



JAIDEV EDUCATION SOCIETY'S  
JD COLLEGE OF ENGINEERING AND MANAGEMENT  
KATOL ROAD, NAGPUR

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An Autonomous Institute, with NAAC "A" Grade  
Affiliated to DBATU, RTMNU & MSBTE Mumbai  
Department of Civil Engineering  
"Building Better Development"  
Session 2022-23



VISION

To be a well-known center for shaping professional leaders of Global Standards in Civil Engineering

MISSION

- Provide quality education and excellent learning Environment for overall development of students.
- Making Sustainable efforts for integrating academics with Industry.



Live Project (CE) - 2022-23

HOD, (CE)

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Katol Road, Nagpur  
Mumbai-441501



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












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Khandala, Katol Road  
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HOD, (CE)



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


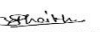





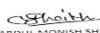



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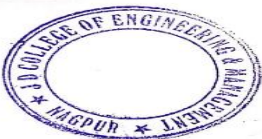

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1. To create self-learning environment by facilitating leadership qualities, team spirit and ethical responsibilities.
2. To improve department-industry collaboration, interaction with professional society through technical knowledge and internship program.
3. To promote research and development with current techniques through well qualified resources in the area of computer science and wireless engineering.

## CSE Student Live Project Details

Date: 10/08/2022

**Title:** "IoT based Smart Agriculture System"

### Abstract

This project aims to develop a cost-effective and efficient system for monitoring and watering plants in agriculture. The system uses DHT sensors to measure temperature and humidity levels, soil moisture sensors to measure soil moisture levels, and a NodeMCU microcontroller to control a watering pump. The collected data is transmitted to a Blynk app where it can be monitored and used to control the watering pump. The results of this project demonstrate the feasibility of using this system to accurately monitor and control the growing environment for plants, improving the efficiency and yield of agricultural operations. In conclusion, this smart agriculture system provides real-time data on the plants' growing environment, allowing for accurate control of the watering and other growing parameters. This results in improved efficiency and yield in agricultural operations, making the system an attractive solution for farmers looking to improve their operations. The system is simple to install and use, making it accessible to farmers of all skill levels. The results of this project demonstrate the feasibility of using this system to monitor and control the growing environment for plants, leading to improved efficiency and yield in agricultural operations.

### Summary

Agriculture is a critical sector that plays a vital role in feeding the world's growing population. With the increasing demand for food, it is essential to develop efficient and cost-effective systems to improve the productivity and yield of agricultural operations. The IoT Based Smart Agriculture System is designed to address this challenge by providing real-time monitoring and control of the growing environment for plants. This system uses a combination of DHT sensors, soil moisture sensors, and a NodeMCU microcontroller to collect data on temperature, humidity, and soil moisture levels. The data is transmitted to a Blynk app where it can be monitored and used to control a watering pump. The result is a system that provides farmers with real-time data on the plants' growing environment, allowing for accurate control of the watering and other growing parameters, resulting in improved efficiency and yield. The IoT Based Smart Agriculture System is simple to install and use, making it accessible to farmers of all skill levels. The system is also cost-effective, using readily available components to minimize costs. The results of this project demonstrate the feasibility of using this system to monitor and control the growing environment for plants, leading to improved efficiency and yield in agricultural operations.

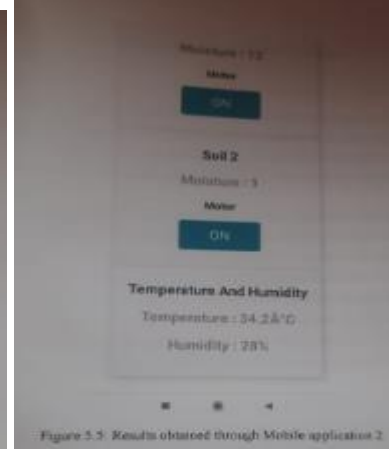
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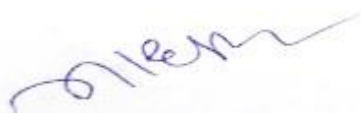
**Photograph:**




**CSE- IoT based Smart Agriculture System -2022-23**


**Group Members Name:**

- Rashi Wasnik  
 Siddhika Raut  
 Ruchika Fulzele  
 Sejal Sanodiya

  
 Prof. Madhuri Babar,  
**Guide**



  
 Prof. Kiran Bode  
**Project Co-ordinator**

  
 Prof. Supriya Sawwashire  
**HOD, CSE**

**HOD**  
 Computer Science & Engineering  
 JDCOEM, Nagpur



## Adwajira Technologies Private Limited

TO WHOMSOEVER IT MAY CONCERN

Ref No.: ATPL/2022/4512

15/03/2023

### CERTIFICATE

TO WHOMIT MAY CONCERN

This is to certify that following student of J D College of Engineering and Management; Nagpur has successfully completed Live Project titled "IoT based Smart Agriculture System" during Academic Session 2022-2023. They worked for mentioned Period i.e. from 16<sup>th</sup> August 2022 to 11<sup>th</sup> March 2023.

Sr.No.	Name of Student	Branch
1	<u>Rashi Wasnik</u>	Computer Science & Engineering
2	<u>Siddhika Raut</u>	Computer Science & Engineering
3	<u>Ruchika Fulzele</u>	Computer Science & Engineering
4	<u>Sejal Sanodiya</u>	Computer Science & Engineering

We wish them a very best in all their future endeavors.

Thanking you,

For Adwajira Technologies Private Limited

*Vaishnavi*  
Director

Mrs. Vaishnavi Tiwari  
Director/ Program Manager,  
Adwajira Technology Pvt. Ltd, India

Adwajira technologies private limited

**Senanpalli, Tollapur Road, Hyderabad - 500004**

www.adwajira.com, +91-63006 45723

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Date: 10/08/2022

**Title:** "Implementation of Secure Smart Cart for Automatic Detection of Object using Arduino and RFID"

**Abstract**

People when they are shopping at a large shopping complex, people frequently go over their allotted spending limit. Moreover, they end up in long waits at the end of their shopping waiting for the things to be scanned and billed. The a fore mentioned issues are easily solved by the Smart Shopping Cart. It assists the customer in ensuring that he stays within his predetermined budget and only purchases the necessities for himself. Additionally, the system helps to reduce long lines at the checkout counter because the products have already been scanned; the customer only needs to pay the bill and bag the items bought. The method is advantageous for shopping malls because it can assist in lowering the number of billing counters, which will help to drastically lower labor costs.

**Summary**

For the innovation of technologies advances at an exponential rate in this period of fast change. Many businesses are making investments in innovations that guarantee consumer happiness at all levels. Technology in customer service, which offers new and reliable systems for customers, is one of the most common developments. Shopping carts, usually referred to as shopping trolleys, are a way to temporarily transfer your purchases before checking out. Since their creation, shopping carts have seen relatively few alterations. Most of the expansions have been made to change its weight and capacity. But as technology has advanced, some of the company's research has led to the creation of a user- friendly shopping system. The shopping cart, for instance, has a touch panel and a RFID Reader attached. The customer can use the touch panel to learn about the details, promotions and the location of products. In addition, when a consumer places an item into the trolley, the RFID reader scans it, and the details of the product is presented on the touch panel display. Without waiting in a long line for the payment process, the consumer will only need to make a payment depending on the amount displayed to the cashier. Due to primarily fast expanding application to track products through the food supply chain, RFID and associated technologies have seen an explosion in attention over the past two years. Due to the relatively high cost of RFID deployment and the extremely low profit margin of supermarket goods, item-level tagging was not yet practicable, therefore these applications instead monitor Store-Keeping Units (SKU) rather than specific product items. One can easily imagine a scenario in which every item in a supermarket is marked with an RFID label, shopping carts have RFID readers and perhaps even on-board computers that can identify items placed in the cart and display information and promotions that have been wirelessly or wired retrieved from the system's back-end. The introduction of RFID technology at the item level would also enable fast checkout lanes that scan all merchandise at once, eliminating lines consistently cited as one of the worst elements of grocery shopping.





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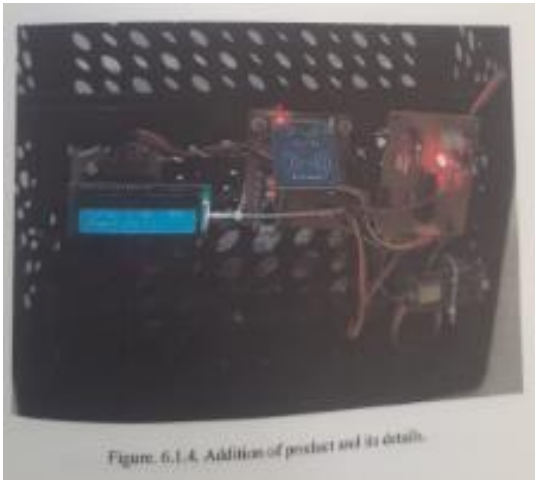


Figure. 6.1.4. Addition of product and its details.

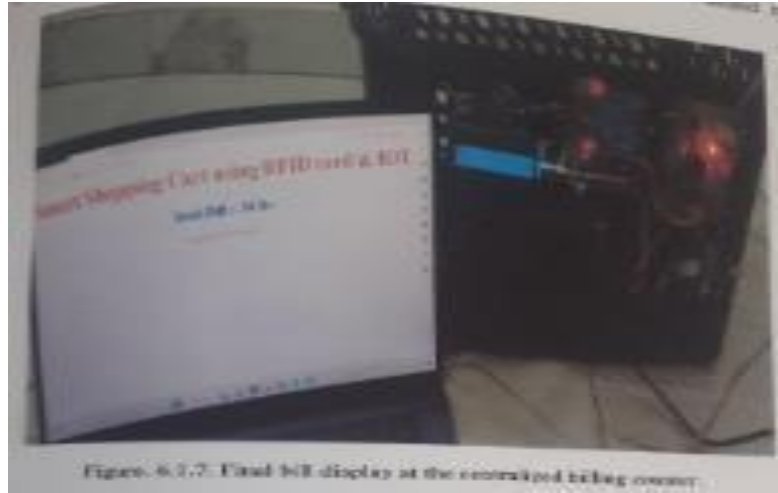


Figure. 6.1.7. Final GUI display at the centralized billing counter.

CSE- Secure Smart Cart for Automatic Detection of Object using Arduino and RFID -2022-23

**Group Members**

Rohit Salunke  
Payal Sangolkar  
Prajwal Bhaje  
Divya Bansod

Prof. Mirza Moiz Baig,  
Guide

Prof. Kiran Bode  
Project Co-ordinator

Prof. Supriya Sawwashire  
HoD CSE

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Computer Science & Engineering  
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Sr.No.	Name of Student	Branch
1	<u>Robit Salunke</u>	Computer Science & Engineering
2	<u>Payal Sangolkar</u>	Computer Science & Engineering
3	<u>Prajwal Bhaje</u>	Computer Science & Engineering
4	<u>Divya Bansod</u>	Computer Science & Engineering

We wish them a very best in all their future endeavors.

Thanking you,



**Mr. Prashant S. Khadan**  
Director, PSK Technologies Pvt. Ltd. Nagpur  
Email: [hr@pskiteservices.com](mailto:hr@pskiteservices.com)  
[www.pskiteservices.com](http://www.pskiteservices.com)



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2. To be excellent learning centre through research and industry interaction.

**TOPIC: -Live Project on "Simulation and Analysis of Home energy management system for Hybrid Electric Source"**

**Name of Industry: -Unitech Powerltd,nagpur.**

**Name of Students: -**

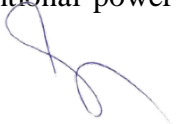
- 1) Sahil Chole
- 2) Karan Masram
- 3) Ankur Dongre
- 4) Parnika Shende

**Objective of the Project: -**

- 1) The main goal of the home management energy system (HEMS) is to improve energy efficiency in homes and buildings.
- 2) Generate low-cost energy with a non-conventional energy source at our home.
- 3) To minimize environmental effects.
- 4) Contribute to reduce the global warming caused by one of the reasons that is pollution from thermal power plant.
- 5) Make a use of natural boundless source of energy for the electrical energy generation.
- 6) The objective is to achieve and maintain optimum energy procurement and utilization.
- 7) The HEMS can be considered the foundation of this endeavour. Its goal is to enable energy management services for efficient monitoring and management of electricity generation, power conservation, as well as energy storage methods designed within the home.

**Brief Outline of the Project**

Over the past few decades, the demand for electrical energy has grown significantly throughout the world. To address this enormous energy demand, both conventional energy sources that mostly rely on fossil fuels and renewable energy sources (RES) including wind, solar, and fuel cells need be used. Redesigning the conventional power system architecture

  
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Khandala, Katol Road  
Nagpur-441503



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**J D COLLEGE OF ENGINEERING AND MANAGEMENT**  
KATOL ROAD, NAGPUR

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Department Of Electrical Engineering  
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2022-23

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and infrastructure may be the solution to problems brought on by the integration of RES into the grid and rising energy demand. In comparison to current systems, this power system's features ought to be more reliable, intelligent, and environmentally beneficial.

Hybrid energy sources are increasingly being used for home energy management systems. Solar energy and PV cells have intermittent issues, just as all other renewable energy sources. It means that it isn't always available to be converted into power, such as at night or in cloudy or wet weather. Therefore, it is likely that PV cells won't be able to satisfy the demands of an electric power system. Because of this, hybrid systems aid in supplying home loads continuously.

#### Need of HEMS

Hybrid systems can increase the amount of dispatchable renewable energy generation as well as the reliability of rural energy access [12]. HEMS provide great opportunities for control of one's household energy usage by enabling users to track their energy consumption, communicate the information to them and other devices, and act on received instructions. It is getting more common to install green energy source in old and new construction buildings.

The design of a home energy management system using hybrid electric sources is shown in Figure. The model was created using the MATLAB/Simulink software. The boost converter is based on IGBT, and it is used to connect the PV array to it. The IGBT of the DC/DC converter will receive a gate pulse from the MPPT controller. The lithium-ion battery and bidirectional dc dc converter is connected in parallel to the dc bus to charge the battery and send power from the PV array to the load at the same time. DC power from the PV array will flow through the dc bus.

The battery and solar power supplies are connected to the dc to ac inverter, which will convert the dc power to ac and supply the home load. Four IGBTs in a dc to ac inverter will be activated by a gate pulse produced by the inverter controller. The bidirectional dc/dc converter's gate pulse will be generated by the battery controller. Also, the power grid is connected with the home load through a single-phase pole-mounted step-down transformer. It acts as an auxiliary source. When there is a requirement of power from home load in the absence of PV array and battery grid will supply the load. When the Power generated by the PV array is more than the load demand then excessive power will be sent to the power grid.

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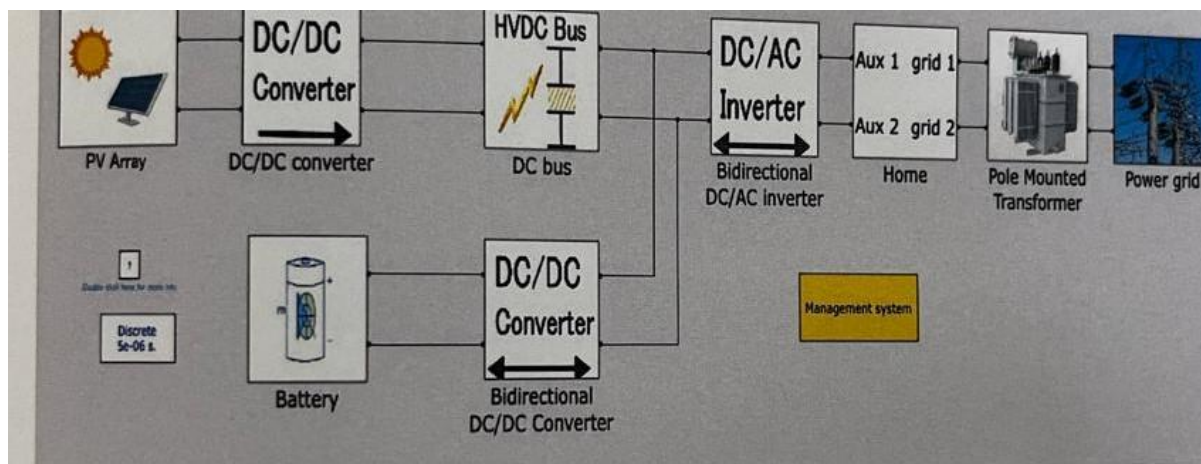


Figure 1 Simulation and Analysis of Home energy management system for Hybrid Electric Source

  
 H.O.D

  
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**unitech**

**Unitech Power Transmission Ltd.**  
ISO 9001 : 2015 & 14001 : 2015  
Works : A-33, MIDC Industrial Area,  
Butibori, Nagpur - 441108, Maharashtra, INDIA  
T (B) : +91 07104 265458, Fax : 07104-265441.  
Email : [works@uptl.co.in](mailto:works@uptl.co.in)  
CIN : U74999DL 1995PLC072431.

**PERMISSION LETTER**

To,  
The Principal,  
J D College of Engineering and Management,  
Nagpur.

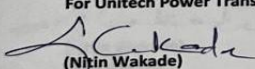
Respected Sir,


With Reference to your application received for Live Project of Final Year Electrical Engg. students of your college for the permission to undertake Live Project at our organization. We pleased to inform you that, we are permitting these 4 students to start their Live Project from 25<sup>th</sup> July 2022 till completion of their project work.

Our staff to be available to assist the students to make help them to get familiarize with Industry.

Please contact us if there is anything that we can do more for you

Student list	Roll No
1) Sahil Chole	25
2) Karan Masram	30
3) Ankur Dongre	11
4) Parnika Shende	05

Thanks & Regards,  
For Unitech Power Transmission Ltd.  
  
(Nitin Wakade)  
Manager (HR)



Head Office : Unitech House, 3rd Floor L-Block, South City-I, Gurgaon-122 001, (Haryana)  
Regd. Office : 6, Community Centre, Saket, New Delhi - 110017, [www.unitech-power.com](http://www.unitech-power.com)



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Khandala, Katol Road  
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*(Signature)*  
H.O.D

*(Signature)*  
PRINCIPAL



**Principal**  
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**Topic: -Live Project on "Exploring the control of highway light monitoring wind power parameter"**

**Name of Industry: -Unitech Powerltd,nagpur.**

**Name of Students: -**

1. Harsh Gupta
2. Tejaswini Wakalkar
3. Nalini Paunikar
4. Komal Deshpande

**Objective of the Project**

Vertical turbines placed at highways will rotate with wind speed and it gets converted into electrical energy. The turbulence directly depends upon size and speed of the automobile along with the traffic frequency. Arduino receives the signal from the voltage and current sensors, then upload the obtained data to the cloud using wifi module. The electrical energy produced by the system should be either completely utilized or stored. Automatic street light controller is implemented to make efficient usage of generated power. So that we can save 50% energid's is used to detect the day/Night time, based on the signal from LDR, controller will turn on/off the lights. We will monitor power generation and consumption using sensor network and upload the data to cloud using IoT technology.

**Brief Outline of the Project**

the highway due to the rapid movement of automobiles. the energy sources solar and wind power, which are developing quickly. We are using wind energy in this since it is completely free everywhere. The quantity of wind energy produced on unused highways is due to the motion of moving automobiles. Therefore, we might make advantage of this. utilizing energy to produce power and address some concerns. It is now possible to erect the windmill or wind turbines. due to its ability to generate power, in the Centre of the road. Electricity is used to illuminate the nearby built streetlights when automobiles go past on both sides. All of these are parameters.

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The wind turbines are a planned projects built to harness wind power from the roadway because swift movement of vehicles. the rapidly expanding source of energy solar and wind power. In this, we're utilizing wind energy because is available anywhere for free. owing to the motion of vehicles, the amount of wind energy generated on the roads that aren't used. Consequently, we may use this. using energy to generate electricity and solve some issues electricity. The windmill or wind turbines can now be installed. because it can produce electricity, in the middle of the roadway. while the cars are moving from both sides, the created Streetlights close by are lit by electricity. These are all parameters.

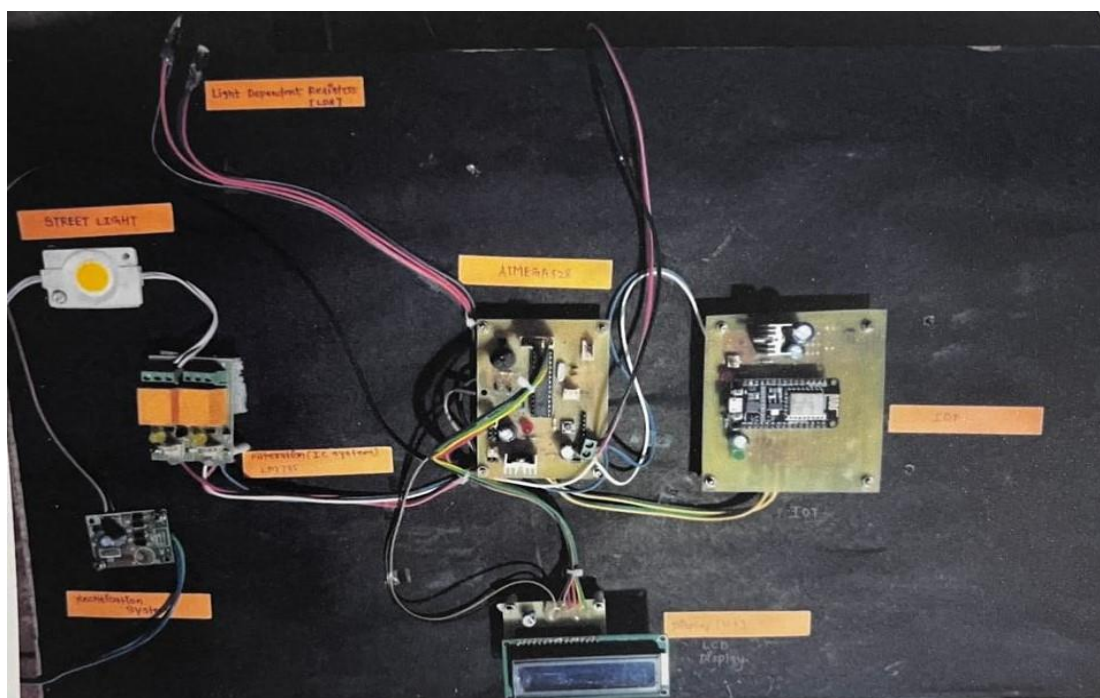


Figure 1 Exploring the control of highway light monitoring wind power parameter



H.O.D




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**unitech**

**Unitech Power Transmission Ltd.**  
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Butibori, Nagpur - 441108, Maharashtra, INDIA  
T (B) : +91 07104 265458, Fax : 07104-265441.  
Email : [works@uptl.co.in](mailto:works@uptl.co.in)  
CIN : U74999DL 1995PLC072431.

**PERMISSION LETTER**

To,  
The Principal,  
J D College of Engineering and Management,  
**Nagpur.**

Respected Sir,

With Reference to your application received for **Live Project** of Final Year Electrical Engg. students of your college for the permission to undertake Live Project at our organization. We pleased to inform you that, we are permitting these 4 students to start their Live Project from 25<sup>th</sup> July 2022 till completion of their project work.

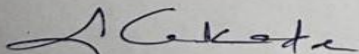
Our staff to be available to assist the students to make help them to get familiarize with Industry.

Please contact us if there is anything that we can do more for you

Student list	Roll No
1. Harsh Gupta	40
2. Tejaswini Wakalkar	22
3. Nalini Paunikar	18
4. Komal Deshpande	20

Thanks & Regards,

For Unitech Power Transmission Ltd.

  
(Nitin Wakade)  
Manager (HR)



Head Office : Unitech House, 3rd Floor L-Block, South City-I, Gurgaon-122 001. (Haryana)  
Regd. Office : 6, Community Centre, Saket, New Delhi - 110017, [www.unitech-power.com](http://www.unitech-power.com)



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*Nitin Wakade*

PROJECT GUIDE

*Shri*

H.O.D

*[Signature]*

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Department of Electronics and Telecommunication Engineering


"Rectifying Ideas, Amplifying Knowledge"

2022-23



VISION	MISSION
To be a Department providing high quality & globally competent knowledge of concurrent technologies in the field of Electronics and Telecommunication."	<ol style="list-style-type: none"><li>1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties.</li><li>2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.</li></ol>

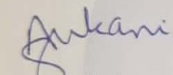


  
Principal  
J.D. College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441503

Date: 05/04/2023

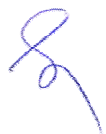
**PROJECT COMPLETION CERTIFICATE**

This Is To Certify That Ms. Aditi Anil Ghodeswar, Ms. Aqsa Amjad Khan, Mr. Sandesh Gajbhiye, Mr. Adil Waghade Of Electronics & Telecommunication Department Of JD College Of Engineering And Management, Nagpur Had Successfully Completed Live Project Title "AUTOMATED DOOR CONTROL USING FINGERPRINT" Under The Supervision Of Project Engineer NU Intelligent Pvt.Ltd. NAGPUR And Prof. Firoz Akhtar, Assistant Professor JDCOEM, Nagpur For Session 2022-23 .

  
Mr. Anish Ukani  
Director,  
NU Intelligent Pvt.Ltd.



**2022-23 ETC LIVE PROJECT CERTIFICATE**



**Principal**  
J.D. College of Engineering & Management  
Khandala, Katol Road  
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**HOD, Dept. of EN/ETC**  
JD College of Engineering  
& Management, Nagpur



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Progress Beyond Excellence

2022-2023 (Odd Sem)



VISION	MISSION
1. To be recognised for excellent innovative engineering, developing global leaders both in educational and research the domain of computer science and wireless engineering.	1. Create self learning environment by facilitating leadership quality, team-spirit and ethical responsibility, 2. Promote research and development with current techniques through well qualified resources in the area of computer science and wireless engineering.

Ref. No. JDCEM/1305/IT/ LIVE PROJWCT/2022-23/17

Date: 10/05/2022

To,  
The Director  
Brillieet Tech Solutions Pvt. Ltd.,  
Nagpur

**SUBJECT: Permission to undertake Live Project.**

Respected Sir/ Mam,

It is my proud privilege to interact with you as Principal of J D College of Engineering and Management Nagpur. Our institute is presently offering Engineering courses in Information Technology, Mechanical, Civil, Electrical, Electronics and Computer Science.

Few Student of IT Department are Keen interested to Undergo Live Project as a part of curriculum of DBATU, Which Will Provide them Industrial Knowledge and fulfillment of Final year Project in Engineering Course.

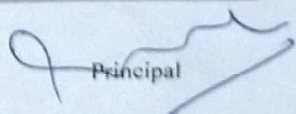
I request you to kindly permit the students to undertake the Live Project in your esteemed organization and provide them necessary information age guidance. The Live project will greatly enhance their understanding of the subjects and give them the desired Industrial exposure.

The name of the student is enclosed herewith.

Thanking you.

Group No	Roll No	Name of student	Internal Guide
05	12	Prachi Rupesh Meshram	Prof. Mirza Moiz Baig
	16	Payal Wankhede	
	17	Smita Vijay Raut	
	18	Vaishnavi Samritkar	
	20	Purva Bhoyar	
06	28	Harsh Dudhat	Prof. Bhagyashree Madan
	29	Neha Bhandarkar	
	33	Aman Verma	
	38	Ujjwal Sahare	



  
Principal

Principal  
J D College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501



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Progress Beyond Excellence

2023-24 (Odd Sem)



VISION

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MISSION

1. Create self learning environment by facilitating leadership quality, team-spirit and ethical responsibility.
2. Promote research and development with current techniques through well qualified resources in the area of computer science and wireless engineering.

Ref. No. JDCEM/105/IT/ LIVE PROJWCT/2023-2024/10

Date: 10/05/2023

To,  
The Director  
V Serve Tec Pvt. Ltd.,  
Nagpur

**SUBJECT: Permission to undertake Live Project.**

Respected Sir/ Mam,

It is my proud privilege to interact with you as Principal of J D College of Engineering and Management Nagpur. Our institute is presently offering Engineering courses in Information Technology, Mechanical, Civil, Electrical, Electronics and Computer Science.

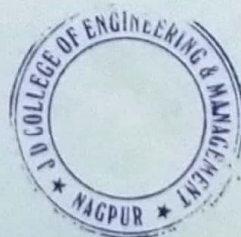
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The name of the student is enclosed herewith.

Thanking you.

.Group No	Roll No	Name of student	Internal Guide
06	14	Rushikesh Gajbhiye	Prof.M.M.Baig
	05	Avantika Paidalwar	
	08	Harshita wasnik	
	04	Ardhana Gupta	
07	22	Akash Bitle	Prof.Bhagyashree Madan Prof. Mikhal John @Bing
	23	Amit Chichmalkar	
	47	Sahil Gedam	
	48	Samyak Waghmare	



*[Signature]*  
Principal

**Principal**  
College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501



## Certificate of completion

**Dt: 30/01/24**

### TO WHOM IT MAY CONCERN

This is to certify that following students of J D College of Engineering and Management Nagpur has successfully completed their project at our Organization with reference to the partial fulfillment of the requirement of the B.Tech. course.

All necessary details were provided from our side for the execution of this project.

Following are the names of Project Groups:

**Group 1. Title: "Detection of Parkinson's Diseases Using Machine Learning"**

Sr. No.	Name Of Students	Enrolment No.
1	Rushika Gajbhiye	BT200014IT
2	Avantika Paidalwar	BT200005IT
3	Harshita Wasnik	BT200008IT
4	Aradhana Gupta	BT200004IT

**Group 2 Title: " You Tube Using Command Line Interface"**

Sr. No.	Name Of Students	Enrolment No.
1	Akash Bitle	BT200022IT
2	Amit Chichmalkar	BT200023IT
3	Sahil Gedam	BT200047IT
4	Samyak Waghmare	BT200048IT

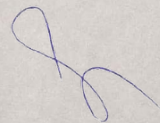
We wish a very best in all his future endeavors.

Thanking you,

With regards,

  
**Hemant Kute**  
Director

**V- SERVETEC PVT LTD**



Principal  
J. D. College of Engineering & Management  
Ichandala, Kati Road  
Nagpur-441103

Ref: Brillect/LP/2022/114

Date:12/05/2022

To,

**HOD, Information Technology**  
**JD College of Engineering and Management**  
**Nagpur**

**SUBJECT: Acceptance to undertake Live Project.**

Respected Sir,

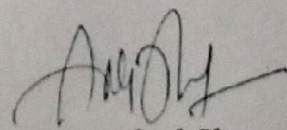
It gives us great pleasure to share with you that we seek to take on the project for 02 group as an external examiner and support the students' academic progress here..

Group No	Roll No	Name of Student	Internal Guide
05	12	Prachi Rupesh Meshram	Prof. Mirza Moiz Baig
	16	Payal Wankhede	
	17	Smita Vijay Raut	
	18	Vaishnavi Samritkar	
	20	Purva Bhoyar	
06	28	Harsh Dudhat	Prof. Bhagyashree Madan
	29	Neha Bhandarkar	
	33	Aman Verma	
	38	Ujjwal Sahare	

This is for your kind information.



Principal  
JD College of Engineering & Management  
Mandale, Rajendra Road  
Nagpur-441101

  
**Dr. Arshad Shareef**  
**Director**  
Brillect Tech Solutions Pvt. Ltd.  
Nagpur, Maharashtra, India



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Affiliated to DBATU, RTMNU & MSBTE Mumbai



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"To be a center of excellence imparting professional education satisfying societal and global needs.

**MISSION**

1. Transforming students into lifelong learners through quality teaching, training and exposure to concurrent technologies.
2. Fostering conducive atmosphere for research and development through well-equipped laboratories and qualified personnel in collaboration with global organizations.

Ref. No. JDcoem/1202/ LIVE PROJECT/2022-23/26

Date: 22/08/2022

To,  
The Manager,  
Budhwanti Foundation,  
Hingna MIDC, Nagpur-(MS)

**SUBJECT: Permission to undertake Live Project.**

Respected Sir/ Mam,

It is my proud privilege to interact with you as Principal of J D College of Engineering & Management, Nagpur. Our institute is presently offering Degree in Engineering in Mechanical, Civil, Electrical, Electronics and Telecommunication, Computer Science, Artificial Intelligence and Information Technology.

Few Student of Mechanical Engineering Department are keenly interested to undergo live project as a part of their curriculum syllabus. Which will provide them industrial knowledge and fulfillment of Degree in Engineering Course.

I request you to kindly permit the students to undertake the Live Project in your esteemed organization and provide them necessary information and guidance. The Live project will greatly enhance their understanding of the subjects and give them the desired Industrial exposure.

The name of the student is enclosed herewith.

Thank you.

Name of student

- |                            |                         |
|----------------------------|-------------------------|
| 1. Mr. Rohit Kurve         | (Mechanical Final Year) |
| 2. Mr. Nishant Nerkar      | (Mechanical Final Year) |
| 3. Mr. Sushil Delikar      | (Mechanical Final Year) |
| 4. Mr. Sushant Harde       | (Mechanical Final Year) |
| 5. Mr. Abhay Pancheshwar   | (Mechanical Final Year) |
| 6. Mr. Chetan Pimpleshende | (Mechanical Final Year) |

Regards,

  
Principal, JDcoem

**Principal**  
J D College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501





**Budhwanti**  
Education and Research Foundation  
*empowerment through education*

(Regn. # 18525 )

Regd. Address: 1509, DLF Phase IV, Gurugram (Haryana)

Mailing Address: 17, Sector-14, Gurugram, Haryana 122001

☎ 0124-2333293 Fax: 0124-4081679

## PERMISSION LETTER

To,  
The Principal,  
J D College of Engineering & Management,  
Nagpur.

Respected Sir,

With Reference to your application Ref. No. **JDCEM/1202/ LIVE PROJECT/2022-23/26** for **Live Project** of Final Year Mechanical Eng. students of your college for the permission to undertake Live Project at our organization. We are pleased to inform you that, we are permitting these 06 students to start their Live Project from 30<sup>th</sup> August 2022 till completion of their project work.

Our staff to be available to assist the students to make help them to get familiarize with Industry.

Please contact us if there is anything that we can do more for you

Name of student

1. Mr. Rohit Kurve (Mechanical Final Year)
2. Mr. Nishant Nerkar (Mechanical Final Year)
3. Mr. Sushil Delikar (Mechanical Final Year)
4. Mr. Sushant Harde (Mechanical Final Year)
5. Mr. Abhay Pancheshwar (Mechanical Final Year)
6. Mr. Chetan Pimpleshende (Mechanical Final Year)

Guide Name- Prof.Suhas A.Rewatkar

Thanks & Regards,

Gopal Raut

Budhwanti Foundation

(Hingna M.I.D.C Nagpur)



Principal  
J.D. College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441503



**Budhwanti**  
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(Regn. # 18525 )

Regd. Address: 1509, DLF Phase-IV, Gurugram (Haryana)

Mailing Address: 17, Sector-14, Gurugram, Haryana 122001

☎ 0124-2333293 Fax: 0124-4081679

**TO WHOM IT MAY CONCERN**

This is to certify that the students mentioned below have successfully completed their project titled "Experimental Investigation of mustard oil based Nano cutting fluid on CNC Turing operation" at our Organization with reference to the partial fulfillment of the requirement of the bachelor course in Mechanical Engineering.

Name of student

1. Mr. Rohit Kurve (Mechanical Final Year)
2. Mr. Nishant Nerkar (Mechanical Final Year)
3. Mr. Sushil Delikar (Mechanical Final Year)
4. Mr. Sushant Harde (Mechanical Final Year)
5. Mr. Abhay Pancheshwar (Mechanical Final Year)
6. Mr. Chetan Pimpleshende (Mechanical Final Year)

Guide Name – Prof.SuhasA.Rewatkar

All necessary details were provided from our side for the execution of this project.

We wish them a very best in all his future endeavors.

Thanking you,

With regards,



**Gopal Raut (Manager)**  
**Budhwanti Foundation,**  
**Hingna MIDC, Nagpur-(MS)**

Principal  
D. College of Engineering & Management  
Khandala, Kato Road  
Nagpur-441503



JAIDEV EDUCATION SOCIETY'S  
**J D COLLEGE OF ENGINEERING AND MANAGEMENT**  
KATOL ROAD, NAGPUR

Website: [www.jdcoem.ac.in](http://www.jdcoem.ac.in) E-mail: [info@jdcoem.ac.in](mailto:info@jdcoem.ac.in)  
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Affiliated to DBATU, RTMNU & MSBTE Mumbai



VISION

MISSION

"To be a center of excellence imparting professional education satisfying societal and global needs.

1. Transforming students into lifelong learners through quality teaching, training and exposure to concurrent technologies.
2. Fostering conducive atmosphere for research and development through well-equipped laboratories and qualified personnel in collaboration with global organizations.

Ref. No. JDCOEM/1202/ LIVE PROJECT/2022-23/36

Date: 22/09/2022

To,  
The Manager,  
Budhwanti Foundation,  
Hingna MIDC, Nagpur-(MS)

**SUBJECT: Permission to undertake Live Project.**

Respected Sir/ Mam,

It is my proud privilege to interact with you as Principal of J D College of Engineering & Management, Nagpur. Our institute is presently offering Degree in Engineering in Mechanical, Civil, Electrical, Electronics and Telecommunication, Computer Science, Artificial Intelligence and Information Technology.

Few Student of Mechanical Engineering Department are keenly interested to undergo live project as a part of their curriculum syllabus. Which will provide them industrial knowledge and fulfillment of Degree in Engineering Course.

I request you to kindly permit the students to undertake the Live Project in your esteemed organization and provide them necessary information and guidance. The Live project will greatly enhance their understanding of the subjects and give them the desired Industrial exposure.

The name of the student is enclosed herewith.

Thank you.

Name of student

1. Mr. Pratik Ghangare (Mechanical Final Year)
2. Mr. Gous Maniyar (Mechanical Final Year)
3. Mr. Kunal Bhanarkar (Mechanical Final Year)
4. Mr. Kunal Pimpleshende (Mechanical Final Year)
5. Mr. Mayur Veer (Mechanical Final Year)
6. Mr. Vedant Nakhate (Mechanical Final Year)

Regards,

Principal, JDcoem  
**Principal**  
D College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501





**Budhwanti**  
Education and Research Foundation  
empowerment through education

(Regn. # 18525 )

Regd. Address: 1509, DLF Phase-IV, Gurugram (Haryana)

Mailing Address: 17, Sector-14, Gurugram, Haryana 122001

☎ 0124-2333293 Fax: 0124-4081679

## PERMISSION LETTER

To,  
The Principal,  
J D College of Engineering & Management,  
Nagpur.

Respected Sir,

With Reference to your application Ref. No. **JDCEM/1202/ LIVE PROJECT/2022-23/36** for **Live Project** of Final Year Mechanical Eng. students of your college for the permission to undertake Live Project at our organization. We are pleased to inform you that, we are permitting these 06 students to start their Live Project from 30<sup>th</sup> September 2022 till completion of their project work.

Our staff to be available to assist the students to make help them to get familiarize with Industry.

Please contact us if there is anything that we can do more for you

Name of student

1. Mr. Pratik Ghangare (Mechanical Final Year)
2. Mr. Gous Maniyar (Mechanical Final Year)
3. Mr. Kunal Bhanarkar (Mechanical Final Year)
4. Mr. Kunal Pimpleshende (Mechanical Final Year)
5. Mr. Mayur Veer (Mechanical Final Year)
6. Mr. Vedant Nakhate (Mechanical Final Year)

Guide Name – Prof. Suhas A. Rewatkar

Thanks & Regards,

Gopal Raut

Budhwanti Foundations

(Hingna M.I.D.C Nagpur)



Principal

J.D. College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501



**Budhwanti**  
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(Regn. # 18525)

Regd. Address: 1509, DLF Phase-IV, Gurugram (Haryana)

Mailing Address: 17, Sector-14, Gurugram, Haryana 122001

☎ 0124-2333293 Fax: 0124-4081679

**TO WHOM IT MAY CONCERN**

**TO WHOM IT MAY CONCERN**

This is to certify that the students mentioned below have successfully completed their project titled "Experimental Investigation of coconut based Nano cutting fluid on CNC Turing operation" at our Organization with reference to the partial fulfillment of the requirement of the bachelor course in Mechanical Engineering.

**Name of student**

1. Mr. Pratik Ghangare (Mechanical Final Year)
2. Mr. Gous Maniyar (Mechanical Final Year)
3. Mr. Kunal Bhanarkar (Mechanical Final Year)
4. Mr. Kunal Pimpleshende (Mechanical Final Year)
5. Mr. Mayur Veer (Mechanical Final Year)
6. Mr. Vedant Nakhate (Mechanical Final Year)

Guide Name- Prof.Suhas A.Rewatkar

All necessary details were provided from our side for the execution of this project.

We wish them a very best in all his future endeavors.

Thanking you,

With regards,



**Gopal Raut (Manager)**  
Budhwanti Foundation,  
Hingna MIDC, Nagpur-(MS)

Principal

J.D. College of Engineering & Management  
Khandala, Kato Road  
Nagpur-441503





**JAIDEV EDUCATION SOCIETY'S**  
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**KATOL ROAD, NAGPUR**  
Website: [www.jdcoem.ac.in](http://www.jdcoem.ac.in) E-mail: [info@jdcoem.ac.in](mailto:info@jdcoem.ac.in)  
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Education to Eternity

VISION

MISSION

To be a center of excellence imparting professional education satisfying societal and global needs.

1. Transforming students into lifelong learners through, quality teaching, training and exposure to concurrent technologies.
2. Fostering conducive atmosphere for research and development through well-equipped laboratories and qualified personnel in collaboration with global organizations.

Ref. No. Jdm801/ LP/2022/23/39

Date: 06/08/2022

**To,**  
**The General Manager,**  
**Agile Capital Services Pvt.Ltd**  
**Nagpur**

**SUBJECT: Permission to undertake Live Project.**

Respected Sir/ Mam,

It is my proud privilege to interact with you as Principal of J D college of Engineering and Management, Nagpur. Our institute is presently offering Degree in Management in Mechanical, Finance, Marketing, Human resources and Operations. Four Student of Marketing Management in MBA Department are interested to Undergo Live Project as a part of curriculum of RTMNU syllabus. Which Will Provide them Industrial Knowledge and fulfillment of Degree in Management Courses.

I request you to kindly permit the students to undertake the Live Project in your esteemed organization and provide them necessary information age guidance. The Live project will greatly enhance their understanding of the subjects and give them the desired Industrial exposure.

Thanking you.

The name of the student is enclosed herewith.

Sr.no	Name of the student	IInd year / Semester
1.	Ms.Kalesh Ukay	III Sem
2	Mr. Himanshu Ghaddinkar	III Sem
3	Ms.SushamaCharpe	III Sem
4	Mr. Aditya Yele	III Sem

**Place: Nagpur**  
**Date : 10/07/201**

*Pawar*

**Principal**  
J.D. College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501



**AGILE CAPITAL SERVICES PVT. LTD.**

**OFFER LETTER**

Date : 30 Aug 2022

Dear. Ms Kalesh Ukey

College Name- J D College of Engineering and Management

On Behalf of Agile Capital Services, We are Pleased to offer you the Position of Intern With our Company. Hope you with our company. Hope you will perform your best. All of us at ACS are Excited that you would be Joining our team.!

Please find below, details regarding your internship:

**Department: Marketing Management**

**Date of Joining: 01 Sep, 2022**

**Office Location: Delhi India**

For any Queries please feel free to write us at: [hr@agilecapitalalservices.com](mailto:hr@agilecapitalalservices.com)

**Best Wishes!!**



**Head HR Agile Capital Services pvt.Ltd**

Principal  
J. D. College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441503



AGILE CAPITAL SERVICES PVT. LTD.

## **COMPLETION CERTIFICATE**

This is to certify that

**Mr. Aditya Nokal Yele**

Has Successfully Completed His Live Project

Under the Guidance of

**Mr. Shanshank Rao**

This Internship Assessment fulfills the stated Criteria and student Findings Are Original Work.

We hereby certify his work satisfactory to the best of my knowledge with an aggregate

**Grade 65**

Location Internship

**New Delhi**

We wish him all the best for future endeavors.

**Warm Regards**



**Head HR Agile Capital Services Pvt.Ltd**

Principal  
J. D. College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501



AGILE CAPITAL SERVICES PVT. LTD.

## **COMPLETION CERTIFICATE**

This is to certify that

**Ms. Sushma Sitram Charpe**

Has Successfully Completed His Live Project

Under the Guidance of

**Mr. Shanshank Rao**

This Internship Assessment fulfills the stated Criteria and student Findings Are Original Work.

We hereby certify his work satisfactory to the best of my knowledge with an aggregate

**Grade 60**

Location Internship

**New Delhi**

We wish him all the best for future endeavors.

**Warm Regards**



**Head HR Agile Capital Services Pvt.Ltd**

Principal  
J.D. College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441503



JAIDEV EDUCATION SOCIETY'S  
JD COLLEGE OF ENGINEERING AND MANAGEMENT  
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Website: www.jdcoem.ac.in E-mail: info@jdcoem.ac.in  
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Department of Civil Engineering  
"Building Better Development"  
Session 2022-23



VISION

To be a well-known center for shaping professional leaders of Global Standards in Civil Engineering

MISSION

- Provide quality education and excellent learning Environment for overall development of students.
- Making Sustainable efforts for integrating academics with Industry.

**Elite**

**NPTEL Online Certification**  
(Funded by the MoE, Govt. of India)

This certificate is awarded to  
**PRATIK ANILRAO DHAWALE**  
for successfully completing the course

**Municipal Solid Waste Management**

with a consolidated score of **66** %

Online Assignments	24.81/25	Proctored Exam	41.5/75
--------------------	----------	----------------	---------

Total number of candidates certified in this course: 1539

Jul-Oct 2022  
(12 week course)

Prof. T. V. Bharat  
Head, Centre for Educational Technology  
NPTEL Coordinator, IIT Guwahati

Indian Institute of Technology Guwahati

swayam

Roll No: NPTEL22CE82553870306 To validate the certificate No. of credits recommended: 3 or 4

CE- 2022-23

Principal  
JD College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501

HOD, (CE)



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JD COLLEGE OF ENGINEERING AND MANAGEMENT  
KATOL ROAD, NAGPUR

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Session 2022-23



VISION


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MISSION

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- Making Sustainable efforts for integrating academics with Industry.



CE - 2022-23

  
Principal  
JD College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501

  
HOD, (CE)



JAIDEV EDUCATION SOCIETY'S  
**J D COLLEGE OF ENGINEERING AND MANAGEMENT**  
KATOL ROAD, NAGPUR

Website: [www.jdcoem.ac.in](http://www.jdcoem.ac.in) E-mail: [info@jdcoem.ac.in](mailto:info@jdcoem.ac.in)

(An Autonomous Institute, with NAAC "A" Grade)

Affiliated to DBATU, RTMNU

Department of Computer Science & Engineering

"A Place to Learn, A Chance to Grow"

Session: 2022-23



**VISION**

To be recognized for excellent engineering, developing global leaders both in educational and research in the domain of computer science and wireless engineering.

**MISSION**

1. To create self-learning environment by facilitating leadership qualities, team spirit and ethical responsibilities.
2. To improve department-industry collaboration, interaction with professional society through technical knowledge and internship program.
3. To promote research and development with current techniques through well qualified resources in the area of computer science and wireless engineering.

**CSE Student NPTEL Certificate 2022-23**

**NPTEL Online Certification**  
(Funded by the MoE, Govt. of India)

This certificate is awarded to  
**POONAM PRAMOD KALE**  
for successfully completing the course  
**Introduction to Internet of Things**  
with a consolidated score of **51** %

Online Assignments	12.28/25	Proctored Exam	39/75
--------------------	----------	----------------	-------

Total number of candidates certified in this course: **25880**

Jul-Oct 2023  
(12 week course)

Prof. Haimanti Banerji  
Coordinator, NPTEL  
IIT Kharagpur

Indian Institute of Technology Kharagpur

Roll No: NPTEL23CG6835742800150 To verify the certificate

No. of credits recommended: 3 or 4

**Elite**  
**NPTEL Online Certification**  
(Funded by the MoE, Govt. of India)

This certificate is awarded to  
**RITIK KISHOR GULHANE**  
for successfully completing the course  
**Introduction to Internet of Things**  
with a consolidated score of **79** %

Online Assignments	23.94/25	Proctored Exam	55.5/75
--------------------	----------	----------------	---------

Total number of candidates certified in this course: **14770**

Jan-Apr 2023  
(12 week course)

Prof. Debjani Chakraborty  
Coordinator, NPTEL  
IIT Kharagpur

Indian Institute of Technology Kharagpur

Roll No: NPTEL23CS51554270100 To validate the certificate

No. of credits recommended: 3 or 4

Prof. Supriya Sawwashere  
**HOD. CSE**  
**HOD**  
Computer Science & Engineering  
JDCEM, Nagpur



**Principal**  
J D College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501



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J D COLLEGE OF ENGINEERING AND MANAGEMENT  
KATOL ROAD, NAGPUR

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(An Autonomous Institute, with NAAC "A" Grade)  
Affiliated to DBATU, RTMNU & MSBTE Mumbai  
Department Of Electrical Engineering  
"Igniting minds to illuminate the world"



2022-23

VISION

"To develop competent and committed Electrical Engineers to serve the society"

MISSION

1. To impart quality education in the field of Electrical Engineering.
2. To be excellent learning centre through research and industry interaction.



NPTEL Certificate 2022-23

HOD EE

Principal

**Principal**

J D College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501







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J D COLLEGE OF ENGINEERING AND MANAGEMENT  
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(An Autonomous Institute, with NAAC "A" Grade)  
Affiliated to DBATU, RTMNU & MSBTE Mumbai  
Department Of Electrical Engineering  
"Igniting minds to illuminate the world"



2022-23

VISION

MISSION

"To develop competent and committed Electrical Engineers to serve the society"

1. To impart quality education in the field of Electrical Engineering.
2. To be excellent learning centre through research and industry interaction.



NPTEL Certificate 2022-23

  
HOD EE





Principal  
**Principal**  
J D College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501



Education to Eternity

JAIDEV EDUCATION SOCIETY'S  
JD COLLEGE OF ENGINEERING AND MANAGEMENT  
KATOL ROAD, NAGPUR

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Affiliated to DBATU, RTMNU & MSBTE Mumbai  
Department of Electronics and Telecommunication Engineering  
"Rectifying Ideas, Amplifying Knowledge"  
2022-23



॥ ज्ञानम् सर्वार्थं साधनम् ॥

VISION

"To be a Department providing high quality & globally competent knowledge of concurrent technologies in the field of Electronics and Telecommunication."

MISSION

1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties.
2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.

This certificate is computer generated and can be verified by scanning the QR code given below.

Roll No: NPTEL22CS12S43982660

To  
DIKSHA SUNIL WASNIK  
EKATMATA NAGAR, SHIVANGOAN ROAD  
JAITALA NAGPUR MAHARASHTRA  
NAGPUR  
MAHARASHTRA - 440036  
PH. NO :9309564695



Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:1

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



## NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to  
**DIKSHA SUNIL WASNIK**  
for successfully completing the course

### Software Testing

with a consolidated score of **50** %

Online Assignments	14.58/25	Proctored Exam	35.75/75
--------------------	----------	----------------	----------

Total number of candidates certified in this course: **898**

  
Prof. Jayanta Mukhopadhyay  
Dean Outreach  
IIT Kharagpur

Jan-Feb 2022  
(4 week course)

  
Prof. Debjani Chakraborty  
Coordinator, NPTEL  
IIT Kharagpur



Indian Institute of Technology Kharagpur



Roll No: NPTEL22CS12S43982660

To validate and check scores: <https://npTEL.ac.in/noc>



Principal  
JD College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441503

**2022-23 NPTEL Certificate**



Elite

# NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to  
**SANA HARSHKANT GANVIR**  
for successfully completing the course

## Enhancing Soft Skills and Personality

with a consolidated score of **65** %

Online Assignments	18.25/25	Proctored Exam	46.37/75
--------------------	----------	----------------	----------

Total number of candidates certified in this course: **12752**

**Prof. B. V. Ratish Kumar**  
Chairman, Centre for Continuing Education  
IIT Kanpur

**Feb-Apr 2023**  
(8 week course)

**Prof. Satyaki Roy**  
NPTEL Coordinator  
IIT Kanpur



Indian Institute of Technology Kanpur



Roll No: NPTEL23HS30S44273760

To validate the certificate



No. of credits recommended: 2 or 3

### 2022-23 NPTEL Certificate



# NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to  
**PRANAY JITENDRA CHANDRIKAPURE**  
for successfully completing the course

## Enhancing Soft Skills and Personality

with a consolidated score of **53** %

Online Assignments	22.63/25	Proctored Exam	30/75
--------------------	----------	----------------	-------

Total number of candidates certified in this course: **12752**

**Prof. B. V. Ratish Kumar**  
Chairman, Centre for Continuing Education  
IIT Kanpur

**Feb-Apr 2023**  
(8 week course)

**Prof. Satyaki Roy**  
NPTEL Coordinator  
IIT Kanpur



Indian Institute of Technology Kanpur



Roll No: NPTEL23HS30S34271359

To validate the certificate



No. of credits recommended: 2 or 3

### 2022-23 NPTEL Certificate

HOD, Dept. of EN/ETC  
JD College of Engineering  
& Management, Nagpur

Principal  
J.D. College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441503



JAIDEV EDUCATION SOCIETY'S  
**J D COLLEGE OF ENGINEERING AND MANAGEMENT**  
KATOL ROAD, NAGPUR

Affiliated to Dr. Babasaheb Ambedkar Technological University, Lonere

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An Autonomous Institute, with NAAC "A" Grade

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Department of Information Technology

"Progress Beyond Excellence"

Session: 2022-23



VISION

" To Produce Competent Professionals equipped with technical knowledge and commitment for satisfying the needs of society "

MISSION

1. To impart advanced knowledge with an inclination towards Research with well-equipped Labs.
2. To develop an ability to work ethically and Responsive towards the need of society.



## NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

**SHEJAL ASHISH DANDEKAR**

for successfully completing the course

### Blockchain and its Applications

with a consolidated score of **51** %

Online Assignments	20.72/25	Proctored Exam	30/75
--------------------	----------	----------------	-------

Total number of candidates certified in this course: **1891**

Jan-Apr 2023  
(12 week course)


  
Prof. Debjani Chakraborty  
Coordinator, NPTEL  
IIT Kharagpur



Indian Institute of Technology Kharagpur



Figure 1NPTEL\_IT\_2022-23

  
Principal  
J. D. College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441503



HOD IT

This certificate is computer generated and can be verified by scanning the QR code given below.

Roll No: NPTEL22CE46S23931758

To  
AADESH RAMESH TALMALE  
PLOT 51/52,GANGABAGH,PARDI.  
NAGPUR 440035  
NAGPUR  
MAHARASHTRA - 440035  
PH. NO :8421846120



Score	Type of Certificate
>=90	Elite+Gold
75-89	Elite+Silver
>=60	Elite
40-59	Successfully Completed
<40	No Certificate

No. of credits recommended by NPTEL:3

An additional 1 credit may be awarded if the University deems it fit, based on the actual student effort involved.



## NPTEL Online Certification

(Funded by the MoE, Govt. of India)



This certificate is awarded to

**AADESH RAMESH TALMALE**

for successfully completing the course

**Mechanics of Solids**

with a consolidated score of **43** %

Online Assignments	13.03/25	Proctored Exam	30/75
--------------------	----------	----------------	-------

Total number of candidates certified in this course: 42

*Pathish*

**Prof. B. V. Ratish Kumar**  
Chairman, Centre for Continuing Education  
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Mechanical Engineering  
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HOD AI  
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*Pathish*

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**Prof. Debjani Chakraborty**  
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2022-23



## EXPERIMENTATION ON SELF-COMPACTING CONCRETE USING METAKAOLIN

<sup>1</sup>Prof. Tejaswini Junghare, <sup>2</sup>Gurucharan Gautam, <sup>3</sup>Prajwal Gawate, <sup>4</sup>Prafull Vaishav, <sup>5</sup>Harsh Mathiya,  
<sup>1</sup>Assistant Professor, <sup>2</sup>Student, <sup>3</sup>Student, <sup>4</sup>Student, <sup>5</sup>Student,  
<sup>1</sup>Department of Civil Engineering,  
<sup>1</sup>J D College of Engineering & Management, Nagpur, India

**Abstract:** Concrete is a mixture of cement, sand, and aggregates which is hard and strong and is mostly used to achieve compressive strength in construction. The many research and development were taken place on concrete to accomplish different properties. Self-Compacting Concrete (SCC) is one of the developments of concrete after adding some other constituents to the concrete mixture. Self-Compacting Concrete (SCC) is concrete that has the property of self-compactness without using other equipment. Self-Compacting Concrete is again developed and Metakaolin is partially replaced by cement in SCC to improve the strength of concrete. Metakaolin is a Pozzolanic material having similar properties to cement but a size very fine than cement which is its advantage, the finer metakaolin particles fulfill the fine gap between cement particles and give the concrete more strength as compared to simple concrete.

**Index Terms - Self compacting concrete, metakaolin, silica fume, workability, compressive strength test**

### I. INTRODUCTION

SCC is made by adjusting the aggregate content and using a combination of chemical and mineral admixture consisting of high range water reducing superplasticizers. High doses of superplasticizers produce a mix with high fluidity and allow for a reduced water-powder ratio. The SCC is poured into forms and flows easily around congested areas of reinforcement without the need for standard consolidation. It is a possible quality concrete without the use of vibrators. Metakaolin is an anhydrous calcined form of kaolinite. Rocks that are rich in kaolinite are known as kaolin or China clay, traditionally used in the manufacture of porcelain. The particle size of metakaolin is lesser than cement particles. The quality and reactivity of metakaolin are strongly dependent on the characteristics of the raw material used. Metakaolin can be produced from various primary and secondary sources containing kaolinite. We studied research papers in which we found that 15% replacement of Metakaolin by weight shows good results, improves the properties of Hardened concrete, and reduces shrinkage and Creep. Some papers say 25% Metakaolin's replacement by cement's weight gives good strength results. We decided to change the percentage of Replacement of metakaolin to 7,14,21,28% by weight of cement. The main objective of this study is to find out the Compressive strength, and tensile strength of concrete mix by replacing cement with Metakaolin in different percentages.

### 3.1 Literature review

- Rahmat Madandoust, S. Yasin Mousavi (2012), studied the fresh and hardened properties of self-compacting concrete for a total of 15 mixes including 0-20% of metakaolin content replaced by cement by weight with 3 water/binder (W/B) ratio of 0.32, 0.38 and 0.45. The tests performed for fresh properties are slump flow, visual stability index, T50, V-funnel, and L-box. The hardened properties were tested for Workability, compressive strength, splitting tensile strength, and ultrasonic pulse velocity (UPV).
- R.Sivakumar, N.Mohanraj, D.Saratah Kumar, T.S.Venkatachalam (2017) studied the effect of Metakaolin on strength of concrete. In this study, they replaced the percentage of metakaolin by 0%, 5%, 10%, and 15% for the M25 grade of concrete and cured for 7 and 28 days. They performed tests for compressive strength, split tensile strength, and flexural strength, and the replacement percentage of metakaolin for getting maximum compressive strength, split tensile strength and flexural strength is also determined.
- In the paper named study of self-compacting concrete using MK and densified Authors Yugasini, Nitya, and Steller, decided to deal with the study of SCC in which they replaced cement partially with MK and silica fumes in 5 %, 10% and 15% and they observed that hardened properties like tensile strength and compressive strength increases and workability increases. They mentioned methodology, code they used, materials, and experimental setup in their paper.
- A. Dimesh of Shri. Ramakrishna Engineering College, says in their paper experimental study on Self Compacting Concrete, that replacement of fly ash by 5, 10, 15, 20 and 25% of cement and silica fumes by 2.5%, 5%, 7.5%, 10%, and 12.5% by cement they found that by replacing silica with cement partially fresh properties like increase and hardened properties like workability increases and hardened properties are also increases. Similarly, by replacing flyash they found that workability

### Research Paper (CE) - 2022-23



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HOD, (CE)

**REVIEW PAPER ON MAKING OF BAGASSE ASH BRICKS COMPARE TO  
CONVENTIONAL FLY ASH BRICKS****Mr. Sayal Shende<sup>\*1</sup>, Mr. Sahil Bansod<sup>\*2</sup>, Mr. Shubham Lonare<sup>\*3</sup>,  
Mr. Prashik Meshram<sup>\*4</sup>**<sup>\*1,2,3,4</sup>JD College Of Engineering And Management Nagpur, India.DOI : <https://www.doi.org/10.56726/IRJMETS35615>**ABSTRACT**

The goal of the current project is to produce fly ash bricks with the inclusion of waste product specifically sugarcane bagasse ash. As India's population grows every day and a vast amount of waste is produced by numerous companies and agricultural practises, posing health risks, disposing of this waste has become a significant issue. One of these is sugarcane bagasse, which is created by burning bagasse ash. In order to efficiently utilise waste materials, we prepared fly ash bricks with bagasse ash in various amounts, ranging from 10% to 50%. Trial bricks of the dimensions 150\*150\*150mm are made, and testing of water absorption and compressive strength are conducted in accordance with Indian norms. The goal of the current study is to examine the potential. The goal of the current investigation is to determine whether bagasse ash can be used to make bricks. The research's conclusion shows the highest compressive strength attained for the ideal mix percentage. Thus, we can draw the conclusion that incorporating waste materials into the brick-making process can reduce the environmental impact, resulting in more affordable and environmentally friendly building.

**Keywords:** Lime, Fly Ash, Sugar Cane Bagasse Ash [SCBA], Sand, And Compressive Strength.**I. INTRODUCTION**

India's population is growing significantly as a result of more industries, which generates between 250 million and 300 million tonnes of industrial trash annually. It is imperative to dispose of this trash correctly without endangering the environment, the public's health, or the ability to fertilise land. As a result, an effort is made to reuse the sugarcane Bagasse ash in varied quantities when making bricks in order to determine its compressive strength after 7 days, 14 days, and 28 days. The acceptability of bagasse ash in various structural elements has been determined upon in light of the findings.

**Objectives**

The primary goals of this work are to investigate the effects of adding bagasse ash to the process of making fly ash bricks and to safeguard the environment by properly disposing of bagasse ash.

**II. LITERATURE REVIEW**

According to Mrityunjay Kumar and Shivani Singh Dhriyan's 2017 study, SCBA can replace 10 to 20% of cement in order to increase tensile, flexural, and strength. Concrete has grown more durable with the addition of SCBA, negating the need for superplasticizer. The flexibility of the SCBA concrete mixture is good. Manish C Cetroja [2018] showed that adding bagasse ash increases water absorption, decreases compressive strength, and decreases hardness under burning. He advised replacing up to 20 to 25 percent of the bagasse ash in bricks with clay. Kishore, S. Kodeeswaran came to the conclusion Bagasse ash can be added up to 50%; additionally, even a small quantity of bagasse ash causes a crack to emerge.

**III. EXPERIMENTAL MATERIALS****Fly ash:-**

Coal-fired power plants create fly ash, a fine grey powder that is primarily made up of spherical, glassy particles. Fly ash and lime are mixed to create cementitious compounds, which have pozzolanic characteristics. It is frequently referred to as an additional cementitious substance. A composite material is fly ash.

Fly ash is appropriate for a wide range of applications and uses, such as Geopolymer concrete, Flowable fills, Mines, and Landfills. Flue-ash and "ash" are other names for fly ash.

The main chemical components present in fly ash are:

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[1359]**Research Paper (CE) - 2022-23****HOD, (CE)****Principal**J. D. College of Engineering & Management  
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## A REVIEW ON BLOCKCHAIN BASED CHARITIES

**Anjali Ghutke<sup>1</sup>, Snehal Shende<sup>2</sup>, Vaibhav Ghugase<sup>3</sup>, Samyak Meshram<sup>4</sup>**

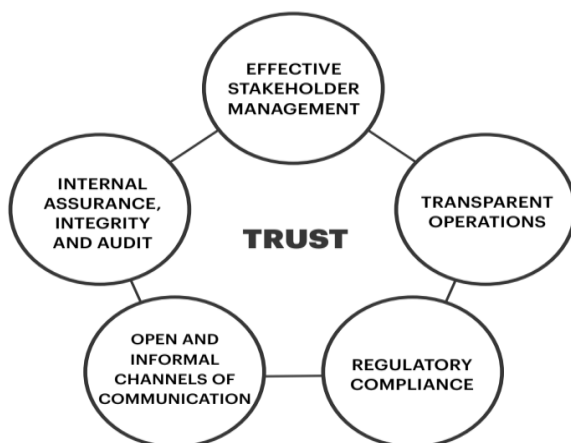
*Department of Computer Science and Engineering,  
JD College of Engineering and Management Nagpur - 441501, DBATU Autonomous,  
Lonere, Maharashtra, India.  
(Professor Rahul Bambodkar, Department of CSE, JDCOEM, Nagpur, 441501)*

**Abstract** - *The charity organizations lack the transparency that's why donors distrust how donated money is spent. Blockchain technology is something we've been hearing about a lot these days. That gained popularity with Bitcoin, and soon seeped into mainstream business applications. This Blockchain-based system will make all the transaction processes Transparent to build trust between Donors and charitable foundations.*

**Key Words:** **Blockchain, Charitable Foundations, Transparency, Tracking Donation.**

### 1. INTRODUCTION

The proposed system is an Ethereum-based blockchain project aimed at ensuring complete transparency in charity transactions along with other technologies to design a trusted framework which would enable charity donations to be as accountable, trustworthy, and transparent. The study examines the possibility of integrating blockchain technology into current organisations to facilitate the efficient transfer of charitable donations from donors to the actual indigent individuals utilising a reliable Ethereum-based Blockchain oriented platform. An objective of this Blockchain based charity management system is to Increase the transparency of charitable foundations by creating a common platform based on blockchain technology that will provide transparent, secure and trustful platform for charity donations by minimizing the frauds and middle-party interference between the transactions.




**Figure 1:** Blockchain and Trust

Charities are non-profitable organizations established worldwide to profit societies. Generous donors primarily fund them with no direct economic impact on the organizations. Eventually, small organizations like student unions also donate some money to charities for a specific purpose. Thus, charities have the responsibility to distribute the money to the beneficiaries. According to the research of the National Research University Higher School of Economics, 57% of people make donations. A donor has the right to demand a report on the expenditure of funds, 30 % of donors follow the path of their donations.

### 2. Blockchain Technology

As the basic technology of Bitcoin, blockchain is decentralized, non- tamper able, anonymous and traceable, that has great potential in transforming traditional industries. Blockchain provides the list of records, called as blocks in the form of hash values that are securely linked to each other using cryptography. Each block contains a cryptographic hash of the previous block, a timestamp, and transaction data it is generally represented as a Merkle tree, where data nodes are represented by leaves. The timestamp proves the transaction timing when data is inserted. The block contains information about the previous block and its original block, they form a chain, with each additional block reinforcing the ones before it. The proof of work is validating the transaction. All the transactions within the new block are then validated and therefore the new block is then added to the blockchain. Hence, blockchain is resistant to modification of their data because once recorded, the data in any given block cannot be altered retroactively without altering all subsequent blocks. The process of verifying the transactions in the block to be added, organizing these transactions in chronological order in the block, and announcing the newly mined block to the entire network doesn't take much energy and time.

  
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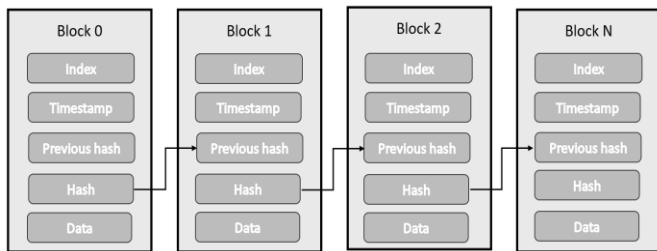


Figure 2: Functional Working of Blockchain

### 3. LITERATURE REVIEW

There are many charity fundraising systems projected to date to produce platforms for secure and transparent transactions in the charity sector. Here, we investigate the prevailing proposal for charity fundraising in several fields and identify the research gaps.

[1] Shweta Jain; Rahul Simha [2018] present a distributed ledger application for the world of citizen philanthropy and social entrepreneurship, with stakeholder incentives designed to increase social good through accountability, transparency, and flexibility.

[2] Irma Latif Atul Laily; Oman Kamrudin; Suci Fadhilah; Ade Azurat [2018] Transaction Systems are token based, and these include a new type of security-based hashing algorithm along with user-friendliness. Developers use ready-made tools - blockchain platforms and do not create a blockchain from scratch. Numerous platforms, including Ethereum, EOS, Waves, Tron, Hyperledger Fabric, Corda, Exonum, and others, can be used to develop blockchain-based projects. The creator of the Ethereum platform, Vitalik Buterin, first brought up Ethereum. It acts as a platform for the development of non-Bitcoin applications. Compared to the traditional Bitcoin design, Ethereum offers several advantages. It improves the Blockchain structure and adds smart contracts to the mix. A smart contract has executable code that seeks to put rules into practice under certain restrictions. There were three primary components to it.

[3] Hai-Ying YU; Pei-wu DONG; Tao MA Yang Qilin realized the core business system of charity fund management through LAMP (Linux, Apache, MySQL, PHP/Perl/Python) architecture, which integrated the administration of charity foundation data and the publication of charity information [2018] explains model theorizes trust as a function of the structural quality of information and the expertise of the information source. When creating a cryptocurrency wallet, a public address and a personal key are generated.

[4] Shang Gao, Daniel Macrinici, and Cristian Cartofeanu. [2018] Solidity is a high-level, object-oriented language that can be used to construct smart contracts. The behavior of accounts in the Ethereum state is controlled by programs

referred to as smart contracts. Curly brackets speak a solid language. It is intended to target the Ethereum Virtual Machine and is influenced by C++, Python, and JavaScript (EVM). It has to do with the programmability of smart contracts, as well as the security, privacy, and scalability of blockchain.

[5] Aiste Rugeviciute and Afshin Mehrpouya [2019] It relies on reports and discussion papers produced by donor organizations and on case studies of two start-ups focused on introducing Blockchain into development aid management. It is a Study of the Barriers and Enablers for Blockchain's Adoption by Development Aid Organizations

[6] Abin Sojan, Akruty Bang, Amal Shaji, Er. Anna Ann Alexander, Feno Sony [2021] By minimizing body costs through automation, providing additional responsibility through traceable giving milestones, and permitting donors to see additional clearly wherever their fund's area unit going, blockchain might facilitate restore a number of the lost believability to charities that prove warrant the public's trust.

[7] Ashutosh Ashish Khanolkar, Ashish Rajendra Gokhale, Amrish Sanjay Tembe, and Vinayak A. Bharadi [2020] explore how the blockchain can be leveraged in the philanthropic sector, through charitable donation services via a web-based donor platform.

[8] Adalberto Rangone & Luca Busolli [2021] provides countless insights that can allow us to investigate the evolutionary trends and the quality of the flows of donations to non-profit entities over time and from numerous perspectives

### 4. CONCLUSION

We looked at how blockchain technology and philanthropy can be combined to build trust between contributors and users. The proposed method will increase process transparency overall. Where Government can see donations for the proposal. NGO users and retailer users can see donations received. This system helps resolve the trust issues, as people already know what they are paying for and the system will help to solve the problem. This system would facilitate an individual to contribute independently to society using their time and abilities apart from just money, and ultimately this will lead to an increase in hands towards society. A complete charity system based on blockchain in the future is the next step for us.

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10. <https://consensys.net/blockchain-use-cases/social-impact/luxarity-case-study/>



**Prof. Supriya S Sawwashere**

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**JDCOEM, Nagpur**



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# An Analytical Review Automatic Number Plate Recognition System

Ms. Supriya Sawwashere    Mr. Bhushan Agashe    Mr. Saurabh Borghare  
JDCOEM                                  JDCOEM                                  JDCOEM

Mr. Girish Zarbade    Mr. Gaurav Chopra  
JDCOEM                                  JDCOEM

**Abstract**— Automatic variety plate recognition (ANPR) is one of the clever transportation techniques that offers a secure medium of transportation and tracking planning.. It is used by many two-wheeler vehicles as well as four-wheeler vehicles to enhance traffic controlling, routing, parking system, toll compendium, governance, and insuring highway law. ANPR is one of the smart transportation methods that provides a safe medium of transportation and monitoring planning. In order for us to be able to identify and recognize number plates, numerous methods and algorithms have been devised. This study demonstrates several different approaches to deep learning that can be used to recognise and identify number plates. This system is composed of three distinct components: the detection of licence plates, the segmentation of the image, and the recognition of characters. The Yolo approach is utilised in the system that we have developed for the detection of licence plates. After that, various filters are applied, and finally, the characters are segmented. After all of the characters have been segmented, the Convolutional Neural Network is utilised to recognize them.

**Keywords**— Number Plate detection, Number plate recognition system, Character segmentation, Character recognition, , CNN, Deep Learning, Yolo algorithm.

## I. INTRODUCTION

Road traffic that moves quickly necessitates a high level of expertise in the monitoring and control of traffic. In this particular scenario, you will not be able to manually track automobiles travelling on the road at high speeds. Additionally, human time and energy are being wasted. The fact that it must be operated manually will result in a great deal of trouble as well as a great number of mistakes. As a result, it is essential to develop an automated system that can assist in the tracking of automobiles by monitoring the number plates on such vehicles in a more effective manner.

Automatic Number Plate Recognition, also known as ANPR, has emerged as one of the most straightforward methods for recognising vehicles [1]. It has the potential to be put to use in a variety of contexts across the world, including the administration of traffic, the collection of vehicle taxes, parking fees, and tolls, among other things. The ANPR algorithm is composed of four distinct subcomponents: vehicle image acquisition, number plate identification, character segmentation and recognition, and character recognition.

The camera begins by taking pictures of a vehicle that has a licence plate displayed on it. The number plate can be determined from it, and the number plate that is extracted contains both numbers and alphabets. After that, a variety of image processing methods are applied [12] in order to conduct an analysis of the image and extract the numbers and alphabets contained within it. Following the completion of the second stage of the recognition process, in this case following the discovery of the exact number, the database is searched using this number to locate the owner's information. As a result, we are able to determine whether or not a person has successfully verified themselves.

The automatic number plate recognition (ANPR) strategy can be used in a variety of contexts, depending on the methodology used. Despite the fact that ANPR makes use of a large number of algorithms, the system is still unable to achieve the desired level of precision and performance in real time. The utilisation of deep learning strategies can help bring this number down. Deep learning is a massive subfield of artificial intelligence (AI) that teaches itself from enormous volumes of data by employing neural networks. This method, which belongs to the field of machine learning [4,] employs a number of layers in order to derive sophisticated functionality from raw input. In today's world, nearly all real-time applications make use of some form of deep learning. It is exceedingly effective in comparison to other algorithms, and testing has shown that it is as error-free as is humanly conceivable.

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## II. LITERATURE SURVEY

### A. Number Plate Detection

During this stage, we removed all of the different border boxes that could be considered number plates. However, in order to establish whether a number plate from a variety of boundary boxes is acceptable, the deep learning architecture given in the CNN model [3] is incorporated in order to filter and identify whether the number plate in question is in fact a number plate., These are the procedures:

1. **RNN:** R-CNN is a webpage that is based on the CNN detector. R-CNN that could be used in object search operations, their functions initially shown that CNN can induce identification of something much higher in PASCAL VOC records as such systems based on a simple HOG-like [8]. R-CNN that could be used in object search operations includes: Appearances. Learning strategies that have been investigated in depth and proven to be useful in the field of object detection.

There are 4 components that make up the R-CNN detector. The first section offers suggestions for the class based on the individual regions. The second component generates a predetermined vector of vertical motion for each region. The final component is a compilation of several different SVM line sorting methods into a single image. The last module is an integrated regressor box that generates precise box estimates. First and foremost, in order to generate regional ideas using the details, the writers selected their chosen search method. After that, CNN would get a vector with 4096 dimensions from each area recommendation it was given. Because the input of vectors of a certain length is necessary for a completely compressed layer, the regional motion parameters have to be the same size. The authors decided that a size of 227 by 227 fixed pixels would be appropriate for the CNN input. You are probably aware that items in diverse photographs have varying field sizes and dimensions. Because of this, this will issue regional proposals from the beginning of the varied sizes.

Regardless of the size of the area of Interest or the size of the aspect ratio, the author mixes each and every pixel of the appropriate size 227 x 227 spinning bound box. Additionally, the entirety of the CNN parameter is shared throughout categories. Each category focuses on an individual SVM that is distinct from the others and does not have any similarities with them.

2. **Fast R-CNN:** The R-CNN programme [8] coordinated the CNN local programme three months after the initial introduction of the R-CNN programme. When calculating RoI, the R-CNN programme makes use of a particular search engine, which is both quicker and more effective in its role as a search engine. R-CNN moved fast to change the RPN newsletter, which is known as the local planning network, into an online communication network that reliably reports on local regions on a broad and big scale. Because it shares the entire features of picture conversion and the conversion process with the research networks, RPN is fast creating a local strategy.

The usage of anchors with numerous sides as a point of reference is another novel approach to the problem of determining appropriate dimensions for various objects. Anchors may make the process of producing several site plans simpler, eliminating the need for multiple scales throughout the installation or design phase. The placement of each window is near to the centre in the first central image installation. The outer region (map mark) of this last portion shares a flexible layer, which generates a fixed window size (3 x 3), in the centre. Box with an anchor value of k (3 3). The author discusses anchor boxes of three different sizes as well as three distinct classifications. After that, we computed the distance that separated the limited box from the equivalent box.

3. **Faster R-CNN:** The R-CNN programme [8] coordinated the CNN local programme later on, three months after the program's initial introduction. When calculating RoI, the R-CNN programme makes use of a particular search engine, which is both quicker and more effective in its role as a search engine. R-CNN moved fast to change the RPN newsletter, which is known as the local planning network, into an online communication network that reliably reports on local regions on a broad and big scale. Because it shares the entire features of image conversion and the conversion process with the research network, RPN is fast creating a local strategy. The process is broken down more clearly in Fig.3 (b). The usage of anchors with many sides as a point of reference is another innovative method for determining different dimensions. Anchor makes it possible to simplify the process of developing numerous site plans without requiring the use of several scales during installation or design. The outer area (map mark) of this last section shares a flexible layer, which produces a fixed window size (3 3), in the centre where the location of each window is adjacent to the centre in the first central image installation of k (3 3) anchor box. This produces a fixed window size in the centre of the box. The author discusses anchor boxes of three different sizes as well as three distinct classifications. After that, the distance that separated the appropriate box and the limited box was computed.

4. **Yolo:** You only live once, a one-part special on R-CNN is currently airing. Taking the ideal webcam picture as quickly as possible is the most important step in the registration process. First, this is because these pipelines estimate fewer than a hundred boxes for each image, whereas Fast R-CNN uses an imagined 2000-point image on each image it processes. Second, the availability of the YOLO frame as a backlash problem, which means that some configurations can eliminate items from the image by rapidly entering the merge box and classroom space. The YOLO network is able to function at 45 FPM [10] without experiencing any major serious issues because to the implementation of multi-dimensional reliability, where P (product) marks the end of the box that contains the product and IOU (product intersection) identifies the box itself. Each cell imaging box B bind the integers x, y, w, and h, with the numbers varying based on the placement of the class and the C-block C class in the class. When compared to fast RCNNs running at 0.5 frames per second and regular RCNNs running at 7 frames per second, the range of products includes 24 distinct variations and upgrades to the Titan X GPU. The first step in the YOLO lights process



involves slicing the image into a V by V grid, with each cell of the grid being responsible for its own separate search for the primary item.

5. **Mask R-CNN**: Similar to how the first level in the second stage, complementing the square measures and the offset drawer, the R-CNN mask likewise generates a double mask for each RoI. This is accomplished through the use of the same two-stage approach. In later systems, there is a divide into mask values, although this one is substantially distinct from those. Our method swiftly follows the fast R-CNN, which makes use of a distinct binding box separator and a droplet to simplify several parts of the multi stage pipeline that R employs. – CNN
6. **R-FCN**: A method of acquiring local objects is referred to as Region-based Fully Convolutional Networks (R-FCN). Unlike prior regional recipients, such as Fast / Fast RCNN, utilising hundreds of low-cost network locations in each area, R-FCN is fully convolution with the common values in the whole picture. To do this, R- FCN uses sensitivity maps to overcome the problem between image classification and translation-variance in object detection.

TABLE I. SUMMARY OF THE NUMBER PLATE DETECTION

Reference using Algorithm	Methods	Accuracy	Advantages	Limitations	Future Scope
[5]	R-CNN (Regional Convolution Neural Network)	66.0%	R-CNN has a very accurate image detection & classification	The very complexity of time makes RCNN unsuitable for realworld applications.	Achieve end-to-end structure in real-time.
[5]	Fast R-CNN (Regional Convolution Neural Network)	66.9%	However, with the introduction of the layer of RoI pooling, time complexity of Fast RCNN has decreased somewhat compared to RCNN.	The problem of generating inaccurate region suggestions caused by the inability to train selective search algorithms exists in Fast RCNN as well as in RCNN.	To train searching model already existing in Fast RCNN.
[7]	Faster R-CNN (Regional Convolution Neural Network)	69.9%	Because of the efficiency of faster RCNNs It performs the function of generating accurate region proposals and significantly reducing the time complexity of RCNNs and fast RCNNs.	Requires many passes through a single image to extract all the objects.	To make an end-to-end system and achieve more performance for processing.
[22]	Yolo (you only look once)	98.52%	The network is able to generalize the image better.	Struggles to detect small objects.	Discover CNN's new approach to optimizing detection.
[23]	MASK R-CNN	97.1%	Addresses the challenge of inaccurate bounding boxes and masks.	Optimizing the model to improve the network in order to simply classify the images	simple and effective classification method to optimize and improve the network.
[24]	BlitzNet	83.6%	Shows image segmentation and object detection with very accurate results.	The Blitz Net pipeline processes multiple types of data at the same time.	Processing of group of data simultaneously
[22]	SSD (Single Shot detector)	96.94%	SSD is a technique for creating a bounding box for each segment that is likely to be the same object in the image.	More datasets are to be fed in order to train the model perfectly and increase its accuracy of the model.	The model is further trained with more datasets under different conditions, and the developed LPR is combined with motorcycle and helmet-wearing systems to enhance traffic safety in conjunction with the surveillance video camera systems increase.
[25]	R-FCN (Region-based Fully Convolutional Networks)	87.48%	Decrease the detection time and improving vehicle detection rate.	This method requires a large number of legitimate vehicle samples and cannot capture and recognize small targets in distant scenes.	The model will be further fed with large number of LP samples to recognize targets from distance

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## B. Character Recognition

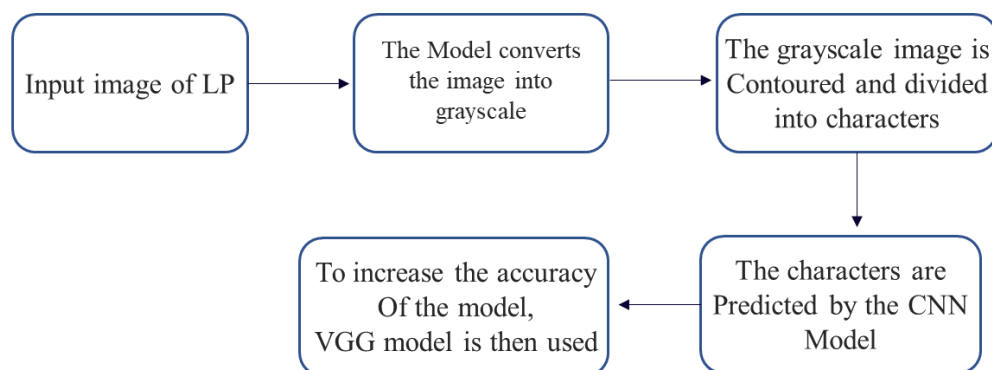
Character recognition is a final stage in this system. There are currently many methods applied to the character recognition, such as syntactic, statistical and neural networks [14] to recognize the characters on a number plate. We separate the characters and numbers using a CNN model with 37 classes. There are 36 entry classes which are classes of digits (0 - 9) and 26 uppercase characters (A - Z) and another non-character class are also considered. The methods are as follows:

1. **Artificial Neural Network (ANN):** Artificial Neural Network (ANN) is also known as neural network is mathematical word, containing interconnected artificial neurons. In ANN two pieces Access neural network with topology 180-180- 36. Procedural adjustment procedures are performed 128 ms. In Multilayered Perceptron (MLP), the ANN mode is used for stratification of character. Inside there is a way to enter options, hidden layer to read much complex associations and output layer for giving decision. Feeding back to the Back- Propagation (BP) algorithm and used to train ANN [14]. BP neural network-based system are used with a working time of 0.06s, ANN is used reduce obscurity between the same characters.
2. **Template Matching:** Template matching is important for comparing colors with same size characters. It is also used for routine facial examination and medical imaging. It is divided into two parts which are feature-based matching and template-based matching. The method- based approach works well when the diagram has a robust character that limit the functionality depending on the model to run. In this method is used to obtain the receiving rate of 85%. In it, many marks are removed and subtraction is as important as training. Standard algorithms are used to calculate all images of the same size. A figure of 95.7% was seen in 1176 images. The source achieved 99.5%, 98.6%, and 97.8% success rate of the total [15], or, at the address found. This method is described in for measuring race interactions.
3. **Back Propagation Neural Network (BPN):** Back Propagation Neural (BPN) Network which has mathematical fundament, the BPN network is used for training multi-layer ANN. The purpose of BPN network is to train the neural network. The patterns used as input are balanced among them. BPN method is categorized into two portions. The training segment and the recognition segment.
4. **Feed Forward Back Propagation:** Feed Forward Back propagation is the feature of the Back Propagation (BP) algorithm is the detected error. The error received from the neural network will occur with its output. The difference between the initial value and the actual value is equal to the error obtained. On the output, the BP algorithm lessens error.
5. **Convolutional Neural Network (CNN):** A neural network is a set of algorithms designed to recognize structure. CNN has many applications in Natural Language Processing (NLP), image and video recognition, and recommendation engines. Excellent for Neural Network (NN) inspired by biological images and recognition. The convolution layer is the most important layer in this network. Used to perform convolution operations. The next layer is the pooling layer. This large layer for the trainable parameters. The trainable parameters of this layer are large. This layer helps to reduce the size of the image. The actual size of the image is 128x128 pixels. The image size is reduced to 28x28, reducing the time required for training the neural network. The range of 94% accuracy is obtained after training the neural network model.
6. **Deep Neural Network (DNN):** Deep Neural Network (DNN) is a neural network with three or more layers. These layers are connected to other nodes called interconnect nodes. These layers communicate with each other through hidden layers. The actual processing is done over a weighted connection. These hidden layers are connected to the output layer.
7. **K-Nearest Neighbour (KNN):** The KNN algorithm is one of the simple classification algorithms and one of the most commonly used for learning algorithms. KNN is not parametric because it does not contain explicit assumptions about the relationship between the predictor and the dependent variable. The characteristics of kNN explain that it is a lazy learning algorithm because it makes predictions based on local information and does not build an explicit model. Its purpose is to predict the classification of new sample points using a database where the data points are divided into several classes. This method retrieves k training samples whose attributes are relatively similar (closest) to the test sample. Therefore, the test samples are categorized based on the class specification of the closest training sample.
8. **Support Vector Machine (SVM):** Support Vector Machine (SVM) is used in character recognition, and it is a supervised learning technique mostly used in regression and classification. Each successful candidate's recognition will be handled by SVM, which will test against a library of trained license plate number models. The accuracy is calculated by classifying the SVM outputs based on the maximum value. SVM, however, must be trained using valid number plate sample database prior to use. The 2 types of SVM classifier are OVA (One Against All) and OVO (One Against One).



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### C. Block Diagram



### III. CONCLUSION

Automatic Number Plate Recognition (ANPR) system is a significant execution of artificial intelligence solutions for numerous aspect. It is generally helpful for security purposes, keeping vehicle record, toll collection, improved traffic monitoring, better parking system, vehicle tracking, etc. Many studies have been conducted on automatic number plate detection as well as character recognition. In reality, a variety of researchers have been done on many methods and techniques for this process. From the survey we can understand that there are different methods and techniques used and it has advantages and disadvantages, and the effectiveness of technique is different from each other. Each country has its own number plate numbering system, different number plate sizes and colors, and character language. The above survey can give you that Valuable understanding and instructions for the approach use. We have proposed a deep learning technique represented by the CNN model for both number plate detection and character recognition for ensuring a decent function of automatic Number Plate Recognition system.

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## REVIEW ON HOME ENERGY MANAGEMENT SYSTEM WITH HYBRID ELECTRIC SOURCES

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### ABSTRACT

Nowadays, energy consumption is rapidly increasing due to an increase in population and lifestyle. This causes greater problems with the delivery of electricity. To prevent such problems, a home energy management system (HEMS) has been developed. HEMS provides a visual representation of energy waste points, a better approach to using energy inside of homes. A HEMS takes into account energy production and communications between the distribution center and customers in both directions. This review paper provides a written analysis of the home energy management system (HEMS).

This review article reviews research papers on the HEMS for various circumstances based on varying climatic circumstances, various devices, and various controllers with algorithms, various residents, and their way of life.

**Keywords:** HEMS, Solar energy, Battery, Hybrid Energy Sources.

### I. INTRODUCTION

Over the past few decades, the demand for electrical energy has grown significantly throughout the world. To address this enormous energy demand, both conventional energy sources that mostly rely on fossil fuels and renewable energy sources (RES) including wind, solar, and fuel cells need be used. Redesigning the conventional power system architecture and infrastructure may be the solution to problems brought on by the integration of RES into the grid and rising energy demand. In comparison to current systems, this power system's features ought to be more reliable, intelligent, and environmentally beneficial.

Hybrid energy sources are increasingly being used for home energy management systems. Solar energy and PV cells have intermittent issues, just as all other renewable energy sources. It means that it isn't always available to be converted into power, such as at night or in cloudy or wet weather. Therefore, it is likely that PV cells won't be able to satisfy the demands of an electric power system. Because of this, hybrid systems aid in supplying home loads continuously. Numerous studies on HEMS have been published over the years. We are

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# Realisation of UPFC device using matlab simulation

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**Abstract:** The possibility of controlling power flow in electric system without any rescheduling and topological changes can improve the power system performances. It has been proved that, instead of building new transmission lines, an efficient usage of the existing line to their thermal limit is possible. Flexible AC Transmission Systems (FACTS), which are power electronic based devices, can change parameters like impedance, voltage and phase angle. Therefore they have the ability to control power flow pattern and enhance the usable capacity of the existing lines. The important feature of FACTS Technology is that they can vary the parameters rapidly and continuously, which will allow a desirable control of the system operation. The Unified Power Flow Controller (UPFC) is a Flexible AC Transmission Systems device used for improving the power quality in power systems. The UPFC consists of a combination of series device and shunt device, the DC terminals of which are connected to a common DC link capacitor. The series device acts as a controllable voltage source VC, whereas the shunt device acts as a controllable current source IC. The main purpose of the shunt device is to regulate the DC link voltage by adjusting the amount of active power drawn from the transmission line. In addition, the shunt device has the capability of controlling reactive power.

**Keywords-**SSSC, Statcom, UPFC

## I. INTRODUCTION

The flexible AC transmission systems (FACTS) concept based on applying leading edge Power Electronics Technology to existing AC transmission systems, improves stability to increase usable power transmission capacity to its thermal limit. A UPFC can simultaneously provide control of the transmission line impedance, phase angle and voltage. The UPFC is constructed from two power electronic inverters which are connected together by a common DC link. Two transformers are used to isolate the UPFC and to match the voltage levels between the power system and the power electronic inverters. One of the inverter is connected to the transmission line. The series connected inverter can generate a voltage which can have adjustable magnitude and phase angle. This inverter therefore can provide both real and reactive power to the transmission line. The second inverter primarily provides the real power required by the series inverter but it can also operate as an independent VAR compensator. Therefore the UPFC can control the flow of real and reactive power in the transmission line. The two VSI's can work

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## Face Mask Detection with Body Temperature Monitoring Using IoT

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**Abstract** - Recent years have seen a rise in the prevalence of the large family of viruses known as coronavirus common, communicable, and harmful to all human beings. It travels from person to person by exhaling the infectious breath, which leaves virus droplets on various surfaces, which are subsequently inhaled by other people, who then contract the infection. Therefore, it has become crucial that we safeguard both ourselves and those who are close to us from this circumstance. We may take safeguards like maintaining social distance, washing our hands every two hours, using hand sanitizer, and most importantly wearing a mask. For offices or any other setting where there are lots of people working, this paper suggests a method to determine if a face mask is used or not. For face mask detection used Convolutional neural network model used here is the MobileNetV2 architecture. MobileNetV2 model is a network model using depth wise separable convolution as its basic unit the model is evaluated with live video streaming with good accuracy after being trained on a real-world dataset.

**Key Words:** Face Mask Detection, Convolutional Neural Network, MobileNetV2, Corona virus Precaution

### 1. INTRODUCTION

Face masks are frequently used in public in China and other countries since the latest coronavirus disease pandemic started. As a result of recent. According to the Health Centre's advisory, research suggest that a sizable fraction of people with coronavirus are asymptomatic (or asymptomatic), and that even those who later develop symptoms (or pre-symptomatic) can spread the virus to others before developing symptoms. The recent information also gives trace of a new strain of corona virus, the mutant corona virus which, in which the virus has changed its structure and become mutant. The new strain is not even able to detect using the RT-PCR test we use now. So, it is inevitable for the people of an overpopulated country like India to wear masks and let the work go on. Nobody can keep an eye on every person coming in the work space is wearing a mask or not. So, the need of Face mask detection arose. The model in this paper uses the Convolutional Neural Network. It is a deep neural network model used for analyzing any visual imagery. It takes the image data as input, captures all the data, and send to the layers of neurons. It has a fully connected layer, which processes the final output that represents the prediction about the image. The Convolutional neural network model used here is the MobileNetV2 architecture. MobileNet model is a network model using depth wise separable convolution as its basic unit. Its depth wise separable convolution has two layers: depth wise convolution and point convolution.

As a result, detecting face masks is a difficult process. Because of the expansion of the corona virus sickness, it has gotten a lot of attention lately since numerous countries have adopted policies such as "No admission without a mask." Face mask detection is a critical issue in security and the prevention of Covid-19. In the medical industry, a mask minimizes the danger of infection from an infected individual, whether or not they show symptoms. Face mask detection is employed in a variety of settings, including airports, hospitals, offices, and educational institutions. Face recognition with no a mask is simpler, but faces recognition with just a mask is more difficult since masked face feature extraction is more difficult than conventional face feature extraction. Many facial characteristics, such as the nose, lips, and chin, are missing from the covered face.

### 2. RELATED WORK

In face detection method, a face is detected from an image that has several attributes in it. According to, research into face detection requires expression recognition, face tracking, and pose estimation. Given a solitary image, the challenge is to identify the face from the picture. Face detection is a difficult errand because the faces change in size, shape, colour, and they are not immutable. The pre-configured MobileNet builds a multi-dimensional component map from a shading image. The element map is converted into a 64-highlight element vector via the suggested model's use of a global pooling block. Finally, using the 64 highlights, the SoftMax layer executes paired order. We tested our suggested model using two freely available datasets. On DS1 and DS2 independently, our suggested model achieved 99% and 100% exactness. With the help of the suggested model's global pooling block, overfitting is avoided. Additionally, the suggested model outperforms previous models in terms of both the number of boundaries and preparation time. However, this model is unable to identify face masks for numerous faces at once.

### 3. PROPOSED SYSTEM

TensorFlow, OpenCV, PyQ5 are three Python libraries that were used to construct and model the model presented here. The MobileNetV2 of a convolutional neural network is the model that we employed. Transfer learning is a technique for using MobileNetV2. Transfer learning involves using a previously trained model to train your current model and obtain the forecast, saving time and simplifying the process of training various models. Using the hyperparameters learning rate, epochs, and batch size, we fine-tune the model. The model is trained with a dataset of images with two class, with mask and without mask.



# IOT CONTROL SOLAR BASED RC BOAT FOR WATER QUALITY & LOCATION MONITOR

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**Abstract**— Present paper we build and develop an IoT-based system that can monitor the water quality of multiple locations in real time and provide future predictions about the water quality at each location. For this project, we developed a physical device that collects various data from the water. This data was collected by various sensors integrated into this device. This data includes the pH level of the water, turbidity level, TDS (Total Dissolved Solids) level, precipitation level, sunlight level, etc. The physical device consists of a microcontroller that collects this data and sends it to a secure website over a Wi-Fi connection module. This hardware device is wireless and waterproof as it has been placed near water sources. It consists of a large battery or solar panel to charge the device. The hardware device then sends data to the site, stores the information and collects water quality data every day.

**Keywords**Water quality monitoring (WQM), water contamination, pH, TDS, turbidity.

## 1. INTRODUCTION

The main causes of water quality problems are the overexploitation of natural resources. The rapid pace of industrialization and increased emphasis on agricultural growth combined with the latest developments, agricultural fertilizers and lack of law enforcement has largely led to water pollution. The problem is sometimes compounded by the uneven distribution of rainfall. Individual practices also play an important role in determining water quality (Consejo Central de Aguas Subterráneas, 2017). Water quality is affected by point and non-point sources of pollution, including wastewater discharges, industrial discharges, runoff from agricultural fields and urban runoff. Other sources of water pollution include floods and droughts and lack of awareness and education among users. The need for user participation in maintaining water quality and consideration of other aspects, such as hygiene, environmental sanitation, storage and disposal, are critical elements in maintaining the quality of water resources. Poor water quality spreads disease, causes death and undermines socio-economic progress. Around 5 million people die due to waterborne diseases worldwide (India Water Resources Information System, 2017). Fertilizers and pesticides used by farmers can be washed away by rain through the soil and end up in rivers. Industrial waste is also dumped into rivers and lakes. These contaminants enter the food chain and build up to toxic

levels, eventually killing birds, fish and mammals. Chemical factories also throw garbage into the water. Factories use river water to run machines or cool them. The increase in water temperature reduces the level of dissolved oxygen and alters the balance of life in the water. All of the above factors make water quality monitoring essential. Water quality monitoring is defined as collecting information at defined locations and at regular intervals to provide data that can be used to define current conditions, establish trends, etc. The main objectives of online water quality monitoring include measuring critical water quality parameters, such as microbial, physical and chemical properties, to identify parameter deviations and provide early warning identification of hazards. In addition, the monitoring system provides real-time analysis of the collected data and suggests appropriate corrective measures. The objective of this work is two-way. One is to provide a detailed survey of recent work carried out in the area of intelligent monitoring of water quality in terms of application, communication technology used, types of sensors employed, etc. Second, is to introduce low-cost and less complex intelligent water quality monitoring system that uses a controller with built-in Wi-Fi module to monitor parameters such as pH, medical images

## II. LITERATURE SURVEY

Abhijit Pathak (2020) [1] shows that Bangladesh has implemented an IoT-based WQM system on the Karnaphuli River. The IoT based system that they used is called ANN (artificial neural network) analysis. They used the BP algorithm (Backpropagation algorithm) for their project as well as Esp8266 (Node MCU) for their hardware. They have been successful in implementing a low-cost IoT based WQM system on a river with the ability to conduct future predictions. On the other hand, a similar project was conducted by BRAC University regarding sensor-based water quality monitoring system.

Paul (2018) [4] For their project, they used GSM shield (SIM 808) and ARTIK Cloud for their IoT services and Arduino Mega-2560 for their hardware. Even though they made a reliable WQM system, they lacked IoT services as there were online services only to give data and could not predict future



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## ROAD SAFETY BY DETECTING DROWSINESS AND ACCIDENT USING MACHINE LEARNING

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### Abstract:

The rate of road accidents is rising continuously, the majority of an accident are caused due to people's negligence and ignorance. There is a lot of work going on continuously to reduce these numbers. Many solutions are based on IoT-based applications for identifying traffic accidents, but these systems have their drawbacks. Therefore, we aim to develop a system with the objective of helping the existing system to increase accuracy. We are currently focusing on highways to reduce accidents and want to utilize this system in cars in the initial phase. We can gain accuracy by using dash cams of the cars to monitor the road to detect accident by third-party vehicles. We have also added a feature where we will continuously monitor the driver's face and detect the negligent behavior of the driver e.g. sleepy and not focused. Considering that the majority of modern automobiles have a camera system will be cost-efficient. We are utilizing machine learning algorithms to make the system more efficient and accurate. If an accident occurs, the nearby automobile will detect and reports it to the emergency services, and we may then act quickly to preserve the life of the person who is injured.

**Keywords:** Accident detection, Accident of highways, CNN, Drowsiness alertness System, Machine learning.

### 1. Introduction:

According to different reports, traffic accidents claim the lives of around 1.3 million people each year. According to The Times Of India, the National Highways had the largest number of fatalities in road accidents in India, accounting for 34.5% (53,615 out of 1,55,622), followed by State Highways (25.1%). (39,040 deaths). In 2021, 62,967 (40.5%) people died in car accidents on other roads. According to a Times of India article, truck drivers get sleepy by driving continually to finish work on time, which is a significant cause of road accidents. Most of the time, when an accident occurs, the wounded individual does not receive sufficient emergency care; this is one of the consequences of rising deaths in road accidents. After considering all of these scenarios and causes we are developing this system which can help to reduce accidents, especially on highways. If the driver appears to be drowsy, the system sounds an alert, and we can propose that he

should take a rest. At the same time, the road will be monitored by the system until it sees an accident. If an accident occurs system reports it to the emergency services, and we may act quickly to preserve the injured person's life. By incorporating this system into a car, we can save a priceless life of a person. This effort assists individuals in remaining safe and reaching their destination. This project has the potential to save the lives of thousands of people.

### 2. Literature Survey:

Vivek Upadhyay et. al. focuses to developing a system that can detect and report an accident. Their system provides methods to prevent an accident because of a speed breaker, blind turns, pits, stop signs, etc. Their Integrated Accident Prevention Detection and Response System (IAPDRS) prototype includes a GPS module to locate the accident sites and report the accident to nearby emergency services. In this proposed model they have used micro-controllers to report a message to the Emergency services like relatives, police, fire brigade, etc., whether an accident happens or not (Ex. If an accident happens then alerting message "ACCIDENT OCCURRED-NEED AMBULANCE" have been sent to the ambulance controller. In the research paper[2] provides an overview of automated traffic-detecting methods for accidents. They combine various deep learning algorithms with smartphone technology, GSM and GPS, vehicle ad-hoc networking, and mobile applications for use while traveling. The techniques promptly let emergency services know about the accident region, working to save lives and lower the number of fatalities related to accidents. These techniques have some drawbacks, including limited accuracy, low reliability, and hardware problems. Therefore, there is a chance to develop effective accident detection techniques. We also investigated how the problem of drowsiness is solved so far [3] they made a system that is completely based on Micro-controller, Sensors, GSM module, GPS module, and Power Source Accident Detection and Response System (ADRS) is an auto-detection system inside a vehicle based on a micro-controller platform that detects the type of accident, performs error checking, and notifies a central control system based on Matlab, informing them via text message of the location of the nearest medical personnel,



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# Experimental Investigation of Coconut Based Nano Cutting Fluid on CNC Turning Operation

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**Abstract:** The surface roughness is paying a very dominant role in manufacturing industries. It is one of the parameters that cannot be avoided in machining process. Investigation was done on turning alloy steel EN19 with TIC-coated carbide insert in a CNC lathe. During machining on titanium, the high cutting temperature found, because of that friction in tool causes, for that purpose we are carry more cutting fluid, cutting tool & actual machining parameter. The present work shows the concentration of multi-walled carbon nanotube (MWCNT) is in used. The Nano fluid is prepared by using various ratios of nano-particles (MWCNT), blended oil as a base fluid. The statistical planning of the experiment is done by using Taguchi method. The process parameters considered in the study are cutting speed, feed rate, depth of cut and surface roughness is considered as a response parameter.

## I. INTRODUCTION

Machining is a process in which cutting tool is used to remove small chips of material from workplace. It is required for desired shape & size of the product. The main forces on machining as per customer requirements the product should be at low cost & good quality. Almost all industries output products are depending on surface quality, cutting force, tool wear, power consumption, etc. While machining, a large amount of heat generated at the tip of tool in such condition cutting fluid playing very important role as a coolant to reduced that kind of problems during machining. Steel and its alloy have the prime choice for many fields of applications. This grade possesses high strength to weight ratio, ductility, Corrosion resistance. we take this material as a challenging because it is hard to machine. so, to achieve the success on EN19 we need to take proper selection of method, machining parameter, cutting tool & most important cutting fluid. In the work dry machining, Conventional machining, pure MQL and nano fluid are cared out by using cutting fluid on (alloy steel EN19). We compare that on which Parameter the good surface finish obtained. While dry machining it is observed that the high temperature occurs | this process required cutting tool to withstand elevated temperature. In conventional cooling method Causing problem for the manufactures, as a substance present in them caused serious health effects on the worker and secondary environment, for the environmental safety pure MQL is prepared as a cutting fluid, on turning operation. Then finally it comes to used nano-fluid (MWCNT) with Tic-coated carbide insert or a good cutting fluid, high thermal conductivity and lower contact angle or higher weldability. These properties help in reducing the operating temperature, cutting forces, improvement in the life of tool and surface finish. Preparation shown that dispersion at nano particles in base fluid after the thermo-physical behaviors of their fluids. As per study MWCNT was selected for preparing nano fluid as it has high thermal Conductivity than any other nano-particles. It has been found that Mustard oil and coconut oil as a base fluid comes into picture.

## II. LITERATURE REVIEW

Laval, S.A. Choudhury (2012) Higher material removal rate can be achieved with vegetable oil-based fluids. Vegetable oil-based fluids are environmentally friendly. Vegetable oil-based fluids performed satisfactorily during machining process. Kuram, E., Ozcelik, B., Huseyin Cetin, M., Demirbas, E., & Askin, S. (2012) In this work, the machinability of Al 7075-T6 was tested using four different types of vegetable-based cutting fluids (VBCFs) in comparison to a commercial mineral cutting fluid. The addition of severe pressure improves the lubrication characteristics of VBCFs. For performance studies of cutting fluids during force and tool wear data were collected. Compared to commercial mineral cutting fluid, VBCFs showed gains in cutting, feed and radial forces ranging from 1.70 to 38.25%. With blended cutting fluid containing 12% of extreme pressure, the lowest average flank and nasal wear values for the commercial mineral cutting fluid were 0.18 and 0.15 mm. The results of the scanning electron microscope revealed that the rake had workpiece material attached to it. D. Madhesh "In this work the multi walled carbon nanotube for 0.1 to 1.0% volume concentration were dispersed in the base fluid. The TEM results conformed the morphology of MWCNTs.



The increase in nanotubes concentration in base fluid and increase in temperature of nanofluid increases the thermal conductivity was shown in the result. The increase in thermal conductivity enhancement shows 23.5% for the volume concentration of 1.0%. The surface area of the MWCNTs found to increase the thermal conductivity of nanofluids. The aggregation as well as the phonon heat interaction of the nanotubes at higher concentration in base fluid were ascertained for the enhancement of the thermal conductivity of the MWCNT nanofluids."

V. Kumaresan The density of the nanofluid increases with the MWCNT concentration. The measured data show an observable deviation from the predicted values of the Pak and Cho correlation, and the deviation increases with an increase in the MWCNT concentration. This is due to the spontaneous filling of nanotubes with water in a confined way, which in turn, increases the mass of the nanofluid for a given volume.

### III. PREPARATION OF NANO-FLUID

#### A. Minimum Quality Lubrication (MQL)

MQL is fundamentally different from flood coolant, which can be a major stumbling block for machinists who are new to MQL. The application of flood coolant is extremely simple. The heat generated by machining operations is kept at bay as long as relatively clean coolant 'floods' the interface of the cutting tool and workpiece. This method works, but it has some serious consequences. One of the main disadvantages of using coolant is that it requires additional equipment. To keep coolant viable, it must be recirculated, filtered, tested, and treated. Bacterial contamination, tramp oil, and swarf are major concerns when disposing of spent coolant. Spent coolant is typically classified as toxic waste, and its coolant is that it's a sloppy mess. Regardless of containment methods, coolant invariably covers more than just the cutting tool and work. Machines, floors, and finished parts are frequently left wet from coolant, posing potential slip hazards and necessitating part cleaning prior to secondary operation. Repeated exposure to a variety of coolants can have serious consequences for the humans involved. With long-term exposure to coolant vapor, some coolants have been shown to cause dermatitis and to be carcinogenic. According to studies, the total cost of coolants can account for up to 15% of the total cost of producing a part.

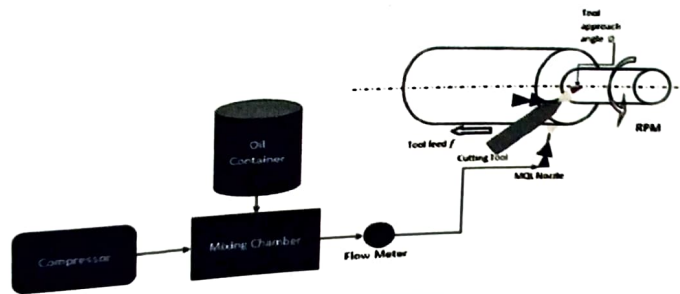


Fig. 1. MQL System

The cost and negative effects of flood coolant beautifully set the stage for MQL. You'd think that when presented with an alternative that saves money, eliminates the mess, disposal, and negative aspects of coolant, machinists all over the world would be scrambling to implement this new technology, wouldn't you? In fact, due to stricter environmental regulations, MQL technology has gained much wider acceptance in European machining. In the United States, MQL is still fighting for the machinists' 'hearts and minds.' This website aims to increase MQL knowledge and awareness in the industry and, hopefully, to serve as a forum for discussion of this emerging technology.

#### B. Nano Particle Used

1) *Multi-Walled Carbon Nanotube (MWCNT)*: MWCNTs are made up of multiple carbon nanotubes that are nested within one another. The number of nanotubes contained within a MWCNT can range from three to more than twenty. At the same time, the diameters of the internal and external nanotubes can range from 2nm for the innermost tube to more than 50nm for the outer wall. They have exceptional electrical, thermal, and mechanical properties, just like single-walled nanotubes. However, because of the increased number of walls, there is a greater likelihood of defects being present when compared to single walled nanotubes, resulting in lower performance. To add functionality, the outer walls of MWCNT can be modified with functional groups such as hydroxides, carboxylic acids, or amides.



C. *Base Fluid Used*

- 1) *Coconut Oil*: Because of its higher thermal conductivity and oxidative stability, coconut oil is being used as one of the cutting fluids in this work. Coconut oil has been found to improve tool life and surface finish when machining at low and medium cutting speeds.
- 2) *Blended Oil*: Blending of oil combines the potency of two edible oils and offers a balance of fatty acids. In this work we use 50% of coconut and 50% of Mustard oil as a Blended oil.

D. *Cutting Fluid Used*

- 1) According to research, we have adopted to take coconut oil and blended oil (50% of coconut oil + 50% of Mustard oil) as a base fluid.
- 2) Then we added MWCNT (1%, 1.5%, 2%) with base fluid to form a nanofluid.

IV. METHODOLOGY

A. *Workpiece Material*

EN19 is a high-quality alloy steel with tensile strength. With a combination of good ductility and shock resistance, EN19 is suitable for applications with very high loading such as engine gear boxes. EN19 steel is a high-quality engineering alloy steel containing chromium and molybdenum. It falls in a class of low alloy steel. It has high fatigue strength, abrasion and impact resistance, toughness, and torsional strength. It can be heat treated in a number of ways to give it a combination of properties.

B. *Machining Parameter*

- 1) *Cutting Speed*: Cutting speed, regardless of the machining operation used, can be defined as the rate at the workpiece surface. Each material and set of machining conditions will have an optimum cutting speed, and the spindle speed (RPM) can be calculated from the speed.
- 2) *Feed Rate*: The feed rate is the speed at which the cutter is fed, or advanced against the workpiece. For turning and boring, it is expressed in distance per revolution.
- 3) *Depth of Cut*: Depth of cut (t) The tertiary cutting motion that provides the required depth of material to be removed by machining. It is measured in mm. It is typically expressed in the third perpendicular direction.

C. *Response Parameter*

- 1) *Surface Roughness*: The shorter frequency of real surfaces relative to troughs is defined as surface roughness. When you look at the machined parts, you will notice that their surface has a complex shape that is made up of a series of peaks and troughs with varying heights, depths, and spacing. Surface roughness is a measure of a surface's texture. The vertical deviations of a real surface from its ideal form are used to quantify it. The surface is rough if these deviations are large; smooth if they are small.

D. *Taguchi Design of Experiment*

To obtain a favourable value for the machining parameters, we can use various methods such as trial and error, design of approach, and so on. However, the outcome will be inaccurate. We can also use the full factorial method for three parameters, as in our case, in which case the number of sets of experiments required is 3<sup>3</sup>, i.e., 27. This is a large number of sets for such an expensive material as alloy steel EN19, making the method less cost effective. As a result, we can use the Taguchi orthogonal array method, where we can select the area of our requirement from the method set available, which includes L4, L8, L9, L16, and L27. L9 and L27 are arrays that can be used for three levels of design, as in our case. As a result, we chose orthogonal array L9 for 9 sets of experiments, which will be both cost effective and time efficient.

L9 ORTHOGONAL ARRAY

Experiment No.	Control Factors		
	Cutting speed	Feed rate	Depth of cut
1	1	1	1
2	1	2	2
3	1	3	3
4	2	1	2



5	2	2	3
6	2	3	1
7	3	1	3
8	3	2	1
9	3	3	2

### V. CONCLUSION

- 1) When compared to conventional cooling, nanofluid MQL significantly reduces cutting force and tool-tip temperature. Dry machining and pure MQL. This is due to MWCNT's excellent thermal conductivity, which allows for effective heat dissipation from the cutting zone, resulting in a better cooling effect and surface finish.
- 2) The Taguchi method determined the best parameters to be speed, depth of cut, and feed rate. This combination produces the best surface roughness, whereas increasing SPEED and DOC while turning on the lathe machine produces poor surface roughness.
- 3) Tool wear increases with increasing cutting speed and feed rate, whereas surface roughness decreases with increasing cutting speed and increases with increasing feed rate. Feed rate was discovered to be the most significant parameter influencing surface roughness, whereas cutting speed was discovered to be the most significant parameter influencing tool wear.
- 4) Good surface Roughness, Low temperature at the cutting area, reduced cutting forces are observed when replacing the coolant with the nano cooling.

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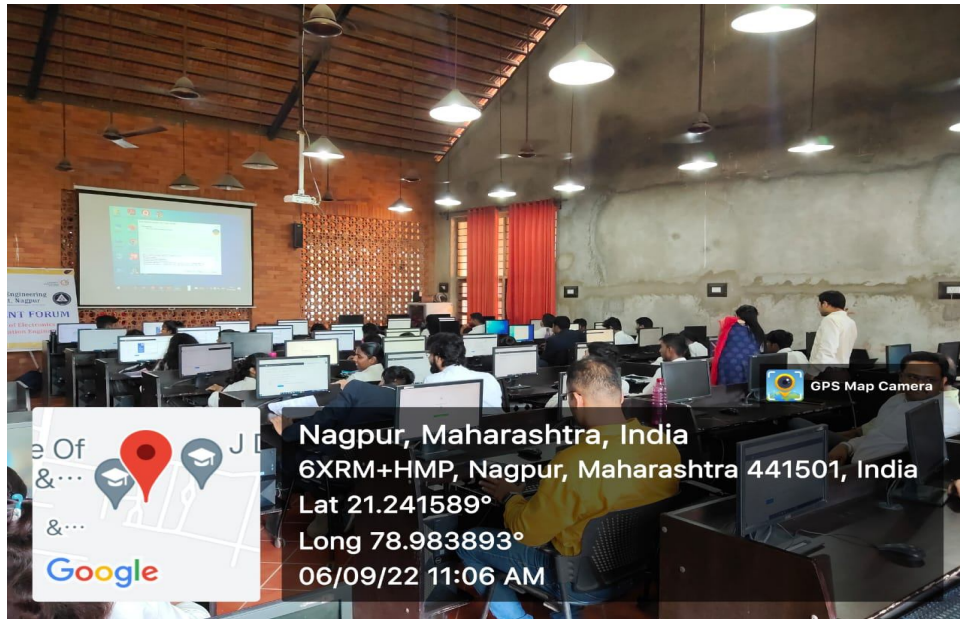
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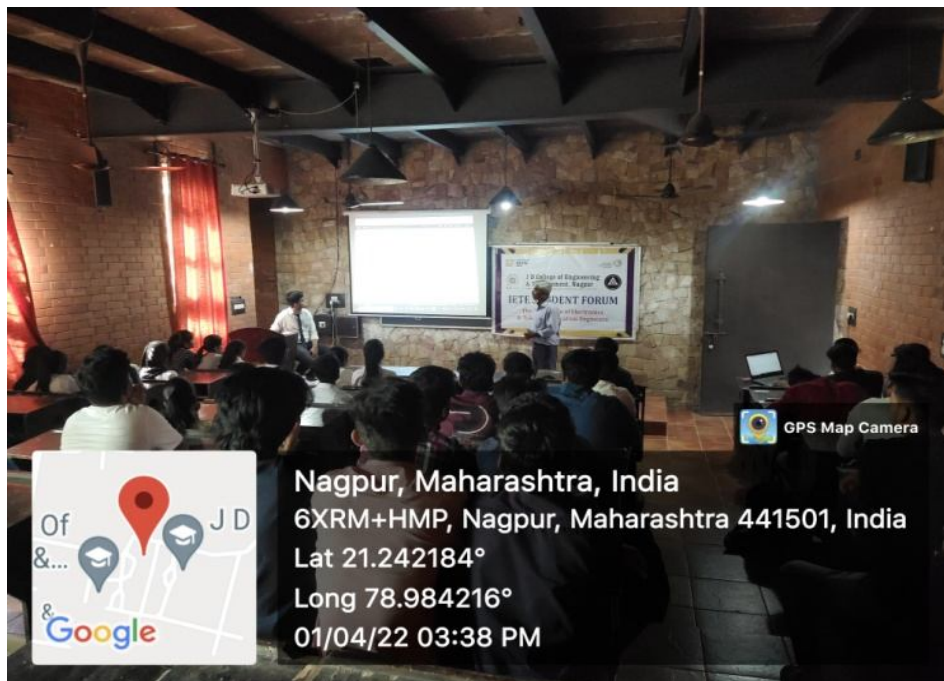
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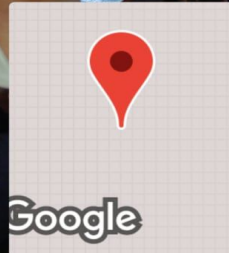
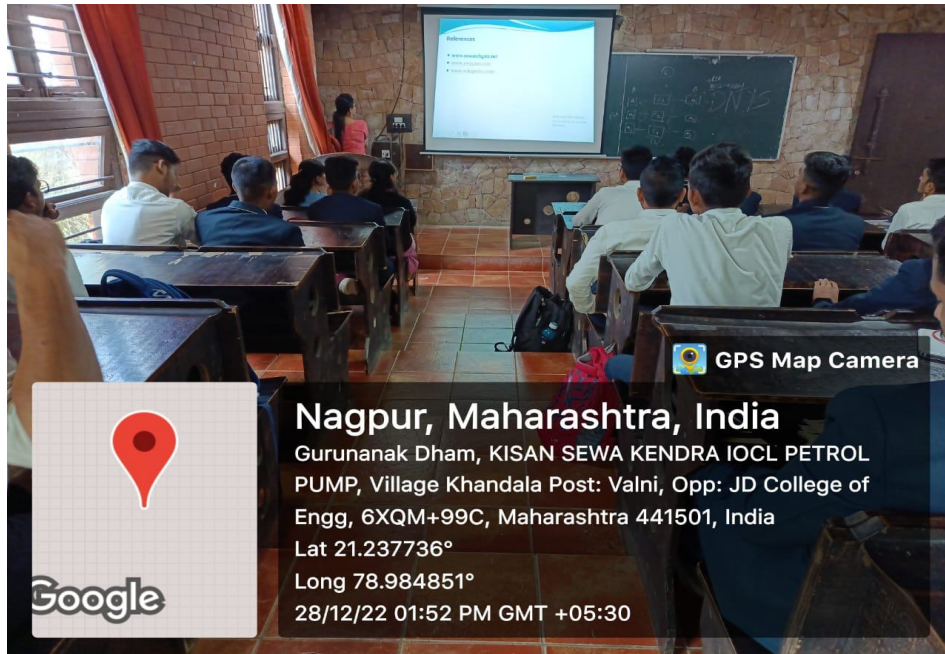
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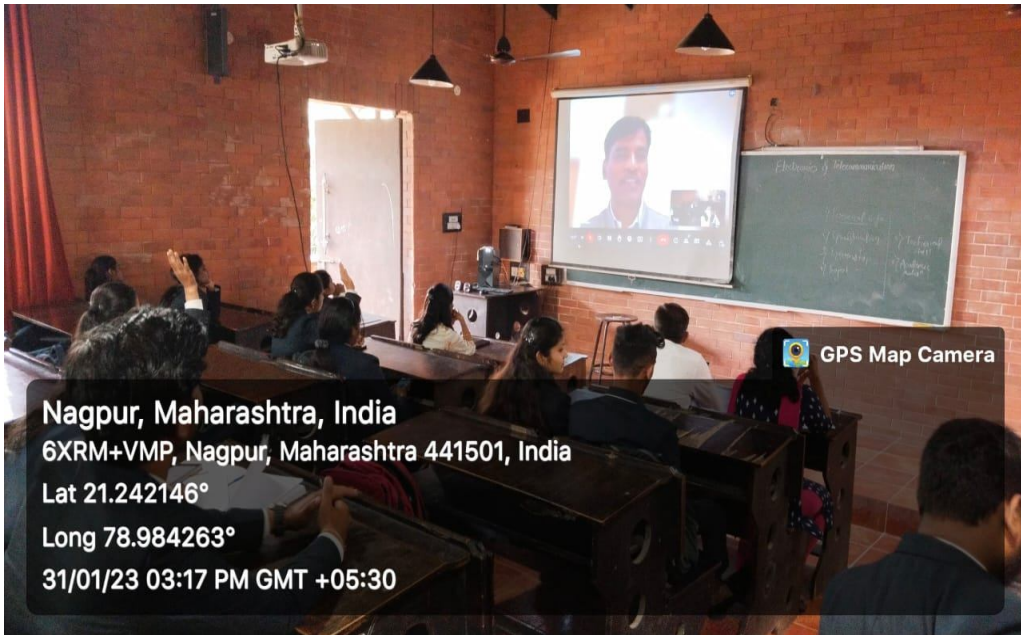
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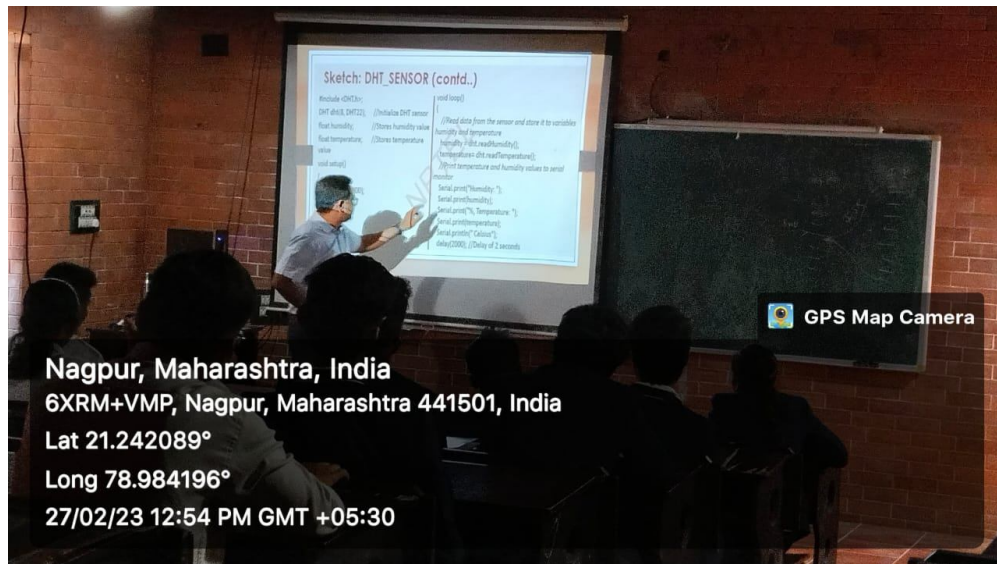


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 Nagpur-441501




Technical club activity - Project Competition



Technical club activity - Roborace Competition



  
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Group discussion & debates One Day Summit On “Challenges & opportunities in Electronic Product Design and Manufacturing”



Technical Presentation - National Conference on “Emerging Trends in Engineering and Technology for Sustainable Development” (ETETSD – 2023)



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Field visit to CSIR NEERI



Industry visit – Parle biscuit manufacturing unit



  
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Industry visit – HiTech Resistors



Industry visit – Regional Metrological Centre



  
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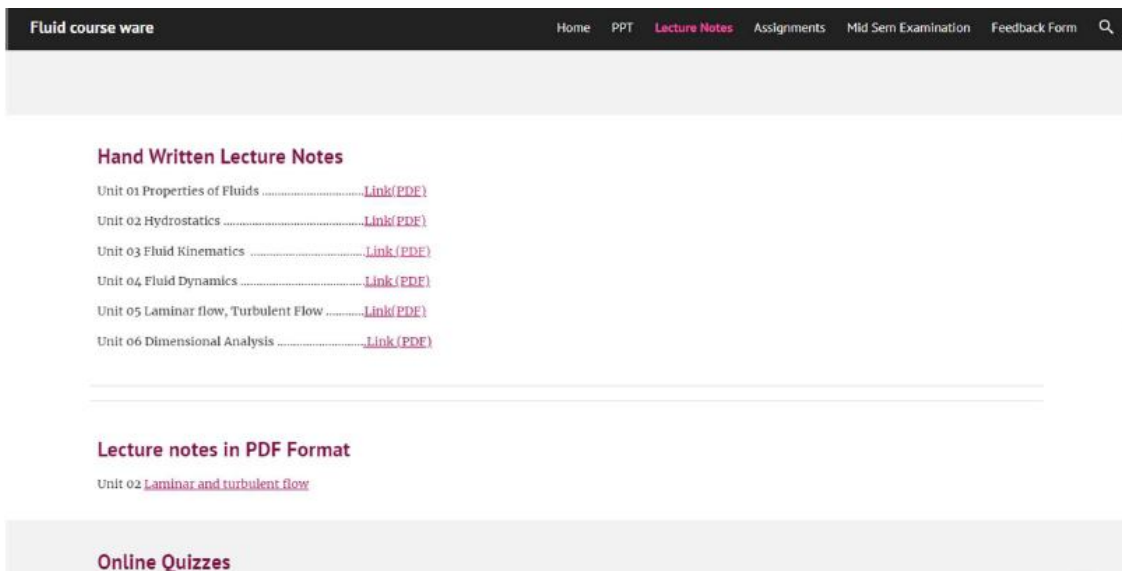
The basic objective of this course is to give a solid understanding of the fundamental discipline of thermodynamics, the interrelationships and applications of thermodynamics with other disciplines will be discussed as well. These disciplines are Materials and Structures; Heat transfer; and Fluid Mechanics . The intellectual threads in these disciplines, as well as their combined application to solve engineering Systems Problems will be discussed. This website is also an attempt to consolidate all the best open source resources related to thermodynamics and also act as a repository or place to host all the classwork, [lecture notes](#), [assignments](#), [quizzes](#), [question bank](#); etc. kindly feel free to contact or submit any query.

### Syllabus

[Teaching Plan.....\(Link\)](#)

[syllabus.....\(Link\)](#)

## Google Sites platform



## Google Sites platform



  
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SOM Home Forum Lecture Notes Study Guide & Readings Online Quizzes Assignments Raedings Feedback Q

# Strength of Materials

## Course Description

This course provides an introduction to the mechanics of solids with applications to science and engineering. We emphasize the three essential features of all mechanics analyses, namely: (a) the geometry of the motion and/or deformation of the structure, and conditions of geometric fit, (b) the forces on and within structures and assemblages; and (c) the physical aspects of the structural system (including material properties) which quantify relations between the forces and motions/deformation

Course Structure

Lectures Each week there will be lectures as per DBATU scheme. Attendance at lectures is mandatory. Recitations Each week, students will meet for a 1.5-hour recitation section consisting of group of students having 8-10 members. Attendance during these sessions is mandatory. The recitation sections will consist of additional discussion of course material, examples and experiments. These sections serve three main purposes:


### Google Sites platform

UNIT 1 : INTRODUCTION AND CASTING PROCESSES

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## What is Manufacturing?

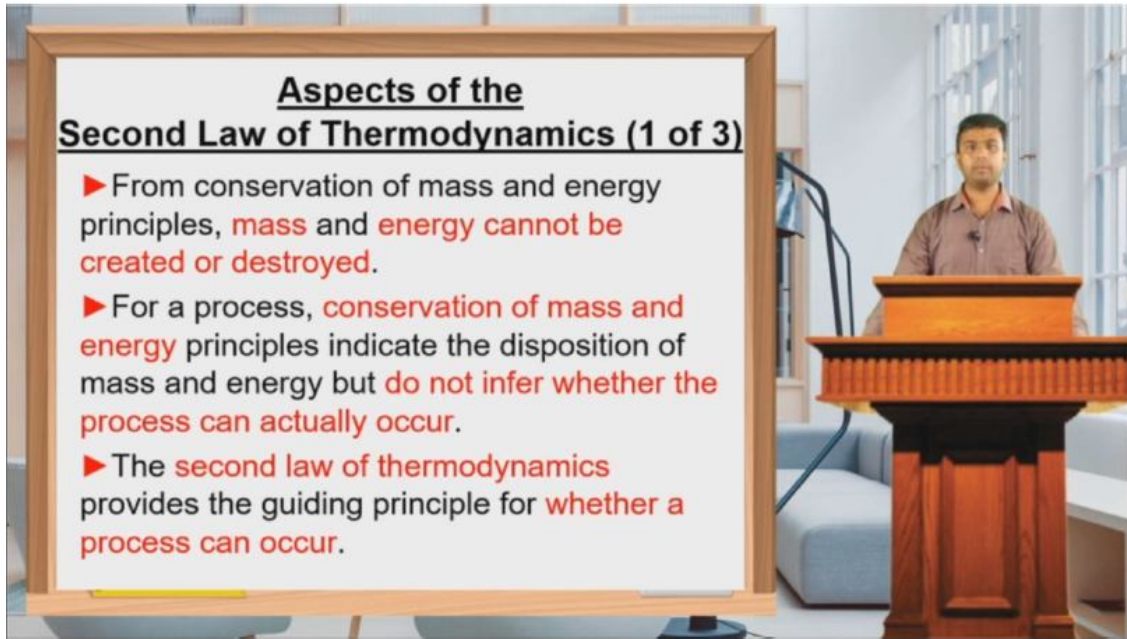
- **Manufacturing is derived from the Latin word "manufactus" means made by hand.**
- **Definition:** A Well organized method of converting raw material, components, or parts into finished product by using certain process.



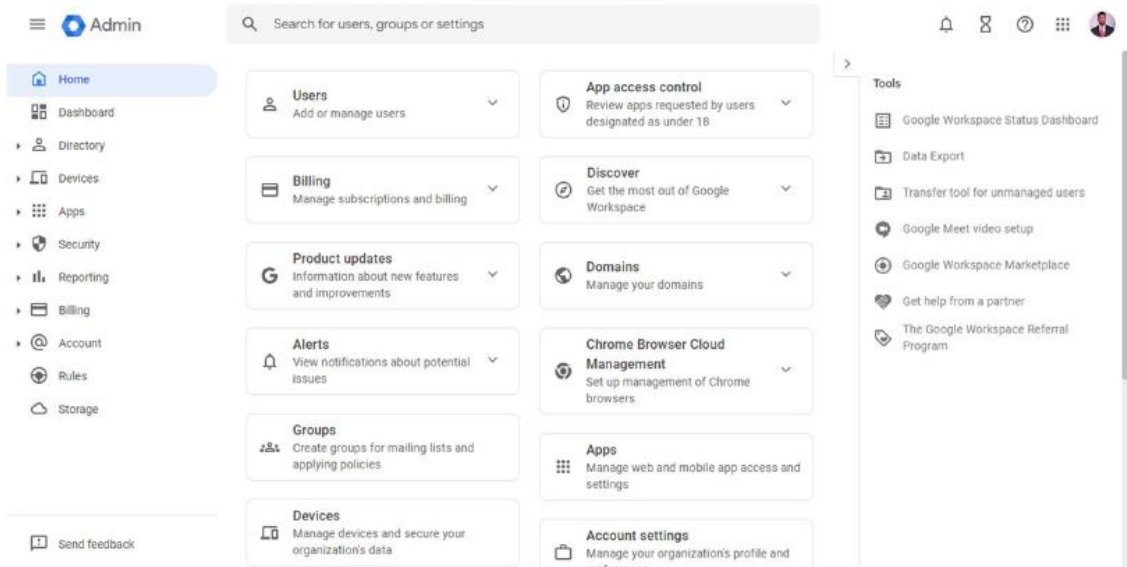
### Chroma cut videos



  
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Chroma cut videos



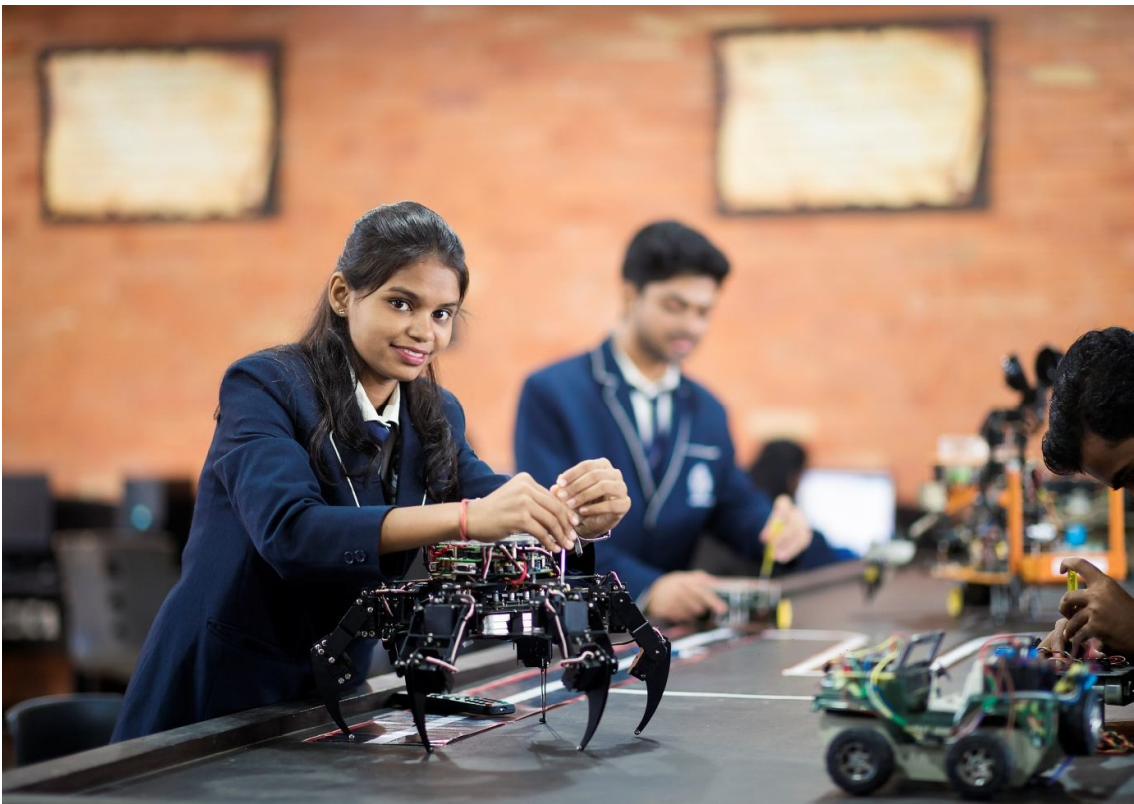
Gsuite platform



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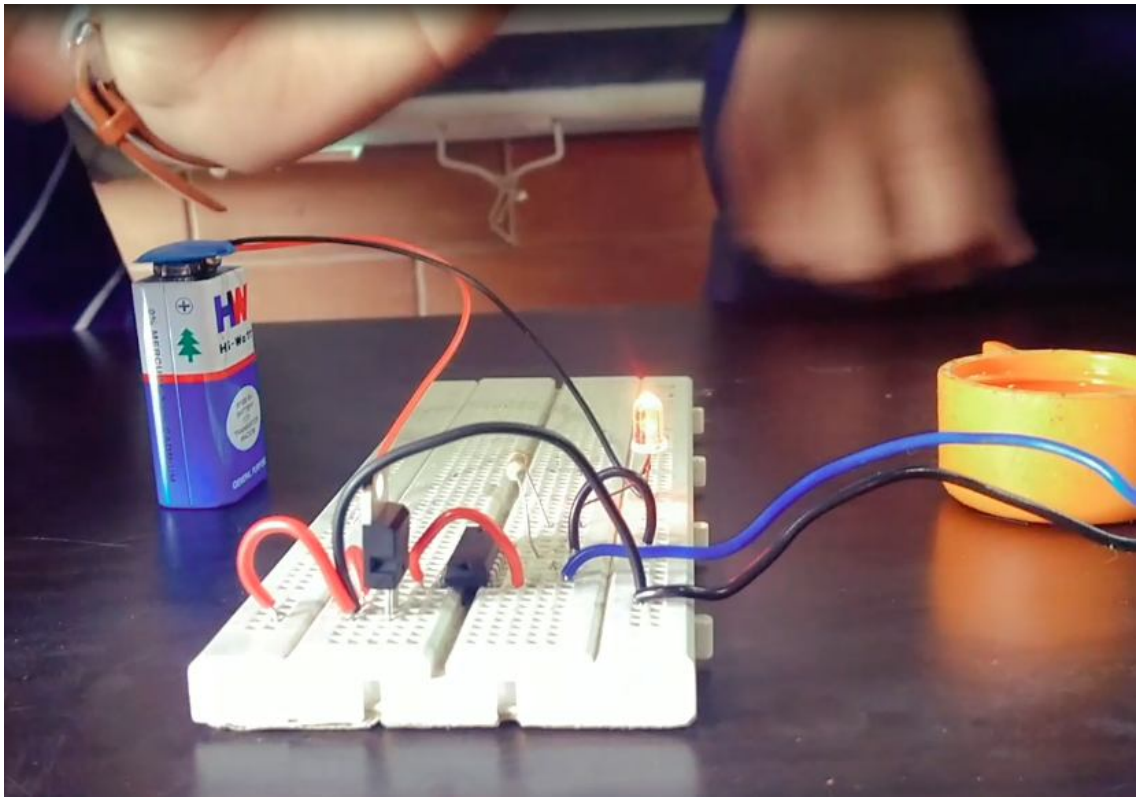
Virtual lab



Innovative model development – e Yantra




  
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Laboratory session



  
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Jyoti College of Engineering & Management  
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Basic Science and Humanities Department

Session- 2022-23

Semester-I

VISION	MISSION
To lay a robust foundation for the institute to reach its zenith.	1. Achieving academic excellence through rigorous teaching, learning and evaluation practices. 2. To develop an ability to apply knowledge of basic science and mathematics to excel in the field of engineering. 3. To provide salutary environment for the betterment of faculty and students.

**Subject: Engineering Physics**  
**Subject Code: Cs/IT/AI/DS 1T 005**  
**Assignment-I**

**Max Marks: 20**

**Date:15.12.2022**

- Q1 Explain with diagram : Absorption ,Spontaneous emission, and Stimulated emission of radiation
- Q2 Describe construction and working of solid state He-Ne LASER with necessary energy level diagram. Explain why diameter of discharge tube is narrow?
- Q3 What is acceptance angle for an optical fiber and derive its expression for an optical signal propagating through optical fiber.
- Q4 Write difference between :1) Single mode and Multimode Fiber  
2) Step Index and Graded Index Fiber
- Q5 Draw energy band diagram of n type and p type semiconductor at 0°K and 300°K.
- Q6 What is Hall effect. Derive an expression for Hall coefficient,Hall voltage,Hall angle and Hall mobility for an extrinsic semiconductor.Mentioned some application of Hall effect
- Q7 What is Fermi energy . Derive an expression to show that Fermi energy lies in middle of band gap in intrinsic semiconductor.
- Q8 What is thin film ? Obtain an expression for fringe width in wedge shaped thin film.
- Q9 Explain the formation of Newton's ring and show that radius of n<sup>th</sup> dark ring is proportional to square root of wavelength of light used.
- Q10 What are antireflection coating? Derive condition for minimum thickness of film for antireflection .

**Last Date of Submission : 22.12.2022**

Mr.U.V.Rathod,  
Subject Teacher

Dr.A.N.Gupta,  
HOD, BSHD,JDCOEM



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Vision	Mission
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### Assignment-I

Subject: SDC

Subject Code: MA1T001

Year/Semester: 1 st Semester (First Year)

Date: 11.01.2023

Max Marks: 20

Q.No.	Questions	Level/CO's	Marks												
Q1	Solve for finding the missing terms in the following data. <table border="1" style="margin-left: 20px;"> <tr> <td>x</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> </tr> <tr> <td>y</td> <td>1</td> <td>8</td> <td>27</td> <td></td> <td>125</td> </tr> </table>	x	1	2	3	4	5	y	1	8	27		125	2/CO2	5
x	1	2	3	4	5										
y	1	8	27		125										
Q2	Solve $\frac{dy}{dx} = \frac{(y+1)}{(y+2)e^{y-x}}$	3/CO3	5												
Q3	Analyze the rank of the following matrices $A = \begin{bmatrix} 1 & 2 & 3 & 0 \\ 2 & 4 & 3 & 2 \\ 3 & 2 & 1 & 3 \\ 6 & 8 & 7 & 5 \end{bmatrix}$	4/CO4	5												
Q4	Test the consistency of the system $x + y + z = 3, x + 2y + 3z = 4, x + 4y + 9z = 6$ and solve, if consistent	4/CO4	5												

Last Date of Submission : 20.01.2023

*Sagar S. Kathalkar*

Mr.Sagar S. Kathalkar  
 Subject Teacher

*Dr.A.N.Gupta*

Dr.A.N.Gupta,  
 HOD, BSBD,JDCEM

*Principal*

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Basic Science and Humanities Department


Session- 2022-23

Semester-II

VISION	MISSION
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Assignment-1		
Subject:Engineering Physics Branch:ME/CE/EE/ETC Date:04.04.2023		
Sr.No.	Questions	COs
Q1	Explain with diagram : Absorption , Spontaneous emission, and Stimulated emission of radiation	CO2
Q2	Describe construction and working of solid state He-Ne LASER with necessary energy level diagram. Explain why diameter of discharge tube is narrow?	CO3
Q3	What is acceptance angle for an optical fiber and derive its expression for an optical signal propagating through optical fiber.	CO2
Q4	Write difference between :1) Single mode and Multimode Fiber 2) Step Index and Graded Index Fiber	CO1
Q5	Draw energy band diagram of n type and p type semiconductor at 0°K and 300°K.	CO3
Q6	What is Hall effect. Derive an expression for Hall coefficient,Hall voltage,Hall angle and Hall mobility for an extrinsic semiconductor.Mentioned some application of Hall effect	CO4
Q7	What is Fermi energy . Derive an expression to show that Fermi energy lies in middle of band gap in intrinsic semiconductor.	CO4
Q8	What is thin film ? Obtain an expression for fringe width in wedge shaped thin film.	CO3
Q9	Explain the formation of Newton's ring and show that radius of n <sup>th</sup> dark ring is proportional to square root of wavelength of light used.	CO3
Q10	What are antireflection coating? Derive condition for minimum thickness of film for antireflection .	CO4

Last Date of Submission : 12.04.2023

  
Dr.U.V.Rathod,  
Subject Teacher



  
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Nagpur-441501

  
Dr.A.N.Gupta,  
HOD, BSHD,JDCOEM



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Department of Basic Science Humanities  
2022-23 (Even Sem)

Vision	Mission
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### Assignment-I

**Subject:** Vector calculus and Probability

**Subject Code:** MA1T002


**Year/Semester:** 2nd Semester (First Year)

**Date:** 29.05.2023

**Max Marks:** 20

Q.No.	Questions	CO's	Marks
Q1	Examine all the values of $\left(\frac{1}{2} + i\frac{\sqrt{3}}{2}\right)^{\frac{3}{4}}$ show that the continued product of all the values is 1.	2/CO2	5
Q2	In a certain college 25% of students failed in mathematics & 15% of the students failed in physics & 10% of the students failed in both the subjects A student is selected at random. (1). If he failed in mathematics. What is the probability that he failed in Physics? (2). What is the probability that he failed in mathematics or physics?	4/CO4	5
Q3	Solve & show that $i \times (\bar{a} \times i) + j \times (\bar{a} \times j) + k \times (\bar{a} \times k) = 2\bar{a}$	3/CO3	5
Q4	Test for the directional derivative of $\phi(x, y, z) = x^2 - 2y^2 + 4z^2$ at the point $C(1, 1, -1)$ in the direction of $2i + j - k$ . In what direction will the directional derivative be maximum? What is its magnitude?	4/CO4	5

**Last Date of Submission :** 10.06.2023

  
Ms. Prerna M. Parkhi,  
Subject Teacher

  
Dr. A.N. Gupta,  
HOD, BSHD, JD COEM





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Department of Computer Science & Engineering

"A Place to Learn, A Chance to Grow"

Session: 2022-23



**VISION**

To be recognized for excellent engineering, developing global leaders both in educational and research in the domain of computer science and wireless engineering.

**MISSION**

1. To create self-learning environment by facilitating leadership qualities, team spirit and ethical responsibilities.
2. To improve department-industry collaboration, interaction with professional society through technical knowledge and internship program.
3. To promote research and development with current techniques through well qualified resources in the area of computer science and wireless engineering.

**Assignment-**

Semester/ Branch: - V Sem/ CSE

Subject Code :-CS5T002

Subject Name : -TCP/IP

Date of Display: 22/08/2023

Subject In-charge: Prof. Anuja Ghasad


Date of Submission: 31/08/2023

**List of Assignment Question's:-**

Que. No.	Questions	Unit No.	Topic Code	CO Mapping
1	Explain Network Architecture with its types.	1	T1.1	CO1
2	State & Explain types of Network Standards.	1	T1.2	CO1
3	Discuss different types of Connecting device in details.	1	T1.6	CO1
4	Differentiate between following a) LAN Vs WAN b) OSI Vs TCP/IP c) Extranet Vs Internet Vs Intranet d) Subnetting Vs Supernetting	1	T1.5/ T1.3/T2.3	CO1
5	Illustrate the following. a) Internet Backbones b) NAP c) ISPs d) RFCs	1	T1.6/ T1.7/ T1.8	CO1
6	Explain ARP and RARP with its working process.	2	T2.4/T2.5	CO2
7	Calculate whether following IP address is valid IP address block or not. a) 100.1.2.32 to 100.1.2.42 b) 192.1.1.47 to 192.1.1.60	2	T2.2	CO2
8	Describe Classful Internet address with its classes.	2	T2.1	CO2
9	Discuss DHCP with its component and working principle.	2	T2.6	CO2
10	Describe BOOTP.	2	T2.6	CO2

  
Prof. Anuja Ghasad  
Subject In charge

  
Prof. Swati Raut  
Dept. Academic Incharge

  
Dr. Supriya Sawwashere  
Dept. Head CSE



  
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Department Of Electrical Engineering

*"Igniting minds to illuminate the world"*

2022-23 (Even Sem)



VISION

"To develop competent and committed Electrical Engineers to serve the society"

MISSION

1. To impart quality education in the field of Electrical Engineering.
2. To be excellent learning centre through research and industry interaction.

### Assignment

Subject	Open Elective-II Basics of AutoCAD	
Subject code	EE60002	
Semester/Year	VI/3rd	
Unit No.	IV and V	
Date of display	07/04/2023	Date of submission : 13/04/2023

Sr. No.	Question	Mapped Co
1.	Explain the various dimensions creation and editing methods.	CO4
2.	Discuss the various Layer list options.	CO4
3.	List out the step by step procedure to create and manage layers for Star –Delta circuit in AutoCAD.	CO4
4.	Examine the various tools and techniques used to create, store and reusing a block in AutoCAD.	CO5
5.	What is attribute in AutoCAD? Explain the attribute commands.	CO5

Subject teacher

Academic Incharge

HOD EE



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*"Rectifying Ideas, Amplifying Knowledge"*  
**2022-23 (Even Sem)**



॥ ज्ञानम् सर्वोर्ध्वं साधनम् ॥

VISION	MISSION
"To be a Department providing high quality & globally competent knowledge of concurrent technologies in the field of Electronics and Telecommunication."	<ol style="list-style-type: none"><li>1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties.</li><li>2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.</li></ol>

**Assignment**

**Date: 23/01/2023**

**Program:** B. Tech in Electronics & Telecommunication

**Course:** Computer Networks & Cloud Computing

**Course Code:** ET6T003

**Year/Semester:** 6<sup>th</sup> Semester (3<sup>rd</sup> Year)

		(Level/CO)	Marks
Q.1	Analyze the Layers in the OSI Model.	4/CO1	5 M
Q.2	Explain different types of transmission media used for data communication.	2/CO2	5 M
Q.3	Illustrate different types of networks used for data communication.	2/CO1	5 M
Q.4	Analyze the Layers in TCP/IP Protocol Suite.	4/CO1	5 M
Q.5	Design a heterogeneous network made of four WANs and three LANs.	6/CO4	5 M

**Date of Submission: 06/02/2023**

**Prof. Avinash K. Ikhari**

**Course Coordinator /  
Academic Incharge**

**Dr. Pravin Kshirsagar**

**HOD (ETC)**

**Principal**

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**Department of Mechanical Engineering**  
**2022-2023 (Odd Sem)**



**VISION**

"To be a centre of excellence of learning and research in Mechanical Engineering."

**MISSION**

1. To provide high quality, innovative and research environment in Mechanical Engineering.
2. To impart soft skill and hard skill to achieve institutional vision.

**Assignment 1**

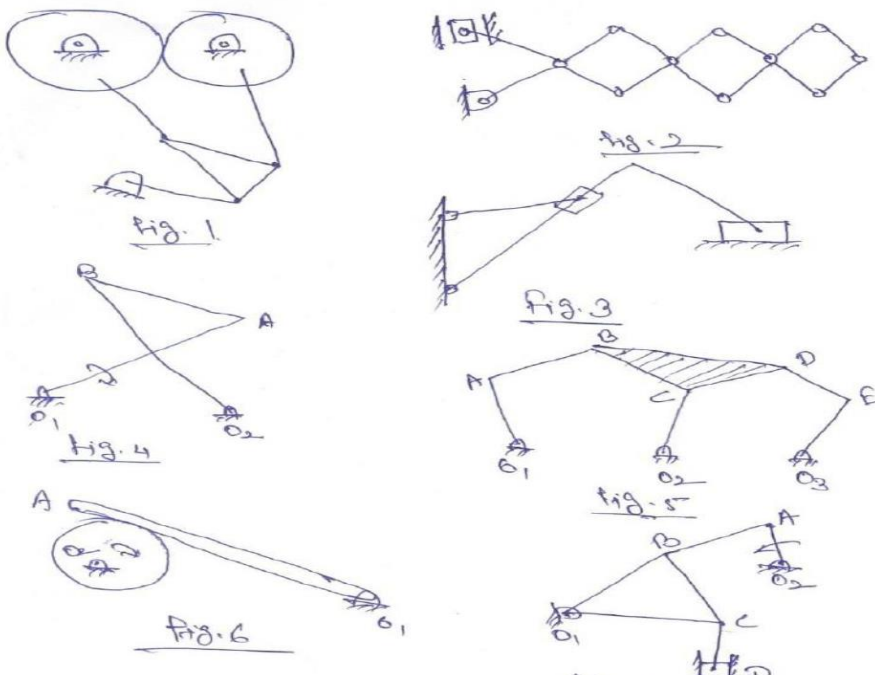
**Date: 08/12/2022**

**Course:** B. Tech. in Mechanical Engineering


**Subject:** Theory Of Machine –I (TOM-I)

**Subject Code:** ME3T005

**Year/Semester:** 3 th Semester (2nd Year)

Q. No.	Question	Level	CO	Marks
01.	Give the purpose and application of peaucellier mechanism, Geneva mechanism, and pawl and ratchet mechanism, transport mechanism?	<b>1</b>	<b>1</b>	<b>10</b>
02.	A plate clutch has three discs on the driving shaft and two discs on the driven shaft, providing four pairs of contact surfaces. The outside diameter of the contact surfaces is 240 mm and inside diameter 120 mm. Assuming uniform pressure and $\mu 0.3$ ; find the total spring load pressing the plates together to transmit 25 kW at 1575 r.p.m. If there are 6 springs each of stiffness 13 kN/m and each of the contact surfaces has worn away by 1.25 mm, find the maximum power that can be transmitted, assuming uniform wear.	<b>1</b>	<b>1</b>	<b>10</b>
03.	Define the cam terminology and types of clutches?	<b>1</b>	<b>2</b>	<b>10</b>
04.	Find the mobility 	<b>1,2</b>	<b>2</b>	<b>10</b>



  
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2022-2023 (Odd Sem)



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2. To impart soft skill and hard skill to achieve institutional vision.

05	A cam, with a minimum radius of 25 mm, rotating clockwise at a uniform speed is to be designed to give a roller follower, at the end of a valve rod, motion described below : <b>1.</b> To raise the valve through 50 mm during 120° rotation of the cam ; <b>2.</b> To keep the valve fully raised through next 30°; <b>3.</b> To lower the valve during next 60°; and <b>4.</b> To keep the valve closed during rest of the revolution i.e. 150° ; The diameter of the roller is 20 mm and the diameter of the cam shaft is 25 mm. Draw the profile of the cam when (a) the line of stroke of the valve rod passes through the axis of the cam shaft, and (b) the line of the stroke is offset 15 mm from the axis of the cam shaft. The displacement of the valve, while being raised and lowered, is to take place with simple harmonic motion. Determine the maximum acceleration of the valve rod when the cam shaft rotates at 100 r.p.m. Draw the displacement, the velocity and the acceleration diagrams for one complete revolution of the cam.	2	2	10
----	--	---	---	----

*Date of Submission: 13/12/2022*

  
Dr. M.P. Nimkar  
Subject Teacher



  
Prof. Suhas A. Rewatkar  
HOD  
In-charge of Department  
Mechanical Engineering  
J D College of Engineering & Management  
Nagpur



  
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Session: 2022-23



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2. To improve department-industry collaboration, interaction with professional society through technical knowledge and internship program.
3. To promote research and development with current techniques through well qualified resources in the area of computer science and wireless engineering.

## Assignment

Semester/ Branch: - III Sem/ AI

Subject Name: - Organization Behaviour

Subject In-charge: Prof. Anuja Ghasad

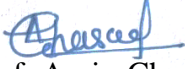
Subject Code :-AI3T001


Date of Display: 09/11/2022


Date of Submission: 17/11/2022

### List of Assignment Question's:-

Que. No.	Questions	Unit No.	Topic Code	CO Mapping
1	Explain Organization Behaviour with its Approaches, Characteristics and Limitations.	1	T03, T04, T05, T06	CO1
2	Define Organization Model also explain types of Organization Behaviour Model.	1	T07	CO1
3	Explain Organization Culture with dimension and types.	1	T09, T11, T12	CO1
4	Discuss Impact of technology on organizational behaviour.	1	T08	CO2
5	Explain following term. a) Division of labour b) Delegation of authority c) Span of control	1	T15, T16, T17, T18, T21	CO2
6	Explain Communication with its Importance.	2	T22, T23	CO2
7	Discuss communication process and how to communicating within organizations.	2	T24, T25	CO2
8	Explain Technical Writing Process with types of Technical Documents	2	T31, T32	CO3
9	Explain the characteristics of Technical Communication.	2	T30	CO3
10	Discuss Interpersonal communication & Multicultural communication with Barriers to effective communication.	2	T26, T27, T28	CO3

  
Prof. Anuja Ghasad  
Subject In charge

  
Prof. Swati Raut  
Dept. Academic Incharge

  
Dr. Supriya Sawwashere  
Dept. Head AI

HOD  
Artificial Intelligence  
JDCEM, Nagpur



  
Principal  
J D College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501



**JAIDEV EDUCATION SOCIETY'S  
J D COLLEGE OF ENGINEERING AND MANAGEMENT  
KATOL ROAD, NAGPUR**

Website: [www.jdcoem.ac.in](http://www.jdcoem.ac.in) E-mail: [info@jdcoem.ac.in](mailto:info@jdcoem.ac.in)

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**VISION**

To be a center of excellence imparting professional education satisfying societal and global needs.

**MISSION**

1. Transforming students into lifelong learners through, quality teaching, training and exposure to concurrent technologies.
2. Fostering conducive atmosphere for research and development through well-equipped laboratories and qualified personnel in collaboration with global organizations.

**Semester: - MBA II Semester**

**Subject Code:-2T3**

**Subject Name: - Marketing Management**

**Assignment: 2022-23**

All Questions are Compulsory:

Q.1.A. National Bank Ltd. provides Irish customers with savings and investments, credit facilities, payment services and pensions. In January 2016 it launched its new home insurance facility 'PROTECTION', providing different policies, buildings and contents insurance options. It charges a reduced premium 30% off standard house insurance rates. Quotations (prices) can be obtained directly online. The facility "PROTECTION" had a high profile celebrity launch accompanied by an extensive advertising campaign. The Insurance market in Ireland is highly competitive however National Bank Ltd. plans to target a market share of 20% within two years.

Explain the product, price, promotion and place elements of the marketing mix. Relate your explanations to National Bank Ltd.

OR

Q.1.B. An established face cream manufacturing company is planning to launch its product in Indian market especially for Men. Suggest Marketing Mix which is best suitable.

Q.2.A. Explain Segmentation, Targeting & Positioning. Apply the concept of STP to Maggie, a Nestle Brand.

OR

Q.2.B. Explain all the phases of product life cycle with suitable example.

Q.3.A. Parle Agro is Planning to launch a new energy drink called "Masti". This is a new entrant in the growing market for drinks enhanced with stimulants to give consumers extra energy. Suggest a pricing strategy for Masti in each stage of PLC.

OR

Q.3.B. Discuss Pricing Decision. Explain the factors affecting price Determination.

Q.4.A. Explain various Distribution channel options for effective distribution of Coca Cola in India.

OR

Q.4.B. A well Garment firm wants to launch its new brand "T-shirt". What factors need to consider before considering a distribution channel.

Q.5.A. Develop a promotion mix for promoting a new brand "T-shirt" launched by Monte Carlo.

OR

Q.5.B. Define Sales Promotion? Explain various tools and technique with suitable example.

*Deepshree*  
**Subject In charge**

*Deepshree*  
**Dept. Academic Incharge**

*Paarvi*  
**Dept. Head MBA**

*[Signature]*  
**Principal**  
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Khandata, Katol Road  
Nagpur-441501

**Dept. of Management Studies (MS)**  
**J.D. College of Engineering & Management**  
Nagpur





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Semester: - MBA III Semester

Subject Code:-3T6

Subject Name: - Sales & Distribution Management

Assignment: 2022-23

=====  
All Questions are Compulsory:

Q1.A.Organizing the sales Management in your own words along with the significance of SM

Or

Q1.B. Estimating the Sales Planning & Control of fmcg.

Q2.A. Explaining the Sales Forecasting Method

Or

Q2.B.Determine the Personnel Selling and Sets of PS

Q3.A.Examine the various types of sales territory

Or

Q3.B. Prepare the Sales Budget for newly open juice company

Q4.A.Define Physical Distribution. Write importance of Physical Distribution.

Or

Q4.B. Identifying the PD process

Q5.A.State the Significance of Reverse Logistic. Discuss List the component of Supply Chain Management

Or

Q5.B. Write note on Electronic Intermediaries And also Explain the E-enabled logistic Management

*Udarge*

Subject In charge

*Deepshree*

Dept. Academic Incharge

*Paaveni*

Dept. Head MBA

*[Signature]*

Principal

J D College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501



11000  
Dept. of Management Studies (MSA)  
J.D. College of Engineering & Management  
Nagpur





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**Semester: - MBA IV Semester**

**Subject Code:-4T5**

**Subject Name: - Retail Sales Management & Service Management**

**Assignment: 2022-23**

All Questions are Compulsory:

**Q1.A.** Explain Meaning of Retailing, Economic Significance of Retailing,

Or

**Q1.B.** Discuss the Criteria for Effective Segmentation

**Q2.A.** Discuss various Types of Retail Stores Location with suitable example

Or

**Q2.B.** Explain Factors Affecting Retail Location Decisions

**Q3.A.** Define Merchandising Management and discuss Activities of a Merchandiser,

Or

**Q3.B.** discuss Integrated Marketing Communication in Retail

**Q4.A.** discuss the concept and evolution of services marketing

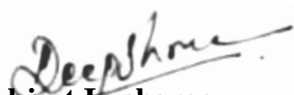
Or

**Q4.B.** 7Ps of service marketing with suitable example

**Q5.A.** meaning and Importance of Service Marketing


Or

**Q5.B.** Discuss managing quality Emerging Issues in Service Marketing

  
**Subject In charge**

  
**Dept. Academic Incharge**

  
**Dept. Head MBA**

  
**Principal**  
 J D College of Engineering & Management  
 Khandala, Katol Road  
 Nagpur-441501

**11000**  
**Dept of Management Studies (MS)**  
**J.D. College of Engineering & Management**  
 Nagpur





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Department of Civil Engineering  
"Building Better Development"  
Session 2022-23



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- Provide quality education and excellent learning Environment for overall development of students.
- Making Sustainable efforts for integrating academics with Industry.



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Nagpur-441501

HOD, (CE)



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- Making Sustainable efforts for integrating academics with Industry.



## Indian Institute of Technology Bombay

Powai, Mumbai, Maharashtra, India.  
<https://www.iitb.ac.in/>  
Phone: +91 (22) 2572 2545, Fax: +91 (22) 2572 3480



### CERTIFICATE OF INTERNSHIP

This is to certify that **Ms. Uttara N. Paithe** of **J D College of Engineering and Management, Nagpur** has successfully completed a project on **"Production of Biogas from Food and Agriculture Waste and Grey Water Treatment Systems"** as a part of SEED Summer Internship Program organized by TUM-IITB-SEED Centre from 05/06/2023 to 05/08/2023.

  
**Prof. Anand B. Rao**  
Scientific Director, TUM-IITB-SEED Centre  
Professor and Head, Centre for Technology  
Alternatives for Rural Areas (CTARA)  
IIT Bombay, Powai, Mumbai, India.



Federal Ministry  
for Economic Cooperation  
and Development



**DAAD**  
Deutscher Akademischer Austauschdienst  
German Academic Exchange Service



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**SEED**  
CENTER

TUM-IITB-SEED Centre/ 2023/Intern/04  
This certificate can be verified at [204358001@iitb.ac.in](mailto:204358001@iitb.ac.in)

Student Internship Completion Certificate (CE)- 2022-23



HOD, (CE)



  
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Department Of Electrical Engineering  
"Igniting minds to illuminate the world"



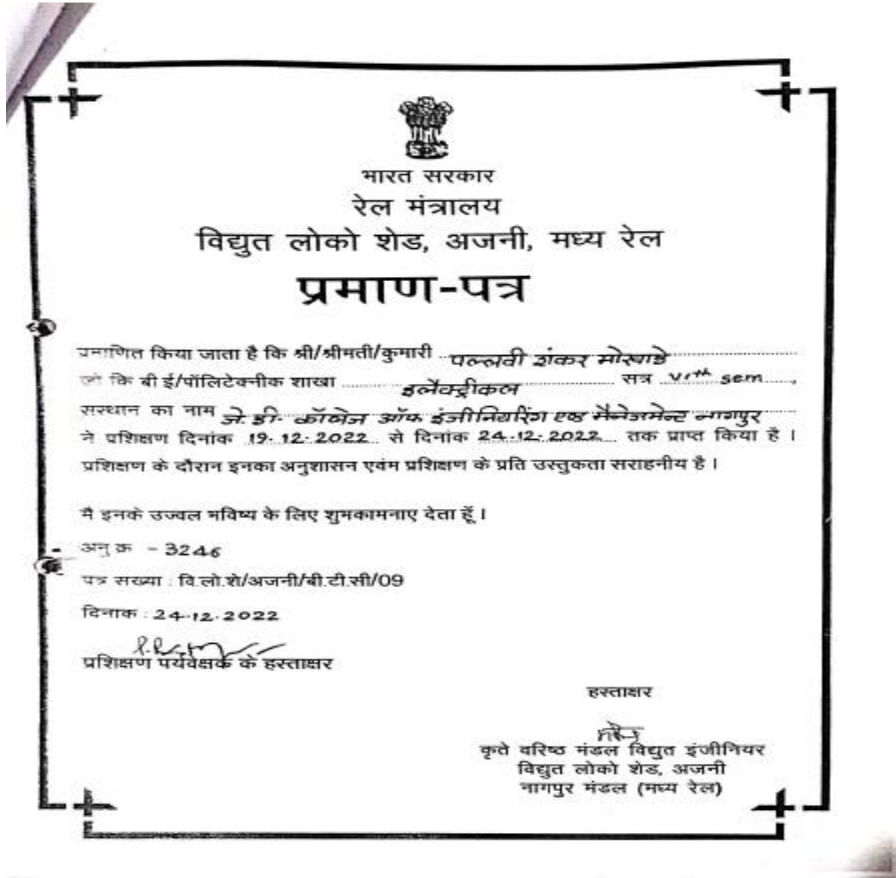
2022-23

VISION

MISSION

"To develop competent and committed Electrical Engineers to serve the society"

1. To impart quality education in the field of Electrical Engineering.
2. To be excellent learning centre through research and industry interaction.



Internship Certificate 2022-23 EE Department

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2022-23

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FACT : S-54, HINGNA, MIDC AREA, NAGPUR-440 016.		TIN NO 27390204840 V w.e.f. 01.04.08	OFF. : FAX - 0712-2238440 FACT: 07104-237294
		TIN NO 27390204340 G w.e.f. 01.04.08	RESI. : 22384698 E-mail: sonalipowerequipments@gmail.com

**SONALI**  
POWER EQUIPMENTS PVT. LTD.  
Manufacturer & Repairers of Transformers

CERTIFICATE  
OF INPLANT TRAINING

THIS IS CERTIFY THAT HIS / HER. AKASH JAGNADE OF J.D. COLLEGE OF ENGINEERING & MANAGEMENT, NAGPUR OF 2<sup>ND</sup> YEAR IV SEM OF ELECTRICAL ENGINEERING ATTENDDEN THE TRAINING FOR 15 DAYS (FIFTEEN DAYS) FROM 20.07.2022 TO 04.08.2022. DURING THE ABOVE-MENTIONED PERIOD HIS / HER CONDUCT AND PERFORMANCE WAS FOUND TO BE SATISFACTORY.

DATE: 04/08/2022

PLACE: NAGPUR.

*Rholse*  
9372309638  
Yours faithfully,  
FOR: SONALI POWER EQUIPMENTS PVT. LTD

Internship Certificate 2022-23 EE Department

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2022-23



VISION	MISSION
"To be a Department providing high quality & globally competent knowledge of concurrent technologies in the field of Electronics and Telecommunication."	1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties. 2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.

## ETC Internship Certificate-2022-23

Page 1/1

D: 08/06/2023

**Internship Offer Letter**

Dear **Priyanshu Rangari**,

On behalf of **Clustor Computing**, we are excited to extend an offer to you for an internship position within our **Technology Department**. This position is located in Nagpur (MH). The position as an **INTERN**.

This position is scheduled to begin from 01/06/2023 and will continue till the program will be over. In this role, you will report directly to **Project Manager**.

Please be sure to bring:

1. Latest Passed Exam Marksheet
2. ID Proof
3. Address Proof
4. NOC Letter from College

with you on your first day to complete your profile.

**Important Note** - During your temporary employment with Clustor Computing you may have access to trade secrets and confidential or proprietary business information belonging to Clustor Computing. By accepting this offer, you acknowledge that this information must remain confidential and agree to refrain from using it for your own purposes or disclosing it to anyone outside of Clustor Computing. Also, you agree that upon completion of your internship, you will promptly return any company-issued property and equipment along with information and documents belonging to the company. By accepting this offer, you acknowledge that your participation in this program is not an offer of employment, and successful completion of the program does not entitle you to an employment offer from Clustor Computing.

This offer letter represents the full extent of the internship offer and supersedes any prior conversations about the position. Changes to this agreement may only be made in writing. If you have any questions about this offer, please contact **Clustor Computing** at **+91-9545400369** in our recruiting department. Please review this letter in full, and sign and return it. We look forward to having you begin your career at Clustor Computing and wish you a successful internship. Welcome to our team!

Sincerely,

  
**Ms. Mayuri Nerkar**  
HR Executive  
Clustor Computing


  
**Principal**  
JD College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501

  
**HOD, Dept. of EN/ETC**  
JD College of Engineering & Management, Nagpur

I, **Mr. Priyanshu Rangari**, accept the above offer and will begin the internship position on 01/06/2023.

Sign  
**Priyanshu Rangari**

**Clustor Computing**  **+91-7709291565, +91-9545400369**  
[www.clustorcomputing.com](http://www.clustorcomputing.com) [contact@clustorcomputing.com](mailto:contact@clustorcomputing.com)  
B4 pandurang gawande layout, Khandala, Nagpur, Maharashtra 440025

  
**Dr. P. R. Kshirsagar**  
HOD, ETC  
HOD, Dept. of EN/ETC  
JD College of Engineering  
& Management, Nagpur

ETC Internship Certificate-2022-23



  
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VISION	MISSION
"To be a Department providing high quality & globally competent knowledge of concurrent technologies in the field of Electronics and Telecommunication."	<ol style="list-style-type: none"><li>1. To provide quality teaching learning process through well-developed educational environment and dedicated faculties.</li><li>2. To produce competent technocrats of high standards satisfying the needs of all stakeholders.</li></ol>



### Internship Letter

Ref: HRD/INTR/IDE002

DATE:  
30 Oct 2023

TO:  
Ankush Bhure  
Nagpur, Maharashtra .

Dear Mr. Ankush Bhure,

This is certify that Mr. Ankush Bhure worked with our organization CloudIDE systems. He was a permanent full time Intern in our organization as a Designation Node JS Intern. He was posted in our office from 12 July, 2023.

We found Mr. Ankush Bhure very dedicated to the work assigned. He was result oriented, professional and sincere. He carries excellent interpersonal skill and knowledge which helped completing lot of valuable business assignments. He is a true team player and fun loving individual.


We wish him all the best for future ventures.

Ashay Sawarkar  
CEO/Founder

77219-34118  
contact@cloudidesys.com

Plot no. 1A, Shushila Society, Kalbarodi  
near Rakash layout 3, Nagpur 440027

Page 1/1

  
Dr. P. R. Kshirsagar  
HOD, ETC  
HOD, Dept. of EN/ETC  
JD College of Engineering  
& Management, Nagpur



  
Principal  
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Nagpur-441501



VISION

"To be a centre of excellence of learning and research in Mechanical Engineering."

MISSION

1. To provide high quality, innovative and research environment in Mechanical Engineering.
2. To impart soft skills and hard skills to achieve the institutional vision.

## ME Internship Certificate-2022-23



### Internship Offer Letter

Dear Jayendra Naik

12/11/2022

Congratulations!!

This is with reference to your application and subsequent interview held with you, We are pleased to offer you the position of "Java Intern" for "Softtronix IT Solution". Your compensation will be as agreed during our discussions. Your date of joining would be on or before 12/11/2022.

You are requested to carry a self - attested copy of the following documents.

1. One passport size photograph.
2. All Qualification Certificates.
3. Proof of residence & Aadhaar Card.

Request you to accept the offer latest by today. A detailed offer letter along with the terms and conditions of appointment applicable to you will be issued to you post the completion of the formalities. We welcome you to Softtronix IT Solution and wish you a rewarding career ahead.

Please feel free to get in touch with me at any time for any further information.

Thanking you,

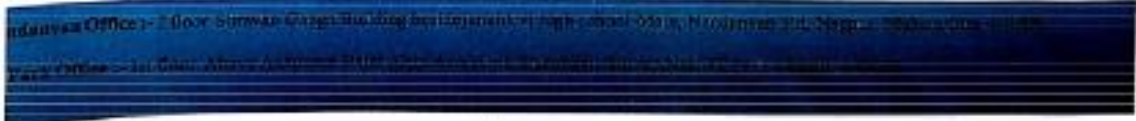
From Softtronix IT Solution

SOFTTRONIX

Proprietor

Signature with Name & Designation

Director / Manager – Human Resources



ME Internship Certificate-2022-23



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## M/s. Advance Metal Scan Industries

Plot No. 121, Mohan Nagar, Lala Jai Narayan Marg, Behind St. Joseph Convent School, Nagpur - 440001  
Land Line / Fax. No. 0712- 2558031, 9422804487, Email : [honymch77@gmail.com](mailto:honymch77@gmail.com)

Ref - No. AMSE / 22-23 / 01 / 11

Dt. 21/11/2022

### Internship/Training Conformation letter

### To Whom so ever It may Concern

This is to Certify that **Mr. Kunal Ramkrishna Vanniyar**, studying in **B.E. Final Year (Mechanical Engineering)** student of J.D College of Engineering, Kalmeshwar road, Phata, Nagpur 441501 will start his internship programme /Training at "**M/s. Advance Metal Scan Industries, Nagpur**" from 01.12.2022 to 31.05.2023.

He will work as a part of our team during his training. We assure him our support for the professional development and growth for his future.

We wish him luck for the exciting new opportunity he will start with us.

Best wishes.

From Advance Metal Scan Industries

(Signature of the Authorized Signatory)

Designation: **Proprietor**

Date: 21.11.2022

Place : Nagpur

Advance Metal Scan Industries  
Plot No. 121, Mohan Nagar,  
Lala Jai Narayan Marg,  
Behind St. Joseph Convent School,  
NAGPUR - 440001



- Engineering construction services like civil construction of commercial and residential complex.
- Non Destructive Testing Services in Civil like UPV, rebound Hammer, Pull Test.
- Non Destructive Testing Services in Mechanical like UT, MPI, RT, DPT, VISUAL, HT.
- Non Destructive Testing Services in Mechanical Testes & Chemical Testes.

ME Internship Certificate-2022-23

Bhushan R. Mahajan  
Head of Department,  
DOME

Head of Department  
Mechanical Engineering  
J.D. College of Engineering & Management  
Nagpur



Principal  
J D College of Engineering & Management  
Khandala, Katol Road  
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**MBA: 2022-23**

**INTERNSHIP CERTIFICATES**

**ASSIST ME SOLUTIONS LLP**

- 2, Priti Society, Hajari Pahad, Nagpur.
- [amsolutionsngp@gmail.com](mailto:amsolutionsngp@gmail.com)
- [www.assistme.in](http://www.assistme.in) LLP ID : AAV-716-8

Date : 15-08-2022

**INTERNSHIP OFFER LETTER**

Dear **Sharad Ghangal**,

We are pleased to offer you Internship as '**Marketing Intern**' in our company. The standard duration of this internship is 4 Months, but in view of your academic deadlines of 45 days the initial internship offer shall be valid for 45 days only. You will be eligible to get an Experience Letter on the successful completion of your internship.

You will be earning monthly stipend of Rs. 3000/- during the internship period and additional petrol allowance shall be provided to you. Company reserves the right to withhold a partial amount if your efforts put-in are not upto the mark or found with any misconduct within the said time period.

Contractual agreement / Placement offer shall be conceded only after successful completion of initial internship. Placement offer shall depend on your performance and effort that has been put-in by you and shall be given the package as company deems fit for you. As per company policy, 1 month prior notice should be given by you, in-case of you are intending to leave the company. This offer letter do not carry any validity unless you are not completing the internship tenure and subsequently getting 'Internship Completion certificate' from the company.

Being a startup company, Company will work for 6 days a week and you are required to work for atleast 8 hours per day to finish your targets as set by the Marketing Manager.

Your date of Joining shall be from **16<sup>th</sup> August 2022**.

You are required to accept this internship offer letter by submitting joining letter.

Congratulations and welcome to the team!

Designated Partner  
 Assist Me Solution LLP  
 ASSIST ME SOLUTIONS LLP  
 LLP Identification No. AAV-716  
 PL. NO. 2, PRITI SOCIETY  
 HAJARI PAHAD, NAGPUR-441002.

Principal  
 J D College of Engineering & Management  
 Khandala, Katol Road  
 Nagpur-441501





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2. Fostering conducive atmosphere for research and development through well-equipped laboratories and qualified personnel in collaboration with global organizations.



**R. K. MAKHIJA & Co.**

**CHARTERED ACCOUNTANTS**

Email: [cmkassociateswarud@gmail.com](mailto:cmkassociateswarud@gmail.com)

On Board: +91 7229 234405.

Cell No. : +91 9403114600.

**CERTIFICATE**

It is to certify that Mr. AMAR B. BODHALE S/o. SHRI BHAURAOJI S. BODHALE was working as MBA Intern with us M/s. R.K. MAKHIJA & CO. Chartered Accountant as Audit clerk from period 10<sup>th</sup> SEPTEMBER 2022 to 29<sup>TH</sup> OCTOBER 2022 as per the firm's employment record.

During his employment Mr. AMAR BHAURAOJI BODHALE has pursued knowledge & experience in field of Audit/Accounting /Goods & Services Tax (GST) etc. from our organization.

During his employment we found has to be Professional, knowledgeable and result oriented with theoretical & practical understanding of work requirements.

He is friendly & having good sense of humor and works well as individual or member of a team as required by management.

Overall Mr. AMAR BHAURAOJI BODHALE performed his duties and responsibilities cheerfully with attention to detail at all times. With his enthusiasm to work, learn and progress, I am certain that he would make a great employee to any enterprise.

We wish him all success in his future.

Date:-12/12/2022

Place :- Warud

**Principal**

JD College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501



For,  
R.K. MAKHIJA & CO.  
CHARTERED ACCOUNTANT

CA. ROSHAN K. MAKHIJA.  
(Proprietor)  
Membership No. 169310.





**JAIDEV EDUCATION SOCIETY'S  
JD COLLEGE OF ENGINEERING AND MANAGEMENT  
KATOL ROAD, NAGPUR**

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Education to Eternity

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2. Fostering conducive atmosphere for research and development through well-equipped laboratories and qualified personnel in collaboration with global organizations.



**Date: - 04<sup>th</sup> Nov, 2022**

**TO WHOM SO EVER IT MAY CONCERN**

This is to certify that Ms. Tejaswini Hatwar has completed her project internship with us during 19<sup>th</sup> Sep, 2022 and 04<sup>th</sup> Nov 2022 in "Finance" Department.

This certificate is issued to her to complete Academic Project formalities with her college.

For TATA Advanced Systems Limited,

*Sachin*



**Sachin Sovani  
Senior Engineer – HR**

*All the best  
Pavani  
4/11/22*

**TATA ADVANCED SYSTEMS LIMITED**

Corporate Identification No. (CIN) U72900TG2006PLC077939  
Nagpur Works, Sector - 10 MIHAN SEZ Nagpur - 441108 Phone No. +91-0712-6662888  
Registered Office:- Hardware Park, Plot No. 21, SY No 1/1, Imrat Kancha, Raviryala Village,  
Maheshwaram Mandal, Hyderabad - 501218, Telangana District  
Website: [www.tataadvancedsystems.com](http://www.tataadvancedsystems.com)

*[Signature]*

**Internship In- charge**

*Pavani*

**Academic Coordinator**

*Usharje*

**HOD- MBA**

*[Signature]*

**Principal**

**JD College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501**

**Head  
Dept. of Management Studies (MBA)  
JD College of Engineering & Management  
Nagpur**





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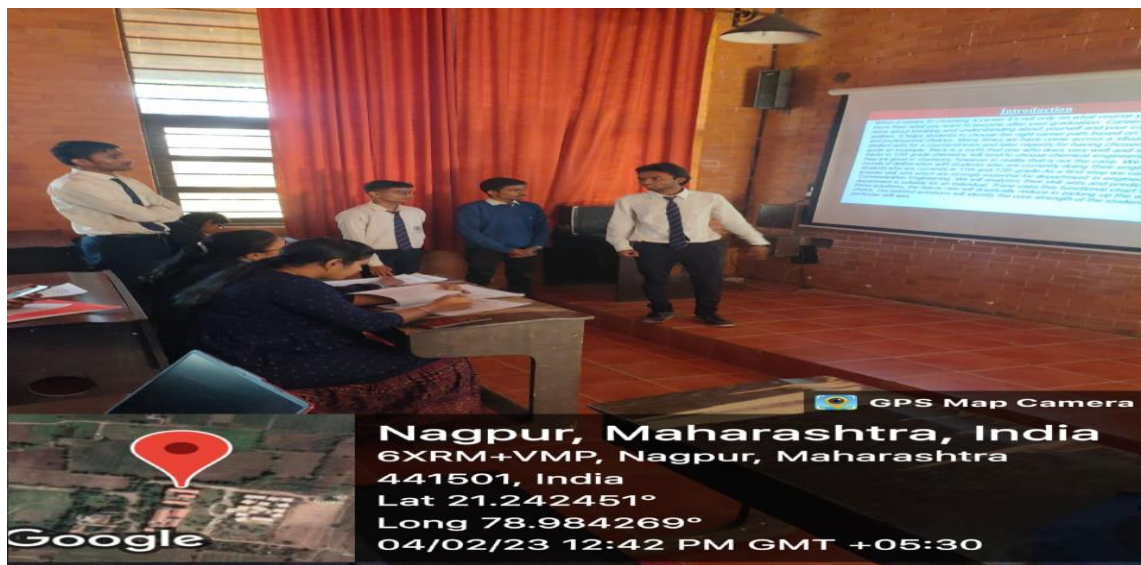
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3. To promote research and development with current techniques through well qualified resources in the area of computer science and wireless engineering.


**CSE Student Presentation Photo 2022-23**



2022-23 CSE Presentation Photo



2022-23 CSE Presentation Photo

  
Prof. Supriya Sawwashire  
HOD. CSE  
HOD  
Computer Science & Engineering  
JDCEM, Nagpur



  
Principal  
J D College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501



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### AI Student Presentation Photo 2022-23



2022-23 AI Presentation Photo



2022-23 AI Presentation Photo

  
Prof. Supriya Sawwashere  
HOD AI  
HOD  
Artificial Intelligence  
JDCEM, Nagpur



  
Principal  
JD College of Engineering & Management  
Khandala, Katol Road  
Nagpur-441501