COURSE	Name	: Biomedical Engineering
	Code	: EE185546
	Credit(s)	: 2
	Semester	: (Elective Course)

Description of Course

The Biomedical Engineering Course is a course that discusses the contribution of engineering fields in medicine and biology that are multidisciplinary. Course materials discussed in this course include the scope of biomedical engineering, physiology systems, biomedical system modeling, bioelectric phenomena, biomechanical concepts, biomaterial concepts, imaging medical, prothese and artificial organs, clinical engineering, medical ethics.

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

(KK04) Being able to implement alternative solutions of engineering problems by concerning in factors of economy, public health and safety, culture, social, and environment.

General Skill

(KU04) Being able to identify the scientific field that becomes the object of his research and positions into a research map developed through interdisciplinary or multidisciplinary approach.

Attitude

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

(S12) Working together to be able to make the most of his/her potential.

Course Learning Outcomes

Knowledge

Mastering the concept of physiological system modeling and biomedical related fields

Specific Skill

Able to model physiological systems and present bioelectric phenomena, and biomedical related fields

General Skill

Able to use software to model physiological systems

Attitude

Demonstrating the attitude of being responsible for the work in his area of expertise independently.

Working together to be able to make the most of their potential.

Main Subjects

1. Introduction to Biomedical Engineering
2. Physiological System Modeling
3. Bioelectric signals
4. Medical Imaging Concept
5. Prothese and Artificial Organ
6. Medical Ethics

Reference(s)

[1] J Bronzino (Ed), Biomedical Engineering Handbook, IEEE Press.
[2] RB Northrop, Introduction to Dynamic Modeling of Neuro-sensory Systems, CRC Press, 2001.
[3] IEEE Trans Biomedical Engineering.
[4] J Moore and G Zouridakis, Biomedical Technology and Devices Handbook, CRC Press, 2004.
[5] J Tan (Ed), E-Health Care Information System, Jossey-Bass, 2005.

Prerequisite(s)

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