



**ANAND**  
INTERNATIONAL COLLEGE  
OF ENGINEERING

June 2021 An Anand-ICE Publication

# Anand

## ENGINEERING ERA

TECHNICAL MAGAZINE



REAP Code 124

Volume 1, Issue 1  
ISBN 978-81-9539-962-8

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## **Vision**

“Be Acknowledged Globally for Value based Education & Innovation in Service of Humankind”

## **Mission**

“To Achieve and sustain excellence in teaching, research and enrich local, national and international communities through our research, skills of alumni and published academic educational materials”

## **About Anand-ICE**

Anand International College of Engineering (Anand-ICE), approved by AICTE, is amongst the premier RTU affiliated colleges in Jaipur established in the year 2010. Since its inception, the institute persists its credentials of joyous teaching-learning environs of global standards and offers B-Tech Degree programs in Civil Engineering, Computer Science Engineering, Electrical Engineering, Computer Science and Engineering (Artificial Intelligence), and Mechanical Engineering. The Institute nurtures intellectually inspiring Academic Environment with world-class infrastructure, state-of-the-art laboratories, and a lush green landscaped campus.

The Anand-ICE distinguishes its lineaments and comes out as a quality-learning place that has placed it among the best-emerging engineering institutions of India (The Times of India). Being the AICTE approved engineering college; Anand-ICE family comprises eminent academicians & scientists as faculty who also extend Academic parenting to the students. The family further broadens its intellectual arena by bringing internationally renowned professionals on board for achieving a higher mark of academic intelligence.

The institute has adopted innovative pedagogies including project/ research-based learning while facilitating students to not only deeply understand the fundamentals of engineering sciences but also train to obtain sustainable solutions of real-life problems. Further, the curriculum is furnished with intensive industrial training & practices, corporate learning and life skills, with a step ahead to what regular AICTE approved engineering colleges in Jaipur offer.

Additionally, the Anand-ICE has employed a unique feature of empowering students for making them compete globally. Within a short period, the institute has built strategic partnerships with various renowned foreign universities of USA, UK, Italy, Turkey, Russia and Thailand for Students' Summer Training on Scholarship. The institute also encourages the students to incubate their innovative concepts to foster new ventures through the Anand Incubation Centre.

Further achieving a higher mark of excellence, the Anand-ICE has an association with reputed Research/ Training Institutes/Industries and draws all possible benefits from their expertise on quality hands-on-learning for enabling students to excel in their careers because studying in AICTE approved colleges is alone not enough for a propitious career.

The campus enriches students with a diverse range of competencies and gears them up to respond to the challenges of every aspect of life and compete globally. The success of our students in the wider world itself speaks for them.

**FROM THE OFFICE OF  
THE CHAIRMAN**

The First Edition of “Anand Engineering Era” is out and it is a landmark in the 10 year run of the college. I would like to reiterate the commitment of everyone who made this journey such a valued and fruitful one. The most spectacular part has been the herculean effort made by all who have contributed to the tallest as well as the most basic jobs at this institution.

The smallest trifles have been the biggest things that we have achieved here as a team. My heart reaches out to the exceptional commitment of the college students who have made Anand-ICE an Educational destination in not only Rajasthan but the entire country.

We are a name to reckon with today. Our reputation surpasses boundaries and spills over into distant lands. A mere 5 batches of students who have graduated from the college since inception in 2010 have made us proud nationally and globally and have managed to carve a niche for us. God Bless them!!!

I would once more like to thank all for the subtle support and care that they have given to nurture this wonderful institution. All my wishes to the Editorial team for doing such a commendable job.

**Manoj Mittal**

**FROM THE OFFICE OF  
THE VICE CHAIRPERSON**

My sincerest congratulations on the launch of our magazine “Anand Engineering Era”. This magazine signifies a milestone in the life of Anand International College of Engineering. We have been working on many ends for quite some time now and this initiative would prove to be a mirror of all those efforts that need to be highlighted and published. I would personally like to approve of the tremendous efforts of the faculty and students who have made this possible.

This Bi-yearly publication will enhance the way our students and people perceive Anand-ICE.

Looking forward to reading and contributing to this classic effort.

**Monika Mittal**

**FROM THE OFFICE OF  
THE PRINCIPAL**

“Anand Engineering Era” was a personal interest as Anand-ICE desperately wanted a publication that would eventually highlight its smallest achievements and talk about its vision for the future. This magazine is bound to attract talent from all sides. The campus wanted a platform for all its technical and cultural activities to be reported and this is exactly what Anand Engineering Era will achieve.

My personal gratitude to all the people concerned and to their sincere efforts in making this publication a reality.

**Prof. (Dr.) Vijay K. Sharma**

**FROM THE OFFICE OF  
THE VICE PRINCIPAL**

“Grande reussite” It gives me immense pleasure to label our magazine a great achievement primarily because of the efforts that have gone into it. Anand Engineering Era have been phenomenally conceived and brought out. The passion that has gone into both of them is an indication of how talent needs conviction and a great platform. I personally would like to wish the editorial team as well as writers who have contributed to this publication and made it so worth reading.

**Prof. (Dr.) Praveen Agarwal**

**~Editors in Chief~**

Ms. Monika Mittal  
Vice-Chairperson, Anand-ICE

Prof. Vijay K Sharma  
Principal, Anand-ICE

Prof. Praveen Agarwal  
Vice-Principal, Anand-ICE

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## **Anand Engineering Era**

ISBN Number: 978-81-953996-2-8

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Published by:

Anand International College of Engineering  
Near Kanota, Agra Road, Jaipur - 303012 (Raj.)

## **Civil Engineering**

With rapid urbanization in India, the construction space is now looking at cutting edge technology solutions such as [artificial intelligence](#), cloud computing and robotics among others. The technology has changed the complete scenario in the construction sector.

Some of the highlights in this regard are mentioned below:

### **Delhi-Based Trace-Cost:**

A start-up which has developed a cloud-based project management automation suite for the construction industry in India. The usage of mobile application for efficiency in work allocation, team collaboration on projects, and monitor team performances. Trace-cost uses technology to predict the outcomes of projects, such as the planned start and end date of various phases of the project.

### **Smart Devices:**

Technologies such as robotics, the internet of things (IoT), data analytics, are being hugely adopted by the construction equipment manufacturers today. Smart devices, along with machine embedded sensors used in construction equipment management software have improved the building progress and real-time status reporting. Such integration provided important data that can be examined after handover to become a part of operational management.

### **Building Information Modeling (BIM):**

The technology comprises the development of accurate and detailed 3D structural models for better visualization of a project. These models test the constructability of a building in advance to make sure that errors and wastage is minimised. It thus reduces the risk of a project going off-budget or off-schedule.

### **Deploying Drones:**

Drones are used during various phases of a construction project. In project planning, it is challenging to obtain accurate information for the site and its surroundings. The use of drones helped to capture aerial photos and video to improve safety and logistics plans for vehicles and pedestrians, thus to minimize disruption near the project site. Drones provide real-time information for team members to track, monitor, and evaluate the site's changing environment.

### **Prefabricating Projects:**

Off-site fabrication principle minimized and eliminated the wastes for proper implementation on a construction project. In addition to maximizing resources and reducing costs, all factors have led to the rise of prefabrication during the post-Recession. Prefabrication plays a significant role in safety by diminishing the risk of injury.

### **Automated Building Intelligence:**

The use of automated building intelligence makes systems, operations, and data analytics smarter. Automating a building provides substantial benefits from the perspective of labor and time savings. Building Automation System is integrated with machine-to-machine platform technology for advanced data acquisition and analysis.

### **Advanced Materials:**

Concrete automatically heals itself after breaking. Permeable concrete holds rainwater and prevents floods. Graphene, a material, is 100 times stronger than steel. Plant-based insulation materials are non-toxic and sustainable.

## **Computer Science & Engineering**

### **Big Data Utilities:**

Big Data refers to a massive quantity of data that continue to grow exponentially with time. Because of such massive data and its complexity, it is not convenient to store and process Big data with traditional data management tools.

According to Gartner, the definition of Big Data –

**“Big data is high volume, velocity, and variety information assets that demand cost-effective, innovative forms of information processing for enhanced insight and decision making.”**

Big data engineering is area related to a bunch of sequential jobs or



tasks that help organizations to collect data from a number of sources like internet, sensors etc, and analyze to ready it for further use such as Data Science Solutions, AI and Business Analytics, etc. It enables organizations and their employee with clean and quality data on which they can trust, so that organizations get deep insights to drive better actions.

Big Data is currently used by many industries and still expanding its application to more industries. This is the reason for increased demand of skilled engineers who can work with such massive data for big companies. Companies like Accenture, Cognizant, Flipkart, Deloitte, Snapdeal, Amdocs, MuSigma offers attractive salaries to big data professionals.

### **Role of Image Processing:**

Computer Vision, which is a hottest topic in industry now days, is defined as ability of computers to automatically understand the Images and Videos. Almost all the latest technologies like face detection, Smart car driving system, biometric systems and Smart Traffic Light system are relay on the computer vision.

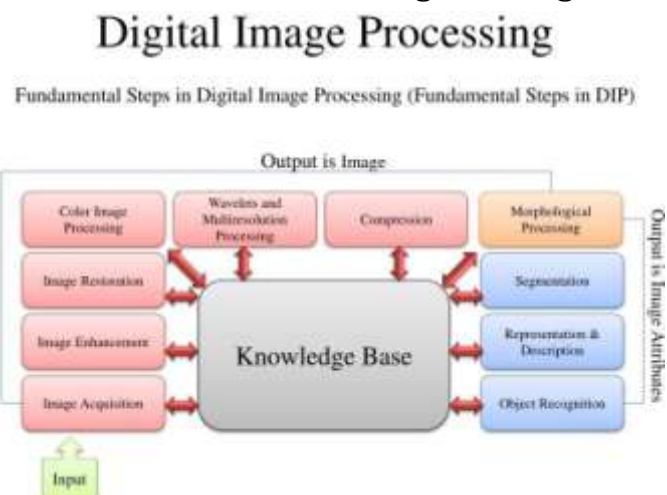
Computer Vision is all about processing of images, so the term Image Processing can be used in place of Computer vision as well. In image processing, a Digital Image is used to analysis and to perform multiple operations.

A digital image processing can be done as two types:

- 1) Analog Image Processing
- 2) Digital image Processing

Analog images can be handled with the electrical means while digital images are handles by a digital scanner digitizer and represented as the set of pixel. Pixel is a point of the image which contains intensity or grayscale value or RGB content for that particular position.

To perform the image processing there are some fundamental steps, which are:



### Techniques of Image Processing:

- A. Image representation
- B. Image preprocessing
- C. Image upgrade
- D. Image rebuilding
- E. Image investigation
- F. Image reproduction
- G. Image information pressure

### Applications of Image Processing:

There are so many day today applications in which Image processing is used, some of them are:

- Medical Image Retrieval
- Traffic Sensing Technologies
- Image Reconstruction
- Face Detection

### Role of Image Processing in Research

Digital Image Processing is most important topic in today's scenario as the necessity of Digital Image Processing can be classify in two application areas: first is for the improvement of pictorial information for human interpretation and another one is for the machine perception of a scene data. There are many advanced applications of image processing which includes remote sensing, image and data storage for transmission in business applications, medical imaging, acoustic imaging, Forensic sciences and industrial automation. Images acquired by satellites are useful in tracking of earth resources, geographical mapping, and prediction of agricultural crops, urban population, weather forecasting, flood and fire control. Space imaging applications include recognition and analyzing of objects contained in images obtained from deep space-probe missions. There are also medical applications such as processing of X-Rays, Ultrasonic scanning, Electron micrographs, Magnetic Resonance Imaging, Nuclear Magnetic Resonance.

## **Electrical Engineering**

The electrical engineering is a big thing in the field of engineering. There are so many research and development work going on to generate electrical power, to store and utilize the electrical energy. The time has gone when electrical engineering was just all about big machines, transformers and power plants, as with the emerge of new technologies this branch has shown some amazing changes. Therefore, here are some cutting-edge technologies you should watch out in upcoming years.

### **Electrical Vehicles:**

In this era where people are so much interested to adopt new technologies, electrical vehicles are the next big change in the automobile industries. If we read the articles and predictions of experts, it says that by 2030 the roads will be occupied with over 125 million electric vehicles. This figure can be higher by seeing the EV manufacturers are putting their everything to this technology and working on to make better batteries, use of super capacitors, charging station, and involving solar power and other renewable sources of energy to the electric vehicles.

Tesla already set a benchmark and shown the world that electric vehicles are going to stay for long and will bring a change to upcoming era of technology.

### **Artificial Intelligence:**

Artificial intelligence is the future and this is the well-known fact, as it is already accepted technology many industries using AI technology to compete with the others. Artificial intelligence and electrical engineering can be combined and can make it better in future. As electrical engineering deals with heavy machines and drives where controlling the machines is somewhat required the complex operations. With AI comes into picture it would be easy to control the operations.

Apart from this AI can help electrical engineers with image processing that can improve the machines operation more reliable and error free as the AI algorithms are so useful for the machines to detect the unhealthy conditions and faults. Application of AI and neural networks in operation and control of a vast network of generation, transmission and distribution is well established and is continuously growing with integration of non conventional sources of power generation.

### **Smart Grids:**

As time has changed, the consumers are not depended on a single company for electrical power, due to multiple options available. Now industries are using solar power to save the electrical energy and it has reduced their electrical bills too.

Smart Grid is also adding many benefit to the industries and power system. Smart Grid gathers important data, which gives access to both consumer as well as suppliers. In this way, it becomes easy to control over multiple power sources. Smart grid can also detect a future outcome that makes the system more efficient and reliable.

Smart grid provides end-to-end communication in between power plants, distribution sites, and to the users end and this makes the system more connected and provide backup if one unit fails during the time of operation.

### **Electronics and Communication Engineering**

The school includes various aspects of modern life like – Computers, robotics Internet, Digital television, satellites system Security system and automation. We provides the student a holistic and pragmatic view of present scenario of the electronics and communication industry and equip them with the concepts and theories that will shapes the future of the industry.

The School has been further strengthened by laboratories like Embedded system lab, electronics workshop lab, Electronics lab, Digital electronics lab, Electronics design lab, Analog digital communication lab, Wireless Communication Lab.

### **Information & Communication Technology:**

Information & Communication Technology encompasses unified Communication and integration of telecommunication (Telephone Lines and wireless signals) as well as necessary enterprise software, middleware, storages, and audio–visual system, which enables user to access, store transmit, and manipulate information.

The core modules include Analog Communication, Digital Communication, Optical Communication, Wireless communication, Electronics Devices and Circuit, Digital Electronics, Microprocessor, Signal and System, Digital Image Processing.

### **Robotics & Embedded System:**

Embedded System is a re-programmable, multifunctional manipulator designed to move materials, parts, tools, or specialized devices through various programmed motion for the performances of a Variety of tasks performed in robotics and the system in which dedicated purpose of software is embedded into a hardware design. As name suggests embedded is a combinations of hardware and software system which is designed to perform a specific tasks.

Robotics engineers use computer aided design and drafting (CADD) and computer aided manufacturing (CAM) system to perform their task.

### **VLSI Design & Automations:**

VLSI system and design activities involves with designing and testing complex digital mixed-signal electronics system. Key applications include surveillance, Robotics, multimedia, and cloud computing that are optimized for power and reliability across the algorithm-architecture circuit levels.

For automation, PLC is a digital computer used for the automation of various electrometrical processes in industries. PLC consists of a microprocessor, which is programmed using the computer language.

## **Mechanical Engineering**

These new subject areas, which are the result of modern advancements, are prerequisites for several emerging and promising fields, including artificial intelligence, biomechatronics, and nanotechnology. Some of the areas where mechanical engineers are expected to be in high demand include:

### **Electric Vehicles:**

The transportation sector continues to generate the highest share in creating pollution, thus increasing pressures to use alternative sources of energy. This helped to fuel the rise of electric vehicles. While mechanical engineers have always been essential in the automotive industry, their role is crucial now more than ever.

Replacement of the traditional internal combustion engine with cleaner, battery-powered systems brings new challenges regarding torque and energy loss, and the design of mechatronics to support new Mechanical System.



### **Nano Engineering:**

Nanotechnology refers to the manipulation of materials at the smallest level. This rapidly growing field is one that offers abundant opportunities for mechanical engineers.

In the years ahead, mechanical engineers are expected to be integral in using nanotechnology to:

- Create stronger Composite Materials
- Develop superior Storage Devices.
- Create advance Bio Medical Equipments and Devices.

### **Biomechatronics:**

The role of mechanical engineers in robotics is taken a step even further with the rapid growth of biomechatronics. This field, which seeks to merge body and machine, involves the design and testing of complex and intricate device architectures that mimic the body's musculoskeletal design. .

### **Manufacturing:**

Manufacturing is an ever-evolving field. Mounting pressures to increase production efficiency while minimizing operating costs have fueled demand for new and innovative technologies.

### **Automation and Robotics:**

This is an area in which mechanical engineers are crucial and continue to be essential in helping manufacturing industries keep up with consumer demand while maximizing profit. Mechanical engineers will be primarily involved in the design of mechanical sensors, controllers, and actuators for biomedical devices.

## BEST PROJECTS

### Brickarp

The concept behind the “BRICKARP” is the construction of affordable houses using plastic waste. The project was carried by our students in collaboration with an American-based construction company “TICO ARQUITECTURA” at COSTA RICA. The blocks are lightweight, modular and can easily be coupled; also they do not require skilled labor. This system seeks to offer an alternative future for the manufacture of structural and non-structural elements for the construction of architectural projects, by generating a construction system integrated with light elements, Modular resistant, allowing quick installations, safe and inexpensive.



### Portable Bio-Digester

The project aims to convert the organic waste (from kitchen like vegetables, fruit peels and wasted food) into biogas which can be used for cooking. It is portable therefore can be set up in a very small space. By product from this digester can be used as fertilizer for gardening. It is 100% eco-friendly and economical. The design parameters are checked and the gas was collected. No expert supervision is needed therefore can be effectively used anywhere (city or rural areas) by a small family.



## **Utilization of corncob ash blended with flyash and Alccofine in concrete as substitute of the fine aggregates**

This is the latest research area where corncob ash is utilized as the substitute for fine aggregates. The project aims to completely remove the fine aggregates from the concrete. Different Mix designs were carried out using the substitutes like flyash, Alccofine and corncob ash for fine aggregates. The project aims to provide sustainable material by utilizing the agricultural waste in concrete and replacing the most renewable resource - sand from the concrete.



## **Partial Replacement Of Bitumen In Bituminous Concrete By Low Density Polyethylene [LDPE]**

The project aims to design bituminous pavement using plastic waste and the concept can bring a new innovation in the field of transportation engineering. The Bitumen was replaced from bituminous concrete, which is usually used nowadays with Low Density Polyethylene [LDPE]. The Bitumen was replaced in Bituminous Concrete by 4% and 8% by its weight. When Waste Plastic is mixed with bitumen it increases its Water Resistivity, Capacity and Stability. Marshal Stability Test is considered to stimulate with field condition. Flow and Stability of the mix increase after incorporating waste plastic.



### Smart Thermal Insulating Home



The project focused on creating an economical and thermally insulated brick which can be used at places with high temperature. Ordinary bricks are made up of clay which does not insulate the sufficient amount of heat. The temperature variance from outside the building is very less. Thus the project

focused to develop the brick with the help of clay, fly ash, sawdust and eggshell powder. The different proportions of these major ingredients were analyzed and the best proportion found out was - Clay - 60 percent, Eggshell powder - 20 percent, Saw dust - 10 percent.



## **Project Based Learning**

**Project Based Learning** is a **teaching** method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge. On the same theme students are involved in real world problem solving

### **Intelligent Voice Activated Google Assistant Based Home Automation Using IOT**

Outcomes: This project aims to implement a voice controlled home automation system using a WI-FI and IOT, which is being remotely controlled and monitored by any Android OS smart phone. The system is implemented using ordinary household appliances. Typical language voice headings are given to the Google Assistant and with the assistance of IF-TTT application and the Adafruit application the direction are decoded and after that sent to the microcontroller, the microcontroller thusly controls the trades related with it as required, turning the device related with the particular relay On or OFF as shown by the clients mentioning to the Google Assistant. The microcontroller utilized is NodeMCU and the communication between the microcontroller and the application is established via Wi-Fi (Internet).

Team:- Nidhi Vashistha

### **Digital Recognition**

Outcomes:- The main objective for our system was to recognize isolated Arabic digits exist in different applications. For example, different users had their own handwriting styles where here the main challenge falls to let computer system understand these different handwriting styles and recognize them as standard writing.

Team :- Ashish Giri Goswami, Dhanraj Yadav, Prateek Gurjar, Devanshu Sharma

## **Intelligent Emergency Management Systems**

Outcomes : Communication during disaster time is very crucial for both rescue team and victim. Emergency never comes with prior intimation. The System is intended to function in case of emergencies in society. The emergencies include Fire, Medical Emergencies, accident and External Emergencies (Earthquake, Floods, Storm). In this paper we present Emergency Management System (EMS), which enables smart phone based ad-hoc communications at disaster times over Wi-Fi. The person in an emergency or anybody at the emergency site will call the EMS at avail service. Location Coordinates are sending on each request. The system works on the principles of client-Server system, wherein the server responds to the requests of the Clients. We have Implemented the EMS Client Application, Rescue Application and Server. The Client and Rescue Application was Implemented as an Android Application. The Sever is implemented as a Web Based Java Application. We tested the System using several real Android Phones with GPS on phone, clients communicating over Wi-Fi.

Team:- Akshita Audichya, Digvijay Singh, Vikas Sharma, Tapan Vijayvergiya

## **Terrorism Detection From Social Media**

Outcomes:- Social media are widely used among terrorists to communicate and disseminate their activities. User-to-user interaction (e.g. mentions, follows) leads to the formation of complex networks, with topology that reveals key-players and key-communities in the terrorism domain. Both the administrators of social media platforms and Law Enforcement Agencies seek to identify not only single users but groups of terrorism-related users so that they can reduce the impact of their information exchange efforts. To this end, we propose a novel framework that combines community detection with key-player identification to retrieve communities of terrorism-related social media users.

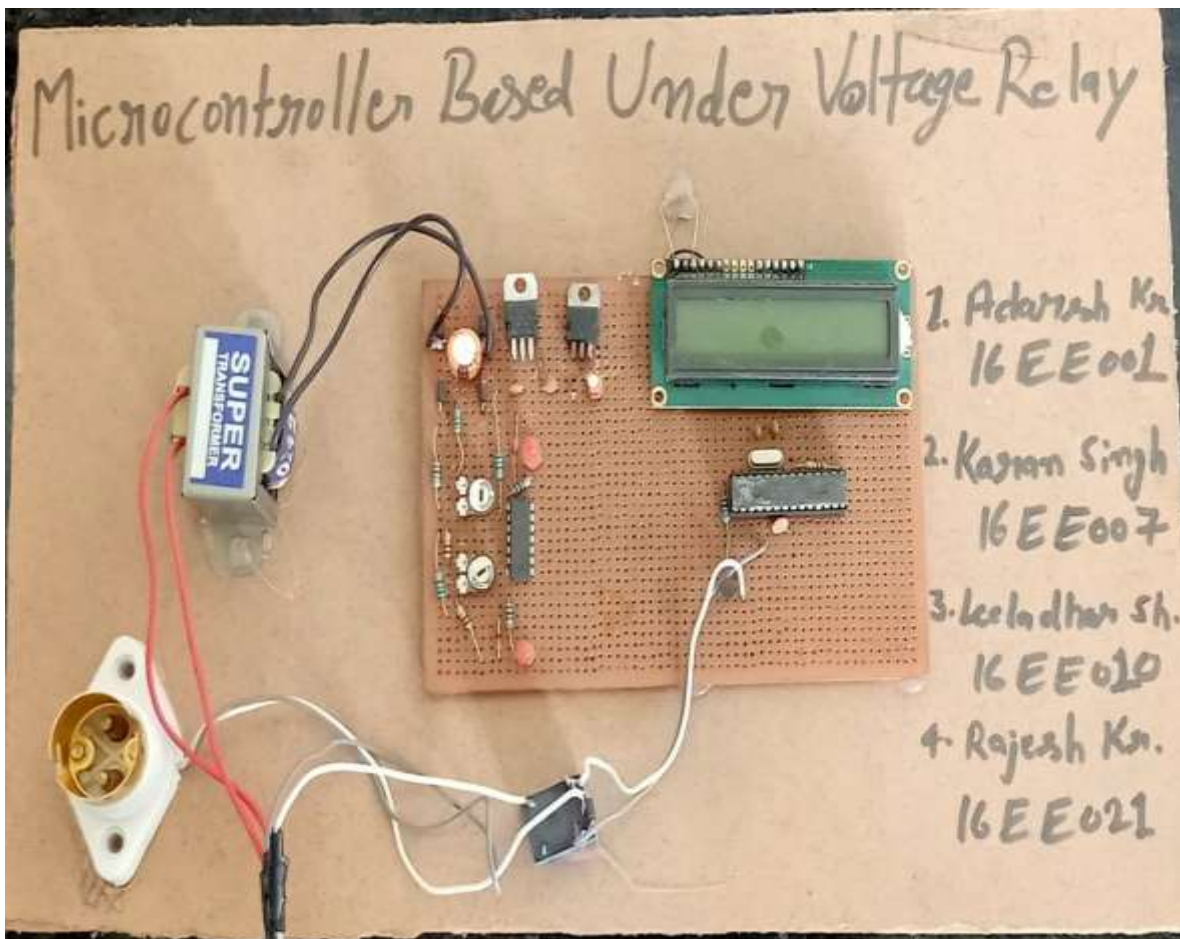
Team:- Anuj Pareek, Vishwaroop, Jiny jain, Manish Rawat

## Microcontroller Based Under Voltage Relay

This project included the concept of protection of power system. It is used to protect the alternator/generator/transformer winding from low voltage operation. Under voltage protection sense the phase to phase voltage of the generator/transformer using instrument transformer (Potential transformer). When the voltage drops below the rated voltage typically 85% (stage 2)-90% (stage 1) the under-voltage protection will be activated.

The project was completed under the guidance and supervision of Mr. Uttam Kumar Gupta & Mr. Ajit. The students involved are as follows:

Adarsh Kumar	(16EE001)
Karan Singh	(16EE003)
Leeladhar Sharma	(16EE010)
Rajesh Kumar	(16EE021)



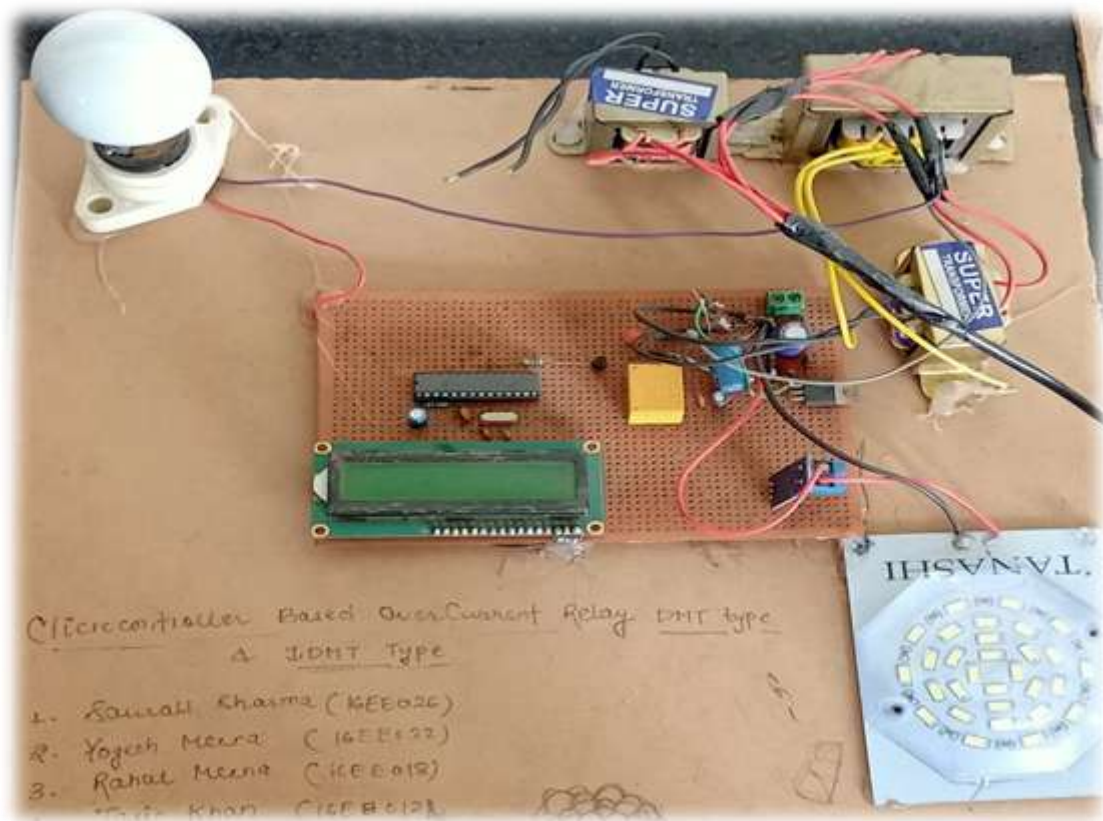
## Microcontroller Based Overcurrent Relay - Dmt Type & Idmt Type.

The project included the concept of power system protection in abnormal conditions. When normal current flows through this coil, the magnetic effect generated by the coil is not sufficient to move the moving element of the relay, as in this condition the restraining force is greater than deflecting force. But when the current through the coil increases, the magnetic effect increases, and after a certain level of current, the deflecting force generated by the magnetic effect of the coil, crosses the restraining force. As a result, the moving element starts moving to change the contact position in the relay.

It included relay, coils, PCBs, switches, Display, transformers, LEDs, microcontroller.

The project was completed under the guidance and supervision of Mr. Pramil Sinha & Mr. Ajit. The students involved are as follows:

Sourabh Sharma	(16EE026)
Yogesh Meena	(16EE032)
Rahul Meena	(16EE018)
Tasir Khan	(16EE012)





## **Robotic Arm**

The project included the conceptualization of a robotic arm and its development. This involved extensive coding, electrical and mechanical works. The robotic arm developed is capable of lifting a weight upto 10Kg with 360 degree rotation and three degrees of freedom.

The project was completed under the guidance and supervision of Mr. Anupam Agarwal. The students involved are as follows:

Koushal Joshi	(16EE009)
Bhawna Bairwa	(16EE003)
Roopali Sharma	(16EE024)
Mohit Bairwa	(16EE013)



## Smart Motor Starter

This project included the concept of controlling (On-off) of motor to irrigate the field by the help of GSM(mobile call/SMS). This project involved relay, ameter, voltmeter, PCBs, GSM module. It has a capacity of 3HP & operated on single-phase supply. It can operate through GSM system & also manually.

One can control the motor from far end in bad weather conditions & it can help to farmers in saving of time as well.

The project was completed under the guidance and supervision of Mr. Shubham Patwari & Mr. ManMahendra Singh. The students involved are as follows:

Rajendra Singh Rajpoot	(14EE042)
Prakash Choudhary	(14EE035)
Kalpita Choudhary	(14EE028)
Ravishankar Kamdar	(14EE048)



## Solar Based Mobile Charger

The project was based on the concept of harnessing solar power for useful purpose & in this project by the help of solar plate electricity gets generated & by the help cables it is taken at output port for the charging of mobiles. This involved PCB, charging circuit, multimeters to show the different electrical parameters. By customizing this project, it can be used in remote areas for mobile charging purpose.

The project was completed under the guidance and supervision of Mr. P.K. Yadav. The students involved are as follows:

Kailash Nath Sahu	(15EE013)
Keshav Rathor	(15EE014)
Krishan Mahawar	(15EE015)
Narendra Jangid	(15EE022)



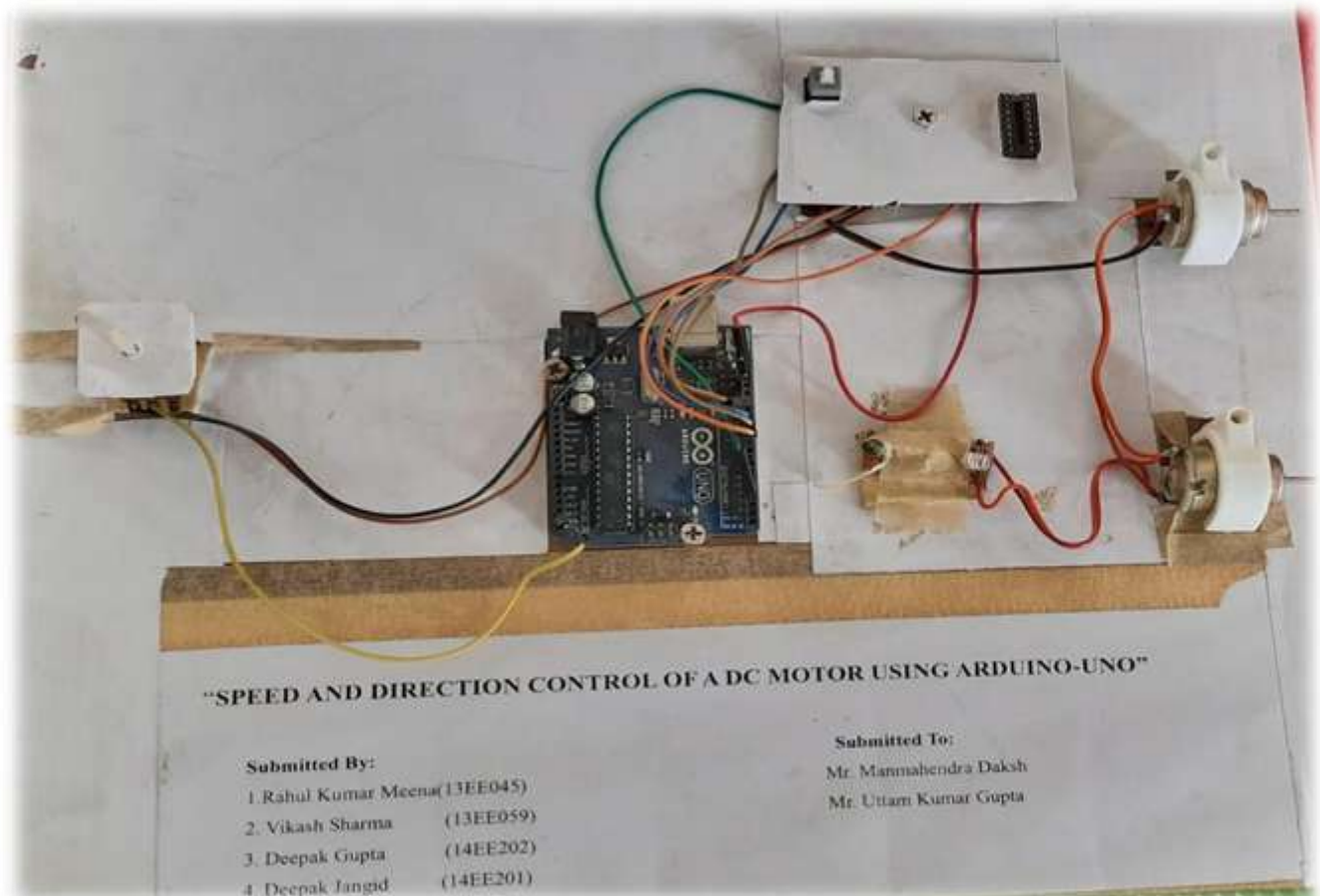
## **Speed and Direction Control of DC Motor using Aurdino-uno**

This project included the concept of speed controlling of DC motor with direction using aurdino-uno module that can help to make the electrical vehicle economical. This project involved extensive coding , Switch, LEDs, Aurdino, dc motors.

It can also be used in smart toys to provide them controlling in terms of speed and direction.

The project was completed under the guidance and supervision of Mr. ManMahendra Singh & Mr. Uttam Kumar Gupta. The students involved are as follows:

Rahul Kumar Meena	(13EE045)
Vikash Sharma	(13EE059)
Deepak Gupta	(14EE0202)
Deepak Jangid	(14EE0201)



## **Medicine Dispatch System**

It is a challenge to dispatch Emergency Medical Services (EMS) appropriately with limited resources and maintaining patient safety; this requires accurate dispatching systems. Some of the benefits of using automated systems include being able to store more stock and faster, more efficient picking of prescriptions. Because the process is automated, requiring only a pharmacist to make the final check, using a pharmacy robot can reduce the number of dispensing errors, with some NHS Trusts reporting an up to a 50% reduction in dispensing errors.

This system uses RFID technology to dispatch medicine. The RFID tag is given to a person by a doctor, in which the doctor feeds the medicine name along with the quantity of the medicine.

The goal of this system is to provide minimum interaction between unhealthy people and healthy people. This system can be implemented in locations where there is a lack of medical personal.



Student: - Vishal Singh Bais (16EC007)

## **Energy Theft Detection**

This project proposes the study the Electricity and Power Theft Detection which aims to detect any theft related to electricity. Electrical energy is very imperative and important for everyday life and acts as a spine for the industry. Electricity is in discipline to our daily life and plays an important role in every possible way and so with increasing need of electricity the corresponding power theft concerning electricity is also increasing .

Power theft is the biggest and major problem in recent times which leads to huge loss to electricity boards. It is very important to take this issue in to consideration and hence to resolve and to overcome these losses prices are increased. So if we can prevent this theft related to electricity then we can save lot of power which will in turn be very beneficial.

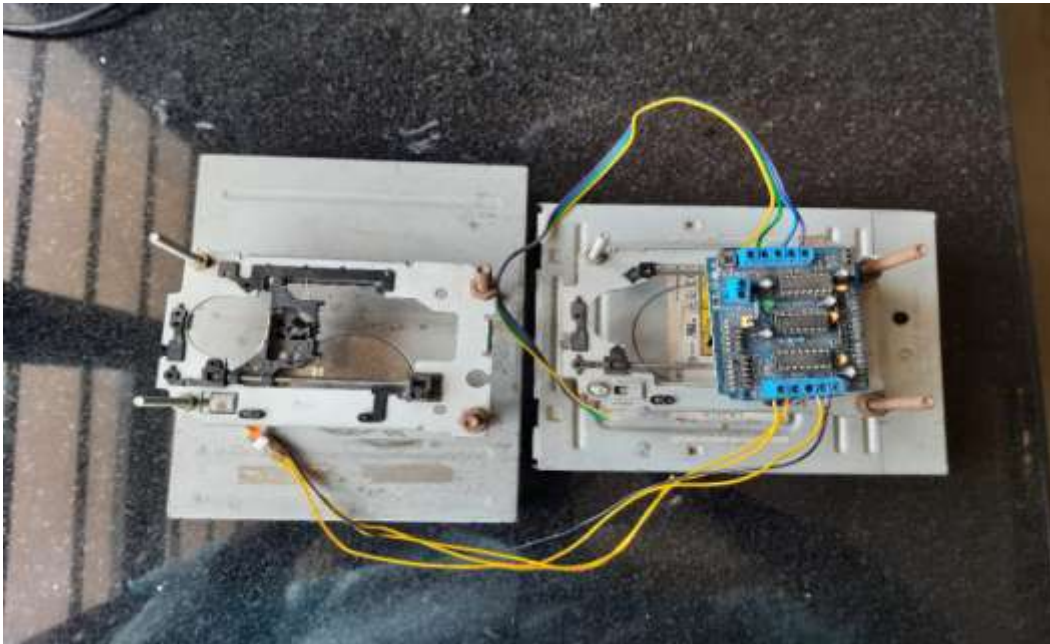
The normal practice for power theft is to short input output terminals or to place magnet on the wheel in case of old meters. So by sensing current flow through the line and energy feedback we can prevent it using circuit breaker. In this system a micro controller is interfaced with an energy metering circuit current sensing circuit, RF communication and a contactor to make or break power line.



Student: - Gaurvav Kumar Sain (15EC003), Girraj Prasad Sharma (15EC004)

## **Laser Engraving Machine**

A laser engraver engraves the upper most layer of the material and prints the things. Till now I have prepared the base of the model structure of the engraver. The base structure includes the movement of the X and Y axis according to the G-code of the image. Till now a pen was fixed on the axis and was allowed to move up and down with the help of the servo motor and now onwards the pen will be displaced by the laser of high power that could engrave the surface of the wood as pre-planned. The G-code can be generated by several software but I have used inscape for the generation of G-code and the simulation of the generated code could be seen on CA motics.



Student: - Shivam Sharma (16EC003)

## **Electronic Panic Alarm System**

Health issues are very common nowadays due to our lifestyle. In some of the conditions we can't even ourselves in that situation like a panic attack or something. In that situation if we need help we need an easier way to find help, this device does the same for us. In this paper we will discuss all about the device, how it works, what are the uses of it etc.

Student: - Rakshita Singhal (17EC002)

## Short Range Radar System

A rangefinder is a device that measures the distance from the target to the observer, for the purposes of surveying, determining focus in photography, or accurately aiming a weapon. In this technical project, we make a simple radar using the ultrasonic sensor, this radar works by measuring a range from 3cm to 40 cm as non-contact distance, with angle range between 15° and

165°.The movement of the sensor is controlled by using a small servo motor. Information received from the sensor will be used by “Processing Development Environment” software to illustrate the result on a PC screen. The main element used in this system is ultrasonic and its operation can be easily understood by the Fig. below.

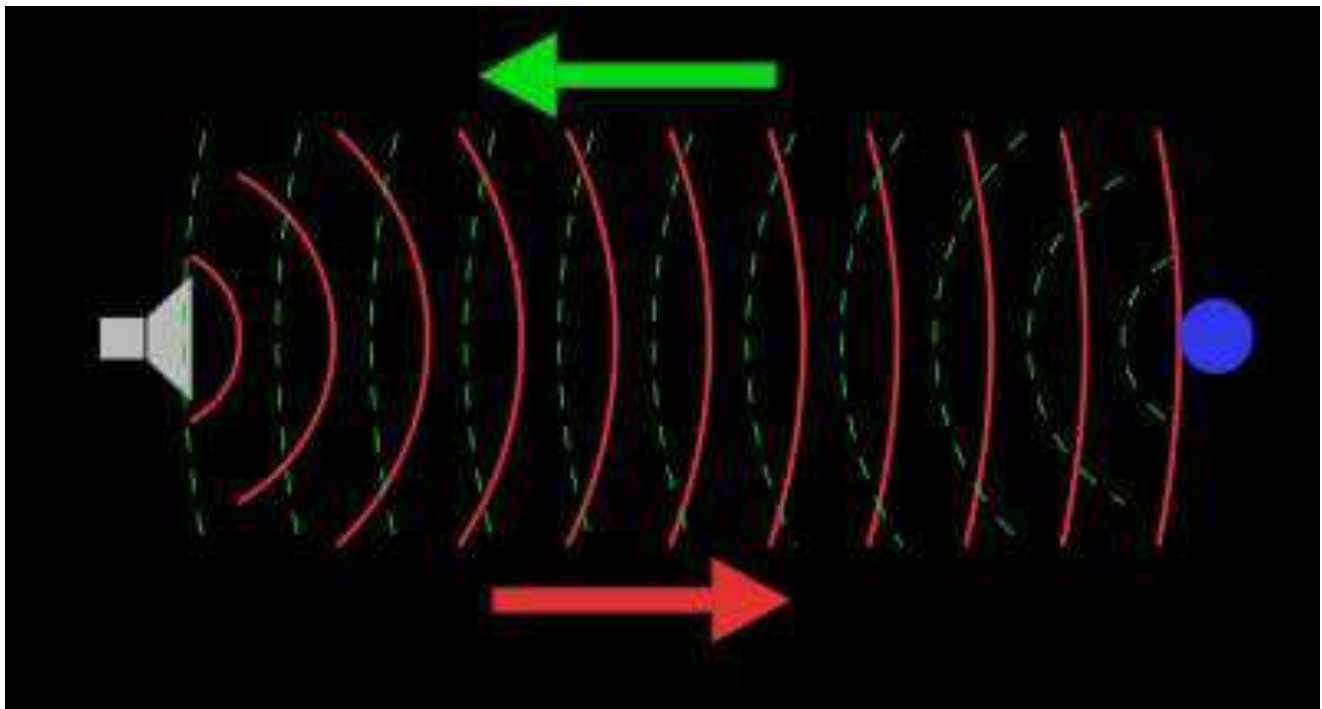


Fig. Radar Working

Today, RADAR (commonly termed radar) technologies are widely used in defense related activities, including air defense systems, anti-missile systems, marine monitoring, and others. Radar technology has also found various civilian uses, such as air and terrestrial traffic control, flight control systems, oceanographic studies, meteorological precipitation monitoring, and geological studies. A special class of



radars is small and short-range radar, which belong to the class of rail synthetic aperture radars (SARs). These radars also find use in modern vehicles in automatic cruise control, collision mitigation braking, and blind spot detection. The radar systems are different in theory and operation from conventional radars due to the associated short-range geometries. Short-range radios require wide bandwidths to achieve accurate range resolution, and they also suffer from wide target scenes, which increase clutter, thus needing coherent processing and detection algorithms. For greater accuracy, their data is generally fused with other sensors to reduce false alarm rates.

Student: - Preksha (15EC008)

### **Automated Thermal Screening Door**

Nowadays, everyone prefer thermal screening test to protect against corona, whenever you go inside the mall, multiplex, supermarkets, railway stations, airports, and various other places before granting access to the visitors. You need a human for that thermal screening test at the entrance, then this automatic door will not require that person, it will automatically go to thermal screening whenever, In this every human will have to bring his/her hand forward and put it in front of the sensor, then there will be display a temperature on the screen, then it will show the temperature under controlled or not. The MLX90614 is a high-performance Infrared Temperature Sensor that can be used to automatically make a temperature check-up and decide whether to grant the door access. The body temperature is under controlled when the door will open automatically it shows green light and the door will not open when the body temperature is out of range it shows red light.

Student: - Gajendra Singh Shekhawat (17EC001)

## HOVER BOARD

Hover board is a drive running on movement has been the students for purposes and carrying load attachment of drive is eco-safe to drive with controls for in to and fro and rotate at 360 point. It can be hospitals, malls organization and carried to for movement



two wheeled battery for purpose. It designed by surveillane also for with external pulley. This friendly and switch movements also can degree at a employed to and various can be easily anywhere purposes.



## **GOLF CART**

The concept behind the product is to design and manufacture an eco-friendly electrically driven, dynamically stable, safe, and ergonomically accessible multi-utility golf kart vehicle for general applications that may be easily accessible to the institutions, hospitals for loading purposes.



## **HUMANOID ROBOT**

This project is concerned with the development of a Humanoid robot which is built upon the Raspberry Pi platform and Python language. This robot uses wheels for mobility and utilizes the Raspberry Pi platform for its voice recognition competencies. It has been designed in order to interact with human beings and process their vocal commands. Use of Raspberry Pi and Python programming language also opens up avenues like gesture controlling, machine learning and artificial intelligence to be used in future developments. This is not a fixed structure rather it is equipped with proper mobility arrangements and sensors that secure it from driving into obstacles. Also, it utilizes DC motors in order to make use of batteries and has a power adapter to charge itself when needed.



## **3D PRINTER**



3D printing is called as desktop fabrication. It is a process of prototyping where by a structure is synthesized from a 3D model. The 3D model is stored in as a STL format and after that forwarded to a 3D printer. It can use a wide range of materials such as ABS,PLA, and composites as well. 3D

printing is a rapidly developing and cost optimized form of rapid prototyping. The 3D printer prints the CAD design layer by layer forming a real object. 3D printing process is derived from inkjet desktop printers in which multiple deposit jets and the printing material, layer by layer derived from the CAD 3D data.

## **ROBOTIC ARM**

Robots are increasingly being integrated into working tasks to replace humans specially to perform the repetitive task. In general, robotics can be divided into two areas, industrial and service robotics. International Federation of Robotics (IFR) defines a service robot as a robot which operates semi- or fully autonomously to perform services useful to the well-being of humans and equipment, excluding manufacturing operations. These robots are currently used in many fields of applications including office, military tasks, hospital operations, dangerous environment and agriculture.



## **STUDENTS ACHIEVEMENT**

<b>Devesh Meena</b> <b>Qualified IES</b> <b>(Indian Engineering Services - 2020)</b>	<b>Ankit Sharma</b> <b>IISC Bangalore</b> <b>Qualified GATE AIR-253</b>
<b>Rakesh Meena</b> <b>Qualified A.En. Exam</b> <b>(Nagar Nigam - 2020)</b>	<b>Rakesh Saini</b> <b>Qualified GATE - 2021</b>
<b>Akash Meena</b> <b>Qualified GATE - 2021</b>	<b>Vivek Meena</b> <b>Qualified GATE - 2020</b>
<b>Jatin Mahawar</b> <b>Prepared Project Electric Bike</b>	<b>Sahil Bafna</b> <b>IIT Madras</b> <b>Qualified GATE AIR-346</b>
<b>Yatharth Dashora</b> <b>Runner up in Mr. Rajasthan</b>	<b>Runner-up Position in</b> <b>Hackathon at Shankara Institute of</b> <b>Tech., Jaipur</b> <b>Jhivanshu Parasar</b> <b>Hemant Singh</b> <b>Ankit Gautam</b>

## STUDENTS CERTIFICATE & PAPER PUBLICATION



# POORNIMA

## COLLEGE OF ENGINEERING

ISI-6 RIICO Institutional Area, Sitapura, JAIPUR – 302022 (Rajasthan), INDIA  
Phone/Fax: 0141-2770790, 92 • Website: [www.pce.poornima.org](http://www.pce.poornima.org)

### IETE PROJECT COMPETITION

# “AAKAR EXPO 2K18”

MARCH 22, 2018

Organized by:

**Department of Electronics &  
Communication Engineering**  
Poornima College of Engineering  
Jaipur

Technically Supported by:



## Certificate

This is to certify that Mr./Ms. VISHAL SINGH BAI.....  
ANAND INTERNATIONAL COLLEGE  
from OF ENGINEERING, JAIPUR..... has participated/coordinated  
in “AAKAR EXPO-2K18” an IETE Project Competition. He/She has  
presented project entitled AQUAPRONICS.....  
.....He/She has secured 3<sup>rd</sup>..... position.



(Dr. GARIMA MATHUR)  
Head, ECE



(Dr. OM PRAKASH SHARMA)  
Director, PCE



(Dr. GHANSHYAM SINGH)  
Hony. Chairman, IETE, Jaipur

SAVE PAPERSAVE TREESREDUCE E-WASTE

Shivam Sharma & Vishal Singh Bais (Student II Year- ECE) project got Third position in AAKAR EXPO 2K18 Under IETE Project Competition organized by Poornima College of Engineering, Jaipur on March 22, 2018.



Vishal Singh Bais (Student Final Year- ECE) project got selected for Best Project in 7th National conference & Exhibition by Govt. College of Engineering, Jammu in collaboration with IIT, Kharagpur on April 23, 24 - 2021. This NEWS also published in Jammu's Newspaper.



Naman Sharma (Student Final Year- ECE) has participated and won First Place in DrisTI online Contest 2019, conducted on Aug 20, 2019 by Texas Instruments India University Program in association with EdGate Technologies Pvt Ltd.

**1. Research Paper Published: -**

**I. Paper Title - Automated Thermal Screening Door**

International Journal of Technical Research & Science

Journal ISSN No. 2454-2024 (Online)

Author – Gajendra Singh (College ID - 17EC001)

**II. Paper Title - Electronic Panic Alarm System**

International Journal of Technical Research & Science

Journal ISSN No. 2454-2024 (Online)

Author – Rakshita Singhal (College ID - 17EC002)

**III. Paper Title - Harmonics Mitigation Usinghybrid Filter**

Author – Vishal Yadav (College ID - 17EE056)

[vishalyadavhw9544@gmail.com](mailto:vishalyadavhw9544@gmail.com)

**IV. Paper Title - Bio-Mass Energy Present Scenario**

Author – Harshita Kumari (College ID - 18EE003)

Author – Kashish Sharma (College ID - 18EE004)

**2. Research Paper Presented in conference: -**

**I. Paper Title - Computerized Fuse Auto Changeover System WithRS485 Bus Reporting & Multiple IOT Cloud Connectivity Avenues**

(TIMES-iCON2018)

Author – Gaurav Kumar Sain (College ID - 15EC003)

Author – Girraj Prasad Sharma (College ID - 15EC004)

**II. Paper Title - A Hybrid Connectivity Oriented Telemedician System For Indian Landscape Using Raspberry Pi SBC & IOT**

(TIMES-iCON2018)

Author – Gaurav Kumar Sain (College ID - 15EC003)

Author – Girraj Prasad Sharma (College ID - 15EC004)

**III. Paper Title - Renewable Energy Sources – A Review**

Author – Vishal Yadav (College ID - 17EE056)

[vishalyadavhw9544@gmail.com](mailto:vishalyadavhw9544@gmail.com)

Author – Shubham Shahi (College ID - 17EE057)

[shahishubham50@gmail.com](mailto:shahishubham50@gmail.com)





Department of Civil Engineering organized an industrial visit to Bisalpur Dam on 08th Feb. 2020 for IV and VI semester students. The visit was organized with the prior permission from the Executive Engineer, Irrigation Dept. Bisalpur Dam. The students were benefited in terms of technical details provided by the organization.



Department of Civil Engineering organized “Project Exhibition’ on 16th Jan. 2020 for VIII semester students. The students had exhibited their project along with Presentation.



Project Proposal by the Students of Department of Civil Engineering was shortlisted for the Vishwakarma Awards – 2019 on the topic – “How to enhance the income of a village?”



Webinar on “Web Application Hacking ” is scheduled on Saturday, 26th September, 2020 that focusing on the hacking basics and how to overcome from the loop holes in the website application that are vulnerable for hackers.

Cyber Club Activity on “Google Hunt” is scheduled on Saturday 25th January ’2021. It was a contest in which students can have set of questions along with some clues. They need to search for answers using clues on Google to complete the whole puzzle of questions.

Seminar on “Cyber Crime Awareness” on Saturday 29th Sept’18. Faculty. The program imparted the knowledge to prepare for a counter-attack the hacking attacks. Also, the program helped us to know the network and source of the attack, which enables us to safeguard our data.

Five Days Online Workshop on "Software Testing" under the aegis of Rajasthan Technical University, Kota from 1st - 5th February, 2021. This workshop was covering the all the hands on practice on Software testing tools for students and faculties. More than 300 participants registered in this event



Industrial Tour to Chandigarh and Manali from 8th Sep 2019 to 13th Sep 2019. This tour gave the practical exposure to students that how working is going on in INTEX and WEP.

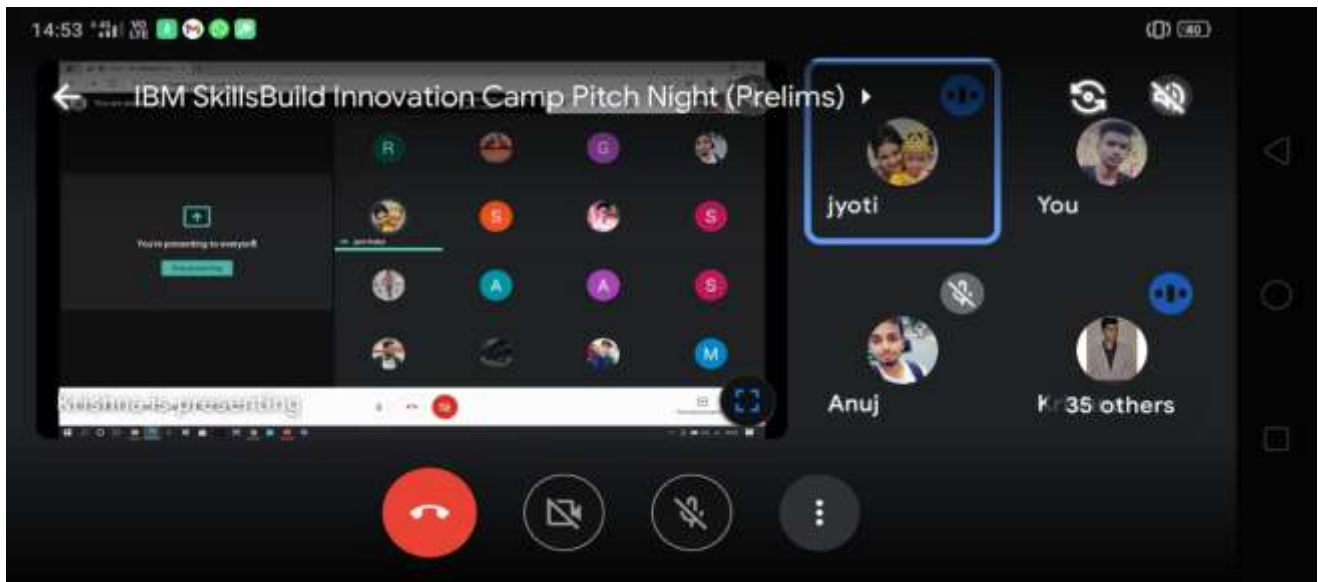


Industrial Visit At Dot Squares on 14-sep-2018 (Friday).This visit was very beneficial for students regarding knowledge for UNITY in game development.



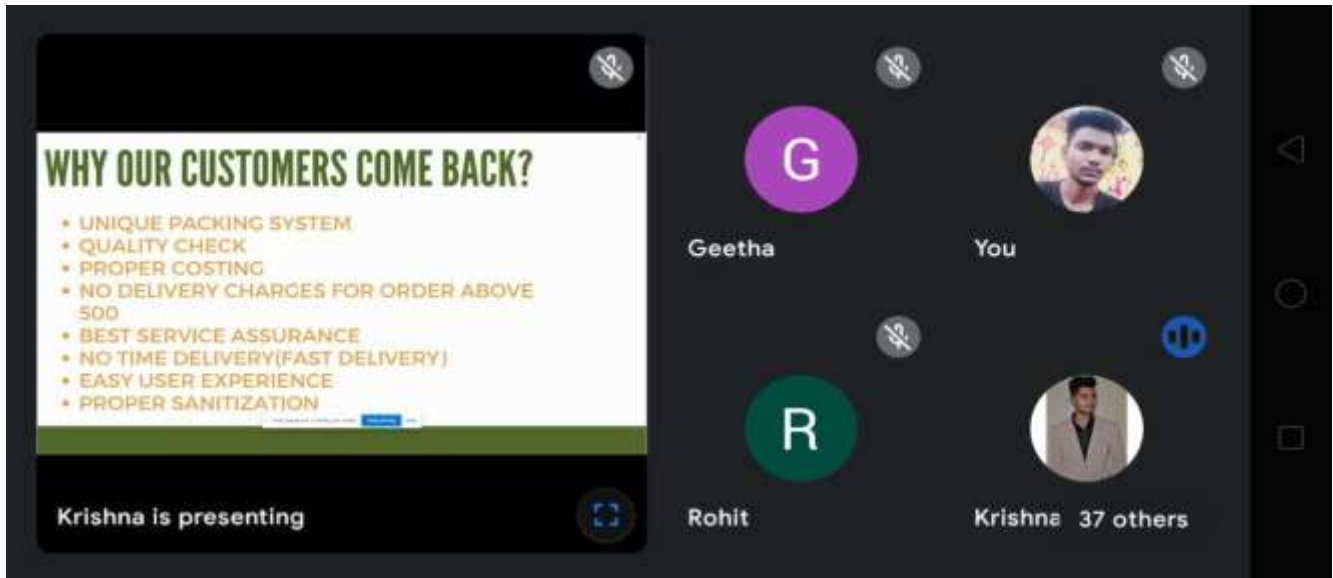
## IBM Skills Build Innovation Camp

The 6 weeks long journey of **IBM Skills Build Innovation Camp** was ended with an event called **Pitch Night** on **22<sup>nd</sup> May, 2021**. All the teams were presented their website on the basis of which they judged. Irrespective of how every website is, CsrBox appreciated the participation of each individual in the innovation camp and working proactively towards designing their own website. Students had a great learning experience at six weeks of Innovation Camp.



Innovation Camp comes with several benefits to career and future of all the participating students, which are as follows;

1. Every individual participated in the Innovation camp will receive **placement support** (for final year students) and **Internship assistance** (remaining year students) from our end.
2. All the participants will receive the **IBM badge** for the innovation camp issued by IBM that will be an asset to your CVs or LinkedIn profile.
3. An exclusive participation **certificate** from CSRBOX to all the participants of Innovation Camp and special certificates to winning team and runner-ups.



### **Hakerrank Activities:**

SCIT conducting weekly Hackerranck activities in the form of weekly challenges for all of our students to grow in the area of competitive programming and conducted weekly classes for the same. In this semester, we conducted 8 Hackerrank activities for our students

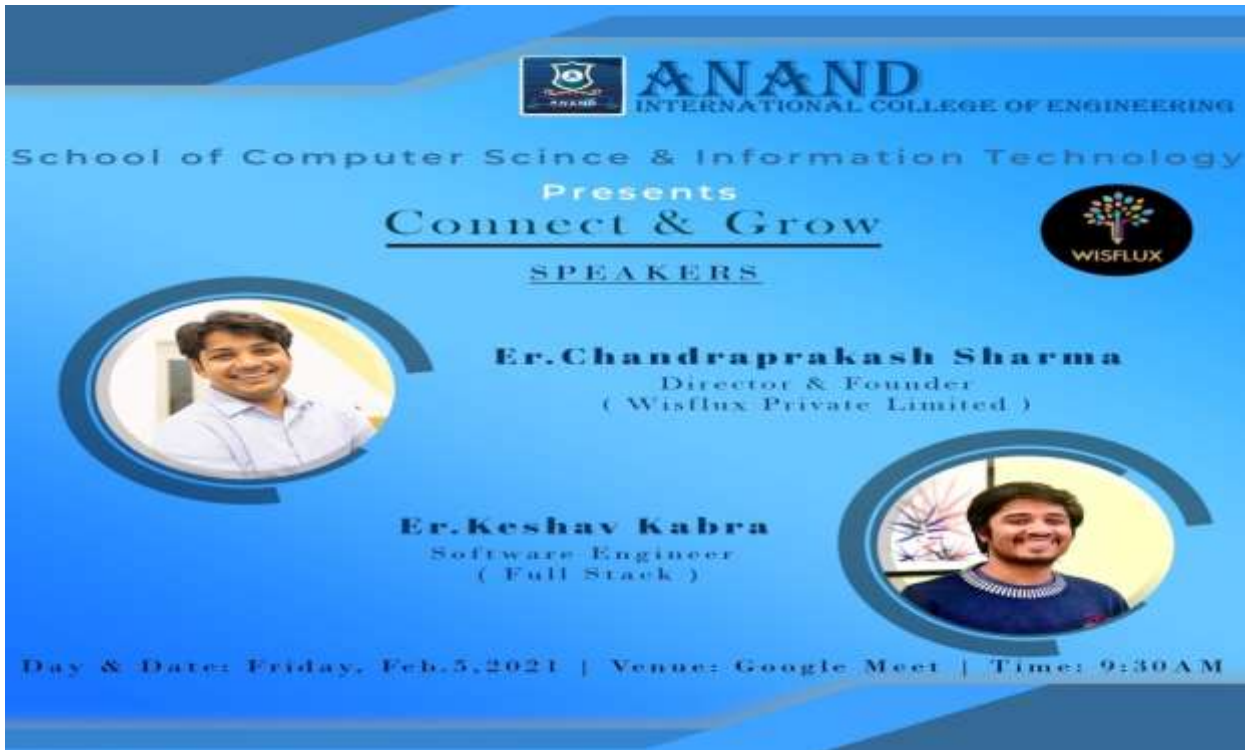
### **CO-CURRICULAR ACTIVITIES**

#### **Connect & Grow:**

The initiative – "CONNECT & GROW" aims to work on outcome-based education to make students excel in the corporate world. It focuses on the vision to enhance student's abstract and factual framework. As a supplement, it serves an opportunity to grow and develop into skilled individuals by not only acquiring knowledge but also hands-on experience from people of the corporate world.

In a fanatical manner, we tabulated an interactive session of expert talk series– "CONNECT & GROW". We have conducted 3 sessions of Connect & Grow till now details are as below.

- 1) Er. Ishaan Sharma TCS Digital on 26<sup>th</sup> Jan 2021.
- 2) Er. Chandraprakash Sharma is the director and founder of Wisflux Private Limited on Feb 5-2021.
- 3) Sachin Mittal, Senior Software Engineer Microsoft ,Redmond, Washington on 1st May 2021.



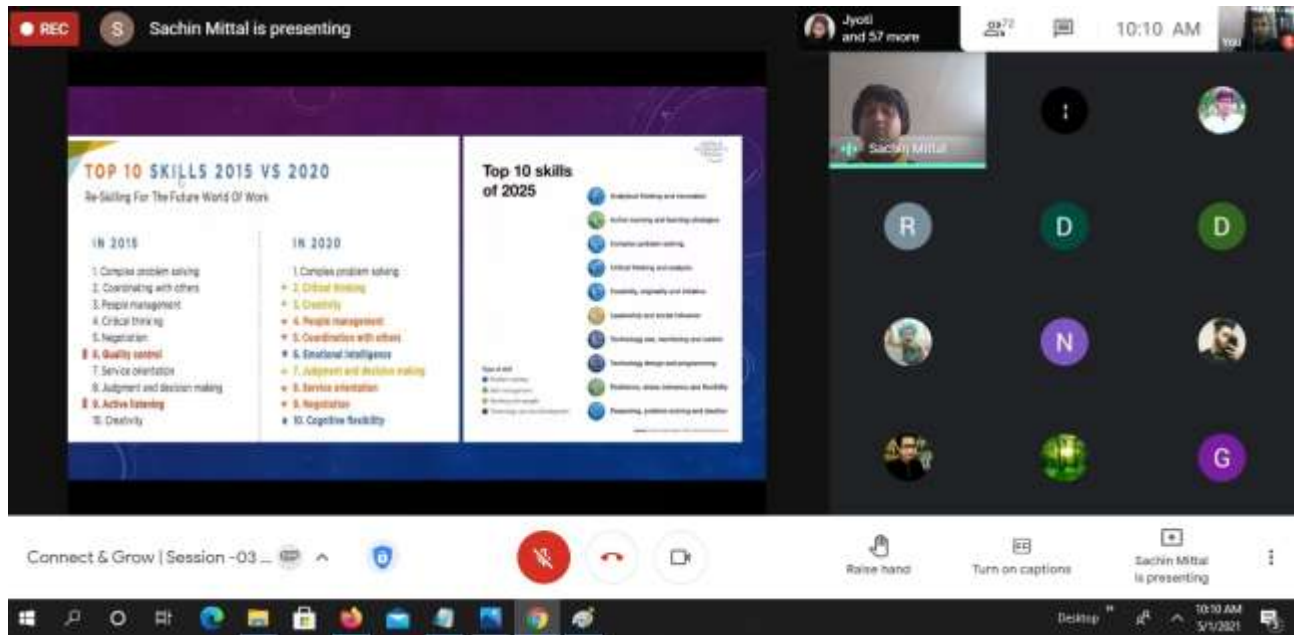




**ANAND**  
INTERNATIONAL COLLEGE OF ENGINEERING

School of Computer Science & Information Technology  
Presents  
**Connect & Grow**  
**FLIGHT TO FUTURE !**  
SPEAKER  
**SACHIN MITTAL**  
SENIOR SOFTWARE ENGINEER  
MICROSOFT

DAY & DATE: SATURDAY, 1<sup>ST</sup> MAY, 2021 | VENUE: GOOGLE MEET | TIME: 9:20AM IST



REC Sachin Mittal is presenting Jyoti and 57 more 10:10 AM

### TOP 10 SKILLS 2015 VS 2020

Re-Skilling For The Future World Of Work

IN 2015	IN 2020
1. Complex problem solving	1. Complex problem solving
2. Coordinating with others	2. Critical thinking
3. People management	3. Creativity
4. Critical thinking	4. People management
5. Negotiation	5. Coordination with others
6. Quality control	6. Emotional intelligence
7. Service orientation	7. Judgment and decision making
8. Judgment and decision making	8. Service orientation
9. Active listening	9. Negotiation
10. Creativity	10. Cognitive flexibility

### Top 10 skills of 2025

- 1. Technical thinking and innovation
- 2. Self-learning and learning strategies
- 3. Effective problem-solving
- 4. Critical thinking and analysis
- 5. Creativity, originality and initiative
- 6. Leadership and social influence
- 7. Technology use, handling and creation
- 8. Technology design and engineering
- 9. Problem-solving, decision-making and flexibility
- 10. Persuading, problem-solving and creation

Participant grid: R, D, D, N, G

Connect & Grow | Session -03 ...

Windows taskbar: 10:10 AM 5/1/2021

Department of Electrical Engineering conducted “RTU (ATU) TEQIP-III sponsored – ‘RTU (ATU) TEQIP-III SPONSORED Five Days Online FDP on “Planning & Design in Various Fields in Electrical Engineering” from 11th – 15th Jan. 2021.

Open the students’ Form of IETE (INSTITUTION OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING) in March 2019.



Organize the DrisTI online Contest 2019, conducted on Aug 20, 2019, Sep 01, 2019 and Sep 10, 2019 by Texas Instruments India University Program in association with EdGate Technologies Pvt Ltd.

Organize Innocity Entrepreneurship Bootcamp, conducted from Jan 27 – 29, 2020 by Startup Oasis (Initiative of RIICO and CIIE- Initiatives).



Open the students' Chapter of IE (India) (INSTITUTION OF E ENGINEERS (INDIA)) in Feb 2020.



~Anand Engineering Era~

Organized a “Industry-Academia Interface” Speaker Er. Anjali Choudhary for, Assistant Manager, CNS, Airports Authority of India for all students in association with Institution of Engineers (IE) India Students’ Chapter & IETE students’ Forum on June 10, 2021.

The poster is for an event titled "Industry - Academia Interface". It is organized by ANAND INTERNATIONAL COLLEGE OF ENGINEERING, JAIPUR, in association with the Institution of Engineers (India), Rajasthan State Center, Jaipur (Students' Chapter) and the Institution of Electronics and Telecommunication Engineers (Students' Forum). The speaker is Mrs. Anjali Choudhary, Assistant Manager, CNS, Airports Authority of India, Jaipur, Under Ministry of Civil Aviation. The event is scheduled for June 10, 2021, at 11:00 AM. The coordinator is Er. Vivek Bhojak (Head, SECE) and the co-coordinator is Mr. Vineet Chhabra. Contact information for both coordinators is provided at the bottom.

Organized a National Seminar (online) on “Engineers role in Energy Conservation, Energy Efficiency use of Renewable energy Environment and Climate change” Speaker K.K. Mahajan, MIE, Chartered Engineer in association with PCRA (Petroleum Conservation Research Association), Institution of Engineers (IE) India Students’ Chapter & IETE students’ Forum on on Jan 06, 2021.

The poster is for a National Seminar (online) on "Engineers's Role In Energy Conservation, Energy Efficiency, Use of Renewable Energy, Environment & Climate Change". It is organized by ANAND INTERNATIONAL COLLEGE OF ENGINEERING, in association with P.C.R.A (Petroleum Conservation Research Association), a department under the Ministry of Petroleum & Natural Gas, G.O.I., IE (India) & IETE, Students' Forum. The speaker is Er. K.K. MAHAJAN, M.I.E., Chartered Engineer, Ex. Senior Executive of Tata Chemicals Ltd, Gujarat, DCW Limited, Gujarat and SIEL Chemical Complex, Rajpura (Pb.) and Delhi. The seminar is scheduled for January 06, 2021, from 01:30 PM to 03:30 PM (IST) and will be live on Facebook. Registration and joining links are provided, along with contact information for the convener, Er. Vivek Bhojak (Head, SECE).



ANAND INTERNATIONAL COLLEGE OF ENGINEERING, JAIPUR  
in association with  
Institution of Engineers (India), Rajasthan State Center, Jaipur  
presents  
National Webinar on  
**Introduction to Industry 4.0**

**Er. S.S. Yadav**  
Chairman - IE (India) RSC, Jaipur

**Dr. P.S. Kumar**  
Founder - 360° Transformation  
Speaker - EDA and PLM, Chennai,  
Total Experience 32 plus years

**Prof. Jayashree Vajpai**  
Head - EE Deptt, MABM Engineering  
College, Jodhpur

Generally, Industry 4.0 refers to the means of automation and data exchange in manufacturing technologies including Cyber-Physical Systems, Internet of Things, big data and analytics, augmented reality, additive manufacturing, simulation, horizontal and vertical system integration, autonomous robots as well as cloud computing.

Date: 31<sup>st</sup> July 2020  
Time: 02.00 PM to 03.00 PM (IST)  
live on facebook

Registration Link:  
<https://forms.gle/YAqTiv6vkPj8NUD7>

E-Certificate for all Participants

Convener  
**Er. Vivek Bhojak (Head, SICE)**  
E-mail: [vivek.bhojak@anandice.ac.in](mailto:vivek.bhojak@anandice.ac.in)  
Mobile: +91-943775055

[www.anandice.ac.in](http://www.anandice.ac.in)

Organized a National webinar (online) on “Introduction to Industry 4.0” Speaker Dr. P.S. Kumar, Founder of DR PS KUMAR 360° Transformation, Prof. Jayashree Vajpai, Head, EE Deptt, MABM Engineering college, Jodhpur and Er. S.S. Yadav, Chairman IE (India), RSC, Jaipur in association with Institution of Engineers (IE) India Students’ Chapter & IETE students’ Forum on July 31, 2020.

Organized National level FDP Sponsored by RTU, Kota on “EDA Tools in the field of Engineering” during January 18 - 22, 2021.



Rajasthan Technical University, Kota  
RTU(ATU) TEQIP-III Sponsored  
in Association with  
**Anand International College of Engineering, Jaipur**  
Presents  
Five Days Workshop on  
**“EDA Tools in the Field of Engineering”**  
18<sup>th</sup>-22<sup>nd</sup> January 2021  
Inaugural Ceremony  
Monday 18<sup>th</sup>, January 2021

**Prof. (Dr.) R.A. Gupta**  
Hon'ble Vice-Chancellor,  
RTU, Kota

**Mr. Manika Mittal**  
Vice Chairperson,  
Anand-ICE

**Prof. (Dr.) Deewendra Mathur**  
TEQIP-III Coordinator,  
RTU, Kota

**Dr. Shashi Bagges**  
Coordinator,  
RTU, Kota

**Prof. (Dr.) Vijay K. Sharma**  
Principal, Anand-ICE

**Prof. (Dr.) Praveen Agarwal**  
Vice Principal, Anand-ICE

**Er. Vivek Bhojak**  
Coordinator, Anand-ICE

## 5 Days FDP Introduction to LaTeX and Multivariate Analysis using SPSS and MS Excel

The participants registered and The Program got inaugurated. The speaker Dr. Trilok Mathur, BITS Pilani, delivered his lecture on MAT LAB. Then on Day 1 the second session was taken by Dr. Ashwini Sharma, JKLU, Jaipur taken his session on Statistics Analysis of Data Analytical Standard Deviation (SPSS). In this, he explained about Standard and Normal Curve with Standard Deviation.

### Industrial Visit in Mayur Uniquoters, Jaipur

An Industrial visit had been conducted on 11.02.2020 for students of IV and VI semesters (Total 25 students & 1 faculty) of SAME, Anand International College of Engineering, Jaipur.

The students visited **Mayur Uniquoters Limited**, Village Dhodsar, Khajiroli Link Road Near Ratan Devi College Jaipur Rajasthan (India). The Students got the knowledge about knitting, processing, heat setting, coating, embossing, printing, lacquering, sueding, tumbling and laminating needs of Fabric.



**Expert lecture was organized by ISHRAE society on “Methodologies for energy performance in buildings” on 29<sup>th</sup> August 2019**

Globally the building sector accounts for more electricity use than any other sector, 42 per cent. No wonder considering that we spend more than 90 per cent of our time in buildings. With increasing urbanization, higher in developing countries, the number and size of buildings in urban areas will increase, resulting in an increased demand for electricity and other forms of energy commonly used in buildings. Africa’s rate of urbanization of 3.5 per cent per year is the highest in the world, resulting in more urban areas with bigger populations, as well as the expansion of existing urban areas. There are currently 40 cities in Africa with populations of more than a million and it is expected that by 2015 seventy cities will have populations of one million.



**Online Expert Lecture-Product Development Process and Tools Dr. Mahabir Prasad**

**Founder, MAPS Technologies (Electric Vehicles), Jaipur 23<sup>rd</sup> Feb 2021**

The topic of the expert lecture was product development process and tools. He explained the complete new product development process. He explained the range of activities carried out by an entity to offer new. The various phases and steps involved. He differentiated the agile versus waterfall approach. He explained the stack holders in product development. He focused on electronic hardware design output and tools. He explained hardware development stage. He talked about current works at MAPS related to disaster management. He also talked about Microseismic activities and tremors problems and their solution. He talked about wireless monitoring networks.

**Expert Lecture on “Engine Design and Development with Modern Material” on 25<sup>th</sup> Feb 2021 by Chiranjit Ghosh Sr. Manager Power train Design & Development, Maruti Suzuki India Ltd.**

The topic was about engine performance testing .He talked about engine design .Use of modern materials to improve the design. He talked about engine emissions. He also focused on noise and vibrations in engine. He also talked about gear trains. He focused on improving engine efficiency.





# Anand

## ENGINEERING ERA

(TECHNICAL MAGAZINE)

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**ANAND**  
INTERNATIONAL COLLEGE  
OF ENGINEERING

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