Ankara University
Faculty of Engineering
Department of Biomedical, Computer and Electrical and Electronics Engineering

Multidisciplinary Project Work

2023-2024 Spring Semester

Design and Test of a Phonocardiogram System

The aim of the project: This project is the design of a practical phonocardiogram system. Teams should practice the design, implementation, and test of this medical device.

The project groups: Project teams should include students from Biomedical, Computer and Electrical and Electronics Engineering Departments who are enrolled to BME 324 Biomedical Instrumentation and BME 4400 Internship Courses, COM2044 Object Orienting Programing and EEE2222/EEE202 ELECTRONICS 1 courses. Students should form the teams and include their contact information to the given link. (Teams are randomly formed)

https://docs.google.com/spreadsheets/d/17ORL3Ex5GclFIANhlvCazlVwzuGPeG1XP1j3W2mSXAA/edit?usp=sharing

The project work:

The project is to design a phonocardiogram device and monitoring software. Team members should assign 3 team leaders from 3 disciplines and 1 team director from team leaders and make a project plan. Each member should be responsible for a part of the project, but team members should work together. The project work has three parts: Design and implementation of the stethoscope, design and implementation of the signal conditioning circuit and developing a monitoring software. The project report should include the basic information about phonocardiogram, stethoscope, the design, standards used or can be used for the design, the parts and materials needed for the design, electronic circuit description, printed circuit board implementation, monitoring software design details, data collection and details about the signal processing using the collected data (Signal processing examples can be one or more of the following or teams can advise their own ideas: Amplitude and frequency detection, their range detection, heart rate calculation, peak detection, anomaly detection etc.). Detailed Information about the project will be given in your ekampus/google class page.

The project report: The project report should not be more than 15 pages (excluding codes and appendix). You should include the references and used standards. Group members, team leader, project plan and encountered difficulties related to multidisciplinary project work should also be included. Do not use any part of the given notes as is in your report, you should make your own figures, diagram, etc.

The project evaluation: The projects will be part of grades depends on your department.

The Report Format: LAYOUT

Use Times New Roman as character font. The font size must be 12 points. Headings and subheadings should be bold typeface and capitalized. Use 1.5 spacing throughout. Separate paragraphs by adding extra spacing. Give space between headings and text. The specifications of the margins must be as follows: left margin 2.5 cm, right margin 2.0 cm, top margin 2.0 cm and bottom margin 2.0 cm. Begin each main section on a separate page.

The preliminary pages (Title Page, Evaluation Report, Abstract, Table of Contents) should be numbered using Roman Numerals (ii. iii, ..). For the remaining pages, use Arabic Numbers. Page numbers should be centered at the bottom of each page. Report will be submitted in pdf format.

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The pdf formatted reports should be uploaded to course Google classroom page.

The announcement date: 17 April 2024

The deadline: 24 May 2024

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Ankara University, Faculty of Engineering, Department of Biomedical, Computer, and Electrical and Electronics Engineering	**MULTIDISCIPLINARY PROJECT WORK EVALUATION REPORT**	**Semester: 2023 - 2024**

TEAM

Number	**13**	**Name**	

STUDENTS

Number	Name and Surname	Course Code
20290387	BÜŞRA AYDIN	BME324-B
21290410	EZGİ ERDOĞAN	BME324-B
20290415	NURCAN KANYILMAZ	BME324-B
22290750	ÖZGÜR GİRAY	COM2044-B
21290762	AHSEN SEVDE DURAN	COM2044-B
21290594	BORAN ÖMER DOĞAN	COM2044-B
21290216	FURKAN ÇAĞATAY ÖZBEK	COM2044-B
20290490	ERDEM ÖZKAY	EEE2222-A
21290712	HEDİYE SUDE TUNÇAZ	EEE2222-A
20291155	ÇAĞLA MELİKE ŞAHAN	EEE2222-A
21290365	ASİYE AYSU ŞAHİN	EEE2222-A
22290605	AHMET ALPTUĞ ALTINTAŞ	EEE2222-A
21290443	FURKAN DAĞLI	EEE2222-A

	Weights	Grade
Evaluation		

1	Literature Work	10	
2	Project Management	10	
3	Stethoscope design, tests, performance	10	
4	Electronic Circuit design, tests, performance	10	
5	Monitoring Software design, tests, performance	10	
6	Tests of the system	10	
7	An example of signal processing using the collected data	10	
8	Possible standards used or can be used for design	10	
9	Encountered difficulties related to multidisciplinary project work	10	
10	Format of the report	10	
	Total	100	

Evaluator(s):