“This courseware helps to master synchronous and asynchronous machines, from parameter identification to full operation in generator and motor modes.”

Danielle Nasrallah, P.Eng, Ph.D
Technical Lead in Advanced Control and Electric Drives

The electric machines teaching laboratory constitutes a fundamental learning tool to thoroughly understand synchronous and asynchronous machines.

Students are in-the-loop, interacting with virtual machines and doing experiments as they would with physical test benches. As a result, they will fully grasp steady-state model parameter identification, synchronous machine motor operations and asynchronous machine speed control.

MAIN BENEFITS

• An interactive user interface brings the students into the loop and allows them to perform step-by-step experiments.

• Avoid costly damage or significant impact that could be caused by errors, such as overspeeding.

• Protection is implemented and allows students to reset the experiment, making it possible to recover from mistakes.

COURSEWARE KIT

OPAL-RT OP4510

• 4-core CPU, Xeon E3 3.5 GHz
• Kintex-7 Xilinx FPGA, 325T
• 32 Di, 32Do, 16 Ai, 16Ao

COURSEWARE

Electric machines teaching laboratory
10 Modules
OUR ELECTRIC MACHINE TEACHING LABORATORY COMES IN TWO SECTIONS WITH FIVE MODULES EACH

SYNCHRONOUS MACHINE OBJECTIVES

- Learn the principles of operation of synchronous machines.
- Identify steady-state model parameters.
- Understand dynamics, stability and power flow control.

ASYNCHRONOUS MACHINE OBJECTIVES

- Learn the principles of operation of asynchronous machines.
- Identify steady-state model parameters.
- Apply various procedures for speed control.