



## Study Plan

**School:** School of Sciences and Technology

**Degree:** Master

**Course:** Paleontology (cód. 440)

### 1st Year - 1st Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
GEO10326M	Paleontology and Evolution	Geology and Biology	6	Semester	162
GEO10327M	Methods in Paleontology	Geosciences	6	Semester	162
BIO10328M	Systematics and Taxonomy	Biology	6	Semester	162
GEO10329M	Paleobotany and Palynology	Geosciences	6	Semester	162
GEO10330M	Invertebrates Paleontology	Geology	6	Semester	162

### 1st Year - 2nd Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
GEO10331M	Vertebrates Paleontology	Geology	6	Semester	162
GEO10332M	Micropaleontology	Geology	6	Semester	162
GEO10333M	Taphonomy and Paleoecology	Geology	6	Semester	162

### Group of Options

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
GEO10334M	Geochemistry applied to Paleontology	Geology	6	Semester	162
GEO10335M	Geochronology applied to Paleontology	Geology	6	Semester	162
GEO10336M	Archeozoology and Archeobotany	Geology	6	Semester	162
GEO10337M	Stratigraphy and Sedimentary Processes	Geology	6	Semester	162
HIS10338M	Geological heritage and Museology	History	6	Semester	162
GEO10339M	Dynamics of Sedimentary Basins	Geology	6	Semester	162

### 2nd Year - 3rd Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
	Dissertation				

### 2nd Year - 4th Semester

Component code	Name	Scientific Area Field	ECTS	Duration	Hours
	Dissertation				



## Conditions for obtaining the Degree:

\*\*\* TRANSLATE ME: Para conclusão do curso é necessário a aprovação (através de avaliação ou creditação) das seguintes unidades curriculares:

1º Ano

1º Semestre:

5 UC obrigatórias num total de 30 ECTS

2º Semestre:

3 UC obrigatórias num total de 18 ECTS

2 UC Optativas, num total de 12 ECTS

Para obtenção do grau, é necessário também a aprovação na Dissertação ou Trabalho de Projecto, com um total de 60 ECTS, no 3.º e 4.º Semestre. \*\*\*

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### **Paleontology and Evolution (GEO10326M)**

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### **Methods in Paleontology (GEO10327M)**

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### **Systematics and Taxonomy (BIO10328M)**

1. Intrapopulation variability
2. Phenetic
3. Cladistics
4. Phylogenetic
5. Numerical Methods for Inference of Phylogeny
6. Biological Nomenclature

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### **Paleobotany and Palynology (GEO10329M)**

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### **Archeozoology and Archeobotany (GEO10336M)**

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### **Stratigraphy and Sedimentary Processes (GEO10337M)**

Theoretical

Fundamentals of Stratigraphy. Definition and objectives. Historical aspects. Stratigraphic Classification. Dimension "time". Rock systems and time periods. Principles of Stratigraphy.

Discontinuities. Facies. Sequential analysis. Paleogeography. Stratigraphy of events. Lithostratigraphic, chronostratigraphic, biostratigraphic units. Stratotype. Chronostratigraphical and geochronological scales. Paleobiogeographic, Palaeoecology.

Methods of physical and geochemical stratigraphy. Correlations. Global syntheses.

Geohistory. Pre-Cambrian. Paleozoic. Caledonic and Hercinian or Variscan Orogenic cycles. Mesozoic. Alpine orogenic cycle.

Paleoclimatology. Cenozoic. Continuation of the Alpine orogenic cycle, paroxysmal phases. Paleogeography. Paleoclimatology.

Practices

Exercises involving concepts of stratigraphy and lithostratigraphic column design, interpretation.

Field trip, visits to exemplary illustration of outcrops of stratigraphic concepts.

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### **Geological heritage and Museology (HIS10338M)**

1. Around a permanent changing concept: cultural and natural heritage

1.1. The concept evolution during the XXth and XXI centuries

1.2. Portuguese legislation and the international framework

1.3. Heritage as a resource. Development and endogenous resources in a global perspective. From development policies to UNESCO Heritage Lists and new development paradigmas

1.5. The geological heritage case

2. Heritage valorisation and museology

2.1. Concept and monument memorial value

2.2. The evolution of museological movement and the different kind of museums

2.3. Territorial museums and ecomuseums

3. Landscape and Geological heritage valorisation and museology

3.1. Cultural and heritage landscapes

3.2. Geological heritage and geotourism

3.3. The UNESCO Global GeoParks Network

4. Heritage valorisation and Museums case studies



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## **Dynamics of Sedimentary Basins (GEO10339M)**

### Theoretical

1. Basic concepts for the analysis of sedimentary basins.
2. Interplay between basin analysis and different thematic areas of Earth Sciences.
3. The Wilson Cycle. The formation and evolution of sedimentary basins related to different models of build-up and evolution of the continental margins.
4. Classification and analysis of sedimentary basins in the framework of plate tectonics. Evolution of sedimentary environments and the sedimentary record in different tectonic contexts.
5. Syn-sedimentary and post-depositional deformation structures as markers of inner or outer basin dynamics.
6. Paleogeographic, paleotectonic and paleoclimatic reconstructions; criteria and methods
7. Basin characteristics for traps and reservoirs and for exploitation of economic resources or the selection of wasting sites.

### Practical

Drawing of simplified paleogeographic maps based on geological mapping in sedimentary contexts. Field trips in areas of different tectonic contexts.