1. **Course title:** Waste Management and Reclamation of Mine areas  
2. **Course code:** SII-GG/20

3. **Validity of course description:** 2016/2017

4. **Level of studies:** MSc programme / 2nd cycle of higher education

5. **Mode of studies:** intramural studies / extramural studies

6. **Field of study:** MINING & GEOLOGY  
   (FACULTY SYMBOL) RG

7. **Profile of studies:** general academic

8. **Programme:** Mine Survey

9. **Semester:** II

10. **Faculty teaching the course:** Institute of Mining Technology

11. **Course instructor:** Dr hab. inż. Marcin Lutyński, prof. nzw. Pol. Śl.

12. **Course classification:** Specialty courses

13. **Course status:** compulsory

14. **Language of instruction:** English

15. **Pre-requisite qualifications:**

   Main pre-requisite courses are: Mining Engineering and Geomechanics and Geotechnics. Student is supposed to possess general knowledge in the field of underground and opencast mining and their environmental impacts. Due to the use of English as a lecture language, student is expected to speak English on a level allowing him understanding of audiovisual message of scientific-technical content, as well formulation of written and oral pronouncements on posed question.

16. **Course objectives:**

    Objective of the course is obtainment of the knowledge in the field of waste management in mining, especially regarding methods of utilization and neutralization of waste, and reclamation of post-mining areas. Secondary objective is to increase the skills of a student for practical use of English in the field of his profession.

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>The student has a theoretical, detailed knowledge in the scope of mining and drilling technologies in the range of underground exploitation of hard coal.</td>
<td>Written colloquium</td>
<td>Lecture</td>
<td>K_W07+</td>
</tr>
<tr>
<td>2.</td>
<td>Possessing knowledge on the protection of mining areas against excessive mining operations impacts including mining and building construction prophylactics methods.</td>
<td>Written colloquium</td>
<td>Lecture Project</td>
<td>K_W10++</td>
</tr>
<tr>
<td>3.</td>
<td>Possessing general knowledge on description of phenomena and processes occurring in the environment. Knowing the basics of post-mining areas reclamation and waste management.</td>
<td>Written colloquium</td>
<td>Lecture Project</td>
<td>K_W16+++</td>
</tr>
<tr>
<td>4.</td>
<td>Ability for obtaining information from literature, data bases, catalogue files of manufacturers and other appropriately selected sources, also in a foreign language, ability to integrate of gathered information, their interpretation and critical evaluation, drawing conclusions as well as formulation and reasoning of opinions.</td>
<td>Single-handedly elaborated project</td>
<td>Project</td>
<td>K_U01+</td>
</tr>
<tr>
<td>5.</td>
<td>Ability for preparation and elaboration of documentation related to implementation of engineering tasks in the field of mining and geology (waste management) and preparation of a review of own research in Polish and foreign languages</td>
<td>Single-handedly elaborated project</td>
<td>Project</td>
<td>K_U03++</td>
</tr>
<tr>
<td></td>
<td>Practicing foreign language on the level B2+ of European System Of Lingual Education</td>
<td>Written colloquium</td>
<td>Lecture</td>
<td>Project</td>
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</tr>
<tr>
<td>7.</td>
<td>Ability for formulating and solving of engineering tasks in the range of survey and protection of mine areas against excessive mine operations impacts. Ability for adequately applying of mining and building construction prophylactic measures.</td>
<td>Written colloquium</td>
<td>Lecture</td>
<td>Single-handedly elaborated project</td>
</tr>
<tr>
<td>8.</td>
<td>Awareness of importance and understanding of non-technical aspects and results of engineering operations including their influence on the environment and the responsibility for undertaken decisions</td>
<td>Written colloquium</td>
<td>Lecture</td>
<td>Single-handedly elaborated project</td>
</tr>
</tbody>
</table>

18. Teaching modes and hours

Lecture / BA / MA Seminar / Class / Project / Laboratory
Semester 2: lecture – 15 hours, project – 15 hours

19. Syllabus description:

Semester 2 :

**Lecture**


**Project**

Selected elements of mine shaft liquidation design with use of industrial waste, design of shaft column filling method, design of reclamation of an area nearby liquidated mine shaft. Project related to waste storage in underground mines and liquid waste injection underground.

20. Examination: semester 2

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>15h/22h – including literature study (12h), preparation for lectures and exam (9h), and exam (1h)</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>15h/15h – including literature study (10h), elaboration of the project (13h), consultancy (2h)</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>30/37</td>
</tr>
</tbody>
</table>

### 24. Total hours: 67

### 25. Number of ECTS credits: 2

### 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:

…………………………………………………………………………………………………………………………………………

(date, Instructor’s signature)………………………………………………………………………………………………

(date, the Director of the Faculty Unit signature)