WORK PROGRAMME OF DISCIPLINE
Advanced and Regional Mineralogy

for student

Branch of knowledge 10 Natural Sciences
Training direction 103 Earth Sciences
(Speciality)
Educational level master
Educational program Geochemistry and Mineralogy
Type of discipline Selective (discipline of the University choice)

Teaching mode full-time studies
Academic year 2017/2018
Semester 2
Number of credits ECTS 4
Language of teaching, learning and evaluation English
Form of final control modular test

Lecturer: Kvasnytsia Iryna (Ph.D, cand.sc.(geol), assistant professor of department of mineralogy, geochemistry and petrography)

for 20__/20__ (______) «__» 20__

for 20__/20__ (______) «__» 20__

for 20__/20__ (______) «__» 20__

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Kyiv - 2017
Lecturer: Kvasnytsia Iryna (Ph.D, cand.sc.(geol), assistant professor of department of mineralogy, geochemistry and petrography)

APPROVED

_________ _____________ 2017
Head of department of mineralogy, geochemistry and petrography

____________________ (Shnyukov S.Ye.)

Protocol # 9 19/06/2017

Approved by Scientific-methodical Commission of Institute of Geology
Protocol # 8 19/06/ 2017

Head of the scientific methodical commission ________________ (Demidov V.K.)
The aim of the discipline — is to provide an introduction to the main modern concepts required to understand minerals and their behaviour and to provide basic knowledge about the spatial and temporal patterns of minerals forming and distribution in a particular region (for example mineral resources of Ukraine).

Preliminary requirements:
1. knowledge of the theoretical foundations of mineralogy
2. be able to diagnose minerals by physical properties

Annotation of discipline:
Academic discipline "Advanced and Regional Mineralogy" is part of education and professional training program for the education level "master" branch of knowledge 10 - Natural Science of specialty 103 - Earth Sciences, educational program - geochemistry and mineralogy.

This discipline is selective discipline (independent choice of educational institution) for educational program "geochemistry and mineralogy". The discipline is taught in the 2nd semester of 1 year Master’s degree program in volume - 120 hours (4 credits ECTS) including lectures - 32 hours, seminars - 6 hours, consultations - 2 hours, self-study work - 80 hours. The course content provides two modules and two module tests. The discipline is finished by test.

The tasks of the discipline – to highlight the following issues:
- basic concepts of modern mineralogy;
- regional structure of modern mineralogy;
- major trends and the current state of regional and mineralogical studies in Ukraine and in the world,
- mineralogical zoning of Ukraine,
- prospects of regional mineralogical studies in Ukraine.

The results of study:

<table>
<thead>
<tr>
<th>Results (1. to know; 2. to be able)</th>
<th>Methods of teaching and learning</th>
<th>Assessment methods</th>
<th>Percentage in the final assessment of the discipline</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 current approaches and concepts of modern mineralogy; content, structure, tasks, and brief history of the regional mineralogy</td>
<td>lecture</td>
<td>test</td>
<td>up to 10%</td>
</tr>
<tr>
<td>1.2 mineralogical zoning principles geological formations; mineralogical nature and value maps;</td>
<td>lecture</td>
<td>test</td>
<td>up to 10%</td>
</tr>
<tr>
<td>1.3 features of mineral composition and specific constitutions, morphology, properties and genesis of minerals from mineralogical provinces of Ukraine</td>
<td>lecture</td>
<td>test</td>
<td>up to 15%</td>
</tr>
<tr>
<td>2.1 identify patterns of distribution and formation of minerals in geological formations; make mineralogical maps;</td>
<td>lecture</td>
<td>test</td>
<td>up to 15%</td>
</tr>
<tr>
<td>2.2 develop mineralogical methods and criteria for search and evaluation of mineral resources based on analysis results regional-mineralogical research</td>
<td>lecture</td>
<td>test</td>
<td>up to 15%</td>
</tr>
<tr>
<td>2.3 analyze geological article from modern periodical in English, followed by preparing a brief summary highlighting the main provisions of this article; prepare a presentation in English of the fundamental principles of geology using modern computer technology and acquire the ability to present a presentation to audience.</td>
<td>lecture, presentations</td>
<td>test, presentations</td>
<td>up to 35%</td>
</tr>
</tbody>
</table>

Structure of discipline: lectures, seminars, self-studying work of student
Scheme of grading forms:

Form of student evaluation:

- semester grading:
  1. Control test - (min - 6, max - 10 grades)
  2. Control test - (min - 6, max - 10 grades)
  3. Presentations (min - 38, max - 60 grades)

- final assessment (modular test) in form of the written test (min - 12, max - 20 grades)

Final evaluation is in the form of a final test (total score of discipline (maximum 100 grades) is defined as the sum for the systematic work during the semester).

Procedure and evaluation system

<table>
<thead>
<tr>
<th></th>
<th>Semesters grades</th>
<th>Modular test</th>
<th>Final grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Min</td>
<td>48</td>
<td>12</td>
<td>60</td>
</tr>
<tr>
<td>Max</td>
<td>80</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

For students who have obtained total grades less than critically-calculated minimum of 20 grades repeated control test is obligatory for taking the test.

**Grading:** For admission to the final grading it is obligatory: 1) to pass two control tests; 2) to prepare six oral reports, which can be presented in the form of presentations and abstracts. The final grading is carried out in the form of written modular test.

**Assessment:**
Conformity scale

<table>
<thead>
<tr>
<th>passed</th>
<th>60-100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fail</td>
<td>0-59</td>
</tr>
</tbody>
</table>

**STRUCTURE OF THE DISCIPLINE**

**PLAN OF LECTURES AND SEMINARS**

<table>
<thead>
<tr>
<th>#</th>
<th>Theme</th>
<th>Hours</th>
<th>Lectures</th>
<th>Seminars</th>
<th>Self-studying work</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Module 1. Advanced Mineralogy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Theme 1. Introduction to the mineralogical sciences</strong></td>
<td>2</td>
<td>-</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><strong>Theme 2. The main concepts of crystallography and crystal morphology</strong></td>
<td>6</td>
<td>-</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><strong>Theme 3. Mineral properties</strong></td>
<td>6</td>
<td>1</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><strong>Theme 4. Rock-forming minerals</strong></td>
<td>4</td>
<td>1</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td><strong>Theme 5. Mineral resources and hazards</strong></td>
<td>6</td>
<td>2</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Test 1</strong></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td><strong>Module 2. Regional mineralogy</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td><strong>Theme 6. Basic concepts of regional mineralogy.</strong></td>
<td>2</td>
<td>-</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Theme 7. Introduction to mineralogy of Ukraine. Mineralogical zoning of Ukraine</strong></td>
<td>4</td>
<td>2</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Test 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Modular test</strong></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>32</td>
<td>6</td>
<td>78</td>
<td></td>
</tr>
</tbody>
</table>
**Themes for self-studying work:**
1. Basic concepts of crystallography
3. Industrial and gems minerals
4. Minerals as construction material.
5. Manufacturing minerals.
6. Physical properties of gems.
7. Mineralogical zoning of Ukraine.

**Total hours of the discipline – 120, that include:**
- lectures – 32 hrs
- seminars - 6 hrs
- consultations - 2 hrs
- self-studying work - 78 hrs

**RECOMMENDED LITERATURE**

**Basic:**

**Additional:**
5. Павлишин В.І., Зінченко О.В., Довгий С.О. Загальні особливості мінерального складу геологічних утворень України. – Мінерал.журн., 2007, №2, с. 5-18.