

## Fundamentals of Earth Science I

<b>Undergraduate / Graduate</b>	Undergraduate	<b>Registration Code</b>	0061411
<b>Course Category</b>	Basic Courses in Natural Sciences	<b>Credits</b>	2.0
<b>Term (Semester) / Day / Period</b>	G-I (1st year, Fall Semester) / Mon / 4 (14:45~16:15)		
<b>Instructor</b>	HUMBLET Marc Andre		

### ●Goals of the Course 【Standardized across all programs】

The goal of this course is to understand the characteristics of our planet Earth and to provide an overview of Earth and planetary science. To this end, the origin of the Earth and of the Solar System, the minerals and rocks that make up the Earth, the processes shaping the landscape, and major events in the history of life will be explained to deepen the understanding of the Earth. Research methods used in Earth and planetary science will also be introduced.

### ●Objectives of the Course

The study of planet Earth embraces a wide range of topics, from the formation of rocks to the evolution of life, from continental drift to the study of earthquakes and volcanoes. In this course, fundamental concepts of earth science will be covered. Students will be introduced to plate tectonics, the fundamental theory underlying the geological processes which have shaped the environment in which we live and continue to modify the landscape, from the slow, progressive uplift of mountains to violent earthquakes and volcanic eruptions. Students will learn how the Earth recycles matter and how minerals and rocks form and are transformed; how the age of rocks and geological events can be determined, which is central to earth science; how the Earth's geography has changed and how life has evolved during Earth's 4.5-billion-year history. Besides providing a basic and up-to-date knowledge of essential concepts of earth science, the aim of this course is to stimulate the interest and curiosity of students for the study of planet Earth and provoke questions, comments, and discussions about issues related to earth science.

### ●Course Content or Plan

1. Earth Sciences: an introduction
2. The solar system
3. Plate tectonics
4. Minerals: rock's elementary building blocks
5. Rocks and rock cycle I: igneous rocks
6. Rocks and rock cycle II: sedimentary rocks
7. Rocks and rock cycle III: metamorphic rocks
8. The age of rocks
9. Earth history I: paleogeography
10. Earth history II: origin and evolution of life

### ●Course Prerequisites and Related Courses

There is no prerequisite for this course.

Related course: Fundamentals of Earth Science II

### ●Course Evaluation Method and Criteria

Online quizzes: 60%

Written essay: 30%

Oral presentation: 10%

Students who enrolled in 2020 will be graded using the six-step A+, A, B, C, C-, and F grade evaluation system (A+: 100-95%, A: 94-80%, B: 79-70%, C: 69-65%, C-: 64-60%, F: 59 % or less).

Students who enrolled in 2019 or before will be graded following the five-step S-A-B-C-F grade evaluation system (S: 90-100%, A: 80-89%, B: 70-79%, C:60-69%, F: 59-0%).

A student will be given an "Absent" grade if he or she submits a Course Withdrawal Request by the 15th of November. This deadline does not apply to students who drop the class part-way through for an exceptional reason (e.g., illness, accident). Also, NUPACE students should check the deadline set by the NUPACE program for course withdrawal.

### ●Study Load (Self-directed Learning Outside Course Hours)

Students should acquire a good understanding of the course content to be able to answer the questions of the quizzes.

Students are also required to write a review paper on a subject of their choice related to the course content, and therefore need to search for information related to this subject and to summarize that information in a clear, organized, and concise manner. Preparation time is also needed for the final short presentation that each student gives at the end of the semester about the subject of their review paper.

**•How to Respond to Questions**

Live lectures will be organized (in class or online or both), and students are strongly encouraged to ask questions during the lectures. Students can also contact me by e-mail or meet me in person in my office. NUCT will be used as another way of communication, to share files and send messages.

<b>Textbook</b>	There is no required textbook for this course. Please refer to the recommended reading below for an additional source of information.
<b>Reference Book</b>	Title: Understanding Earth Authors: John Grotzinger & Thomas H. Jordan Publisher: W. H. Freeman Issue year: 2014 (7th edition) ISBN: 978-1464138744
<b>Reference website for this Course</b>	