



# CYMCAP Basic Web Training

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April 2021

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## Further Information

Please contact:

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## Overview of Training

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This training course reviews the fundamental use of the software dedicated to the calculation of ampacity and temperature rise for power cable installations.

This training is designed to help you use the software more effectively. Users learn to collect and assemble cable and installation data to build a model of the power cable installation. Furthermore, the course explores the full range of functionality that is offered in CYMCAP as well as its output capabilities. Finally, users will gain the skills necessary to analyze and interpret the simulation results.

CYME INTERNATIONAL T&D INC personnel who are thoroughly familiar with the software products and techniques applied instruct the course. Class size is limited so that each user may receive personal attention.

## SESSION 1

*Monday April 26<sup>th</sup> 9h00PM-11h30PM EDT*

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- 1. Introduction to CYMCAP**
  - a. Purpose
  - b. Theoretical background
  - c. Operating philosophy
  - d. Scope and limitations
  - e. Demonstration
- 2. Description of the Navigator**
- 3. The Cable Library and Cable Design Facilities**
  - a. Brief description
  - b. Data preparation
    - Example: Building cable models
- 4. The Duct Bank Library and the Duct Bank Designer**
  - a. Brief description
  - b. Data preparation
    - Exercise: Building duct bank models

## SESSION 2

*Tuesday April 27<sup>th</sup> 9h00PM-11h30PM EDT*

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### **The Study Library and Steady-State Simulations**

Description of studies and executions

- Example: Create a new study and execution
- Example: Setup and compute ampacity for a duct bank installation
- Example: Create a new execution in an existent study
- Example: Modify an existing execution to perform temperature runs
- Example: Modify an existing execution to add a heat source
- Major factors affecting ampacity
- Bonding types
- Modeling exercises: Buried cables, cables in duct, etc.
- Comparison of results
- Moisture migration
- Multiple conductor per phase.
- Isotherms potter
- Cable in air and riser poles
- Excel report

## **SESSION 3**

***Wednesday April 28<sup>th</sup> 9h00PM-11h30PM EDT***

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- 1. Cyclic loading**
  - a. Nether McGrath vs. IEC Method
  - b. Modeling exercises
- 2. Transient vs. Steady-State Ratings**
  - a. Time-temperature-ampacity interactions
  - b. Transient engine: Scopes and limitations
- 3. The Shape Library – Daily Load Profile**
  - a. Description
  - b. Data preparation
  - c. Scaling factor
  - Example: Building shapes
- 4. The Load Library – Weekly Load Profile**
  - a. Description
  - b. Data preparation
  - c. Meaning of per unit values
  - d. Scaling factors
  - Example: Building loads by hand

## **SESSION 4**

***Thursday April 29<sup>th</sup> 9h00PM-11h30PM EDT***

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### **1. Transient Simulations**

- a. Activating the transient analysis
- b. Description of the 6 options of transient
- c. Assigning load to cables / circuits
  - Example: Compute ampacity given time and temperature
  - Example: Compute temperature given time and current
  - Example: Compute time given current and temperature
  - Example: Plot temperature as function of time

### **2. Overview of some add-On Modules**

- a. Multiple duct-banks and backfills
- b. Short-circuit
- c. Detailed impedance calculations
- d. Unfilled trough
- e. Cables crossing
- f. Extended report with formulas

### **3. Advanced Features**

- a. Utilities tab of the Navigator
  - i. Change working directory
  - ii. Backup your database
  - iii. Append a database
  - iv. Restore a backed-up database
  - v. Copy tagged to