1. Course title: BIG DATA, Cloud platforms
2. Course code: BG_CP


4. Level of studies: MSc programme

5. Mode of studies: intramural studies

6. Field of study: CONTROL, ELECTRONIC AND INFORMATION ENGINEERING (MACRO) (FACULTY SYMBOL) RAU-2

7. Profile of studies: ACADEMIC

8. Programme: DATA SCIENCE

9. Semester: 1

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

11. Course instructor: dr hab. inż. Dariusz Mrozek

12. Course classification: common courses

13. Course status: compulsory/elective

14. Language of instruction: English

15. Pre-requisite qualifications: Theory of computer science, Computer architecture, Introduction to programming in Java, Computer programming, Programming for the Java Platform, Enterprise Edition

16. Course objectives: The aim of the course is to provide students the knowledge necessary to understand Cloud computing, its architecture, models, platforms, interaction, programming solutions working on the Cloud for various applications.

17. Description of learning outcomes:

<table>
<thead>
<tr>
<th>Nr</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>Student understands basic notions in the area of cloud computing.</td>
<td>Exam</td>
<td>Lecture</td>
<td>K2A_W05, K2A_W06, K2A_W26</td>
</tr>
<tr>
<td>2.</td>
<td>Student knows available platforms of computational cloud and can verify their usefulness.</td>
<td>Exam</td>
<td>Laboratory</td>
<td>K2A_W05, K2A_W06</td>
</tr>
<tr>
<td>3.</td>
<td>Student is able to elaborate computer program or application working in the chosen cloud platform</td>
<td>Laboratory tasks</td>
<td>Laboratory</td>
<td>K2A_U18, K2A_U20, K2A_K03, K2A_K04</td>
</tr>
<tr>
<td>4.</td>
<td>Student is able to use advanced tools for developing applications for cloud computing.</td>
<td>Laboratory tasks</td>
<td>Laboratory</td>
<td>K2A_U19, K2A_U20, K2A_K03, K2A_K04</td>
</tr>
<tr>
<td>5.</td>
<td>Student is able to administer cloud resources.</td>
<td>Laboratory tasks</td>
<td>Laboratory</td>
<td>K2A_U21, K2A_U22, K2A_K05, K2A_K06</td>
</tr>
<tr>
<td>6.</td>
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<td>8.</td>
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</tbody>
</table>

18. Teaching modes and hours

Lecture 15 / BA/MA Seminar / Class / Project / Laboratory 15
19. Syllabus description:

Lecture:
1. Introduction to cloud platforms and cloud computing.
2. Cloud architecture.
3. Abstraction and virtualization.
4. Cloud models and services.
5. Cloud platforms.
6. Working with Cloud-based storage.
7. Exploring platform as a service.
8. Working with virtual machines.
9. Scaling resources on the Cloud.
10. Developing solutions for selected cloud platform.

Laboratory:
1. Managing resources in a cloud platform.
2. Storing data in the Cloud.
3. Developing applications for the Cloud.

20. Examination: semester 1

21. Primary sources:

22. Secondary sources:

23. Total workload required to achieve learning outcomes

<table>
<thead>
<tr>
<th>Lp.</th>
<th>Teaching mode:</th>
<th>Contact hours / Student workload hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lecture</td>
<td>15/15</td>
</tr>
<tr>
<td>2</td>
<td>Classes</td>
<td>0/0</td>
</tr>
<tr>
<td>3</td>
<td>Laboratory</td>
<td>15/15</td>
</tr>
<tr>
<td>4</td>
<td>Project</td>
<td>/</td>
</tr>
<tr>
<td>5</td>
<td>BA/MA Seminar</td>
<td>/</td>
</tr>
<tr>
<td>6</td>
<td>Other</td>
<td>/</td>
</tr>
<tr>
<td></td>
<td>Total number of hours</td>
<td>30/30</td>
</tr>
</tbody>
</table>

24. Total hours: 60

25. Number of ECTS credits: 3

26. Number of ECTS credits allocated for contact hours: 1

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

28. Comments:

Approved:

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