GIAN Course
on
Role of Reliability Evaluation in Power System Planning, Operation and Maintenance

MARCH 3 - 7, 2025

Organized By

Department of Electrical Engineering

Delhi Technological University, Delhi -110042

About External Expert

Prof. Lalit Goel joined the School of Electrical and Electronic Engineering (EEE) at the Nanyang Technological University (NTU), Singapore, in 1991 where he is presently a Professor of Power Engineering and Director of the Renaissance Engineering Programme (REP). He served as the Head of the Division of Power Engineering, Deputy Director of NTU's Protective Technology Research Centre (PTRC), Dean of Admissions & Financial Aid, Director, Undergraduate Education (Projects) in the President's Office, Director of the Office of Global Education and Mobility and Director of India Connect office, Presidents' Office NTU. He has received 20 teaching and education related awards, including the Nanyang Education Awards from EEE, NTU, the IEEE PES, USA Outstanding Power Engineering Educator Award in 2009, and the PES Roy Billiton Power System reliability Award in 2024. Prof. Goel received the IEEE PES Singapore Chapter Outstanding Engineer Award in 2000. His areas of research are power system reliability, cost/benefit assessment, power markets and renewables.

COURSE CONTENTS

- Introduction to reliability engineering and probability theory.
- Reliability of engineering processes.
- Probability distribution in reliability evaluation.
- Reliability evaluation techniques for various systems.
- Power system reliability.
- Planning criterion - loss of load/energy method.
- Reliability evaluation of interconnected power systems.
- Distribution system reliability assessment

Who can attend?

- Students (B.Tech./M.Tech./Ph.D.) and faculty from reputed academic/technical institutions.
- Executives, engineers, scientists, researchers from power sector/industries and government/private organizations including R & D laboratories.

Registration Process and Fee

Scan or click the link to register now

The shortlisted participants will be informed through e-mail. The above fee includes all instructional materials, laboratory equipment usage charges, computer usage for tutorials and assignments. The course fee does not include boarding and lodging. The paid hostel/ guest house accommodation may be provided on first come first serve basis with prior request.

https://forms.gle/9VoCC4VdkFQdwmgY9

The registration fee should be paid through NEFT only as per the details given below.

Name of Beneficiary	:	**Registrar, DTU Receipt A/c**
Bank Account No.	:	**30875679275**
Bank Name	:	**State Bank of India**
Branch Name	:	**Delhi College of Engineering**
IFSC Code	:	**SBIN0010446**
Branch Code	:	**10446**
MICR Code	:	**110002438**
Swift Code	:	**SBININBB776**
Type of Account	:	**Current A/c**

Last date of registration – 18th February, 2025

The participation fees (including GST@ 18%) for taking the course are as follows:

- Participants from abroad: US $ 100
- Industry/Research Organizations: ₹2360/-
- Academic Institutions (Faculty): ₹1180/-
- Research Scholars/ students: ₹590/- (₹295/- for SC/ST students)

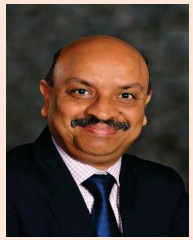
Local Coordinator
Prof. Madhusudan Singh
E-mail: *madhusudan@dce.ac.in*

Course Coordinator
Prof. Uma Nangia
E-mail: *umanangia@dce.ac.in*

Course Co-Coordinator
Prof. M. Rizwan
E-mail: *rizwan@dce.ac.in*

Department of Electrical Engineering, Delhi Technological University, Delhi

EXTERNAL EXPERT

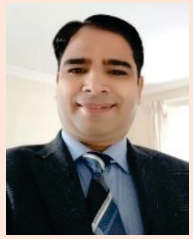


Prof. Lalit Goel obtained his Bachelor's Degree in electrical engineering from the Regional Engineering College, Warangal, India in 1983, and his M.Sc. and Ph.D. degrees in electrical engineering from the University of Saskatchewan, Canada, in 1988 and 1991 respectively. He joined the School of EEE at the Nanyang Technological University (NTU), Singapore, in 1991 where he is presently a professor of power engineering. He served as the Head of the Division of Power Engineering from July 2005 to August 2008, Deputy Director of NTU's Protective Technology Research Centre (PTRC) from May 1999 to April 2007, Dean of Admissions & Financial Aid 2008 to June 2012, Director Undergraduate Education (Projects) in the President's Office from Jan 2013 to Dec 2015, Director of the Office of Global Education and Mobility from October 2014 until March 2018, and Director of India Connect Office NTU program from July 2020 until June 2022. Since April 2018, Prof. Goel has been serving as the Director of the Renaissance Engineering Programme (REP). He has received 20 teaching and education related awards, including the Nanyang Education Awards from EEE, NTU, the IEEE PES Outstanding Power Engineering Educator Award in 2009, and the PES Roy Billiton Power System reliability Award in 2024. Prof. Goel served as conference Chair for several power engineering conferences in Singapore. Prof. Goel received the IEEE PES Singapore Chapter Outstanding Engineer Award in 2000. His areas of research are power system reliability, cost / benefit assessment, power markets and renewables.

COURSE COORDINATOR

Prof. Uma Nangia obtained her Ph.D. in Power Systems, Electrical Engineering from the University of Delhi in 1999. She holds the position of Professor in the Department of Electrical Engineering at Delhi Technological University (DTU), Delhi, India. Presently, she is Chairperson of the ICC (Internal Complaints Committee), DTU, Delhi. She is also Co-coordinator, Centre of Excellence, Electric Vehicle and Related Technologies. She held the position of Head, Department of Electrical Engineering from June 2019 to October 2022. She has over thirty years of teaching experience to UG and PG students. She has supervised four Ph.D. scholars and is presently supervising ten Ph.D. scholars. She has research papers in esteemed international/ national journals and conferences. Her areas of interest are - Optimization, Multi-objective Optimal Power Flows, Soft Computing Techniques, Artificial Intelligence, Renewable Energy Systems, and Electric Vehicles. She is a Member of the Institute of Electrical and Electronics Engineers (IEEE), Life Member of the Institution of Engineers, India (IEI) and the Indian Society for Technical Education (ISTE). She has been a reviewer of various reputed journals.

COURSE CO-COORDINATOR



Prof. M. Rizwan did his post-doctoral research at Virginia Polytechnic Institute and State University, USA. He has more than 22 years of teaching and research experience. Prof. Rizwan has successfully completed four national and one international research projects in the area of renewable and sustainable energy and published and presented more than 220 research papers in reputed international/national journals including IEEE transactions and conference proceedings. Presently he is working on one international and one national research projects in the area of solar PV. Prof. Rizwan has authored one book for CRC Press, USA and edited one book for AIP Publishing, USA. Recently he has authored two books on energy science engineering and energy conservation and audit for AICTE. He is the recipient of Raman Fellowships for Post-Doctoral Research for Indian Scholars in USA, DST Start Up Grants (Young Scientists) and many more. His area of interest includes soft computing applications in power engineering, renewable energy systems, building energy management, smart grid and EVs infrastructure etc. He is a Sr. Member of IEEE, Life Member of ISTE, Life Member of SSI, Member of International Association of Engineers (IAENG), and many other reputed societies.

सत्यमेव जयते
Ministry of Education
Government of India

GIAN
GLOBAL INITIATIVE OF ACADEMIC NETWORKS

DELTECH UNIVERSITY

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Role of Reliability Evaluation in Power System Planning, Operation and Maintenance

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Shahbad Daulatpur, Bawana Road, Delhi-110042

Course Overview

This course will introduce the concepts and techniques associated with reliability engineering and processes including Markov Modeling and other useful probablistic techniques along with numerical examples/case studies. The course will then present the fundamental concepts and techniques for reliability evaluation of electric power systems, starting with generating systems and moving on to interconnected power systems and concluding with distribution systems.

Course Objectives

The primary objectives of the course are as follows:

i) Exposing participants to the fundamentals of reliability evaluation techniques.

ii) Understanding the application of probabilistic techniques to determine the reliability of generating, interconnected and distribution systems.

iii) Providing exposure to probabilistic and deterministic approaches through case studies in power systems.

iv) Enhancing the capability of the participants to be able to evaluate the reliability of power systems in terms of various reliability indices which can be used for power system planning, operation and maintenance.

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Registration Fee

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- Industry/ Research Organizations: **Rs. 2360 /-**
- Academic Institutions (Faculty): **Rs. 1180 /-**
- Research Scholars/students: **Rs. 590 /- (Rs. 295 /-** for SC/ST students)

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Last Date of Registration: February 18th, 2025

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Contact Details

Course Coordinator

Prof. Uma Nangia
umanangia@dce.ac.in

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Local Coordinator

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madhusudan@dce.ac.in

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PROGRAMME SCHEDULE

MONDAY, MARCH 3, 2025

Registration	9:00 AM - 10:00 AM
Inauguration	10:00 AM - 11:00 AM
Lecture-1: Introduction	11:15 AM - 1:15 PM
Tutorial-1	2:00 PM - 5:00 PM

TUESDAY, MARCH 4, 2025

Lecture-2 : Realiabiltiy of Engineering Processes	10:00 AM - 11:00 AM
Lecture-3 : Probability Distributions in Reliability Evaluation	11:15 AM - 1:15 PM
Tutorial-2	2:00 PM - 5:00 PM

WEDNESDAY, MARCH 5, 2025

Lecture-4 : Evaluation Techniques	10:00 AM - 11:00 AM
Lecture-5 : Power System Realiabilty	11:15 AM - 1:15 PM
Tutorial-3	2:00 PM - 5:00 PM

THURSDAY, MARCH 6, 2025

Lecture-6 : Planning Criterion #1: Loss of Load Method	10:00 AM - 11:00 AM
Lecture-7 : Planning Criterion #2: Loss of Energy Method	11:15 AM - 1:15 PM
Tutorial-4	2:00 PM - 5:00 PM

FRIDAY, MARCH 7, 2025

Lecture-8 : Reliability Evaluation of Interconnected Power Systems	10:00 AM - 11:00 AM
Lecture-9 : Distribution System Reliability Assessment	11:15 AM - 12:15 PM
Tutorial-5	2:00 PM - 5:00 PM
Valedictory Function	5:00 PM to 6:00 PM

Need assistance?

Feel free to reach out to us for any queries or support. We're here to help!
+91- 8377996475, +91- 9354176451