Special Subjects of the Department of Physiological Sciences

Field	Course Code	Subject	Credit	Content of subject	Instructor
Molecular & Cellular Physiology・Homeostatic Regulation・Fundamental Neuroscience・System Neuroscience	20DPH029**	Molecular and Cellular Physiology Ⅰ	1	Ion channels, receptors and cell-adhesion molecules in neurons and epithelial cells will be introduced from the point of view of their structure, function, regulation and analytical methods.	Masaki Fukata Yoshihiro Kubo Mikio Furuse Kazuyoshi Murata Yasuhiro Go Hideji Murakoshi
	20DPH030**	Molecular and Cellular Physiology Ⅱ	1	Molecular bases of ion channels and membrane transporters as well as intracellular signal transduction will be introduced to understand physiological functions of neurons and epithelial cells.	
	20DPH031**	Regulation of Biological Function Ⅰ	1	The homeostasis of the organism is maintained by the communication of various organs, and its abnormality causes the diseases. In this lecture, we outline the role of each organ for controlling the blood circulation, feeding, metabolism, temperature, and sensory regulation from the viewpoint of inter-organ interaction.	Makoto Tominaga Motohiro Nishida Yasuhiko Minokoshi Kazutoshi Nishijima
	20DPH032**	Regulation of Biological Function Ⅱ	1	The homeostasis of the organism is maintained by the communication of various organs, and the abnormality causes the disease. In this lecture, we outline the role of each organization for controlling muscle movement, endocrine, and temperature regulation from the viewpoint of inter-organ interaction.	
	20DPH033**	Fundamental Neuroscience Ⅰ	1	In order to understand the mechanisms underlying information processing in the brain, this course reviews the properties and functions of neurons and glia cells, the neural mechanisms for sensory and motor functions, and circuit models of information processing.	Jyunichi Nabekura Yumiko Yoshimura Tomomi Nemoto Hiroaki Wake Yoshiyuki Kubota Masumi Hirabayashi
	20DPH034**	Fundamental Neuroscience Ⅱ	1	In order to understand the functional development and plasticity of the brain, this course reviews the development of neurons and neural circuits, activity-dependent synaptic plasticity and remodeling, and homeostatic development.	
	20DPH035**	System Neuroscience Ⅰ	1	This course reviews the brain mechanisms underlying movement, vision, language, and social cognition in physiology and disease.	Masaki Isoda Atsushi Nambu Norihiro Sadato Keiichi Kitajo Hiromasa Takemura Kenta Kobayashi
	20DPH036**	System Neuroscience Ⅱ	1	This course reviews the brain mechanisms underlying movement, emotion, learning, and social cognition in physiology and disease.	
	20DPH037**	Brain science step by step Ⅱ	1	Advanced knowledge necessary for brain science can be learned through an e-learning system with lecture and small tests.	Atsushi Nambu
	20DPH038**	Basic physiological and anatomical brain science	1	Basic physiology and anatomy on brains can be learned through 8 lectures and 2 practices.	Atsushi Nambu
	20DPH039**	Basic information brain science	1	Bases of information brain science can be learned through 3 lectures and 7 practices.	Atsushi Nambu
	20DPH019**	Methodology in Physiological Sciences	1	Various technology and methodology in physiological sciences will be introduced in laboratories which you do not belong to.	
	20DPH020**	Scientific Writing in Physiological Sciences	1	Basic expression and logical writing for scientific publication in English will be introduced.	
	20DPH021**	Practical Spoken English Ⅰa	1	Basic expression and preparation for oral presentation in English will be introduced.	Sechrist, Jeremiah S Mikio Furuse
	20DPH022**	Practical Spoken English Ⅰb	1		
	20DPH023**	Practical Spoken English Ⅱa	1		
	20DPH024**	Practical Spoken English Ⅱb	1		
	20DPH025**	Special Lectures in Physiological Sciences Ⅰ	1	Recent progress and results at the cutting edge will be introduced by experts in the physiological sciences.	
	20DPH026**	Special Lectures in Physiological Sciences Ⅱ	1		
	20DPH027**	Special Lectures in Physiological Sciences Ⅲ	1		

Field	Course Code	Subject	Credit	Content of subject	Instructor
Molecular & Cellular Physiology・Homeostatic Regulation・Fundamental Neuroscience・System Neuroscience	20DPH908**	Clinical pathophysiology 1	1	Lecturers in the basic fields will give an overview of the mechanisms of normal functioning of the brain or organs of the body. After that, clinical researchers invited from outside will give a lecture on the clinical pathology and treatment for diseases caused by functional abnormalities of the corresponding organs.	
	20DPH909**	Clinical pathophysiology 2	1		
	20DPH910**	Special lectures in clinical medicine	1	This course covers topics related to the treatment of diseases with drugs and the findings of translational research leading to the development of new therapies.	
	20DPH911**	Special lectures in oncology	1	This course provides an overview of the state-of-the-art knowledge on the nature and treatment of cancer, which has the highest mortality rate of all diseases.	
	20DPH912**	Special lectures in social medicine	1	This course will explain the handling and utilization of medical information, which occupies an important position in social medicine.	
	20DPH913**	Clinical and Social Medicine Seminar 1	1	Students participate in research meetings related to clinical and social medicine held at NIPS to learn the latest research results.	
	20DPH914**	Clinical and Social Medicine Seminar 2	1		

A two-digit number or letter will be entered to ** according to the semester or the lecturer in charge.