

## SYLLABUS

### 1. Information regarding the programme

|                                     |  |
|-------------------------------------|--|
| 1.1 Higher education institution    | <b>Babeş Bolyai University</b>                     |
| 1.2 Faculty                         | <b>Faculty of Mathematics and Computer Science</b> |
| 1.3 Department                      | <b>Department of Computer Science</b>              |
| 1.4 Field of study                  | <b>Computer Science</b>                            |
| 1.5 Study cycle                     | <b>Master</b>                                      |
| 1.6 Study programme / Qualification | <b>Software Engineering</b>                        |

### 2. Information regarding the discipline

|                            |   |              |          |                         |          |                        |                   |
|----------------------------|---|--------------|----------|-------------------------|----------|------------------------|-------------------|
| 2.1 Name of the discipline | <b>Research Project in Software Engineering</b> |              |          |                         |          |                        |                   |
| 2.2 Course coordinator     | <b>Assoc.Prof.PhD. Simona Motogna</b>           |              |          |                         |          |                        |                   |
| 2.3 Seminar coordinator    | <b>Assoc.Prof.PhD. Simona Motogna</b>           |              |          |                         |          |                        |                   |
| 2.4. Year of study         | <b>2</b>  | 2.5 Semester | <b>4</b> | 2.6. Type of evaluation | <b>C</b> | 2.7 Type of discipline | <b>Compulsory</b> |

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

|   |     |                      |   |                        |       |
|---|-----|----------------------|---|------------------------|-------|
| 3.1 Hours per week  | 3   | Of which: 3.2 course | 0 | 3.3 seminar/laboratory | 3 pr  |
| 3.4 Total hours in the curriculum   | 36  | Of which: 3.5 course | 0 | 3.6 seminar/laboratory | 36    |
| Time allotment:   |     |                      |   |                        | hours |
| Learning using manual, course support, bibliography, course notes                     |     |                      |   |                        | 20    |
| Additional documentation (in libraries, on electronic platforms, field documentation) |     |                      |   |                        | 20    |
| Preparation for seminars/labs, homework, papers, portfolios and essays                |     |                      |   |                        | 50    |
| Tutorship   |     |                      |   |                        | 14    |
| Evaluations   |     |                      |   |                        | 10    |
| Other activities: .....   |     |                      |   |                        | -     |
| 3.7 Total individual study hours  | 114 |                      |   |                        |       |
| 3.8 Total hours per semester  | 150 |                      |   |                        |       |
| 3.9 Number of ECTS credits  | 6   |                      |   |                        |       |

### 4. Prerequisites (if necessary)

|                   |   |
|-------------------|---|
| 4.1. curriculum   | <ul style="list-style-type: none"> <li>• Computer Science Research Methodology</li> </ul> |
| 4.2. competencies | <ul style="list-style-type: none"> <li>•</li> </ul>                                       |

### 5. Conditions (if necessary)

|                                      |  |
|--------------------------------------|--|
| 5.1. for the course                  | <ul style="list-style-type: none"> <li>• -</li> </ul>    |
| 5.2. for the seminar /lab activities | <ul style="list-style-type: none"> <li>• None</li> </ul> |

### 6. Specific competencies acquired

|                                  |  |
|----------------------------------|--|
| <b>Professional competencies</b> | <ul style="list-style-type: none"> <li>• Analysis, design, and implementation of software systems</li> <li>• Proficient use of methodologies and tools specific to programming languages and software systems</li> </ul> |
| <b>Transversal competencies</b>  | <ul style="list-style-type: none"> <li>• Professional communication skills; concise and precise description, both oral and written, of professional results</li> </ul>   |

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

|  |   |
|--|---|
| 7.1 General objective of the discipline  | The research project activity represents the individual work the student performs with the purpose to realize a scientific report on a given topic.   |
| 7.2 Specific objective of the discipline | At the completion of this course, the student should: <ul style="list-style-type: none"> <li>- have documentation abilities on an established topic</li> <li>- be able to design the table of contents of research project</li> <li>- know how to write a technical document (research paper) in many iterations</li> </ul> |

### 8. Content

| 8.1 Course   | Teaching methods                   | Remarks |
|--|------------------------------------|---------|
| 8.2 Seminar / laboratory   | Teaching methods                   | Remarks |
| 1. Establishing the research 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 assignment to the designed structure   | Conversation, debate, case studies |         |
| 5. Detecting possible original contribution; discussion and decision on practical part and experimental part   | Conversation, debate, case studies |         |
| 6. Translation of selected documents and writing the paper – first draft of the report   | Conversation, debate, case studies |         |
| 7. Final form of the report  | Evaluation                         |         |
| Bibliography   |                                    |         |
| <ul style="list-style-type: none"> <li>- to be decided by student based on his/her research topic</li> <li>- Internet resources on software projects and on the particular topics of the projects</li> </ul> |                                    |         |

**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 activities                  | The ability to write a research report and present the obtained results | <p>Each of the activities has a due date and a corresponding mark, on a 10-point scale. A penalty of 1pt per week are considered for delays.</p> <p>Portofolio: 3 research reports</p> <ul style="list-style-type: none"> <li>• Report 1: deliver date: week 4</li> <li>• Report 2: deliver date: week 6</li> <li>• Report 3: deliver date: week 10</li> </ul> <p>Presentation</p> | <p>20%</p> <p>20%</p> <p>50%</p> <p>10%</p> |
| 10.6 Minimum performance standards           |   |  |   |
| ➤ At least grade 5 (from a scale of 1 to 10) |   |  |   |

Date 14.04.2021      Signature of course coordinator Assoc.Prof.PhD. Simona MOTOGNA      Signature of seminar coordinator Simona MOTOGNA

Date of approval .....      Signature of the head of department Prof.dr. Laura Dioşan