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| **Module code** | SG-4305 | | | |
| **Module Title** | Micropaleontology and Biostratigraphy | | | |
| **Degree/Diploma** | Bachelor of Science (Geology) | | | |
| **Type of Module** | Major Option | | | |
| **Modular Credits** | 4 | **Total student Workload** | 10 | hours/week |
| | | **Contact hours** | 5 | hours/week |
| **Prerequisite** | None | | | |
| **Anti-requisite** | None | | | |

**Aims**

Students will be able to recognise micro- and nanno-fossils from all geological periods and several common environments, in thin sections and loose material. Biology, ecology and stratigraphy of these groups will be studied. Some groups of macrofossils (e.g. trilobites, cephalopods, bivalves, brachiopods and graptoliths) will be presented to integrate the biostratigraphical part. Particular attention will be given to oil-related biostratigraphic services and most common biosteering techniques. Some rudiments on microfacies analyses will be also part of the teaching program.

**Learning Outcomes**

*On successful completion of this module, a student will be expected to be able to*:

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| Lower order : | 30% | - recall fossil names<br>- recognise the most important index and facies fossils<br>- identify fossils in both loose specimens and thin sections |
| Middle order : | 50% | - interpret several environments and environmental changes through time<br>- observe and interprettransportation, reworking and mixtures |
| Higher order: | 20% | - correlate logs and environment through geological time and space<br>- reconstruct fossil taxa and their taphonomic pathways<br>- work independently and in groups, use online resources and books |

**Module Contents**

- Systematic of organisms (eukaryotes, prokaryotes, archea, bacteria)
- Phylogeny of most important groups (Foraminifera &Nanofossils)
- Taxonomy of some selected biostratigraphic relevant fossil groups
- Microfacies analyses
- Precambrian, Paleozoic, Mesozoic and Cenozoic biostratigraphies and microbiostratigraphies
- Biostratigraphy in the future (Anthropocene and future mass extinction)
- Biostratigraphy in applied Geology and oil industry

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| **Assessment** | Formative assessment | Practical tests, assignments and feedback |
| | Summative assessment | Examination: 50% |
| | | Coursework: 50%<br>- 3 review tests (50%) |