New Jersey Institute of Technology
Department of Biomedical Engineering

BME 386 – Course Syllabus
Biomedical Engineering Instrumentation Laboratory - Fall 2018

Instructor:

Mesut SAHIN, PhD
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Fenster Hall, Room 617
Office Hours: 2 hour period after class on Wednesdays
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Course Description:

The main objective of this course is to equip the students with further hands-on experience in Biomedical Instrumentation before taking the Capstone projects. The studio experiments involve both digital (only one studio lab) and analog circuits designed for practical applications of biomedical measurement systems commonly used in bioinstrumentation. The topics will cover the application of transducers, and electrodes for recordings of physiological signals, building circuits for signal conditioning, and acquiring these signal into a computer and further processing on the computer.

Studio format involves the integration of lectures and labs into one highly participatory structure. A report will be due on each studio the following week.

Studio sessions will be conducted in 2 or 3 person groups. **Studio Reports** should be **typed** and submitted **as a group** on the date that is due. A template will be provided for the studio reports. There will be a penalty for late submissions (**5 points** per day, out of 100). There is no textbook for the course to buy. The instructor will provide an assignment sheet for each lab explaining the details.

Attendance: Students need to come to each class to keep up with the material since this is a studio style class. ***The lab report grade (70% of the final grade) will be calculated as the average of all the reports except the one with the lowest grade. Each student will be allowed to miss a maximum of 1 studio (1 week), in which case the missing studio will be considered the one with the lowest grade. There will be no make-up sessions for the missed studios.***

Academic Dishonesty: In accordance with the Academic Honor Code, an evidence of cheating may result in an "F" grade in this course.

Honor Code Violations/Disruptive Behavior: NJIT has a zero-tolerance policy regarding cheating of any kind and student behavior that is disruptive to a learning environment. Any incidents will be immediately reported to the Dean of Students. In the cases the Honor Code violations are detected, the punishments range from a minimum of failure in the course plus disciplinary probation up to expulsion from NJIT with notations on students' permanent record. Avoid situations where honorable behavior could be misinterpreted. ***No eating or drinking is allowed in class. Cellular phones must be turned off during the class hours***.

Finally, the best way to reach the instructor outside the office hours is via e-mail. Also, check your email a few times a week for messages from the instructor as a part of this class.

Class Grading:	
Midterm:	10%
Final Exam:	20%
Lab Reports:	70%

Course Objectives:

1. Develop skills to design and conduct experiments and analyze data
2. Gain hands-on experience on analog and digital circuits commonly used in biomedical Instrumentation
3. Acquire practical experience about interfacing with the living systems for collection of biological signals
4. Apply modern engineering hardware and software to collect, analyze and interpret biological signals
5. Work in groups and develop written communication skills