

Physiological Sciences

Course Code	Course	Credit	Content of Subject
40COM003**	Practical Spoken English 1	1	The course focuses on improving and building the communication and presentation skills necessary for researchers.
40COM004**	Practical Spoken English 2	1	Following "Practical Spoken English 1", the course focuses on improving and building the communication and presentation skills necessary for researchers.
40COM005**	Practical Spoken English 3	1	Following "Practical Spoken English 2", the course focuses on improving and building the communication and presentation skills necessary for researchers.
40COM006**	Practical Spoken English 4	1	Following "Practical Spoken English 3", the course focuses on improving and building the communication and presentation skills necessary for researchers.
40COM007**	Practical Spoken English 5	1	Following "Practical Spoken English 4", the course focuses on improving and building the communication and presentation skills necessary for researchers.
40COM008**	Practical Spoken English 6	1	Following "Practical Spoken English 5", the course focuses on improving and building the communication and presentation skills necessary for researchers.
40COM009**	Practical Spoken English 7	1	Following "Practical Spoken English 6", the course focuses on improving and building the communication and presentation skills necessary for researchers.
40COM010**	Practical Spoken English 8	1	Following "Practical Spoken English 7", the course focuses on improving and building the communication and presentation skills necessary for researchers.
40COM011**	Practical Spoken English 9	1	Following "Practical Spoken English 8", the course focuses on improving and building the communication and presentation skills necessary for researchers.
40COM012**	Practical Spoken English 10	1	Following "Practical Spoken English 9", the course focuses on improving and building the communication and presentation skills necessary for researchers.
40COM013**	Life Science Retreat I	1	Students and faculty members who are involved in life science research gather for academic exchanges. First-year students in the Five-year Doctoral Program present their research plan and progress.

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40COM014**	Life Science Retreat II	1	Students and faculty members who are involved in life science research gather for academic exchanges. Second-year students in the Five-year Doctoral Program present their research progress.
40COM015**	Life Science Retreat III	1	Students and faculty members who are involved in life science research gather for academic exchanges. Third-year students in the Five-year Doctoral Program or first-year students in the Three-year Doctoral Program present their research plan and/or progress.
40COM016**	Life Science Retreat IV	1	Students and faculty members who are involved in life science research gather for academic exchanges. Fourth-year students in the Five-year Doctoral Program or second-year students in the Three-year Doctoral Program present their research progress.
40COM017**	Life Science Retreat V	1	Students and faculty members who are involved in life science research gather for academic exchanges. Fifth-year students in the Five-year Doctoral Program or third-year students in the Three-year Doctoral Program present their research progress.
40PHS001**	Brain science e-learning	1	Advanced knowledge necessary for brain science can be learned through an e-learning system with lecture and small tests.
40PHS002**	Basic physiological and anatomical brain science	1	Basic physiology and anatomy on brains can be learned through 10 lectures.
40PHS003**	Principle and Methodology in Brain Science	1	Basic principles and methodologies essential to understand brain science will be explained.
40PHS004**	Molecular and Cellular Physiology 1	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.
40PHS005**	Molecular and Cellular Physiology 2	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.

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40PHS006**	Regulation of Biological Function 1	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.
40PHS007**	Regulation of Biological Function 2	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.
40PHS008**	Fundamental Neuroscience 1	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 visual and somatosensory functions, circuit models of information processing, neural basis of biological rhythms, and methods for measuring neural activity.
40PHS009**	Fundamental Neuroscience 2	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.
40PHS010**	System Neuroscience 1	1	This course reviews the brain mechanisms underlying movement, vision, language, and social cognition in physiology and disease.
40PHS011**	System Neuroscience 2	1	This course reviews the brain mechanisms underlying movement, emotion, learning, and social cognition in physiology and disease.
40PHS012**	Methodology in Physiological Sciences	1	Students will be assigned to a laboratory different from the one to which they belong, where they will learn the principles of various research techniques used in physiological sciences and receive instruction through hands-on experience.

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40PHS013**	Special Lectures in Physiological Sciences 1	1	The cutting-edge research being conducted by researchers at NIPS will be lectured, including the background, methods, latest findings, and significance. This lecture does not duplicate the contents of Special Lectures in Physiological Sciences 2.
40PHS014**	Special Lectures in Physiological Sciences 2	1	The cutting-edge research being conducted by researchers at NIPS will be lectured, including the background, methods, latest findings, and significance. This lecture does not duplicate the contents of Special Lectures in Physiological Sciences 1.
40PHS015**	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.
40PHS016**	Clinical pathophysiology 2	1	Lecturers in the basic fields will give an overview of the mechanisms of the normal functioning of the cortical networks, basal ganglia circuits, and synapses. 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.
40PHS017**	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 findings. The research meetings do not overlap with those in Clinical and Social Medicine Seminar 2.
40PHS018**	Clinical and Social Medicine Seminar 2	1	Students participate in research meetings related to clinical and social medicine held at NIPS to learn the latest research findings. The research meetings do not overlap with those in Clinical and Social Medicine Seminar 1.
40PHS019**	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.

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40PHS020**	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.
40PHS021**	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.
40PHS022**	Physiological Science Seminar I	1	First-year students in the Five-year Doctoral Program participate in research seminars or scientific meetings held at NIPS to learn about cutting-edge research in physiological sciences directly from the researchers themselves.
40PHS023**	Physiological Science Seminar II	1	Second-year students in the Five-year Doctoral Program participate in research seminars or scientific meetings held at NIPS to learn about cutting-edge research in physiological sciences directly from the researchers themselves.
40PHS024**	Physiological Science Seminar III	1	Third-year students in the Five-year Doctoral Program or first-year students in the Three-year Doctoral Program participate in research seminars or scientific meetings held at NIPS to learn about cutting-edge research in physiological sciences directly from the researchers themselves.
40PHS025**	Physiological Science Seminar IV	1	Fourth-year students in the Five-year Doctoral Program or second-year students in the Three-year Doctoral Program participate in research seminars or scientific meetings held at NIPS to learn about cutting-edge research in physiological sciences directly from the researchers themselves.
40PHS026**	Physiological Science Seminar V	1	Fifth-year students in the Five-year Doctoral Program or third-year students in the Three-year Doctoral Program participate in research seminars or scientific meetings held at NIPS to learn about cutting-edge research in physiological sciences directly from the researchers themselves.

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80PHS001**	Physiological Science Progress I A	2	First-year students in the Five-year Doctoral Program present their research project and the academic background for their research to their supervisors and other faculty members, and receive advice on their research and presentation.
80PHS002**	Physiological Science Progress I B	2	First-year students in the Five-year Doctoral Program present their research plans and progress on their research projects to their supervisors and other faculty members, and receive advice on their research and presentation.
80PHS003**	Physiological Science Progress II A	2	Students present their research progress and revised research plan since Physiological Science Progress IB to their supervisors and other faculty members, and receive advice on their research and presentation.
80PHS004**	Physiological Science Progress II B	2	Students summarize their findings and data obtained from the research project they have been conducting for two years, present them to their supervisors and other faculty members, and receive advice on their research and presentation.
80PHS005**	Physiological Science Progress III A	2	Students in the Five-year Doctoral Program develop a research plan for their doctoral degree based on two years of research. First-year students in the Three-year Doctoral Program set a research project for doctoral degree research and develop their research plan. Students present these to their advisors and other faculty members and receive advice on their research and presentation.
80PHS006**	Physiological Science Progress III B	2	Students present their research progress and revised research plan since Physiological Science Progress IIIA to their supervisors and other faculty members, and receive advice on their research and presentation.
80PHS007**	Physiological Science Progress IV A	2	Students present their research progress and revised research plan since Physiological Science Progress IIIB to their supervisors and other faculty members, and receive advice on their research and presentation.

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80PHS008**	Physiological Science Progress IVB	2	Students present their research progress and revised research plan since Physiological Science Progress IVA to their supervisors and other faculty members, and receive advice on their research and presentation.
80PHS009**	Physiological Science Progress VA	2	Students present their research progress and revised research plan since Physiological Science Progress IVB to their supervisors and other faculty members, and receive advice on their research and presentation.
80PHS010**	Physiological Science Progress VB	2	Students present the status of their doctoral dissertation preparation or the progress of their research toward a doctoral dissertation to their advisor and other faculty members, and receive advice on their research and presentations.
80PHS011**	Physiological Science Reading Seminar I A	2	Students will participate in seminars that involve the close reading, explanation, and discussion of current life science papers to gain an overview of the papers.
80PHS012**	Physiological Science Reading Seminar I B	2	Students will participate in seminars that involve the close reading, explanation, and discussion of current life science papers to understand the details of the papers' research findings.
80PHS013**	Physiological Science Reading Seminar II A	2	Students will participate in seminars that involve the close reading, explanation, and discussion of current life science papers to understand the experimental methods used in research.
80PHS014**	Physiological Science Reading Seminar II B	2	Students will participate in seminars that involve the close reading, explanation, and discussion of current life science papers to understand the advances in the papers' research considering previous studies.
80PHS015**	Physiological Science Reading Seminar III A	2	Students will participate in seminars that involve the close reading, explanation, and discussion of current life science papers to understand the logic flow of the papers throughout their introduction, results and discussion.

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Course Code	Course	Credit	Content of Subject
80PHS016**	Physiological Science Reading Seminar ⅢB	2	Students will participate in seminars that involve the close reading, explanation, and discussion of current life science papers to further understand the logic flow of the papers throughout their introduction, results and discussion.
80PHS017**	Physiological Science Reading Seminar ⅣA	2	Students will participate in seminars that involve the close reading, explanation, and discussion of current life science papers to get English expressions used in research papers as well as scientific knowledge.
80PHS018**	Physiological Science Reading Seminar ⅣB	2	Students will participate in seminars that involve the close reading, explanation, and discussion of current life science papers to further get English expressions used in research papers as well as scientific knowledge.
80PHS019**	Physiological Science Reading Seminar ⅤA	2	Students will participate in seminars that involve the close reading, explanation, and discussion of current life science papers to develop the ability to critically evaluate papers.
80PHS020**	Physiological Science Reading Seminar ⅤB	2	Students will participate in seminars that involve the close reading, explanation, and discussion of current life science papers to further develop the ability to critically evaluate papers.