FOR INDUSTRY PROFESSIONALS
AND Ph.D./M.Sc. STUDENTS

POWER SYSTEM STABILITY

Chalmers University, Gothenburg
May 18-22 | 2026

Solvina
PART OF REJLERS

CHALMERS
UNIVERSITY OF TECHNOLOGY

THE COURSE

This course will provide a unique opportunity for engineers in the power industry to undertake a comprehensive and in-depth study of the important areas of power system. The aim is to bridge the gap between theoretical and practical concepts by combining theoretical lectures with lab experiments.

Power System and Control Theory (basics):
Swing equation and power transfer equations, modeling of the grid and synchronous machines, Laplace transforms and block diagrams, PID control and tuning, frequency domain analysis, and stability criteria.

Stability issues:
Theory on different types of stability – transient, voltage, and small signal stability. Laboratory demonstrations of voltage and transient stability under various grid conditions.

Active power and frequency control:
Theory on frequency stability, droop control, different prime movers and governors, and the overall impact of the power plant process. Laboratory demonstrations of frequency stability, governor testing and tuning, and the impact of droop and different prime movers.

Testing and tuning of AVR:
Theory of voltage control in synchronous machines, different excitation systems and their characteristics, and AVR testing methods. Laboratory demonstrations of AVR control response, testing procedures, and tuning practices, including the impact of various exciter types.

Testing and tuning of PSS:
Theory of electromechanical oscillations and damping, principles of the Power System Stabilizer (PSS), different types of PSS, and PSS tuning and testing. Laboratory demonstrations of small signal stability and PSS testing and tuning.

The lectures are scheduled from **08:00 to 17:00** on all five days.

The first day starts with **registration between 08:00 and 08:30.**

AUDIENCE

This course is intended for engineers and specialists in the power industry.

Participants attending the course will enhance their understanding of the theory and practice of system stability and control, as well as the mitigation of system oscillations after contingencies.

The course will provide participants with a solid understanding of the fundamentals of the topic.

POWER SYSTEM STABILITY – WHERE THEORY MEETS PRACTICE

With more than 25 years of experience, Solvina supports the energy sector across conventional and renewable power generation, energy storage, and power distribution. The company helps utilities and industries enhance the stability, efficiency, and compliance of their power systems.

Guided by the principle Power with Perspective – Solving Problems, Sharing Knowledge, Solvina applies deep technical expertise and a systems-based approach to strengthen performance, ensure compliance, and support resilient, future-ready operations. The company's expertise spans system studies, control system optimization, and real-world testing and validation – enabling effective integration of renewables, reliable island operation, and improved overall system resilience.

Building on this experience and commitment to knowledge sharing, Solvina – together with Chalmers University – offers this comprehensive course on Power System Stability. Combining extensive field experience with practical demonstrations, the course integrates theoretical lectures with laboratory sessions conducted at Chalmers. This gives participants a unique opportunity to develop a deep, hands-on understanding of power system stability.

"More than 25 years of experience in the field of Power System testing and tuning"

A holistic approach – lasting solutions

REAL EXPERIENCES. REAL IMPACT.

Satisfied participants provided high praise and satisfactory testimonials for previous Power System Stability courses. Here are a few examples:

"Bengt was an excellent lecturer, nice to hear some real life/on-site examples as well." – Course 2023 participant, **Minna Luojus, Fingrid**

"The presenter was very experienced and was able to convey the concepts in a clear and engaging way. Chalmers was a great place with excellent facilities and the lab demonstrations was the highlight." – Course 2023 participant, **Roushan Rezvani Arany, Siemens Energy.**

"All topics covered in the course were relevant and essential for myself to perform in my daily work." – Course 2022 participant, **Lauri Kauppi, Wärtsilä.**

"The content is rich in practical examples and measurements, which is a big plus for all of us who work in science and education. A special plus is that the material covered is up to date with current trends in development and application." – Course 2022 participant, **Ružica Kljajić, Faculty of Electrical Engineering, Computer Science and Information Technology Osijek.**

"The course has discussed the important aspects of power system stability as well as demonstrated it in the lab" – Course 2022 participant, **Anthony F. Lacastesantos, National Grid Corporation of the Philippines.**

"Bengt was very clear during his lectures. He is extremely prepared on the topics he presented during the course. It was a pleasure to attend!" – Course 2021 participant, **Pozzi Fabio, CESI.**

"A good and helpful course giving a very practical view on the content. Content matches the lecturer's experience well." Course 2021 participant.

ABOUT THE LECTURER:
Bengt Johansson is a senior specialist in power system dynamics with more than 25 years of experience in electrical power engineering. He holds a Master's degree in Electrical Engineering from Chalmers University of Technology and has extensive experience from power plants, industrial facilities, and utilities.

At Solvina, he works with frequency and voltage control testing, island operation verification, AVR and PSS tuning, grid code compliance, and dynamic simulations for Swedish and international clients.

Bengt also leads Solvina's course Power System Stability and delivers tailored trainings worldwide, combining technical expertise with practical field experience to give participants a clear understanding of power system stability and control.

COURSE INFORMATION

LAST DAY TO REGISTER
★★★
APRIL 15th

WHAT IS INCLUDED
The course fee includes course material for all participants. Lunch and light snacks are provided during the morning and afternoon breaks for on-site participants. All participants are invited to a welcome dinner held after the first day of the course.

REGISTRATION
Via our website: https://www.solvina.com/courses-power-engineering/.

Registration can also be made directly by emailing education@solvina.com or by calling +46 31-709 63 00. The number of participants is limited.

SIGN UP TODAY TO SECURE YOUR PLACE!
The course fee (excluding VAT) is 45,000 SEK.

LANGUAGE
The course will be held in English.

THE COURSE LOCATION
Is the Edit Conference Room, Hörsalsvägen 11, Chalmers University of Technology in central Gothenburg, 412 96 Gothenburg, www.chalmers.se.

CONFIRMATION
Within one week of registration, a confirmation will be sent to the email address provided. The number of participants is limited, and if the course is full, you will be placed on a waiting list.

PAYMENT
The course will be invoiced and shall be paid before the start of the course.

CANCELLATION TERMS
If you cannot participate, you may transfer the registration to another person at the same company free of charge. Registration is binding. Solvina reserves the right to cancel the course up to 2 weeks before the start. All registered participants will be informed and Solvina shall not be held responsible for any damages.

ACCOMMODATION
Accommodation is not included in the course fee. Solvina will be happy to help with your hotel booking if desired.

FORCE MAJEURE
Solvina AB is not liable for damages caused by Swedish or foreign law, Swedish or foreign authorities, war, strike, blocking or similar circumstances, and shall not be held responsible for damages if all or part of the course cannot be carried out due to illness.

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