Introduction to the Fundamentals of Power Systems

CPD Course, 29 January – 30 January 2024

Power, Energy & Control Engineering Discipline at the School of Electrical Engineering and Computer Science (EECS), University of Queensland (UQ) is pleased to announce a two-day face-to-face CPD course in Brisbane focusing on the fundamentals of power systems.

This course will deliver the theoretical background information necessary along with the "hands-on" experience through industry standard simulation platforms and experimental test benches to understand the fundamentals of power systems.

This course is aimed at engineers/professionals from both electrical and non-electrical background working on power systems, specifically for the personnel from industries aligned with power system planning, operation, management, and maintenance.

This two-day face-to-face course will bring industry professionals together for dialogue and sharing of knowledge to better understand the fundamentals of power systems along with its modelling and operational aspects.

Key Outcomes

- Learn the basics of power system like phasor diagrams, per-unit, three phase source and load connections, and power calculations.
- Understand the modelling of power system components like generator, transmission line, load, transformer, etc.
- Learn about the transmission line compensation techniques and distribution line voltage compensation techniques.
- Be informed of the Y-bus matrix and power system load flow analysis technique.
- Understand the theory, modelling, and operation of synchronous machines.

Presenters

The presenters are the academic experts from the University of Queensland (UQ) as given below.

- Prof. Tapan Saha is a Professor of Electrical Engineering in the School of EECS at UQ and the leader of Power, Energy and Control Engineering discipline.
- Dr Ruifeng (Richard) Yan is a senior lecturer in the School of EECS at UQ and was an ARC DECRA fellow.
- Dr. Phuong Nguyen is a postdoctoral research fellow with the School of EECS at UQ.
- Dr. Bonu Ramesh Naidu is a postdoctoral research fellow with the School of EECS at UQ

Who should attend

- Young engineers just starting out in their career in power system and engineers from other backgrounds.
- Consultants and designers in the power system, renewables, manufacturing, mining, industrial and infrastructure groups.

Practical Component

The course will have a half-day simulation (through industry standard software) and practical component at the end of each day, giving attendees the opportunity to gain hands-on experience with some of the concepts discussed during the course.

Cost
$1600 + GST per person

REGISTRATION

Registrations close 6pm 17 January 2024 (Unless all places are filled earlier).

Venue
Hawken Engineering Building (50)
Room S-202, Staff House Road
The University of Queensland
St Lucia, Brisbane, Queensland

Enquiries and Further information:
Email: ruifeng@eecs.uq.edu.au

Introduction to the Fundamentals of Power Systems

Day 1: Monday 29 January 2024	
08:30 – 09:00	Welcome address and registration (Prof. Tapan Saha)
09:00 – 10:30	Introduction to power system modelling (Prof. Tapan Saha)
10:30 – 11:00	Morning tea
11:00 – 12:30	Transmission line compensation (Prof. Tapan Saha)
12:30 – 13:30	Lunch
13:30 – 15:00	Simulation (PSSE) and laboratory session 1 (Dr. Ramesh Naidu and Dr. Phuong Nguyen)
15:00 – 15:30	Afternoon tea
15:30 – 17:00	Simulation (PSSE) and laboratory session 2 (Dr. Ramesh Naidu and Dr. Phuong Nguyen)
Day 2: Tuesday 30 January 2024	
09:00 – 10:30	Power System load flow analysis (Prof. Tapan Saha)
10:30 – 11:00	Morning tea
11:00 – 12:30	Synchronous generator (Dr. Richard Yan)
12:30 – 13:30	Lunch
13:30 – 15:00	Simulation (PSSE) and hardware session 1 (Dr. Ramesh Naidu and Dr. Phuong Nguyen)
15:00 – 15:30	Afternoon tea
15:30 – 17:00	Simulation (PSSE) and hardware session 2 (Dr. Ramesh Naidu and Dr. Phuong Nguyen)

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