### COURSE DESCRIPTION

<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>Possess knowledge on the life-cycle of equipment and technical systems in extractive industries.</td>
<td>Written colloquium</td>
<td>Lecture</td>
<td>K_W11++ K_W17+++ K_W21++</td>
</tr>
<tr>
<td>2.</td>
<td>Is able to preliminary select an underground coal mining system in relation to conditions of a coal bed.</td>
<td>Written colloquium</td>
<td>Lecture</td>
<td>K_U05++ K_U12++ K_U13++</td>
</tr>
<tr>
<td>3.</td>
<td>Is able to adequately define priorities required to reach the objectives formulated by himself or the others.</td>
<td>Single-handedly elaborated calculations</td>
<td>Project</td>
<td>K_K04+ K_K06+</td>
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</tbody>
</table>

**COURSE TITLE:** MINE CLOSURE  
**COURSE CODE:** SII-EZIZO/24

**Validity of course description:** 2014/2015  
**Level of studies:** MSc programme / 2nd cycle of higher education  
**Mode of studies:** intramural studies  
**Field of study:** MINING & GEOLOGY  
**Programme:** MINING TECHNOLOGIES AND WASTE MANAGEMENT  
**Semester:** III  
**Faculty teaching the course:** Institute of Mining  
**Course instructor:** Dr Eng. Grzegorz Strozik  
**Course classification:** Specialty courses  
**Course status:** compulsory  
**Language of instruction:** English  

**Pre-requisite qualifications:**  
The main pre-requisite course is: General Mining. Student should possess overall knowledge in the field of underground and opencast mining systems, metal ore mining and quarrying.

**Course objectives:**  
Objective of the course is obtainment by the student a knowledge in the field of mines closure and liquidation of workings. Development of abilities to solve simple engineering problems related to mentioned subject.

**Teaching modes and hours:**  
Lecture / BA / MA Seminar / Class / Project / Laboratory  
Sem 3: Lecture 15 h., Project - 15 h

**Syllabus description:**  
Semester 3 :  
**Lecture:** Introduction - Principles of Mine Closure; Decommissioning and closure ; Legislation and regulations; Time span of mine closure; Mine closure planning – surface, underground mines and leaching operations; Activities of mine closure – barricades, void filling; Mine Workings and
Mine Shaft Treatment - Fill and seal mine shafts and adits; Mine gas drainage after closure; Case studies.

**Project:** Develop conceptual design longwall liquidation with particular emphasis on the security requirements of mining. The project includes the selection of the optimal method of preparing the wall for disposal, a method of decommissioning of using different modes of transport in relation to the closed walls of equipment (harvester, conveyor, casing mechanized), and the identification and control methods of natural hazards that occur during the liquidation of the wall. Calculations.

**20. Examination:** semester 3

**21. Primary sources:**

**22. Secondary sources:**
2. Norm PN-93/G-11010 Mining - "hydraulic filling materials - Requirements and test methods”.

**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 – including literature study (5h), preparation for the exam (5h), and exam (2h)</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>15/15 – including elaboration of the project (10h) and consultancy (5h)</td>
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<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:** 1

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

**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)