COURSE	Name	: Renewable Energy System and Design
	Code	: EE185510
	Credit(s)	: 2
	Semester	: (Elective Course)

Description of Course

Renewable Energy Engineering course discusses the application and implementation of power plant systems with renewable energy sources related to optimal sizing capacity and system design by considering the quality of electrical power and energy efficiency.

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

(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.

Course Learning Outcomes

Knowledge

Mastering the concept of a renewable energy generating system that includes theories related to the types of renewable energy generator and energy conversion systems and the problems that exist in renewable energy systems.

Specific Skill

Being able to determine optimal capacity sizing and electrical energy storage systems.

Being able to design renewable energy generation systems by considering system power quality and economic factors.

General Skill

Able to demonstrate independent, quality, and measurable performance in analyzing existing problems in renewable energy generation systems.

Attitude

Able to be responsible for the work, both individually and in groups.

Main Subjects

1. Renewable Energy Potential
2. Solar radiation energy generator system (PV)
3. Wind energy generator system (WT)
4. Microhydro (MH) energy generator system
5. Ocean current energy generator systems
6. Fuel cell energy generator system

Reference(s)

[1] R.K. Behl, R.N. Chhibar, S. Jain, V.P. Bahl, N.El Bassam, “Renewable energy source and their application”, IFEED
[2] V V N Kishore, Renewable Energy Engineering and Technology
[3] Ben Sorensen, Renewable Energy 3th edition, 2017
[4] J. Aabakken, Power Technology Energy Databook 3th Edition, 2005

Prerequisite(s)

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