

Course name: Knowledge bases and expert systems in economy		
Type of study: Computer Science	Type of study: Full-time	Course code:
Course characteristics:: Mandatory within the additional content	Level: Second (M.Sc.)	Year: I Semester: I
Type of classes lectures, laboratories	Hours per week: 2lect, , 2lab	ECTS points: 5 ECTS

COURSE GIIDE

AIMS

- C1. Informing the students about expert system structures, methods of procedure algorithms creation, tools for their creation. Expert system algorithm analysis with regarding economic needness and problems.
- C2. Knowledge needed to decisions suport and their optimization.
- C3. Skills in improvement knowledge base structures (by removing contradictions and redundations).

PREQUISITES

1. Knowledge of economic, logistic, plan decision pragmatics and problems.
2. Based knowledge of algorithm creation and programming.
3. Ability to form criteria and constrains in decision process.
4. Ability to individual and grouped work.
5. Ability to interpret effects and results of program realization.
6. Ability to form and present conclusions and recapitulation.
7. Ability to literature exploration and study.

LEARNING OUTCOMES

- EK 1 – has basic knowledge in area of expert system priorities in comparison with traditional computer systems,
- EK 2 – has a basic knowledge about stages of expert system creation,

EK 3 – has basic knowledge about tools and specialists designing knowledge bases,

EK 4 – knows the convention of rules creation in inferring mechanism.

EK 5 – able to select appropriate approach to analysis the possibility of improvement knowledge bases structure,

EK 6 – able to select and adopt model of expert system to given economic problem,

EK 7 – can tested effectiveness and scale of optimization in applied in implementation procedures methods.

CONTENT

Lectures	Hours
W1 – Introduction to expert system + economic adaptations	2
W2 – Structure and classification of expert system	2
W3 – Knowledge bases structure and parameters	4
W4 – System functions, rules and inferring procedures	4
W5 – Parameters and type of inferring methods	4
W6 – Real time expert systems	2
W7 – Semiotic aspects of inferring structures	2
W8 – Tools of expert system creation	4
W9 – Knowledge exploration and its presentation	4
W10 – Additional ways of expert system problem resolving improvements	2
Laboratories	Hours
L1 – inferring mechanism creation	2
L2 – game strategy description and modeling in systems	4
L3 – optimization in transport problem	2
L4 – artificial intelligence in expert system	4
L5 - production planning optimization in expert system	2
L6 – prognosis procedures in expert system creation	2

L7 – learning process in expert system	3
L8 – cell automata in prognosis system	3
L9 – decision support based on Saaty matrix	4
L10 – market game and equilibriums	4

TEACHING TOOLS

1. – lectures using media presentations
2. – blackboard and chalk whiteboards
3. - laboratory guides
4. - report from laboratory activities
5. – computers with software

LITERATURE

1. Forsyth R.: Expert System. Principles and Case Studies, Chap. and Hall, London, 1984
2. Ignizio J.P.: An Introduction to Expert Systems, McGraw-Hill, New York, 1991
3. Devis R., Lenat D.B.: Knowledge-Base Systems in Artificial Intelligence, New York, 1982
4. Nebendahl E.:Expert Systems, J.Wiley and Sons Inc., Berlin, 1988
5. Waterman D.A.: A Guide to Expert Systems, A-W Publ. Comp., London, 1986
6. Addis T.R.: Designing Knowledge- Besesd Systems, Kogan Page, London, 1985

TEACHERS

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