Academic course description – professional software

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| master’s DEGREE**Environmental geochemistry** 1st YEAR OF STUDY, 1st SEMESTER |

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| **Course title** | **Professional software**  |
| Course code | 31020030010PM1211204  |
| Course type | full attendance |
| Course level | 2nd cycle (master’s degree) |
| Year of study, semester | 1st year of study, 1st semester |
| Number of ECTS credits | 6 |
| Number of hours per week | 3 (0 lecture hours + 3 seminar hours) |
| Name of lecture holder | Assistant Professor Andrei Ionuţ Apopei |
| Name of seminar holder | Assistant Professor Andrei Ionuţ Apopei |
| Prerequisites | Geoinformatics  |
| A | **General and course-specific competences** |
|  | **General competences**:* Effectively using additional scholarly sources and assisted learning resources in order to devise a research paper using specialized software

**Course-specific competences**:* Using knowledge of Geoinformatics in order to present and interpret geological processes, in concrete situations or as part of projects, programs or activities aimed at analyzing and interpreting natural phenomena
* Properly using specific software for the quantitative and qualitative analysis of minerals, rocks, soil and water
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| B | **Learning outcomes** |
|  | Upon successfully completing the discipline, students become capable of using software such as Petrel, GIS, EndNote or Origin for various field-related projects  |
| C | **Lecture content** |
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| Week | Title of lecture | Teaching methods |  Duration  |
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| D | **Recommended reading for lectures** |
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| E | **Seminar content** |
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| Week | Title of seminar | Teaching methods | Duration  |
| 1.  | Managing bibliographical references | Application in the geoinformatics laboratory  | 3 hours |
| 2. | Devising and managing bibliographies (EndNote) | Application in the geoinformatics laboratory | 3 hours |
| 3. | Graphical representations: - data managementVarious types of specific graphs and diagrams | Application in the geoinformatics laboratory | 3 hours |
| 4. | The graphical interface and main functions of Petrel | Application in the geoinformatics laboratory | 3 hours |
| 5. | Petrel: Exercises on the interpretation of seismic data, simple surfaces and networks, geometric modelling (volume), displaying results and data by means of graphs, the representation of elements of tectonics  | Application in the geoinformatics laboratory | 12 hours |
| 6. | Introductory notions of Topography  | Application in the geoinformatics laboratory | 3 hours |
| 7. | Basic notions of GIS (Geographic Information Systems):* Georeferencing maps
* Digitizing thematic maps

Managing the information from tables of attributes  | Application in the geoinformatics laboratory | 12 hours |
| 8. | Geographic Information Systems and their role in geological applications; examples of projects; steps in the creation of a GIS database  | Application in the geoinformatics laboratory | 3 hours |

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| F | **Recommended reading for seminars** |
|  | - Complete EndNote User Guide (http://endnote.com/training)- Origin 8.6 Getting Started Booklet- Ormsby T., Napoleon E. J., Burke R., Groessl C., Bowden L. (2010) Getting to Know ArcGIS Desktop |
| G | **Education style** |
| learning and teaching methods | Application in the geoinformatics laboratory |
| assessment methods | Oral exam (50%) and continuous assessment (50%) |
| Language of instruction | English  |