

**Academic Year 2024**

**GRADUATE SCHOOL OF HEALTH SCIENCES  
SYLLABUS  
DOCTOR'S COURSE, 1<sup>st</sup> grade**

**FUJITA HEALTH UNIVERSITY  
GRADUATE SCHOOL OF HEALTH SCIENCES**

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# **The curriculum of the Graduate School of Health Sciences (Doctoral Program), Fujita Health University**

**Aiming to acquire a wide knowledge in health sciences and to write an original doctoral thesis**

Yoshikiyo Kanada, Dean of the Graduate School of Health Sciences, Fujita Health University

The Major in Health Sciences, Graduate School of Health Sciences (Doctoral Program), Fujita Health University, is based on the founding spirit of “creating one solid principle of your own.” We aim to cultivate versatile human resources who can respond widely to the sophistication, complexity, and diversification of modern medical care in addition to displaying the specialized knowledge and skills gained through the master’s program. In April 2024, we established the two fields: Nursing and Rehabilitation Sciences. The program aims to train well-rounded educators, researchers, and leaders who contribute to solving problems in the field of clinical medicine and health and welfare in the community based on advanced knowledge and scientific thinking. In addition, the program aims to produce human resources who bridge nursing and rehabilitation sciences and integrate specialized academic knowledge across fields to address diverse problems with interdisciplinary perspective. At Fujita Health University, a unique curriculum is tailored in accordance with the aforementioned slogan, helping students gain a working knowledge in health science. In the first year of each field, students learn rudimentary concepts of health science that are common to each field through the common (collaboration) subjects of introduction to health science, research methodology of health sciences, and introduction to medical and health care professional collaboration. In the specialized course, students deepen their knowledge and skills of the health profession and are exposed to the present-day theory and knowledge in each field. Seminars help students acquire basic ideas on exploring the problems to be solved and provide the right training for thinking to solve the problems. Through the specialized research conducted from the 1st to 3rd years and by exploring cutting-edge, up-to-date knowledge and examining issues in technological development, students are able to improve their creativity, theory-building skills, and active problem-solving abilities. As specialized research is built upon continuous investigation and accumulation of results, it is best to study this subject continuously for three years. During the first semester of the first year, a research plan will be decided, and the development of the research commences in the second semester. In the third year, a doctoral dissertation on the researched topics should be formulated, and as the lead authors, students ought to publish their research results in international journals to widely disseminate their research findings.

The syllabus summarizes the course periods, outline, goals, lecture plans, evaluation methods, teaching materials/textbooks/reference materials, preparatory learning, and points to note while pursuing a course are all listed for each subject to allow students to decide on their learning activities as independently as possible. It is also vital for faculty members and students to come up with effective

ways to achieve learning outcomes, clearly understand their responsibilities and obligations, and work together. It is my hope that the graduate students maintain a broad view of the entire class in accordance with the syllabus and that they engage in learning activities with a strong sense of purpose.

It is the desire of all faculty members that the three years of research at the Graduate School of Health Sciences will be a fulfilling experience, providing a strong basis for future career development for students.

## **Three Policies of the Graduate School of Health Sciences**

### **1. Admissions Policy**

The Doctoral Course, Major in Health Sciences in the Graduate School of Health Sciences, seeks prospective students who possess the following qualities:

- (1) Individuals who aspire to conduct research to solve diverse issues in all areas of the health sciences by exploring scientific evidence.
- (2) Individuals who aspire to pursue truth by developing new knowledge and techniques relevant to their research topics.
- (3) Individuals who aspire to become educators, researchers, or instructors.
- (4) Individuals with a strong desire to publish and implement research results and contribute to advancing health sciences.

### **2. Curriculum Policy**

For students to acquire the skills specified in the Diploma Policy, the Doctoral Course has established a systematic distribution of subjects between coursework (such as lectures, seminars, and practical exercises) and research work (graduate thesis), which trains basic and specialized scientific skills and facilitates collaboration among majors based on the following policies:

- (1) Common compulsory courses provide an academic basis for students to become educators, researchers, or instructors by studying essential health science concepts common to each major.
- (2) Seminars and practical exercises in specific majors train students to address and solve problems by providing in-depth health professional knowledge and the latest techniques.
- (3) Graduate theses train students to write academic papers that can be submitted to international journals by exploring cutting-edge knowledge and developing their theoretical and technical problem-solving skills.
- (4) Interdisciplinary research seminars train students to develop cutting-edge theory and practical skills and to disseminate and implement them widely in society through the results of basic and clinical scientific investigations and collaboration among majors.

### **3. Diploma Policy**

Students must meet several requirements to be conferred a Doctoral Degree in Health Sciences. They must be enrolled in the course for the minimum number of years to complete the required credits per the educational philosophy and objectives. Additionally, through the dissertation defense and final examination, they must demonstrate that they have acquired the following necessary competencies.

- (1) Skills to analyze problems and articulate them from unique perspectives based on a comprehensive understanding of existing research.
- (2) Skills in selecting and implementing appropriate analyses to solve problems.
- (3) Skills to present new findings and propose new techniques or theories that contribute to developing professionalism in the relevant disciplines.
- (4) Skills in seeking truth and promoting unique research while maintaining an original academic spirit.

## The number of total required credits

### 1) Nursing, Rehabilitation Sciences

Course	Number of credits		Notes
	Required	Elective	
Common subjects	4 credits		4 credits or more
Nursing	6 credits	4 credits	10 credits for each fields
Rehabilitation Therapy Sciences	6 credits	4 credits	
<b>Total</b>	<b>14 credits or more</b>		

## Curriculum table

Field	Subject	Credit (Hours)		1st year		2nd year		3rd year	
		Required	Elective	Autumn semester	Spring semester	Autumn semester	Spring semester	Autumn semester	Spring semester
Common Subjects	Introduction to Medical Sciences	2 (30)			2				
	Research Methodology of Medical Sciences	2 (30)		2					
Nursing	Health Care and Nursing Integrated Sciences, Advanced		2 (30)		2				
	Health Care and Nursing Integrated Sciences, Exercise		2 (30)	2					
	Graduate Thesis of Health Care and Nursing Integrated Sciences	6 (180)		1		2	1	1	1
Rehabilitation Therapy Sciences	Rehabilitation Therapy Science, Advanced I (Rehabilitation Educational Sciences)		2 (30)		2				
	Rehabilitation Therapy Science, Advanced II (Rehabilitation Educational Sciences)		2 (30)		2				
	Rehabilitation Therapy Science, Advanced III (Bioinformatics and Therapeutic Systems Sciences)		2 (30)		2				
	Rehabilitation Therapy Science, Advanced IV (Motor Control Instrumentation Sciences)		2 (30)		2				
	Rehabilitation Therapy Sciences, Exercise I (Rehabilitation Educational Sciences)		2 (30)	2					
	Rehabilitation Therapy Sciences, Exercise II (Rehabilitation Educational Sciences)		2 (30)	2					
	Rehabilitation Therapy Science, Exercise III (Bioinformatics and Therapeutic Systems Sciences)		2 (30)	2					
	Rehabilitation Therapy Sciences, Exercise IV (Motor Control Instrumentation Sciences)		2 (30)	2					
	Graduate Thesis of Rehabilitation Therapy Science	6 (180)			1		2	1	1

## Subjects and instructors

Field	Course Title	Credits	Hours	Instructor
Common Subjects	Introduction to Medical Sciences	2	30	KANADA Yoshikiyo, SUGAMA Junko, MURAYAMA Ryoko, TAKEHARA Kimie, SAKURAI Hiroaki, TERANISHI Toshio
	Research Methodology of Medical Sciences	2	30	KANADA Yoshikiyo, SUGAMA Junko, SAKURAI Hiroaki, TERANISHI Toshio, MURAYAMA Ryoko, TAKEHARA Kimie, YAMADA Kouji, INAMOTO Yoko, TANABE Shigeo, TAKEDA Kotaro, MIYOSHI Yumiko, ONOGI Keiko, NAKAMURA Sayuri, SEKO Rumi
Nursing	Health Care and Nursing Integrated Sciences, Advanced	2	30	SUGAMA Junko, SEKO Rumi, MURAYAMA Ryoko, NAKAMURA Sayuri, TAKEHARA Kimie
	Health Care and Nursing Integrated Sciences, Exercise	2	30	SUGAMA Junko, MURAYAMA Ryoko, TAKEHARA Kimie
	Graduate Thesis of Health Care and Nursing Integrated Sciences	6	180	SUGAMA Junko, MURAYAMA Ryoko, TAKEHARA Kimie
Rehabilitation Therapy Sciences	Rehabilitation Therapy Science, Advanced I (Rehabilitation Educational Sciences)	2	30	KANADA Yoshikiyo, SAKURAI Hiroaki, TANABE Shigeo
	Rehabilitation Therapy Science, Advanced II (Motor Control Instrumentation Sciences)	2	30	KANADA Yoshikiyo, SAKURAI Hiroaki, TANABE Shigeo
	Rehabilitation Therapy Science, Advanced III (Bioinformatics and Therapeutic Systems Sciences)	2	30	TERANISHI Toshio, INAMOTO Yoko, ONOGI Keiko
	Rehabilitation Therapy Science, Advanced IV (Motor Control Instrumentation Sciences)	2	30	YAMADA Kouji, TANABE Shigeo, TAKEDA Kotaro
	Rehabilitation Therapy Sciences Exercise I (Rehabilitation Educational Sciences)	2	30	KANADA Yoshikiyo, SAKURAI Hiroaki, TANABE Shigeo
	Rehabilitation Therapy Sciences Exercise II (Motor Control Instrumentation Sciences)	2	30	KANADA Yoshikiyo, SAKURAI Hiroaki, TANABE Shigeo
	Rehabilitation Therapy Science, Exercise III (Bioinformatics and Therapeutic Systems Sciences)	2	30	TERANISHI Toshio, INAMOTO Yoko, ONOGI Keiko
	Rehabilitation Therapy Sciences Exercise IV (Motor Control Instrumentation Sciences)	2	30	YAMADA Kouji, TANABE Shigeo, TAKEDA Kotaro
	Graduate Thesis of Rehabilitation Therapy Science	6	180	KANADA Yoshikiyo, SAKURAI Hiroaki, TERANISHI Toshio, INAMOTO Yoko, ONOGI Keiko, YAMADA Kouji, TANABE Shigeo, TAKEDA Kotaro

# **1. Common Subjects**



## Introduction to Health Sciences

専攻分野 Major Field	common	学年 Grade	1st year	期 間 Semester	Full year
授業形態 Style	lecture	単位 Credits	2	時間数 Hours	30
授業方法 Class Methods	remote class	使用言語 Language	English		
担当教員名 Instructor	KANADA Yoshikiyo (Course Manager), SUGAMA Junko, SAKURAI Hiroaki, TERANISHI Toshio, MURAYAMA Ryoko, TAKEHARA Kimie				
科目概要 Course Aims	<p>Holding lectures on the current state of knowledge in all fields of medicine and healthcare including those other than nursing and rehabilitation. Students will learn the latest and advanced knowledge necessary for medical and healthcare professions regarding disease prevention and health promotion, including perspectives from healthcare, nutrition, humanities and social sciences, psychology, and social welfare sciences.</p> <p>In addition, the importance of preventive medicine for diseases caused by lifestyle and environment is increasing, and further progress in healthcare is needed. Students will learn about health statistics, community health, maternal and health, occupational health, mental health, environmental science, psychological factors, living environment, and other aspects of healthcare to prevent disease, and maintain and promote health.</p>				
到達目標 Objectives	To obtain a wide range of knowledge and perspectives on research topics in nursing and rehabilitation therapy science				
回数 Chapters	授業計画 Course schedule (topic for each time)			担当教員 Instructor	
1	Explain the current state of physical and occupational therapists involved in healthcare, as well as the educational environment, social structures, and issues			KANADA Yoshikiyo	
2	The purpose of clinical practice guidelines and how to create them			SUGAMA Junko	
3	Explain standardization of skills in the rehabilitation field and the application of OSCE (Objective Structured Clinical Examination)			SAKURAI Hiroaki	
4	The rehabilitation ward is a place to expand activities, and is a ward where many falls occur. This course will explain and discuss methods to increase the amount and range of activities while reducing the risk of falls, as well as consider about fall risk assessment and management methods.			TERANISHI Toshio	
5	Commentary on creating evidence for nursing care through multidisciplinary integration			MURAYAMA Ryoko	
6	Explain the importance of preventive care for diabetic foot.			TAKEHARA Kimie	
7-10	Students attend the seminars four times a year on medical and healthcare sciences provided by researchers from inside and outside of the university.			KANADA Yoshikiyo	
11-15	Students will learn and acquire basic, current, and advanced knowledge as researchers by participating in special lectures and symposiums of the 藤田医科大学医学会学術大会 (英語正式名称を入力), ethics seminars, compliance seminars, the APRIN e-learning program, and 博士後期課程学位論文公开发表会 (英語正式名称を入力) held on campus.			KANADA Yoshikiyo	
評価法・基準 Grading Policies	Grading will be done based on students' attitude (20%) and discussion with faculty members and other staff (80%) by the Course Manager. If necessary, adequate feedback will be given during the discussion or by email.				
教科書 Text Book	Distribute each time.		教材・参考書 Reference Book	If necessary, introduce appropriate.	
オフィス アワー Office Hour	KANADA: by email SUGAMA: by email SAKURAI: by email TERANISHI: by email		連絡先 Contact		

	MURAYAMA: by email TAKEHARA by email		
準備学習 Preparation of study	<p>These lectures will be instructed in English only, including questions, answers and opinions.</p> <p>Preparatory study of the specified theme for about 30 minutes. After the lecture, review the lecture with handout for about 1 hour and summarize them in a notebook.</p>	履修上の注意点 Notice for Students	None

## Research Methodology of Health Sciences

専攻分野 Major Field	Common	学年 Grade	1st year	期間 Semester	2nd semester
授業形態 Style	Lecture	単位 Credits	2	時間数 Hours	30
授業方法 Class Methods	remote class	使用言語 Language	Japanese		
担当教員名 Instructor	KANADA Yoshikiyo (Course Manager), SUGAMA Junko, SAKURAI Hiroaki, TERANISHI Toshio, MURAYAMA Ryoko, TAKEHARA Kimie, YAMADA Kouji, INAMOTO Yoko, TANABE Shigeo, TAKEDA Kotaro, MIYOSHI Yumiko, NAKAMURA Sayuri, ONOGI Keiko, SEKO Rumi				
科目概要 Course Aims	When people have a disease, they receive medical treatment at a medical institution. It is widely accepted that early detection and treatment of a disease result in better outcome. Furthermore, it is important to maintain health by setting an environment that prevents diseases. Seamless medical care, including not only the treatment of diseases but also prevention and maintenance of health, will be discussed. As technological innovations in clinical practice continue to advance, technologies such as robots, information and communication technology (ICT), and artificial intelligence (AI) are being applied. Findings from demonstrations and current research will be presented on the basis of specific examples. In addition, through discussions, students will have an opportunity to learn about collaborative research in medical and healthcare fields and to apply and use this knowledge in their respective fields.				
到達目標 Objectives	To obtain working knowledge and skills related to research in nursing integrated science, motor control measurement science, and rehabilitation education science in the two fields of health science as well as acquire the ability to utilize the aforesaid knowledge for research				
回数 Chapters	授業計画 Course schedule (topic for each time)			担当教員 Instructor	
1	Explain educational topics and solutions for physical and occupational therapists responsible for rehabilitation therapy and healthcare			KANADA Yoshikiyo	
2-3	To explain about systematic reviews and meta-analysis in relation to clinical practice guidelines			SUGAMA Junko	
4	Explain the current state of standardization of skills in the rehabilitation education field			SAKURAI Hiroaki	
5	Students will learn about three-dimensional motion analysis methods to evaluate motor impairment in hemiplegic patients. In addition, the severity of impairment and disability, the course after onset, methodology including the use of orthotics and assistive devices, and outcomes of gait reconstruction in hemiplegic patients will be taught.			TERANISHI Toshio	
6	Expansion of nursing care with ultrasonography: clinical study, algorithm development, and empirical study			MURAYAMA Ryoko	
7	Nursing science and engineering research in tinea pedis care: clinical study, care development, and empirical study			TAKEHARA Kimie	
8	The decline in cognitive function associated with aging can be improved through exercise. The molecular mechanism will be explained from the perspective of morphological changes in neurons in the hippocampus, receptors, neurotransmitters, and neural networks, and long-term potentiation (LTP) and long-term depression (LTD) of synapses			YAMADA Kouji	
9	An overview of treatment-oriented evaluation from conventional methods to the latest methods in patients with dysphagia			INAMOTO Yoko	
10	An overview of the various activity assistive devices used in the rehabilitation sciences			TANABE Shigeo	
11	An overview of the regression, classification, and machine learning methods that form the basis of AI algorithms			TAKEDA Kotaro	
12	Methods of scale development and trends in self-regulated learning research			MIYOSHI Yumiko	
13	An overview of research trends regarding interprofessional collaboration in health care			NAKAMURA Sayuri	

14	Outline the practice and problems of rehabilitation in house-based phase	ONOGI Keiko
15	Prevention of lifestyle-related diseases from the perspective of health measures	SEKO Rumi
評価法・基準 Grading Policies	Grading will be done based on students' attitude (30%) and discussion with faculty members and other staff (70%) by the Course Manager.	
教科書 Text Book	Distributed each time	教材・参考書 Reference Book
オフィス アワー Office Hour	KANADA : by email SUGAMA : by email SAKURAI : by email TERANISHI : by email MURAYAMA : by email TAKEHARA : by email YAMADA : by email INAMOTO : by email TANABE : by email TAKEDA : by email MIYOSHI : by email NAKAMURA : by email ONOGI : by email SEKO : by email	連絡先 Contact
準備学習 Preparation of study	Preparatory study of the specified theme for about 30 minutes. The lecture should be reviewed using the handout for about 1 hour after its delivery, and a summary should be written in a notebook.	履修上の注意点 Notice for Students
		If necessary, introduced appropriately

## **2. Nursing**

## Health Care and Nursing Integrated Sciences, Advanced

専攻分野 Major Field	Nursing	学年 Grade	1st year	期間 Semester	1st semester
授業形態 Style	lecture	単位 Credits	2	時間数 Hours	30
授業方法 Class Methods	remote class	使用言語 Language	Japanese		
担当教員名 Instructor	SUGAMA Junko, MURAYAMA Ryoko, TAKEHARA Kimie, NAKAMURA Sayuri, SEKO Rumi				
科目概要 Course Aims	The course considers the maintenance and promotion of health and health restoration for people living in the community through theories about people's health, the surrounding environment, and physical, mental, psychological, and social influences. The course also outlines the basics of implementation science, using various theories, research designs, and methods to implement and disseminate evidence-based practices in medical and health activities.				
到達目標 Objectives	<p>In this class, students will learn to:</p> <ol style="list-style-type: none"> <li>1. Explain people's health, the environment, and its physical, mental, psychological, and social effects.</li> <li>2. Explain solutions to the above problems through theory</li> <li>3. Explain the basics of implementation science to implement and disseminate evidence-based practices in medical and health activities.</li> <li>4. Explain the basics of implementation science that implements and disseminates evidence-based practices in medical and health care activities.</li> </ol>				
回数 Chapters	授業計画(各回のテーマ) Course Schedule (topic for each time)			担当教員 Instructor	
1	What is Implementation Science?			SUGAMA Junko	
2	Methods of Implementation Science from the Literature an			SUGAMA Junko	
3	Theory and Frameworks for Implementation Science			SUGAMA Junko	
4	Strategies for Implementation Science			SUGAMA Junko	
5	Principles for Health Design Thinking			SUGAMA Junko	
6	Methods for Health Design Thinking			SUGAMA Junko	
7	Case Studies Using the Health Design Thinking			SUGAMA Junko	
8	Current Situation and Issues of people Living in the Community and Health and Welfare Policy			SEKO Rumi	
9	Theory of Health Maintenance and Promotion for People Living in the Community			SEKO Rumi	
10	Nursing Theory for Patient Understanding			NAKAMURA Sayuri,	
11	Theory and Nursing Research			NAKAMURA Sayuri	
12	Translational Research Based on Nursing Science and Engineering Methods			MURAYAMA Ryoko	
13	Innovations in Medicine and Nursing			MURAYAMA Ryoko	
14	Nursing Research and Social Conditions			TAKEHARA Kimie	
15	Nursing Research and the Paradigm Shift in Nursing			TAKEHARA Kimie	
評価法・基準 Grading Policies	Evaluation will be based on reports, seminar materials, and examinations (70%) and class attitude (30%). In order to measure the level of understanding of the objectives, a report on each of them, assignments such as preparation of materials, or examinations will be assigned, and explanations will be given after the assignments are made.				

教科書 Text Book	None	教材・参考書 Reference Book	None
オフィス アワー Office Hour	All faculty available online for 30 minutes after class	連絡先 Contact	
準備学習 Preparation of study	Students should prepare about one hour in advance on the designated topic. Also, review about 1 hour after the exercises. Be interested in everything and have a positive attitude. After class, review what students learned for about 60 minutes.	履修上の注意点 Notice for Students	Materials to be used in class should be uploaded to Teams in advance

## Health Care and Nursing Integrated Sciences, Exercise

専攻分野 Major Field	Nursing	学年 Grade	1st year	期 間 Semester	2nd semester
授業形態 Style	lecture	単位 Credits	2	時間数 Hours	30
授業方法 Class Methods	remote class	使用言語 Language	Japanese		
担当教員名 Instructor	SUGAMA Junko, MURAYAMA Ryoko, TAKEHARA Kimie				
科目概要 Course Aims	Discussions will be held on the theories learned in the Advanced Course and recent research trends, as well as the underlying ideas, theories, and methods of each. In addition, students will learn how to reflect on clinical questions and research questions, and the process from research planning to publication of research results, through practical examples.				
到達目標 Objectives	In this class, students will learn to: 1. Discuss and critically examine the underlying ideas, theories, and methods from theories and recent research trends 2. Describe the evidence and logical skills necessary for conducting one's own research.				
回数 Chapters	授業計画(各回のテーマ) Course Schedule (topic for each time)			担当教員 Instructor	
1-15	Preparation of literature review Clarification of research objectives based on literature review Research methods based on research objectives Research Methods Based on Research Objectives Ethics in Nursing Research Data collection and analysis Writing and Publication			SUGAMA Junko MURAYAMA Ryoko TAKEHARA Kimie	
評価法・基準 Grading Policies	Evaluation will be based on reports, seminar materials, and examinations (70%) and class attitude (30%). In order to measure the level of understanding of the objectives, a report on each of them, assignments such as preparation of materials, or examinations will be assigned, and explanations will be given after the assignments are made.				
教科書 Text Book	None	教材・参考書 Reference Book	None		
オフィス アワー Office Hour	Each research supervisor available online or via email for 30 minutes after class	連絡先 Contact			
準備学習 Preparation of study	Students should prepare about one hour in advance on the designated topic. Also, review about 1 hour after the exercises. Be interested in everything and have a positive attitude. After class, review what students learned for about 60 minutes.	履修上の注意点 Notice for Students	Materials to be used in class should be uploaded to Teams in advance		



## Graduate Thesis of Health Care and Nursing Integrated Sciences

専攻分野 Major Field	Nursing	学年 Grade	1st・2nd・ 3rd year	期間 Semester	full year
授業形態 Style	Seminar	単位 Credits	6	時間数 Hours	180
授業方法 Class Methods	Remote or face-to-face class	使用言語 Language	Japanese		
担当教員名 Instructor	SUGAMA Junko, MURAYAMA Ryoko, TAKEHARA Kimie				
科目概要 Course Aims	<p>In the special research, students conduct research on the construction of evidence in nursing and its social implementation and prepare a doctoral dissertation. In the process, students learn a series of dissertation writing processes, including selection of a research theme, review of previous research, planning of a research plan, experimentation and investigation, and discussion. In addition, students learn the conscience and ethics as scientists, their attitude toward research, original ideas, and the nature of research through the preparation of their doctoral dissertations. The major research topics are as follows:</p> <p>(SUGAMA Junko)</p> <ol style="list-style-type: none"> <li>1. Development of evidence and its implementation for prevention and management of chronic wound and vulnerable skin tissue</li> <li>2. Development of evidence and its implementation for nursing interventions and clinical skills</li> <li>3. Evaluation of nursing role and function in the interdisciplinary approach to the health care</li> </ol> <p>(MURAYAMA Ryoko)</p> <ol style="list-style-type: none"> <li>1. Research on the creation of evidence-based nursing technology and the construction of systems for social implementation</li> <li>2. Research on the development of educational programs including the development of teaching materials and human resource development for the dissemination of nursing technology and its social implementation</li> </ol> <p>(TAKEHARA Kimie)</p> <ol style="list-style-type: none"> <li>1. Research on the development and social implementation of diabetic foot ulcer preventive care and assessment technology using nursing science and engineering methods</li> <li>2. Research on a series or part of the process to create of advanced new nursing care by the clinical seeds and its social implementation (i.e., its widespread return to clinical field)</li> <li>3. Research on the working environment and education of nurses, and patient education</li> </ol>				
到達目標 Objectives	<p>The goals of this course are to be able to</p> <ul style="list-style-type: none"> <li>- decide the research subject and investigate the related literature.</li> <li>- determine the framework for promoting research, learn the research methods, and conduct research.</li> <li>- interpret and discuss your research results logically.</li> <li>- write a doctoral thesis.</li> </ul>				
回数 Chapters	授業計画(各回のテーマ) Course Schedule (topic for each time)				担当教員 Instructor
1-10 (1st year)	Continue research activities and summarize the results to create a thesis. Creating a research plan and making research planning document. Applying for a document to the relevant ethics committee.				Each research supervisor
11-15 (1st year)	With the approval of the relevant ethics committee, proceeding with research preparations and starting research activities.				
16-60 (2nd year)	Data collection / survey / experiment, data analysis, discussion of research results, interpretation and evaluation of data, and consideration using relevant literature according to the research plan.				
61-90 (3rd year)	Continuing research activities. Compilation the results and creating a thesis.				

長期履修 授業計画 Long-term study Class plan	Long-term students will consult with their research supervisor according to the duration of the course and make a course plan.		
評価法・基準 Grading Policies	Grading will be described based on students' attitude (30%), Reports, seminar materials and oral examinations (70%). In order to measure the level of comprehension of the goals, assign tasks such as reports, material creation, etc., oral examinations for each.		
教科書 Text Book	None	教材・参考書 Reference Book	None
オフィス アワー Office Hour	Each research supervisor available online or via email for 30 minutes after class	連絡先 Contact	
準備学習 Preparation of study	Students should prepare about one hour in advance on the designated topic. Also, review about 1 hour after the exercises. Be interested in everything and have a positive attitude. After class, review what students learned for about 60 minutes.	履修上の注意点 Notice for Students	Materials to be used in class should be uploaded to Teams in advance

## **3. Rehabilitation Sciences**

## Rehabilitation Therapy Science, Advanced I (Rehabilitation Educational Sciences)

専攻分野 Major Field	Rehabilitation Science	学年 Grade	1st year	期間 Semester	1st semester
授業形態 Style	lecture	単位 Credits	2	時間数 Hours	30
授業方法 Class Methods	remote class	使用言語 Language	Japanese		
担当教員名 Instructor	KANADA Yoshikiyo, SAKURAI Hiroaki, TANABE Shigeo				
科目概要 Course Aims	Education for therapists can be divided into pre-graduate education, such as classroom and clinical training, post-graduate education for novice therapists, and education for clinical training instructors. In this course, students attend lectures and discussions on 1) standardization of clinical skills in physical therapist education, 2) reliability, validity, and usefulness of Objective Structured Clinical Examination (OSCE), and 3) educational methods in clinical training for students, training for novice therapists, and training for clinical training instructors.				
到達目標 Objectives	<ol style="list-style-type: none"> <li>1. Explain the present state and problems of physical therapist education in Japan.</li> <li>2. Explain the techniques for clinical skill standardization and the reliability, validity, and effectiveness of OSCE.</li> <li>3. Explain student clinical training, training of novice physical therapists, and training of clinical training instructors.</li> </ol>				
回数 Chapters	授業計画(各回のテーマ) Course Schedule (topic for each time)			担当教員 Instructor	
1	Current status of therapists, education environment, social structure, issues			KANADA Yoshikiyo	
2	Therapist-related regulations, social security, occupational fields			KANADA Yoshikiyo	
3	Definition and various domains of rehabilitation, related professions Designation rules, compliance, interdisciplinary collaboration			KANADA Yoshikiyo	
4	Communication, external evaluation by third parties			KANADA Yoshikiyo	
5	Elementary and secondary education and psychological characteristics of youth (including developmental disorders)			SAKURAI Hiroaki	
6	Essence, purpose, history, educational curriculum, system			SAKURAI Hiroaki	
7	Educational psychology, information utilization, teaching methods, learning theories			SAKURAI Hiroaki	
8	Educational curriculum, lesson design			SAKURAI Hiroaki	
9-10	Clinical practice instruction, coaching, and teaching			SAKURAI Hiroaki	
11-12	Communication, external evaluation by third parties			SAKURAI Hiroaki	
13	Research methods, research design, statistics			TANABE Shigeo	
14	Significance, types, methods of educational evaluation			TANABE Shigeo	
15	Classroom evaluation, grading, exam question creation, clinical practice evaluation			TANABE Shigeo	
評価法・基準 Grading Policies	Grading will be considered comprehensively based on discussions held during the lecture (30%), and reports (70%) by course instructor. The points which do not reach the goal are fed back in the lecture.				
教科書 Text Book	Distribute materials each lecture.		教材・参考書 Reference Book		

<p>オフィス アワー Office Hour</p>	<p>KANADA Yoshikiyo Building 8-1F-106 Monday 12:00-13:00 SAKURAI Hiroaki Building 8-1F-106 Monday 12:00-13:00 TANABE Shigeo Building 8-1F-112 Monday 12:10-13:00</p> <p>E-mail us if you have any questions.</p>	<p>連絡先 Contact</p>	
<p>準備学習 Preparation of study</p>	<p>Prepare each theme for 30 minutes and gather the opinions. After the lecture, review for about 60 minutes using handouts and compile in a notebook.</p>	<p>履修上の注意点 Notice for Students</p>	

## Rehabilitation Therapy Science, Advanced II (Rehabilitation Educational Sciences)

専攻分野 Major Field	Rehabilitation Science	学年 Grade	1st year	期間 Semester	1st semester
授業形態 Style	lecture	単位 Credits	2	時間数 Hours	30
授業方法 Class Methods	remote class	使用言語 Language	Japanese		
担当教員名 Instructor	KANADA Yoshikiyo, SAKURAI Hiroaki, TANABE Shigeo				
科目概要 Course Aims	Students will conduct their own research on topics covered in the Rehabilitation Therapy Science Seminar I, and critically evaluate the results to enhance the level of knowledge retention. Furthermore, by discussing these findings with others, students deepen their understanding and concurrently learn about innovative teaching methods.				
到達目標 Objectives	<p>By the end of this course, a successful learner will be able to</p> <ol style="list-style-type: none"> <li>1. explain the current status and issues in therapist education in Japan, as well as other relevant regulations.</li> <li>2. explain the essence and purpose of education, learning psychology, and related topics.</li> <li>3. explain educational curriculum and classroom settings.</li> <li>4. explain student clinical practice, training of novice physical therapists, and training of clinical practice instructors.</li> <li>5. explain appropriate research and statistical processing methods.</li> </ol>				
回数 Chapters	授業計画(各回のテーマ) Course Schedule (topic for each time)			担当教員 Instructor	
1	Discussion on the current status, educational environment, societal structure, and issues concerning therapists			KANADA Yoshikiyo	
2	Discussion on therapist-related regulations, social security, and occupational domains			KANADA Yoshikiyo	
3	Discussion on the definition of rehabilitation, its various domains, and related professions			KANADA Yoshikiyo	
4	Discussion on designation rules, compliance, and interdisciplinary collaboration Discussion on effective communication and external evaluation by third parties			KANADA Yoshikiyo	
5	Discussion on primary and secondary education and the psychological characteristics of youth (including developmental disorders)			SAKURAI Hiroaki	
6	Discussion on the essence, purpose, history, curriculum, and system of education			SAKURAI Hiroaki	
7	Discussion on learner psychology, information utilization, teaching methods, and learning theories			SAKURAI Hiroaki	
8	Discussion on educational curriculum and lesson design			SAKURAI Hiroaki	
9-10	Discussion on clinical practice instruction			SAKURAI Hiroaki	
11-12	Discussion on clinical practice facilities			SAKURAI Hiroaki	
13	Discussion on research methods, research design, and statistics			TANABE Shigeo	
14	Discussion on the significance, types, and methods of educational evaluation			TANABE Shigeo	
15	Discussion on classroom evaluation, grading, and exam question creation Discussion on the evaluation of clinical practice			TANABE Shigeo	
評価法・基準 Grading Policies	Grading will be considered comprehensively based on discussions held during the lecture (30%), and reports (70%) by course instructor. The points which do not reach the goal are fed back in the lecture.				
教科書 Text Book	Distribute materials each lecture.		教材・参考書 Reference Book		

<p>オフィス アワー Office Hour</p>	<p>KANADA Yoshikiyo Building 8-1F-106 Monday 12:00-13:00 SAKURAI Hiroaki Building 8-1F-106 Monday 12:00-13:00 TANABE Shigeo Building 8-1F-112 Monday 12:10-13:00</p> <p>E-mail us if you have any questions.</p>	<p>連絡先 Contact</p>	
<p>準備学習 Preparation of study</p>	<p>Prepare each theme for 30 minutes and gather the opinions. After the lecture, review for about 60 minutes using handouts and compile in a notebook.</p>	<p>履修上の注意点 Notice for Students</p>	

# Rehabilitation Therapy Science, Advanced III

(Bioinformatics and Therapeutic Systems Sciences)

専攻分野 Major Field	Rehabilitation Science	学年 Grade	1st year	期間 Semester	1st semester
授業形態 Style	lecture	単位 Credits	2	時間数 Hours	30
授業方法 Class Methods	remote class	使用言語 Language	Japanese		
担当教員名 Instructor	TERANISHI Toshio, INAMOTO Yoko, ONOGI Keiko				
科目概要 Course Aims	This course focuses the rehabilitation evaluation and treatment approaches for activity disorders, which is the core of rehabilitation medicine. Students will learn the methodology of analyzing a wide range of biological information as well as analysis of treatment and therapeutic methods. Students will review the latest findings from domestic and international literatures, organize the known/unknown facts, identify the current issues, and discuss evidence based evaluation and approaches.				
到達目標 Objectives	By the end of this course, a successful learner will be able to 1. explain the theory of muscle strengthening 2. explain the methods of biological information analysis used in gait analysis 3. explain the methodology of reconstruction of activity and its approach 4. explain the analysis of swallowing evaluation 5. explain functional changes associated with aging and how to deal with them. 6. explain the importance of nutritional management in rehabilitation				
回数 Chapters	授業計画(各回のテーマ) Course Schedule (topic for each time)			担当教員 Instructor	
1	Methodology of muscle strengthening exercise			TERANISHI Toshio	
2	Evaluation and exercise of balance			TERANISHI Toshio	
3	Evaluation of gait			TERANISHI Toshio	
4	Biometric analysis methods			TERANISHI Toshio	
5	Analysis and discussion of treatment options			TERANISHI Toshio	
6	Methodology of reconstructive activity			INAMOTO Yoko	
7	Methodology of therapeutic learning using assistive systems			INAMOTO Yoko	
8	Treatment oriented evaluation of swallowing evaluation			INAMOTO Yoko	
9	Analysis of imaging evaluation			INAMOTO Yoko	
10	Element based swallowing exercise and task oriented swallowing exercise			INAMOTO Yoko	
11	Evaluation of independence of ADL and nursing care level			ONOGI Keiko	
12-13	Evaluation of nutrition and rehabilitation			ONOGI Keiko	
14-15	Evaluation of cognitive function and psychological state with aging			ONOGI Keiko	
評価法・基準 Grading Policies	Grading will be comprehensively based on assigned reports (70%) and contributions to discussions including oral examinations (30%) in each lecture.				
教科書 Text Book	Distribute materials each lecture.		教材・参考書 Reference Book		



<p>オフィス アワー Office Hour</p>	<p>TERANISHI Toshio Building 8-7F-704 INAMOTO Yoko Building 8-7F-703 ONOGI Keiko Building 8-7F-708</p> <p>E-mail if you have any questions</p>	<p>連絡先 Contact</p>	
<p>準備学習 Preparation of study</p>	<p>Students prepare each theme for 30 minutes and gather the opinions. After the lecture, review for about 60 minutes using handouts and compile in their notebook.</p>	<p>履修上の注意点 Notice for Students</p>	<p>To make notebooks, you can use laptop computer. No things to prepare unless specified. Students must take your PC every class. Be interested in anything and learn it positively.</p>

## Rehabilitation Therapy Science, Advanced IV (Motor Control Instrumentation Sciences)

専攻分野 Major Field	Rehabilitation Science	学年 Grade	1st year	期間 Semester	1st semester
授業形態 Style	lecture	単位 Credits	2	時間数 Hours	30
授業方法 Class Methods	remote class	使用言語 Language	Japanese		
担当教員名 Instructor	YAMADA Kouji, TANABE Shigeo, TAKEDA Kotaro				
科目概要 Course Aims	In this lecture, students will learn practical methods to summarize related studies for motor control and functional recovery in rehabilitation, and deepen their understanding by discussing critically the latest knowledge with clinical, anatomical, and physiological principles. In order to understand related studies and to promote the students' thesis, they will also learn about measurement instruments, biomedical measurements, signal processing, and statistical methods.				
到達目標 Objectives	By the end of this course, a successful learner will be able to 1. Explain the latest researches and trends in biomedical measurements and rehabilitation engineering. 2. Critique the methods, results, and discussion of the related research papers. 2. Make appropriate figures, tables, and presentation slides 3. Select optimal statistical processing methods and interpret the data appropriately.				
回数 Chapters	授業計画(各回のテーマ) Course Schedule (topic for each time)			担当教員 Instructor	
1	Survey of previous findings			TAKEDA Kotaro	
2	Perception of manuscript structure, and reading comprehension from a critical perspective			TAKEDA Kotaro	
3	Investigation of research trends			TAKEDA Kotaro	
4	Measurement and evaluation from an anatomical point of view			YAMADA Kouji	
5	Measurement and evaluation from a physiological point of view			YAMADA Kouji	
6	Measurement and evaluation from a biochemical perspective			YAMADA Kouji	
7-8	Measurement and evaluation from a molecular biology perspective			YAMADA Kouji	
9	Concept of instrumentation in rehabilitation engineering			TANABE Shigeo	
10	Data acquisition and signal processing from various biometric instruments			TANABE Shigeo	
11	Statistical analysis method used for research on motion control			TANABE Shigeo	
12	Programming languages for biometrics (concept)			TANABE Shigeo	
13	Programming languages for biometrics (implementation)			TANABE Shigeo	
14	Programming languages for signal and statistical processing (concept)			TAKEDA Kotaro	
15	Programming languages for signal and statistical processing (implementation)			TAKEDA Kotaro	
評価法・基準 Grading Policies	Grading will be comprehensively based on assigned reports (70%) and contributions to discussions including oral examinations (30%) in each lecture.				
教科書 Text Book	Distribute materials each lecture.		教材・参考書 Reference Book		

<p>オフィス アワー Office Hour</p>	<p>YAMADA Kouji Building 8-7F-707 TANABE Shigeo Building 8-1F-112 TAKEDA Kotaro Nanakuri Memorial Hospital</p> <p>E-mail us if you have any questions.</p>	<p>連絡先 Contact</p>	
<p>準備学習 Preparation of study</p>	<p>Students prepare each theme for 30 minutes and gather the opinions. After the lecture, review for about 60 minutes using handouts and compile in their notebook.</p>	<p>履修上の注意点 Notice for Students</p>	

## Rehabilitation Therapy Sciences Exercise I (Rehabilitation Educational Sciences)

専攻分野 Major Field	Rehabilitation Science	学年 Grade	1st year	期 間 Semester	2nd semester
授業形態 Style	seminar	単位 Credits	2	時間数 Hours	30
授業方法 Class Methods	face-to-face class	使用言語 Language	Japanese		
担当教員名 Instructor	KANADA Yoshikiyo, SAKURAI Hiroaki, TANABE Shigeo				
科目概要 Course Aims	<p>For the training of therapists who can respond to advanced medical care and diversified needs of patients, this practicum provides a place to discuss more effective teaching methods for pre-graduate education, including classroom and clinical training; post-graduate education for novice therapists; and instructor education for clinical training instructors. Specifically, the discussion proceeds through the topic of clinical skills education using Objective Structured Clinical Examination (OSCE). The discussions also include topics on the content of training for instructors to ensure effective clinical training. In addition, the discussions include topics on a new education system in which university teachers and clinical training instructors work together. Students practice statistical processing using statistical software. By practicing the process from data analysis to presentation, students learn basic research methods.</p>				
到達目標 Objectives	<p>By the end of this course, a successful learner will be able to</p> <ol style="list-style-type: none"> <li>1. Explain the problem of physical therapist education in Japan and the solution.</li> <li>2. Explain the clinical technical competence assessment of physical therapists using OSCE.</li> <li>3. Select appropriate statistical processing methods, implement and interpret.</li> </ol>				
回数 Chapters	授業計画(各回のテーマ) Course Schedule (topic for each time)			担当教員 Instructor	
1-4	Issues in therapist education in Japan and their corresponding solutions			KANADA Yoshikiyo	
5-6	Content of clinical practice for training clinical instructors			SAKURAI Hiroaki	
7-8	Educational and instructional system between university faculty and clinical practice instructors			SAKURAI Hiroaki	
9-10	Standardization of skills for physical therapists and occupational therapists			SAKURAI Hiroaki	
11-12	Objective clinical competency examinations			SAKURAI Hiroaki	
13	Educational research targeting students in training schools			TANABE Shigeo	
14	Educational research targeting post-graduate therapists			TANABE Shigeo	
15	Statistical analysis methods necessary for research in therapist education			TANABE Shigeo	
評価法・基準 Grading Policies	Grading will be considered comprehensively based on students' attitude, performance, and discussions during the lecture (30%), and reports (70%) by course instructor.				
教科書 Text Book	Distribute materials each lecture.		教材・参考書 Reference Book		

<p>オフィス アワー Office Hour</p>	<p>KANADA Yoshikiyo Building 8-1F-106 Monday 12:00-13:00 SAKURAI Hiroaki Building 8-1F-106 Monday 12:00-13:00 TANABE Shigeo Building 8-1F-112 Monday 12:10-13:00</p> <p>E-mail us if you have any questions.</p>	<p>連絡先 Contact</p>	
<p>準備学習 Preparation of study</p>	<p>Prepare each theme for 30 minutes and gather the opinions. After the lecture, review for about 60 minutes using handouts and compile in a notebook.</p>	<p>履修上の注意点 Notice for Students</p>	

## Rehabilitation Therapy Sciences Exercise II (Rehabilitation Educational Sciences)

専攻分野 Major Field	Rehabilitation Science	学年 Grade	1st year	期間 Semester	2nd semester
授業形態 Style	seminar	単位 Credits	2	時間数 Hours	30
授業方法 Class Methods	face-to-face class	使用言語 Language	Japanese		
担当教員名 Instructor	KANADA Yoshikiyo, SAKURAI Hiroaki, TANABE Shigeo				
科目概要 Course Aims	<p>To cultivate the ability to independently study advanced and effective therapist education, one conducts literature reviews based on specific themes, summarizes the findings, and clarifies insights and future challenges. Additionally, by critically analyzing others' presentations while engaging in constructive discussions, individuals develop rational thinking skills. Furthermore, through reading the latest English literature, individuals deepen their knowledge related to their research topics and enhance their research methods, analysis, and writing skills through discussion. Actively exploring peripheral knowledge of the literature and creating problem discovery and solution strategies through independent research exercises fosters a lifelong learning ability and the capacity for independent thinking.</p>				
到達目標 Objectives	<p>By the end of this course, a successful learner will be able to</p> <ol style="list-style-type: none"> <li>1. explain the issues in therapist education in Japan and their corresponding solutions.</li> <li>2. explain clinical practice.</li> <li>3. explain student education.</li> <li>4. explain post-graduate education and training for therapists.</li> </ol>				
回数 Chapters	授業計画(各回のテーマ) Course Schedule (topic for each time)			担当教員 Instructor	
1-4	Issues in therapist education in Japan			KANADA Yoshikiyo	
5-8	Clinical practice			SAKURAI Hiroaki	
9-12	Student education			SAKURAI Hiroaki	
13-15	Post-graduate education and training for therapists			TANABE Shigeo	
評価法・基準 Grading Policies	Grading will be considered comprehensively based on students' attitude, performance, and discussions during the lecture (30%), and reports (70%) by course instructor.				
教科書 Text Book	Distribute materials each lecture.		教材・参考書 Reference Book		
オフィス アワー Office Hour	KANADA Yoshikiyo Building 8-1F-106 Monday 12:00-13:00 SAKURAI Hiroaki Building 8-1F-106 Monday 12:00-13:00 TANABE Shigeo Building 8-1F-112 Monday 12:10-13:00 E-mail us if you have any questions.		連絡先 Contact		
準備学習 Preparation of study	Prepare each theme for 30 minutes and gather the opinions. After the lecture, review for about 60 minutes using handouts and compile in a notebook.		履修上の注意点 Notice for Students		

# Rehabilitation Therapy Sciences Exercise III

(Bioinformatics and Therapeutic Systems Sciences)

専攻分野 Major Field	Rehabilitation Science	学年 Grade	1st year	期間 Semester	2nd semester
授業形態 Style	seminar	単位 Credits	2	時間数 Hours	30
授業方法 Class Methods	face-to-face class	使用言語 Language	Japanese		
担当教員名 Instructor	TERANISHI Toshio, INAMOTO Yoko, ONOGI Keiko				
科目概要 Course Aims	The course focuses on the practice and discussion based on the acquired knowledge and methodology from the Rehabilitation Therapy Science, Advanced III (Bioinformatics and Therapeutic Science). Students will analyze the biological information, interpret and present the findings, review the literatures of basic and clinical ones, and to discuss the direction of research required in clinical practice in the future.				
到達目標 Objectives	By the end of this course, a successful learner will be able to 1. Explain research trends in rehabilitation assessment and therapy. 2. Explain the latest findings in rehabilitation assessment and therapy.				
回数 Chapters	授業計画(各回のテーマ) Course Schedule (topic for each time)			担当教員 Instructor	
1-15	Review and discussion of the required research direction in the following topics - Muscle strengthening exercise - Balance rehabilitation - Gait analysis - Motor learning on swallowing exercise - Latest treatment-oriented evaluation (Swallowing CT, High resolution manometry) - Posture techniques and swallowing maneuvers in task oriented exercise - ADL Independent level and care level - Evaluation of nutrition - Cognitive and psychological changes with aging - Directions for predicting pathological changes and functional improvement through analysis of biological information			TERANISHI Toshio INAMOTO Yoko ONOGI Keiko	
評価法・基準 Grading Policies	Grading will be comprehensively based on assigned reports (70%) and contributions to discussions including oral examinations (30%) in each lecture.				
教科書 Text Book	Distribute materials each lecture.	教材・参考書 Reference Book			
オフィス アワー Office Hour	TERANISHI Toshio Building 8-7F-704 INAMOTO Yoko Building 8-7F-703 ONOGI Keiko Building 8-7F-708  E-mail if you have any questions	連絡先 Contact			
準備学習 Preparation of study	Students spend more than 60 minutes preparing English papers related to each topic and understand the outline before participating in the seminar. After the seminar, students review them for about 30 minutes and write down important points in their notebook.	履修上の注意点 Notice for Students	To make notebooks, you can use laptop computer. No things to prepare unless specified. Students must take your PC every class. Be interested in anything and learn it positively.		

## Rehabilitation Therapy Sciences Exercise IV (Motor Control Instrumentation Sciences)

専攻分野 Major Field	Rehabilitation Science	学年 Grade	1st year	期間 Semester	2nd semester
授業形態 Style	seminar	単位 Credits	2	時間数 Hours	30
授業方法 Class Methods	face-to-face class	使用言語 Language	Japanese		
担当教員名 Instructor	YAMADA Kouji, TANABE Shigeo, TAKEDA Kotaro				
科目概要 Course Aims	<p>In this exercise, students read original papers and reviews related to motor control, functional recovery, biomedical measurements, and rehabilitation engineering, and discuss the contents of the papers and how to describe them. In the discussion, the students deeply understand the physiological meaning of motor control, signal processing of biomedical signals, and statistical methods, and utilized them for their own research. The students also learn the techniques necessary to present research results, such as how to create figures and tables, through the preparation of materials for discussion.</p>				
到達目標 Objectives	<p>By the end of this course, a successful learner will be able to</p> <ol style="list-style-type: none"> <li>1. Explain research trends and latest knowledge on motor control, functional recovery, biomedical measurements, and rehabilitation engineering.</li> <li>2. Verify and state opinions on the methods, results, and discussions of the paper.</li> <li>3. Deliver relevant presentations using appropriate figures / tables.</li> <li>4. Select appropriate statistical processing methods and implement them.</li> </ol>				
回数 Chapters	授業計画(各回のテーマ) Course Schedule (topic for each time)			担当教員 Instructor	
1-6	Reading and discussion of latest English papers on motor control and functional recovery			YAMADA Kouji TANABE Shigeo TAKEDA Kotaro	
7-8	Reading and discussion of latest English papers on biomedical measurements			YAMADA Kouji TANABE Shigeo	
9-15	Reading and discussion of latest English papers on rehabilitation engineering			YAMADA Kouji TANABE Shigeo TAKEDA Kotaro	
評価法・基準 Grading Policies	Grading will be comprehensively based on assigned reports (70%) and contributions to discussions including oral examinations (30%) in each lecture.				
教科書 Text Book	Distribute materials each lecture.		教材・参考書 Reference Book		
オフィス アワー Office Hour	YAMADA Kouji Building 8-7F-707 TANABE Shigeo Building 8-1F-112 TAKEDA Kotaro Nanakuri Memorial Hospital  E-mail us if you have any questions.		連絡先 Contact		
準備学習 Preparation of study	Students spend more than 60 minutes preparing English papers related to each topic and understand the outline before participating in the seminar. After the seminar, students review them for about 30 minutes and write down important points in their notebook.		履修上の注意点 Notice for Students		



## Graduate Thesis of Rehabilitation Therapy Science

専攻分野 Major Field	Rehabilitation Science	学年 Grade	1st ・ 2nd ・ 3rd year	期間 Semester	full year
授業形態 Style	seminar	単位 Credits	6	時間数 Hours	180
授業方法 Class Methods	face-to-face class	使用言語 Language	Japanese		
担当教員名 Instructor	KANADA Yoshikiyo, SAKURAI Hiroaki, TERANISHI Toshio, YAMADA Kouji, INAMOTO Yoko, ONOGI Keiko, TANABE Shigeo, TAKEDA Kotaro				
科目概要 Course Aims	<p>In the field of Rehabilitation Educational Sciences, research targets educational methods for the training of physiotherapists and occupational therapists who can contribute to team medicine and have high teaching ability. The construction of clinical skills education and clinical practice based on the increasing sophistication of rehabilitation and the diversification of patient requirements will be examined. In addition, the training of practical training supervisors for the effective implementation of clinical practice will be examined. Furthermore, a new educational guidance system that strengthens cooperation between training school teachers and practice supervisors will be examined.</p> <p><b>KANADA Yoshikiyo</b> Research is conducted on therapist education from the perspective of Evidence-Based Medicine (EBM). Additionally, studies are undertaken on topics such as society, urban development, and community health. The following themes are addressed in research supervision:</p> <ol style="list-style-type: none"> <li>1. Studies on the outcomes of physical therapist education</li> <li>2. Studies on the standardization of treatment techniques for physical therapists</li> <li>3. Studies on the clinical training guide for physical therapists</li> <li>4. Studies on the student, novice physical therapist, and patient education</li> </ol> <p><b>SAKURAI Hiroaki</b> Research focuses on the training of therapist educators equipped with high levels of technical expertise, leadership abilities, and teaching skills. The following themes are addressed in research supervision:</p> <ol style="list-style-type: none"> <li>1. Studies on the objective evaluation of therapist skills</li> <li>2. Studies on the training of practical training supervisors</li> <li>3. Studies on cooperative education and guidance systems at training schools and practice sites</li> <li>4. Studies on the standardization of treatment techniques for physiotherapists and occupational therapists</li> <li>5. Studies on lifelong learning of post-graduate therapists</li> </ol>				

<p>科目概要 Course Aims</p>	<p>In the fields of Bioinformatics and Therapeutic Systems Sciences, research focuses on the practical science of activity disorders, encompassing activities, interventions, and behavior change strategies based on bioinformation. This includes kinetic analysis of swallowing dynamics, identification of swallowing dysfunction, and refinement of swallowing techniques and practice methods. Moreover, with the increasing demands of an aging society for seamless medical care spanning from acute to long-term phases, research guidance is provided to develop original ideas regarding elderly medical care. This involves addressing independence in activities of daily living, nutritional status, cognitive function, changes over time in pathological conditions, and predicting symptom improvement and healing.</p> <p><b>TERANISHI Toshio</b>  With the advancement of medical specialization and differentiation, problems that cannot be solved without the cooperation of professionals are occurring. In this special research, a doctoral thesis will be created using keywords such as activity, intervention, and behavior change. In the course, students will learn a series of a doctoral thesis writing processes, such as selecting a research theme, reviewing previous research, drafting a research plan, experimenting, and considering. In addition, through writing a doctoral thesis, students will learn how to conduct research, including the conscience of scientists, attitudes toward research, and creative ideas. Themes are summarized in the following four.</p> <ol style="list-style-type: none"> <li>1. Research on posture and movement of patients and healthcare workers.</li> <li>2. Research on quantitative measurement of spasticity</li> <li>3. Research on fall prevention, fall risk evaluation and patient management.</li> <li>4. Research on time study and consequences of rehabilitation intervention.</li> </ol> <p><b>INAMOTO Yoko</b>  This course will conduct a research related to swallowing and dysphagia rehabilitation. Research goal is to elucidate the physiology of swallowing, to characterize the factors underlying dysphagia, and to elaborate the swallowing exercise using kinematic and/or kinetic analysis, such as videofluoroscopy, swallowing CT, and high resolution manometry. Specific research interests include the mechanism of airway protection during swallowing, mechanism of UES opening/relaxation, kinetic effect of swallowing maneuvers, tongue and pharyngeal strengthening exercise, and intensive dysphagia treatment.</p> <p>Focused areas:</p> <ol style="list-style-type: none"> <li>1. Studies on the physiology of swallowing</li> <li>2. Studies of the pathophysiology of dysphagia</li> <li>3. Studies on the swallowing exercise and maneuvers</li> </ol> <p><b>ONOGI Keiko</b>  It is important to understand the changes and characteristics associated with aging in implementing rehabilitation for the elderly. In this course, with the keyword of dealing with the elderly, students will learn a series of thesis writing processes such as selection of research theme, review of previous research, planning of research plan, experiment, and discussion. In addition, through writing a doctoral dissertation, students will learn about the conscience of scientists, their attitude toward research, original ideas, and how research should be conducted. The theme is summarized in the following three.</p> <ol style="list-style-type: none"> <li>1. Research on motor function in the elderly</li> <li>2. Research on cognitive function in the elderly</li> <li>3. Research on QOL of the elderly</li> </ol>
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<p>科目概要 Course Aims</p>	<p>In the field of Motor Control Instrumentation Sciences, research spans from basic investigations to clinical applications, covering motor control, motor learning, and rehabilitation engineering. Specifically, basic research involving animal models of disease and simulated patients, as well as clinical research with actual patients, is conducted on topics such as postural control during movement, therapeutic learning, and rehabilitation robots. Researchers will present their findings at conferences and publish them in specialized journals within their respective fields, receiving guidance on paper preparation to facilitate the dissemination of information to society.</p> <p>YAMADA Kouji Based on gross and histological knowledge and theory of skeletal muscle, bone, ligaments, tendons, and joints, based on morphological and structural observations regarding problems that occur in the rehabilitation treatment process in clinical practice, judgment of prognosis, etc. Research on the functional analysis that does not stay in range, and create a doctoral dissertation. Further, the present invention is similarly carried out in the biological control field of neural control and humoral control. In this process, students learn the attitude toward research as a scientist through a series of doctoral dissertation creation processes, such as devising research themes, clarifying the progress of prior research, drafting research plans, conducting experiments, and studying.</p> <ol style="list-style-type: none"> <li>1. Research from a preventive medical point of view applied to humans from basic research using disease model animals.</li> <li>2. Structural analysis methods such as bone morphometry and biochemical analysis of humoral factors.</li> <li>3. Research on biological control mechanism by humoral factors represented by myokines.</li> </ol> <p>TANABE Shigeo We will conduct research related to rehabilitation therapy science, especially rehabilitation engineering. Rehabilitation engineering is research field to develop practical devices and methods based on clinical problems and requests. The following are specific themes.</p> <ol style="list-style-type: none"> <li>1. Studies on the rehabilitation robots</li> <li>2. Studies on the development of motion analysis and treatment methods</li> </ol> <p>TAKEDA Kotaro Based on instrumentation engineering, rehabilitation engineering, neuroscience, and cognitive science, the following studies on biomedical measurement, clinical evaluation, and intervention will be conducted.</p> <ol style="list-style-type: none"> <li>1. Studies on the scalp electroencephalogram and surface electromyogram</li> <li>2. Studies on the clinical evaluation and database</li> <li>3. Studies on motion analysis</li> <li>4. Studies on motor imagery</li> </ol>																
<p>到達目標 Objectives</p>	<ol style="list-style-type: none"> <li>1. Choose a research topic and search for relevant literature.</li> <li>2. Determine the framework for promoting research, learn the research methods, and conduct.</li> <li>3. Interpretant and consider the research results logically.</li> <li>4. Write a doctoral thesis.</li> </ol>																
<p>回数 Chapters</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;"></th> <th style="width: 60%;">授業計画(各回のテーマ) Course Schedule (topic for each time)</th> <th style="width: 25%;">担当教員 Instructor</th> </tr> </thead> <tbody> <tr> <td>1-4 (1st year)</td> <td>Search for previous studies and related literature</td> <td rowspan="6" style="text-align: center; vertical-align: middle;">Each instructor</td> </tr> <tr> <td>5-10 (1st year)</td> <td>Review of related literature</td> </tr> <tr> <td>11-15 (1st year)</td> <td>Research planning</td> </tr> <tr> <td>16-18 (2nd year)</td> <td>Pre-experiment</td> </tr> <tr> <td>19-20 (2nd year)</td> <td>Preparation of documents to the epidemiology and clinical research ethics review board</td> </tr> <tr> <td>21-24 (2nd year)</td> <td>Data measurement</td> </tr> </tbody> </table>		授業計画(各回のテーマ) Course Schedule (topic for each time)	担当教員 Instructor	1-4 (1st year)	Search for previous studies and related literature	Each instructor	5-10 (1st year)	Review of related literature	11-15 (1st year)	Research planning	16-18 (2nd year)	Pre-experiment	19-20 (2nd year)	Preparation of documents to the epidemiology and clinical research ethics review board	21-24 (2nd year)	Data measurement
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25-28 (2nd year)	Data review		
29-60 (2nd year)	Data measurement, write an academic paper and submit to a journal		
61-75 (3rd year)	Flow creation of the thesis		
76-90 (3rd year)	Preparation of a thesis		
長期履修 授業計画 Long-term study Class plan	Long-term students should discuss with their research advisors and plan research schedule according to the period of study.		
評価法・基準 Grading Policies	Grading will be considered comprehensively based on the contents of academic conferences, academic papers (40%), and doctoral thesis (60%). However, participation in 4-field joint research seminars is mandatory.		
教科書 Text Book		教材・参考書 Reference Book	
オフィス アワー Office Hour	KANADA Yoshikiyo Building 8-1F-106 SAKURAI Hiroaki Building 8-1F-106 TERANISHI Toshio Building 8-7F-704 INAMOTO Yoko Building 8-7F-703 Monday, Wednesday, Friday 8:00-9:00 ONOGI Keiko Building 8-7F-708 YAMADA Kouji Building 8-7F-707 Monday, Wednesday 19:00-20:00 TANABE Shigeo Building 8-1F-112 Monday 12:10-13:00 TAKEDA Kotaro Nanakuri Memorial Hospital,  E-mail us if you have any questions.	連絡先 Contact	
準備学習 Preparation of study	Students should actively pursue their own themes.	履修上の注意点 Notice for Students	