COURSE	Name	: Intelligence System
	Code	: EE185660
	Credit(s)	: 2
	Semester	: (Elective Course)

Description of Course

This course materials consists : basic concept of intelligent system, Intelligent system application: from searching techniques, classification, clustering and optimization, Random theory and statistical computation, Genetic Algorithm, searching technique, non-deterministic searching, logical agents, knowledge-based agents, forward and backward chaining, classification techniques (K-NN), Reasoning Techniques, Bayes rules, K-Means Clustering, Artificial Neural-Network and Machine Learning.

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

(KK01) Being able to formulate engineering problems with new ideas for the development of technology in power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics.

General Skill

(KU11) Being able to implement information and communication technology in the context of execution of his/her work.

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 basic concept of intelligent system, Intelligent system application for searching, classification, clustering and optimization, random theory and statistical computation, Genetic Algorithm, searching technique, non-deterministic searching, logical agents, knowledge-based agents, forward and backward chaining, classification techniques (K-NN), Reasoning Techniques, Bayes rules, K-Means Clustering, Artificial Neural-Network and Machine Learning.

Skill

Able to develope his/her own algorithm to solve some specific problems given by the lecturer, including in the field of searching, optimising and classification.

Main Subjects

1. Basic concept of intelligent system
2. Intelligent system application for searching, classification, clustering and optimization
3. Random theory and statistical computation
4. Genetic Algorithm
5. Searching technique and non-deterministic searching
6. Logical agents and knowledge-based agents
7. Forward and backward chaining
8. Classification techniques (K-NN), K-means Clustering
9. Reasoning Techniques, Bayes rules
10. Artificial Neural-Network and Machine Learning.

Reference(s)

[1] Artificial Intelligence: A Modern Approach., 3rd Edition., Stuart Russell, Peter Norvig., 2010.
[2] An Introduction to Genetic Algorithms., Melanie Mitchell., 1996
[3] Support Vector Machine for Classification and Regression., Steve R Gunn., 10 May 1998.
[4] Support vector Machines and kernels methods., AI Magazine Vol 23 Number 3., 2002., Nello Cristianini and Bernhard Scholkopf
[5] Neural Network Learning and expert systems, Gallant, Stephen I., the MIT press, London, 1993

Prerequisite(s)

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