

COURSE	Name	: Biomedical Signal Analysis
	Code	: EE185547
	Credit(s)	: 2
	Semester	: (Elective Course)

Description of Course

Biomedical Signal Analysis Course is a course that studies the basics of generating signals from a biological system. The signal will then be processed and extracted to obtain certain characteristics of the signal. Analysis is carried out on the characteristics obtained for the purposes of the biomedical field. Some mathematical tools are used in developing biomedical signal analysis.

Learning Outcomes**Knowledge**

(P02) Mastering engineering concepts and principles to develop the necessary procedures and strategies for systems analysis and design in the areas of power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics.

Specific Skill

(KK02) Being able to compose problem solving in engineering through depth and breadth of knowledge which adapts to changes in science and technology in power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics.

General Skill

(KU07) Being able to improve the capacity of learning independently.

Attitude

(S09) Demonstrating attitude of responsibility on work in his/her field of expertise independently.

Course Learning Outcomes**Knowledge**

Mastering the concepts and principles of biomedical signal analysis to develop procedures and strategies needed for system analysis and design in the field of biomedical engineering.

Specific Skill

Able to develop solutions to biomedical engineering problems by deepening or expanding scientific analysis of biomedical signals.

General Skill

Able to improve the capacity of scientific learning anatomy and physiology of human organs independently.

Attitude

Demonstrate an attitude of responsibility for work in the field of anatomy and physiology of human organs independently.

Main Subjects

1. Electro physiology of heart
2. ECG analysis
3. Myoelectric signal
4. EOG analysis
5. Digital Filter for signal processing
6. Processing and analysis of human movement signals
7. Frequency-based analysis and Time-Frequency analysis

Reference(s)

- [1] JL Semlow, Biosignal and Biomedical Image Processing, Marcell Dekker Inc., 2004.
- [2] J Bronzino (Ed), Biomedical Engineering Handbook, IEEE Press.
- [3] Metin Akay (Ed), Biomedical Signal Detection, IEEE Press.

Prerequisite(s)
