

Category (科目区分)	Specialized subjects / Basic Medical System		
Course Title (授業科目名)	Physiology		
Instructors (担当者名)	Tomohiro Numata	Academic Year (配当年次)	1,2
Required Course / Elective Course (必修/選択)	Elective Course	Credits (単位数)	2
Class Format (授業形態)	Lecture		
Schedule (開講期間)	Students will be notified by email after the course registration is complete.		
Class Date/Period (開講曜日・時間)	Every Friday from 18:00 to 21:30 (details of the schedule are negotiable)		
Course Outline/ Course Objectives (授業の概要・到達目標)			
Class purpose: To understand general medical physiology.			
Class Achievement Goals: Understand general medical physiology and acquire a research mindset.			
Class overview:			
• Understand the structure and function of the human body and explain its essence.			
• Learn the physiological functions and mechanisms by which the function of one organ affects the function of other organs, and understand the mechanism by which the pathological condition progresses due to the imbalance.			
• Learn about brain function and organ function control mechanism based on the basics of neuroscience.			
Course Planning (授業計画)			
	Course Outline/ Course Objectives (授業の概要及び到達目標) (Contents of Class) (授業内容)	Instructor (担当教員名)	Department (講座名) Class Room (実施場所)
1	Introduction to Neuroscience (1) Nerve excitation (ion channel/receptor)	Tomohiro Numata	Integrative Physiology [ Research Building for Basic Medicine 5th floor, seminar room ]
2	Introduction to Neuroscience (2) Cerebral cortical neurons		
3	Introduction to Neuroscience (3) Hippocampus and amygdala (memory and emotion)		
4	Introduction to Neuroscience (4) Basal ganglia and cerebellum		
5	Introduction to Neuroscience (5) Motor sensation and function		
6	Introduction to Neuroscience (6) Sleep and waking state		
7	Introduction to Neuroscience (7) Autonomic nerves of the brain stem (circulation, respiration, urination, etc.)		
8	Introduction to Neuroscience (8) Hypothalamus and autonomic function		
9	Introduction to Neuroscience (9) Appetite and autonomic function		
10	Introduction to Neuroscience (10) appetite and hormones		
11	Introduction to Neuroscience (11) Sexual function (sex hormone)		
12	Introduction to Neuroscience (12) Sexual behavior		
13	Introduction to Neuroscience (13) Growth hormone		
14	Introduction to Neuroscience (14) Bone metabolism and hormones		
15	Introduction to Neuroscience (15) Nerve-endocrine-immune linkage		
Grading Criteria (成績評価の基準と方法)			
Thirty hours of practical training and 15 hours of self-study in the seminar room, a total of 45 hours, will be used for one unit.			
Grades will be considered by attendance, examination results, and reports.			
Contact Information (問い合わせ先(氏名, メールアドレス等))			
Name: Prof. Tomohiro Numata / E-mail: numata@med.akita-u.ac.jp			
Comment (その他特記事項)			
Information about courses: If you cannot attend the training due to work, such as working graduate students, we will adjust the schedule, including remote lectures and discussions.			
We accept participation not only from the medical field but also from a wide range of fields.			
Textbooks / References: Textbooks / References: "Standard Physiology" Igaku-Shoin			