Academic course description – paleontology I

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| bachelor’s DEGREE **Geological engineering** 2nd YEAR OF STUDY, 1st SEMESTER |

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| **Course title** | | **Paleontology I** |
| Course code | | 31120120010SL1212119 |
| Course type | | full attendance |
| Course level | | 1stcycle (bachelor’s degree) |
| Year of study, semester | | 2nd year of study, 2nd semester |
| Number of ECTS credits | | 4 |
| Number of hours per week | | 4 (2 lecture hours + 2 seminar hours) |
| Name of lecture holder | | Assistant Professor Paul Țibuleac |
| Name of seminar holder | | Assistant Professor Paul Țibuleac |
| Prerequisites | |  |
| A | **General and course-specific competences** | |
|  | **General competences**:   * Effectively using additional sources and assisted learning resources in order to devise a research paper on a topic pertaining to the academic discipline * Improving teamwork abilities within a research team   **Course-specific competences**:   * The analysis and solving of issues related to the field of Geological Engineering based on knowledge of the fossil assemblages in rocks and their biostratigraphic significance (relative dating) * The analysis and solving of issues related to the geological environment based on the paleontological, paleogeographic and paleoclimatic significances of fossil assemblages * The analysis and solving of issues related to the evaluation and extraction of geological resources through relative dating and biostratigraphic correlation methods | |
| B | **Learning outcomes** | |
|  | Upon completing the discipline, students become capable of:   * explaining the relative dating of rocks and the delineation of the main eras in the geological history of the Earth * describing the main morphological characteristics of a fossil specimen belonging to major taxa * using the biostratigraphic significance of fossil assemblages in the correlation of layers in outcrops and wells and the evaluation and study of mineral resources * analyzing the significance of fossil assemblages in paleoenvironmental reconstructions * estimating the influence of various paleoenvironmental factors (bathymetry, salinity, temperature, currents etc.) which have instilled specific characteristics into sedimentary rock layers * processing paleontological samples in the laboratory | |
| C | **Lecture content** | |
|  | |  |  |  |  | | --- | --- | --- | --- | | Week | Title of lecture | Teaching methods | Duration | | 1 | Introduction. Fossils and fossilization. The importance of fossils | Lecture-debate | 2 hours | | 2 | Landmarks in the history of Paleontology. Elements of taxonomy and nomenclature | Lecture. Problematization. | 3 hours | | 3 | **Superkingdom *Prokarya.* Kingdom *Bacteria*** | Lecture | 2 hours | | 4 | **Superkingdom *Eukarya.* Kingdom** ***Protista:***phylum *Granuloreticulosa*: *c*lass *Foraminiferea.* | Lecture | 3 hours | | 5 | Phylum *Sarcomastigopora*:class *Actinopoda.* *Protista incertae sedis – Calpionellidae* | Lecture | 2 hours | | 6 | **Kingdoms *Chromista* and *Fungi*** | Lecture | 2 hours | | 7 | **Kingdom *Animalia:***phylum *Porifera*;*Archaeocyatha* | Lecture | 2 hours | | 8 | Phylum *Cnidaria* | Lecture. Problematization. | 2 hours | | 9 | Phylum *Mollusca*:Introduction. Subphylum *Amphineura* Subphylum *Cyrtosoma*: Class *Gastropoda* | Lecture | 2 hours | | 10 | Class *Cephalopoda*:Subclasses *Endoceratoidea, Actinoceratoidea, Bactritoidea.* Subclass *Nautiloidea.* Subclass *Ammonoidea* | Lecture. Demonstration. | 2 hours | | 11 | Class *Cephalopoda*: Subclass *Ammonoidea. Aptichi* | Lecture | 4 hours | | 12 | Subclass *Coleoidea* (Orders *Aulacocerida*, *Belemnitida*) | Lecture | 2 hours | | |
| D | **Recommended reading for lectures** | |
|  | Hanganu Elisabeta, Şuraru N., Griogorescu D. (1986) - Paleontologie, *Editura Didactică şi Pedagogică* Bucureşti, 456 p.  Turculeţ I., (1996) – Dicţionar de paleontologie. *Editura Universităţii „Al. I. Cuza”* Iaşi, 262 p., 26 pl.,  addenda.  Ţibuleac P. (2006) – Paleontologie. Vol. I. *Ed. Tehnopress*, Iaşi, 366 p. | |
| E | **Seminar content** | |
|  | |  |  |  |  | | --- | --- | --- | --- | | Week | Title of seminar | Teaching methods | Duration | | 1 | Fossils and fossilization | Demonstration. Application. Problematization. | 2 hours | | 2 | Phylum *Granuloreticulosa*: Class *Foraminiferea* | Demonstration. | 4 hours | | 3 | Phylum *Sarcomastigopora –* Subclass *Radiolaria. Protista-incertae sedis – Calpionellidae* | Demonstration. Application. | 2 hours | | 4 | Phylum *Porifera* | Demonstration | 1 hour | | 5 | Field application | Demonstration. | 2 hours | | 6 | Phylum *Cnidaria* | Demonstration. Application. | 3 hours | | 7 | Phyum *Mollusca* Subphylum *Cyrtosoma*: Class *Gastropoda* | Demonstration. Application. | 4 hours | | 8 | Class *Cephalopoda -*  Subclasses *Actinoceratoidea, Nautiloidea* | Demonstration. Application. | 2 hours | | 9 | Class *Cephalopoda -*  Subclass *Ammonoidea* | Demonstration. Application. Problematization. | 5 hours | | 10 | Class *Cephalopoda.* Subclass *Ammonoidea –* Aptichi. Subclass *Coleoidea* | Demonstration. Application. | 3 hours | | |
| F | **Recommended reading for seminars** | |
|  | Nistor-Hanganu, Elisabeta, Manoliu, Eugenia, Grigorescu., D., Dragomir, B. 1982. Paleontologie. Lucrări  practice. *Editura Universităţii Bucureşti,* 289 p.  Turculeţ, I. 1996. Dicţionar de paleontologie. *Editura „Universităţii Al. I. Cuza”* Iaşi, 262 p., 26 pl., addenda.  Ţibuleac, P.. 2004. Paleontologie. Sitematică-ghid practic. *Editura Tehnopress,* 238 p. | |
| G | **Education style** | |
| learning and teaching methods | | Lecture-debate, demonstration, application, problematization |
| assessment methods | | Ora assessment and research paper (lecture) – 70%, practical assessment and portfolio (seminar) – 30% |
| Language of instruction | | English |