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

2. **Course code** N I – GO/35

3. **Validity of course description:** 2017/2018

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

5. **Mode of studies:** extramural 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 10 h, Laboratory 10 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>10 / 25</td>
</tr>
<tr>
<td>2</td>
<td>Classes</td>
<td>/</td>
</tr>
<tr>
<td>3</td>
<td>Laboratory</td>
<td>10 / 30</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>20/55</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)