2006-2105: DEVELOPMENT OF AN INTER-UNIVERSITY ADVANCED INSTRUMENTATION COURSE FOR GRADUATE STUDENTS IN ENGINEERING TECHNOLOGY

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Advanced Instrumentation for Graduate Students in Engineering Technology

Abstract

Instrumentation is one of the most important courses of engineering curriculum. Almost all programs in engineering technology at undergraduate level offer labs and instrumentation. Also, most of the textbooks on instrumentation are written for undergraduate programs. On the other hand emerging technologies require the use of advanced precise instruments. Thus, it becomes the responsibility of academic community to meet the demand of new technologies by developing and offering proper advanced instrumentation courses at graduate level. This article explains the content of a new advanced instrumentation course offered to graduate students in the Department of Engineering Technology at the University of Memphis (UM). It is also under consideration at Northern Kentucky University (NKU). The development of the course materials, the required instruments and the method of delivery, will be the main topics of this article.

Introduction

The Department of Engineering Technology at the University of Memphis offers an M.S. degree in engineering technology with concentrations in electronics, computer and manufacturing. This is in addition to its undergraduate degrees in electronics, computer and manufacturing technology. Students select their field of concentration according to their future professional goals.

In the Masters program, each concentration offers its own graduate courses outlined in the Graduate Bulletin of the university [1]. In contrast to undergraduate programs that are highly focused on their particular concentration, this graduate program is less focused and more diverse. Moreover, some of the graduate courses are offered at night making it possible for the members of the professional community to enroll in this program. In fact, the majority of the graduate students enrolled in this program are from industry. The structure of the program is such that any individual with an undergraduate degree in technology can enter the program and select a concentration that matches his/her career goals.

The core courses required for the electronic concentration are shown in Fig.1.