Course Coding(科目ナンバー)	Year/Semester/Term(年度・学期)	Faculty Offering Course(時間割所属・時間割コード)	Eligible Student Year(開講年次)	Credits(単位数)	Weekday and Period(曜日・時限)
RDM7-006-79-2	2025whole year	Graduate School of Medical Sciences (20070)	1, 2, 3, 4	2	others

Course Title(Theme)(科目名(講義題目))	Instructor(s)(担当教員)
Neuroscience (For students admitted in 2022 and before)(B6)	SHIODA Norifumi, FUKUDA Takaichi, MIZUNO Hidenobu, ERA Takumi, ORITA Yorihisa, Itou Yasuhiro, INOUE Toshihiro, TAKEMOTO Makoto, YAMASHITA Satoshi

Goals with their ratio(学修成果とその割合)
1.Advanced expert knowledge, skill and research capability ‥‥80% 2.Profound inter-disciplinary knowledge ‥‥20%

Type of Class(授業の形態)	Lecture
Teaching Method(授業の方法)	PowerPoint will be used in the lectures.
Course Goals(授業の目的)	In this course, you learn structure and function of several brain regions, postnatal development of somatosensory cortex, malformation of the brain due to the abnormalities in development, pathophysiology in the sensory systems, and neurodegenerative disorders. Recent advances in the therapeutic approaches including regenerative medicine are discussed.
Course Learning goals(学修目標)	【A level (A水準)】 Students can explain the structure and function of the central nervous system and its abnormalities, new therapeutic approaches to the neural disorders using stem cells and gene targeting, pathophysiology in the somatosensory, visual, and auditory systems and their treatments. Students can also find unresolved issues in the presented topics and explain their ideas to investigate the issues. 【C level (C水準)】 Students can explain the basic knowledge about the structure and function of the central nervous system and its abnormalities, new therapeutic approaches to the neural disorders using stem cells and gene targeting, pathophysiology in the somatosensory, visual, and auditory systems and their treatments.
Course Outline(授業の概要)	(1) general structure of the brain; (2) Structure and function of the neocortex and hippocampus; (3) `Postnatal development of somatosensory cortex; (4) Morphology and function of the visual cortex; (5) Morphology and function of the basal ganglia; (6) Neural crest cells and pluripotency; (7) Nerve growth factor and apoptosis; (8) Gene abnormality and the resultant congenital insensitivity to pain; (9) Deformity of central nervous system and treatment; (10) Pathophysiology and treatment of retinal diseases; (11) Glaucoma pathophysiology and treatment; (12) Hearing impairment and treatment; (13) Regenerative medicine for neurodegenerative diseases; (14) State-of-the-art therapies for Parkinson's diseases

Details for Individual Classes(各回の授業内容)

No.(回)	Date(月日)	Class Theme(授業テーマ)	Brief Outline of Class(内容概略)
1		FUKUDA Takaichi [eEJ-0]	General structure of the brain
2		FUKUDA Takaichi [eEJ-0]	Structure and function of the neocortex and hippocampus
3		MIZUNO Hidenobu [eEJ-0]	Postnatal development of the somatosensory forex
4		FUKUDA Takaichi [eEJ-0]	Structure and function of the visual system
5		FUKUDA Takaichi [eEJ-0]	Structure and function of the basal ganglia
6		ERA Takumi [eJ-0,eE-0]	Development and differentiation of neural crest cell, pluripotency
7		ERA Takumi [eJ-0,eE-0]	New medical application to diseases of the nervous system using stem cell
8		TAKEMOTO Makoto [eE-0]	Learning, memory, and emotion
9		SHIODA Norifumi [eE-0]	The potential of nucleic acid structures as a therapeutic target for neurological diseases
10		ITOU Yasuhiro [eE-0]	Pathology and treatment of retinal diseases
11		INOUE Toshihiro [eE-0]	Glaucoma pathophysiology and therapy
12		ORITA Yorihisa [eJ-0]	Olfaction impairment and the treatment
13		YAMASHITA Satoshi [eE-0]	Regenerative medicine for neurodegenerative diseases
14		YAMASHITA Satoshi [eE-0]	State-of-the-art therapies for Parkinson's diseases
15		_____	_____

Estimated out-of-class study time	
Required Textbook(テキスト)	
Reading List(参考文献)	
Enrollment Conditions(履修条件)	
Assessment Methods and Criteria(評価方法・基準)	The students' understanding will be evaluated on the basis of quizzes related to the topics dealt with in class to be scored from 0 to 100. Final grades will be based on the average of the 10 highest scores out of 15 quizzes.
Language Used in Instruction(使用言語)	Japanese and English
Textbook/Material Language(教科書・資料の言	Combination of Japanese and English

語)	Combination of Japanese and English
Course Based on Practical Work Experience(実務経験を活かした授業)	Applicable (Fourteen out of fifteen classes are lectured by teachers with practical work experience in clinical medicine.)