TIF21-22-44

Artificial Intelligence

Kecerdasan Buatan

BASIC INFORMATION

Course Credit	3 / 150 minutes per Week
Course Type	Required
Course Classification	Engineering Topics
Prerequisites	-

STUDENT AND LEARNING OUTCOMES

Covered Student Outcomes

Fundamental and Engineering Knowledge (a)	Engineering Design (c)
Development of Engineering Solution (b)	Modern Tools Utilization (e)

Learning Outcomes

LO1 Student able to explain the definition, history, taxonomy, and examples of applications of Artificial Intelligence.

LO2 Student able to implement search techniques.

LO3 Student understand and able to explain expert system.

LO4 Able to represent production rules, propositional logic and first order logic.

LO5 Student able to design and implement using Prologue.

LO6 Student capable of solving problems with data mining techniques, for example using nearest neighbor and decision tree.

COURSE DESCRIPTION

Understanding the definition, history, taxonomy, and examples of its application. Student expected to understand representation of knowledge, expert systems and machine learning. Ability to implement search techniques. Ability to implement Prologue programming language.

TOPICS

1. Preliminary
2. Searching for exploring alternative solutions
3. Expert system
4. Representation of knowledge: rules and logic
5. Knowledge Representation: semantic network
6. Machine learning: nearest neighbor and decision tree
7. Data mining techniques
8. Prologue
9. Arithmetic, List, & Predicate Calculus
10. Tree structure and graph
11. k. NLP and Machine translation

REFERENCES

[1] Russell & Norvig, *Artificial Intelligence: A Modern Approach 2nd Ed*., Pearson, 2013.

[2] M. Negnevitsky, *Artificial Intelligence: A Guide to Intelligent Systems 2nd Ed*. Pearson, 2011.