



2020-21

# Department of Electrical Engineering

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## Chairperson's message

Building careers, Transforming youth is the motto of Electrical Engg Deptt at JC Bose UST. The department has over the years perfected the art of aiming for the highest and embracing the excellence. We have produced competent electrical engineers with strong foundation in design, analytical and problem solving skills for successful professional careers in industry, research and public service.

**Dr. Poonam singhal**  
Prof & Chairperson  
Electrical Deptt.



## 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 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.

## 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.

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.



## 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.
- PO3 -** Design solution for electrical engineering problems and design system component of processes that meet the desired needs with appropriate consideration for the public health and safety and the cultural, societal and the environmental considerations.
- 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 contest of technological changes in electrical engineering.



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## International conference “Advances in Sustainable Energy, Environment and Engineering” (ICASEE-2021)

“Advances in Sustainable Energy, Environment and Engineering” (ICASEE-2021) offered a platform for worldwide researchers and scientists from academia, industry and government to discuss proposals and disseminate results on various aspects related to engineering and technology, sustainable energy and its impact on the environment. It also provides a premier interdisciplinary platform for researchers, practitioners and educators

to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the fields of Energy and Environment

Chief-Guest, Dr. Hanif Qureshi, IPS IGP IRB, Haryana Director-General, New and Renewable Energy Department, Govt of Haryana (India) Prof. N. P. Padhy, Department of Electrical Engg., IIT Roorkee Prof. Suku-



mar mishra, Department of Electrical Engg., IIT Delhi Dr. Akhter Kalam, Colege of Engineering and Science. Victoria University, Melbourne, Australia

## STTP on “AutoCAD for Engineers with PLC Basics”



(25.06.2021 – 02.07.2021)

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. Mr. Ravi Makhija- Director of RvmCAD SOFT, Hemant Dixit and Himanshu Pal.

## ATAL Sponsored Online FDP on “Digital Circuit Implementation Using Zynq FPGA IC”



16.09.2020 - 20.09.2020

This webinar explored how a small solar system can be used as an Agricultural Pump in place of existing scarce grid supply or diesel pumps. So, it proved a win-win situation for all the stake holders if the pumps can operate on Solar. The resource persons were:

1. Mr. Ankur Sangal (Lead Application Engineer, CoreEL Technologies)
2. Mr. Mayank Singh (Application Engineer, CoreEL Technologies)
3. Mrs. Nitin Sachdeva (JCBUST, YMCA Faridabad)
4. Mr. Prashant Kumar (JCBUST, YMCA Faridabad)

## TEQIP III Sponsored Online Faculty Development Programme on ‘Green Technology’

18-20 July, 2020

This online FDP gave insight details of “Green technology” which aims at active use of renewable resources and its contribution for sustainable development of India. The various renewable energy resources or green energy and its associated technologies, their status in India, the socio-economic impact of renewable energy resources (RES), challenges associated with it and the future of RES or green energy in India from various professors of IITs and other prestigious Universities of India and abroad. With right investments in green technologies, we can



01-06 March 2021

The objective of this programme is to equip the participants with working knowledge of fundamentals, design tools, current research and critical issues in the development of micro grid and Electric Vehicle systems. This programme will pave the way for understanding integration of renewable energy resources into the grid integrating renewable energies satisfying the grid codes, enable customer participation, energy storage support, battery, drives and con-

trollers used in microgrid and Electric Vehicles. Some of the focus areas of the programme will be various control challenges in the areas of microgrid, protection issues, energy management and solution of interconnection issues of DG. Participants will also be exposed to the optimization techniques to improve the features of EV. This programme will also provide the participants with recent advancements in the area of microgrid and EV systems.

## ‘Green Technology’

say that India is well positioned to achieve the ambitious renewable energy targets. The pursuit towards cleaner energy will play a key role in supporting country’s transition to a full sustainable energy system for a new India. • Professor Sukumar Mishra, IIT Delhi • Prof.. B.K. Panigrahi, IIT Delhi • Prof.. S.N. Singh, IIT Kanpur and VC Gorakhpur University • Prof.. N.P. Padhy, IIT Roorke • Prof. Jahangir Hossain Macquarie University, Australia Mr. Lalit Goyal, principle Consultant, ABB, North California, USA

## Power Electronics Applications in “Micro-grid and Electric Vehicle System”



## Online Staff Development Programme on Basic computer skills and ICT Tool "Google Classroom"

J.C. Bose University of Science and Technology, YMCA Faridabad  
NAAC 'A' Grade Accredited University  
NH-2, Sector-6, Mathura Road, Faridabad-121006, Haryana, India

Department of Electrical Engineering  
Is Organising  
Online Staff Development Programme on  
Basic Computer Skills and ICT Tool "Google Classroom"

**HIGHLIGHTS**

1. MICROSOFT WORD
2. MICROSOFT EXCEL
3. MICROSOFT POWER POINT
4. GOOGLE CLASSROOM

**PROGRAM CHAIR** Prof. Poonam Singhal  
Chairperson Electrical Engg. Deptt. JCBUST, YMCA Faridabad

**PATRON** Prof. Dinesh Kumar  
Vice Chancellor, JCBUST, YMCA Faridabad

**SDP COORDINATORS** Dr. Shakuntla (Assistant Professor, EL)  
Mr. Nitin Goel (Assistant Professor, EL)

Registration link:  
<https://forms.gle/4LM4Ve6YovBD43pd7>

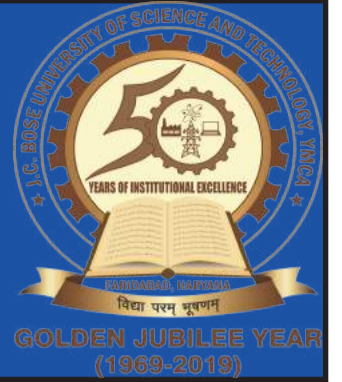
E- Certificates will be provided on Successful Completion of the SDP

10-14 July, 2020

A one week Staff Development Program on Basic computer skills and ICT Tool "Google Classroom" organized by the Department of Electrical Engineering using Zoom Platform. This is a fundamental course that is designed to develop basic computer skills and use an ICT tool "Google Classroom" for the Faculty/ Workshop staff/ Lab staff/ Research Scholars and any individual who is willing to learn with little or no prior knowledge of computer systems. This course will be focusing on the Hands on Experience on various aspects of MS Word, MS Excel, MS Power Point and use of ICT tool "Google Classroom" for teaching-learning purpose, day to day activities and other professional activities. More than 100 participants of various Centre Govt. /State Govt./ Semi Govt. and Private Universities/Organizations a/ Departments from different States have attended and successfully completed this course.



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## Expert Lectures

- Expert lecture on 'MV and LV Solutions' by Mr. Kumaresh Soam (Alumni), INNOVIC Energy LLP, 27/01/2021.
- Expert lecture on 'Low voltage Power distribution by busways' by Mr. Manish Chhabra (Alumni), Bharat Prakashan Limited, 27/01/2021.
- Expert lecture on 'Substation- Containerized' by Mr. Prithpal Singh Teji (Alumni), C & S Electric Limited, 28/01/2021.
- Expert lecture on 'Basics of HVAC' by Mr. Ajay Kumar (Alumni), AHI Carrier FZC Sharjah (UAE), 29/01/2021.
- Expert lecture on 'Service Modernization and retrofit' by Mr. Sunil Kumar Mago (Alumni), AHI Carrier FZC, UAE, 29/01/2021.
- Expert lecture on 'Indian standard of Lighting' by Mr. Neeraj Aggarwal (Alumni), Havells India Ltd., 30/01/2021.
- Expert lecture on 'Selling skills/ sales management process' by Mr. Yogender Singh Bisht (Alumni), Minosha India Limited, 30/01/2021.
- Expert lecture on 'Product development in an Automotive industry' by Mr. Sanjeev Sharma (Alumni), 30/01/2021.
- Expert lecture on 'Harnessing Solar Power' by Mr. Rajesh Walia (Alumni), Fiat Chrysler Automobile (USA), 01/02/2021.
- Expert lecture on 'Protection System and IEC 61850' by Mr. Vineet (Alumni), Siemens, 01/02/2021.
- Expert Lecture on awareness program on international standards ISO/IEC by M/s Belz Instruments Pvt. Ltd.
- Six days Webinar series on "PLC programming and HMI Development in coordination with Schneider India.

## Value Added courses

1. Value Added course on "AutoCAD" in session July-Dec 2020
2. Value Added course on "MATLAB" in session July-Dec 2020
3. Value Added course on "Programming in C++" in session July-Dec 2020
4. Value Added course on "Simulation Using LT-Spice" in session Jan-June 2021
5. Value Added course on "Human Ethics and Professional Values" in session Jan-June 2021
6. Value Added course on "Universal Human Values" in session Jan-June 2021

## MOU's Signed

- MOU with Schneider Electric India Pvt. Ltd.
- MOU with Fuji Gemco Pvt. Ltd.
- MoU with Belz Instruments Pvt. Ltd.