INFORMATICS DOCTORAL SCHOOL
COMPLEX EXAMINATION – COURSE TOPICS

Information technology curriculum theory

- Comparative analysis of informatics and computer science curricula: common characteristics and differences with respect to educational goals, instructional objectives, developmental requirements, and implementation practices.
- Educational standards in informatics curricula. Implementation of theoretical curriculum models in concrete educational and instructional frameworks.
- Conceptualisation of informatics as a field of general education: core principles and objectives; developmental tasks; integration of thematic areas; interdisciplinary and cross-curricular connections.
- Knowledge domains of informatics: definition of content areas; structure and organisation of the informatics literacy domain; age-based progression; historical development of curriculum structures.
- Key competences in European and Hungarian educational regulation: OECD recommendations; digital competence frameworks; competence maps; principles of competence-based education and approaches to competence assessment.
- Informatics-related competences: approaches to defining competence systems and their critiques; relationships between informatics competences and mathematical competences; implementation of competence-based development in informatics education.
- Conceptual networks and key concepts in informatics: core concepts of informatics; relationships between informatics and mathematical conceptual systems; connections between competence-based and concept-based curriculum models.
- Multi-level curriculum regulation: the interrelated structure of the National Core Curriculum, framework curricula, local curricula, and educational programmes. Curriculum design in informatics: goals, objectives, requirements, and coherence. Boundaries between informatics and other fields of general education.
