**Engineering Faculty Document No. 05-06**
August 5, 2006

**To:** Faculty of the College of Engineering

**From:** Faculty of Weldon School of Biomedical Engineering

**Subject**: Change in Existing Course Title and Description - BME 305 Bioinstrumentation Laboratory

The Faculty of the Weldon School of Biomedical Engineering has approved the change in title and description of the course listed below. This action is now submitted to the Engineering Faculty with recommendation for approval.

**From:**

**BME 305 Bioinstrumentation Laboratory** Sem. 1. Class 1, Lab 3, cr.2.
Prerequisites: PHYS 241, MA 266, or equivalents
Co-requisites: BME 301

**Course Description:** Introduction of laboratory instruments used to measure physiological events. Stimulation and conduction of electric signals within the mammalian nervous system and other excitable tissues are demonstrated. Fundamental circuit elements and concepts include resistance, capacitance, inductance, op-amps, impedance, voltage, current, power, and frequency. Integrative design project addresses instrumentation amplifiers and filtering for obtaining an ECG, emphasizing the practical aspects of quantitative physiological measurements.

**To:**

**BME 305 Bioinstrumentation Circuit and Measurement Principles** Sem. 1. Class 1, Lab 3, cr.2.
Prerequisites: PHYS 241, MA 266, or equivalents
Co-requisites: BME 301

**Course Description:** Introduction of laboratory instruments used to measure physiological events. Stimulation and conduction of electric signals within the mammalian nervous system and other excitable tissues are demonstrated. Fundamental circuit elements and concepts include resistance, capacitance, inductance, op-amps, impedance, voltage, current, power, and frequency. Fundamental analog measurement concepts include adequate bandwidth and amplitude and phase linearity. An integrative two-week design project addresses the practical aspects of quantitative physiological measurements.

**Reasons:** The revised course title is more descriptive of the subject matter taught in the course. The course description was modified to more accurately describe the culminating two-week design project and specify the measurement principles taught in the course. Upon initial implementation of this course, the ECG design project became Lab 13 and the subject of the two-week design project in Labs 14 and 15 changes from semester to semester.

Requested by: _____ Date: _____

Title Head of Biomedical Engineering