



## **Training Course on Flexible AC Transmission Systems (FACTS): Best Practices For Engineers**



**AGILE LEADERS**  
Training Center

# **Training Course on Flexible AC Transmission Systems (FACTS): Best Practices For Engineers**

## **Course Overview:**

The course is a comprehensive program designed to equip engineers with in-depth knowledge and practical skills in FACTS of controllers and power transmission. This course delves into the essential concepts and applications of Flexible AC Transmission Systems FACTS, focusing on static shunt and series converters, and the Unified Power Flow Controller UPFC. Participants will gain insights into Voltage Sourced Converters, Current Sourced Converters, and the design of FACTS controllers. With a strong emphasis on Power Transmission Stability, Controllable VAR Generation, and Power Oscillation Damping Techniques, this course offers hands-on learning and real-world applications. Engineers will learn to enhance voltage regulation, improve transient stability, and compare SVC and STATCOM systems. By mastering Thyristor-Controlled Series Capacitors and Pulse Width Modulation PWM Converters, participants will be prepared to address complex challenges in power flow control and transmission.

## **Target Audience:**

- Electrical Engineers
- Power Systems Engineers
- Transmission Engineers
- Control Systems Engineers
- Senior Technicians
- Engineers looking to specialize in Flexible AC Transmission Systems FACTS

## **Targeted Organizational Departments:**

- Power Transmission Departments
- Electrical Engineering Divisions
- Control Systems Units
- R&D Departments in Power Systems

## **Targeted Industries:**

- Power Generation and Transmission
- Electrical Engineering Services
- Renewable Energy Sector
- Utility Companies

## Course Offerings:

By the end of this course, participants will be able to:

- Understand and apply the principles of Flexible AC Transmission Systems FACTS
- Design and implement FACTS controllers in power transmission systems
- Enhance power transmission stability and efficiency using advanced techniques
- Compare and evaluate different types of static shunt and series compensators
- Implement Voltage Sourced and Current Sourced Converters effectively

## Training Methodology:

This course employs a variety of training methodologies to ensure an engaging and effective learning experience. Participants will benefit from interactive lectures, case studies, group discussions, and hands-on workshops. Real-world examples and practical applications of FACTS controllers will be emphasized to bridge the gap between theory and practice. Collaborative group work and feedback sessions will encourage active participation and knowledge sharing.

## Course Toolbox:

- Comprehensive workbooks and manuals
- Access to online resources and reading materials
- Checklists and templates for FACTS controller design

## Course Agenda:

### Day 1: Concepts of Flexible AC Transmission Systems

- **Topic 1:** Introduction to Flexible AC Transmission Systems FACTS
- **Topic 2:** Types and Applications of FACTS Controllers
- **Topic 3:** Shunt Controllers in Power Transmission
- **Topic 4:** Series Controllers and Their Benefits
- **Topic 5:** Combined Shunt and Series Controllers
- **Reflection & Review:** Key Learnings and Benefits of FACTS

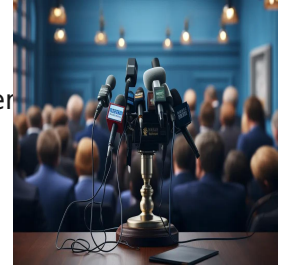
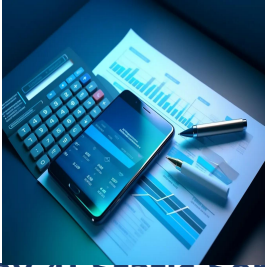
### Day 2: Voltage And Current Sourced Converters

- **Topic 1:** Fundamentals of Voltage Sourced Converters
- **Topic 2:** Single Phase and Three Phase Full Wave Bridge Converters
- **Topic 3:** Transformer Connections for 12-Pulse Operation
- **Topic 4:** Current Sourced Converters with Turn Off Devices
- **Topic 5:** Comparison Between Voltage Sourced and Current Sourced Converters
- **Reflection & Review:** Practical Applications of Converters



## Day 3: Static Training Course Categories

- **Topic 1:** Objectives and Methods of Shunt Compensation
- **Topic 2:** Point Voltage Regulation and Power Factor Improvement
- **Topic 3:** Multiple Impedance Matching and Power Factor Correction
- **Topic 4:** Comparison of Shunt Compensation with Series Compensation
- **Topic 5:** Review



## Day 4: Static Series Compensators

Finance and Accounting Training Courses

Agile PM and Project Management Training Courses

Certified Courses By International Bodies

Communication and Public Relations Training Courses

- **Topic 1:** Objectives of Series Compensation
- **Topic 2:** Techniques for Voltage Stability Improvement
- **Topic 3:** Thyristor-Controlled Series Capacitor TCSC Systems
- **Topic 4:** Operating Control Schemes for Series Compensators
- **Topic 5:** Static Synchronous Series Capacitor SSSC



## Day 5: Static Series Compensators

Data Analytics Training and Data Science Courses

Environment & Sustainability Training Courses

Governance, Risk and Compliance Training Courses

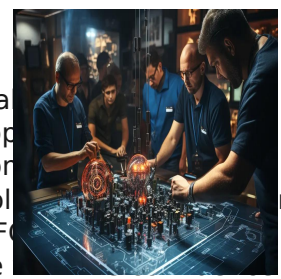
Human Resources Training and Development Courses

- **Topic 4:** Interline Power Flow Controller IPFC Applications
- **Topic 5:** Multifunctional FACTS Controllers
- **Reflection & Review:** Advanced Power Flow Control Techniques

## How This Course is Different from Other

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This course is designed to provide a comprehensive understanding of the principles and applications of Static Series Compensators (SSCs) in power transmission engineering. The course covers the objectives, methods, and techniques for voltage stability improvement, power factor correction, and multiple impedance matching. It also compares shunt compensation with series compensation and provides a detailed review of the topics.



and expertise needed to excel in the field of power transmission engineering.

IT Security Training & IT Training Courses

Leadership and Management Training Courses

Legal Training, Procurement and Contracting Courses

Maintenance Training and Engineering Training Courses



# Training Course Categories



**Marketing, Customer Relations, and Sales Courses**



**Occupational Health, Safety and Security Training Courses**



**Oil & Gas Training and Other Technical Courses**



**Personal & Self-Development Training Courses**



**Quality and Operations Management Training Courses**



**Secretarial and Administration Training Courses**



## Training Cities



**Accra - Ghana**



**Amman - Jordan**



**Amsterdam - Netherlands**



**Baku - Azerbaijan**



**Bali - Indonesia**



**Bangkok - Thailand**



**Barcelona - Spain**



**Cairo - Egypt**



**Cape town - South Africa**



**Casablanca - Morocco**



**Doha - Qatar**



**Dubai - UAE**



**Geneva - Switzerland**



**Istanbul - Turkey**



**Jakarta - Indonesia**



**Johannesburg - South Africa**

# Training Cities



**Kuala Lumpur - Malaysia**



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**London - UK**



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**Manama - Bahrain**



**Milan - Italy**



**Nairobi - Kenya**



**Paris - France**



**Phuket - Thailand**



**Prague - Czech Republic**



**Rome - Italy**



**Sharm El-Sheikh - Egypt**



**Tbilisi - Georgia**



**Tokyo - Japan**



**Vienna - Austria**



**Zanzibar - Tanzania**



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# Training Cities



**Zoom - Online  
Training**



# WHO WE ARE

Agile Leaders is a renowned training center with a team of experienced experts in vocational training and development. With 20 years of industry experience, we are committed to helping executives and managers replace traditional practices with more effective and agile approaches.

## OUR VISION

We aspire to be the top choice training provider for organizations seeking to embrace agile business practices. As we progress towards our vision, our focus becomes increasingly customer-centric and agile.

## OUR MISSION

We are dedicated to developing value-adding, customer-centric agile training courses that deliver a clear return on investment. Guided by our core agile values, we ensure our training is actionable and impactful.

## WHAT DO WE OFFER

At Agile Leaders, we offer agile, bite-sized training courses that provide a real-life return on investment. Our courses focus on enhancing knowledge, improving skills, and changing attitudes. We achieve this through engaging and interactive training techniques, including Q&As, live discussions, games, and puzzles.



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