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| (1.) Course Title: INFPHD150 Data mining seminar II.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Credits: 6 |
| Course Classification: Optional                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |            |
| Theoretical or Practical Nature of the Course, 'training character' <sup>13</sup> : 50-50% (credit%)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |
| <b>Type of Class:</b> practice and <b>number of hours:</b> 2/week in the given semester,<br><i>(If the course is not (only) taught in Hungarian, then the language: English)</i><br><b>Additional</b> (specific) <b>methods and characteristics</b> <sup>2</sup> used in delivering the knowledge <i>(if any)</i> : -                                                                                                                                                                                                                                                                                                                                                              |            |
| <b>Assessment Method</b> (Exam / Midterm Grade / <b>Other</b> <sup>3</sup> ): practical course marc<br><b>Additional</b> (specific) <b>methods</b> <sup>4</sup> applied in knowledge assessment <i>(if any)</i> :                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |
| <b>Course Placement</b> in Curriculum (Semester Number): -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |
| Prerequisites <i>(if any)</i> : -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |
| <b>Course Description:</b> A concise yet informative description of the knowledge to be acquired.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |            |
| Overview of the most recent results in machine learning, artificial intelligence, and networks                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |            |
| <b>2-5 Most Important Required and Recommended Literature</b><br>List of required and recommended literature (notes, textbooks) with bibliographic data (author, title, publication details, (possibly pages), ISBN).                                                                                                                                                                                                                                                                                                                                                                                                                                                              |            |
| Conference proceedings of the recent editions of ICML, NeurIPS, ICLR, AAAI, KDD, WWW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |            |
| <b>List of Prescribed Professional Competencies and Competency Elements</b><br>(knowledge, skills, etc., KKK Section 8) that the course significantly contributes to developing (highlight the most important ones).<br><b>a) Knowledge</b> <ul style="list-style-type: none"> <li>Has a research-level understanding of the general and specific characteristics, major directions, and precisely developed boundaries of the subject area within the discipline, as well as the agreed and debated interrelations.</li> <li>Creatively comprehends the interrelations, theories, and conceptual frameworks and terminologies of the given field of study.<sup>1</sup></li> </ul> |            |

<sup>1</sup>**Section 108**, Article 37 of the National Curriculum Act (Nftv.) 37. lesson: a session (lecture, seminar, exercise, consultation) requiring the personal involvement of the instructor to fulfil the academic requirements specified in the curriculum, the duration of which is at least forty-five minutes and not more than sixty minutes.

<sup>2</sup> e.g. case studies, role play, thematic presentations, etc.

<sup>3</sup> e.g. continuous debriefing, mid-year report

<sup>4</sup> e.g. request for case studies, thematic papers, essays, business, organisational plans, etc.

- Possesses research methodology knowledge necessary for independent research in the given discipline/field.

#### **b) Skills**

- Capable of creative analysis of the field, synthesizing comprehensive and specific interrelations with a new perspective, and conducting appropriate evaluative and critical activities.
- Able to apply and further develop the specialized learning and problem-solving methods of the field.
- Can creatively elaborate on the novel, previously unknown practical implications of theoretical issues.
- Capable of planning and executing new projects, conducting research in the field, and developing new techniques and approaches.
- Able to identify unforeseen professional problems and uncover the detailed theoretical and practical background necessary for their resolution at a research level.
- Can construct and communicate new relations relevant to the field, as well as comprehensive interrelations significant for personal and communal existence.

#### **c) Attitudes**

- Represents and further develops the relations that contribute to the process of human self-creation based on the field's characteristics.
- Possesses an interest and learning ability that enable identifying and solving currently unpredictable research problems in the field.
- Demonstrates a firm professional commitment, a continuous dedication to exploring new approaches, and an acceptance of the necessity for persistent effort.

#### **d) Autonomy and Responsibility**

- Builds and initiates new knowledge areas with creative independence and proposes new practical solutions.
- Participates in formulating theoretical and practical questions with a leadership role and high-level cooperation.
- Engages as an equal discussion partner with professionals in the field.
- Takes responsibility for raising and addressing new ethical questions concerning theoretical and practical aspects of the profession.

**Course responsible** (name, position, academic degree): Dr. András Benczúr, PhD

**Instructor(s) involved in teaching the course** (if any) (name, position, academic degree):

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