

1. **BMEN 2320 - Biomedical Instrumentation**

2. 3 Credit hours and 4.5 Contact Hours

3. Instructor: Dr. Vijay Vaidyanathan

4. Office Hours: TR; 3 – 5 PM

5. Textbook: None; Reference book: Digital Fundamentals by Thomas Floyd

6. Specific course information

- a. Course catalog description: Introduction to biomedical instrumentation design; design, building and testing of bioinstrumentation circuits including digital circuits and microprocessor-based systems.
- b. Prerequisites or co-requisites: Prerequisite(s): BMEN 1300 and BMEN 2210. BMEN 1400 or concurrent enrollment
- c. Required

7. Specific goals for the course:

a. Specific outcomes of instruction: Understand digital logic and how to apply it in instrumentation applications. Gain knowledge of microcontroller programming and interface for instrumentation. Building software user interfaces for interaction with biomedical instrumentation. Learning additional circuits needed for biomedical instrumentation.

b. ABET Outcome 6: an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

8. Brief list of topics to be covered:

- Design, building and testing of bioinstrumentation circuits including power supplies, analog signal amplifiers and analog filter circuits.

9. Grades: ≥ 90 A; 80-89 B; 70-79 C; 60-69 D; < 60 F

10. Must complete all laboratory exercises to pass the course.

11. Distribution of points: Exams and Report: 70%; Labs 20%; Homework 10%;