ROMÂNIA • MINISTERUL EDUCAŢIEI

UNIVERSITATEA „1 DECEMBRIE 1918” DIN ALBA IULIA

Departamentul de Informatică, Matematică și Electronică

TEMATICA

Funcția didactică de Asistent, poziția 39, din Statul de funcții al Departamentului de Informatică, Matematică și Electronică, anul universitar 2025-2026

1. Parameters calculus. Calculation and interpretation of the parameters of the central tendency, mean value, median value, modal value
2. Applications for estimation of unknown parameters based on confidence intervals-confidence interval for unknown mean
3. Numbering bases, conversions, operations
4. Assembly programming: basic instructions, advanced instructions, DOS functions, using the stack
5. Introduction to the Python language. Installation. How to run a Python program
6. Defining and using functions
7. Algorithmic problem-solving. Implementation of simple algorithms: search, max/min selection, sorting, etc
8. Data structures. ADT Compex implementation.
9. Programming methods. Divide et Impera techniques.
10. Greedy method-specific issues
11. Introduction to Object-Oriented Programming (OOP)
12. Classes and Objects
13. Multiple Inheritance and Interfaces
14. Complements of Mathematics
15. Achieving finite automata
16. Classification techniques using the k-nearest neighbor. Implementation in one programming language of choice (Matlab, R, C++, Python)
17. Support Vector Machines. Matlab implementation
18. Neural networks. Applications and examples.
19. Structure of an OpenGL application
20. Calculating shadows in OpenGL applications
21. Paradigm of Genetic Algorithms
22. Application of evolutionary algorithms in optimization
23. Introduction to fuzzy logic. Fuzzy systems.
24. Simpex algorithm Particular cases: the infinite case, the degenerate case, multiple solution case

25. Transport problems Particular cases: degenerate solution, multiple solution case

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