### Tech. Magazine

### Department Of Mechanical Engineering

Dream Institute of Technology

Session-2021-22

### MECHANIZER



Dream Institute Of Technology Thakurpukur, Samali,B.H Road Kolkata - 70010+, West Bengal, India.

### **EDITOR'S DESK**

As the editorial team of our departmental magazine "MECHANIZER", we feel overwhelmed to be a part of this. The pleasure and the responsibility of making the departmental newsletter is unparalleled and is experienced by every member. One of the challenges faced by us has been to constantly change and re-invent the magazine in order to appeal to a larger section of students and faculty. With the magazine now coming under the newly emerged "Literature Society of Mechanical (LSM)", we feel proud to be a part of it. We'll be making some vibrant announcements but more importantly you can make it to the LSM activities with your contributions in the form of articles, arts, paintings, photography etc... We will be making some exciting announcements which are aimed at tapping the talent of the students. And in this moment of warmth, we request your active involvement and participation in the LSM activities. Your contribution is highly important to us since this whole initiative of both Mechanizer as well as LSM has been to improve the skills and knowledge of students. If you intend to make a difference to the department and to the students, approach us and we'll help you. There are a lot of young aspirants who could serve our society as entrepreneurs, businessmen, technical geniuses, innovative scientists hidden in our department who are yet to realize their potential. The role of LSM here is to improve your soft-skills. With the activities, events, workshops which have been planned to be put into action, your skills and confidence are bound to go higher. At this highly esteemed moment, we feel deeply obliged to thank our beloved Chairperson Ms. Susmita Sarkar, our respected Principal, Dr. Dipankar Sarkar, Head of the Department, Dr. Priti Shukla, faculty members, Mr. Sourav Saha and Mr. Shaibal Sahoo and advisors who have been very helpful, encouraging and supportive in this journey and much more to come. Their continuous support has raised expectations and this has indeed provided us motivation. Also, we thank our aluminus Mr. Sandip Hati and alumna Mr. Pritam Mandal, at this moment, who put up Mechanizer for the first time, and inspired us to carry it forward to this level.



My 50 years' experience in research and development of equipment for reputed engineering colleges across the country inspired me to establish this research-driven engineering institute. With a dream to create an academic foundation for social, cultural, scientific, economic and technological progress, we established Dream Institute of Technology in 2006.

We nurture individualism, creativity, innovation and strive to inculcate these values within the aspiring professionals. Our pedagogy is student – centric with emphasis on inquiry and project-based learning.

My advice to students who want to be successful is to acquire the industry-oriented skills and learn to capitalize the opportunities and resources provided by the college.

Today, at Dream Institute of Technology, we take immense pride that our students receive quality education by following very high standards of teaching and learning. Our excellence is not just confined to the classroom; we are also notably active in conducting conferences, workshops, seminars, guest lectures and other co-curricular activities.

The cutting-edge infrastructure of DIT sets the right ambience for an excellent teaching learning environment combined with latest technological best practices. With all your wishes today, "Dream Institute of Technology "has become one of the leading institutes in the state of West Bengal. Our mantra of success is dedication, research, education, advancement and motivation.

### CHAIRPERSON'S MESSAGE



Ms. Susmita Sarkar

Dream Institute of Technology aspires to build a strong technical foundation for new age engineering students. We impart skill-based industry driven knowledge over and above university defined curriculum. This will help to develop the broad technical outlook required for students to survive in this competitive market.

We always encourage collaboration between students and faculties, reciprocity and cooperation among students, active learning, prompt feedback and experiential learning beyond classroom. Dream Institute of Technology imparts effective learning skills that helps student to accurately remember information learnt, recall them at the right point of time and utilize them effectively in a wide variety of situations.

We encourage students to attend their classes in the college regularly, so that they can build up the habit of attending the workplaces punctually. Besides knowledge, discipline is very much essential for every individual to succeed professionally. At Dream Institute of Technology, discipline is maintained on a priority basis within the college campus.

Every student in our institute is made to understand that there can be no short-cut to success. I feel privileged to be a part of this institution and hope to fuel the intellectual energies of all our students with the support of dedicated faculty members of our institute.



### PRINCIPAL'S MESSAGE



Prof. (Dr.) Dipankar Sarkar

India is a fast emerging destination for cutting-edge research & development. In the year 2020 India will be in need of large talent pool not only in information technology but also in other fields like nanotechnology, agricultural science, manufacturing etc. Our students must be equipped to meet these upcoming challenges. "Dream Institute of Technology" has become one of the leading engineering institutions in West Bengal as well as in India.

Within a short span of time the institute has created a niche for itself by providing lucrative career opportunities with esteemed recruiters like TCS, Capgemini, Infosys, Reliance, Accenture, Wipro- spectra mind, Satyam Computers, Cognizant, etc. We have well-equipped computer labs, central computer center and departmental labs to equip students as quality engineers not only in the core sectors but also in the field of software engineering.

Dream Institute of Technology, a state-of-the-art engineering institute provides well-equipped workshops and advanced learning resources. From a modest beginning in July 2006, the Dream Institute of Technology made a pledge to create the ideal environment for young, fresh, talents to realize and optimize their potentials. We facilitate students to develop a symbiotic relationship between the community, society, and the institution.

We are at work in unison to ensure a tremendous value-addition among our students during their four years' of stay with us. At the same time, we are also confident to ensure that the alumni of our college always feel proud of their institution of choice in the days ahead of us.

### FROM HOD'S DESK

Mechanizer, the official megazine of the Mechanical department of Dream Institute of Technology, initiated first by our prodigious alumni, is now carried by the vigor of the Literature Society, **LSM.** Sincere congratulations to the student members to have taken it intriguingly, keeping in view, the prospects of the fresher's.

*To articulate on the department,* we have 10 fac- ulty, 2 doctorates with different specializations, 1 experienced professors. Amongst this, 1 faculty are pursuing Ph.D.

The department's consistent placement record has been so evident. It is felicitous that the department has an official MoU signed with EEQUATE, which provide training to faculty member regarding upgraded teaching skills. Also, training for the GATE exam is carried out and guidance towards career development is thrown light on. Apart from this,



Keeping in view the importance of profile building and research oriented guidance for the students, we have a team of enthusiastic faculty members:

Dr. N. C. Das (Prof.) Dr. Priti Shukla (Asso. Prof. and Head) Mr. Abhijit Bhowmik Mr. Sourav Saha Mr. Akarshan Mukherjee Mr. Shaibal Sahoo Mr. Milan Maity Mr. Farid Hussain Mr. S. K. Sabir Mr. Mofijul Islam

- Dr. PRITI SHUKLA ASSOCIATE PROFESSOR AND HEAD DEPT. OF MECHANICAL ENGINEERING

### **DEPARTMENTAL VISION**

To be a top ten recognized Department of Mechanical Engineering in the Eastern Region providing excellent academic ambience producing Mechanical Engineers capable of serving Nation and the World.

### **DEPARTMENTAL MISSION**

M1: To provide the most effective teaching learning ambience with emphasis on student centric learning

M2: To remain constantly aligned with relevant industries to prepare job-ready graduates through offering training in line with Industry 4.0 and obtain collaborative projects and consultancy from industry

**M3:** To provide excellent training opportunities for faculty to remain constantly updated in their knowledge and skills.

M4: To encourage innovation and entrepreneurship by setting incubation center

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<b>Program Specific Outcomes (PSOs)</b>				
PSO NO.	PROGRAM SPECIFIC OUTCOMES			
PSO1	Students will be able to correlate the most up-to-date advanced manufacturing methods, such as CNC lathe, CNC milling, and 3D printing.			
PSO2	Students will be able to develop professional skills, modern tools, and advanced software such as Auto Cad, Fusion 360, 3D Cut-Viewer and MatLab.			

PEO NO.	Program Educational Objectives			
PEO1	Students are expected to pursue higher studies, conduct research, entrepreneurship and pursue a successful career in the field of Mechanical Engineering and Allied fields.			
PEO2	Students are expected to possess skills and core-competency to solve complex analytical and design problems in Mechanical and Allied industries.			
PEO3	Students are expected to be proficient in multi-skills and work in collaborative projects with inter-disciplinary departments to enhance job areas.			
PEO4	Students are expected to develop analytical and critical thinking capability, time management, ethical attitude, concern for social problems needed for responsible professionals' engineers.			
PEO5	Students are expected to improve professional career by lifelong learning through persistent education of technical and decision-making skills.			

### **Program Educational Objectives (PEO)**

### PROGRAMME OUTCOMES

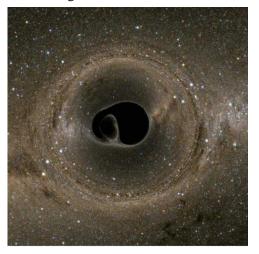
PO No	Program Outcomes (POs)			
PO1	<b>Engineering knowledge</b> -Ability to apply the knowledge of mathematics, physical sciences and computer science and engineering specialization to the solution of complex engineering problems.			
PO2	<b>Problem analysis</b> -Ability to identify, formulate and analyze complex real life problems in order to provide meaningful solutions by applying knowledge acquired in computer science and engineering.			
PO3	<b>Design/development of solutions</b> -Ability to design cost effective software / hardware solutions to meet desired needs of customers/clients.			
PO4	<b>Conduct investigations of complex problems</b> –Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions in the field of computer science and engineering.			
PO5	<b>Modern tool usage</b> -Create, select and apply appropriate techniques, resources and modern computer science and engineering tools including prediction and modelling to complex engineering activities with an understanding of the limitations.			
PO6	<b>The engineer and society</b> - Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.			
PO7	<b>Environment and sustainability:</b> Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.			
PO8	<b>Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.			
PO9	<b>Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.			
PO10	<b>Communication:</b> Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.			
PO11	<b>Project management and finance:</b> Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.			
PO12	<b>Life-long learning:</b> Recognise the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.			

### **DOUBLE BLACK HOLE DISCOVERY**

Two black holes, 1.4 billion light years from earth, spiraled around each other and collided, creating ripples in the fabric of space of time, known as gravitational waves, which arrived at December 2015 and were detected by LASER INTER- FEROMETER GRAVITATIONAL- WAVE OBSERVATORY(LIGO). This was announced during a news conference at 228<sup>th</sup> meeting of American Astronomi- cal Society in San Diego. LIGO made the



first detection of gravitational waves in September 2015 that these waves were generated due to the collision of two black holes. Black holes are dense objects in the universe and create intense curves in space time. When they move around each other every quickly, those curves in space become ripples and move outward. Black holes weighed about 14.2 times and 7.5 times the mass of sun, according to paper detailing the new finding, published in the journal, Physical Review. Stellar black holes are made when the center of a very big star falls in upon itself, it causes a supernova. A supernova is an exploding star that blasts part of the star into space. Black holes do not radiate or reflect light.



However, rapidly moving matter around a black hole will generate light and reveal the monster's presence to astronomers. The rapid inward rush of material drives up the internal pressure to the point that creates a black hole. The pull of new objects is so intense that even light cannot escape. These two remain partners even after death, slowly spiraling around each other eventu- ally colliding. Black holes do not go around in space eating stars, moons and planets. According to NASA, earth will not fall into a black hole because no black hole is close enough to the solar system for earth to do that. Even if a black hole having the same mass as the sun were to take the place of the sun, earth still would not fall in. Black hole would have the same gravity as the sun. Earth and the other planets would orbit the

Black holes as they orbit the sun now. The sun will never turn into a black hole. Earth views black holes as a fantasy and it would never fall in.

SANJU DEY II MECHANICAL

### LETRONS

A Turkish company has built an actual working Transformer robot out of an actual BMW. The Transformer was made by Let vision, a hard- ware and software engineering Company based in Ankara. It has kinetic fingers, arm and wrist movements and smoke but can't walk or be driven on a highway. Let vision says that the LETRONS will be street-legal soon in car mode and will be walking in robot mode as soon as a buyer pays for it. While ANTIMON is the only LETRON so far, let vision has



revealed the designs and clever names for the next four robots: BIZMUT, ARGON, WOLFRAM and TANTA.

### **INTRODUCED 3D PRINTING MACHINE IN OUR LAB**

A 3d printer is an additive manufacturing technique where 3D objects and parts are made by the addition of multiple layers of material. It can also be called as rapid prototyping. It is a mechanized method where 3D objects are quickly made as per the required size machine connected to a computer containing blueprints of any object. The additive method may differ with the subtractive process, where the material is removed from a block by sculpting or drilling. The main reason to use 3d printer is for 90% of material utilization, increase product life, lighter and stronger. 3D printing is efficiently utilized in various fields such as aerospace, automobile, medical, construction and in manufacturing of many household products.



COMPILED BY SANIL DOPTARY III MECHANICAL

### **BEST PROJECTS**

### Project Title: Advancement of Abrasive Jet Machining

**Project Members:** Soumyadip Dutta, Pritam Mandal, Ektiyer Rahaman Mollick and Bhaskar Bhaumick

Guide: Mr. Sourav Saha

**Abstract:** The AJM will chiefly be used to cut shapes, drill holes and deburr in hard and brittle materials like glass, ceramics etc. In this project, a model of the Abrasive Jet Machine was designed using CAD packages like AutoCAD and CATIA.

Description: Abrasive Jet Machining (AJM) is the process of material remov.

of a high speed stream of abrasive particles suspended in a gas medium from a nozzle. The material removal process is mainly caused by brittle fracture by impingement and then by erosion. The machine was fabricated in the institute workshop with convectional machine tools like arc welding machine, hand drill, grinding machine using commonly available materials like mild steel sheet and rod, aluminum sheet, glue, polythene sheet ,glass fiber which are commonly available in the local market.

### **Project Title: Automated Gutter Cleaner**

Project Members: Akash Prasad Raut, Ananda Pradhan, Anupam Mandal,

Dipankar Koley, Arafath Hussain and Avijit Pan

Guide: Mr. Mofijul Islam

**Abstract:** Automated drain gutter cleaning mechanism to tackle these modern day gutter jamming issues. Our system uses an automated gutter/drain cleaning system that lets fluids flow through it but catches large solid waste like bottles & plastic and accumulates it. So gutter cleaners need to just clean these gutter cleaning systems installed at points instead of cleaning entire gutter floors.

**Description:** Cleaning of drains/gutters has always been a problem. Labors cleaning gutters & drain seems unethical and also leads to a high risk of them catching infections or poisoning due to large amounts of waste/chemicals in them. Also throwing of bottles/plastics and other such objects into the gutters lead to narrowing and eventually blockage in gutter flow. This leads to overflow in many cases. The mechanism consists of a filter basket on top of it. After particular time intervals the jaw lifts up using a motorized shaft which is connected using a chain to the jaws. It then reaches the top and turns upside down to dump the solid waste. Now after dumping the waste, the motor rotates again to bring the jaw again to the bottom position to collect more waste. The system is a very efficient way to cleaning gutters & drains and also requires very low power since it will only rotate once or twice a day to dump the solid waste.

COMPILED BY SANDIP HATI III MECHANICAL

### The Alarm clock

The first alarm clock was designed for one person and could only go off at 4am – when they had to get up and get ready for work. An adjustable alarm clock was not created for another 60 years.







### Machining Performance of Nano SiC and Graphite Powder mixed Aluminum Matrix Composites fabricated by Powder Metallurgy using EDM

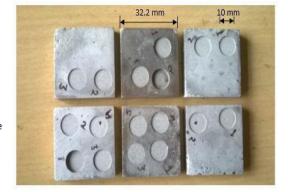
### Abstract

Currently, aluminum MMCs are increasingly being used for different engineering applications due to their lot advantages. In this experiment, MMCs were machined using electrical discharge machining (EDM) to get high-performance results. Powder Metallurgy method was used to add different percentages of Graphite (3%, 5% & 7%) and Silicon Carbide (5%, 10% & 15%) Nano-powders to pure Aluminum powders. Different Compaction loads and Sintering temperatures were taken at 150, 200 & 250 KN, and 500, 550 & 600 °C respectively. The process parameters have been designed using the Taguchi L9 orthogonal array. With input parameters such as current (I), pulse on time ( $T_{on}$ ), pulse off time ( $T_{off}$ ), and voltage, the EDM technique was chosen for machining composite materials. The addition of silicon carbide particulates with aluminum metal matrix increases the Surface Roughness (Ra) and Hardness but decreases the Metal removal rate (MRR), and a suitable amount of graphite particulates with aluminum metal matrix increases MRR, SR, and Hardness also of the



Cu Tool

Workpiece



Mofijul Islam Assistant Professor Mechanical Engg. Deptt.

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**CONNECTS ALL FOUR METRO CITIES AND ALSO SOME MAJOR CITIES OF INDIA** FROM CHENNAI TO MUMBAI TRAVEL TIME IS JUST 60 MINUTES , IT'S TRUE !! YPERLOOP WHERE PASSENGERS CAN TRAVEL ABOUT 760MILES/HR

### WHICH IS INR 85 THOUSAND CRORES V MUCH IT COSTS will take RS 300 Crores to PROJECT ESTIMATION WORTH BUILD 1KM HIGH-SPEED LINE IS ABOUT \$13 BILLION USD

A HVPFRLOOP SAVS



### IOW IT RUNS ?

HYPERLOOP WILL RUN ON RENEWABLE ENERGY. There will be solar panels on the top of the tube, wind turbines in the pylons. We will generate more energy than we need. It would be like having a power plant that also transports people.

CHENNAI



>

## **WHAT IS A HYPERLOOP**

CAPSULE WILL BE CAPSULE ?? Capsule will be between the set of the set of the set of an meters (i.e. 98.5 feet) Have a diameter of 2.7 meters (i.e. 9 feet) Weight 20 tons, and have a capacity of 28-40 passengers. Speed: Up to 1,223 km/hr (760 mph)

### **REVOLUTION IN ENGINEERING MATERIALS -**COMPOSITE MATERIALS

A composite material (or just composite) is a mixture of two or more materials with properties superior to the materials of which it is made. Many common examples of composite materials can be found in the world around us. Wood and bone are examples of natural composites. Wood consists of cellulose fibers embedded in a com- pound called lignin. The cellulose fibers give wood its ability to bend without breaking, while the lignin makes wood stiff. Bone is a combina- tion of a soft of known as collagen and a form protein but brittle mineral called apatite. strong Humans have been using compo- site materials for centuries, long before they fully understood the structures of such composites. The important building material concrete, for example, is a mixture of rocks, sand, and Port- land cement. Concrete is a valuable building material because it is much stronger than any one of the individual components of which it is made. Interestingly enough, two of those com- ponents are themselves natural composites. Rock is a mixture of stony materials of various sizes, and sand is a composite of small-grained materials. Cutting wheels designed for use with very hard materials are also composites. They are made by combining fine particles of tungsten carbide with cobalt powder. Tung- sten carbide is one of the hardest materials known, so the composite formed by this method can be used to cut through almost any natural or synthetic material.

High-performance composites are composites that perform better than conventional structur- al materials such as steel and aluminium al- lovs. They are almost all fiber-reinforced com- posites polymer (plastic like) matrices. The with fibers used in high-performance compo- sites are made of a wide variety of materials, including glass, carbon, boron, silicon carbide, aluminium oxide, and certain types of poly- mers. These fibers are generally interwoven to form larger filaments or bundles. Thus, if one fiber or a few individual fibers break, the struc- tural unit as a whole-the filament or bundle- remains intact. Fibers usually provide compo- sites with the special properties, such as strength and stiffness, for which they are de- signed. In contrast, the purpose of the matrix in a highperformance composite is to hold the fibers together and protect them from damage from the outside environment (such as heat or moisture) and from rough handling. The ma- trix also transfers the load placed on a compo- site from one fiber bundle to the next. Most matrices consist of polymers such as polyes- ters, epoxy vinyl, and bismaleimide and polyi- mide resins. The physical properties of any giv- en matrix determine the ultimate uses of the composite itself.

> Mr. ABHIJIT BHOWMIK ASSISTANT PROFESSOR MECHANICAL DEPARTMENT

### POLAR BEARS GOING STEALTHY

Polar bears keep warm due to a thick layer of blubber under the skin. Thermal cameras detect the heat lost by a subject as infrared, but po- lar bears are experts at conserving heat. The bears keep warm due to a thick layer of blubber under the skin. Add to this a dense fur coat and they can endure the chilliest Arctic day. Thus, polar bears are nearly undetectable by infrared cameras.



### ACHATES POWER FUNDAMENTALLY BETTER ENGINES

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Internal Combustion Engines in cars may be on their way out, but experts agree it will take few decades before electric-powered vehicles become dominant. Meanwhile, the existing gas and diesel engines can be made more efficient and less polluting. With a \$9 million grant from the U.S. Department of Energy, a U.S. -based company is using an old technological concept to build a power train that is 50 percent more fuel efficient and just as powerful as conventional engines. This engine looks like it has only three pistons; but in fact, it has six, sharing only three cylinders. With the help of modern technology California-based Achates Power has given new life to the concept of opposed -piston engine, mostly abandoned after the Second World War. "With the opposed



Achates Engine

piston engine, able you're to achieve the efficiency of a much larger engine in a much smaller packsaid Fabien age," Redon of Achates op-Power. An

posed piston moves against each other

in the cylinder, compressing the fuel-air mix- ture, which self-ignites, pushing the piston apart, generating power. Exhaust gases escape through ports in the cylinder walls. Stripped of many conventional engine parts, the opposed – piston engine is inexpensive and simple to manufacture. "We make sure that we do not over scavenge and achieve a very good efficiency, so that unburned hydro-carbons and the emissions are reduced to a great extent. This combustion strategy has some difficulties and weaknesses at low loads, because it



needs a certain level of temperature inside the combustion chamber to make sure that the gasoline gets ignited," said Redon. Larger opposed –piston engines have long been used for military and other applications. But developing them for consumer vehicles was not easy. Achates Power, together with Argonne National Laboratory and Delphi Automotive, say they are sure they will over-

come the obstacles, and by 2018 will have a 50 percent more efficient three-liter threecylinder engine that will be suitable for passenger cars and trucks

### PRITAM MANDAL IV MECHANICAL



### **List of Industry Internship/Summer Training**

Pass out Batch-2021-22

Department Of Mechanical Engineering

Dream Institute of Technology, Kolkata.

SI.		No of
No.	Training Organization Name	Students
		Attended
1	AUTO DESK	25
2	NATIONAL INSTITUTE OF INDUSTRIAL TRAINING	6
3	FORCE MOTOR LTD.	1
4	MSME	1
5	KISWOK INDUSTRIES PVT. LTD.	1
6	KEERTIKA TRAINING ACADEMY	1
7	MARAICA INDUSTRIES	1
8	MAURYA MOTOR PVT LTD	1
9	WEST BENGAL TRANSPORT COOPORATION	1
10	SOUTHEASTERN RAILWAY	3
11	APOLLO ENGINEERING	1
12	BANGIYA INDUSTRY INSTITUTE COLLABORATION	2
	ASSOCIATION	Z
13	WEBSOL ENERGY SYSTEM LTD	1
14	ABS FUJITSU GENERAL PVT LTD	1
15	RE ACADEMY	1
16	MCTI PVT LTD	1
17	SIMPLEX INFRASTRUCTURE LTD	1
18	EXIDE INDUDTRIES LTD	1
19	KGN REFRIGERATION	1
20	BIRLA JUTE CORPORATION	1
21	TATA STEEL LTD.	1
22	RESHMI GROUP	1
23	BIG BULL TRADER PRIVATE LIMITED	1
24	CRESCENT FOUNDRY	1



### **STAFF COORDINATOR**



### Mr. Sourav Saha Asst. Prof. (ME Deptt.)



### Mr. Shaibal Sahoo Asst. Prof. (ME Deptt.)

- Associate Editors: 1. Pritam Mandal
- 2. Soumyadip Dutta
- 3. Sandip Hati
- 4. Sahil Daptary
- 5. Sanju Dey
- 6. Debnarayan Parua

### THE CREW



"The innate knowledge intertwined with one's wisdom and skills, differentiates an engineer from everyone else. Let us be ambitious to emerge as true engineers."

SANDIP HATI (THIRD YEAR)



"The space between the mouth and the power of the nib, is ever omnipotent and can make wonders. There we go."

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SAHIL DOPTARY (THIRD YEAR)
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"Team work- that is the key. Learn and let learn. The cognizance you achieve is extraordinary "

SANJU DEY (SECOND YEAR)



"Work fervently and smartly. Never compromise for scruples. When you turn back- you will feel a self-satiation. It's an achievement indeed. "

**DEBNARAYAN PARUA (SECOND YEAR)** 



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