THE UNIVERSITY OF QUEENSLAND
AUSTRALIA

CREATE CHANGE

Renewable Energy Integration

CPD Course, 31 January – 1 February 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 renewable energy integration.

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 renewable energy integration.

This course is aimed at engineers/professionals from both electrical and non-electrical background working on power system; specifically for the personnel from industries aligned with power system planning, operation, management, and maintenance. For engineers without power system background, it is highly recommended to take the "Introduction to the Fundamentals of Power System" CPD course first, which is offered by the University of Queensland.

This two-day face-to-face course will bring industry professionals together for dialogue and knowledge sharing to better understand the renewable energy technologies and their integration regarding renewable generator modelling, control techniques, frequency and voltage regulation aligning with grid codes.

Key Outcomes

- Understand the basic principles of renewables, including the modelling and control of solar PV, wind energy conversion systems, and energy storage systems.
- Be informed with control techniques for renewable energy resources, focusing on grid-following and grid-forming (virtual synchronous) generator technologies.
- Understand frequency control in power system and frequency response from renewables.
- Understand impacts of renewables on system strength in power systems, as well as grid codes related to frequency and voltage regulation applied to renewables.
- Be exposed to simulation studies through industry standard EMT software, and hardware experiment with solar PV, wind turbine, and battery storage.

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 systems, and engineers from non-power systems background.
- 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

Renewable Energy Integration

Day 1: Wednesday 31 January 2024	
08:30 – 09:00	Welcome address and registration (Prof. Tapan Saha)
09:00 – 10:30	Introduction to renewable energy resources (Dr. Richard Yan)
10:30 – 11:00	Morning tea
11:00 – 12:30	Control of renewable energy resources (grid-following and grid-forming technologies) (Dr. Richard Yan)
12:30 – 13:30	Lunch
13:30 – 15:00	Simulation (PSCAD) and laboratory session 1 (Dr. Ramesh Naidu and Dr. Phuong Nguyen)
15:00 – 15:30	Afternoon tea
15:30 – 17:00	Simulation (PSCAD) and laboratory session 2 (Dr. Ramesh Naidu and Dr. Phuong Nguyen)
Day 2: Thursday 1 February 2024	
09:00 – 10:30	Frequency control under high renewable (Dr. Richard Yan)
10:30 – 11:00	Morning tea
11:00 – 12:30	System strength impacts and analyses (Dr. Richard Yan)
12:30 – 13:30	Lunch
13:30 – 15:00	Simulation (PSCAD) and hardware session 1 (Dr. Ramesh Naidu and Dr. Phuong Nguyen)
15:00 – 15:30	Afternoon tea
15:30 – 17:00	Simulation (PSCAD) and hardware session 2 (Dr. Ramesh Naidu and Dr. Phuong Nguyen)