

PhD Physics course at Bari University (XXXI Cycle)

Title	Introductory course to the development of data acquisition and analysis systems in a LabView environment
Proponent	F.Gargano
# CFU (1 CFU = 8 hours)	2
Schedule	18/4/2016 - 20/4/2016 - 22/4/2016 - 27/4/2016 - 29/4/2016 - 02/05/2016 - 04/05/2016
Brief Summary of the course	<p>The course aims to introduce students to the most common problems of data acquisition systems and data analysis and to propose some implementations realized in LabView.</p> <p>This software has experienced in recent years a great development and diffusion, becoming a standard in both scientific and industrial environment. Modern versions are now compatible with all major operating systems and allow to solve complex problems. In addition, the parallel development of computing power makes it a powerful tool for achieving portable data acquisition and analysis.</p> <p>The course includes an introduction Labview environment, with particular attention to the basic principles of programming and to the typical structure of data acquisition. Most of the course will instead be operational and dedicated to addressing both general and specific case studies related to the research activities of the students.</p>
Programme	<p>Lesson 1. General introduction to Labview</p> <p>Lesson 2. Structures and related exercises</p> <p>Lesson 3. Multidimensional arrays and manipulation functions</p> <p>Lesson 4. Graphic objects management and exercise.</p> <p>Lesson 5. Waveform graph and plot management</p> <p>Lesson 6. Introduction to the communication protocols and data acquisition</p> <p>Lesson 7. Example of data acquisition with National Instruments cards</p>
Recommended texts	Lecture notes. National Instruments tutorial Support software.

Assessment methods

Verification of the activities carried out during the practical part of the course.
Developing of a simple acquisition system on a case of interest