ЦЕНТЪР ЗА ОБУЧЕНИЕ – БАН

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Basic Information:
Course Title: INTUITIONISTIC FUZZY SETS
Lecturer: Acad. Krassimir Todorov Atanassov
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Email: k.t.atanassov@gmail.com
Total Teaching Hours: 30 h.

Annotation (up to 150 words)

The course covers the basic elements of Petri nets and Generalized Nets (GNs) theories and discusses their main applications in artificial intelligence, industry, medicine, and more.

Course content (brief description by topics or modules)
Topic / Module 1: Definition of an IFS. Geometrical interpretations of IFSs
Topic / Module 2: Operations and relations over IFSs
Topic / Module 3: Modal operators over IFSs
Topic / Module 4: Topological operators over IFSs
Topic / Module 5: Norms and metrics of IFSs
Topic / Module 6: Interval-valued IFSs
Topic / Module 7: Temporal IFSs and IFSs of *n*-th type
Topic / Module 8: Intuitionistic fuzzy logic
Topic / Module 9: IFSs as component of the artificial intelligence toolkit
Topic / Module 10: Applications of IFSs

Teaching and assessment methods
Exam based on a synopsis or (at the choice of each individual PhD student) preparation of a manuscript/report for publication in a journal or participation in a conference

Competencies acquired as a result of training (3–5 points)
skills for scientific work on the theory of IFSs
skills for applying the theory of IFSs in artificial intelligence
skills for applying the theory of IFSs in economics, industry, medicine and others.

Literature:
Atanassov, K. On Intuitionistic Fuzzy Sets Theory, Springer, Berlin, 2012.
Atanassov, K. Intuitionistic Fuzzy Logics, Springer, Cham, 2017.
Atanassov, K. Interval-Valued Intuitionistic Fuzzy Sets, Springer, Cham, 2020.
Atanassov. K. Generalized Nets and Intuitionistic Fuzziness in Data Mining. “Prof. Marin Drinov” Academic Publishing House, Sofia, 2020.

Additional information (optional) (e.g., special requirements, laboratory equipment, prior knowledge)