シラバス参照

<<Last Updated:2021/12/03>>

Course Schedule Information

Course Code	881112
Semester	Fall and Winter Term
Day and Period	Tue5
Course Name (Japanese)	宇宙地球科学への招待
Room	
Course Name	Introduction to Earth and Space Science
Capacity	0
Course Numbering Code	88INES9U100
Required/Optional	
Credits	2.0
Student Year	1,2,3,4,5,6
Field	
Instructor	HATANO Takahiro
Course of Media Class	Not Applicable

※About Course of Media Class
"Course of Media Class" are classes in which more than half of the classes are held in places other than classrooms by making advanced use of various media.
Undergraduate students can include up to 60 credits in media class course as requirements for graduation.
Even if this is not the case, we may hold classes using the media.

Detailed Syllabus Information

Course Name	Introduction to Earth and Space Science
Language of the Course	English
Type of Class	Lecture Subject
Course Objective	The aim of this course is to introduce students to the current status of Earth and Space science, which is a rapidly developing area of research.
Learning Goals	Modern Earth and space science consists of many fields: astrophysics, planetary science, materials science, solid-state physics, geology, mineralogy, nonlinear dynamics, statistical physics, and so on. Students can acquire basic knowledge in the various fields after finishing this course.
Requirement / Prerequisite	
Class Plan	

1st	Title:Supermassive Black Holes & Cosmic Star Formation History
	Growth of supermassive black holes and star formation in the cosmic history.
	Instructor : Inoue, Y.
2nd	Title:Cosmology and Structure Formation
	State-of-the-art understanding of cosmology and structure formation in the Universe dominated by dark matter and dark energy. Some details of stars and the Sun will also be presented.
	Instructor : Nagamine, K., Takasao, S.
3rd	Title:X-ray Astronomy 1
	What is X-ray? History of X-ray astronomy. X-ray emission from celestial objects.
	Instructor : Matsumoto, H.
4th	Title:X-ray Astronomy 2
	How to detect X-rays. X-ray astronomical satellite.
	Instructor : Matsumoto, H.
5th	Title:Observation of exoplanets
	Search for Extrasolar Planetary Systems
	Instructor : Sumi, T.
6th	Title:Earth and planetary material science 2
	Volcanoes and disaster prevention

	Instructor : Saiki, K.
7th	Title:The Earth-Moon system
	New insights into the Earth-Moon system revealed by KAGUYA
	Instructor : Terada, K.
8th	Title:Earth and planetary material science 1
	Voyage au centre de la Terre
	Instructor : Ohtaka, O.
9th	Title:Earth's radiation belt
	A new picture of the radiation belt developed by recent observations
	Instructor : Yokota, S.
10th	Title:Deep Interiors of the Earth and planets 1
	Unusual behavior of materials under extreme conditions
	Instructor : Kondo, T.
11th	Title:Deep Interiors of the Earth and planets 2
	Mantle convection and deep water cycle
	Instructor : Nishi, M.
12th	Title:Impact phenomena
	Impact-induced phenomena governing various geophysical processes (e.g. planetesimal formation, crater formation, and terrain relaxation) will be introduced.
	Instructor : Katsuragi, H.
13th	Title:Life on Earth
	It is believed that a primitive life appeared on Earth and evolved to be existing creatures. The history of lives on Earth will be introduced.
	Instructor : Hisatomi, O.
14th	Title:Physics in daily life 1
	Pattern formation and dynamics in nonequilibrium systems : We can observe various interesting patterns in our daily lives: cracks in mud, veins in leaves, waves on the water surface, etc. How are they formed? Why are they so complex? We address these questions from the viewpoint of theoretical physics.
	Instructor : Yukawa, S.
15th	Title:Physics in daily life 2
	Earthquakes from theoretical physics perspective: We often experience earthquakes in Japan. But what are they anyway? They are one of the most serious natural disasters. Can't we predict earthquakes?
	Instructor : Hatano, T.

Independent Study Outside of Class	Homework is assigned in each lecture. Some reading assignment (lecture notes and related articles) may be given occasionally.
Textbooks	
Reference	
Grading Policy	Class Participation 50%, homework 50%
Other Remarks	
Special Note	
Office Hour	
Keywords	
Messages to Prospective Students	

Instructor(s)

Instructor Name	Name (hiragana)	Affiliation, Title, Course	Office	Extension	Fax	E-mail
Takahiro Hatano		Earth and Space Science	F521	5589		hatano@ess.sci.osaka-u.ac.jp

Cautions for Students