#### **SYLLABUS**

## 1. Information regarding the programme

| 1.1 Higher education institution    | Babeş Bolyai University                     |
|-------------------------------------|---|
| 1.2 Faculty                         | Faculty of Mathematics and Computer Science |
| 1.3 Department                      | Department of Computer Science              |
| 1.4 Field of study                  | Computer Science                            |
| 1.5 Study cycle                     | Master                                      |
| 1.6 Study programme / Qualification | Applied Computational Intelligence          |

## 2. Information regarding the discipline

| 2.1 Name of the discipline |   |          | Elaboration of the | Diss                  | ertation The | sis         |            |
|----------------------------|---|----------|--------------------|-----------------------|--------------|-------------|------------|
| 2.2 Course coordinator     |   |          |                    | Prof.Dr. Horia F. Pop |              |             |            |
| 2.3 Seminar coordinator    |   |          |                    | Prof.Dr. Horia F. Po  | р            |             |            |
| 2.4. Year of               | 2 | 2.5      | 4                  | 2.6. Type of          | VP           | 2.7 Type of | Compulsory |
| study                      |   | Semester |                    | evaluation            |              | discipline  |            |

## 3. Total estimated time (hours/semester of didactic activities)

| 3.1 Hours per week  | 5  | Of which: 3.2 course                    | 0 | 3.3 project | 5     |
|---|----|---|---|-------------|-------|
| <b>I</b>  | 5  |   |   |             | 5     |
| 3.4 Total hours in the curriculum   | 60 | 60   Of which: 3.5 course   0   3.6 pro |   |             | 60    |
| Time allotment:   |    |   |   |             | hours |
| Learning using manual, course support, bibliography, course notes                     |    |   |   |             | 8     |
| Additional documentation (in libraries, on electronic platforms, field documentation) |    |   |   |             | 8     |
| Preparation for seminars/labs, homework, papers, portfolios and essays                |    |   |   |             | 12    |
| Tutorship   |    |   |   |             | 8     |
| Evaluations   |    |   |   |             | 4     |
| Other activities:   |    |   |   | -           |       |
| 3.7 Total individual study hours  |    | 40                                      |   |             |       |

| 3.8 Total hours per semester | 100 |
|------------------------------|-----|
| 3.9 Number of ECTS credits   | 4   |

## 4. Prerequisites (if necessary)

| 4.1. curriculum   | Computer Science Research Methodology |
|-------------------|---------------------------------------|
| 4.2. competencies |                                       |

#### 5. Conditions (if necessary)

| 5.1. for the course                  | -    |
|--------------------------------------|------|
| 5.2. for the seminar /lab activities | None |

# 6. Specific competencies acquired

| <b>Professional</b><br>competencies | • | Analysis and formalization of problems and issues requiring advanced computer science understanding                |
|-------------------------------------|---|--|
| sio                                 | • | Use of specific theoretical methods in problems solving at various levels  |
| ofes                                | • | Analysis, design, and implementation of advanced software systems  |
| Pro                                 | • | Proficient use of methodologies and tools specific to programming languages and software systems                   |
| <b>Transversal</b><br>competencies  | • | Professional communication skills; concise and precise description, both oral and written, of professional results |

## 7. Objectives of the discipline (outcome of the acquired competencies)

| J                             |   |
|-------------------------------|---|
| 7.1 General objective of the  | This research activity represents the individual work the student performs  |
| discipline                    | with the purpose to finalize his/her dissertation thesis.                   |
| 7.2 Specific objective of the | At the completion of this course, the student should:                       |
| discipline                    | - have documentation abilities on the dissertation;                         |
|                               | - be able to design the table of contents of the dissertation;              |
|                               | - know how to write a technical document (dissertation) in many iterations. |

## 8. Content

| o. Content   |                                    |         |
|--|------------------------------------|---------|
| 8.1 Course   | Teaching methods                   | Remarks |
| 8.2 Seminar / laboratory                                   | Teaching methods                   | Remarks |
| 1. Establishing the thesis title/topic                     | Conversation, debate, case studies |         |
| 2. Bibliographical documentation                           | Conversation, debate, case studies |         |
| 3. Table of contents: version 1.0                          | Conversation, debate, case studies |         |
| 4. Relevance of the bibliographical sources and their      | Conversation, debate, case studies |         |
| assignment to the designed structure                       |                                    |         |
| 5. Detecting possible original contribution; discussion    | Conversation, debate, case studies |         |
| and decision on experimental modelling                     |                                    |         |
| 6. Processing of selected documents and writing the        | Conversation, debate, case studies |         |
| paper – first draft of the thesis                          |                                    |         |
| 7. Final form of the thesis                                | Evaluation                         |         |
| Bibliography   |                                    |         |
| - to be decided by student based on his/her research topic |                                    |         |

- Internet resources on software projects and on the particular topics of the projects

# 9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program

- The course respects the IEEE and ACM Curricula Recommendations for Software Engineering studies;
- The course exists at the major universities in Romania offering similar study programs;
- Graduating a master program assumes experience in developing a research project

#### 10. Evaluation

| Type of activity                   | 10.1 Evaluation criteria    | 10.2 Evaluation methods                     | 10.3 Share in |
|------------------------------------|-----------------------------|---|---------------|
|                                    |                             |   | the grade (%) |
| 10.4 Course                        |                             |   |               |
| 10.5 Seminar/lab                   | The ability to write a      | Each of the activities has a due date and a |               |
| activities                         | research report and         | corresponding mark, on a 10-point scale.    |               |
|                                    | present the obtained        | A penalty of 1pt per week are considered    |               |
|                                    | results.                    | for delays.                                 |               |
|                                    |                             | 1. title and table of contents              | 10%           |
|                                    |                             | 2. bibliographical documentation,           | 20%           |
|                                    |                             | relevance, assignment to structure          |               |
|                                    |                             | 3. full text of the report                  | 50%           |
|                                    |                             | 4. final presentation                       | 20%           |
| 10.6 Minimum perfe                 | ormance standards           | · · · ·                                     |               |
| <ul> <li>At least grade</li> </ul> | 5 (from a scale of 1 to 10) |   |               |

| Date       | Signature of course coordinator |
|------------|---------------------------------|
| 22.04.2023 | Prof. Dr. Horia F. Pop          |

Signature of seminar coordinator Prof. Dr. Horia F. Pop

Date of approval

Signature of the head of department

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