ALPHA LABORATORY IMMERSION
Reed College, Saturday July 17, 2010, 8 Set-Ups

LabVIEW Instruction for the Advanced Laboratory

Description:

This daylong workshop will be held on the Reed College campus in the Physics Department’s Advanced Laboratory and will be of interest to professors seeking to include LabVIEW-based instruction in their instructional lab curricula. By the workshop’s end, each participant will have the course materials and experience necessary to create a similar instructional lab at his or her own institution. The requirements for developing such a lab will be discussed during the workshop and suggestions will be provided for adapting the material into a teaching unit ranging from three weeks to a full semester.

No prior knowledge of LabVIEW is necessary. In advance of the workshop, each participant will be supplied with the book *Hands-On Introduction to LabVIEW for Scientists and Engineers* (Oxford University Press, 2009) and be asked to devote 15 to 20 hours of self-study of selected chapters to learn the LabVIEW programming language (free trial versions of LabVIEW software can be downloaded at http://www.ni.com/trylabview/).

During the workshop, participants working in groups of two will use their acquired programming skills on Reed’s LabVIEW systems (Windows machines equipped with National Instruments Multifunction Data Acquisition and GPIB boards) to build several computer-based instruments (including a digital oscilloscope, spectrum analyzer, digital thermometer, and temperature controller) and to explore GPIB control of instrumentation.

The workshop will be mostly self-paced, but will include a few short presentations to the group. Reed College is located in Southeast Portland and is easily accessible from downtown hotels by public transportation.

Mentor – Bio

Name/Title: John Essick/David W. Brauer Professor of Physics
Email Address: jessick@reed.edu Phone: (503) 517-7841
Institution Name: Reed College Dept.: Physics
Mailing Address: 3203 SE Woodstock Blvd. Portland, OR 97202

John Essick is a solid state physics experimentalist who studies the optoelectronic properties of semiconductors. He is a professor in the Physics Department at Reed College in Portland, Oregon and, since 1993, he has used LabVIEW to teach computer-based data acquisition and analysis skills to his junior-level Advanced Laboratory students. The teaching materials he developed for this Advanced Laboratory course formed the basis for the text *Hands-On Introduction to LabVIEW for Scientists and Engineers.*