1. Course title: **ELECTRICAL SAFETY MANAGEMENT IN MINING**

2. Course code: S I – EiAG/35


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: Electrical Engineering and Automatic Control in Mining

9. Semester: 7

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, Polish

15. Pre-requisite qualifications: Introducing subjects are Electrical engineering (Elektrotechnika ogólna) and Electrical Devices and Power Networks (Urządzenia i sieci elektroenergetyczne). Student should have basic knowledge of electrical laws and equations.

16. Course objectives: The objective of this course is to provide knowledge about means of electric shock protection and explosion proof equipment as well as electrical safety at work.

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 basic terms of electric shock protection, effects of current passing through the human body, values of permissible touch voltages</td>
<td>written exam</td>
<td>Lecture</td>
<td>K_W10+ K_W21++ K_W24+++</td>
</tr>
<tr>
<td>2.</td>
<td>Student has the knowledge of electric shock protection rules, means of protection, criteria of their selection and valuation of effectiveness in environmental conditions of underground mines</td>
<td>written exam, test after laboratories</td>
<td>Lecture, laboratory</td>
<td>K_W24++ K_W18+</td>
</tr>
<tr>
<td>3.</td>
<td>Student can select means of basic and fault protection for given installation and check their effectiveness</td>
<td>written exam, test after laboratories</td>
<td>Lecture, laboratory</td>
<td>K_U16+ K_U18++ K_U09+++ K_U19++ K_U24+++</td>
</tr>
<tr>
<td>4.</td>
<td>Student can identify and describe basic features and parameters of network and devices and assess their ability to safe and effective work in the mining environment</td>
<td>written exam</td>
<td>Lecture</td>
<td>K_U25++</td>
</tr>
<tr>
<td>5.</td>
<td>Student is aware of meaning of environmental conditions and electric shock protection in mines to the safety of personnel</td>
<td>written exam</td>
<td>Lecture</td>
<td>K_K02++ K_K04++ K_K06++</td>
</tr>
<tr>
<td>6.</td>
<td>Student can present electrical hazards and methods of limiting consequent risk</td>
<td>written exam</td>
<td>Lecture</td>
<td>K_K03+ K_K05++ K_K07++</td>
</tr>
</tbody>
</table>

18. Teaching modes and hours

Lecture 15 h, Laboratory 15 h

19. Syllabus description:

Lectures:

**Laboratory:**

20. **Examination:** semester 7

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 / 35</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>30/60</td>
</tr>
</tbody>
</table>

24. **Total hours:** 90

25. **Number of ECTS credits:** 3

26. **Number of ECTS credits allocated for contact hours:** 3

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

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)