LPHY2161

2015-2016

Geodesy and GNSS (Global Navigation Satellite System)

5.0 credits	30.0 h	2q

Teacher(s) :	Bergeot Nicolas ; Dehant Véronique ;
Language :	Français
Place of the course	Louvain-la-Neuve
Prerequisites :	Basic knowledge in Physics and Mathematics at the level of BAC in science or applied science.
Main themes :	Space geodesy for the Earth and the planets with a particular focus on the Global Navigation Satellite System (GNSS) and their applications in geophysics.
Aims :	To be able to present geodetic techniques (especially those that use GPS or equivalent) that allow to observe the main mechanisms governing the deformation of the solid Earth at the local, regional or global scales, including rotation Earth. To be able to apply the concepts of space geodesy to the knowledge of the Earth and terrestrial planets in the solar system *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Content :	Chapter 1: Classical and space geodesy; Chapter 2: GPS system; Chapter 3: European Galileo system and other satellite navigation systems; Chapter 4: Applications of GPS in Earth Sciences; Chapter 5: Study of deformation of the Earth synthetic aperture radar (SAR); Chapter 6: Celestial systems and frames; Chapter 7: Terrestrial systems and frames; Chapter 8: Earth rotation; Chapter 9: Space geodesy techniques other than GNSS; Chapter 10: Space Geodesy around other planets of the solar system; Chapter 11: Motion of an artificial satellite around a planet and geophysical information;
Bibliography :	Lecture notes available.
Other infos :	& t; Master in sciences-geography & t; First year of master [120] in sciences-geography, climatology orientation, research focus & t; First year of master [120] in sciences-geography, general orientation, research focus & t; First year of master [120] in sciences-geography, general orientation, teaching focus & t; Second year of master [120] in sciences-geography, climatology orientation, research focus & t; Second year of master [120] in sciences-geography, general orientation, research focus & t; Second year of master [120] in sciences-geography, general orientation, teaching focus & t; Master in sciences-physics & t; First year of master [120] in sciences-physics, research focus & t; First year of master [120] in sciences-physics, teaching focus & t; First year of master [120] in sciences-physics, professional focus in medical physics & t; Master in applied sciences & t; Second year of master [120] : civil Engineer, Engineer in chemistry, Engineer in material science, and Engineer with professional focus in medical physics
Faculty or entity in charge:	PHYS

Programmes / formations proposant cette unité d'enseignement (UE)				
Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Master [120] in Physics	PHYS2M	5	-	
Master [120] in Geography : Climatology	CLIM2M	5	-	