




5.00 credits

22.5 h + 7.5 h

Q1

Teacher(s)	Rekier Jérémy ;
Language :	English > French-friendly
Place of the course	Louvain-la-Neuve
Prerequisites	Basic training in physics and mathematics (level of bachelor in sciences or applied sciences).
Main themes	The topics/themes covered in the teaching unit are the structure and physics of the Earth and of the other terrestrial planets, their rotations, their evolutions, their own overall characteristics, and the global geodynamics of the Earth and terrestrial bodies (planets and moons) in the solar system.
Learning outcomes	<p><b>At the end of this learning unit, the student is able to :</b></p> <p><b>a. Contribution of the teaching unit to the learning outcomes of the programme (PHYS2MA and PHYS2M1)</b>                      AA1: A1.1, A1.2, A1.3, A1.4, A1.5, A1.6                      AA2: A2.1, A2.2                      AA3: A3.1, A3.2, A3.4                      AA6: A6.1                      1 AA7: A7.3                      AA8: A8.1, A8.2</p> <p><b>b. Specific learning outcomes of the teaching unit</b>                      At the end of this teaching unit, the student will be able to:</p> <ol style="list-style-type: none"> <li>1. present the main mechanisms that govern the internal structure of the solid Earth and the geophysical techniques used to observe them at global scale ;</li> <li>2. Apply these concepts to the knowledge of the terrestrial planets in the solar system.</li> </ol>
Evaluation methods	
Teaching methods	Lectures and exercises, with a visit of a geophysical site.
Content	<ol style="list-style-type: none"> <li>1. Internal structure of the Earth and terrestrial planets</li> <li>2. Free oscillations of the Earth and terrestrial planets</li> <li>3. Seismology, plate tectonics and earthquakes</li> <li>4. Geomagnetism of the Earth and terrestrial planets</li> <li>5. Short introduction to geodesy and GNSS (GPS)</li> <li>6. Tides (solid) of the Earth and terrestrial planets</li> <li>7. Gravitational force, gravitational potential of the Earth and terrestrial planets</li> <li>8. Heat flux from the Earth and terrestrial planets</li> <li>9. "Geophysical" habitability of terrestrial bodies of the solar system</li> </ol>
Bibliography	Syllabus préparé pour l'unité d'enseignement / Syllabus prepared for the teaching unit
Other infos	Targeted students: Students in Master of Physics, Mathematics and Geographical Science and Engineers
Faculty or entity in charge	PHYS

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [120] in Geography : Climatology	CLIM2M	5		
Master [60] in Physics	PHYS2M1	5		
Master [120] in Physics	PHYS2M	5		
Master [120] of Education, Section 4 : Physics	PHYS2M4	5		