



Introduction

1. Course Information

Course Name	<i>Biomedical Instrumentation Laboratory</i>
Institution	<i>University of Florida</i>
Course Number	BME 4503L
# credits	1
Meeting times	Tu 2-4 PM or Th 2-4 PM or Th 7-9 PM
Is this a required course?	Yes
Pre-requisites	MAC 2313, MAP 2302, PHY 2049, and EEL3111C
Target audience (e.g. 1st, 2nd year):	2nd or 3rd Year
Textbook	None
Course Website (if it exists)	https://www.bme.ufl.edu/sites/default/files/BME4503L_Fall%202017_Arce.pdf

2. Course Description

In the space below, “paste” the description of the course. This can be the actual description listed in the syllabus from the course.

*Laboratory to go with BME 4503 Biomedical Instrumentation. Students will put into practice what they learn in the course.
From BME 4503:
This course covers engineering and medical bases of application, measurement and processing of signals to and from living systems. Biomedical transducers for measurements of movement, biopotentials, pressure, flow, concentrations, and temperature are discussed, as well as treatment devices such as ventilators and infusion pumps.*

3. Course Learning Objectives

In the space below, “paste” the course learning objectives if explicitly stated.

- *Understand practical aspects of measurement and instrumentation*
- *Understand the limitations of physiological measurements*
- *Learn to design, build, and test biomedical instrumentation equipment*
- *Learn to acquire measurements and interpret data from physiological systems*

4. Fundamental Tools and Skills

In the space below, describe the fundamental tools and skills that are addressed in the class. For example, labview, arduino’s, the design process etc.

- Apply knowledge
- Conduct experiments
- Design
- Function on teams

5. Exercises or Experiential Projects of Interest

Exercise/Project	Project Overview	Learning Activities and Assessments	Required Resources for Project Completion
<i>EXAMPLE</i>	Students make pulse oximeters.	<p>Learning Activities</p> <ul style="list-style-type: none"> • Students will use resistors and a bread board to ... • In a short essay assignment, students explain... <p>Assessment</p> <ul style="list-style-type: none"> • Students complete a laboratory report that explains ... 	Function generator, resistors, oscilloscope....
1	Introduction Lab – Circuits Review Lab 1 – Simple Op Amp	Essentially for all of these labs, since this course is just a 1 credit addition to the main course where the material is actually learned, the students are required to simply build the systems that are noted and most likely run some tests and collect	The projects that they do will most likely be function generator, resistors, oscilloscope, soldering materials, bread boards, op-amps, electrodes and any other misc

Exercise/Project	Project Overview	Learning Activities and Assessments	Required Resources for Project Completion
	Circuit Measurements Lab 2 – Op Amp Circuits Lab 3 – Thermistors Lab 4 – Joint Flex Sensors Lab 5a – Neuroamplifier (soldering) Lab 5b – Neuroamplifier (testing) Lab 6 – Notch filter (BMES week) Lab 7 – Photoplethysmography Lab 8 – ECG Amplifier Lab 9a – Simple Pacemaker (building) Lab 9b – Simple Pacemaker (testing) Holiday – No Labs Lab10-TALab In-Class Practical Exam	results. Most likely they will keep a lab notebook to keep track of their progress and write down their results and discussions	items that may be required for the particular project
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6. Additional thoughts

If you have any other thoughts about this course, but have not been able to reflect it elsewhere in the document, please feel free to do so here.

No additional thoughts, seems to be a toned down version of our BME 458 course