## COURSE DESCRIPTION

1. **Course title:** SOFTWARE PROJECT

2. **Course code:** SP

3. **Validity of course description from:** 2018/2019

4. **Level of studies:** 1<sup>st</sup> cycle of higher education

5. **Mode of studies:** intramural studies

6. **Field of study:** INFORMATYKA (RAU)

7. **Profile of studies:** general academic

8. **Specialization:** COMPUTER GRAPHICS AND SOFTWARE

9. **Semester:** VI

10. **Faculty teaching the course:** Faculty of Automatic Control, Electronics, and Computer Science

11. **Course instructors:** dr inż. Dariusz Myszor;

12. **Course classification:** specialty courses

13. **Course status:** compulsory

14. **Language of instruction:** English

15. **Pre-requisite qualifications:** completed course: Fundamentals of Computer Programming; Software Engineering

16. **Course objectives:**

   The objective of the course is to provide knowledge necessary to understand aspects of team work over the design and implementation of software system / application. Important part of the course is practical to the students issues related to design and implementation of the software by group of people and methods on how to efficiently cope with these issues such as methodical work on the project, internal and external communication, work organization etc.

17. **Description of learning outcomes:**

<table>
<thead>
<tr>
<th>No.</th>
<th>Learning outcomes description</th>
<th>Method of assessment</th>
<th>Teaching methods</th>
<th>Learning outcomes reference code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ability to select and apply data structures and algorithms in order to realize given task</td>
<td>Project assignment</td>
<td>Project</td>
<td>K1A_W09, K1A_W11, K1A_W12, K1A_W14, K1A_W15, K1A_W22, K1A_U20, K1A_U29, K1A_U27, K1A_U26, K1A_U24</td>
</tr>
<tr>
<td>2</td>
<td>Get acquaintance with the latest trends in the area of software development</td>
<td>Project assignment</td>
<td>Project</td>
<td>K1A_W13</td>
</tr>
<tr>
<td>3</td>
<td>Ability to apply version control systems and software for dev team management</td>
<td>Project assignment</td>
<td>Project</td>
<td>K1A_U07, K1A_U21</td>
</tr>
</tbody>
</table>
4. Ability to plan and organize individual work as well as team work in dev team
   Project assignment

5. Ability to cooperate in dev team and ability to realize various task in such team.
   Project assignment

18. Teaching modes and hours
   Lecture - Laboratory - Project 45

19. Syllabus description:

   Software Project:
   
   1. Preparation of software environment
      a. General description of utilities exploited during software development.
      b. Justification of selected components.
   
   2. Basic UML model
      a. Outline of the use case model in the form of a diagram and description of primary scenarios.
      b. Outline of the class model necessary to implement the foreground scenarios.
   
   3. Classes and interfaces
      a. An interaction model that implements a selected use cases presented in the form of flowcharts and interaction diagrams.
      b. Sub-model of classes that are necessary for the implementation of described use cases, with the visible responsibility of classes and interfaces.
      c. Specification of interfaces for individual classes.
      d. The division of tasks between individual team members.
   
   4. Presentation of the solution
      a. Preparation of the presentation addressed to the "management of the company".
      b. Presentation of prepared presentation.
   
   5. Implementation
      a. Internal specification showing those parts of the source code in which there are references to interfaces set at the design stage.
      b. A short external specification documenting the application interface used to launch the implemented interaction.

20. Exam: no

21. Primary sources:
   
   - G. Schneider, J. Winters, „Stosowanie przypadków użycia”, WNT 2004
   - R.S. Pressman, „Praktyczne podejście do inżynierii oprogramowania”, WNT 2004
   - J. Górski (red.): „Inżynieria oprogramowania w projekcie informatycznym”, wyd. II rozszerzone. Mikom, Warszawa 2000
   - Jaszkievicz: "Inżynieria oprogramowania", Helion, 1997
   - P. Szmal (red.): "Inżynieria programowania. Metody i ćwiczenia laboratoryjne", Skrypt uczelniany Politechniki Śląskiej nr 2120, Gliwice, 1998
22. Secondary sources:
   - 

23. Total workload required to achieve learning outcomes

<table>
<thead>
<tr>
<th>No.</th>
<th>Teaching mode :</th>
<th>Contact hours / Student workload hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lecture</td>
<td>- / -</td>
</tr>
<tr>
<td>2</td>
<td>Classes</td>
<td>- / -</td>
</tr>
<tr>
<td>3</td>
<td>Laboratory</td>
<td>- / -</td>
</tr>
<tr>
<td>4</td>
<td>Project</td>
<td>45 / 45</td>
</tr>
<tr>
<td>5</td>
<td>Seminar</td>
<td>- / -</td>
</tr>
<tr>
<td>6</td>
<td>Other</td>
<td>- / -</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>45 / 45</td>
</tr>
</tbody>
</table>

24. Total hours: 90

25. Number of ECTS credits: 3

26. Number of ECTS credits allocated for contact hours: 2

27. Number of ECTS credits allocated for in-practice hours (laboratory classes, projects): 1

26. Comments: -

Approved:

…………………………….
…………………………………………………
(date, Instructor’s signature) (date, the Director of the Faculty Unit signature)

1 punkt ECTS – 30 godzin.