IMPROVING THE EFFECTIVENESS OF THE ELECTRICAL ENGINEERING SERVICE COURSE

Physical Layout

Project Overview

Tutoring Tool

Baseline Assessment

Tutoring Tool

Supported by the National Science Foundation Undergraduate Education Division
CCLI EMD 0088905

National Advisory Board

Rose-Hulman Institute of Technology

Textbook

Baseline Assessment

~100 MHz oscilloscope
~15 MHz arbitrary waveform / function generator
~universal electronic counter
~2 digital multimeters
~multiple DC power supply
~transducer and data acquisition station
~control system station

Instructor console
View screens
Demo area
Demo area
Demo area
Demo area
Demo area
Demo area
Entrance

100 kΩ
0.01 µF
10 Ω

SMA 1
SMA 2
SMA 3

1 mH
SW 1
SW 2
SW 3
SW 4

Connect function generators here
tie SMA 1 OC to SMA 2 IC
tie SMA 3 OC to common

+ i(t)
- 20 cos 100 t   V
100 µF
1/5 H
2 i(t)

v(t)
- 100 Ω
400 Ω

Prior classes serve as prerequisite for core classes in major.

Student engagement builds on effective learning tools.

Keys to Success

- improving the effectiveness of the electrical engineering service course

- supported by the national science foundation undergraduate education division

- rose-hulman institute of technology

- textbook

- baseline assessment

- tutoring tool

- project overview

- physical layout