



Department of Electrical Engineering

2021-22



**Prof.(Dr) Anju Gupta
(Chairperson, Electrical
Engineering Department)**

Chairperson's message

Over the past year, we have faced numerous challenges in our social, personal lives and in the realm of academia. However, despite these obstacles, I am proud to say that our department has continued to thrive. Our faculty members have continued to produce groundbreaking research and to push the boundaries of what is possible in the field of Electrical Engineering. Our students have shown an unwavering commitment to their studies, even in the face of unprecedented challenges.

As we look forward to the future, I am confident that our department will continue to lead the way in Electrical Engineering education and research. We are blessed to have a talented and dedicated team of faculty and staff who are committed to ensuring that our students receive the best possible education and training. We commit to provide excellence in every sphere of electrical engineering.

The Department of Electrical Engineering is committed to impart technical education in the most efficient manner to its students. It was established in the year 2012 (earlier combined with Electronics Engineering Department and known as EEE Department running since the inception of YMCAIE). The department has equipped itself with workshops/labs and syllabus for achieving engineering education excellence, from the support of excellent faculty of the Department, YMCA UST has established itself as well known entity in the field of Electrical education. The syllabus of the Department composed of the fundamental concepts blended with the ultra modern topic to impart quality technical education, the lab/workshops consists of the basic instrument to software/simulators for providing the student a feel for industrial work environment. Department of Electrical Engineering is running various UG, PG and Ph.D. programs.



VISION

Electrical Engineering Department congregates the challenges of new technological advancements to provide comprehensively trained, career focused, morally strong accomplished graduates, cutting edge researchers by experimental learning which contribute to ever changing global society and serve as competent engineers.

MISSION

- To commit excellence in imparting knowledge through incubation and execution of high quality innovative educational programs.
- To develop the Research oriented culture to build national capabilities for excellent power management.
- To inculcate and harvest the moral values and ethical behavior in the students through exposure of self discipline and personal integrity.
- To develop a centre of research and education generating knowledge and technologies which lay ground work in shaping the future in the field of electrical engineering.

Program Outcomes of B.Tech in Electrical Engineering

Graduates of the Electrical Engineering program at JCBUST, YMCA will be able to:

PO1- Apply knowledge of mathematics, science, engineering fundamentals, and electrical engineering specialization to the solution of engineering problems.

PO2 - Identify, formulate, review literature and analyze electrical engineering problems to design, conduct experiments, analyze data and interpret data.

PO4 - Use research based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions in electrical engineering.

PO5 - Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to electrical engineering activities with an understanding of the limitations.

PO6 - Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.

PO7 - Understand the impact of the electrical engineering solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development.

PO8 - Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9 - Function affectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10 - Communicate effectively on complex engineering activities with the engineering committee and with society at large, such as, being able to comprehend and write affective reports and design documentation, make effective presentations in electrical engineering. PO11 - Demonstrate knowledge & understanding of the engineering principles and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12 - Recognize the need for, and the preparation and ability to engage in independent research and lifelong learning in the broadest context of technological changes in electrical engineering.

PROGRAM SPECIFIC OUTCOMES (PSO's)

The specific outcomes of the B.Tech program in Electrical Engineering are:

PSO1 - To apply state-of-the-art knowledge in analysis design and complex problem solving with effective implementation in the multidisciplinary area of Electrical Engg. with due regard to environment and social concerns.

PSO2 - To prepare graduates for continuous self learning to apply technical knowledge and pursue research in advanced areas in the field of Electrical Engg. for successful professional career to serve the society ethically

PROGRAM EDUCATIONAL OBJECTIVES (PEO's)

The main objectives of the B.Tech program in Electrical Engineering are:

PEO1- To produce competent electrical engineering graduates with a strong foundation in design, analytics and problem solving skills for successful professional careers in industry, research and public service.

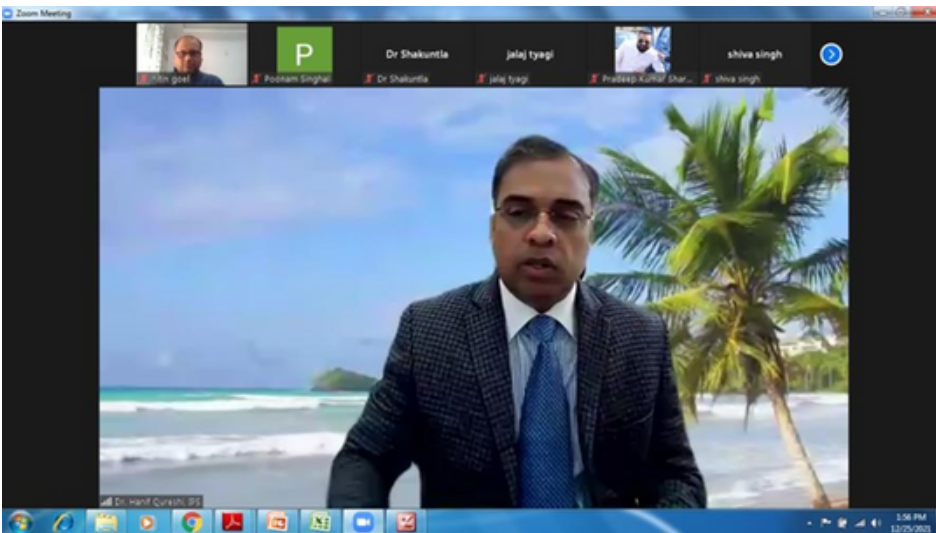
PEO2 - To provide a stimulating research environment so as to motivate the students for higher studies and innovation in the specific and allied domains of electrical engineering.

PEO3 - To encourage the graduates to practice the profession following ethical codes, social responsibility and accountability.

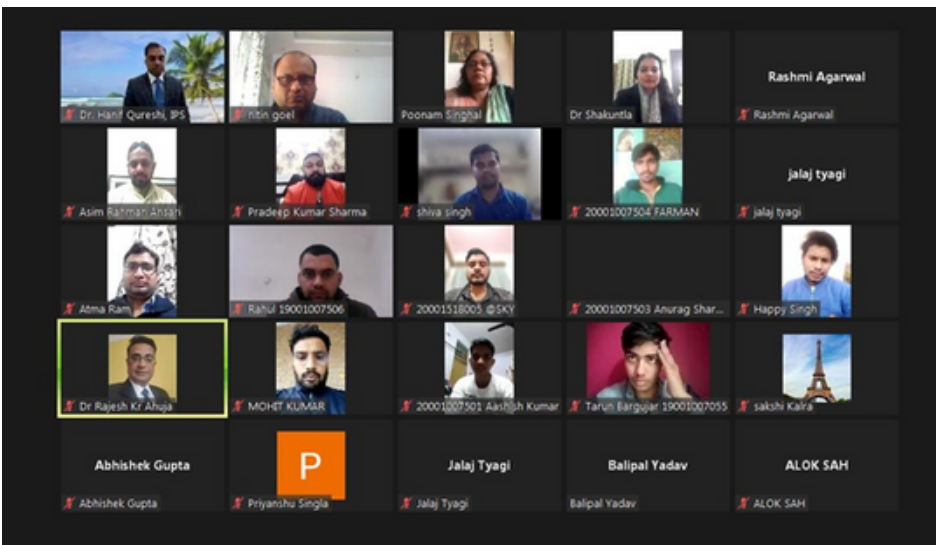
PEO4 - To train students to communicate effectively in multidisciplinary environment.

PEO5 - To imbibe an attitude in the graduates for life-long learning process

Six days Online AICTE SPONSORED STP on “Vehicle Techniques with OPAL-RT Solutions” from 20th – 25th Dec, 2021.



This STTP covered the entire spectrum of design, technology and analysis involved in the electric vehicle development cycle. It aims to deliver the right tools and skills for EV Systems Modelling and simulation that includes EV technology, operations, battery systems and functions, power train systems and components for better simulation and modelling using OPAL-RT hardware and simulator. The training is a combination of presentation, demonstration and hands-on sessions under the guidance of resource persons from renowned speakers from IITs, other renowned institutes and industry-expert instructors.



Two days Online workshop on “Design and Development of Electric Vehicle using Ansys” from 26th – 27th Nov, 2021.

The webinar was organised in a successful manner. The objective of the Workshop was to get insight details of various aspects related with the basics of Electric Vehicles, its design and analysis using Ansys Software. To understand the four pillars which form the basis electrification of electric vehicle namely Battery, Traction Motor, Power Electronics and Systems Engineering and how ANSYS helps in different aspects like reducing battery cost and increasing life, meeting EMI, EMC regulations and developing fuel cells.



J.C. Bose University of Science & Technology
YMCA, Faridabad
 NH2, Sector-6, Mathura Road, Faridabad-121006, Haryana, India
 (Accredited 'A' Grade by NAAC)

Two Days Online Workshop
 on
“Design & Development of Electric Vehicle using Ansys”
 November 26-27, 2021



Patron
Sh. Raj Nehru
 Vice Chancellor,
 JCBUST, YMCA Faridabad



Program Chair
Dr. Poonam Singhal
 Chairperson,
 JCBUST, YMCA Faridabad

Program Outline

- Introduction of Electric Vehicle.
- Design and Analysis of Electric Motor using Ansys.
- Power Electronics in Electric Vehicle.
- Complete Electric Vehicle Simulation.

E-certificate will be provided to all registered participants



Resource Persons
Mr. Kartikesh Kumar Jha
Mr. Kailash
 ANSYS Academy

Program Coordinators
Dr. Shakuntla (8076416816)
Nitin Goel (9313241442)
 Assistant Professor (EL)

Organized by
Department of Electrical Engineering
 in association with
ARK Infosolutions Pvt. Ltd.



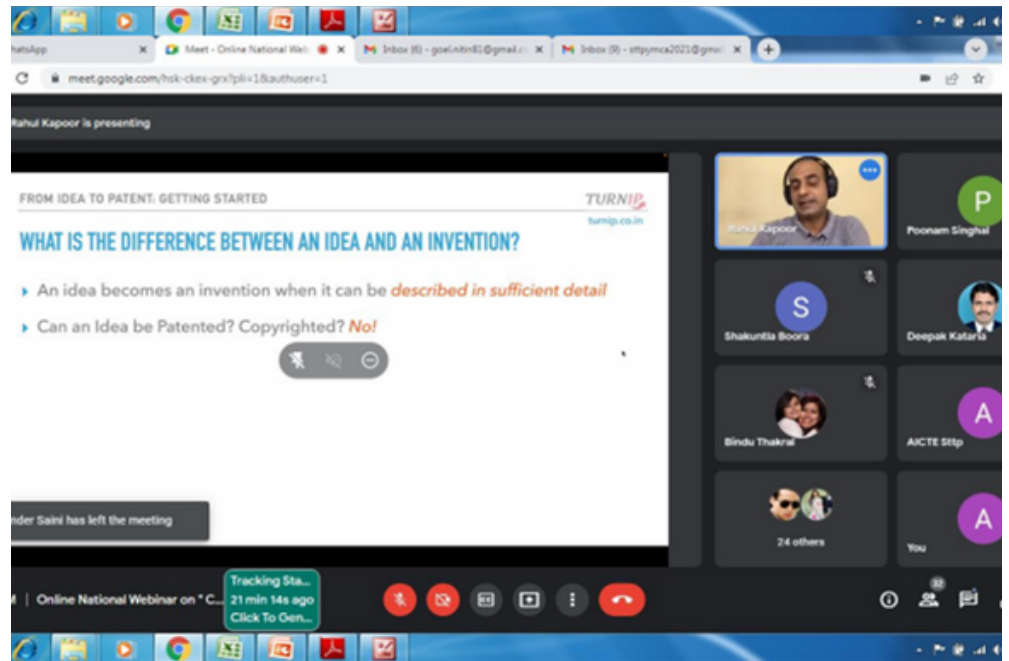

6 days Offline STTP on "AutoCAD for Engineers with PLC Basics" from 25th June – 02nd July, 2021.



6 days Offline STTP on "AutoCAD for Engineers with PLC Basics" was held from 25th June – 02nd July, 2021. The training was a combination of Technical seminars, presentations and practicals. The key concepts are delivered through practical experience under the guidance of industry-expert instructors.

Online National Webinar on "Converting Research to Patents" held on 4th March 2022.

The webinar was organized in a successful manner. Though more than 50 participants from Central/State Universities and organizations of different states have attended the webinar. The speaker addressed the participants with lots of information regarding the IPR, Patents, Importance of Patents, requirements of patentability, Application Preparation and Filing etc.



A webinar on 'Machines' held on 4th Dec 2021

The various topics covered during the Webinar:


- Synopsis of the respective subjects
- Typical questions that appear in the competitive exams and their solutions (from previous years)
- How to prepare for various types of questions like objective, descriptive, etc.
- How to answer the different types of questions in the examination
- Elimination techniques
- Do's & Don'ts in the examination
- Students pursuing B. Tech in the respective streams


A seminar on "Career Opportunities after B.Tech" held on 18th May'2022

Mr Arjun Chhabra gave seminar on career opportunities after B.Tech. He discussed that pursuing higher studies is another most important career option after engineering. After completing the B.Tech Course, the students can take part in M.Tech program. He informed that students can prepare for GATE exam that will test comprehensive understanding of undergraduate engineering subjects and help them to get into IITs & NITs for M.Tech.



Value Added Courses on 'PLC Programming' & 'Message of Bhagwat Gita' were organised during July-Dec'2021 and Jan-April'2022 respectively.

 <p>J.C. Bose University of Science & Technology, YMCA, Faridabad NH2, Sector-6, Mathura Road, Faridabad-121006, Haryana, India (Accredited 'A' Grade by NAAC)</p>	
<p>Department of Electrical Engineering conducting</p>	
<p>Value Added Course on PLC PROGRAMMING” Session (July-Dec 2021)</p>	
<p>Chairperson</p>	<p>Coordinator</p>
<p>Dr. Poonam Singhal Chairperson (EL) JCBoseUST, YMCA</p>	<p>Ms. Shipra Jain Assistant Professor Electrical Engg</p>

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<p>Department of Electrical Engineering conducting</p>	
<p>Value Added Course on Message of BHAGWAT GITA” Session (Jan – April 2022)</p>	
<p>Chairperson</p>	<p>Coordinator</p>
<p>Dr. Poonam Singhal Chairperson (EL) JCBoseUST, YMCA</p>	<p>Ms. Shipra Jain Assistant Professor Electrical Engg</p>

A visit to Bhakra Dam, Nangal was scheduled for the students of 6th sem Electrical Engineering from 19th May-21st May'22



DEPARTMENT OF ELECTRICAL ENGINEERING,

The main aim of this trip was to give exposure to the students about the hydroelectric powerplants. This trip was planned to provide knowledge to the students about the construction and working of the Bhakra Dam. During this trip, students visited various places near Bhakra Dam and were taught about the functioning of dam by various experts there. Students also visited VIRASAT-E-KHALSA which is a museum of Sikh religion.

Two days AICTE sponsored International Conference on Recent Developments in Electrical and Electronics Engineering (ICRDEEE-2022) held from 15th-16th April 2022

The conference provided a platform to the Scholars, Professionals & Engineers who have a propensity towards research, to explore innovative ideas related to Electrical & Electronics Engineering. Dr Hanif Qureshi, IPS & DG of New & Renewable Energy Department, Haryana was the Chief Guest of the inaugural function. He apprised the audience on various Haryana Govt. Policies of EV charging stations in order to promote EV in Haryana.



TRAINING PROGRAMMES HELD FOR STUDENTS DURING (2021-22)

Date	Name of Activity	Number of Participants
07.07.2021	National webinar on Process of Writing and Publishing Quality Research Papers in Indexed –Journals	50
July-Dec'2021	Value added course on 'PLC Programming'	17
Jan-April-2022	Value added course on ' Message of Bhagwat Gita'	58
11.06.2021	Session on 'Introduction to Database'	93
27.07.21-28.07.21	Workshop on 'Encoders & Motors'	78
31.10.21	Workshop on 'LED Matrix'	30
20.11.21-21.11.21	A two-day's workshop on 'PCBify with Altium'	58
5.22.22-6.2.22 & 12.02.22-13.02.22	A 4-days workshop on 'Elements of Electronics & Electrical'	129
28.02.22	Workshop on 'SC Maglev'	134
12.03.22-13.03.22	A two days workshop on 'Solar Power Generation & BMS Circuits'	127
17.04.22	Workshop on 'Arduino Bootcamp'	86

MISCELLANEOUS ACTIVITIES

- MOU with RVM CADSoft signed on dated 20 Aug 2021.
- MOU with Bareja solar and Projects Pvt. Ltd signed on dated 02 Sept 2021.