Course Syllabus

ARTIFICIAL INTELLIGENCE

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Program: Computer Science

1. Course number and name
CCPG1014 - ARTIFICIAL INTELLIGENCE

2. Credits and contact hours
3 credits and 3 contact hours

3. Instructor's course or coordinator's name
COLON ENRIQUE PELAEZ JARRIN

4. Text book, tittle, author, and year
*Luger, George F.. Artificial Intelligence: structures and strategies for complex problem solving (6th ed.)

 a.Other supplemental materials

*Mitchell Tom. Machine Learning (First)

*Chollet D. F.. Deep Learning with Python (First)

5. Specific course information
   a.   Brief description of the content of the course (catalog description)

   This course describes Artificial Intelligence (AI) techniques as tools for analyzing and solving non-conventional problems. During the course, different knowledge representation methods are defined and identified; diverse mechanism for searching and artificial reasoning are discussed and applied to solve problems, as well as the introduction to methodologies for solving complex problems based on machine learning techniques such as neural, convolutional and recurrent networks

   b.   Prerequisites

   PROGRAMMING LANGUAGES - SOFG1001

   c.   This course is a: Required

6. Specific goals for the course
   a.   Specific outcomes of instruction

   1.- To evaluate the appropriate search algorithm for trees and proper artificial reasoning techniques for modeling intelligent behavior of systems

   2.- To apply different knowledge representation methods to solve non-conventional problems

   3.- To recognize the correct application of supervised or unsupervised learning algorithms during the definition of the problem

   4.- To select the appropriate learning algorithm according to the type of data available for automatic training

   5.- To evaluate the development of machine learning models, considering accuracy and performance, as well as the design and implementation skills using the appropriate programming languages

   b.   Explicity indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course

   (1) Analyze a complex computing problem and to apply principles of computing and other relevant

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disciplines to identify solutions.

(6) Apply computer science theory and software development fundamentals to produce computing-based solutions.

7. Brief list of topics to be covered

1.- Fundamentals of Artificial Intelligence

2.- Techniques for solving AI problems

3.- Knowledge representation

4.- Artificial reasoning and inference

5.- Machine Learning - Neural Networks

6.- Convolutional Neural Networks (CNN) and Recurrent Neural Networks (RNN)