another art of expressing your heart

____Jeevi

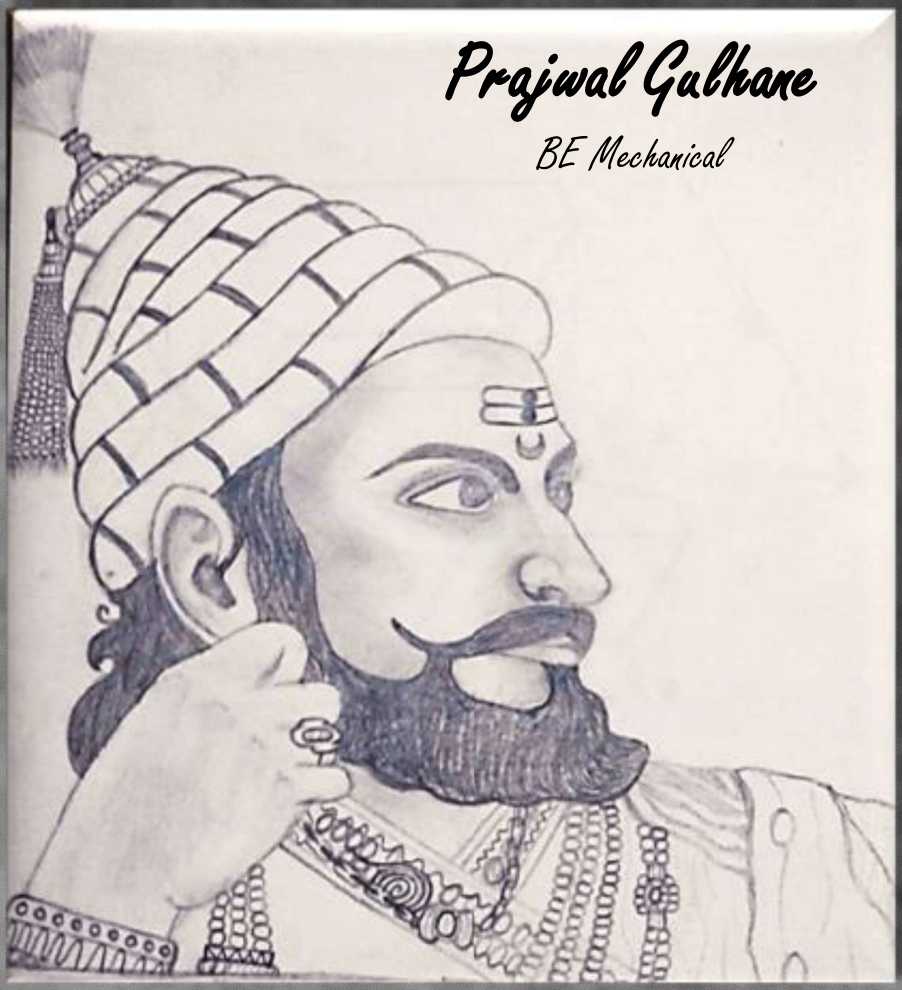

Pratik Palhade
TE Mechanical

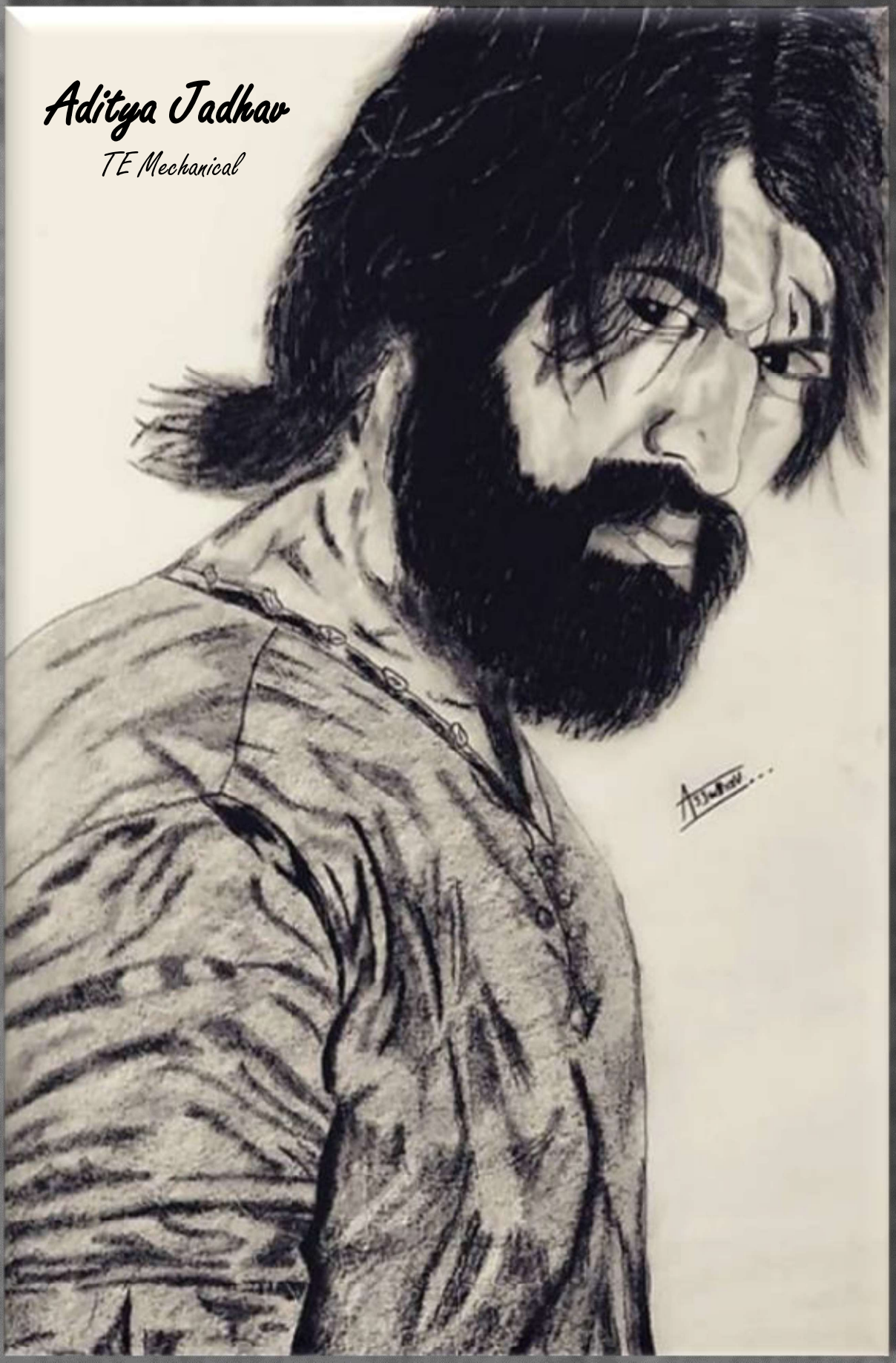
Prajwal Kamble

SE Mechanical

Prajwal Gulhane

BE Mechanical





Aditya Jadhav

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Prof. Rohit Jadhao

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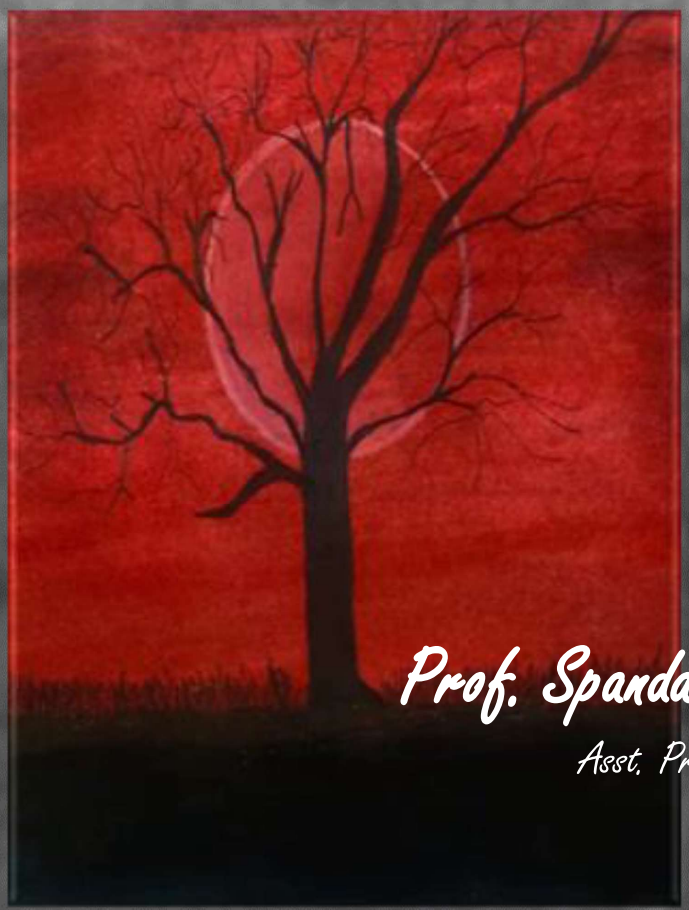
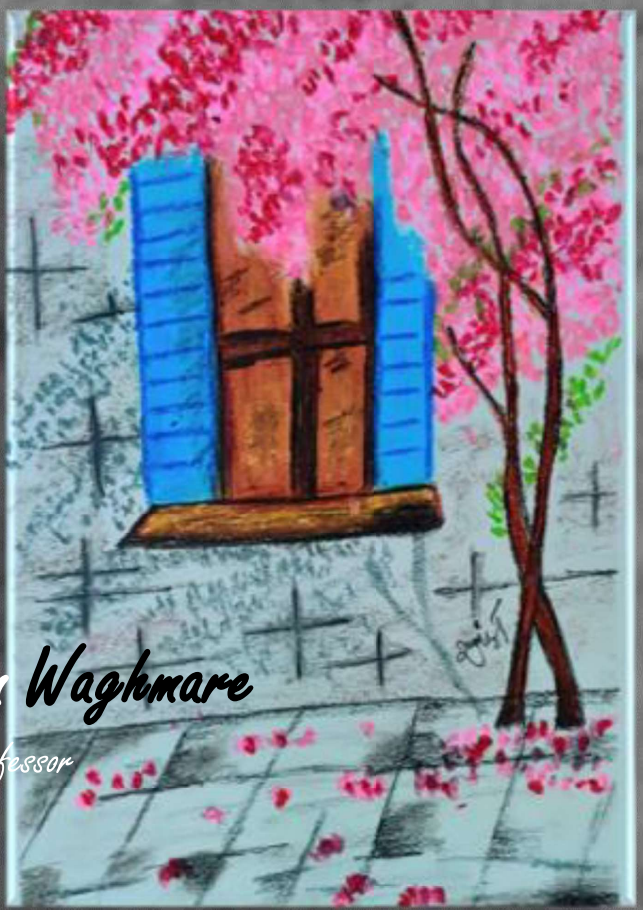


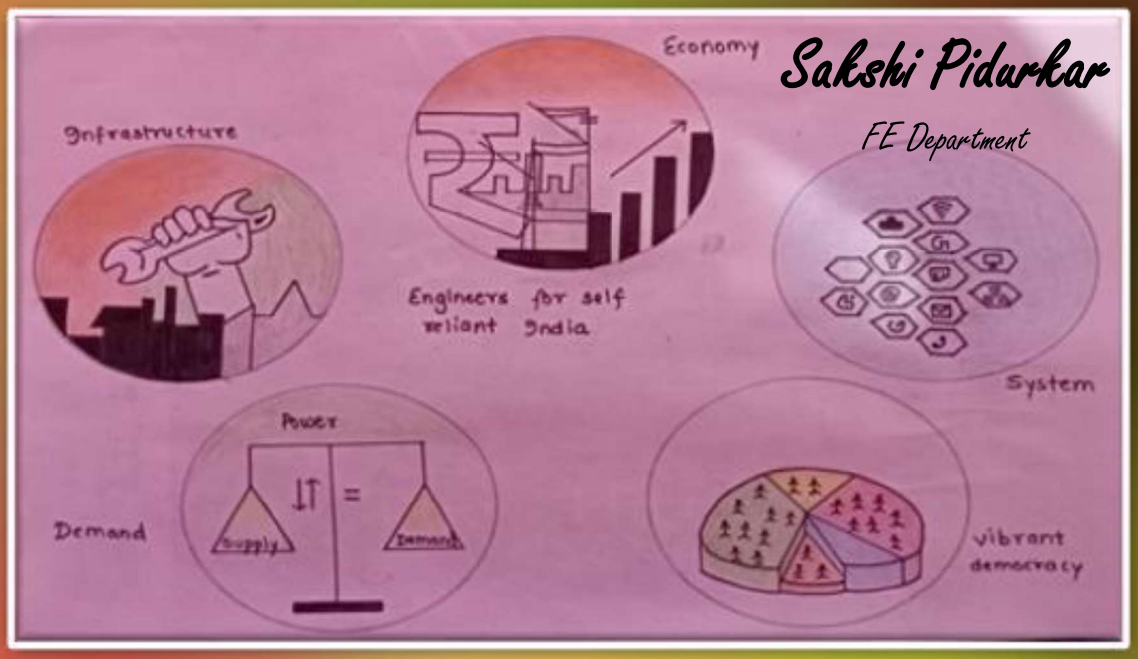


Prof. Spandan Waghmare

Asst. Professor

Posters

Five Pillars of Self Reliant India



Sakshi Pidurkar

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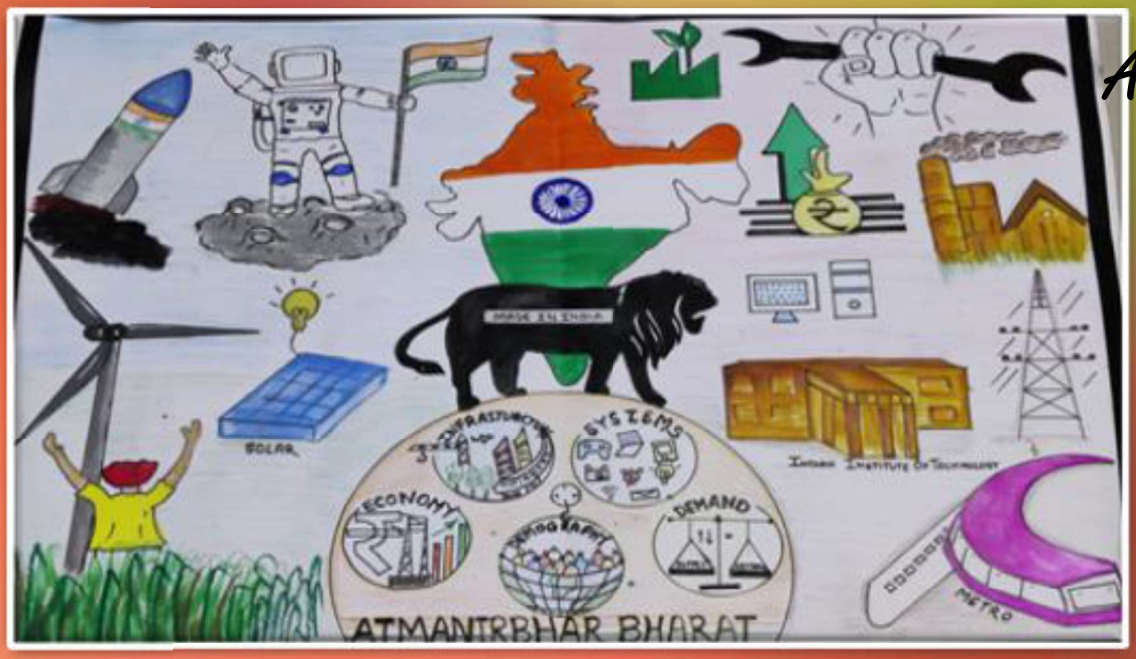

Argin Attar

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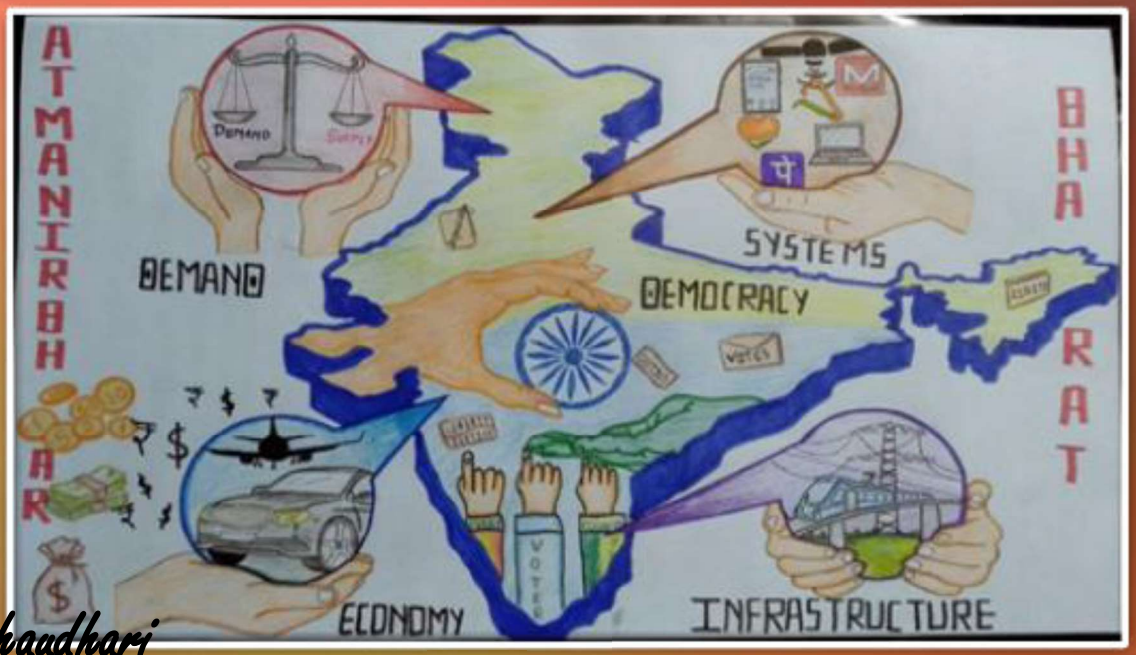

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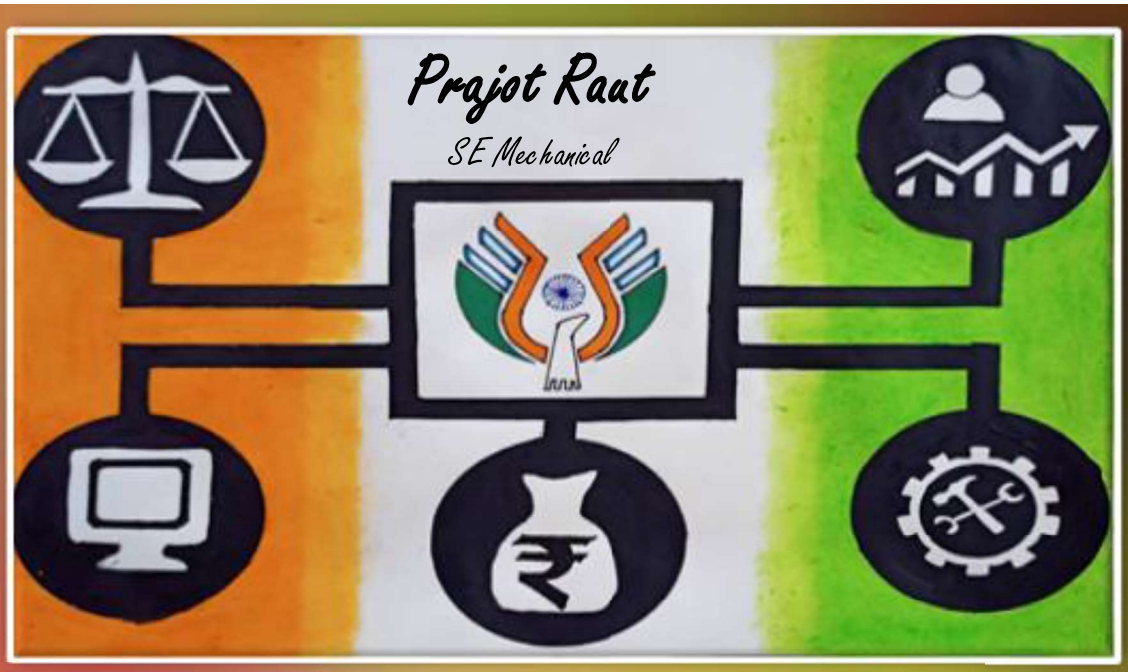

Prajot Raut

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Prajwal Kamble

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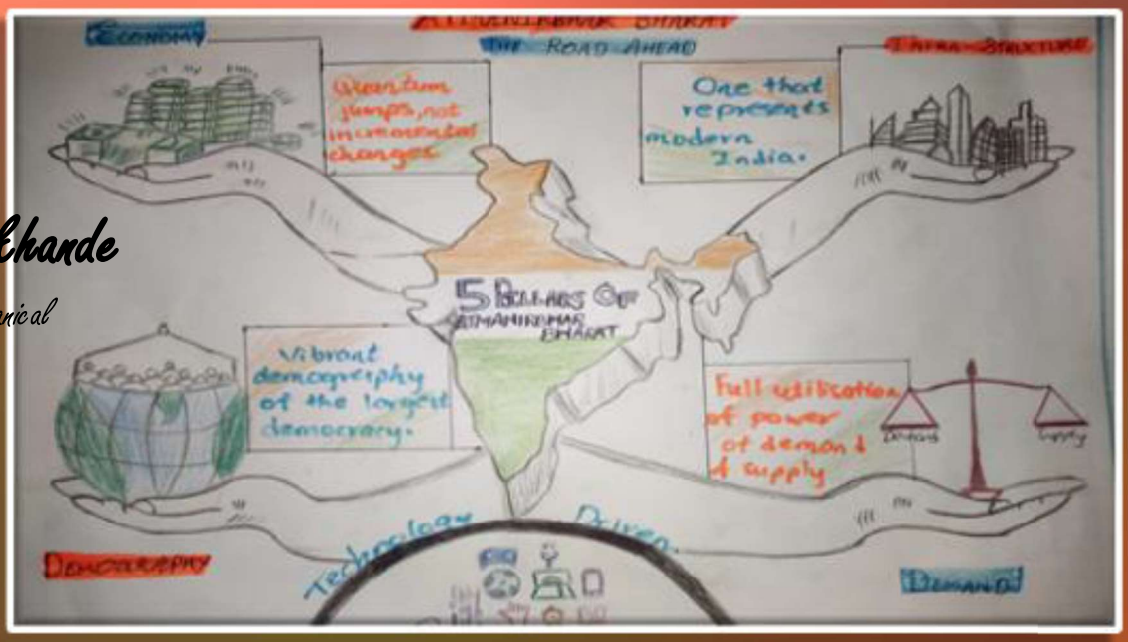

Sahil Vekhande

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Maheshwari Pardeshi

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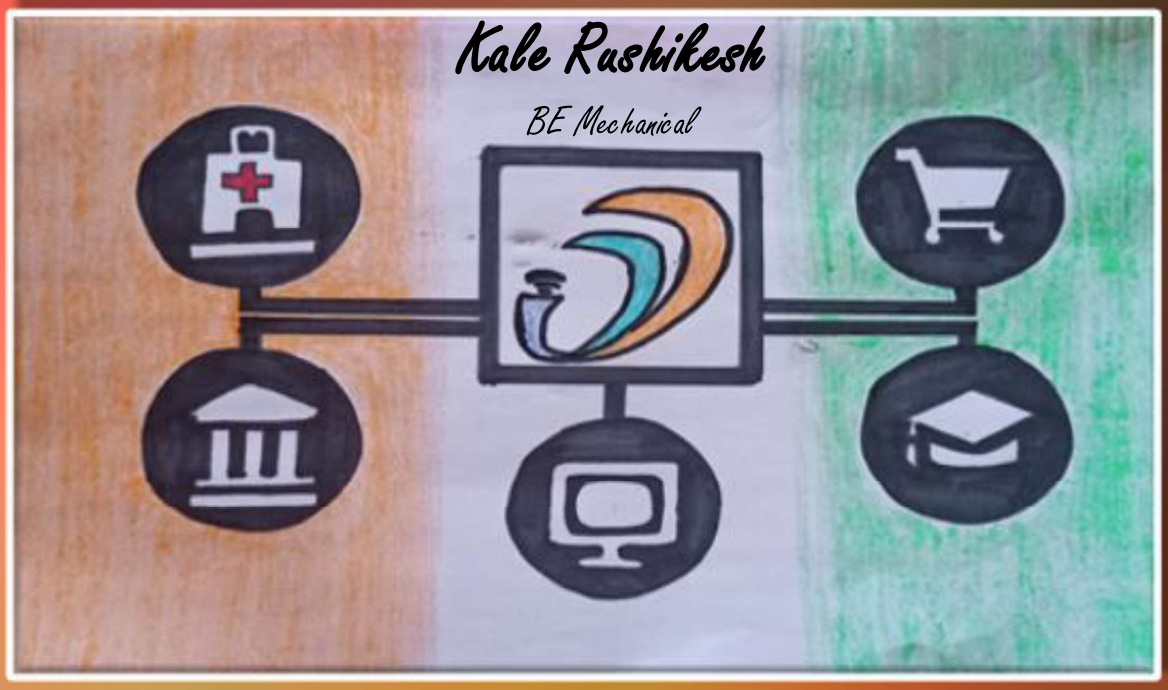
Kale Rushikesh

BE Mechanical



Nikita Patil

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Aditya Gangawane

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Aditya Kotre

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Anurag Borse

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Posters

By Club Student Members

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OBSERVATION

SKILLS FOR BEING AN INNOVATIVE

1. Observation comes from 'Being Present' in the moment.
2. Observation is all about resining.
3. Observation enhances problem solving.
4. Observe the things that adds clutter to our life.

Stay inquisitive! Question and analyse Your observation. Doing this will add Value to your work.

Know your Subject. You'll notice more if you Understand it.

"Nothing has such power to broaden the mind as the ability to investigate systematically and truly all that comes under the observation in life".
- *Marcus Aurelius*

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PRINCIPLES OF NEW EDUCATION POLICIES

Promotion of New Education policies by Ministry Of Education

- Recognizing, Identifying, and Fostering the unique capabilities of each student, by sensitizing teachers as well as parents to promote each student's holistic development in both academic and non-academic spheres.
- Flexibility, so that learners have the ability to choose their learning trajectories and programmes, and thereby choose their own paths in life according to their talents and interests.
- Emphasis on conceptual understanding rather than rote learning and learning-for-exams.
- creativity and critical thinking to encourage logical decision-making and innovation.
- Extensive use of technology in teaching and learning, removing language barriers, increasing access for Divyang students, and educational planning and management.
- Respect for diversity and respect for the local context in all curriculum, pedagogy, and policy, always keeping in mind that education is a concurrent subject.
- A 'light but tight' regulatory framework to ensure integrity, transparency, and resource efficiency of the educational system through audit and public disclosure while encouraging innovation and out-of-the-box ideas through autonomy, good governance, and empowerment.
- Continuous review of progress based on sustained research and regular assessment by educational experts.

Prepared By:
Ruturaj Mahajan (BE-B)
Suparp Paritkar (SE-A)

URL OF WEBSITE FOR REFERENCE
https://www.mhrd.gov.in/nep-new

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Creative Thinking

Creative thinking is .....

1.A way of looking at problems or situations from a fresh perspective that suggests unorthodox solutions.
2.Phenomenon whereby something new and somehow valuable is formed.

To Develop Creative Thinking

- Embrace new opportunities and try new things.
- Challenge stereotypes and force yourself to think beyond the obvious.

- Consume content that's way outside your comfort zone.
- Overcome a negative attitude.
- Fight fear of failure.
- Brainstorm new ideas.
- Challenge yourself and create opportunities.
- Explore multiple solutions.

Example of creativity in modern engineering:
Bullet trains: Japan's high-speed bullet train or Shinkansen is earthquake proof and the maximum operating speed is 200 miles per hour, an idea that once would have been implausible. To exist, it required someone to imagine a new possibility not yet invented and even drew inspiration on the composition of a kingfisher bird to reduce the noise it created. Reference: nesfircroft.com

Prepared by :- Sanket Jadhav Kunal Patil (TE Mech)

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SHINKANSEN TRAIN

Shinkansen train known in English as the bullet train, It is a network of high speed railway lines in Japan. Shinkansen Japanese means 'new trunk line' or 'new main line', but this word is used to describe both the railway lines the trains run on and the trains themselves.

- On October 1, 1964, the shinkansen train began commercial service between Japan's two largest cities of Tokyo and Osaka. This train having speed of 210 kmph.
- As per the 1964's design of train there is problem of Sonic boom
- Sonic Boom: train moving at high speed compresses and displaces a great amount of air. Normally this air diffuses in all direction. However, when the train enters a tunnel, a high pressure zone or shockwave is created, which travels down the tunnel and arrives at the opposite exit some time before the train. When this pulse leaves the tunnel, it expands outward rapidly, creating a boom.
- To avoid this Sonic Boom the design of front portion of train is inspired from beak of kingfisher.
- Kingfishers move quickly from air, a low-resistance medium, to water, a high-resistance medium. The kingfisher's beak provides an almost ideal shape for such an impact. The beak is streamlined, steadily increasing in diameter from its tip to its head. This reduces the impact as the kingfisher essentially wedges its way into the water, allowing the water to flow past the beak rather than being pushed in front of it.
- Because the train faced the same challenge, moving from low drag open air to high drag air in the tunnel, Japanese Engineers designed the forefront of the Shinkansen train based on the beak of the kingfisher
- With this updated design, Shinkansen train not only moves quietly, it now travels faster and uses 15% less electricity.
- The speed of shinkansen train having design of beak of kingfisher is 300 kmph.

Reference URL : https://asknature.org/idea/shinkansen-train/

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TOYOTA'S 'E-PALETTE'

A Weird, Self-driving Modular Store On Wheels

OVERVIEW

- Fully-automated, next generation battery electric vehicle[s] designed to be scalable and customizable for a range of Mobility as a Service businesses. Think of them as transparent cargo or shipping containers on wheels that grow and shrink in size depending on their specific task
- Toyota envisions these serving a variety of functions, from typical mobility services like ride-sharing and carpooling, to less typical purposes like serving as mobile office and retail space, medical clinics, hotel rooms, and more

CONCEPT

- With its open interior design layout, the vehicle can be outfitted with purpose-built interiors in accordance with the user's needs.
- It is a fully-automated, next generation battery electric vehicle (BEV) designed to be scalable and customizable for a range of Mobility as a Service (MaaS) businesses.

MAIN FEATURES

- Extensive interior space with
- A low floor/cube shape design
- Next-Generation vehicle control interface
- MSPF Enabled

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Yamaha Niken

The name Niken is a coined word meaning "Two Swords", referring to the dynamic movement of front two wheels like a sword manifests two swords

Creativity in This Bike

1.Advanced Ackerman Steering Geometry
2.Creative Banking to increase more cornering grip
3.Creative Design of Bike from Front which looks like a four wheeler

Technologies used in Niken Bike

1.Revolutionary (two front wheel)Leaning Multi Wheel (LMW) Chassis
2.Parallel Quadrilateral arms to support the cantilever suspension
3.Vertical Ackerman Steering Geometry
4.The bike is also equipped with cruise control, assist slipper clutch, quick shift system, traction control system and driving mode switching system
5.To achieve a natural steering feeling with sport bike agility and confident corner carving performance a specially developed hybrid frame is used
6.The NIKEN's torque rich 847cc 3 cylinder has special fuel injection settings which are used to achieve strong performance in twisty and challenging riding situations .

NORMAL BIKES	NIKEN BIKE
Normal Bike Steering Mechanism	Vertical Ackerman Steering Geometry
Two Wheels	Three Wheels
Less Traction Force	High Traction Force
No Distance (As in single wheel)	15" Distance in front 2 wheels

Ref. : https://www.yamaha-motor.eu/be/en/products/motorcycles/sport-touring/niken/technicalspecs/

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Innovative Decision Making (IDM)

The Decision-Making Process :-

- Define the problem, challenge, or opportunity.
- Generate an array of possible solutions or responses.
- Evaluate the costs and benefits, or pros and cons, associated with each option.
- Select a solution or response.
- Implement the option chosen
- Assess the impact of the decision and modify the course of action as needed.

A good way to make the most informed decision is to follow a process that assures you are taking into account all relevant information and considering each of the most probable outcomes.

" Instead of doing just trials, analyse the problems, figure out a feasible solution and make a decision to implement it. "

"It is in your moments of decision that your destiny is shaped."

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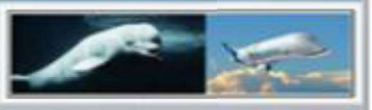
AIRBUS BELUGA

Airbus Beluga, is version of the standard wide-body airliner modified to carry aircraft parts and outsize cargo. It received the name Beluga (a whale it resembles) gained popularity and has since been officially adopted

- This plane has got a distinctive frontal protuberance similar to a Beluga whale. This sub-Arctic marine mammal's name has been given to the plane because of their similarities.
- The wings, engines, landing gear, and the lower part of the fuselage remain identical to those used on the conventional A300, while the upper part of the fuselage forms an enormous horseshoe-shaped structure 7.7 m (25 ft.) in diameter.
- In comparison with the Super Guppy, the payload was more than doubled and the volume increased by more than 30 per cent.
- The Airbus Beluga's main task is to transport aircraft sections and components throughout production locations and assembly lines at Toulouse (France), Hamburg (Germany) and Seville (Spain).
- To provide access to cargo area from front without having to disconnect all electrical, hydraulic and flight control connection, the standard A300 cockpit was relocated down below the cargo level floor.
- By relocating the cockpit in this manner, loading times reportedly halved from those encountered while using the super guppy.



http://edition.cnn.com/travel/article/inside-airbus-beluga/index.html

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ARISE Atal New India Challenges

The Aatmanirbhar Bharat ARISE-ANIC program is an Atal Innovation Mission NITI Aayog initiative targeted at promoting research and innovation in small Indian enterprises through support of Central Government Ministries

OVERVIEW

- Initiative by Indian Government's NITI AAYOG
- To promote research and innovation in MSMEs and startups
- By challenging them.

COLLABERATION WITH

1) Indian Space Research Organization
2) Ministry of Defence
3) Ministry of Food Processing Industries
4) Ministry of Health and Family Welfare
5) Ministry of Housing and Urban Affairs

(will facilitate the process by putting out 3 problem statements each)

PROCESS

1) Challenge selection
2) Evaluation/Selection
3) Prototype development.
4) Minimum usable/field deployable prototype.

ELIGIBILITY

- Have to be MSME applicant. (OR)
- Registered startup
- Individual applicant also should satisfy any one of above.

INCENTIVE

- Will be given support by network of incubators, mentors and other startup in environment.
- Support by the ministry's as well
- Grant aid of 50 lakhs (based on milestone/achievements), over a period of 9-12 months for development of viable prototype.

GLIMPSE OF THE PROGRAM

URL FOR REFERENCE AND REGISTRATION

https://aim.gov.in/aatmanirbhar-bharat-arise-anic.php

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ANATOMY of an ENTREPRENEUR
BRAIN
A pool of ideas
EYES
Looking for investor and opportunities
MOUTH
Communicating the vision
EARS
Listening to customers feedback
STOMACH
Trust your gut
HEART
Full of passion
FEET
Dream high but stick to the ground
LEGS
Keeps them going in tough time
TOP 5 TIPS
by Michael Bloomberg
TAKE RISKS
MAKE YOUR OWN LUCK
BE PERSISTENT
NEVER STOP LEARNING
GIVE BACK
Prepared by: Prajjwal Narkhede (BE Mech)
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QUALITY OF AN ENTREPRENEUR
Creative thinker:-
Creative thinking is a must-have skill that an entrepreneur must have to create some inventive ideas and make the entrepreneurial process a big success.
Creativity allows the business to devise some interesting strategies that give advantage to the entrepreneurs.
The major contributor to economic growth is the Entrepreneurship but there is a huge impact of creativity on it.
Creative thinking is a must-have skill that an entrepreneur must have to create some inventive ideas and make the entrepreneurial process a big success.
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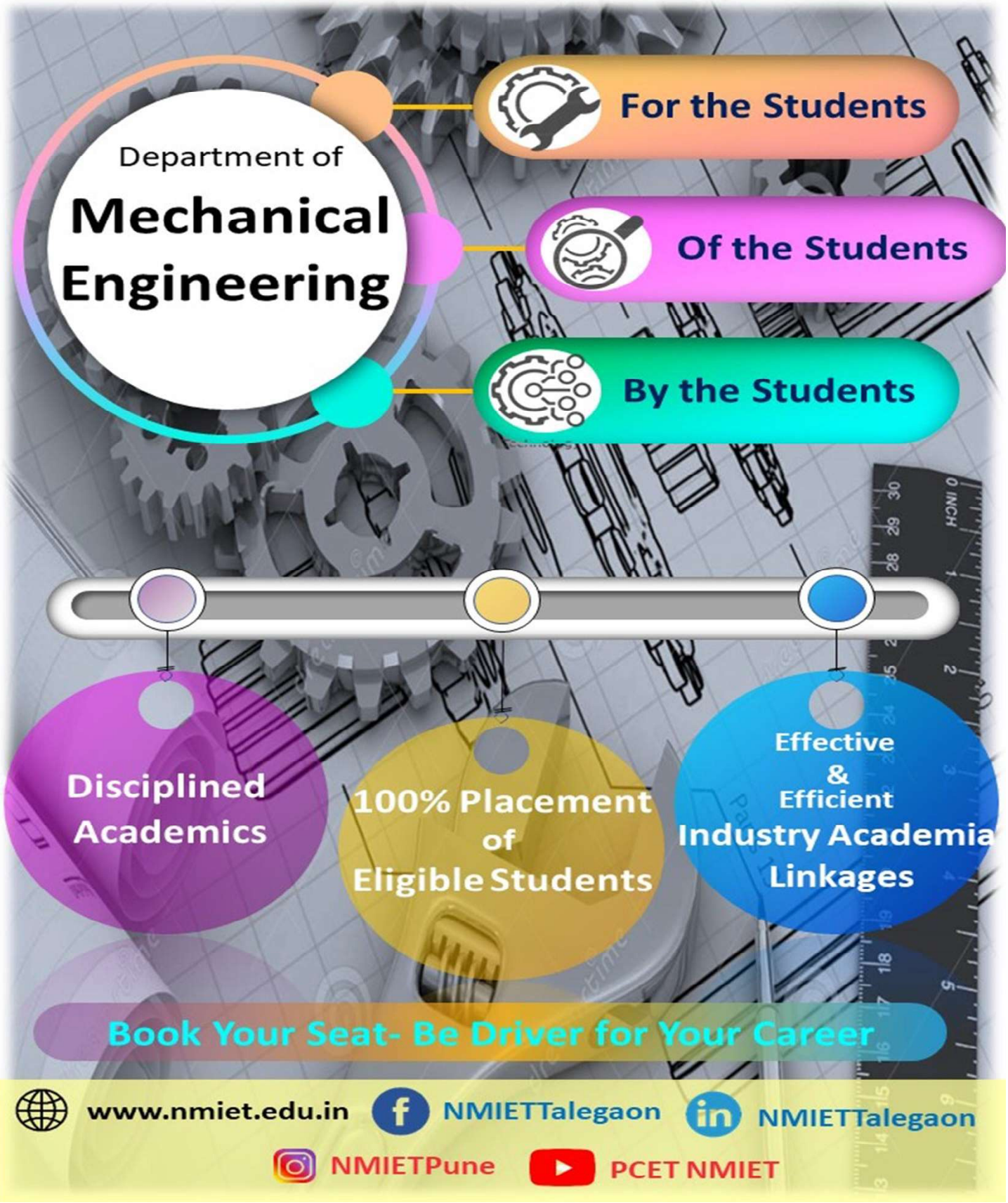

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