

IEEE – [Modernizing the Smart Grid](#) – Syllabus

Course Program

One of the biggest frontiers in electrical engineering today is the development and implementation of smart grid technology. Fueled by the global demand for greener technologies and alternative fuels, environmentally-friendly smart grid technology has the ability to stimulate stagnated economies and change the way power is delivered to electricity consumers around the world.

Modernizing the Smart Grid is a 4-course program designed to get you and your team up to speed quickly on the latest Smart Grid technologies.

What you will learn:

- Managing the Practical Challenges of Smart Grid
- Smart Grid Energy Transition and Clean-Slate Design
- Smart Grid Security
- Smart Grid Resiliency: Recommendations and Next Steps

Courses included in this program:

- [Strong Grid Before Smart Grid](#)
- [Smart Distribution Systems](#)
- [The Digitized Grid](#)
- [Engaging Consumers in the Smart Grid Marketplace](#)

Course Program Length: 4 hours

Program Level: Intermediate

Who Should Attend: Electrical engineer, software, Security engineer, Design engineer, Network engineer, AI/ML engineer, Computer engineer

Instructor

John McDonald, Smart Grid Business Development Leader for GE Power's Grid Solutions business

Publication Year: 2018

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IEEE – [IEEE Academy on Smart Grid Microgrids](#) – Syllabus

Course Program

A microgrid is a group of interconnected loads and distributed energy resources that acts as a single controllable entity with respect to the grid. This learning path will provide an understanding about microgrid technologies. Products and solutions in the field of electrical power system along with function of major components will also be discussed. In addition we will also review microgrids integration with DERs like wind, solar PV and storage system, microgrid operation in grid connected and islanded modes and microgrid planning and Energy Management System. This path will provide information, knowledge and resources related to latest trends, technologies and solutions for microgrids along with major components; application of technologies, benefits, challenges and best practices, modelling, analysis, protection and control.

Learning Path Length: 5 hours

IEEE – Introduction to IEEE Std 1547-2018: Connecting Distributed Energy Resources – Syllabus

Course Program

This standard has a significant impact on the design and deployment of all DER systems, removes limitations from the original standard, and adds requirements for “smart inverters.” Are your engineers prepared for these changes?

Available online and on-demand, train your entire technical team how to best implement this important standard.

What you will learn:

- Review the interconnection testing and verification requirements included in the IEEE 1547 standard
- Requirements for interoperability and open access at the DER
- Clauses and annexes of IEEE Std 1547-2018
- System power quality and the limitations from the distributed energy resource's perspective to meet the power quality requirements at the interconnection point

Course titles included in this program

- [Introduction to IEEE Std 1547-2018](#)
- [Power Quality and Voltage Regulation in IEEE Std 1547-2018](#)
- [Response to Area EPS Abnormal Conditions in IEEE Std 1547-2018](#)
- [Islanding and Networks in IEEE Std 1547-2018](#)
- [Interoperability, Info Exchange and Networks, and Protocols in IEEE Std 1547-2018](#)
- [Interconnection: Test and Verification in IEEE Std 1547-2018](#)

Course Program Length: 6 hours

Program Level: Introductory

Who Should Attend: Electrical Engineer, Engineering Technicians, Network Engineer, Data Engineer, Design Engineer, Computer Engineer, Systems Engineer, Communications, Hardware Engineer, Lead Engineer, Project Engineer, Energy Resource Engineer, Vehicle Engineer, Field Technician, Resource Planner, Energy Analyst, Wind Energy Engineer, Operations

Instructors

- Mark Siira, Director of utility compliance and solutions, ComRent
- Brian Seal, Senior Program Manager for Distributed Energy Resource Integration, Electric Power Research Institute (EPRI)
- Michael Ropp, President and Principal Engineer of Northern Plains Power Technologies, Brookings SD
- Jens Boemer, EPRI's strategic research on integrated T&D planning and operations
- Babak Enayati, Manager of the Technology Deployment team, National Grid, USA

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