1. Course title: MINERAL DEPOSIT GEOLOGY
2. Course code SII-GGiP/12
4. Level of studies: MSc programme
5. Mode of studies: intramural studies
6. Field of study: MINING AND GEOLOGY (RG)
7. Profile of studies: academic
8. Programme: Mining and Exploring Geology
9. Semester: II
10. Faculty teaching the course: Faculty of Mining and Geology, Institute of Applied Geology
11. Course instructor: Rafal Morga PhD, D.Sc.
12. Course classification: programme course
13. Course status: compulsory
14. Language of instruction: English (lecture), Polish
15. Pre-requisite qualifications: completion of Mineral Deposit Geology course on semester I
16. Course objectives: Studying the geological structure of the most important world coal deposits, obtaining skill of its analysing and calculation of the resources. Obtaining the skill of microscopic identification of ferro-alloy and precious metal, and semi-metal ores.
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>Student knows geological structure of the most important coal deposits in the world</td>
<td>examination</td>
<td>lecture</td>
<td>K_W10 +++</td>
</tr>
<tr>
<td>2</td>
<td>Student knows origin of coal deposits</td>
<td>examination</td>
<td>lecture</td>
<td>K_W11 ++</td>
</tr>
<tr>
<td>3</td>
<td>Student knows relationships between geological setting and occurrence of coal deposits</td>
<td>examination</td>
<td>lecture</td>
<td>K_W12 +</td>
</tr>
<tr>
<td>4</td>
<td>Student manages to prepare and elaborate documentation connected with resolution of engineering problem within the area of mining and geology</td>
<td>written elaboration</td>
<td>project</td>
<td>K_U03 +</td>
</tr>
<tr>
<td>5</td>
<td>Student can speak foreign language at level B2+ of the Common European Framework of Reference for Languages</td>
<td>examination</td>
<td>lecture</td>
<td>K_U06 ++</td>
</tr>
<tr>
<td>6</td>
<td>Student manages to identify ferro-alloy and precious metal, and semi-metal ores with the use of microscopic methods</td>
<td>written test</td>
<td>laboratory</td>
<td>K_U15 ++</td>
</tr>
<tr>
<td>7</td>
<td>Student manages to prepare coal quality maps, classify coal and calculate coal resources in a deposit</td>
<td>written elaboration</td>
<td>project</td>
<td>K_U17 ++</td>
</tr>
<tr>
<td>8</td>
<td>Student is conscious of and understands non-technical aspects and effects of deposit exploitation, environmental impact including</td>
<td>examination</td>
<td>lecture</td>
<td>K_K02 ++</td>
</tr>
</tbody>
</table>

18. Teaching modes and hours
Lecture: 15
Laboratory: 15
Project: 15
19. Syllabus description:

Lecture
Characteristics of occurrence conditions and geological structure of the world sub-bituminous and bituminous coal, and anthracite deposits: geotectonic position, origin, stratigraphy and lithology, tectonics, petrographic properties of coal, resources and output in geographical distribution (Europe, Asia, North and South America, Africa, Australia).

Laboratory
Microscopic identification of Fe ores. Microscopic identification of Cr, Ni, Ti, Mo, Mn and W ores. Microscopic identification of As, Sb and Bi as well as Ag and Au ores. Ore comparison classes.

Project
Analysis of geological structure of a one-seam bituminous coal deposit recognized by drillings made from the surface. It includes determination of seam spatial orientation and its morphology as well as quality and quantity of coal. Project stages:
1. Preparation of coal quality maps, seam thickness map and structural map of the seam bottom.
2. Preparation of coal types map and coal resources map.
3. Classification and calculation of coal resources in the seam.

20. Examination: YES

21. Primary sources:
The Carboniferous System in Poland. Prace PIG CXLVIII, Warszawa 1995

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>15/10</td>
</tr>
<tr>
<td>4</td>
<td>Project</td>
<td>15/15</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>45/45</td>
</tr>
</tbody>
</table>

24. Total hours: 90

25. Number of ECTS credits: 3

26. Number of ECTS credits allocated for contact hours: 2

27. Number of ECTS credits allocated for in-practice hours (laboratory classes, projects): 2

26. Comments:

Approved:

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