



## Bilbao (Spain) Learning Center Training Course Guide 2021

All the information you need in one place to make an informed training selection.



# Welcome to Learning & Development

Lets Start With Some Useful Information

## What is being offered and when? Visit our website.

It is a useful place to find more information about our training offerings including other course guides etc. You can also download our Curriculum Guide from there.

<http://www.gegridsolutions.com/multilin/support/training/>

## Need to access free learning videos? Visit our YouTube channels.

Did you know that we have a dedicated You Tube channel where you can find e-learning training videos at no cost. Here you can find how2 videos, training webinars and training course modules for self learning.



<https://www.youtube.com/c/LDforProtectionandControl>

## Contact Us

Need more information, have questions about our offerings, want to follow up with us on any training related issue, then contact us through our training email.

[services.bilbao@ge.com](mailto:services.bilbao@ge.com)

+34 94 485 88 60

## What type of training is offered by GE?

- no cost training videos are available on our youtube channels
- standard schedule courses are available to book on the online store
- on demand courses at your place or ours, email: [services.bilbao@ge.com](mailto:services.bilbao@ge.com)

## Where do I find resource info? Visit our resources page.

Did you know here you can find a multitude of useful resources to assist your learning about our products services and solutions.

<http://www.gegridsolutions.com/resources.htm>



Grid Learning Center's - *Discover the Difference*

# Protection & Control

Course Code | TRNG-8S-BIO - 8 Series Essentials

**note 1:** timeline is generic may vary dependent on scheduling logistics

**who should attend**

Engineering Staff within electrical utility, industrials & system integrators who need to design protection and control systems using GE products in non- 61850 and 61850 configurations.

**learning outcome**

Build a knowledge and understanding of the product hardware, software and configuration and its application within the smart grid.

Application Labs will give the students an opportunity to apply their knowledge.

**prerequisites**

Fundamentals of Modern Protection Relaying is highly recommended or with certain 8 Series relay working experiences.

**workshop hardware needs**

All equipment is provided as part of the workshop.

**what's covered**

- Diagnostic Tools
- I/O Configuration
- Protection Elements
- FlexLogic
- IEC61850
- Application design
- Integration

**learning contact hours**

- E-learn: 6 hours (playlist e-953)
- Workshop: 24 hours
- **Total: 30 hours**

Learning contact hours quoted are our estimate of time to complete, actual is very much dependent on students prior knowledge.

**timeline** note 1

Registration Deadline

4 weeks prior to workshop

course notices sent out

3 weeks prior to workshop

e-learning

To be reviewed prior to workshop

Workshop

week zero

e-learning playlist | e-953 <https://www.youtube.com/watch?v=W9UmresoQL8&list=PLZPultIGPYLNnwwa7wtobsq8F2fx4j7HT>

Module	Name
8SP-100	8 Series Relay Overview
8SP-101	8 Series Hardware
8SP-102	8 Series Software Interface
8SP-103	S Series Software Setpoints
8SP-104	8 Series Protections
8SP-105	8 Series Control & Monitoring
8SP-106	8 Series FlexLogic
8SP-107	8 Series IEC61850 Configurator

## Prerequisites

Students **should** read through the equipment operating manuals to familiarize themselves with the technology & equipment terminology.

## Learning Objective

On completion of the Practical Workshop students should be able to identify, assemble, integrate and operate configure 8 series relays where they can then hone their skills through further applications.

DAY 1	DAY 2	DAY 3
AM   Hardware Setup	AM   Protection and Controls Function	AM   Hands-on lab – secondary injection tests of protection functions
PM   Software Interface	AM   Events & Oscilloscope	AM   SLD Editor
PM   Protection and Control Functions	PM   Hands-on lab – secondary injection tests of protection functions	PM   61850 configuration
		PM   hands-on lab - 61850 Goose exchange

## Course Note

Workshop activities are a mix of presentation based and demonstration instruction, followed by student hands on activities.

The detailed content of each module is introduced on the proceeding slides.

Learning content is provided via USB at the beginning of the training.