



Syllabus

Graduate School of Kagawa Nutrition University

Year 2022

Nutrition Sciences Degree Programs

Subjects Name, Credit Number, and The Prof. in charge

Subjects Name	Credit Number		Prof. in charge	Page
	Compulsory Subject	Elective Subject		
I Basic Nutrition Science				
Advanced Lectures on Mother and Child Nutrition		1	Prof. Akio Nakamura	1
Advanced Lectures on Human Growth and Development Studies		1	Prof. Shigeho Tanaka	2
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IV Food Science and Culture				
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Advanced Lectures on Eating Psychology		1	Prof. Tomoko Hasegawa	23
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Advanced Lectures on Human Life Education		1	Prof. Rie Imoto	26
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V Food Science				
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Specialized Seminars on Nutrition	2		Each student's supervisor	
Specialized Experiments and Practicums on Nutrition	12		Each student's supervisor	
Compulsory Credits	16	Total necessary number of credit for graduation		30
Selective Credits	14			

Subject	Advanced Lectures on Mother and Child Nutrition	Prof. Akio Nakamura	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
<p>In this lecture, students will be required to explain the concept of maternal and child nutrition from the perinatal period to the lactation period and the newborn and its importance, and it is appropriate for mothers and children based on the nutritional scientific basis of "food education starts from the fetal period".</p>							
Course Summary							
<p>In 1980s, D. Barker who was a professor of medical faculty of University of Southampton developed the Fetal origins of Adult Disease:FOAD, which argues that nutritional status of pregnant mothers largely affects health conditions and disease risks of the next generation. In the 20th century, this hypothesis was developed as Origins of Health and Disease (DOHaD) hypothesis, a new concept which emphasizing the role of prenatal and perinatal exposure to environmental factors in determining the development of human diseases in adulthood by Gluckman and Hanson. In Japan, lean women and prematurely born babies are frequently observed, causing concerns over a sharp increase in lifestyle diseases in the future. Thus, maternal and child nutrition plays an important role to determine future health and illness of children so that preemptive medicine must be given before fetal life, and it is an interdisciplinary process that many nutrition experts are needed to learn. The students will learn the basic concept of DOHaD from its basic research until the clinical study.</p>							
Course Plan							
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; vertical-align: top;"> <ol style="list-style-type: none"> 1. The significance and actual situation of maternal and child nutrition in Japan: Wasting women and low birthrate infants 2. The historical background and concept of DOHaD: Large-scale birth cohort study 3. The growth of infants and fetal period in DOHaD: Malnutrition and overnutrition </td> <td style="width:50%; vertical-align: top;"> <ol style="list-style-type: none"> 4. Basic research on the molecular mechanism of DOHaD: From animal experiments to epigenomes 5. DOHaD and illness (1): Lifestyle-related diseases, allergy diseases 6. DOHaD and illness (2): Psycho-neurological disorders and the gut-brain axis. 7. Fetal programming editing and designer babies </td> </tr> </table>						<ol style="list-style-type: none"> 1. The significance and actual situation of maternal and child nutrition in Japan: Wasting women and low birthrate infants 2. The historical background and concept of DOHaD: Large-scale birth cohort study 3. The growth of infants and fetal period in DOHaD: Malnutrition and overnutrition 	<ol style="list-style-type: none"> 4. Basic research on the molecular mechanism of DOHaD: From animal experiments to epigenomes 5. DOHaD and illness (1): Lifestyle-related diseases, allergy diseases 6. DOHaD and illness (2): Psycho-neurological disorders and the gut-brain axis. 7. Fetal programming editing and designer babies
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Work to be done outside of class (preparation, etc.)							
<p>Materials related to the topics to be covered in the lecture will be distributed in advance. Students are required to read them carefully and prepare for lively discussions in the lecture. Students are also required to write an essay after class and submit it by e-mail before the next class. 2-3 hours of preparatory and review self-study will be required each week.</p>							
Grading criteria		Textbooks		References			
<ul style="list-style-type: none"> • In-class performance (30%) • Reports (70%) <p>Feedback on the submitted reports will be given at the beginning of the next class.</p>		<p>Necessary textbooks will be distributed in class.</p>		<p>References will be introduced as needed.</p>			
		Materials		Remarks			
		<p>Handouts will be distributed at the beginning of each class.</p>		<p>N/A</p>			

Subject	Advanced Lectures on Human Growth and Development Studies	Prof. Shigeho Tanaka	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
The goals of the course are to understand the methods of evaluation and the importance of lifestyle and energy requirements in a scientific manner especially during the growth period, and to increase problem awareness and find their own solution.							
Course Summary							
While the lifestyle habits such as diet, physical activity, sedentary behaviors and sleep are important for children, it is difficult to understand the evidence. The same is true for energy requirements, and there are challenges unique to children. and there is a challenge unique to children. The course will explore issues and solutions related to lifestyle and energy requirements of mainly children including elderly based on the collection and interpretation of scientific knowledge, understanding of evaluation methods and experimental plans.							
Course Plan							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;"> 1. Introduction; importance of scientific evidence and thinking ability from the perspective of background of establishing energy requirements 2. Methodology of collecting references and how to read them 3. Energy requirements for adults, including the elderly 4. Energy requirements for infants, young children, and pregnant women </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> 5. Evaluation methods for physical activities and sedentary behavior 6. Evaluation of overall life habits including sleeping 7. Summary and Presentation </td> </tr> </table>						1. Introduction; importance of scientific evidence and thinking ability from the perspective of background of establishing energy requirements 2. Methodology of collecting references and how to read them 3. Energy requirements for adults, including the elderly 4. Energy requirements for infants, young children, and pregnant women	5. Evaluation methods for physical activities and sedentary behavior 6. Evaluation of overall life habits including sleeping 7. Summary and Presentation
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Work to be done outside of class (preparation, etc.)							
Students are required to get in the habit of organizing interesting information acquired in the class or through media and investigating it themselves. Furthermore, students are expected to prepare reports and PPT on issues raised in class (e.g., review of papers) before attending and having presentation in each class. This self-study will take about twice as much time as class time.							
Grading criteria			Textbooks		References		
<ul style="list-style-type: none"> • In-class performance (50 %) • In-class presentations (50%) 			N/A		N/A		
			Materials		Other		
			Materials will be prepared on a case-by-case basis as needed.		N/A		

Subject	Advanced Lectures on Nutrition for the Elderly	Prof Shouji Shinkai	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals and Course summary					
Nutrition and its development based on the characteristics of the elderly.					
Course Summary					
There are a variety of health indicators for the elderly. Unlike in middle age, functional health is increasingly important in elderly life. Therefore, in this lecture, domestic and international evidence on the relationship between functional health and diet/nutrition in the elderly will be collected. Based on this evidence, students will learn what kind of diet and nutrition management is required in the community, in clinical practice, and at home in order to extend the healthy life expectancy of the elderly.					
Course Plan					
1. Learn about the medical, physical, and psychosocial characteristics of the elderly. 2. Learn about health indicators (especially functional health) and food and nutrition assessment indicators for the elderly. 3. Review the latest nutritional epidemiology research and learn about the relationship between food and nutrition and the health of the elderly.			4. Learn what undernutrition is and how food and nutrition can be used to prevent undernutrition. 5. Learn what frailty is and how to use food and nutrition to prevent frailty. 6. Learn what dementia is and how food and nutrition can help prevent dementia. 7. Learn to develop food and nutritional guidance based on the characteristics of the elderly (community, clinical, and home).		
Work to be done outside of class (preparation, etc.)					
Students are required to: 1. study the textbook and reference books in advance, 2. subscribe to relevant papers and materials in advance, and 3. devote twice as much time to self-study as they use for preparation of in-class presentation. In preparation for the presentation, students should prepare for the presentation by studying the materials and papers to be distributed in advance.					
Grading criteria		Textbooks		References	
<ul style="list-style-type: none"> In-class performance including self-study (50%) Presentation (50%) 		新開省二「死ぬまで介護いらずで人生を楽しむ食べ方」(草思社、2017年)		東京都健康長寿医療センター編「健康長寿新ガイドライン エビデンスブック」(社会保険出版社、2017年)、 Summary: World Report on Ageing and Health (WHO、2015)	
		Materials		Remarks	
		Textbooks and reference books will be distributed free of charge at the first class. In addition, materials and reference papers will be distributed as needed.		In the case of absence, students are required to inform the academic office in advance. In the case of absence, students may be asked to study and submit a report on the materials and reference papers distributed on the day of the class.	

Subject	Advanced Lectures on Sports Nutrition	Prof. Jun Iwamoto	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
<p>The team healthcare approach involving medical doctors, trainers, and registered dietitians is required to help athletes get in shape and prevent injuries and disabilities caused by sports. This course aims to ensure that registered dietitians can actually provide appropriate nutritional guidance to help athletes get in shape and prevent sports injuries.</p>							
Course Summary							
<p>There are gender differences in sports injuries. Men are likely to have external injuries caused by intense movements, such as fractures, while women often have sprains and ligament damages because fat accumulated around joints is involved in joint fragility and sex hormones increase joint motility. Furthermore, female athletes tend to think that building a slim figure is beneficial to improving performance. As a result, there are many female athletes with low born mass related to vitamin D deficiency and menstrual abnormality. So it is also required to take into account the prevention of osteoporosis. In the components of the Female Athlete Triad (low energy availability, amenorrhea, and bone density reduction), the bone mass issue is especially important. The course will highlight gender differences in sports injuries and problems faced by female athletes, and consider measures to prevent female fractures due to osteoporosis from the perspectives of exercise and nutrition, focusing on each age stage—growth, pre-menopause, post-menopause, and elderly.</p>							
Course Plan							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> 1. About locomotor disorders 2. What is osteoporosis? Why do bones break? 3. Nutrition to prevent osteoporosis and medical treatment (importance of Vitamin D) 4. Osteoporosis and physical exercise/sports </td> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> 5. Sports injuries (physical injuries and disabilities) 6. Osteoporosis in female athletes 7. Summary and free discussion (sports medicine in general) </td> </tr> </table>						<ol style="list-style-type: none"> 1. About locomotor disorders 2. What is osteoporosis? Why do bones break? 3. Nutrition to prevent osteoporosis and medical treatment (importance of Vitamin D) 4. Osteoporosis and physical exercise/sports 	<ol style="list-style-type: none"> 5. Sports injuries (physical injuries and disabilities) 6. Osteoporosis in female athletes 7. Summary and free discussion (sports medicine in general)
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Work to be done outside of class (preparation, etc.)							
<p>Students are required to do preparatory study with materials distributed prior to class.</p>							
Grading criteria			Textbooks	References			
<ul style="list-style-type: none"> • In-class performance and responses to questions (20 %) • Reports (80%) <p>Reports are written about a topic selected by the student regarding an issue brought up in class, using the latest academic papers (in English) as references.</p>			N/A	N/A			
			Materials	Remarks			
			Distributed as needed.	N/A			

Subject	Advanced Lectures on Basic Nutrition	Prof. Terue Kawabata	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals					
<ul style="list-style-type: none"> • Can understand and explain the linkage between fatty acid nutrition and health. • Can understand and explain suitable nutrition intake at each stage of life. 					
Course Summary					
<p>Fatty acids, key constituent of lipids, can be categorized into saturated, monounsaturated and polyunsaturated fatty acids. The polyunsaturated fatty acids can be further divided into n-6 and n-3. Each type has different effects on our body. This course aims to ensure that students understand the linkage between fatty acids and diseases and the nutritional importance of fatty acids at each life stage.</p>					
Course Plan					
<p>1. Actual situation of fatty nutrition (1) Production of trans fatty acid, food that contains it, and its relationship to disease 2. Actual situation of fatty nutrition (2) Trans fatty acid intake, labeling and countermeasure 3. About fats and oils in diet (1) Dietary intake standards, fat energy ratio, saturated fatty acids</p>			<p>4. About fats and oils in diet (2) Odd chain fatty acids, types of vegetable oils, palm oils, and health 5. n-3 fatty acid nutrients (1) n-3 fatty acids and the role of the biometric index in health 6. n-3 fatty acid nutrients (2) Multi-type n-3 and n-6 fatty acid unsaturated enzymes</p>		
Work to be done outside of class (preparation, etc.)					
<p>Students are required to read materials distributed in class at home. (150 minutes) Students are required to prepare for the related content with textbooks or other materials based on the material distributed the following week. (50 minutes)</p>					
Grading criteria		Textbooks		References	
<ul style="list-style-type: none"> • In-class performance (50%) • Reports (50%) <p>Feedback on the submitted reports will be given in the next class.</p>		N/A		脂質栄養学「日本人の健康と脂質の理解を求めて」/Michihiro Kanno, 2016	
		Materials		Remarks	
		Handouts will be distributed in class.		N/A	

Subject	Advanced Lectures on Nutritional Physiology	Prof. Kazuhiro Uenishi	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals					
<p>The thematic focus of this course is to understand the linkage between human body function and nutrition based on physiological indicators and discuss a nutritional and physiological approach to addressing health issues related to obesity and osteoporosis. Students aim to be able to explain the causes and pathological conditions of obesity and osteoporosis. They also aim to be able to explain the methodology for the prevention and treatment of obesity and osteoporosis.</p>					
Course Summary					
<p>Students will learn the causality between energy balance and body fat accumulation as well as the relationship between lifestyle, including diet and fitness habit, and bone density.</p>					
Course Plan					
<p>1. Think about energy balance in nutrition. 2. What is metabolism? What is a cause of metabolism? 3. Consider how to improve metabolism effectively through a nutritional physiological approach. 4. Think about how to find the required amount of nutrients, in the context of calcium.</p>			<p>5. Explain the medical condition of osteoporosis and its cause. 6. Consider bone mass, age-related bone density, and prevention of osteoporosis. 7. Summary. Consider the themes learnt in the class so far in the context of the students themselves.</p>		
Work to be done outside of class (preparation, etc.)					
<p>Students are required to read papers related to the course, summarize the contents in a report, and submit the report in class. Students are required to devote twice as much time to self-study as they do to class time (100 minutes per class).</p>					
Grading criteria		Textbooks		References	
<ul style="list-style-type: none"> • In-class performance (50%) • Reports (50%) 		N/A		Dietary Reference Intakes for Japanese (2020) Prevention and Treatment Guideline for Osteoporosis. (2015)	
		Materials		Remarks	
		Materials will be introduced or distributed as needed		It is recommended that students take "Research Methodology in Nutrition III (Nutritional Assessment and Diet Evaluation)" concurrently with this class.	

Subject	Advanced Lectures on Clinical Nutrition	Prof. Kazuyo Tsushita	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals					
<p>The course will focus on understanding guidelines for lifestyle-related diseases (obesity, diabetes, dyslipidemia, and hypertension) that require nutritional guidance. The goal is to understand the pathogenesis and epidemiology of each lifestyle-related disease, as well as the rationale, content, and utilization of guidelines for prevention and treatment.</p>					
Course Summary					
<p>The course will mainly overview the guidelines for preventing and treating lifestyle-related diseases such as diabetes, dyslipidemia, hypertension, and obesity, covering 1) the pathological background in the context of the guidelines, 2) the content of the guidelines, and 3) how to use the guidelines. The actual use of the system according to life stages will also be discussed.</p>					
Course Plan					
<p>1. Guideline development process and utilization (general overview), Obesity prevention and treatment guidelines. 2. Guidelines for Prevention and Treatment of Diabetes (1) Pathogenesis and Epidemiology of Diabetes. 3. Guidelines for Prevention and Treatment of Diabetes Mellitus (2) Diagnostic criteria, treatment methods and goals of diabetes mellitus. 4. Guidelines for Prevention and Treatment of Dyslipidemia (1) Pathogenesis and Epidemiology of Dyslipidemia</p>			<p>5. Guidelines for Prevention and Treatment of Dyslipidemia (2) Diagnostic criteria, treatment methods and goals. 6. Guidelines for Prevention and Treatment of Hypertension (1) Pathogenesis and Epidemiology of Hypertension. 7. Guidelines for Prevention and Treatment of Hypertension (2) Diagnostic criteria, treatment methods and goals</p>		
Work to be done outside of class (preparation, etc.)					
<p>Students are required to check prevention and treatment guidelines for lifestyle-related diseases. After class, students are required to prepare a report on the application of the guidelines to a single case.</p>					
Grading criteria		Textbooks	References		
<ul style="list-style-type: none"> •Preparation for the class (20%) •In-class performance (30%) •Report (50%) 		N/A	Guidelines of each association		
		Materials	Remarks		
		Handouts will be distributed.	N/A		

Subject	Advanced Lectures on Clinical Nutrition Management	Prof. Naohiro Washisawa	Compulsory	<input checked="" type="checkbox"/>	Selective	1 credit		
Course goals								
<ul style="list-style-type: none"> • Student are able to describe hospital malnutrition that occurs in health care facilities and nursing homes. •• Students are able to explain the activities of Nutrition Support Teams (NST) comprising doctors, pharmacists, nutritionists, and nurses and other professionals working across multiple disciplines. •• Student are able to identify malnourished and at-risk patients. 								
Course Summary								
The lecture will give examples of how the special environment of the hospital can affect the deterioration of nutritional status when working with specialized nutrition support.								
Course Plan								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> 1. Explanation of hospital malnutrition (1) Abstinence from food, overeating, etc. 2. Characteristics of nutritional treatment (2) in hospital and provision of assignments to students 3. Differences in medical care and nutritional therapy in different countries and systems (3) Hospital food service. 4. General handling of fictitious cases set up by the student in a general medical setting </td> <td style="width: 50%; vertical-align: top;"> 5. Explanation of possible adverse events that may occur in the medical field in a fictitious case set up by the trainee 6. Evaluation and improvement of the nutrition plan developed by the students 7. 7. Review the environmental differences of the patients receiving medical treatment. The contents of the course plan will be combined in accordance with the circumstances of the students who study. </td> </tr> </table>							1. Explanation of hospital malnutrition (1) Abstinence from food, overeating, etc. 2. Characteristics of nutritional treatment (2) in hospital and provision of assignments to students 3. Differences in medical care and nutritional therapy in different countries and systems (3) Hospital food service. 4. General handling of fictitious cases set up by the student in a general medical setting	5. Explanation of possible adverse events that may occur in the medical field in a fictitious case set up by the trainee 6. Evaluation and improvement of the nutrition plan developed by the students 7. 7. Review the environmental differences of the patients receiving medical treatment. The contents of the course plan will be combined in accordance with the circumstances of the students who study.
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Work to be done outside of class (preparation, etc.)								
Students are required to spend at least 30 minutes reading the relevant sections of the textbook in advance of each week's lecture. Students are also required to (a) examine the literature on nutritional therapy, (b) analyze it in light of their own experiences, and (c) summarize the positioning of nutritional therapy in medical institutes in a report.								
Grading criteria			References					
<p>In the latter half of each lecture, the lecturer will ask questions related to the lecture content and provide feedback by making further comments on the answers. Students will also be given feedback by adding comments to their presentations during the lecture. Finally, grades will be determined based on submitted reports.</p>			<ol style="list-style-type: none"> 1. 新臨床栄養学 栄養ケアマネジメント 第4版 本田佳子編 発行年月:2021年3月 SBN978-4-263-70794-4 医歯薬出版株式会社 3,800円 2. 静脈経腸栄養ガイドライン 第3版 日本静脈経腸栄養学会編 発行年月:2013年5月、ISBN978-4-7965-2990-8 照林社 4,000円 3. 日本人の食事摂取基準 2020年版 厚生労働省「日本人の食事摂取基準(2020年版)」 策定検討会報告書 厚生労働省 https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/kenkou_iryuu/kenkou/eiyuu/syokuji_kijyun.html 4. エッセンシャル臨床栄養学(第8版)佐藤和人、本間 健、小松龍史編 発行年月:2021年3月、ISBN978-4-263-70671-8 医歯薬出版株式会社 3,700円 5. Kathleen Mahan, Janice Raymond: Krause's Food & the Nutrition Care Process, 14th edition (Krause's Food & Nutrition Therapy), 2016, ELSEVIER, Hardcover ISBN: 9780323340755 6. Wahan K, Escott-Stump S, Raymond J: クラウスの13版 栄養ケアプロセスを目指して 栄養学と食事療法大事典(日本語版)、2015年、ガイアブックス、東京 					

Subject	Advanced Lectures on Medical Nutrition	Prof. Keiko Honda	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals					
<p>The thematic focus of the course is dietetic therapy, which covers vast scopes depending on underlying diseases and pathological conditions. The course is designed for students to understand the dietetic therapy procedure: setting goals, alleviating diseases, preventing progression and exacerbation, supporting medical treatment, and maintaining physical strength. Students will understand the process for developing dietetic therapy and gain the capacity to deal with complex diseases at the elderly stage of life.</p>					
Course Summary					
<p>The course will be lectured on dietetic therapy through case studies covering 1) clinical path methods, 2) medical records and nutrition/food management records, 3) nutritional guidance and its outcomes and implications, and 4) evidence-based medical analysis</p>					
Course Plan					
<p>1. Disease treatment guidelines and dietetic therapy 2. The purpose of medical treatment of diseases through dietetic therapy 3. Establishment of treatment guidelines and the development process 4. Process of dietetic therapy and nutritional guidance on disease 5. Outcome of dietetic therapy and nutritional guidance on disease</p>			<p>6. Researching papers and clinical practices of evidence-based medicine/nutrition 7. Process of dietetic therapy and nutritional guidance at each life stage and on patients who have multiple diseases</p>		
Work to be done outside of class (preparation, etc.)					
<ul style="list-style-type: none"> Acquire knowledge regarding nutritional treatment and diet therapy in the medical treatment guidelines provided by each medical society. Identify the effectiveness indicators currently used in nutritional treatment and diet therapy. At least 200 minutes of self-study are required each week. 					
Grading criteria		Textbooks		References	
<ul style="list-style-type: none"> In-class performance (30%) Reports (70%) <p>Grading criteria: Grades are determined based on the student's accumulation of knowledge through lectures, research in papers related to the lectures, and consideration and thinking processes as demonstrated through reports, etc.</p>		N/A		<p>各医学会の編集による診療 Guidelines、論文の書き方の基礎知識臨床栄養学-栄養ケアマネジメント</p>	
				Remarks	
		<p>To ensure the suitability of grading and enhance students' self-study, students are given feedback related to the evaluation of their reports in the form of comments. During Stage 4 of COVID-19, the course will also utilize online classes. (However, at least one in-person class will be included in the course.)</p>			

Subject	Advanced Lectures on Clinical Nutrition in Life Stage	Prof. Keiko Honda	Compulsory <input type="checkbox"/>	Selective <input checked="" type="checkbox"/>	1 credit		
Course goals							
<p>The thematic focus of the course is physical/mental features and nutrition physiology at each stage of life and nutritional factors that may cause lifestyle-related diseases. The course will identify evidence for nutritional treatments in response to abnormal physical symptoms. It will enable students to know nutritional physiology and symptoms of chronic diseases and mental/physical conditions of patients, develop plans to apply nutritional care, and acquire practical treatment techniques.</p>							
Course Summary							
<p>The course will explain mental/physical features and nutritional physiology at each stage of life, including childhood and adolescence, and also explain nutritional factors that may cause lifestyle-related diseases, from the viewpoints of medical treatment guidelines and epidemiological study reports. The course will also outline abnormal physical symptoms needing nutritional care, their nutritional treatments, and relevant evidence. Finally, it will explain nutritional physiology and symptoms of chronic diseases and education for removing nutritional factors that may cause chronic diseases, and provide workshops for practical techniques.</p>							
Course Plan							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> 1. The mental and physical features of each life stage and the causes of lifestyle-related diseases 2. Acute symptoms and nutritional care (Fever, dehydration, abdominal pain, diarrhea, constipation, vomiting) 3. Congenital metabolic abnormalities and nutritional care </td> <td style="width: 50%; vertical-align: top;"> <ol style="list-style-type: none"> 4. Metabolic disorder prevention and nutritional care 5. Digestive disorder prevention and nutritional care 6. Kidney and circularly disorder prevention and nutritional care 7. Blood and immune disorders and nutritional care </td> </tr> </table>						<ol style="list-style-type: none"> 1. The mental and physical features of each life stage and the causes of lifestyle-related diseases 2. Acute symptoms and nutritional care (Fever, dehydration, abdominal pain, diarrhea, constipation, vomiting) 3. Congenital metabolic abnormalities and nutritional care 	<ol style="list-style-type: none"> 4. Metabolic disorder prevention and nutritional care 5. Digestive disorder prevention and nutritional care 6. Kidney and circularly disorder prevention and nutritional care 7. Blood and immune disorders and nutritional care
<ol style="list-style-type: none"> 1. The mental and physical features of each life stage and the causes of lifestyle-related diseases 2. Acute symptoms and nutritional care (Fever, dehydration, abdominal pain, diarrhea, constipation, vomiting) 3. Congenital metabolic abnormalities and nutritional care 	<ol style="list-style-type: none"> 4. Metabolic disorder prevention and nutritional care 5. Digestive disorder prevention and nutritional care 6. Kidney and circularly disorder prevention and nutritional care 7. Blood and immune disorders and nutritional care 						
Work to be done outside of class (preparation, etc.)							
<p>Students are required to read papers provided in class. At least 200 minutes of self-study are required each week.</p>							
Grading criteria			Textbooks	References			
<ul style="list-style-type: none"> • In-class presentations (40%) • Participation in discussions (20%) • Reports (40%) 				References and other materials will be distributed in class.			
			Materials	Remarks			
				<p>To ensure the suitability of grading and enhance students' self-study, students are given feedback related to the evaluation of their reports in the form of comments. During Stage 4 of COVID-19, the course will also utilize online classes. (However, at least one in-person class will be included in the course.)</p>			

Subject	Advanced Lectures on Nutritional Epidemiology	Prof. Satoshi Sasaki	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals					
<p>The course intends to learn 1) the academic concept of nutritional epidemiology, 2) nutritional epidemiological research methodology, and 3) application of nutritional epidemiology to real cases. Students will be able to develop the capacity to understand, plan, conduct, and analyze nutritional epidemiological research. This course is a prerequisite for students who study human-related fields and pursue careers in those fields.</p>					
Course Summary					
<p>Focusing mainly on dietary assessment, this course will offer lectures on how to develop a monitoring plan, treat and analyze data, and interpret and use nutrition/health information.</p>					
Course Plan					
<ul style="list-style-type: none"> 1. Nutritional epidemiology and history 2. Measuring theory in nutritional epidemiology 3. Theory of descriptive epidemiology and facts 4. Theory of observation study and facts 5. Theory of intervention exam and facts 			<ul style="list-style-type: none"> 6. Systematic review and meta-analysis 7. Methodology of searching and reading research papers in nutritional epidemiology 		
Work to be done outside of class (preparation, etc.)					
<p>Students are required to read the relevant sections of textbooks thoroughly prior to class. Students are advised to read the textbook with the aim of utilizing it in their research. The food assessment practicum is also considered to be work outside of class.</p>					
Grading criteria		Textbooks	References		
<ul style="list-style-type: none"> • Questions and answers during class (50%) • Reports (50%) 		<p>わかりやすいEBNと栄養疫学</p>	<ul style="list-style-type: none"> • 佐々木敏のテータ栄養学のすすめ • 佐々木敏の栄養データはこう読む！ 		
		Materials	Remarks		
		<p>Materials will be distributed in class as needed.</p>	<p>N/A</p>		

Subject	Advanced Lectures on Dietary Reference Intake	Prof. Kazuhiro Uenishi	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
<p>This course seeks to deepen the understanding of nutrition science and its challenges through the establishment of dietary reference intakes for the Japanese. Students will be able to understand the meaning of the establishment of dietary reference intakes for the Japanese and how to utilize them. Students will also be able to explain frail, sarcopenia, and locomotive syndromes.</p>							
Course Summary							
<p>This course is designed to learn in detail about the 2015 dietary reference intakes for the Japanese and understand their rationale. Students will also learn frail, sarcopenia, and locomotive syndromes, which are now becoming critical problems among elderly people.</p>							
Course Plan							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;"> 1. Dietary reference intakes for the Japanese: Concept and transition 2. Dietary reference intakes for the Japanese: Usage 3. Dietary reference intakes for the Japanese: Energy 4. Dietary reference intakes for the Japanese: Balance of energy-providing nutrients </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> 5. Dietary reference intakes for the Japanese: Vitamins 6. Dietary reference intakes for the Japanese: Minerals 7. Frail, sarcopenia, locomotive syndrome </td> </tr> </table>						1. Dietary reference intakes for the Japanese: Concept and transition 2. Dietary reference intakes for the Japanese: Usage 3. Dietary reference intakes for the Japanese: Energy 4. Dietary reference intakes for the Japanese: Balance of energy-providing nutrients	5. Dietary reference intakes for the Japanese: Vitamins 6. Dietary reference intakes for the Japanese: Minerals 7. Frail, sarcopenia, locomotive syndrome
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Work to be done outside of class (preparation, etc.)							
<p>Students are required to read papers related to the course, summarize the contents in a report, and submit the report in class. Students are required to devote twice as much time to self-study as they do to class time (100 minutes per class).</p>							
Grading criteria			Textbooks	References			
<ul style="list-style-type: none"> • In-class performance (50%) • Reports (50%) 			Dietary Reference Intakes for Japanese (2020)	N/A			
			Materials	Remarks			
			Handouts will be distributed as needed.	N/A			

Subject	Advanced Lectures on Nutrition Management	Prof. Hiromi Ishida	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals					
<p>This course will focus on diets that help maintain our mental and physical health, and consider them from multiple viewpoints including nutrition, preparation, quality, culture, and economics. Students will be able to understand the cycle of nutrition management, select assessment methods depending on different target recipients, and develop appropriate nutrition intervention (by providing meal)/evaluation plans. Students also will be able to acquire the ability to promote practical research in the field of nutrition management practice.</p>					
Course Summary					
<p>This course will help students understand the current dietary situation of Japanese people at different stages of life and consider diets that can maintain our mental and physical health. Explanations will be given on how to assess dietary intakes and apply the assessment results, and basic knowledge about menu planning and composition. Using one life stage as an example, consider the process of nutrition management with a focus on dietary assessment.</p>					
Course Plan					
<p>1. Characteristics and challenges of the current dietary situation of Japanese people at different stages of life 2. General idea of nutrition management, procedures of nutrition management, the PDCA cycle 3. Nutritional assessment, anthropometry, clinical testing, clinical examination 4. Dietary assessment, dietary assessment methods, nutrients, food groups, cuisines, dietary patterns</p>			<p>5. Food preparation and dietary quality, nutrition, dietary volume, dietary shape, quality standards, seasoning ratio 6. Meal plan, menu development criteria, nutrition plan, food composition, dietary pattern, and cost 7. Summary (Consider the priority of meal improvement from the perspective of dietary assessment and summarize the connection among nutrient level, food level, cuisine and dietary level)</p>		
Work to be done outside of class (preparation, etc.)					
<p>Students are required to allocate twice as much preparatory and review time to do dietary analysis for each assigned life stage as they do to class time (100 minutes per class).</p>					
Grading criteria			Textbooks	References	
<ul style="list-style-type: none"> In-class performance (including comments made in class, presentations, etc.) (50%) Reports (50%) <p>Submitted reports will be returned with comments.</p>			Handouts will be distributed as needed.	N/A	
			Materials	Remarks	
			N/A	N/A	

Subject	Advanced Lectures on Food Service Management	Prof. Hiromi Ishida	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
<p>The focus of this course is to learn how to establish an effective and efficient food service system which aims at serving a large number of clients with specific needs. Students will be able to come up with research methods related to the food service system. Based on marketing theories, they will also be able to explain how to manage food service resources in nutritional management services (ingredients, cooks, costs, equipment, methodology, information, etc.) and meet the users' needs. Students also will be able to acquire research skills in food service management.</p>							
Course Summary							
<p>The lecture will be centered around the latest trends of the meal provision system and management cycle at food service facilities. Students will jointly review challenges related to food service operation and management that they face and discuss how to solve them.</p>							
Course Plan							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>1. Nutrition management and food service management (1) Nutrition supply, education materials, meal development, quality development, production</p> <p>2. Nutrition management and food service management (2) Management resources, marketing, management</p> <p>3. Cookery/provision system and quality management (1) Cookery /provision system, menu management, quality management</p> </td> <td style="width: 50%; vertical-align: top;"> <p>4. Cookery/provision system and quality management (2) Facility/equipment, cooking procedures, procedures, standardization</p> <p>5. Hygiene management/risk management, HACCP system, general hygiene management, risk management</p> <p>6. Food service system development, total system, sub-system, integration</p> <p>7. Summary (Clarify the challenges of the student's food service management and summarize the solution.)</p> </td> </tr> </table>						<p>1. Nutrition management and food service management (1) Nutrition supply, education materials, meal development, quality development, production</p> <p>2. Nutrition management and food service management (2) Management resources, marketing, management</p> <p>3. Cookery/provision system and quality management (1) Cookery /provision system, menu management, quality management</p>	<p>4. Cookery/provision system and quality management (2) Facility/equipment, cooking procedures, procedures, standardization</p> <p>5. Hygiene management/risk management, HACCP system, general hygiene management, risk management</p> <p>6. Food service system development, total system, sub-system, integration</p> <p>7. Summary (Clarify the challenges of the student's food service management and summarize the solution.)</p>
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Work to be done outside of class (preparation, etc.)							
<p>Students are required to allocate twice as much time to self-study as they do to class time. It is recommended that students place their own thematic focus related to food service operation and management in the context of the course contents.</p>							
Grading criteria			Textbooks	References			
<ul style="list-style-type: none"> • In-class performance (including comments made in class, presentations, etc.) (50%) • Reports (50%) <p>Submitted reports will be returned with comments.</p>			N/A	N/A			
			Materials	Remarks			
			Handouts will be distributed as needed.	N/A			

Subject	Advanced Lectures on Nutrition Education	A/Prof. Fumi Hayashi	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit									
Course goals														
This main focus of the course is to help the student deepening their understanding on the behavioral science theories and applying the models used to nutrition and dietary education. Students will become able to understand basic theories necessary for an interventional study of nutrition education and develop concrete plans.														
Course Summary														
Lectures will cover the basics of behavioral science theories and models that are used for the practice and study of nutrition education and dietary education targeted at individuals and groups, so that students will learn examples of how to use them in nutrition education and dietary education. In addition, students will also learn a series of processes, including assessment, identification of priority issues, determination of objectives and goals, selection of evaluation metrics and methods, planning of interventional programs, selection of educational materials and learning styles, cooperation and collaboration with related parties, evaluation of intervention, and review of programs, in line with the management cycles of nutrition education and dietary education. Through not only lectures but also literature readings and discussions on multiple themes including nutrition education and dietary education studies for different life stages, students will deepen understanding of theoretical basics and management cycles.														
Course Plan														
<table border="1"> <tr> <td>1. Understanding of factors related to food choices and dietary behaviors that are addressed in nutrition education.</td> <td rowspan="4">5. Management cycle of nutrition education/dietary education and research plans (From planning to evaluation)</td> </tr> <tr> <td>2. Basic theory/model of behavior science and how to apply them to nutrition education and dietary education study (Mainly learn about individual behavior change)</td> </tr> <tr> <td>3. Basic theory/model of behavior science and how to apply them to nutrition education and dietary education study (Mainly learn about individuals and relationships between individuals and society)</td> </tr> <tr> <td>4. Management cycle of nutrition education/dietary education and research plans (From the assessment and clarification of challenges to aim/purpose setting)</td> </tr> <tr> <td colspan="2">6. Basic criteria of intervention research and case studies in the nutrition education field</td> </tr> <tr> <td colspan="2">7. Review and discussion of research articles related to nutrition education (Summary)</td> </tr> </table>						1. Understanding of factors related to food choices and dietary behaviors that are addressed in nutrition education.	5. Management cycle of nutrition education/dietary education and research plans (From planning to evaluation)	2. Basic theory/model of behavior science and how to apply them to nutrition education and dietary education study (Mainly learn about individual behavior change)	3. Basic theory/model of behavior science and how to apply them to nutrition education and dietary education study (Mainly learn about individuals and relationships between individuals and society)	4. Management cycle of nutrition education/dietary education and research plans (From the assessment and clarification of challenges to aim/purpose setting)	6. Basic criteria of intervention research and case studies in the nutrition education field		7. Review and discussion of research articles related to nutrition education (Summary)	
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7. Review and discussion of research articles related to nutrition education (Summary)														
Work to be done outside of class (preparation, etc.)														
Review what you learnt in your undergraduate program as preparatory study. Develop questions and themes that will lead to discussion in class thorough preparatory and review self-study, including reading papers and materials provided in class. The estimated amount of time for self-study should be about twice the class time.														
Grading criteria	Textbooks	References												
<ul style="list-style-type: none"> In-class performance (20%) Reports (80%) 	<ul style="list-style-type: none"> Contento IR 著, 足立己幸, 衛藤久美, 佐藤都喜子監訳. これからの栄養教育論—研究・理論・実践の輪—, 2015. 第一出版. 	<ul style="list-style-type: none"> Contento IR. & Koch PA. Nutrition Education: Linking research, theory, and practice, 4th edition. Jones & Bartlett Learning, 2020. Glanz, K., Rimer, BK., Viswanath K. Health Behavior and Health Education: Theory, research, and practice, 5th edition. Jossey-Bass, 2015. 中山健夫, 津谷喜一郎編著: 臨床研究と疫学研究のための国際ルール集 中山健夫, 津谷喜一郎編著: 臨床研究と疫学研究のための国際ルール集Part 2 												
	Materials	Remarks												
	Materials will be distributed in class.	N/A												

Subject	Advanced Lectures on Community Nutrition	Prof. Yukari Takemi	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
<p>The thematic focus of this course is nutrition education and food environment improvement (provision of healthy foods and meals, and provision of appropriate related information) as a strategy targeted at the majority population, based on the understanding of trends of health/nutrition policy in communities (local authorities, schools, and occupational areas). Students will be able to explain the necessity of nutrition education and food environment improvement, and then develop and plan new food environment improvement programs in consideration of characteristics of target groups.</p>							
Course Summary							
<p>First, the lecturer will introduce the latest trends of nutrition education policy and health/nutrition policy in Japan, based on her own experience of being involved in the policy development process. Next, the course will explain the knowledge necessary to promote nutrition education and food environment improvement in local communities in the future, including the concept of fundamental population approach, the ladder of intervention (which is a framework to organize its effectiveness), and social marketing and behavioral economics applications (which help come up with effective initiatives). Lastly, two case methods will be implemented to strengthen critical thinking skills for practical purposes, using examples of Local Food Environment Improvement in the communities.</p>							
Course Plan							
<table border="1"> <tr> <td> <p>1. Health policy: The rationale for setting aims related to nutrition and dietary fields in Health Japan 21 (Second)</p> <p>2. Dietary education policy: Adaptation for 'new normal' and The 4th Basic Plan for the Promotion of Shokuiku (Food and Nutrition education)</p> <p>3. Food environment improvement policy: Consideration of healthy diet created by the MoHLW and a healthy diet/food environment accreditation system by a consortium of academic societies</p> <p>4. Food environment improvement and the ladder of intervention as a fundamental population approach</p> </td> <td> <p>5. Establishment of food environment improvement and nutrition education plans applying social marketing and behavior economics</p> <p>6. Case methods: Local food environment improvement using a dietary balance guide (Case study on provision of a balanced menu by the food industry)</p> <p>7. Case methods: Security of food access as a risk management (Case study of local nutrition activities in natural disasters)</p> </td> </tr> </table>						<p>1. Health policy: The rationale for setting aims related to nutrition and dietary fields in Health Japan 21 (Second)</p> <p>2. Dietary education policy: Adaptation for 'new normal' and The 4th Basic Plan for the Promotion of Shokuiku (Food and Nutrition education)</p> <p>3. Food environment improvement policy: Consideration of healthy diet created by the MoHLW and a healthy diet/food environment accreditation system by a consortium of academic societies</p> <p>4. Food environment improvement and the ladder of intervention as a fundamental population approach</p>	<p>5. Establishment of food environment improvement and nutrition education plans applying social marketing and behavior economics</p> <p>6. Case methods: Local food environment improvement using a dietary balance guide (Case study on provision of a balanced menu by the food industry)</p> <p>7. Case methods: Security of food access as a risk management (Case study of local nutrition activities in natural disasters)</p>
<p>1. Health policy: The rationale for setting aims related to nutrition and dietary fields in Health Japan 21 (Second)</p> <p>2. Dietary education policy: Adaptation for 'new normal' and The 4th Basic Plan for the Promotion of Shokuiku (Food and Nutrition education)</p> <p>3. Food environment improvement policy: Consideration of healthy diet created by the MoHLW and a healthy diet/food environment accreditation system by a consortium of academic societies</p> <p>4. Food environment improvement and the ladder of intervention as a fundamental population approach</p>	<p>5. Establishment of food environment improvement and nutrition education plans applying social marketing and behavior economics</p> <p>6. Case methods: Local food environment improvement using a dietary balance guide (Case study on provision of a balanced menu by the food industry)</p> <p>7. Case methods: Security of food access as a risk management (Case study of local nutrition activities in natural disasters)</p>						
Work to be done outside of class (preparation, etc.)							
<p>Students are required to read the basic plan of each country thoroughly prior to class. Prepare to make comments in class by thinking about how to utilize what you learn in the class, by placing it in the context of your research theme.</p>							
Grading criteria		Textbooks	References				
<ul style="list-style-type: none"> In-class performance (20%) Short essay (50%) Comprehensive report (50%) 		N/A	<p>「日本人の長寿を支える「健康な食事」のあり方検討会」報告書. 厚生労働省 2014.</p> <p>「自然に健康になれる持続可能な食環境づくりの推進に向けた検討会」報告書. 厚生労働省 2021.</p>				
		Materials	Remarks				
		Materials will be distributed in class.	N/A				

Subject	Advanced Lectures on Health Management at School	Prof. Nobuko Endo	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals					
This course is concerned with school health nursing as one of health, medical and welfare systems pertaining to children's health and nutritional conditions, and teaches how nutrition teachers (registered dietitians) should think and behave at schools. Students will be able to recognize the current situation and challenges of school health nursing and consider the role of school meals and dietary challenges at home while keeping appropriate school health nursing/management in mind.					
Course Summary					
Students will understand the meaning and purpose of school health nursing and learn its trends. In addition, the course will highlight 1) the relationship between general/dietary education and related laws/regulations and 2) organizational activities of school health nursing, in order to clarify the current challenges of school health nursing. It will then explore how nutrition teachers or registered dietitians can cooperate with others involved in school health nursing to solve those challenges.					
Course Plan					
1. To learn about the significance and purpose of school health and the domain structure (health management, health education, and organizational activities). [Keywords] school health management, school safety, health education, organizational activities)		[Keywords] nutrition teacher, school nurse, school health plan, school health safety plan, health organization activities.			
2. To learn about the actual conditions of growth and development and health issues of children and students, and the historical transition of school health. [Keywords] growth and development, health issues, school health history		5. To learn about health promotion at schools in Japan and in other countries and the challenges they face. [Keywords] health promotion, healthy school.			
3. To learn about approaches and research on various issues in school health from the perspective of the relationship to dietary education. [Keywords] dietary education, orphan eating, eating disorders, obesity, leanness.		6. To develop approaches and research plans for solving school health issues from the standpoint of nutrition teachers or registered dietitians. [Keywords] health promotion, healthy school) (Keywords: problem finding, assessment.			
4. To learn about school health planning, school health and safety planning, and participation in school health organization activities from the standpoint of nutrition teachers (registered dietitians).		7. To study school health and nutrition education through presentations, general discussions, and critiques of each student's proposed approaches and research plans. [Keywords] dietary education, school health.			
Work to be done outside of class (preparation, etc.)					
Students are required to read research papers and materials distributed prior to class.					
Grading criteria	Textbooks	References			
<ul style="list-style-type: none"> • In-class presentations (40%), • Comments and willingness to participate in discussions (30%), • Reports (30%). 	学校保健マニュアル 南山堂 衛藤隆 (編集)	References will be introduced in class.			
	Materials	Remarks			
	Materials will be distributed as needed.	Students are required to participate in at least one school health conference or other related conference and submit a report on what they learned.			

Subject	Advanced Lectures on Nutritional Care for Children with Disability	Prof. Kazuhiro Shimokawa	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
<p>This course will cover various cases requiring nutritional care and support, including type 1 diabetes of sickly children, obesity of mentally challenged children, extreme fussiness of autistic children, eating disorders like anorexia and bulimia associated with mental disability, and eating and swallowing disorders observed in severely disabled children. Students will be able to understand the various conditions of pupils requiring dietary care and support, know how to care and support them, and, as nutrition teachers, provide dietary consulting and other support services to pupils and their parents. The objective of this course is to acquire knowledge to become a person who has profound knowledge from a broad perspective of nutritional science as stated in the DP.</p>							
Course Summary							
<p>Students will learn disability characteristics of various disabled children including those with development disability, and master basic knowledge and skills about ways to support them depending on their disability characteristics.</p>							
Course Plan							
<table border="1"> <tr> <td data-bbox="137 766 778 1055"> 1. Overview of education policy for children with disabilities (CWD) and selection of research themes 2. Characteristics of disabilities of CWD (1) Sensory disturbance and communication support 3. Characteristics of disabilities of CWD (2) Cognitive features of CWD and support </td> <td data-bbox="778 766 1433 1055"> 4. Characteristics of disabilities of CWD (3) Swallowing mechanism development and support for disorders of feeding and swallowing 5. Research Presentation and Discussion (1) "Case Studies of School Lunch Accidents" 6. Characteristics of disabilities of CWD (4) Support for endocrine disorders, eating disorders, picky eaters" 7. Research Presentation and Discussion (2) "Consultation Support for Children and Families in Need of Food Considerations" </td> </tr> </table>						1. Overview of education policy for children with disabilities (CWD) and selection of research themes 2. Characteristics of disabilities of CWD (1) Sensory disturbance and communication support 3. Characteristics of disabilities of CWD (2) Cognitive features of CWD and support	4. Characteristics of disabilities of CWD (3) Swallowing mechanism development and support for disorders of feeding and swallowing 5. Research Presentation and Discussion (1) "Case Studies of School Lunch Accidents" 6. Characteristics of disabilities of CWD (4) Support for endocrine disorders, eating disorders, picky eaters" 7. Research Presentation and Discussion (2) "Consultation Support for Children and Families in Need of Food Considerations"
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Work to be done outside of class (preparation, etc.)							
<p>Lecture notes will be distributed as a textbook in the first class. Students are required to attend the class after referring to/reviewing "PowerPoint PDF Data" (provided via Teams) before participating in the class. In "Research Presentation and Discussion," two themes (case law research and consultation support) will be presented in the first class, and students are required to select one theme for each. Students are required to present their research in the 5th and 7th classes. Students are also required to prepare reports and materials for the presentation. (200 minutes per week required.)</p>							
Grading criteria	Textbooks	References					
<ul style="list-style-type: none"> In-class presentations (25%) Participation in discussions (25%) Outcomes of the research presentation (50%) Evaluations and other comments will be shared in the class.	Lecture Notes distributed in class will be used as the textbook.	「食べる機能の障害 その考え方とリハビリテーション」金子芳洋・向井美恵・尾本和彦（日本医師薬出版） 「特別支援教育ハンドブック」飯野順子・岡田加奈子・玉川進編著（東山書房）					
	Materials	Remarks					
	Lecture Notes and PDFs of the PowerPoint used in class will be sent to through Teams. Students will be notified of materials the are required to prepare themselves prior to class.	N/A					

Subject	Advanced Lectures on Chrono-Nutrition	Prof. Shiuichi Horie	Compulsory	<input checked="" type="checkbox"/>	Selective	1 credit						
Course goals												
<p>The importance of preventive medicine is widely acknowledged in the context of aging society. Efforts have already been made to use bio-markers to early identify groups of people with high risks and provide tailor-made treatments to prevent the onset of diseases and mitigate symptoms. This course will facilitate students to learn the significance of accurately analyzing clinical epidemiological data, a biological basis for preemptive medicine, and understand the effects of genetics and epigenetics on gene expression and their control mechanism. The course will also help students to think about lifestyles necessary to sustain health and prevent aging, from the perspective of chrono-nutrition, taking into account the nutritional environment during the perinatal period and the relationship between daily diet and gene expression regulation. This course is in line with the Master's Diploma Policy which is to acquire a high degree of expertise and a broad prospective on nutritional science</p>												
Course Summary												
<p>Students will learn genetic and environmental causes of the onset of non-contagious diseases and understand the gene expression control mechanism. Students will also learn development programming mechanisms of the cases influenced by environmental factors, referring to the thrifty phenotype and DOHaD hypotheses. In addition, they will learn chromatin's histone modification mechanism so as to understand the influences of nutritional status and stress during the embryonic and neonatal periods on the expression format in various tissues in vivo. Negative consequences of dietary habits on human bodies (such as lifestyle-related diseases and accelerated aging) will be examined from the perspective of the relationship with clock gene expression rhythm. Finally, open discussions will be held on bioethics issues associated with gene modifications and alterations such as use of advanced medical technology and genome editing.</p>												
Course Plan												
<table border="1"> <tr> <td>1. Diseases and modern medicine: Non-communicable diseases, genetic/environmental factors, polymorphisms and preemptive medicine, precision nutrition</td> <td>4. Chrono-nutrition and lifestyle-related diseases (1): Circadian rhythm, clock genes, body clock and sleep</td> </tr> <tr> <td>2. Genetics and epigenetics: GWAS, histone modifications, miRNAs, exosomes</td> <td>5. Chrono-nutrition and lifestyle-related diseases (2): Obesity, diabetes, brain function, dementia, cancer and diets</td> </tr> <tr> <td>3. Gene expression regulation mechanism: Frugal phenotypic hypothesis, DOHaD hypothesis, perinatal nutrition</td> <td>7. General discussion: Genome editing, genetic diagnosis, reproductive medicine, terminal care and bioethics, researcher ethics</td> </tr> </table>							1. Diseases and modern medicine: Non-communicable diseases, genetic/environmental factors, polymorphisms and preemptive medicine, precision nutrition	4. Chrono-nutrition and lifestyle-related diseases (1): Circadian rhythm, clock genes, body clock and sleep	2. Genetics and epigenetics: GWAS, histone modifications, miRNAs, exosomes	5. Chrono-nutrition and lifestyle-related diseases (2): Obesity, diabetes, brain function, dementia, cancer and diets	3. Gene expression regulation mechanism: Frugal phenotypic hypothesis, DOHaD hypothesis, perinatal nutrition	7. General discussion: Genome editing, genetic diagnosis, reproductive medicine, terminal care and bioethics, researcher ethics
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Work to be done outside of class (preparation, etc.)												
<p>Students are required to conduct a preliminary survey on the keywords provided in class. Students are also required to select and investigate a theme in which they have interest, submit a report on it, and prepare to present it along with their own views.</p>												
Grading criteria	Textbooks		References									
Attendance in class, level of participation in discussions during class, performance in off-campus classes, reports, and presentations in general discussions are all evaluated.	Handouts will be distributed in class and information related to the handout will be explained using a PowerPoint presentation in class.		The latest reference materials for each item will be included in the lecture handouts.									
	Materials		Remarks									
	Blu-ray video		The Course plan may be switched due to time constraints. Presentation dates will be determined in consultation with students									

Subject	Advanced Lectures on Molecular Nutrition	Prof. Akiko Fukushima	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals					
<p>The thematic focus of this course is lifestyle-related diseases and genes. Students will be able to explain the diversity of genes and lifestyle-related diseases at the genetic level. This course is in line with the Master's Diploma Policy which is to acquire a high degree of expertise and a broad prospective on nutritional science</p>					
Course Summary					
<p>The human genome has been analyzed, and all life phenomena are being analyzed at the genetic level. Nutrition science also requires the understanding of humans at the genetic level. The course will cover vast areas from basic knowledge on genes to the molecular mechanism of the onset of lifestyle-related diseases.</p>					
Course Plan					
<p>1. Molecular composition of DNA 2. Flow of genetic information (Replication, transcription, translation) 3. Human genome (Autosome, sex chromosome, mitochondria DNA) 4. Lifestyle-related diseases and genetic polymorphisms (genetic diseases, genetic polymorphisms, disease susceptibility genes)</p>			<p>5. Molecular mechanism of obesity (mast cells, adipocytokines) 6. Molecular mechanism of diabetes (insulin, TNF-α, gluconeogenesis) 7. Molecular mechanisms such as hyperlipidemia (LDL receptor, PPAR)</p>		
Work to be done outside of class (preparation, etc.)					
<p>Students are required to review a textbook used in the undergraduate biochemistry class prior to the course. Students are also required (a) to read designated papers prior to class, (b) summarize the keywords and study the relevant parts of the references as a review. At least 200 minutes of preparatory and review study are required per class.</p>					
Grading criteria	Textbooks		References		
<p>Grades will be determined based on submitted reports. Students will be provided with feedback regarding the reports.</p>	N/A		<ul style="list-style-type: none"> ・栄養と遺伝子のはなしー分子栄養学入門 ・メディカルサイエンス遺伝子検査学 ・分子生物学イラストレイテッド 		
	Materials		Remarks		
	N/A		N/A		

Subject	Advanced Lectures on Biochemistry	Prof. Kazuhiko Yamada	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals and Course summary					
<p>This course aims to enable students to explain physiologically and biochemically how the foods we intake are broken down, absorbed into and utilized in our bodies as low-molecular nutrients.</p>					
<p>The course will explain the structure and function of the digestive system, digestion and absorption of the three major energy-yielding nutrients, digestion and absorption of coenzymes and vitamins, fermentation and absorption of resistant carbohydrates by intestinal bacteria, etc.</p>					
Course Plan					
<p>1. Outline of digestive system structure and its functions 2. Enzymatic decomposition process of nutrients and absorption process by transport 3. Absorption of nutrients producing three major energetics 4. Process of transporting nutrition to the blood and the process of distribution to the respective organs</p>			<p>5. Absorption of complementary enzymes and vitamins, and its re-composition 6. Nucleic acid absorption process 7. Metabolism in the large intestine as a fermentation/absorption organ</p>		
Work to be done outside of class (preparation, etc.)					
<p>Students are required to conduct preparatory and review study on physiology, biochemistry, and gastrointestinal function in the field of basic nutrition at the undergraduate level.</p>					
Grading criteria	Textbooks	References			
<p>Grades will be determined comprehensively based on (a) Q&A sessions and the level of understanding demonstrated in class, and (b) the level of understanding of two designated papers (originally in English/Japanese) that students are to read.</p>	<p>Handouts will be distributed as needed.</p>	<p>坂井健雄・河原克雅総集編「人体の正常構造と機能改定第3版」日本医事新報社(2017). その他、参考文献、資料等については、授業の際に指示する。</p>			
	Materials	Remarks			
	<p>Materials will be distributed in class.</p>	<p>N/A</p>			

Subject	Advanced Lectures on Food Cultural Anthropology	A/Prof. Akiko Moria	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
<p>In this course, students will learn the significance of food to humans from an anthropological perspective. The goal is to understand social and cultural of food and various values reflected in food, based on specific examples. The goal of this course is related to the Diploma Policy, which is to acquire a high degree of expertise with in-depth knowledge of human food and a broad prospective on nutritional science</p>							
Course Summary							
<p>Students will learn the historical transition of Japanese food culture in the broader context of East Asian food culture. They will also review various cultural aspects reflected in food, through dietary records and ethnography.</p>							
Course Plan							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> (a) Food and culture (b) Livelihood and food culture (c) Food culture formation and development in Japan 1 </td> <td style="width: 50%; vertical-align: top;"> (c) Food culture formation and development in Japan 2 (d) Rice culture (e) Food culture in East Asia (d) Modern challenges surrounding food </td> </tr> </table>						(a) Food and culture (b) Livelihood and food culture (c) Food culture formation and development in Japan 1	(c) Food culture formation and development in Japan 2 (d) Rice culture (e) Food culture in East Asia (d) Modern challenges surrounding food
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Work to be done outside of class (preparation, etc.)							
<p>Students are required to read the designated book stipulated under References. (Students are required to dedicate twice as much time to preparatory study as they do to class time.) It is recommended that students visit museums or exhibitions related to food prior to class.</p>							
Grading criteria	Textbooks	References					
In-class performance (20%) Reports (80%)	N/A	『日本の食文化ーその伝承と食の教育ー新版』(江原絢子編、アイ・ケイ・コーポレーション)					
	Materials	Remarks					
	Handouts will be distributed in class.	The first class and the final class will be conducted in person, and all others will be online.					

Subject	Advanced Lectures on Eating Psychology	Prof. Tomoko Hasegawa	Compulsory	<input checked="" type="checkbox"/>	Selective	1 credit								
Course goals														
<p>The main theme of this course is the psychological approach to diet behavior. The course aims to enable students to 1) intensively read English research papers describing diet behavior and related actions from a psychological perspective, and 2) understand and explain psychological theories on diet behavior.</p>														
Course Summary														
<p>We can psychologically analyze diet behavior from the perspectives of 1) the human as an animal, 2) persons as individuals, and 3) human beings as social and cultural creatures. And in terms of psychology, eating behavior is related to 1) neuroscience, 2) learning and motivation, 3) culture and society, 4) health and clinicalness, and 5) development.</p> <p>The latest literature will be selected from the following themes: the development of diet behavior, interactions between diet behavior and society, cognitive effects on diet behavior, diet behavior and desires to slim down, etc. Research on the development of diet behavior will be explained from the perspective of interactions with humans. The number of hours of literature reading will vary depending on the number of students.</p>														
Course Plan														
<table border="1"> <tr> <td>1. Outline of diet behavior from the perspective of psychology</td> <td>5. Reading literature on eating behavior and desire for slimming</td> </tr> <tr> <td>2. Reading papers on development of diet behavior</td> <td>6. Recent Research Trends in Developmental Psychology of Eating Behavior 1: From the perspective of food selection</td> </tr> <tr> <td>3. Reading papers on diet behavior and social interaction</td> <td>7. Recent Research Trends in Development Psychology of Eating Behavior 2: From the perspective of mother and child relationships and family relationships</td> </tr> <tr> <td>4. Reading literature on cognitive effects on eating behavior</td> <td></td> </tr> </table>							1. Outline of diet behavior from the perspective of psychology	5. Reading literature on eating behavior and desire for slimming	2. Reading papers on development of diet behavior	6. Recent Research Trends in Developmental Psychology of Eating Behavior 1: From the perspective of food selection	3. Reading papers on diet behavior and social interaction	7. Recent Research Trends in Development Psychology of Eating Behavior 2: From the perspective of mother and child relationships and family relationships	4. Reading literature on cognitive effects on eating behavior	
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4. Reading literature on cognitive effects on eating behavior														
Work to be done outside of class (preparation, etc.)														
<p>Please prepare your resume after carefully reading the assigned sections (including a verbatim translation). Please refer to Yuhikaku's "Dictionary of Psychology" or Heibonsha's "Encyclopedia of Psychology," etc., and prepare carefully for the psychological terms that will be used. Detailed instructions will be given after registration. Self-study time will be about twice as much as class time.</p>														
Grading criteria	Textbooks	References												
<p>Presentation contents, level of participation in discussions (80%) Reports (20%) Feedback will be given on students' comments.</p>	<p>Academic papers and Splane, E. C. et al. (2020). Psychology of Eating: From biology to culture to policy second edition. Routledge., Meiselman, H. L. et al. (Eds).(2020). Handbook of Eating and Drinking. Springer. Other handouts will be distributed in class as needed.</p>	References will be designated in class.												
	Materials	Remarks												
	N/A	N/A												

Subject	Advanced Lectures on Global Nutrition	Prof. Chizuru Nishida	Compulsory <input checked="" type="checkbox"/>	Selective <input type="checkbox"/>	1 credit
Course goals and Course summary					
<p>Child obesity is increasing in many countries. Even in developing countries where malnutrition and infection diseases (including AIDS) are major public health issues, child obesity and various lifestyle-related diseases are rapidly increasing. In this course, students are required to consider what kind of nutrition policy should be developed in countries facing the double burden of malnutrition, and why the life-course approach is necessary for the development and scale-up of effective nutrition improvement plans and programs. Students will also learn what kind of activities are conducted by international institutes such as WHO to support those countries in the public health and nutrition fields.</p>					
Course Plan					
<p>1-3. Learn about global nutrition issues varying rapidly and consider the challenging of the double burden of malnutrition increasing in developing countries and the necessity of life course approach to solve it.</p>			<p>4-6. Acknowledge the actual situation of commitment, capacity, and nutrition governance required to achieve a nutrition improvement plan and program and to scale them. 7. Summary</p>		
Work to be done outside of class (preparation, etc.)					
<p>Students are required to conduct preparatory study about recent news related to global nutrition and food issues by checking science magazines and newspapers and researching nutrition-related topics on the WHO and UNICEF websites.</p>					
Grading criteria			References		
<p>Grades will be determined based on the level of participation in discussions and on submitted reports.</p>			<ul style="list-style-type: none"> •SCN. 6th Report of the World Nutrition Situation: Progress in Nutrition. SCN, Geneva, 2010.(Chapter 2: Regional Nutrition Trends and Chapter 3: Maternal Nutrition). http://www.unscn.org/files/Publications/RWNS6/html/index.html •Tackling the Double Burden of Malnutrition: A Global Agenda, SCN News No. 32,2006. •Nishida C. Global food and nutrition strategies for addressing the double burden of malnutrition and other emerging issues. SCN News No.33, pp18-21, 2006. •Darnton-Hill I, Nishida C, James WPT. A life course approach to diet, nutrition and the prevention of chronic diseases. Public Health Nutrition, 7(1A): 101 – 121, 2004. • WHO/FAO. Diet, nutrition and the prevention of chronic diseases. Report of the joint WHO/FAO Expert Consultation •FAO/WHO. Preparation and use of food-based dietary guidelines. Report of a joint FAO/WHO Expert Consultation (TRS 880). 1998 (日本語訳本あり) • Nishida C, Shrimpton R, Darnton-Hill I. Landscape Analysis on countries' readiness to accelerate action in nutrition. SCN News No. 37, 2009: 4 – 9. • Engesveen K, Nishida C, Prudhon C, Shrimpton, R. Assessing countries' commitment to accelerate nutrition action demonstrated in PRSPs, UNDAFs and through nutrition governance. SCN News, No. 37, 2009: 10 – 16. •List of the Millennium Development Goals •ICN World Declaration and Plan of Action on Nutrition, 1992 		

Subject	Advanced Lectures on International Development	Prof. Atsuko Isoda	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals					
<p>Students are required to understand basic nutrition and health policies of foreign countries as healthcare professionals and learn international development and cooperation initiatives related to healthcare and nutrition. The goal of the course is to ensure that students can master the basic philosophies and methodologies of these international initiatives and apply them to nutritional improvement activities inside and outside Japan from international perspectives. This is in line with the Master's Diploma Policy which is to acquire a high degree of expertise and a broad prospective on nutritional science.</p>					
Course Summary					
<p>About 800 million people worldwide are still suffering from lack of food and nutrition. Feeding services are one effective solution. But now, in addition to supports from the healthcare, nutrition and food fields, a broader set of supports are offered by global society, including those related to economics, the natural environment, and peace building. Using both lectures and workshops, the course will cover the history of international cooperation in the food/nutrition field; concepts, methods and examples of the human rights-based approach employed by UNICEF; and the project management process from planning to evaluation.</p>					
Course Plan					
<p>1. The historical transition and rationale of food/nutrition challenges and its problem-solving approaches in the international cooperation and development area</p> <p>2. Methodology and concept of a rights-based approach and a case study</p> <p>3. Practicum applying a rights-based approach: Understanding and analysis of a case study</p>			<p>4. Methodology of project development and evaluation theories in the international cooperation area</p> <p>5. Practicum of project development and evaluation in international cooperation (1) Project Development</p> <p>6. Practicum of project development and evaluation in international cooperation (2) Development of evaluation plans</p> <p>7. Summary</p>		
Work to be done outside of class (preparation, etc.)					
<p>Students are required to conduct preparatory and review study on designated materials and references. Students are also required to dedicate twice as much time to preparation and review as they do to class time.</p>					
Grading criteria	Textbooks		References		
<p>Level of participation and understanding of practicum (20%)</p> <p>Reports (80%)</p>	N/A		N/A		
	Materials		Remarks		
	<p>Assignment materials and related materials will be distributed in advance or in class.</p>		N/A		

Subject	Advanced Lectures on Human Life Education	Prof. Rie Imoto	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
<p>This course is a prerequisite for students who wish to acquire an advanced home economics teaching license for middle and high schools.</p> <p>Students will be able to consider the interaction between people and the environment in human life centered on the home, deeply understand the contents and methods of home economics required in the course of study, and be able to provide specialized guidance.</p>							
Course Summary							
<p>After deeply considering how to perceive life, students will understand the relationship between various issues in modern society and life. In addition, students will formulate specialized guidance to develop the ability to solve life problems in home economics education.</p>							
Course Plan							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> 1. Value-consciousness and decision-making in life 2. Living hours and life resources 3. Money in life and various values 4. Environmental issues and life </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> 5. Information and life 6. Research trends in home economics education 7. Education methods to develop the capacity to solve problems in life </td> </tr> </table>						<ul style="list-style-type: none"> 1. Value-consciousness and decision-making in life 2. Living hours and life resources 3. Money in life and various values 4. Environmental issues and life 	<ul style="list-style-type: none"> 5. Information and life 6. Research trends in home economics education 7. Education methods to develop the capacity to solve problems in life
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Work to be done outside of class (preparation, etc.)							
<p>Students are required to read research papers, references, and materials designated in class and and dedicate twice as much time to preparatory and review study as they do to class time.</p>							
Grading criteria	Textbooks	References					
Presentations and comments in class (50%) Reports (50%) Comments will be returned as feedback.	Handouts will be distributed as needed.	(一社)日本家政学会 家政学原論部会 編 『やさしい家政学原論』建帛社、2018					
	Materials	Other					
	Materials will be distributed as needed.	N/A					

Subject	Advanced Lectures on Environmental Education	Prof. Rie Imoto	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals and Course summary					
<p>This course aims to ensure that students can understand the close linkage between dietary life and environmental issues and propose practical classes or projects on dietary education as part of education for sustainable development (ESD).</p>					
<p>Students will first learn the linkage between dietary life and environmental issues and the underlying ESD theory, undertake literature reviews of a few selected key papers, and examine some case studies. They will then choose their own research topics and make presentations on their plans for dietary environment education. Class members will discuss each plan.</p>					
Course Plan					
<p>1. Theories related to the relationship between dietary life and environmental issue and the orientation of dietary education as ESD 2. Dietary education in school education 3. Dietary education in social education 4. Dietary education in England and Germany</p>			<p>5. Dietary education as international cooperation 6. Mock lesson on dietary education by each student or project proposal and presentation 7. Discussion and consideration of the mock lesson or project proposal and presentation</p>		
Work to be done outside of class (preparation, etc.)					
<p>Students are required to read research papers, references, and materials designated in class and dedicate twice as much time to preparatory and review study as they do to class time.</p>					
Grading criteria	Textbooks	References			
Presentations and comments in class (50%) Reports (50%) Reports will be returned with feedback.	Handouts will be distributed as needed.	日本環境教育学会編『環境教育とESD』東洋館出版社、2014日本環境教育学会[監修]『知る・わかる・伝える SDGs I－貧困・食料・健康・ジェンダー』学文社、2019 その他、授業の際に指示する。			
	Materials	Other			
	Materials will be distributed in class.	N/A			

Subject	Advanced Lectures on Food Analysis	Prof. Teruyuki Usui	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals					
Students will become able to understand and explain the purpose of use of analytical instruments in food analysis.					
Course Summary					
In modern food analysis, it is essential to use computers to control analytical instruments and analyze data. In the class, students will learn about typical modern instruments for food analysis. In addition, with the focus on experimental methods in academic papers, students will understand the purpose of using such analytical instruments. The term food analysis does not just mean quantitative analysis of food composition, but has an extensive meaning, including food functionality assessment. Students are expected to learn food analysis as essential knowledge on food, especially processed food.					
Course Plan					
1. Particle size distribution methods 2. Absorption analysis, fluorescence analysis, and luminescence analysis 3. Methods for separating food components (1) 4. Methods for separating food components (2) 5. Methods for separating food components (3)			6. Methods for using nuclear magnetic resonance 7. Use of Chemical Structure Data		
Work to be done outside of class (preparation, etc.)					
Students are required to dedicate twice as much time to preparatory and review study as they do to class time (including review using files distributed after class).					
Grading criteria	Textbooks		References		
Grades will be determined based on submitted homework (including translation of short English sentences related to analysis) each time class is held.	N/A		Introduced in class as needed.		
	Materials		Other		
	PDF files to review what was covered in class will be distributed after class.		N/A		

Subject	Advanced Lectures on Food Material Development	A/Prof. Masataka Saito	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
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Course goals and Course summary

High value-added foods, including physiological functional foods aimed at health maintenance and foods for the purpose of utilizing recyclable food waste, are widely distributed and are readily available in the market. Many of these foods are made from a wide variety of domestically-produced ingredients. The goal in this course is to understand the social needs for food and the research and development processes, and to become able to explain the characteristics of processed foods or recipes that use specific food materials and ingredients.

Course Plan

Students will investigate how specific food materials or ingredients have been utilized in recent years and grasp in detail their characteristics and functionality. Students are also required to summarize observations, and make presentations.

Course Plan

<ol style="list-style-type: none"> 1. Food materials that are attracting attention such as lipids, proteins, peptides, amino acids, etc. 2. Production techniques and usage of food materials (production of food materials and development of processed food and meal menus) 3. Case study on food material development basic research (composition, nature, genome editing): online class 	<ol style="list-style-type: none"> 4. Food ingredients that are attracting attention such as food (wasting and locally specialized food, etc.) 5. Development of proposals related to processed food and meal menus: online class 6. Summary (presentation, discussion, reference introduction): online class
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Work to be done outside of class (preparation, etc.)

Students are required to read and summarize designated research papers and reviews in food/nutrition science magazines. They are also required to create a report in the form of a PowerPoint presentation and submit it in class. Students are required to dedicate twice as much time to preparation and review study as they do to class time.

Grading criteria	Textbooks	References
<ul style="list-style-type: none"> • In-class performance and presentations (60%) • Reports (40%) 	Handouts will be distributed as needed.	Food and Development (UBM ジャパン株式会社)
	Materials	Remarks
	N/A	Students are required to prepare a PC for online classes. (Classes 3 and 6 in the course plan)

Subject	Advanced Lectures on Food Functions	Prof. Toshihide Nishimura	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
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Course goals and Course summary

This course aims to enable students to explain three food functions (nutritional function, preference function, and physiological function), referring to actual foodstuffs and ingredients. The objective of this class is related to the Master's Diploma Policy which is to acquire the research and abilities required of professionals with a high degree of expertise and a broad perspective on food functions.

The course will pick up topics such as “science of food flavor”, and “physiological functions such as antioxidative activity or anti-hypertensive activity of peptides derived from meat,” provide guidance on three food functions, and explain foodstuffs and ingredients that have each function. It will also help students understand the mode of action of each food ingredient from the perspective of food chemistry or physiology.

Course Plan

1,2 Science of food taste: Outline the factors that determine deliciousness and the physiology that accept them.
 3. Science of *Koku* attributes of food: Outline the definition of *Koku* attributes and the factors involved in *Koku* in food.
 4. Meat aging: Explain the relationship between meat deliciousness and its aging. (Amino acid, inosinic acid, rigor mortis, softening)

5. Functions of peptides derived from meat (preference function): Clarify the preference effect and physiological function of peptides.
 6,7. Functions of peptides (physiological function): Clarify the physiological function and mechanism of action. (Imidazole dipeptide, antioxidant effect, blood pressure increase inhibitory effect, calcium absorption promoting effect)

Work to be done outside of class (preparation, etc.)

Read the materials distributed prior to class thoroughly and clarify the parts that are not understood (for at least twice the amount of time as class time). Students are required to review what they learn by researching parts that are not understood in dictionaries, etc. (for at least twice the amount of time as class time).

Course Plan	Textbooks	References
<ul style="list-style-type: none"> In-class performance (50%) Reports (50%) 	N/A	References will be designated in class.
	Materials	Remarks
	PowerPoint files will be distributed.	N/A

Subject	Advanced Lectures on Quality Management	Prof. Hideki Tsuda	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals					
<p>While the objects of quality management and assurance are various, the course define the main theme of this course is the quality management/assurance for diets and beverage production. After a series of classes, students aim to be at a level where they will have a standard mindset that will be useful when working in food and beverage manufacturing and the companies that provide them.</p>					
Course Summary					
<p>Classes include "Overview" to learn the differences between quality control and quality assurance and their methods, and "Quality control and quality assurance" to understand the intentions from recent revisions of laws and regulations related to food and beverages and various globalized standards. Furthermore, trends and objectives of legislation and standards that affect the industry, and "quality and quality assurance during normal times and emergencies" to learn about quality control and quality assurance practices based on actual examples of the food and beverage manufacturing industry. The visits to the production factory will be conducted in order to inflate the student's imagination in the final round of the classes.</p>					
Course Plan					
<p>1. 2. Introduction of quality management and assurance (Keywords: quality, quality management, quality assurance, analysis/evaluation method, QMS)</p> <p>3. 4. Trends in amendment of laws and regulations which affect quality management and quality assurance (Keywords: food hygiene law, food labeling law, food labeling standards, Pharmaceutical Machinery Law (Pharmaceuticals and Medical Devices Law), Freebie Labeling Law, ISO, FSSC, International Standardization, etc.)</p>			<p>5. 6. Quality management and quality assurance under normal and emergency situations (Keywords: quality accident, health damage, recall/voluntary recall system)</p> <p>7. Excursion to Krin beer factory in Yokohama</p>		
Work to be done outside of class (preparation, etc.)					
<p>Students are required to review the previous class and assigned homework as preparation for the next class. (200 minuits per week)</p>					
Grading criteria	Textbooks		References		
<ul style="list-style-type: none"> • In-class performance (50%) • Reports (50%) 	No textbooks. Related documents will be distributed.		①真壁 肇・鈴木和幸(著)、品質管理と品質保証、信頼性の基礎、日科技連出版社、2018 ②山田正美(著)、図解 よくわかるこれからの品質管理、同文館出版、2017 ③河岸宏和(著)、食品工場の品質管理、同文館出版、2015 ④深田博史・寺田和正(著)、見るみる食品安全・HACCP・FSSC22000、日本規格協会、2020		
	Materials		Remarks		
	N/A		N/A		

Subject	Advanced Lectures on Food Hygiene	Prof. Morihiro Saito	Compulsory <input checked="" type="checkbox"/>	Selective <input type="checkbox"/>	1 credit
Course goals					
<p>Even nutritious food may cause harm such as disease and poisoning. The purpose of food sanitation is to prevent these harms and maintain healthy life. Food poisoning is one important incident, and it is a main focus of this course. Students will work to understand and explain the characteristics of recent food poisoning events, classification of food poisoning, possible causal food and its relationship with disease agents, the characteristics of disease agents, and prevention of food poisoning. In addition, students also acquire a high degree of expertise and a broad prospective on nutritional science and health science and the research and abilities required of professionals as stipulated in the Master's Diploma Policy.</p>					
Course Summary					
<p>Students will learn the basics of substances and microorganisms that cause food poisoning and the overview of food poisoning. The kinds of food poisoning that will be covered in the course are bacterial food poisoning, viral food poisoning, chemical food poisoning, parasitic food poisoning, and horse meat poisoning, a recent new addition.</p>					
Course Plan					
<p>1. The basics of microorganisms (viruses, bacteria, parasites) related to food hygiene 2. Overview/classification and epidemiology of food poisoning 3. Bacterial food poisoning I: Salmonella, staphylococcus aureus, vibrio parahaemolyticus, pathogenic Escherichia coli</p>			<p>4. Bacterial food poisoning II: Clostridium botulinum, bacillus cereus, clostridium perfringens. 5. Viral food poisoning and natural poisoning, food poisoning: Norovirus, poisonous mushrooms, pufferfish poisoning, shellfish poisoning, etc. 6. Chemical food poisoning: Allergic food poisoning, harmful elements, pesticides, etc. 7. Parasitic food poisoning: protozoans, nematodes, trematodes, tapeworms</p>		
Work to be done outside of class (preparation, etc.)					
<p>Students are required to write reports assigned in class.</p>					
Grading criteria	Textbooks		References		
<ul style="list-style-type: none"> In-class performance (50%) Reports (50%) 	Handouts will be distributed		N/A		
	Materials		Remarks		
	N/A		N/A		

Subject	Advanced Lectures on Food System Science	Prof. Yasuhiro Nakashima	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
<p>Food and agriculture today are facing a major turning point. In order to see where the future is headed, students will study the current status and issues of food and agriculture, and the social framework that supports them, through the concept of food systems. The objective of the course is to acquire the thinking methods and specialized knowledge to understand and examine the reality and background of changes in dietary habits, industries related to food, and socially necessary systems, based on a social scientific perspective, especially an economic one.</p>							
Course Summary							
<p>The framework and functions of the food system, which are the basis for thinking throughout the class, will be introduced. The course will then review how food consumption in our country and around the world has changed in the postwar period and describe the characteristics of recent years. Next, the actual conditions of the agriculture, food manufacturing, distribution, and retail industries that support those foods will be explained in terms of industrial structure and industrial organization. Furthermore, the student will discuss the food safety system and the labeling system, which have been the biggest concerns of consumers in recent years, and examine their framework and social issues. Finally, students will learn and think about the dilemma of food and environmental issues facing the world in the pursuit of the SDGs and the role that food systems should play in this dilemma.</p>							
Course Plan							
<table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top; border-right: 1px dashed black;"> <p>1) What is the food system? 2) Trends in food consumption in Japan and the world 3) Economic structure of the food system 4) Distribution mechanism and price formation of agricultural products</p> </td> <td style="width: 50%; vertical-align: top;"> <p>5) Food safety and certification systems 6) Food standards and labeling 7) Food issues and food systems</p> </td> </tr> </table>						<p>1) What is the food system? 2) Trends in food consumption in Japan and the world 3) Economic structure of the food system 4) Distribution mechanism and price formation of agricultural products</p>	<p>5) Food safety and certification systems 6) Food standards and labeling 7) Food issues and food systems</p>
<p>1) What is the food system? 2) Trends in food consumption in Japan and the world 3) Economic structure of the food system 4) Distribution mechanism and price formation of agricultural products</p>	<p>5) Food safety and certification systems 6) Food standards and labeling 7) Food issues and food systems</p>						
Work to be done outside of class (preparation, etc.)							
<p>Students are required to read not only textbooks but also research papers distributed in class. Students are also required to read references (indicated below) for writing reports.</p>							
Grading criteria	Textbooks		References				
<ul style="list-style-type: none"> • In-class performance (50%) • Reports (50%) 	<p>時子山ひろみ・荏開津典生・中嶋康博『フードシステムの経済学(第6版)』医歯薬出版、 Students are required to have the 2019 edition of the book. The previous edition should be avoided because the statistical data is out-dated.</p>		<p>ルース・ドフリース『食糧と人類』日経ビジネス人文庫、2021年</p>				
	Materials		Remarks				
	Materials are distributed as needed.		N/A				

Subject	Advanced Lectures on Food Preparation Science	A/Prof. Keiko Shibata	Compulsory	<input checked="" type="checkbox"/>	Selective	1 credit
Course goals						
Students will be able to understand and explain changes in food ingredients and structure that happen in the cooking process, subsequent changes in taste and texture, preference factors of eaters and their evaluation.						
Course Summary						
Focusing primarily on heat cooking, which has a significant influence on preference, this course will discuss the relationship between changes in food and palatability. Students will also learn cooking operation, the characteristics of cooking devices, effective ways to use cooking devices, and related applied research. Evaluation methods will be taught through exercises using typical examples.						
Course Plan						
1. 2. Food preference factors and their evaluation: Taste, odour, vision, taste interaction, sensory evaluation 3. 4. Food changes and human acceptability during the cooking process: Cooking conditions, taste, texture, difference test, preference test			5. 6. Changes in heat transfer characteristics: Food characteristics, food structure, heat conduction, microwave heating 7. Summary of food taste and preference evaluation: Sensory attributes, time-series evaluation (time intensity/qualitative change over time), factors influencing evaluation			
Work to be done outside of class (preparation, etc.)						
Students are required to read research papers and books introduced in the class. Students are required to dedicate at least twice as much time to preparatory and review study as they do to class time.						
Grading criteria	Textbooks		References			
<ul style="list-style-type: none"> In-class participation (50%) Reports (50%) Comments on reports will be made when returning the report or by providing an explanation in class. 	Handouts will be distributed as needed.		<ul style="list-style-type: none"> NEW 調理と理論 第2版(山崎、島田他著)同文書院 調理科学講座 1 ~ 7 卷(島田、橋本他編著)朝倉書店 新版 総合調理科学事典(日本調理科学会編)光生館 			
	Materials		Other			
	Handouts will be distributed in class.		N/A			

Subject	Advanced Lectures on Cookery & Dietary Life	Prof. Fumiko Konishi	Compulsory	<input checked="" type="checkbox"/>	Selective	1 credit									
Course goals															
<p>(1) Students will be able to explain the linkage between the antioxidant capacity of food and food preparation.</p> <p>(2) Students will be able to think of measures to live a healthy life both mentally and physically from the comprehensive perspectives of meal contents, dietary environments, household environments, and exercise habits, based on the understanding of actual dietary habits of infants to the elderly. The above studies will provide students with a broad perspective of nutrition and a deeper knowledge and understanding of diet and health.</p>															
Course Summary															
<p>(1) Looking at infants to the elderly, the course will explain the linkage between actual dietary habits and physical/mental health, life satisfaction, etc. based on study data, and outline measures to live a healthy life mentally and physically throughout these stages of life.</p> <p>(2) The course will explain the antioxidant capacity of food and how it changes with cooking. It will give guidance on the linkage between the antioxidant property of food and health.</p>															
Course Plan															
<table border="1"> <tr> <td>1. Consider the relationship between dietary life and health of a toddler and a young child (Keywords: toddler, young child, dietary life)</td> <td rowspan="4" style="border-left: 1px dashed black;"></td> <td>6. Learn the relationship between food functions and health through recent research knowledge and experience. (Keywords: antioxidant, life habit).</td> </tr> <tr> <td>2. Consider the relationship between dietary life and health of junior high and high school students (Keywords: junior high school students, family relationship)</td> <td>7. Learn the relationship between food functions and health through recent research papers. (Keywords: antioxidant, dietary life)</td> </tr> <tr> <td>3. Consider the relationship between dietary life and health of elderly people. (Keywords: the elderly, life satisfaction, physical strength)</td> <td></td> </tr> <tr> <td>4. Learn the relationship between antioxidant and food preparation. (Keywords: antioxidant, food preparation)</td> <td></td> </tr> </table>							1. Consider the relationship between dietary life and health of a toddler and a young child (Keywords: toddler, young child, dietary life)		6. Learn the relationship between food functions and health through recent research knowledge and experience. (Keywords: antioxidant, life habit).	2. Consider the relationship between dietary life and health of junior high and high school students (Keywords: junior high school students, family relationship)	7. Learn the relationship between food functions and health through recent research papers. (Keywords: antioxidant, dietary life)	3. Consider the relationship between dietary life and health of elderly people. (Keywords: the elderly, life satisfaction, physical strength)		4. Learn the relationship between antioxidant and food preparation. (Keywords: antioxidant, food preparation)	
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4. Learn the relationship between antioxidant and food preparation. (Keywords: antioxidant, food preparation)															
Work to be done outside of class (preparation, etc.)															
Students are required to read the research papers assigned in class.															
Grading criteria	Textbooks		References												
<ul style="list-style-type: none"> Reports (100%) Comments on the content of the reports will be provided. 	N/A		N/A												
	Materials		Remarks												
	N/A		N/A												

Subject	Advanced Lectures on Nutrition Education for Food Preparation	Prof. Yukie Yanagisawa	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
<p>Understand the basic premise that nutrients are supplied through meals, the significance of good taste as an oral sensation, and how to respond to the feeding function of the subject in meal planning. Learn how to plan meals that take into consideration the characteristics of each life stage and be able to plan meals according to the subject.</p>							
Course Summary							
<p>Culinary education focuses on the understanding of meals and cooking techniques for preparing meals. For meal planning, the focus will be on oral functions during the life stages of the subject, explaining the characteristics of each life stage and how to develop meals from the viewpoint of oral functions. In addition, the course will also focus on "cooking skills" as one of the meal preparation skills.</p>							
Course Plan							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;"> <ol style="list-style-type: none"> 1. Significance of "deliciousness" in meals: "deliciousness" as a research objective of culinary science. 2. Use of food groups and the Dietary Balance Guide in meal planning: food groups and cuisine groups. 3. Meal planning by life stage (1): Infants and school-age children, acquisition of good taste, development of eating function </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> <ol style="list-style-type: none"> 4. Meal planning by life stage (2): Youth, adulthood, mastication. 5. Meal planning by life stage (3) : Aging, Frail Prevention. 6. Oral Function decline and meal planning: Eating and swallowing function, functional decline and food morphology. 7. Improvement of cooking skills and its essentials: cooking techniques and meal composition skills </td> </tr> </table>						<ol style="list-style-type: none"> 1. Significance of "deliciousness" in meals: "deliciousness" as a research objective of culinary science. 2. Use of food groups and the Dietary Balance Guide in meal planning: food groups and cuisine groups. 3. Meal planning by life stage (1): Infants and school-age children, acquisition of good taste, development of eating function 	<ol style="list-style-type: none"> 4. Meal planning by life stage (2): Youth, adulthood, mastication. 5. Meal planning by life stage (3) : Aging, Frail Prevention. 6. Oral Function decline and meal planning: Eating and swallowing function, functional decline and food morphology. 7. Improvement of cooking skills and its essentials: cooking techniques and meal composition skills
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Work to be done outside of class (preparation, etc.)							
<p>Read the papers introduced in class and search for related papers and books to deepen your understanding of their contents, and search for related papers and books to deepen your understanding of the content. In addition, students will explore the relevance to their own research themes.</p>							
Grading criteria	Textbooks		References				
<ul style="list-style-type: none"> • In-class performance (50%: Contents of comments made in the class discussion) • Reports (50%) 	N/A		References will be designated in class.				
	Materials		Remarks				
	Materials will be distributed in class.		N/A				

Subject	Advanced Lectures on Development Support Studies	Prof. Miyoko Nagatsu	Compulsory	<input checked="" type="checkbox"/>	Selective	1 credit		
Course goals								
<p>The thematic focus of this course is child development and its support.</p> <ul style="list-style-type: none"> – Students will learn the necessity to support both children themselves and their families and communities in which they grow. – Students will deepen their understanding of problems faced by children in families, schools, and communities. – Students will be able to think about better environments for child growth from a broader perspective. <p>The contents of the course will be in line with the Master's Diploma Policy which is to acquire a high degree of expertise and a broad prospective on developmental support.</p>								
Course Summary								
<p>The environment surrounding children is greatly changing due to changes in people's attitudes toward child rearing, and an increase in nuclear families and dual income families. An increase in bullying and truancy/child abuse has become a social problem, affecting child growth significantly. The course seeks to understand challenges and problems faced by children at each stage of their development, learn the current situation of child support, and explore solutions. It will also shed light on the problematic situation of each environment surrounding children and consider how to create better environments for them.</p>								
Course Plan								
<table border="1"> <tr> <td> <p>1. What is developmental support ? (It is the developmental stages and developmental issues of children, various environments surrounding children, and social changes.)</p> <p>2. Families and local communities as places where children grow up (nuclear families, society with fewer children, children's lifestyles and families, connections and places to stay, social care and local communities)</p> <p>3. Problems faced by children (juvenile crime, child abuse, bullying, truancy, etc., and the situation of social support)</p> <p>4. Sexuality and education (sexual minorities, transformation of sexual behavior, reproductive revolution, reproductive health/rights, expansion of paternity handbook and fatherhood classes)</p> </td> <td> <p>5. Social support for child-rearing (development as a parent, child-rearing by mothers, child-rearing by fathers, Recent parent-child relationships, social support for child-rearing)</p> <p>6. Balance of work and life and guarantee of children's development (employment status of parents, balance of work and life, childcare leave system, a place for children to grow up; nursery schools, certified childcare centers, childcare for school children, various social support network)</p> <p>7. Aiming to build a society that nurtures both children and adults: Presentations and discussions on issues addressed by each participant</p> </td> </tr> </table>							<p>1. What is developmental support ? (It is the developmental stages and developmental issues of children, various environments surrounding children, and social changes.)</p> <p>2. Families and local communities as places where children grow up (nuclear families, society with fewer children, children's lifestyles and families, connections and places to stay, social care and local communities)</p> <p>3. Problems faced by children (juvenile crime, child abuse, bullying, truancy, etc., and the situation of social support)</p> <p>4. Sexuality and education (sexual minorities, transformation of sexual behavior, reproductive revolution, reproductive health/rights, expansion of paternity handbook and fatherhood classes)</p>	<p>5. Social support for child-rearing (development as a parent, child-rearing by mothers, child-rearing by fathers, Recent parent-child relationships, social support for child-rearing)</p> <p>6. Balance of work and life and guarantee of children's development (employment status of parents, balance of work and life, childcare leave system, a place for children to grow up; nursery schools, certified childcare centers, childcare for school children, various social support network)</p> <p>7. Aiming to build a society that nurtures both children and adults: Presentations and discussions on issues addressed by each participant</p>
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Work to be done outside of class (preparation, etc.)								
<p>Students are required to read the materials distributed prior to class carefully, and are also asked to research the related topics before coming to class. (Excluding the first and second time that classes are held.)</p>								
Grading criteria	Textbooks	References						
<ul style="list-style-type: none"> • In-class performance (50%) • Reports (50%) 	<p>While textbooks are not used in this course, handouts will be distributed prior to class.</p>	<p>柏木恵子『子どもが育つ条件』岩波書店、2008 日本家政学会家政教育部会編『家族生活の支援－理論と実践－』建帛社、2014 長津美代子・小澤千穂子編著『改訂新しい家族関係学』建帛社、2018 日本家政学会編『現代家族を読み解く 12章』丸善出版、2018 社会保障入門編集委員会『社会保障入門 2021』中央法規、2021</p>						
	Materials	Remarks						
	N/A	N/A						

Subject	Advanced Lectures on School Management	Prof. Takahide Kato	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals					
<p>The thematic focus of this course is school management and organization and the positioning of nutrition teachers at schools. Students will be able to understand the concept of public education and school management, and express their ideas on school management. They will also deepen their understanding of leadership and roles of principals and organizational collaboration of teachers, and be able to explain the positioning and roles of nutrition teachers in a school as a team. The goal of this course involves the acquisition of knowledge to become a person who is recognized as having acquired the necessary competencies to become a professional with a high level of expertise in his/her major field of study (special license for nutrition teachers).</p>					
Course Summary					
<p>Students will learn the concept of public education and school management and deepen their understanding of the reason why school management reforms are demanded and the independence and autonomy of schools. In doing so, they will understand principals' leadership and teachers' organizations, and then grasp the positioning and roles of nutrition teachers. They will give thought to the roles and significance of nutrition teachers in a school as a team. Finally, discussions will be held on how nutrition teachers should act in future schools, in the context of school management.</p>					
Course Plan					
<p>1. The significance of public education and schools 2. School management reform and school autonomy and independence 3. Principal's leadership 4. School organization and staffing system 5. Relationships with parents and community and outlet of school management</p>			<p>6. Food safety and the school's response as an organization (countermeasures against allergies and infectious diseases) 7. The future of the "school as a team" and the role of the nutrition teacher: Summary</p>		
Work to be done outside of class (preparation, etc.)					
<p>Students are required to read related materials, etc., as instructed in class, and to prepare for and review the class. Students are also required to prepare for the class by connecting what they have learned to their own research topics and to be prepared to present in class. Approximately 200 minutes of self-study is required each week.</p>					
Grading criteria	Textbooks	References			
<ul style="list-style-type: none"> • In-class performance (including comments in class) (20%) • Reports (80%) 	<ul style="list-style-type: none"> •加藤崇英編『「チーム学校」まるわかりガイドブック』教育開発研究所、2016年 •加藤崇英・臼井智美編著『教育の制度と学校のマネジメント』時事通信社、2018年 	<ul style="list-style-type: none"> •加藤崇英編『「チーム学校」まるわかりガイドブック』教育開発研究所、2016年 •日本教育経営学会（編集）『現代の教育課題と教育経営』（講座 現代の教育経営2）学文社、2018年 •References will be distributed in class. 			
	Materials	Remarks			
	Materials will be distributed in class.	N/A			

Subject	Advanced Lectures on Shokuiku at School	Prof. Rie Imoto・Prof. Hiromi Ishida	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit
Course goals					
<p>The main theme is to increase the capacity of dietary education at schools and school management to promote effective dietary education.</p> <p>① Students can assess the actual situation of children's food. ② Students can assess the organization and resources used to promote food education in schools. ③ Based on the assessment results, students can formulate a dietary education promotion plan and evaluation method.</p>					
Course Summary					
<p>The course requires the students review the curriculum of dietary education applied by the respective students as a nutrition/home economics teacher to reveal their challenges. Based on that, the students will conduct school visit, observation, and investigation through interview and consider the way of the dietary education.</p>					
Course Plan					
<p>1. Guidance, review of your own dietary education curriculum, and clarification of challenges 2. Preliminary guidance: Perspectives on observation in schools; What is an interview survey? 3. Observation at school sites (observation of a dietary education class) (off-campus) 4. Survey at a school (interview with teachers) (off-campus)</p>			<p>5. Share the results of your observations and research with the class after returning to the university. 6. Develop a plan for promoting dietary education and evaluation methods. 7. Future challenges in dietary education</p>		
Work to be done outside of class (preparation, etc.)					
<p>Read the handouts and literature provided in the classes to clarify the challenges. Plan and summarize observations and investigations at school sites.</p>					
Grading criteria	Textbooks		References		
<ul style="list-style-type: none"> • In-class presentations (50%) • Reports (50%) 	<p>朝岡幸彦・野村 卓編著『食育の力—食育・農育・教育』光生館、2010 小中高等学校学習指導要領解説、文部科学省</p>		<p>・文部科学省『食に関する指導の手引—第二次改訂版—』平成31年3月</p>		
	Materials		Other		
	<p>Materials will be distributed as needed.</p>		<p>This course can be taken only by students who wish to obtain a specialized license of nutrition teacher and home economics teacher.</p>		

Subject	Research Methodology in Nutrition I (Research Planning)	Prof. Kazuhiko Yamada	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
<p>The goal is to understand experimental design and research methods, a basis for nutritional research.</p>							
Course Summary							
<p>Students will learn ways to formulate hypotheses, make research plans, and draw conclusions while appropriately collecting indicators in the nutritional science and health science fields. The course will especially focus on how to collect and analyze biomarkers appropriately.</p>							
Course Plan							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;"> <ul style="list-style-type: none"> 1. Types and methods of nutritional research: analysis of food components and biological components, precision experiments, and survey analysis 2. Quantitative analysis of food components: tables of food components and energy content in Japan and other countries. 3. Energy consumption and intake: Analysis of energy consumption, direct method, indirect method, DLW method 4. Analysis of biological information: Omics, comprehensive analysis method </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> <ul style="list-style-type: none"> 5. Biological rhythms: biological clock, circadian rhythm. 6. Ethical aspects of nutrition research: Declaration of Helsinki, animal welfare, legal compliance, conflict of interest 7. Research Presentation: Brief report on your research </td> </tr> </table>						<ul style="list-style-type: none"> 1. Types and methods of nutritional research: analysis of food components and biological components, precision experiments, and survey analysis 2. Quantitative analysis of food components: tables of food components and energy content in Japan and other countries. 3. Energy consumption and intake: Analysis of energy consumption, direct method, indirect method, DLW method 4. Analysis of biological information: Omics, comprehensive analysis method 	<ul style="list-style-type: none"> 5. Biological rhythms: biological clock, circadian rhythm. 6. Ethical aspects of nutrition research: Declaration of Helsinki, animal welfare, legal compliance, conflict of interest 7. Research Presentation: Brief report on your research
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Work to be done outside of class (preparation, etc.)							
<p>Subscription to experimental methods in thesis abstracts for graduate seminars. Acquisition of specific experimental methods for dissertation research. Review of relevant areas in physiology, biochemistry, basic nutrition, and food science at the undergraduate level.</p>							
Grading criteria	Textbooks		References				
<p>Grades will be determined comprehensively based on questions and understanding demonstrated at the time of attendance, as well as a close reading and comprehension of the contents of two papers to be submitted as a report: one original work and review in a European language and one original work and review in the Japanese language.</p>	<p>Handouts will be distributed as needed.</p>		<p>Nutrition Research Methodologies (The Nutrition Society Textbook), Julie A. Lovegrove, Leanne Hodson, Sangita Sharma, Susan A. Lanham-New, John Wiley & Sons, Inc 2012</p>				
	Materials		Remarks				
	<p>Materials will be distributed in class.</p>		<p>N/A</p>				

Subject	Research Methodology in Nutrition II	Prof. Tetsuji Yokoyama	Compulsory	<input checked="" type="checkbox"/>	Selective	1 credit		
Course goals								
<p>The main theme is the method of information processing and statistical analysis in nutritional research.</p> <p>Goal 1: Can make analysis plans in consideration of the linkage among research purposes, methods, results and analyses.</p> <p>Goal 2: Can process outliers and theoretical errors appropriately and determine data to be used for analysis.</p> <p>Goal 3: Can conduct summarization, univariate analysis, and multivariate analysis of the characteristics of research targets and summarize the results in charts.</p> <p>Goal 4: Can interpret the results of analyses appropriately and draw suitable conclusions.</p>								
Course Summary								
<p>Students will master the process of quantitative research in the nutritional science and health science fields: appropriately processing information collected based on research protocols, conducting optimal statistical analysis, and summarizing the results.</p>								
Course Plan								
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>1. Introduction to quantitative research.</p> <p>2. Information processing method.</p> <p>3. Statistical analysis (1) Analysis plan, descriptive statistics, univariate analysis</p> <p>4. Statistical analysis (2) Multivariate analysis, summary in figures and tables</p> <p>5. Research presentation</p> </td> <td style="width: 50%; vertical-align: top;"> <p>6. Statistical analysis methods (3) Improvement of analysis methods based on research presentations</p> <p>7. Statistical analysis methods (4) Interpretation of analysis results and conclusions</p> </td> </tr> </table>							<p>1. Introduction to quantitative research.</p> <p>2. Information processing method.</p> <p>3. Statistical analysis (1) Analysis plan, descriptive statistics, univariate analysis</p> <p>4. Statistical analysis (2) Multivariate analysis, summary in figures and tables</p> <p>5. Research presentation</p>	<p>6. Statistical analysis methods (3) Improvement of analysis methods based on research presentations</p> <p>7. Statistical analysis methods (4) Interpretation of analysis results and conclusions</p>
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Work to be done outside of class (preparation, etc.)								
<p>Preparation of the research presentation will be conducted by individual students between classes 4 and 5 in the above course plan.</p>								
Grading criteria	Textbooks		References					
Reports	<p>初めての栄養学研究論文一人には聞けない要点とコツ。日本栄養改善学会監修。第一出版。</p>		<p>保健活動のための調査・研究ガイド。中村好一。医学書院。医学への統計学【第3版】。丹後俊郎著。朝倉書店。 Survey Research Methods (Applied Social Research Methods Series) (5th) Floyd J. Fowler, Jr. SAGE Publications, Inc.</p>					
	Materials		Remarks					
	<p>Original teaching materials will be distributed in class.</p>		<p>It is desirable that you have already collected data based on the research plan. It is desirable to have studied basic statistics.</p>					

Subject	Research Methodology in Nutrition III (Nutritional Assessment and Dietary Evaluation)	Prof. Hiromi Ishida Prof. Kazuhiro Uenishi	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
This course seeks to ensure that students will understand the characteristics, advantages and disadvantages of methodologies for measuring the nutritional status used in research and consider what to do to increase the accuracy of data obtained. Students will be able to design and conduct nutritional assessments and dietary evaluation studies, and analyze the obtained data according to the purposes. They will also be able to understand the meaning of data. Acquire skills in nutritional assessment in human subjects research.							
Course Summary							
Students will measure the weight/height, consumed daily diet, and energy metabolism of other students and check the accuracy of data obtained. They will also conduct statistical data processing to evaluate and diagnose the nutritional status.							
Course Plan							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> 1. Body measurement (DXA method, impedance method)/Prof. Uenishi 2. Body measurement (circumference, sebum thickness)/Prof. Uenishi 3. Bone mass measurement (ultrasonography)/Prof. Uenishi 4. Clinical examination (blood chemistry)/Prof. Uenishi 5. Physiological examination (blood pressure, lung activity, resting metabolic rate)/Prof. Uenishi 6. Dietary survey (identification of examinee's food, coding, confirmation of agreement in weight estimation)/Prof. Ishida 7. Setting the purpose of the dietary survey, survey planning and preparation/Prof. Ishida 8. Meal recording method (characteristics and points to be noted in implementation)/Prof. Ishida </td> <td style="width: 50%; vertical-align: top;"> 9. 24-hour recalling method (features and points to note in implementation)/Prof. Ishida 10. Food intake frequency questionnaire (features and points to note in implementation)/Prof. Ishida 11. Utilization of the table of food composition (examination of changes in ingredients due to cooking)/Prof. Ishida 12. Statistical analysis of body measurements/Prof. Uenishi. 13. Statistical analysis of results of dietary survey/Prof. Ishida 14. Discussion of points to be noted regarding the survey and criteria for determining nutritional status based on the results of statistical analysis/Prof. Uenishi, Ishida </td> </tr> </table>						1. Body measurement (DXA method, impedance method)/Prof. Uenishi 2. Body measurement (circumference, sebum thickness)/Prof. Uenishi 3. Bone mass measurement (ultrasonography)/Prof. Uenishi 4. Clinical examination (blood chemistry)/Prof. Uenishi 5. Physiological examination (blood pressure, lung activity, resting metabolic rate)/Prof. Uenishi 6. Dietary survey (identification of examinee's food, coding, confirmation of agreement in weight estimation)/Prof. Ishida 7. Setting the purpose of the dietary survey, survey planning and preparation/Prof. Ishida 8. Meal recording method (characteristics and points to be noted in implementation)/Prof. Ishida	9. 24-hour recalling method (features and points to note in implementation)/Prof. Ishida 10. Food intake frequency questionnaire (features and points to note in implementation)/Prof. Ishida 11. Utilization of the table of food composition (examination of changes in ingredients due to cooking)/Prof. Ishida 12. Statistical analysis of body measurements/Prof. Uenishi. 13. Statistical analysis of results of dietary survey/Prof. Ishida 14. Discussion of points to be noted regarding the survey and criteria for determining nutritional status based on the results of statistical analysis/Prof. Uenishi, Ishida
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Work to be done outside of class (preparation, etc.)							
Students are required to dedicate at least twice as much time to self-study and practice as they do to class time, in order to write reports on the assignments presented before and after the practicums.							
Grading criteria	Textbooks		References				
Grades will be determined based on: • A summary of the results of measurement and analysis and presentation (50%) • A comprehensive report (50%) Submitted reports will be returned with comments.	日本食品標準成分表 2015 年版(七訂) 文部科学省、日本人の食事摂取基準 2020 年版 厚生労働省		食事調査マニュアル(南山堂) 日本栄養改善学会 監修				
	Materials		Remarks				
	Materials will be introduced and distributed as needed.		N/A				

Subject	Research Methodology in Nutrition IV (Diet and Food Environment)	Prof. Yukari Takemi	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
<p>This course will focus on methods of quantitative surveys and qualitative surveys in nutritional research. As methods of surveys on dietary habits and food environments necessary for nutritional research targeted at populations, students will be able to understand the methodologies of quantitative surveys using questionnaires and qualitative surveys using individual/group interviews to design surveys in accordance with research purposes. Students will also be able to explain the methodology of surveys on food environments.</p>							
Course Summary							
<p>As quantitative surveys, students will learn the basics of questionnaire surveys aiming to examine dietary action, dietary behavior, and dietary knowledge, and deepen their understanding by actually designing questionnaires. As qualitative surveys, students will learn the methods and case studies of individual interviews and focus group interviews, and experience the analysis of recorded interviews. As food environment surveys, students will learn the utilization of existing materials, observation methods, questionnaire methods, and GIS and get to know the trends of previous studies. Lastly, students will simulate the combination of these surveys in accordance with research purposes, and deepen their understanding of the features of each survey and the mutual relationship among such surveys.</p>							
Course Plan							
<table border="1"> <tr> <td style="vertical-align: top;"> <p>1. Necessity of selecting a research method that meets the research purpose and ethical considerations in research</p> <p>2. Quantitative research 1: Basics of questionnaire survey (selection and sampling of subjects, characteristics of various survey methods, etc.)</p> <p>3. Quantitative research 1: Basics of questionnaire survey (methods of selecting and extracting subjects, characteristics of various survey methods, etc.)</p> <p>3) Quantitative research 2: Development of questionnaire (development of survey framework based on theoretical model and design of questionnaire)</p> <p>4. Quantitative research 2: Questionnaire development (development of a research framework and questionnaire design based on a theoretical model)</p> <p>4) Quantitative research 3: Considering issues in the design and implementation of questionnaire surveys based on examples from previous studies</p> <p>5. Quantitative Research 3: Thinking about issues in designing and implementing questionnaire surveys from examples of previous studies</p> <p>5) Quantitative Research 4: Creating a survey framework and practicing questionnaire design according to the research question</p> <p>6. Quantitative survey 5: Processing and analysis of obtained data (necessity of thinking about analysis methods before conducting the survey)</p> </td> <td style="vertical-align: top;"> <p>7. Qualitative research 1: Types and characteristics of qualitative research, sampling of subjects, and preparation of interview guide Translated with www.DeepL.com/Translator (free version)</p> <p>8. Qualitative Research 2: Learn how to conduct a survey and write a paper based on the examples of previous studies using individual interviews</p> <p>9. Qualitative Research 3: Learn how to conduct a survey and write a paper based on the examples of previous studies using focus group interviews</p> <p>10. Qualitative Research 4: Practice analyzing verbatim transcripts as a method of qualitative research analysis</p> <p>11. Food environment research 1: Basics of food environment research methods (organizing the concept of food environment, its significance in nutrition research, etc.)</p> <p>12. Food environment survey 2: Types and characteristics of food environment survey methods (use of existing data, observation, questionnaire, GIS, etc.)</p> <p>13. Dietary environment survey 3: Recent trends in previous studies on the relationship between dietary environment and health status of food intake</p> <p>Practice of actual use of survey methods (simulation and presentation of the use of multiple surveys in combination according to research objectives, assuming a community, school, workplace, etc.) Translated with www.DeepL.com/Translator (free version)</p> </td> </tr> </table>						<p>1. 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Qualitative Research 4: Practice analyzing verbatim transcripts as a method of qualitative research analysis</p> <p>11. Food environment research 1: Basics of food environment research methods (organizing the concept of food environment, its significance in nutrition research, etc.)</p> <p>12. Food environment survey 2: Types and characteristics of food environment survey methods (use of existing data, observation, questionnaire, GIS, etc.)</p> <p>13. Dietary environment survey 3: Recent trends in previous studies on the relationship between dietary environment and health status of food intake</p> <p>Practice of actual use of survey methods (simulation and presentation of the use of multiple surveys in combination according to research objectives, assuming a community, school, workplace, etc.) Translated with www.DeepL.com/Translator (free version)</p>
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Work to be done outside of class (preparation, etc.)							
<p>Read the relevant prior literature and materials as instructed in class, and prepare for and review the class. Students are expected to deepen their understanding of the contents of the course by connecting them to their own research topics and considering how they can be utilized.</p>							
Grading criteria	Textbooks	References					
<ul style="list-style-type: none"> In-class performance (20%) Comprehensive report (80%) 	N/A	<ul style="list-style-type: none"> ・中村好一：保健活動のための調査・研究ガイド、2002。医学書院 ・保坂亨、中澤潤、大野木裕明編著：心理学マニュアル 面接法、2000。北大路書房 ・キャサリン・ポープ／ニコラス・メイズ編著、大滝純司監訳：質的研究実践ガイド-保健医療サービス向上のために、2008。医学書院 ・佐藤郁哉：質的データ分析法-原理・方法・実践、2008。新曜社 					
	Materials	Remarks					
	Materials will be distributed in class	N/A					

Subject	Advanced Common Lectures on Nutrition I (Specific Health Check-up and Health Guidance)	Prof. Kazuyo Tsushita	Compulsory	<input checked="" type="checkbox"/> Selective	1 credit		
Course goals							
<p>In Japan, various health guidance programs, including specific health guidance, have been put in place to protect people's health. This course aims to help students understand the purpose of each program and the goals of responsible entities and learn the knowledge and skills necessary to provide health guidance.</p>							
Course Summary							
<p>Focusing on specific health guidance using the metabolic syndrome concept and on preventing progressive diabetic nephropathy, the course will foster students' practical skills by providing explanations and case studies regarding the points of interpretation of medical checkup data and follow-up guidance, behavioral change theories, methods of guidance on nutrition, exercise, etc., and health guidance evaluation.</p>							
Course Plan							
<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>1. Mechanisms to support health guidance (health checkup system according to life stage, data health plan, etc.) 2. Health guidance for metabolic syndrome 3. Health guidance for metabolic syndrome 3) Case study, health guidance method to promote behavioral change 4. Health guidance for prevention of severe cases of diabetic nephropathy</p> </td> <td style="width: 50%; vertical-align: top;"> <p>5. Case study, health guidance for high-risk patients, and cooperation with medical care 6. Health guidance for elderly diabetics 7. Evaluation of health guidance</p> </td> </tr> </table>						<p>1. Mechanisms to support health guidance (health checkup system according to life stage, data health plan, etc.) 2. Health guidance for metabolic syndrome 3. Health guidance for metabolic syndrome 3) Case study, health guidance method to promote behavioral change 4. Health guidance for prevention of severe cases of diabetic nephropathy</p>	<p>5. Case study, health guidance for high-risk patients, and cooperation with medical care 6. Health guidance for elderly diabetics 7. Evaluation of health guidance</p>
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Work to be done outside of class (preparation, etc.)							
<p>Self-study by reading materials in advance, reviewing case studies, and preparing teaching records.</p>							
Grading criteria	Textbooks		References				
<p>Preparation for class (20%), active participation in questions and case studies (30%), post-class report (50%)</p>	N/A		<p>厚生労働省：標準的な保健指導プログラム 30 年度版 https://www.mhlw.go.jp/content/10900000/000496784.pdf 厚生労働省：重症化予防てびき https://www.mhlw.go.jp/content/12400000/tebiki.pdf 門脇孝、津下一代編。第三期特定健診・特定保健指導ガイド 南山堂</p>				
			Materials		Remarks		
	Materials will be distributed in class		N/A				

Subject	Special Common Course II ~ IV	Kazuhiro Uenishi, Chief of the Nutrition Sciences Degree Program	Compulsory	<input checked="" type="checkbox"/>	Selective	1 credit
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Course goals and Course summary

The National Institute of Public Health and the Graduate School of Kagawa Nutrition University have concluded an agreement on human resource development and research cooperation. This agreement allows our students to participate in short-term training sessions and some classes of long-term training courses that are provided by the National Institute of Public Health. By taking these classes of the National Institute of Public Health, students will aim to develop capabilities necessary to become leaders in society, including a broad range of knowledge and expertise regarding the fields of public health and medical health welfare. Depending on the number of classes you take, you can receive credits of Special Common Courses I to IV.

Course Plan

For more information on the training offered by the National Institute of Health Sciences, please visit the following website:
<https://www.niph.go.jp/entrance/r4/index.html>

Read the related materials assigned in class, and prepare for and review the class.

Work to be done outside of class (preparation, etc.)

Read the related materials assigned in class, and prepare for and review the class.

Grading criteria	Textbooks	References
Grades will be determined based on a report after after the course at the National Institute of Health Sciences.	Refer to the class outline published by the National Institute of Health Sciences.	Refer to the class outline published by the National Institute of Health Sciences.
	Materials	Remarks
	Refer to the class outline published by the National Institute of Health Sciences.	The training courses conducted by the National Institute of Health Sciences are originally intended for local government employees. Therefore, graduate students may not necessarily be able to take the training or courses they desire if they do not meet the course requirements or if there is a limit to the number of students who can take the course.

Subject	Introduction to Research Methodology (Literature Review, Preparation of Presentation, Ethics in Research)	Prof. Yukari Takemi* Prof. Kazuhiko Yamada	Compulsory	Selective	1 credit
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Course goals and Course summary

The goal of this course is to master basic knowledge and skills necessary to conduct research in the nutrition and health science fields. Specifically, students will 1) understand ways to search and utilize literature, 2) master basic presentation skills, and 3) understand guidelines regarding research ethics.

Course Summary

As basic items necessary to conduct research, students will master the following: 1) how to search domestic and foreign literature on prior research and prepare evidence tables, 2) basic presentation skills used in research seminars and academic meetings (i.e., how to use PowerPoint, speaking techniques), and 3) matters related to research ethics guidelines, application for the ethics review committee, and conflicts of interest.

Course Plan

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| <ul style="list-style-type: none"> 1. Literature search and usage 1: Database search and manual search (Takemi) 2. Literature search and usage 2: How to use databases such as PubMed and Medical Journal Web (Takemi) 3. Literature search and usage 3: Practice of creating evidence tables (Takemi) 4. Presentation skill 1: How to make PowerPoint presentations for research reports (Takemi) | <ul style="list-style-type: none"> 5. Presentation skills 2: How to speak and ask questions at research presentations, conferences, etc. (Takemi) 6. Research Ethics 1: Ethical Guidelines for Medical Research Involving Human Subjects and Other Ethical Guidelines (Yamada) 7. Research Ethics 2: Necessity of Application to the Ethics Review Committee and Conflict of Interest (COI) in Research |
|--|--|

Work to be done outside of class (preparation, etc.)

Participate in conferences and research meetings, and experience watching and listening to good presentations. As for ethics education, all graduate students are required to attend the CITI Japan Program.

Grading criteria	Textbooks	References
A comprehensive report will be required based on study of the three parts (literature search and utilization, presentation, and ethics education). Grades will be determined based on the report (60%) and class participation (40%).	N/A	References will be introduced as needed.
	Materials	Remarks
	Materials will be distributed in each class.	All master's course students are required to take this course. Doctoral students who have entered from other graduate schools are also encouraged to attend.

Subject	Comprehensive Lectures on Nutrition	Kazuhiro Uenishi, Chief of the Nutrition Sciences Degree Program	Compulsory	<input checked="" type="checkbox"/>	Selective	1 credit
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Course goals and Course summary

The course aims to enable students to know various challenges on nutrition science, broaden their perspectives, and position their interest and research agendas in order to launch a research on nutrition science. Graduate students are expected to find their research themes from among various challenges on nutrition science, explore them, publish the results, and receive professional evaluation. In order to do so, they are firstly required to have sufficient expertise and understand new issues in each field of nutrition science. Each of all full-time professors of the Nutrition Science Degree Programs gives a 90-minute class once during the course and explains challenges on nutrition science, interdisciplinary/diversity of its methodology, and its future prospects based on their own research and activities. Students will be able to understand the whole picture of nutrition science and clarify the positioning of the themes they are going to work on in the respective specialized fields.

Course Plan

Part 1. Prof. Shigeo Tanaka; Advanced Lectures on Human Growth and Development Studies	Part 12. A/Prof. Masako Kimura; Physiology
Part 2. Prof. Shouji Shinkai; Nutrition for the Elderly	Part 13. Prof. Akiko Moriya; Food Culture Anthropology
Part 3. Prof. Terue Kawabata; Basic Nutrition.	Part 14. Prof. Rie Imoto; Environmental Education
Part 4. Prof. Kazuhiro Uenishi; Nutritional Physiology	Part 15. Prof. Teruyuki Usui; Food Analysis
Part 5. Prof. Keiko Honda; Medical Nutrition	Part 16. A/Prof. Masataka Saito; Food Material Development
Part 6. Prof. Hiromi Ishida; Nutrition Management	Part 17. Prof. Toshihide Nushimura; Food Functions
Part 7. A/Prof. Fumi Hayashi; Nutrition Education	Part 18. A/Prof. Keiko Shibata; Food Preparation Science
Part 8. Prof. Yukari Takemi, Community Nutrition	Part 19. Prof. Fumiko Konishi; Cookery & Dietary Life
Part 9. Prof. Nobuko Endo; Health Management at school	Part 20. Prof. Yasuo Kagawa; Aging Biochemistry
Part 10. Prof. Akiko Fukushima; Molecular Nutrition	Part 21. Summary
Part 11. Prof. Kazuhiko Yamada; Biochemistry	

Work to be done outside of class (preparation, etc.)

Review what you have learned in each teacher's class and summarize it briefly. Submit a report at the end of class.

Grading criteria	Textbooks	References
Grades will be determined based on a summary report after each class.		
	Materials	Remarks
		N/A

Subject	Comprehensive Seminars on Nutrition	Prof. Kazuhiro Uenishi A/Prof. Fumi Hayashi	X	Compulsory	2	Selective	credit
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Course goals and Course summary

Students aim to deepen and broaden their understanding of nutrition science by discussing topics related to research themes and nutrition science. At the same time, they will improve their expertise and professional capability and develop the capacity to think theoretically. They will also learn knowledge and techniques to write master's theses and reports. They further aim to improve their academic presentation skills and develop the ability to lead and manage seminars.

Course Plan

The seminar will consist of the following three types. In the first semester, second-year students are in charge, and in the second semester, first-year students are in charge. The first semester is taught by second-year students, and the second semester by first-year students. The chairperson (facilitator) will also be a student, and this will serve as training in the skills of facilitating and coordinating a single session. The class will be held mainly on Wednesdays, but also on other days during 5th and 6th periods.

Type B seminar: A symposium or workshop-style seminar conducted mainly by students in the Advanced Human Resources Development Program (external lecturers are also planned). Students take the initiative in planning (setting themes, selecting external lecturers, etc.), organizing, and evaluating the seminar. Plan to hold one seminar per year (first year students in charge). The schedule will be decided through coordination.
C-type seminar: All second-year students give an interim report on their research. All 1st and 2nd year students are expected to participate.

Work to be done outside of class (preparation, etc.)

For your own presentation, prepare the PowerPoint and handouts well. For other students' presentations, read through the materials distributed in advance, understand the content of the presentation, and actively participate in the discussion.

Grading criteria	Textbooks	References
Grades will be determined comprehensively based on the content of their presentations in class and their participation in discussions.		
	Materials	Remarks