1. Course title: **ELECTRICAL MINING DEVICES**

2. Course code: S I – GO/36

3. Validity of course description: 2017/2018

4. Level of studies: 1st cycle of higher education

5. Mode of studies: intramural studies

6. Field of study: MINING AND GEOLOGY (RG)

7. Profile of studies: academic profile

8. Programme: Opencast Mining

9. Semester: 6

10. Faculty teaching the course: Faculty of Mining and Geology, Department of Electrical Engineering and Control in Mining

11. Course instructor: Sergiusz Boron, Ph.D.

12. Course classification: other

13. Course status: compulsory

14. Language of instruction: English

15. Pre-requisite qualifications: Introducing subject is Electrical engineering (Elektrotechnika ogólna). Student should have basic knowledge of laws (Ohm's, Kirchhoff's) and phenomena occurring in electrical circuits of direct and alternating current, also 3-phase systems.

16. Course objectives: The objective of this course is to provide knowledge about the structure of power system in mine and rules of electric devices exploitation.

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>Students knows the basics of power system in open pit mines</td>
<td>written test, tests after laboratory exercises</td>
<td>Lecture, laboratory</td>
<td>K_W05+</td>
</tr>
<tr>
<td>2.</td>
<td>Student has the knowledge concerning electric drives used in mining machines</td>
<td>written test, tests after laboratory exercises</td>
<td>Lecture, laboratory</td>
<td>K_W22+++</td>
</tr>
<tr>
<td>3.</td>
<td>Student can work out data regarding supply system of electric motors and protective devices used in electrical installations</td>
<td>evaluation of laboratory reports</td>
<td>Laboratory</td>
<td>K_U14+++</td>
</tr>
<tr>
<td>4.</td>
<td>Student can assess hazards caused by using electrical devices, knows the rules of safe and effective exploitation of electrical devices</td>
<td>written test</td>
<td>Lecture</td>
<td>K_U14++, K_U28+</td>
</tr>
<tr>
<td>5.</td>
<td>Student can work in the group during measurements of electric data and working out results</td>
<td>evaluation of laboratory activities</td>
<td>Laboratory</td>
<td>K_K03+</td>
</tr>
</tbody>
</table>

18. Teaching modes and hours

Lecture 15 h, Laboratory 15 h

19. Syllabus description:

**Lectures:**

**Laboratory:**

20. Examination: No
21. Primary sources:
2. Krasucki F. (red.): Laboratorium z urządzeń elektrycznych w górnictwie. Skrypt Politechniki Śląskiej nr 1289.

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 / 20</td>
</tr>
<tr>
<td>2</td>
<td>Classes</td>
<td>/</td>
</tr>
<tr>
<td>3</td>
<td>Laboratory</td>
<td>15 / 25</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>30/45</td>
</tr>
</tbody>
</table>

24. Total hours: 75

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): 2

28. Comments: Laboratory exercises take place in the "Laboratory of networks, devices and electrical hazards in mining". Group is divided into sections that carry out individual exercises

Approved:

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