



# 2019 PROTECTION TRAINING

Doble offers a wide range of protection training courses that will help prepare you for a modern grid, power plant and industrial facility. We can conduct these courses at your facilities, or at one of our training facilities.

**READ FULL COURSE DESCRIPTIONS AT**  
[events.doble.com/protection](http://events.doble.com/protection)

## PROFESSIONAL CREDITS

Most of our protection training courses are eligible for NETA Continuing Technical Development Credits (CTDs) as well as IACET certified Continuing Education Units (CEUs). For more information visit <http://www.doble.com/earning-ceus/>

Doble Engineering Company is accredited as an Authorized Provider by the International Association for Continuing Education and Training (IACET).

## COURSES

### RTS ESSENTIALS TRAINING

- Two-day training on the basics of RTS and routine creation  
NETA CTD credits: 16 | \$750

### RTS DEVELOPER

- Two-day training on how to create and modify automated relay test routines with the FasTest system & learn RTS commands that are beyond the FasTest system  
NETA CTD credits: 16 | \$1800

### RTS ADVANCED DEVELOPER

- Three-day training on advanced techniques to develop advanced and custom test procedures that are tailored to specific class needs  
NETA CTD credits: 24 | \$2500

### 2019 PROTECTION SEMINAR

- The Protection Seminar brings together protection testing topics, training and discussion forums with multiple learning tracks to best fit your needs.  
Free with your Doble Protection Software License

### SCHEMATIC ELECTRICAL PRINT READING

- Three-days of training on electrical print terminology, symbols, device numbers, & abbreviations, AC/DC control schematics, and power circuit breakers | \$1650

### SUBSTATION MAINTENANCE

- Three-day training on the hazards and safety in a substation, concepts of switching in a high voltage yard \$1650

### PROTECTIVE RELAYING APPLICATION & TESTING

- Three-day training on protective relay testing applicable for utilities, industrial plants, commercial facilities and power plants  
NETA CTD credits: 24 | \$1650

### BASICS OF PROTECTION FOR INDUSTRIALS

- Three-day training on protection basics as it applies to industrial plants, commercial facilities and power plants  
NETA CTD credits: 24 | \$1650

### BASICS OF PROTECTION FOR UTILITIES

- Three-day training on protection basics for power utilities  
NETA CTD credits: 24 | \$1650

### ESSENTIALS OF PROTECTION - BEGINNERS COURSE FOR TECHNICIANS

- A must for technicians who are setting out to build a career in relay testing  
NETA CTD credits: 24 | \$1400

### HARMONICS SIMPLIFIED

- One-day training to gain a working knowledge of harmonics, simple methods to calculate distortion levels, quick hand calculations to calculate resonant frequencies, detailed analysis using software, and a detailed procedure of designing harmonic filters  
NETA CTD credits: 8 | \$800

### BASIC HANDS-ON TRAINING FOR THE APPLICATION AND TESTING OF ELECTRO-MECHANICAL & MICROPROCESSOR RELAYS

- Three-day training on testing of simple overcurrent relays such as time overcurrent, under/overvoltage, and over/under frequency electromechanical relays  
NETA CTD credits: 24 | \$1400

### INTERMEDIATE HANDS-ON TRAINING FOR THE APPLICATION & TESTING OF ELECTRO-MECHANICAL & MICROPROCESSOR RELAY

- Three-day training on testing of distance, differential, rate of change of frequency, loss of field, reverse power and synchronizing relays  
NETA CTD credits: 24 | \$1650

### ADVANCED HANDS-ON TRAINING FOR THE APPLICATION AND TESTING OF ELECTRO-MECHANICAL & MICROPROCESSOR RELAY

- Three-days of advanced testing training involving communication assisted protection, analysis of event reports, COMTRADE and ss1 files, line current differential, relays, bus differential and out-of-step protection testing  
NETA CTD credits: 24 | \$2000

### IEC 61850 APPLICATION AND TESTING

- One and a half days of training on IEC 61850  
NETA CTD credits: 12 | \$1200

### FAULT CALCULATION & SYMMETRICAL COMPONENTS

- Two-day training covering fault calculations for various types of short circuit faults that can occur in a power system  
NETA CTD credits: 24 | \$1200

### GENERATOR PROTECTION APPLICATION & TESTING

- Two-day training on the basics of generator protection testing, including all elements that are typically used in power plant applications  
NETA CTD credits: 12 | \$1200

# PROTECTION TRAINING 2019 CALENDAR

## JANUARY

8	9	10
Application & Testing Electro-Mechanical & Microprocessor Relays (Basic)		
15	16	17
Essentials of Protection		
22	23	24
Application & Testing Electro-Mechanical & Microprocessor Relays (Intermediate)		
RTS Essentials		
29	30	31
Schematic Electrical Print Reading		

## FEBRUARY

26	27
RTS Developer	

## MARCH

12	13	14
RTS Advanced Developer		
15	16	17
Application & Testing Electro-Mechanical & Microprocessor Relays (Advanced)		
20	21	22
Application & Testing Electro-Mechanical & Microprocessor Relays (Intermediate)		

## APRIL

2	3	4
Application & Testing Electro-Mechanical & Microprocessor Relays (Intermediate)		
16	17	
RTS Essentials		
23	24	25
Application & Testing Electro-Mechanical & Microprocessor Relays (Basic)		

## MAY

7	8	9
Schematic Electrical Print Reading		
Application & Testing Electro-Mechanical & Microprocessor Relays (Basic)		
21	22	23
Application & Testing Electro-Mechanical & Microprocessor Relays (Intermediate)		
RTS Developer		

## JUNE

3	4	5	6
2018 Protection Seminar			
	12	13	14
Application & Testing Electro-Mechanical & Microprocessor Relays (Advanced)			
	18	19	20
RTS Advanced Developer			
	25	26	27
Essentials of Protection - Beginner's Level for Technicians			

## JULY

9	10	11
Basics of Protection for Utilities		
16	17	
RTS Essentials		

## AUGUST

13	14	15
Basics of Protection for Industrials		
20	21	22
Schematic Electrical Print Reading		
27	28	
RTS Developer		

## SEPTEMBER

4	5	6
Application & Testing Electro-Mechanical & Microprocessor Relays (Basic)		
17	18	19
RTS Advanced Developer		

## OCTOBER

1	2	3
Application & Testing Electro-Mechanical & Microprocessor Relays (Intermediate)		
15	16	17
Application & Testing Electro-Mechanical & Microprocessor Relays (Advanced)		
22	23	
RTS Essentials		

## NOVEMBER

5	6	7
Schematic Electrical Print Reading		
12	13	14
Essentials of Protection		
19	20	21
Basics of Protection for Utilities		
RTS Developer		

## DECEMBER

3	4	5
Basics of Protection for Industrials		
17	18	19
Application & Testing Electro-Mechanical & Microprocessor Relays (Basic)		

- 2019 Protection Seminar Hosted in San Diego, CA USA
- Event Hosted at Training Facility in Tulsa, OK USA
- Event Hosted at Training Facility in Morrisville, NC USA

## VISIT [EVENTS.DOUBLE.COM/PROTECTION](https://events.doble.com/protection) TO LEARN MORE & REGISTER

If you have 8 or more people that your company would like to send to a course, consider hosting it at your facility. Email Doble Events at [events@doble.com](mailto:events@doble.com) to find out more information.