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SYLLABUS

(English)

NIIGATA UNIVERSITY

Graduate School of Medicine, Dentistry and Health Sciences

Doctoral Program of Medicine and Dentistry

Dental Program

Day Course

Period	Time
1 st period	8 : 4 5 ~ 1 0 : 1 5
2 nd period	1 0 : 3 0 ~ 1 2 : 0 0
3 rd period	1 3 : 0 0 ~ 1 4 : 3 0
4 th period	1 4 : 4 5 ~ 1 6 : 1 5
5 th period	1 6 : 3 0 ~ 1 8 : 0 0
6 th period	1 8 : 1 0 ~ 1 9 : 4 0
7 th period	1 9 : 4 5 ~ 2 1 : 1 5

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Statement of purpose

The Graduate School program focuses both on education and research in the field of advanced life sciences, incorporating the latest advancements in life science technology and responding to a wide range of medical challenges. The results of comprehensive research are applied to the development of medical treatment for the benefit of society.

The University seeks to train its students with a high sense of integrity and creativity, endeavoring to build a closer connection, not only with the local community, but also in a global society.

These goals implement the philosophy of the Graduate School:

In Education

1. Training a team of researchers who will expand the field of advanced life sciences
2. Generating medical discoveries that meet the needs of clinical disciplines
3. Equipping professionals to pursue academic activity and healthcare with medical and intellectual integrity
4. Affirming lifelong learning and re-entry into academic life by accepting persons in occupational undertakings, and with cooperation of the University of the Air, whose study center for delivering broadcast lectures, is located on the same campus.

Course Day

2026 Niigata University Graduate School of Medicine, Dentistry and Health Sciences
 Graduate School of Medical and Dental Sciences Academic Calendar

No Classes

Schedule Adjustment Days

() Exam Days

— Days for Make-Up Classes, etc.

First Semester

Second Semester

First Semester								Second Semester										
	Sun	Mon	Tue	Wed	Thu	Fri	Sat		Sun	Mon	Tue	Wed	Thu	Fri	Sat			
Apr.				<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	4/3 Entrance Ceremony	Oct.					<u>1</u>	<u>2</u>	<u>3</u>	10/1 Autumn Entrance Ceremony	
	5	6	7	8	9	10	11	4/8 Start Classes		4	5	6	7	8	9	10		
	12	13	14	15	16	17	18			11	12	13	14	15	16	17	10/2 Start Classes	
	19	20	21	22	23	24	25			18	19	20	21	22	23	24	10/13 Monday Classes	
	26	27	28	29	30					25	26	27	28	29	30	31		
May.						1	2	5/7 Monday classes	Nov.	1	2	3	4	5	6	7	11/6 Tuesday classes	
	3	4	5	6	7	8	9	5/8 Tuesday classes		8	9	10	11	12	13	14		
	10	11	12	13	14	15	16			15	16	17	18	19	20	21		
	17	18	19	20	21	22	23			22	23	24	25	26	27	28		
	24	25	26	27	28	29	30			29	30							
	31																	
Jun.		1	2	3	4	5	6	6/1 University Foundation Day	Dec.			1	2	3	4	5		
	7	8	9	10	11	12	13			6	7	8	9	10	11	12		
	14	15	16	17	18	19	20			13	14	15	16	17	18	19		
	21	22	23	24	25	26	27			20	21	22	23	24	25	26		
	28	29	30							27	28	29	30	31				12/27~1/6 Winter Vacation
Jul.				1	2	3	4		Jan.						1	2		
	5	6	7	8	9	10	11			3	4	5	6	7	8	9		
	12	13	14	15	16	17	18			10	11	12	13	14	15	16	1/14 Monday Classes	
	19	20	21	22	23	24	25			17	18	19	20	21	22	23	1/22 Monday Classes	
	26	27	(28)	29	(30)	(31)				24	25	26	27	28	29	30		
										31								
Aug.							1		Feb.		1	2	(3)	(4)	(5)	6		
	2	(3)	4	(5)	6	7	8	8/11~9/30 Summer Vacation		7	(8)	(9)	10	11	12	13		
	9	10	11	12	13	14	15			14	15	16	17	18	19	20		
	16	17	18	19	20	21	22			21	22	23	24	25	26	27		
	23	24	25	26	27	28	29			28								
	30	31																
Sep.			1	2	3	4	5		Mar.		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	6		
	6	7	8	9	10	11	12			7	8	9	10	11	12	13		
	13	14	15	16	17	18	19			14	15	16	17	18	19	20	3/11~3/31 Spring Vacation	
	20	21	22	23	24	25	26	9/24 Autumn Graduation Ceremony		21	22	23	24	25	26	27	3/23 Graduation Ceremony	
	27	28	29	30						28	29	30	31					
Number of Class Weeks	16	16	16	16	16			Number of Class Weeks	16	16	16	16	16	16				

Four-digits Number: Academic Field and Attained Level

Each subject is given 4-digits number which means Academic field (2 digits) and Attained level(2 digits).

Academic Field:

70 English 90 Basic Dentistry 91 Clinical Dentistry 92 Social Dentistry

Attained Level:

Tens place : 0 Open to all students 1 Open to only to the students of this course

Ones place : 1 Facilitating level 3 Basic level 4 Core level 5 Advanced level

< Chart of Academic Field and Standard >

Category			Four-digits number: Academic Field and Attained Level
Course Designated Subjects	Required subjects	Research Methods Doctor	9013
Common Program Subjects	Elective Required Subjects	Seminar for research and biostatistics	9211
		Academic Reading & Writing	7013
Specialized Program Subjects	Elective Subjects	Course works for basic dentistry	9013
		Course works for clinical dentistry	9113
		Integrated Lectures on Basic and Clinical Dentistry	Basic 9015 Clinical 9115
		Department Related Subjects	9014
			9114
			9214
			9015
			9115
9215			

* Please refer to the following URL

<http://www.iess.niigata-u.ac.jp/epc/eso/bunyasuijun.html>

Grade criteria

A passing grade is score of 60 or more out of 100.

Score	Grade	Standard
100~80	A	Meet high standards of attainment target
79~70	B	Meet standards of attainment target
69~60	C	Meet minimal standards of attainment target
59~0	D	Not meet minimal standards of attainment target

Course Requirements

The Course for Oral Life Science with new concept comprises the following two courses. Course for development of leaders has been established to develop researchers and leaders in the fields of dental and/or medical sciences. Another one, course for advancement in the main discipline focuses on education in the specialized field for general practitioners. Students are expected to take each of the above courses.

1. Course Requirements (a minimum of 30 credits including lectures, seminars and exercises)

- 1) Course Designated Subjects (Required 2 credits)
- 2) Common Program Subjects (a minimum of 4 credits)
- 3) Specialized Program Subjects (a minimum of 16 credits)

2. Advisors and Research Program

Students are supposed to belong to a certain research project, and then to take course works and specific seminars relevant to fundamental matter. After that, an advisory team consisting of one chief advisor and two supervisors is established and a research program is also determined.

3. Thesis and Evaluation

The system of “Doctoral Candidate” is applied in the Graduate School. Marks are given to students based upon their educational, research, (clinical) activities and self-learning. Students will have the privilege to submit thesis after obtaining grades determined.

Requirements for the PhD Degree

We can offer the doctoral degree medicine, dentistry, and academics. The PhD degree must be completed within a minimum of four years and following the completion of 30 graduate credit units in the program. Students must complete their doctoral dissertation and pass the final examination. Only students with a successful record of research will be able to complete their degrees within three years.

Course Designated Subjects
(Required Subjects)

Course Designated Subjects (Required Subjects)

Course	Page
Research Method Doctor (B)	7

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5002	1	Fri / 3, 4	2	9013	Lecture(including Zoom)・Practice
260W7002		Fri / 6, 7			
Course	Research Method Doctor (B)				
Instructor	Prof. Atsushi Ohazama (Div. Oral Anatomy) Prof. Kenji Izumi (Div. Biomimetics) Prof. Miho Terunuma (Div. Oral Biochemistry) Prof. Kazuhiro Horii (Div. Comprehensive Prosthodontics)				
Place	Intelligence Active Learning Classroom 2 (iALCL2) etc.				
<p>【Course outline】 As an independent researcher, students will learn the fundamental methodologies necessary throughout the entire research process: thoroughly understanding existing research findings in medical fields, conceiving their own research based on this understanding, developing concrete plans for its execution, conducting the research, and presenting the results at academic conferences and in papers.</p> <p>【Course aim】 Research related to healthcare varies significantly in methodology depending on its purpose and subject matter. However, the process of scientific research involves numerous common fundamental aspects that must be understood when conducting literature reviews, addressing ethical considerations, presenting findings, and writing papers. This course systematically covers these fundamental aspects while broadly exploring research methodologies specific to medical and healthcare research.</p> <p>【Attainment target】 Acquire the foundational skills to independently conduct literature reviews, develop research themes, evaluate ethical considerations, implement research, present at academic conferences, and write papers. Understand and practice the mindset and methodology essential for the minimum research activities required of an independent researcher in medical and healthcare-related fields.</p> <p>【Study method・attention】 In addition to in-person sessions, classes may also be conducted as real-time online sessions using Zoom or as video-streamed lectures. Students are expected to actively participate in discussions and other activities.</p> <p>【Use of Generative AI】 This course permits the conditional use of generative AI (such as ChatGPT, Gemini, etc.). When using such tools, please adhere to the following points:</p> <ol style="list-style-type: none"> 1. If utilized in reports or similar work, you must explicitly state which sections were generated, the purpose for which they were used (e.g., question prompts), and which specific AI tool was employed. 2. Do not use generated content verbatim; you must personally verify and amend the information for accuracy and appropriateness. 3. Students bear full responsibility for the final deliverable. 4. Any inappropriate use (including unauthorized usage or infringement of others' copyright) will be dealt with strictly in accordance with university regulations. 					

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	April 10	【Lecture】 Ethical considerations and ethical review	Details will be given in class.	Atsushi Ohazama, Kenji Izumi
2	April 17	【Lecture】 Reviewing literature	Details will be given in class.	Miho Terunuma, Kazuhiro Hori
3	April 24	【Lecture】 Necessity of research and identifying research topics	Details will be given in class.	Atsushi Ohazama, Kenji Izumi
4	May 1	【Lecture】 Research planning and design	Details will be given in class.	Miho Terunuma, Kazuhiro Hori
5	May 15	【Lecture】 Research methods; Morphological research	Details will be given in class.	Atsushi Ohazama, Kenji Izumi
6	May 22	【Lecture】 Research methods; Biochemical research	Details will be given in class.	Miho Terunuma, Kazuhiro Hori
7	May 29	【Lecture】 Research methods; Physiological research	Details will be given in class.	Miho Terunuma, Kazuhiro Hori
8	June 5	【Lecture】 Research methods; Anatomical research	Details will be given in class.	Atsushi Ohazama, Kenji Izumi
9	June 12	【Lecture】 Research methods; Epidemiology and cohort Studies	Details will be given in class.	Atsushi Ohazama, Kenji Izumi
10	June 19	【Lecture】 Research methods; International health science research	Details will be given in class.	Miho Terunuma, Kazuhiro Hori
11	June 26	【Lecture】 Research methods; Molecular biology	Details will be given in class.	Atsushi Ohazama, Kenji Izumi

12	July 3	【Lecture】 Research methods; Neurological research	Details will be given in class.	Miho Terunuma, Kazuhiro Hori
13	July 10	【Lecture】 Research methods; Academic presentation skills	Details will be given in class.	Atsushi Ohazama, Kenji Izumi
14	July 17	【Lecture】 Research methods; Writing a paper	Details will be given in class.	Miho Terunuma, Kazuhiro Hori
15	July 24	【Practice】 Presentations by student	Details will be given in class.	Atsushi Ohazama, Kenji Izumi
16	July 31	Summary and Examination	Details will be given in class.	Atsushi Ohazama, Kenji Izumi, Miho Terunuma, Kazuhiro Hori
<p>【Evaluation】 Based on in-class discussions, assignment practice, reports, presentation content, etc. (80%) and attitude assessment (20%).</p> <p>【Media】 Academic literature, etc., shall be indicated as appropriate.</p> <p>【Reference book】 References will be provided as appropriate.</p>				

Common Program Requirements
(Required Subjects)

Common Program Requirements (Required Subjects)

Course	Page
Seminar for research and biostatistics	11
Academic Reading & Writing I	14

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5103	2	MON/3-4	2	9211	Seminar
260W7103		Video library			
Course	Seminar for research and biostatistics				
Instructor	Prof. OGAWA Hiroshi (Div. Preventive Dentistry) Prof. NOHNO Kaname (Div. Oral Science for Health Promotion) Associate Prof. TAKEHARA Sachiko (Div. Preventive Dentistry) Assistant Prof. Kaung Myat Thwin (Div. Preventive Dentistry) Dr. KARAWEKPANYAWONG Raksanan (Mahidol University)				
Place	Intelligence Active Learning Classroom (iALC1)				
<p>【Course outline】 It is important to learn relevant statistical methods for the content of protocol (study design) to succeed in researches. This course is designed to provide theory in research preparation and statistical analysis as based on case study.</p> <p>【Course aim】 This course aims to provide basic statistical knowledge to cover several thematic units in research (aim/study design, method/ eligible criteria, sample allotment, endpoint and evaluation, statistical analysis).</p> <p>【Attainment target】 This course helps to give the students confidence in planning, practice and analysis in research.</p> <p>【Study method・attention】 Each of content will include a lecture component as based on scientific published papers and a group discussion component. Lecture materials will be suggested accordingly. Live special lecture will be delivered via Zoom online. Video library will be released at the day after each lecture. Further instructions will be guided during the course enrollment. In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the results yourself. When using generative AI, please check the "Niigata University Generative AI Usage Promotion Guidelines" before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.</p>					
【Plan】					
No.	Date	Contents	Preparing learning	Instructor	
1	October 13 3 period	Introduction - Validity of study design-	Lecture materials will be suggested accordingly	OGAWA Hiroshi	
2	October 19 3 period	Study design and protocol I	Lecture materials will be suggested accordingly	OGAWA Hiroshi	
3	October 19 4 period	Framing of study protocol, research questions (Group work)	Materials will be suggested accordingly	TAKEHARA Sachiko Kaung Myat Thwin	

4	October 26 3 period	Study design and protocol II	Lecture materials will be suggested accordingly	OGAWA Hiroshi
5	October 26 4 period	Constructing study protocol I (Group work)	Materials will be suggested accordingly	TAKEHARA Sachiko Kaung Myat Thwin
6	November 9 3 period	Structured abstracts and basic presentation	Lecture materials will be suggested accordingly	OGAWA Hiroshi
7	November 9 4 period	Constructing study protocol II (Group work)	Materials will be suggested accordingly	TAKEHARA Sachiko Kaung Myat Thwin
8	November 16 3 period	Basic statistics I (Standard Deviation, Standard Error, Normal distribution, Confidence interval, Hypothesis testing, P value)	Lecture materials will be suggested accordingly	NOHNO Kaname Kaung Myat Thwin
9	November 16 4 period	Exercise of statistics	Materials will be suggested accordingly	TAKEHARA Sachiko Kaung Myat Thwin
10	November 30 3 period	Basic statistics II (Univariate analysis, Multiple test, Multivariate analysis, Sample size and power)	Lecture materials will be suggested accordingly	NOHNO Kaname Kaung Myat Thwin
11	November 30 4 period	Exercise of statistics	Materials will be suggested accordingly	TAKEHARA Sachiko Kaung Myat Thwin
12	December 7 3 period	Case studies and critical thinking	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
13	December 7 4 period	Publication search/making evidence table and systematic review	Lecture materials will be suggested accordingly	TAKEHARA Sachiko Kaung Myat Thwin
14	December 14 3 period	Special lecture (via-Zoom online) Preparation for acting as PI	Lecture materials will be suggested accordingly	KARAWEKpanyawong Raksanan
15	December 14 4 period	Research ethics for scientific study Presentation and evaluation of study protocol	Lecture materials will be suggested accordingly	OGAWA Hiroshi
16, 17	December 21 3, 4 period	Presentation and evaluation of study protocol	Preparation for presentation	OGAWA Hiroshi TAKEHARA Sachiko

				Kaung Myat Thwin
<p>【Evaluation】 Evaluated by assignments and presentations (80%) and debates (20%). Absence will not be allowed. Students who watch video library will be required to submit all assignments to get the final score.</p> <p>【Media】 Textbooks will be indicated if required.</p> <p>【Reference book】 References will be indicated if required.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5101	1	Fri/1, 2	2	7013	Real-time online lessons using Zoom
Course	Academic Reading & Writing I				
Instructor	Prof. John E. Plagens (Japan Lutheran College)				
Place	Zoom				
Reading	<p>【Course outline】 Students will be introduced to the reading skills in the textbook. These will include scanning, skimming, context clues, and inferences.</p> <p>【Course aim】 Students find information from reading passages and become familiar with the rhetoric of English writing.</p> <p>【Attainment target】 Students can understand the rhetoric of English writing and identify topics and supporting ideas. Students can work with authentic material.</p> <p>【Study method・attention】 Skills will be introduced in class, to be reviewed by students in homework assignments. The limited class time requires students to be present each session. There will be a take-home test with a study sheet at the end of the first half.</p> <p>【Use of Generative AI】 The use of generative AI is comprehensively prohibited for any academic work in this course, including reports, examinations, or other assignments. Furthermore, materials distributed in the class may not be inputted into generative AI systems. All submitted work must be based solely on the student's personal knowledge and thinking. If any use of generative AI is confirmed, it will be considered a breach of academic standards and dealt with according to university regulations.</p>				
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	April 10	Introduction, vocabulary study, Part 2, Unit 1.	Details will be given in class.	John Plagens	
2	April 17	Scanning, Part 3, Unit 1.	Details will be given in class.	John Plagens	
3	April 24	Skimming, Part 3, Unit 6.	Details will be given in class.	John Plagens	
4	May 1	Meaning from Context, Part 2, Unit 3.	Details will be given in class.	John Plagens	
5	May 15	Making Inferences, Part 3, Unit 2.	Details will be given in class.	John Plagens	

6	May 22	Topics of Paragraphs	Text pp. 147-155.	John Plagens
7	May 29	Main Ideas of Paragraphs	Text pp. 156-	John Plagens
8	June 5	Free study period	Details will be given in class.	John Plagens

【Evaluation】

Attendance, homework assignments, and a take-home test.

The homework will comprise 70% of the grade; late homework will receive $\frac{1}{2}$. The take-home test will be 30% of the final grade.

【Media】

More Reading Power (3rd Edition, Longman) by Beatrice S. Mikulecky and Linda Jeffries. (approx. ¥4000)

Writing

【Course outline】

A comprehensive review of writing skills from the sentence level to paragraph and essay construction.

【Course aim】

Students acquire the writing skills necessary for composing a well written essay.

【Attainment target】

Students can understand the components of the English essay: introduction styles, thesis statements, supporting paragraphs, and concluding paragraphs. Also included will be outlining and self-editing.

Each student can make an essay at the end of the first half of the course.

【Study method・attention】

Attendance in class is required as there will be in-class writing practice. There will also be homework assignments each time. These will be submitted to the instructor by e-mail.

【Use of Generative AI】

The use of generative AI is comprehensively prohibited for any academic work in this course, including reports, examinations, or other assignments. Furthermore, materials distributed in the class may not be inputted into generative AI systems. All submitted work must be based solely on the student's personal knowledge and thinking. If any use of generative AI is confirmed, it will be considered a breach of academic standards and dealt with according to university regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	April 10	Introduction to sentence types, common errors in English writing.	Text, pp. 170-181	John Plagens
2	April 17	More on sentence types, introduction to the paragraph.	Text, pp. 182-187; pp. 2-9	John Plagens
3	April 24	Further studies on the paragraph.	Text, pp. 11-21	John Plagens
4	May 1	Unity and coherence in the paragraph.	Text, pp. 22-30	John Plagens
5	May 15	Introduction to logical connectors.	Text, pp. 31-39; Logical Order, pp. 40-41	John Plagens
6	May 22	Introduction to the essay.	Text, pp. 73-85	John Plagens

7	May 29	Outlining, essay unity.	Text, pp. 86-100	John Plagens
8	June 5	Free study period	Details will be given in class.	John Plagens

【Evaluation】

The essay and take-home tests will comprise 30% of the final grade. The homework is 70%.

【Media】

Writing Academic English (Fifth Edition), by Alice Oshima and Ann Hogue, Longman (approx. ¥4000)

【Reference book】

トップジャーナルに学ぶ センスのいい科学英語論文の書き方、プレゲンズ ジャン E、医学書院 (¥3740 円)

Reading

【Course outline】

Students will build on the reading skills acquired in the first half and continue using the textbook.

【Course aim】

Students understand common patterns of organization in reading as well as the logical connectors employed. Participants will be able to choose reading topics.

【Attainment target】

Students can acquire the ability to analyze authentic material for patterns of organization.

Students can gain an understanding of the organization of academic papers.

【Study method・attention】

Attendance at each session is absolutely necessary. There will be homework assignments each time. A final take-home test will be given.

【Use of Generative AI】

The use of generative AI is comprehensively prohibited for any academic work in this course, including reports, examinations, or other assignments. Furthermore, materials distributed in the class may not be inputted into generative AI systems. All submitted work must be based solely on the student's personal knowledge and thinking. If any use of generative AI is confirmed, it will be considered a breach of academic standards and dealt with according to university regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	June 12	Sentence patterns, Listing pattern, additive connectors.	Text, pp. 172-175	John Plagens
2	June 19	Sequence pattern, sequential connectors.	Text, pp. 175-178	John Plagens
3	June 26	Comparison/Contrast pattern, adversative connectors.	Text, pp. 179-181	John Plagens
4	July 3	Cause/Effect pattern, causal connectors.	Text, pp. 181-184	John Plagens
5	July 10	Problem/Solution pattern, pattern review.	Text, pp. 184-186; pp, 187-188	John Plagens
6	July 17	Summarizing, Reading Longer Passages	pp. 194-	John Plagens
7	July 24	More on Summarizing	Details will be given in class.	John Plagens

8	July 31	Free study period	Details will be given in class.	John Plagens
<p>【Evaluation】 Attendance attitude, homework assignments, and final take-home test. The homework will comprise 70% of the grade; late homework will receive ½. The final take-home test will be 30% of the final grade.</p> <p>【Media】 More Reading Power (3rd Edition, Longman) by Beatrice S. Mikulecky and Linda Jeffries. (approx. ¥4000)</p>				
Writing				
<p>【Course outline】 Students will continue learning writing skills necessary for professional papers. The course will cover such topics as patterns of organization and the composition of abstracts and professional papers.</p> <p>【Course aim】 Students acquire the rhetoric and writing skills necessary for professional papers.</p> <p>【Attainment target】 Students can understand patterns of writing organization and rhetorical devices used in professional papers and reports. Authentic examples will be used for reference.</p> <p>【Study method・attention】 Attendance in class is required as there will be in-class writing practice. There will also be homework for each class; these assignments will be submitted by e-mail before the next class.</p> <p>【Use of Generative AI】 The use of generative AI is comprehensively prohibited for any academic work in this course, including reports, examinations, or other assignments. Furthermore, materials distributed in the class may not be inputted into generative AI systems. All submitted work must be based solely on the student's personal knowledge and thinking. If any use of generative AI is confirmed, it will be considered a breach of academic standards and dealt with according to university regulations.</p>				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	June 12	Interpreting and explaining graphs: Narration, Description, Exposition	Details will be given in class.	John Plagens
2	June 19	Ch. 5: Chronological Order: Process Essays	Chapter 5	John Plagens
3	June 26	Ch. 7: Comparison/Contrast Essays	Chapter 7	John Plagens
4	July 3	Ch. 6: Cause/Effect Essays	Chapter 6	John Plagens
5	July 10	Writing abstracts, summaries, and introductions: Ch. 3 Summarizing, the "Moves"	Chapter 3	John Plagens
6	July 17	Rhetorical organization of research papers; Analyzing Discussions	Details will be given in class.	John Plagens
7	July 24	Definitions in research: topics and terminology	Details will be given in class.	John Plagens
8	July 31	Free study period	Details will be given in class.	John Plagens

【Evaluation】

The essay and take-home tests will comprise 30% of the final grade. The homework is 70%.

【Media】

Writing Academic English (Fifth Edition), by Alice Oshima and Ann Hogue, Longman (approx. ¥4000)

【Reference book】

トップジャーナルに学ぶ センスのいい科学英語論文の書き方、プレゼンズ ジャン E、医学書院 (¥3740 円)

Specialized Program Subjects
(Course works for basic dentistry)

Specialized Program Subjects (Course works for basic dentistry)

Course	Page
Tissue Engineering Coursework	20
Basic course for morphological analysis	23
Basic course for orofacial function	25
Basic Course for Maxillofacial Anatomy	27
Basic Cell Biology	30
Basic oral pathology course	32
Ethics, Laws, and Regulations in Medical and Dental Sciences	34
International collaboration in the field of basic research	36

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5501	2	Thu, 6, 7	4	9013	Lecture and Practice
260W7501		Fri, 6, 7			
Course	Tissue Engineering Coursework				
Instructor	Prof. Kenji IZUMI (Div. Biomimetics)				
Place	A204 Alliance etc.				

【Course outline】

Cell culture technique is necessary to conduct biological and medical researches because the cell culture environment can be accurately controlled, and the observation of cells in vitro and handling cells can be simply done, compared with an animal study. Students in this wet laboratory course are instructed the minimum skills and knowledges that require for cell culture and will be able to obtain basic cell culture techniques.

【Course aim】

In this course, students will acquire the technique of primary cell culture obtained from human oral mucosa keratinocytes and fibroblasts. Furthermore, students will learn other techniques such as cell passage (subculture), cryopreservation and three-dimensional cell culture for organogenesis.

【Attainment target】

After this course, the students should be able to

- explain the advantages and disadvantages of cell culture.
- correctly handle cell culture vessels using aseptic techniques.
- dispense cell culture media as well as reagents.
- establish primary oral keratinocytes and fibroblasts culture.
- feed and passage cells.
- cryopreserve cells and develop a 3D in vitro model.

【Study method・attention】

- Prepare lab notes by your own.

Hair ties

Keep valuable jewelry at home

Wear closed toe shoes

No long flowing sleeves

- Course materials are provided prior to the class.

【Regarding the Use of Generative AI】

In this course, the use of generative AI is permitted under certain conditions. If students choose to use it, students must comply with the following guidelines:

1. Students may allow generative AI to read materials distributed in class; however, the most reliable source of information is the designated textbook. All submitted work must be based on students' own knowledge and independent reasoning.
2. Do not use AI generated content as is. Students must verify and revise the information to ensure its accuracy and appropriateness.
3. Full responsibility for the final submitted work rests solely with the students.
4. If inappropriate use is identified—such as using AI beyond the permitted scope or infringing on others' copyrights—strict measures will be taken in accordance with university regulations.

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/8 10/2	Introduction What is cell culture?	The details are instructed in the class.	Kenji Izumi
2	10/15 10/9	Cell culture equipment Cell culture supplies	The details are instructed in the class.	Kenji Izumi
3	10/22 10/16	Aseptic techniques Dispense culture media and reagents	The details are instructed in the class.	Kenji Izumi
4-6	10/29 11/5 11/12 10/23 10/30 11/13	Establishment of primary oral keratinocytes culture	The details are instructed in the class.	Kenji Izumi
7-9	11/19 11/26 12/3 11/20 11/27 12/4	Change culture medium and passage cells	The details are instructed in the class.	Kenji Izumi
10	12/10 12/11	Cryopreservation of cells	The details are instructed in the class.	Kenji Izumi
11	12/17 12/18	Establishment of primary fibroblasts culture	The details are instructed in the class.	Kenji Izumi
12-14	12/24 1/7 1/21 12/25 1/8 1/15	3D cell culture technology	The details are instructed in the class.	Kenji Izumi
15	1/28 1/29	Summary	Reviewing all previous coursework.	Kenji Izumi
16	2/4 2/5	Examination	Reviewing all previous coursework.	Kenji Izumi

【Evaluation】

The grade is evaluated by face-to-face oral and written examination regarding living cells cultured by each student (50% each)

【Media】

Original Cell Culture Manual is provided.

【Reference book】

I provide research papers if required.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5502	1	Thu / 1, 2	4	9013	Lecture • Practice
260W7502		Thu / 6, 7			
Course	Basic course for morphological analysis				
Instructor	Prof. Atsushi Ohazama (Div. Oral Anatomy) Assoc. Prof. Maiko Kawasaki (Div. Oral Anatomy) Assist. Prof. Katsushige Kawasaki (Ctr. Advanced Oral Science)				
Place	Oran Anatomy Lab				
<p>【Course outline】 Histological research requires for skills which involve tissue preparation, a variety of staining, observations with a light microscope as well as taking microphotographs. This course work aims to obtain knowledge and skills for several morphological techniques.</p> <p>【Course aim】 In this course, the students acquire preparing paraffin sections and performing hematoxylin-eosin and AZAN staining. Furthermore, they acquire basic immunohistochemical and in situ hybridization procedures.</p> <p>【Attainment target】 Students can fix animal tissues under suitable anesthesia. Students can prepare tissue section including paraffin, frozen and cryostat sections. Students can stain histological specimens. Students can perform basic immunohistochemistry. Students can perform basic <i>in situ</i> hybridization. Students can examine histologic sections using a digital light microscope.</p> <p>【Study method•attention】 The instruction will be done by the procedure indicated by our original text. Text will be provided in advance.</p> <p>【Use of Generative AI】 This course permits the conditional use of generative AI (such as ChatGPT, Gemini, etc.). When using such tools, please adhere to the following points: 1. If utilized in reports or similar work, you must explicitly state which sections were generated, the purpose for which they were used (e.g., question prompts), and which specific AI tool was employed. 2. Do not use generated content verbatim; you must personally verify and amend the information for accuracy and appropriateness. 3. Students bear full responsibility for the final deliverable. 4. Any inappropriate use (including unauthorized usage or infringement of others' copyright) will be dealt with strictly in accordance with university regulations.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	April 9	Guidance	Details will be given in class.	Atsushi Ohazama	
2	April 16	Holding animals and anesthesia	Details will be	Atsushi	

			given in class.	Ohazama
3	April 23	Summary of histological preparation	Details will be given in class.	Atsushi Ohazama
4	April 30	Fixation of animal and tissue	Details will be given in class.	Atsushi Ohazama
5	May 14	Extracting tissue	Details will be given in class.	Atsushi Ohazama
6	May 21	Preparation of paraffin sections	Details will be given in class.	Katsushige Kawasaki
7	May 28	Preparation of frozen sections	Details will be given in class.	Maiko Kawasaki
8	June 4	Hematoxylin-eosin staining	Details will be given in class.	Atsushi Ohazama
9	June 11	AZAN staining	Details will be given in class.	Atsushi Ohazama
10	June 18	Immunohistochemistry (fluorescence)	Details will be given in class.	Maiko Kawasaki
11	June 25	Immunohistochemistry (DAB development)	Details will be given in class.	Atsushi Ohazama
12	July 2	<i>In situ</i> hybridization (DIG probe) 1	Details will be given in class.	Atsushi Ohazama
13	July 9	<i>In situ</i> hybridization (DIG probe) 2	Details will be given in class.	Maiko Kawasaki
14	July 16	Observations and taking digital photos	Details will be given in class.	Katsushige Kawasaki
15	July 23	Discussion	Details will be given in class.	Katsushige Kawasaki
16	July 30	Summary and Examination	Details will be given in class.	Atsushi Ohazama, Maiko Kawasaki, Katsushige Kawasaki

【Evaluation】

Oral examination (100%)

【Media】

A Manual of Histologic Preparation edited by Div. Oral Anatomy

【Reference book】

We provide research papers if required.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5503	1	Thu/3, 4	4	9013	Lecture
260W7503		Thu/6, 7			
Course	Basic course for orofacial function				
Instructor	Prof. Kensuke Yamamura (Div. Oral Physiology) Associate Prof. Keiichiro Okamoto (Div. Oral Physiology)				
Place	Laboratory of Oral Physiology				
<p>【Course outline】 This lecture is designed to provide PhD students with an understanding of orofacial function from a physiological perspective. Specific topics are orofacial pain, mastication and swallowing. Students shall improve understanding of orofacial functions by reading recent research papers by correlating basic knowledge acquired during undergraduate years.</p> <p>【Course aim】 The aims of this course are to acquire the physiological knowledge of orofacial functions required for basic or clinical research in dentistry.</p> <p>【Attainment target】</p> <ul style="list-style-type: none"> ● Explain structures and functions of the trigeminal, facial and hypoglossal nervous system. ● Explain function and neural basis of orofacial somatosensory systems. ● Explain the neural mechanisms of orofacial pain. ● Explain control mechanisms of orofacial voluntary movements. ● Explain neural control mechanisms of masticatory movements. ● Explain neural control mechanisms of swallowing. <p>【Study method・attention】 Seminar and/or discussion style is employed. Students require sufficient preparations prior to each lecture. Although the face to face seminar is held; however, the on-line lecture/seminar (real time) with the Zoom could be possible when necessary.</p> <p>【Regarding the use of Generative AI】 In this course, the use of generative AI is permitted under certain conditions. If you choose to use it, you must comply with the following rules: 1) When you use generative AI for reports or other assignments, you must state which parts were generated, for what purpose, and which AI system was used. 2) You must not use the generated content as is; you are required to verify and, if necessary, correct its accuracy and appropriateness on your own. 3) The student bears full responsibility for the final submitted work. 4) If inappropriate use is identified, strict action will be taken in accordance with the university regulations.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/9	Guidance	N. A.	Yamamura, Okamoto	
2	4/16	Structure and function of the trigeminal nervous system	Organizing the main points of the materials distributed at the class	Yamamura	

3, 4	4/23 4/30	Orofacial sensory systems (Overview)	Organizing the main points of the materials distributed at the class	Okamoto
5	5/14	Orofacial pain	Read the research article introduced at the class	Okamoto
6, 7	5/21 5/28	Pathophysiology of orofacial pain	Read the research article introduced at the class	Okamoto
8, 9	6/4 6/11	Orofacial motor systems (Overview)	Organizing the main points of the materials distributed at the class	Yamamura
10	6/18	Facial and tongue movements	Organizing the main points of the materials distributed at the class	Yamamura
11, 12	6/25 7/2	Mastication	Read the research article introduced at the class	Yamamura
13, 14	7/9 7/16	Swallowing	Read the research article introduced at the class	Yamamura
15	7/23	Conclusion and discussion	Review of previous classes	Yamamura, Okamoto
16	7/30	Examination	Review of previous classes	Yamamura, Okamoto
<p>【Evaluation】 Report and Examination (50%), Observation record during seminar (50%). The oral examination is conducted by face to face with the instructor.</p> <p>【Media】 N. A.</p> <p>【Reference book】 A journal article will be provided when needed.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5504	1	Wed/ 5 · 6	4	9013	practice
260W7504		Thu/ 6 · 7			
Course	Basic Course for Maxillofacial Anatomy				
Instructor	Prof. Hayato Ohshima (Div. Anatomy and Cell Biology of the Hard Tissue), ext. 2812, e-mail: histoman@dent.niigata-u.ac.jp Associate Prof. Hiroko Ida (Div. Anatomy and Cell Biology of the Hard Tissue), ext. 2813, e-mail: hyone@dent.niigata-u.ac.jp				
Place	Laboratory for Dissection				
<p>【Course outline】 It is necessary to integrate the anatomical knowledge learned at the undergraduate course for the clinical and investigative approaches in the field of maxillofacial anatomy. Especially, the understanding of maxillofacial anatomy from the clinical point of view is required for clinicians and researchers. This course provides the dissection program for head and neck regions for graduate students and focuses on the dissection practice using a cadaver.</p> <p>【Course aim】 The students shall learn the morphological features of maxillofacial regions in the human body and the spatial arrangement and relationship among their components such as organs, nerves, blood vessels, and so on.</p> <p>【Attainment target】</p> <ul style="list-style-type: none"> • The students can dissect sprahyoid, masseter, and temporal muscles and their associated nerves and blood vessels, and explain their origin, insertion, innervation, vascular supply, and function. • The students can open mandibular canals and explain their course. • The students can dissect temporomandibular joints and their associated muscles, ligaments, nerves and blood vessels, and explain their structure and function. • The students can dissect submandibular, sublingual, and parotid glands and their associated ducts, nerves and blood vessels, and explain their structure, function and innervation. • The students can dissect trigeminal, facial, glossopharyngeal, vagus, accessory and sublingual nerves, and explain their components such as motor, sensory and ganglion. • The students can dissect nasal cavity, tongue and palate, and explain their structure, function, innervation, blood supply and paranasal sinus. • The students can open pterygopalatine fossa, and explain the associated nerves and blood vessels. <p>【Study method・attention】 The students have to study the manual for dissection beforehand and to study continuously during the practice for the improvement of the skill for dissection.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI (such as ChatGPT and Gemini) is permitted under certain conditions. If you choose to use it, please adhere to the following guidelines:</p> <ol style="list-style-type: none"> 1. If you use generative AI in reports or other assignments, you must clearly indicate which parts were generated, the purpose (such as the prompt used), and which AI tool was used. 2. Do not use the generated content as-is; you must verify and revise the information yourself to ensure its accuracy and appropriateness. 3. Students are solely responsible for the final deliverables. 4. If inappropriate use (such as use beyond the permitted scope or infringement of others' copyrights) is confirmed, strict disciplinary action will be taken in accordance with university regulations. 					

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1-2	4/8 class 5/6 or 4/9 class 6/7	Prone position: surface observation, decortication and 6 cutaneous nerves	Manual p. 9-15	Hayato Ohshima Hiroko Ida
3-4	4/15 class 5/6 or 4/16 class 6/7	Prone position: sternocleidomastoid muscle, and levator scapulae muscle	Manual p. 16-21	Hayato Ohshima Hiroko Ida
5-6	4/22 class 5/6 or 4/23 class 6/7	Supine position: surface observation, decortications, and cutaneous nerves	Manual p. 22-26	Hayato Ohshima Hiroko Ida
7-8	5/13 class 5/6 or 4/30 class 6/7	Supine position: platysma, digastric, mylohyoid, and neck muscles	Manual p. 27-47	Hayato Ohshima Hiroko Ida
9-10	5/20 class 5/6 or 5/14 class 6/7	Supine position: decortications, thyroid gland, and subclavian artery and vein	Manual p. 48-68	Hayato Ohshima Hiroko Ida
11-12	5/27 class 5/6 or 5/21 class 6/7	Prone position: head mutilation	Manual p. 69-76	Hayato Ohshima Hiroko Ida
13-14	6/3 class 5/6 or 5/28 class 6/7	No position: pharynx, masseter muscle, and temporal muscle	Manual p. 77-88	Hayato Ohshima Hiroko Ida
15-16	6/10 class 5/6 or 6/4 class 6/7	No position: mandibular canal, medial and lateral pterygoid muscle, temporomandibular joint, and submandibular gland	Manual p. 89-91	Hayato Ohshima Hiroko Ida
17-18	6/17 class 5/6 or 6/11 class 6/7	No position: mandibular canal, medial and lateral pterygoid muscle, temporomandibular joint, and submandibular gland	Manual p. 89-91	Hayato Ohshima Hiroko Ida
19-20	6/24 class 5/6 or 6/18 class 6/7	No position: mandibular nerve	Manual p. 89-91	Hayato Ohshima Hiroko Ida
21-22	7/1 class 5/6 or 6/25 class 6/7	No position: orbit, eyeball, inner ear, and nasal cavity	Manual p. 94-100	Hayato Ohshima Hiroko Ida
23-24	7/8 class 5/6 or 7/2 class 6/7	No position: pharynx, tongue, and palatine	Manual p. 101-103	Hayato Ohshima Hiroko Ida
25-26	7/15 class 5/6 or 7/9 class 6/7	No position: pterygopalatine fossa	Manual p. 104-107	Hayato Ohshima Hiroko Ida

27-28	7/22 class 5/6 or 7/16 class 6/7	No position: cranial nerves	Manual p.104-107	Hayato Ohshima Hiroko Ida
29-30	7/29 class 5/6 or 7/23 class 6/7	Summary and Examination		Hayato Ohshima Hiroko Ida

【Evaluation】

Comprehensive evaluation to assess whether the students have achieved attainment targets or not is performed by both oral test (30%) and report (70%) including attitude at the practice.

【Media】

The manual for dissection will be distributed beforehand.

【Reference book】

- ・ 口腔解剖学 1 骨学：上條雍彦著（アナトーム社）定価 9,800 円
- ・ 口腔解剖学 2 筋学：上條雍彦著（アナトーム社）定価 9,000 円
- ・ 口腔解剖学 3 脈管学：上條雍彦著（アナトーム社）定価 9,600 円
- ・ 口腔解剖学 4 神経学：上條雍彦著（アナトーム社）定価 9,900 円
- ・ 口腔解剖学 5 内臓学：上條雍彦著（アナトーム社）定価 9,700 円
- ・ 科学的根拠から学ぶインプラント外科学 ベーシック編：古賀剛人（クインテッセンス）定価 7,350 円
- ・ 科学的根拠から学ぶインプラント外科学 応用編：古賀剛人（クインテッセンス）定価 14175 円
- ・ 科学的根拠から学ぶインプラント外科学 偶発症編：古賀剛人（クインテッセンス）定価 11,550 円
- ・ 実習人体解剖図譜：浦 良治著（南江堂）定価 5,403 円
- ・ 分担解剖学 1（総説・骨学・靭帯学・筋学）第 11 版：森 於菟 / 小川 鼎三 / 大内 弘 / 森 富 著（金原出版）定価 9,765 円
- ・ 分担解剖学 2（脈管学・神経系）第 11 版：原著）平沢 興 原著、岡本 道雄 改訂（金原出版）定価 11,130 円
- ・ 分担解剖学 3（感覚器学・内臓学）第 11 版：小川 鼎三 原著、山田 英智 改訂、養老 孟司 著改訂（金原出版）定価 9,030 円
- ・ 日本人体解剖学（第 19 版）（全 2 冊）：金子丑之助原著（南山堂）上巻：定価 12,600 円、下巻：定価 10,500 円
- ・ 人体解剖学（第 42 版）：藤田恒太郎著（南江堂）定価 9,975 円
- ・ 解剖学アトラス：越智淳三訳（文光堂）定価 10,500 円
- ・ カラー人体解剖学 構造と機能：ミクロからマクロまで：FH マティーニ、MJ ティモンズ、MP マッキンリ著（西村書店）定価 7,800 円
- ・ グレイ解剖学原著第 2 版：塩田浩平、瀬口春道、大谷浩、杉本哲夫訳（エルゼビア・ジャパン）定価 10,500 円（税込）
- ・ グレイ解剖学アドレス原著第 1 版：塩田浩平訳（エルゼビア・ジャパン）定価 9,450 円
- ・ Susan Standring: Gray's Anatomy 40th edition, Elsevier, 2008, 25,473 yen.
- ・ あたらしい人体解剖学アトラス：佐藤達夫訳（メディカル・サイエンス・インターナショナル）定価 7,350 円
- ・ プロメテウス解剖学アトラス頭部／神経解剖学：坂井建雄、河田光博監訳（医学書院）定価 11,550 円
- ・ プロメテウス解剖学アトラス頸部／胸部／腹部・骨盤部：坂井建雄、大谷 修監訳（医学書院）定価 11,550 円
- ・ プロメテウス解剖学アトラス解剖学総論／運動器系：坂井建雄、松村穰児監訳（医学書院）定価 12,600 円
- ・ プロメテウス解剖学アトラス口腔・頭頸部第 2 版：阪井建雄、天野 修監訳（医学書院）定価 16,000 円
- ・ トートラ解剖学：小澤一史、千田隆夫、高田邦昭、依藤 宏監訳（丸善）定価 10,000 円
- ・ 解剖学カラーアトラス第 7 版：J. W. Rohen、横地千仞、E. Lutjen-Drecoll 共著（医学書院）定価 12,000 円
- ・ ネットー頭頸部・口腔顎顔面の臨床解剖学アトラス第 3 版：Neil S. Norton 著、前田健康監訳（医歯薬出版）定価 11,000 円

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5505	1	Mon/5-7	4	9013	lecture and practical
260W7505					
Course	Basic Cell Biology				
Instructor	Prof. Miho Terunuma, Assis. Prof. Takako Ichiki				
Place	Laboratory of Oral Biochemistry				
<p>【Course outline】 This course introduces the basic and advanced lab techniques in Cell Biology. It consists of lectures and practical laboratories. Up-to-date information will be obtained by discussing newly published research articles.</p> <p>【Course aim】 This laboratory-based course provides basic cell biology knowledge and techniques to young researchers.</p> <p>【Attainment target】 On successfully completing this course, students should be able to: (1) perform cell culture in mammalian cells (2) purify plasmids (3) perform transient transfection in mammalian cells (4) detect proteins using immunofluorescence and immunoblotting analysis</p> <p>【Study method・attention】 This course is based on lectures and practical laboratories.</p> <p>【Use of Generative Artificial Intelligence (AI)】 This course aims to help students develop practical skills in critically examining and effective use of generative AI. Its active use is recommended for brainstorming, research support, and logical structure verification.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	Apr 13	Orientation, Basic lecture of cell biology	The details are instructed in the class.	Terunuma M	
2	Apr 20	Preparation of LB medium, transformation	The details are instructed in the class.	Terunuma M	
3	Apr 27	Plasmid preparation	The details are instructed in the class.	Terunuma M	
4	May 7	Agarose gel electrophoresis	The details are instructed in the class.	Terunuma M	
5	May 11	Mammalian cell cultures (reagents, subculture, cell counting)	The details are instructed in the class.	Terunuma M	

6	May 18	Transfection protocols 1	The details are instructed in the class.	Terunuma M
7	May 25	Transfection protocols 2	The details are instructed in the class.	Terunuma M
8	June 1	Preparation of cell lysate	The details are instructed in the class.	Terunuma M
9	June 8	Protein assay	The details are instructed in the class.	Terunuma M
10	June 15	SDS-PAGE, Western blot 1	The details are instructed in the class.	Terunuma M
11	June 22	SDS-PAGE, Western blot 2	The details are instructed in the class.	Terunuma M
12	June 29	Gel staining after SDS-PAGE	The details are instructed in the class.	Terunuma M
13	July 6	Immunocytochemistry 1	The details are instructed in the class.	Terunuma M
14	July 13	Immunocytochemistry 2	The details are instructed in the class.	Terunuma M
15	July 27	Immunocytochemistry 3	The details are instructed in the class.	Terunuma M
16	Aug 3	Summary of program, oral presentation, examination	The details are instructed in the class.	Terunuma M

【Evaluation】

Oral presentation (60%) and oral examination (40%)

【Media】

Lab manual will be provided at the beginning of the course.

【Reference book】

Scientific research articles will be provided if required.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5506	1	Thursday/6-7	4	9013	Lecture (face-to-face class)
260W7506					
Course	Basic oral pathology course				
Instructor	Prof. Jun-ichi Tanuma, Assistant Prof. Manabu Yamazaki, Assistant Prof. Tatsuya Abé				
Place	Laboratory room of Division of Oral Pathology				

【Course outline】

Seminar on Basic oral pathology course is that it deals with the methodology for research on pathogenesis of oral and maxillofacial diseases from the aspect of molecular pathology. Modern trends in molecular biology technology which should be applied in pathological research on oral and maxillofacial diseases will be lectured.

【Course aim】

Student will understand the pathogenesis of oral and maxillofacial diseases, including their causative factors, molecular mechanism, clinical processes, and prognoses. Clinic-pathological aspects of their diagnostic criteria will be emphasized towards the end of their prevention and treatments.

【Attainment target】

Student will understand this course as follows;

- Understanding various clinical characteristics of oral and maxillofacial diseases.
- Distinguishing clinicopathological features for oral and maxillofacial diseases.
- Understanding possible pathogenetic processes of oral and maxillofacial diseases.
- Understanding clinical and pathological diagnostic issues on of oral and maxillofacial diseases.
- Understanding possible prevention strategies against of oral and maxillofacial diseases.

【Study method・attention】

Basic on this seminar will be conducted by lectures and discussions. To prepare for this seminar, students need to read reference textbooks and papers.

【Use of Generative AI】

The use of generative AI (e.g., ChatGPT, Gemini) is permitted on this course under the following conditions:

1. Clearly state where, for what purpose (including prompts), and which AI tool was used.
2. Do not use AI-generated content as it is; check and revise it for accuracy and appropriateness.
3. The student is fully responsible for the final submission.
4. Inappropriate use (e.g., unauthorized use or copyright infringement) will be handled strictly in accordance with the university regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	04/09	Guidance & Diseases of tooth and periodontal tissue 1	The details will be given in class	Jun-ichi Tanuma
2	04/16	Diseases of tooth and periodontal tissue 2	Textbook 1 pp67-97	Jun-ichi Tanuma
3	04/23	Diseases of oral mucosa 1	Textbook 1 pp239-256	Jun-ichi Tanuma

4	04/30	Diseases of oral mucosa 2	Textbook 1 pp239-256	Jun-ichi Tanuma
5	05/14	Diseases of oral mucosa 3	Textbook 1 pp239-256	Jun-ichi Tanuma
6	05/21	Diseases of salivary gland 1	Textbook 1 pp257-270	Tatsuya Abé
7	05/28	Diseases of salivary gland 2	Textbook 1 pp271-282	Tatsuya Abé
8	06/04	Diseases of salivary gland 3	Textbook 1 pp271-282	Tatsuya Abé
9	06/11	Diseases of odontogenic tissue 1	Textbook 1 pp196-211	Manabu Yamazaki
10	06/18	Diseases of odontogenic tissue 2	Textbook 1 pp196-211	Manabu Yamazaki
11	06/25	Diseases of odontogenic tissue 3	Textbook 1 pp196-211	Manabu Yamazaki
12	07/02	Diseases of jaw and temporomandibular joint 1	Textbook 1 pp212-238	Manabu Yamazaki
13	07/09	Diseases of jaw and temporomandibular joint 2	Textbook 1 pp212-238	Manabu Yamazaki
14	07/16	Diseases of mesenchymal soft tissue 1	Textbook 1 pp212-238	Tatsuya Abé
15	07/23	Diseases of mesenchymal soft tissue 2	Textbook 1 pp212-238	Tatsuya Abé
16	07/30	Examination	The details will be given in class	Jun-ichi Tanuma

【Evaluation】

Examination (30%), Handing in papers (30%) and oral examinations (40%).

【Media】

Textbook 1: New Oral Pathology (3rd ed.) (Ishiyaku Pub., Inc.) 11,000 yen

Textbook 2: Basic Pathology for Dental Students (1nd ed.) (Ishiyaku Pub., Inc.) 11,000 yen

【Reference book】

Basic Pathology for Dental Students (1st ed.) (Ishiyaku Pub., Inc.) 10,000 yen

【Reference website】

Div. of Oral Pathology HP: <http://www5.dent.niigata-u.ac.jp/~opatho/>

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5507	1	Tue/4, 5	4	9013	Lecture • Seminar
260W7507					
Course	Ethics, Laws, and Regulations in Medical and Dental Sciences				
Instructor	Prof. Yutaka Terao (Division of Microbiology and Infectious Diseases) Assistant Prof. Satoru Hirayama (Division of Microbiology and Infectious Diseases)				
Place	Room E418				
<p>【Course outline】 This course deals with the essential knowledge in laws and regulations for Medical and Dental Sciences to understand the ethical considerations as a scientist.</p> <p>【Course aim】 The aim of this course is to acquire fundamental knowledge of laws and regulations for the Medical and Dental researchers, and then to learn and understand the responsibilities as a scientist.</p> <p>【Attainment target】 (1) Describe the important points and explain the responsibilities to promote research. (2) Describe the ethical considerations as a scientist and explain the compliance with laws and regulations. (3) Practice the laws and regulations for the Medical and Dental Sciences.</p> <p>【Study method•attention】 In advance of this lesson, participants should read and understand the below textbook and references. Depending on the number of the students, we may perform actual seminar and discussion. In this course, the use of generative AI is strictly prohibited for reports, exams, and other assignments. Furthermore, using generative AI to read any materials distributed in class is also prohibited. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.</p>					
【Plan】					
No.	Date	Contents	Preparation and Review	Instructor	
1	4/14	Responsibility of Scientists	Organize the main points	Yutaka Terao	
2	4/21	Responsible Research Activity	Organize the main points	Yutaka Terao	
3	4/28	Concept of Informed Consent	Organize the main points	Yutaka Terao	
4	5/12	Protecting Personal Information	Organize the main points	Yutaka Terao	
5	5/19	Purposes of Lab-Notes	Organize the main points	Satoru Hirayama	
6	5/26	Managing Lab-Notes and Data	Organize the main points	Satoru Hirayama	
7	6/2	Definition of Research Misconduct	Organize the main points	Satoru Hirayama	
8	6/9	Examples of Research Misconduct	Organize the main points	Satoru Hirayama	
9	6/16	Avoiding of Research Misconduct	Organize the main points	Satoru Hirayama	
10	6/23	Genetic Recombination Experiment	Organize the main points	Satoru Hirayama	

11	6/30	Detailed Regulations for Genetic Recombination Experiment 1	Organize the main points	Satoru Hirayama
12	7/7	Detailed Regulations for Genetic Recombination Experiment 2	Organize the main points	Satoru Hirayama
13	7/14	Detailed Regulations for Genetic Recombination Experiment 3	Organize the main points	Satoru Hirayama
14	7/21	Detailed Regulations for Genetic Recombination Experiment 4	Organize the main points	Satoru Hirayama
15	7/28	Examination	Keyword organization	Satoru Hirayama
16	8/4	Conclusion and Discussion	Exam question review	Yutaka Terao

【Evaluation】

Written Examination 50%

Discussion and Debate 50%

【Media】

For the Sound Development of Science –The Attitude of a Conscientious Scientist–. (Japanese book ¥990 / English PDF

https://www.jsps.go.jp/j-kousei/data/rinri_e.pdf)

【Reference book】

The research paper using in the lecture will be distributed in each practice.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5508	Any time	Any time	4	9015	Lecture, Seminar, Practice
Course	International collaboration in the field of basic research				
Instructor	Prof. OGAWA Hiroshi (Div. Preventive Dentistry)				
Place	Basic research laboratories in the foreign countries				
<p>【Course outline】 This course is intended as a complement to the current graduate school dental curriculum to promote and engage in basic research by enrolling students, for a certain period of time, in oversea laboratories in order to understand, train and develop advanced research. The students of this course are expected not only to continue their research activities after their return, but also to expand their international research network and contribute to the development of dental research. After returning, students are required to present the research results obtained in the international laboratories at academic meetings and submit academic reports. The duration of the travel and the research activities, shall be not less than 3 months and not more than 12 months.</p> <p>【Course aim】 By enrolling in this course, the following outcomes are expected.</p> <ol style="list-style-type: none"> 1. Improve communication skills in English, especially in the discussion of research topics. 2. A deeper understanding of basic research 3. Improve oral presentation skills in English 4. A better understanding of international research environments and the management system of the facilities. 5. Be able to objectively evaluate the research environment in your country <p>【Attainment target】</p> <ol style="list-style-type: none"> 1. Research communication and mutual understanding in English. 2. Active involvement in basic research projects. 3. Make oral presentations in English. 4. Compare your research environment with research environments in other countries. 5. Explain the managements system of the research facilities in other countries. 6. Evaluate the research environment in your country. <p>【Study method・attention】 Since students will actually enroll in an international basic research laboratory for a period of time, please take note and carefully consider the following points.</p> <ol style="list-style-type: none"> 1. Communicate actively and positively in English. 2. Actively participate in all basic research activities during your stay. 3. Have a detail discussion with the person in charge of the laboratory in which you will be enrolled in advance. 4. Constantly check and collect all the information available in the home-page of the Ministry of Foreign Affairs. 5. Register the travel period of time and travel destination at the “Ministry of Foreign affairs registration office” . <p>In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the results yourself. When using generative AI, please check the “Niigata University Generative AI Usage Promotion</p>					

Guidelines” before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.

【Plan】

No.	Date	Contents	Preparing learning	Instructor
1	Any time	Enrollment in a research laboratory overseas to engage in basic research.	Preliminary survey and meetings with foreign dental	Supervisors in Niigata/on-site

【Evaluation】

After returning to Japan, the results of the research activities conducted at the overseas basic research laboratories must be presented in a detailed report. This report will be evaluated by the Graduate School of Medicine and Dentistry Comprehensive Studies, Dental School Affairs Committee Members, and determine if the expected outcomes corresponding to overseas traveling period has been obtained. In addition, the results must be presented at an academic meeting within six months of returning home.

If the above two points are met, it will be certified as a credit for the fiscal year corresponding to the date of the presentation at the academic meeting.

【Media】

Appropriate academic literature and text books related to basic research methods will be designated.

【Reference book】

Appropriate scientific literature will be designated.

Specialized Program Subjects
(Course works for clinical dentistry)

Specialized Program Subjects (Course works for clinical dentistry)

Course	Page
Course for Basic Global Oral Health	39
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Course Work of Pediatric Dentistry	45
Clinical Prosthodontics	47
Basics in Prosthodontics	49
Course work related to Oral and Maxillofacial Surgery	51
Course work related to periodontology	54
A Basic Course for Clinical Orthodontics	56
Course for functional evaluation of stomatognathic system	59
Course work of comprehensive prosthodontics	61
Seminar on Diagnosis, Treatment and Postoperative Evaluation of Oral and Maxillofacial Diseases	64
Dental Radiology Course Work	66
Basic science course for pain	69

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5601	1	TUE/2	4	9113	Lecture
260W7601		TUE/7			
Course	Course for Basic Global Oral Health				
Instructor	Prof. OGAWA Hiroshi (Div. Preventive Dentistry) Assistant Prof. Kaung Myat Thwin (Div. Preventive Dentistry)				
Place	Seminar room (Div. Preventive Dentistry)				
<p>【Course outline】 Oral and craniofacial diseases and disorders are amongst the most common health problems in all regions of the world. This course work aims to provide knowledge for global oral health promotion as based on the WHO Global Oral Health Programme, and train its policy in a global sense.</p> <p>【Course aim】 This course will cover several thematic units (basic philosophy, epidemiology of oral diseases, etiologies of oral disease, social and culture risk factors, prevention of oral disease in public health). It is also excellent preparation for the WHO Global Oral Health Internship Programme.</p> <p>【Attainment target】 This course is designed to help English skills in the international dentistry. The aim is to give the students confidence to discuss, present and write papers about global oral health in English.</p> <p>【Study method・attention】 In this tutorial, each of content will include a lecture component and a group discussion component. The students will not be permitted to apply the WHO Global Oral Health Internship Programme unless fulfill course requirement. Lecture materials will be provided prior to each lecture. In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the results yourself. When using generative AI, please check the "Niigata University Generative AI Usage Promotion Guidelines" before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.</p>					
A・B		【Plan】			
No.	Date	Contents	Preparing learning	Instructor	
1	April 14	Introduction of global health, policy and management	Lecture materials will be suggested accordingly	OGAWA Hiroshi	
2	April 21	Ethics and decision making	Lecture materials will be suggested accordingly	OGAWA Hiroshi	
3	April 28	Basic statistics in global health	Lecture materials will be suggested accordingly	OGAWA Hiroshi	
4	May 8	Global oral epidemiology	Lecture materials	OGAWA Hiroshi	

			will be suggested accordingly	
5	May 12	Epidemiological research methods	Lecture materials will be suggested accordingly	OGAWA Hiroshi
6	May 19	Assessment form and criteria, questionnaires and interviewing	Lecture materials will be suggested accordingly	OGAWA Hiroshi
7	May 26	Global trend of dental caries prevalence	Lecture materials will be suggested accordingly	OOGAWA Hiroshi Kaung Myat Thwin
8	June 2	Global trend of periodontal disease prevalence	Lecture materials will be suggested accordingly	OGAWA Hiroshi Kaung Myat Thwin
9	June 9	Global trend of oral cancer/precancer prevalence etc	Lecture materials will be suggested accordingly	OGAWA Hiroshi Kaung Myat Thwin
10	June 16	Global Oral Health Information System	Lecture materials will be suggested accordingly	OGAWA Hiroshi Kaung Myat Thwin
11	June 23	Global trend of fluoride application	Lecture materials will be suggested accordingly	OGAWA Hiroshi
12	June 30	Non communicable diseases and oral health	Lecture materials will be suggested accordingly	OGAWA Hiroshi
13	July 7	Common risk factors: Tobacco, Free sugars etc	Lecture materials will be suggested accordingly	OGAWA Hiroshi
14	July 14	Communicable diseases and oral health	Lecture materials will be suggested accordingly	OGAWA Hiroshi
15	July 21	Implementation of global oral health promotion	Lecture materials will be suggested accordingly	OGAWA Hiroshi Kaung Myat Thwin
16	July 28	Summary and examination	Review the course	OGAWA Hiroshi Kaung Myat Thwin

【Evaluation】

Evaluated by debates (20%), assignments (50%) and presentations (30%).

【Media】

WHO World Oral Health Report, etc WHO publications.

【Reference book】

References will be indicated if required.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5602	1	Thu/6, 7	4	9113	Lectures, demonstrations, and laboratory practices
260W7602					
Course	Course for Practical Clinical Endodontics				
Instructor	Prof. Yuichiro Noiri (Div. of Cariology, Operative Dentistry & Endodontics) Associate Prof. Shouj Takenaka (Div. of Cariology, Operative Dentistry & Endodontics) Lecture Prof. Naoto Ohkura (Div. of Cariology, Operative Dentistry & Endodontics)				
Place	Laboratory at the Div. Cariology, Operative Dentistry & Endodontics, Simulation laboratory (3F) and Clinic of Operative Dentistry & Endodontics				
<p>【Course outline】</p> <p>This course provides a combination of both the practical and theoretical essentials of advanced endodontic treatment required for students who wish to extend knowledge and skills in endodontics and/or to become an accredited specialist in this discipline. The program is comprised of (i) lectures on contemporary endodontics, (ii) demonstrations and lab exercises to acquire clinical skills, and (iii) seminars to develop a critical appreciation of the relevant literature and give an introduction to research methodology.</p> <p>【Course aim】</p> <p>In this course, students wishing to offer patients specialized endodontic treatment learn the principles of the state-of-the-art in endodontics and receive training on specialized treatment techniques under simulated conditions.</p> <p>【Attainment target】</p> <p>After completing this course, the student should be able to:</p> <ol style="list-style-type: none"> 1. Describe an outline of current progresses in the art and science of endodontics. 2. Describe objectives, indication and techniques regarding the use of operating microscope in non-surgical endodontic treatment. 3. Operate the microscope for non-surgical endodontic treatment under simulated condition. 4. Describe techniques for shaping canals using NiTi rotary instruments. 5. Discuss current topics in root canal irrigation. 6. Prepare simulated canals and extracted teeth with NiTi rotary instruments and evaluate resulting canal shape. 7. Discuss current topics in root canal obturation. 8. Obturate root canals using different techniques. 9. Describe objectives, indication and techniques regarding the use of operating microscope in surgical endodontic treatment. 10. Operate the microscope for surgical endodontic treatment under simulated condition. <p>【Study method・attention】</p> <p>Lectures, demonstrations, and laboratory practices</p> <p>We will indicate learning contents and methods without lecture at the beginning of the course.</p>					

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	4/9	Introduction Trends and controversies in current endodontics	The details will be provided at the first lecture.	Yuichiro Noiri
2-4	4/16 4/23 4/30	Microendodontics 1. Non-surgical endodontic treatment - Objectives and indication - Usage of operating microscope and ultrasonic devices/instruments - Canal orifice location, broken instrument removal, perforation repair	Original handouts	Yuichiro Noiri Shouji Takenaka Naoto Ohkura
5-7	5/14 5/21 5/28	Chemomechanical root canal preparation - Ni-Ti rotary preparation - Current concepts in canal irrigation - Evaluation of canal preparation	Original handouts	Yuichiro Noiri Shouji Takenaka Naoto Ohkura
8-10	6/11 6/18 6/25	Microendodontics 2. Surgical endodontic treatment - Objectives, indication and techniques of endodontic microsurgery - Apicoectomy and retrofilling with MTA	Original handouts	Yuichiro Noiri Shouji Takenaka Naoto Ohkura
11-13	7/2 7/9 7/16	Microendodontics 2. Surgical endodontic treatment - Objectives, indication and techniques of endodontic microsurgery - Apicoectomy and retrofilling with MTA	Original handouts	Yuichiro Noiri Shouji Takenaka Naoto Ohkura
14, 15	7/23 7/30	Clinical attendance - microendodontics - Ni-Ti rotary preparation - Wormed gutta-percha techniques	Original handouts	Yuichiro Noiri Shouji Takenaka Naoto Ohkura
16	8/6	Examination & Seminar	Review	Yuichiro Noiri
<p>【Evaluation】 Oral examination (40%) Practical assessment (30%) Assessment of seminar presentation (30%)</p> <p>【Media】 Course manual; Practical Clinical Endodontics (Div. Cariology, Operative Dentistry & Endodontics)</p> <p>【Reference book】 Textbook of Endodontology 3rd ed. (Bergenholtz G <i>et al.</i>, Wiley-Blackwell, 2018) 16,252yen Pathways of the Pulp, 12th ed. (Cohen S and Hargreaves KM, Mosby Elsevier, 2021) 25,693yen</p> <p>【Regarding the Use of Generative AI】 This course permits the conditional use of generative AI tools (such as ChatGPT, Gemini, etc.). If you use them, please adhere to the following points:</p>				

1. If you use them in reports, etc., you must clearly state which part was generated, the purpose (e.g., question prompts), and which AI tool was used.
2. Do not use generated content verbatim; you must personally verify and revise the accuracy and appropriateness of the information.
3. Students bear full responsibility for the final deliverables.
4. Any inappropriate use (including unauthorized use or infringement of others' copyrights) will be strictly addressed in accordance with university regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5603	1	Fri 3,4	4	9113	Seminar
260W7603		Fri 6,7			
Course	Course Work of Pediatric Dentistry				
Instructor	Prof. HAYASAKI, Haruaki (Div. Pediatric Dentistry)				
Place	Seminar Room in Division of Pediatric Dentistry				
<p>【Course outline】</p> <p>Pediatric Dentistry is not a department for specific treatments, but for persons, i.e., children. The aim of dental treatment is to cure, habilitate and rehabilitate oral functions. Therefore, taking into this aim into consideration, understanding of growth and development are indispensable. The students are expected to grasp, especially the knowledge of general human and oro-facial growth, and oral functions.</p> <p>【Course aim】</p> <p>The course deals with 1) mandibular motion, 2) functions of the lip, 3) respiratory functions, 4) occlusal contacts in primary dentition, for better understanding of Pediatric Dentistry.</p> <p>【Attainment target】</p> <p>To explain general growth of human body. To explain oro-facial growth. To explain the development of oro-facial functions.</p> <p>【Study method・attention】</p> <p>Read and understand the prepared literatures thoroughly by yourself before every lecture, and join in the discussion actively on every lecture. Styles of class are lecture and group study.</p> <p>In this course, the use of generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions. When using generative AI, students must comply with the following guidelines:</p> <ol style="list-style-type: none"> 1. If generative AI is used for reports or other assignments, students must clearly state which parts were assisted by AI, the purpose of its use (e.g., the prompts or questions used), and which AI system was utilized. 2. Students must not use AI-generated content as-is; they are required to independently verify and, if necessary, revise the content to ensure its accuracy and appropriateness. 3. Students bear full responsibility for the final submitted work. 4. If inappropriate use is identified (including use beyond the permitted scope or infringement of others' intellectual property rights), strict action will be taken in accordance with university regulations. 					
【Plan】					
No.	Date	Contents	Preparation and Review	Instructor	
1	4/10	Outline of CWPD	The details are instructed during the course.	HAYASAKI Haruaki	
2	4/17	General Growth of Child (1)	Textbook1 pp150~183	HAYASAKI Haruaki	
3	4/24	General Growth of Child (2)	Textbook1 pp248~257	HAYASAKI Haruaki	

4	5/1	General Growth of Child (3)	Textbook1 pp412~422	HAYASAKI Haruaki
5	5/15	Growth of Oro-Facial Region (1)	Textbook1 pp184~199	HAYASAKI Haruaki
6	5/22	Growth of Oro-Facial Region (2)	Textbook1 pp258~278	HAYASAKI Haruaki
7	5/29	Growth of Oro-Facial Region (3)	Textbook1 pp423~459	HAYASAKI Haruaki
8	6/5	Mandibular Movement of Children (1)	Textbook1 pp566~574	HAYASAKI Haruaki
9	6/12	Mandibular Movement of Children (2)	Textbook1 pp575~585	HAYASAKI Haruaki
10	6/19	Evaluation of Lip Function	Textbook1 pp385~392	HAYASAKI Haruaki
11	6/26	Respiration of Children (1)	Textbook1 pp81~87	HAYASAKI Haruaki
12	7/3	Respiration of Children (2)	Textbook1 pp352~370	HAYASAKI Haruaki
13	7/10	Occlusal Contacts of Children (1)	Textbook1 pp379~384	HAYASAKI Haruaki
14	7/17	Occlusal Contacts of Children (2)	Textbook1 pp393~397	HAYASAKI Haruaki
15	7/24	Examination + summarization	Previous review.	HAYASAKI Haruaki

【Evaluation】

Oral test or written examination (50%) and report (50%).

【Media】

1. Textbook

(1) Pediatric Dentistry – Infancy Through Adolescence-. WB Saunders Company. ISBN 0-7216-4695-6.

【Reference book】

1. Reference Books

(1) Functional Occlusion. PE Dawson. MDP Company. ISGN 978-263-44313-2.

2. Reference Journals

(1) Pediatric Dentistry

(*Journal of American Academy of Pediatric Dentistry*)

(2) International Journal of Paediatric Dentistry

(*Journal of the British Society of Paediatric and the International Journal of Pediatric Dentistry*)

(3) Pediatric Dental Journal

(*International Journal of Japanese Society of Pediatric Dentistry*)

(4) The Journal of Clinical Pediatric Dentistry

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5604	1	Tue/6	4	9113	Lecture and seminar
260W7604					
Course	Clinical Prosthodontics				
Instructor	Masaru Kaku/Nami Akiba				
Place	C416 Refresh room				
<p>【Course outline】 Lectures will be given about the basics of clinical prosthodontics. There are several options to replace missing teeth including RPD, FPD and dental implants. To improve the prognosis of prosthodontic treatments, it's very important to diagnose and provide appropriate treatment plans to each patient. In this course, you will learn the basic of prosthodontics in the former half and we will discuss more concrete solutions of actual clinical cases in the latter half.</p> <p>【Course aim】 To provide appropriate prosthodontic treatments to the patients, you will learn the basics and clinical aspects of prosthodontics. You will also learn the knowledge required for prosthodontic specialist.</p> <p>【Attainment target】</p> <ol style="list-style-type: none"> 1. To explain prosthodontics terms. 2. To explain prosthodontic techniques 3. To enumerate the problems of actual patient cases. 4. To enumerate the options of prosthodontic treatments. 5. To explain the techniques concretely. <p>【Study method・attention】 Please prepare your actual and selected patients' information if possible. Necessary text will be provided prior to the lectures and please study these contents in advance.</p> <p>In this course, the use of generative AI tools is strictly prohibited for the completion of assignments. In addition, students are not permitted to upload any materials distributed during the course to generative AI systems. All assignments must be fully prepared by the student. Any confirmed use of generative AI will be regarded as academic misconduct and will be subject to strict disciplinary action in accordance with university regulations.</p>					
【Plan】					
No.	Date	Contents	Preparation and Review	Instructor	
1	4/7	Guidance	The details will be given in the lecture.	Akiba N	
2	4/14 4/21	Outline of Prosthodontics	Preparing learning with provided text.	Kaku・Akiba N	
3	5/8	Methodology of prosthodontics	Preparing learning	Kaku・Akiba	

	5/12 5/19 5/26 6/2		with provided text.	N
4	6/9 6/16 6/23 6/30 7/7 7/14	Case based discussion	Preparing learning with provided text.	Kaku·Akiba
5	7/21	Conclusion and examination	Review of previous lectures	Kaku

【Evaluation】

Scores will be given according to the attendance attitude (20%), quality of reports (40%) and oral examination (40%).

【Media】

To be announced during the course. The handout will be provided in each lecture.

【Reference book】

To be announced during the course.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5605	1	Wed/7	4	9113	Lecture • practice
260W7605					
Course	Basics in Prosthodontics				
Instructor	Assoc. prof. Masaru Kaku / Asst. Prof. Yujin Aoyagi				
Place	C412 Common Seminar Room				
<p>【Course outline】 Attendants will be expected to discuss and think about the selection of clinical options through reading clinical references. Several themes will be given each time in every 2 or 3 lectures and you will be required to seek related articles. Discussion will be held based on these references.</p> <p>【Course aim】 To provide appropriate prosthodontic treatments to the patients, you will learn the clinical aspects of prosthodontics.</p> <p>【Attainment target】 1. To find the appropriate references. 2. To read the English papers. 3. To summarize English papers. 4. To enumerate the options of prosthodontic treatments. 5. To explain the techniques concretely.</p> <p>【Study method•attention】 Please be ready to used PubMed or other databases. Necessary text will be provided prior to the lectures and please study these contents in advance.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/8	Guidance	The details will be given in the lecture.	Aoyagi	
2-4	4/15 4/22 5/13	Discussion on references 1	Select an interesting paper and discuss it.	Kaku/ Aoyagi	
5-7	5/20 5/27 6/3	Discussion on references 2	Select an interesting paper and discuss it.	Kaku / Aoyagi	
8	6/10	Conclusion of 1 and 2	Review and summary of 1 and 2.	Kaku / Aoyagi	
9-11	6/17 6/24 7/1	Discussion on references 3	Select an interesting paper and discuss it.	Kaku / Aoyagi	

12-14	7/8 7/15 7/22	Discussion on references 4	Select an interesting paper and discuss it.	Kaku / Aoyagi
15	7/29	Conclusion of 3 and 4	Review and summary of 3 and 4.	Kaku / Aoyagi
16	8/5	Examination	Evaluate the reviews and summaries.	Kaku / Aoyagi

【Evaluation】

Scores will be given according to the attendance (20%) and quality of reports (80%) that will be required occasionally.

【Media】

To be announced during the course.

【Reference book】

To be announced during the course.

【About the use of generative AI】

In this course, the use of generative AI (such as ChatGPT and Gemini) is conditionally permitted.

1. If you use generative AI, be sure to clearly state that fact.
2. Always verify and correct the accuracy and appropriateness of the generated content yourself, and take responsibility for the final output.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5606	1	Tue/5	4	9113	Lecture・Seminar・Practice
260W7606		Tue/6			
Course	Course work related to Oral and Maxillofacial Surgery				
Instructor	Associate Professor Hideaki Hirai.				
Place	Laboratory in Div. Oral and Maxillofacial Surgery.				
<p>【Course outline】 This seminar course deals with inflammation, cyst and fracture occurring in the oral and maxillofacial region. We study diagnosis, treatment and prevention of these diseases, and discuss on the prognosis of various surgical treatment techniques.</p> <p>【Course aim】 The course is designed to learn diagnostic methods, treatment planning and basic technique for a specialist of oral surgery.</p> <p>【Attainment target】 ① To explain the diagnosis and treatment of inflammations. ② To explain the diagnosis and treatment of cystic lesions. ③ To explain the diagnosis and treatment of fractures. ④ To master the basic technique of oral surgeries. ⑤ To explain the extraction of an impacted wisdom teeth and its complications. ⑥ To explain the alveolar ridge augmentation for dental implant. ⑦ To select and order some examinations for adequate diagnosis of oral disease. ⑧ To explain the pre- and post-surgical management of the patients with orofacial lesions.</p> <p>【Study method・attention】 Lecture: The guidance or this course Simulation: To master the basic technique of oral surgeries Patient practice: Managements of out and/or in patients at our clinic Presentation and discussion of some cases and reports by e-mail.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI is strictly prohibited in the preparation of reports, examinations, and all other assignments. In addition, all materials distributed in class must not be uploaded to or processed by generative AI tools. All submitted work must be created solely on the basis of the student's own knowledge and reasoning. If the use of generative AI is confirmed, it will be regarded as academic misconduct and will be dealt with strictly in accordance with university regulations.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/14	Guidance	The details are instructed in the class.	Hirai	
2	4/21	The diagnosis of the Inflammation and the infection	The details are	Hirai	

			instructed in the class.	
3	4/28	How to control the inflammation and the infection	The details are instructed in the class.	Hirai
4	5/8	Inflammation.	The details are instructed in the class.	Hirai
5	5/12	Diagnosis of the Cyst.	The details are instructed in the class.	Hirai
6	5/19	Treatment of the Cyst.	The details are instructed in the class.	Hirai
7	5/26	Diagnosis of the Fractur	The details are instructed in the class.	Hirai
8	6/2	Treatment of the Fracture..	The details are instructed in the class.	Hirai
9	6/9	Oral surgery concerning with teeth and alveolar bone.	The details are instructed in the class.	Hirai
10	6/16	Oral surgery concerning with teeth and alveolar bone.	The details are instructed in the class.	Hirai
11	6/23	How to extract an impacted wisdom teeth.	The details are instructed in the class.	Hirai
12	6/30	Complications association with a wisdom teeth extraction.	The details are instructed in the class.	Hirai
13	7/7	Alveolar ridge augmentation for dental implants (Bone graft).	The details are instructed in the class.	Hirai
14	7/14	Alveolar ridge augmentation for dental implants (Sinus lift).	The details are instructed in the class.	Hirai
15	7/21	Alveolar ridge augmentation for dental implants (Vertical alveolar distraction).	The details are instructed in the class.	Hirai

			class.	
16	8/4	Examination.	The details are instructed in the class.	Hirai
<p>【Evaluation】 Clinical presentation and report are main events of evaluation (70%), additionally questions and answers (30%) .</p> <p>【Media】 We indicate some guideline for Oral and Maxillofacial surgery.</p> <p>【Reference book】 We indicate research paper if required.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5607	1	Mon/3・4	4	9113	Lecture・Seminar
260W7607					
Course	Course work related to periodontology				
Instructor	Prof. Koichi Tabeta, Assistant Professor. Mayuka Nakajima.				
Place	Laboratory (E411) at Division of Periodontology, E4 Refresh room (E417)				
<p>【Course outline】 Periodontal diseases are multifactorial and inflammatory diseases. It is important to conduct the treatment following a comprehensive system based on a strategic treatment planning. The course is based on lectures and discussions about basic and practical knowledge for periodontal therapy.</p> <p>【Course aim】 The aim of this course is to learn basic and practical knowledge about etiology, emergency treatment, medical interview, basic periodontal examination, diagnosis, treatment planning, plaque control, scaling and root planing, drug therapeutics, occlusal adjustment, periodontal surgery, furcation treatment, splint, restorative therapy, maintenance and supportive periodontal treatment, and case presentation.</p> <p>【Attainment target】 Students will be able to 1) explain basic knowledge and concept for periodontal therapy. 2) explain the background and evidences related to key techniques for each periodontal treatment. 3) perform case presentation of periodontal therapy.</p> <p>【Study method・attention】 The basic knowledge will be provided by lecture and discussion. Students are required to read the reference books prior to the lesson.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/13	Etiology and symptom	Summary of handouts	Tabeta Nakajima	
2	4/20	Emergency treatment	Summary of handouts	Tabeta Nakajima	
3	4/27	Medical interview	Summary of handouts	Tabeta Nakajima	
4	5/7	Basic periodontal examination	Summary of handouts	Tabeta Nakajima	
5	5/11	Diagnosis	Summary of handouts	Tabeta Nakajima	
6	5/18	Treatment planning	Summary of handouts	Tabeta Nakajima	

7	5/25	Plaque control	Summary of handouts	Tabeta Nakajima
8	6/1	Scaling and root planning	Summary of handouts	Tabeta Nakajima
9	6/8	Drug therapeutics	Summary of handouts	Tabeta Nakajima
10	6/15	Occlusal adjustment	Summary of handouts	Tabeta Nakajima
11	6/22	Periodontal surgery	Summary of handouts	Tabeta Nakajima
12	6/29	Furcation treatment	Summary of handouts	Tabeta Nakajima
13	7/6	Splint, restorative therapy	Summary of handouts	Tabeta Nakajima
14	7/13	Maintenance and supportive periodontal treatment	Summary of handouts	Tabeta Nakajima
15	7/27	Case presentation, Summary Examination	Summary of handouts	Tabeta Nakajima

【Evaluation】

Reports (50%), Oral examination (50%)

【Media】

Original handouts and related research papers

【Reference book】

- Clinical Periodontology 4th edition (ISBN978-4-263-45701-6, Ishiyaku Publishers, Inc., 11,550yen)
- Regeneration (ISBN978-4-87417-881-2, Quintessence Publishing, 14,300yen)
- Dental Regenerative Medicine (ISBN978-4-263-45838-9, Ishiyaku Publishers, Inc., 16,500yen)

【Remarks】

Use of Generative AI:

In this course, the use of generative AI is strictly prohibited for reports, examinations, and any other assessment tasks. In addition, students are not permitted to upload or input any materials distributed in class into generative AI systems. All submitted work must be created based on the student's own knowledge and independent thinking. If the use of generative AI is confirmed, it will be regarded as academic misconduct and will be dealt with strictly in accordance with university regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5608	1	Wed/6, 7	4	9113	Lecture・Seminar・Practice
260W7608					
Course	A Basic Course for Clinical Orthodontics				
Instructor	Professor Jun Nihara (Div. Orthodontics) Assistant Prof. Yuko Oomori (Div. Orthodontics)				
Place	Seminar room for practice or cephalometric analysis, or orthodontic clinic				
<p>【Course outline】 This course work will offer lectures on orthodontic treatment concept, orthodontic diagnosis, and edgewise system in clinical orthodontics. The postgraduates taking this course will also have experiences in skills for cephalometric analysis, case analysis for various types of malocclusions, and wire bending.</p> <p>【Course aim】 This course work provides the students with fundamental knowledge and a part of skills for basic orthodontic management in dental practice and applying an accredited orthodontist.</p> <p>【Attainment target】 Participant(s) can;</p> <ul style="list-style-type: none"> • Explain orthodontic treatment concept • Explain methods for cephalometric analysis • Perform cephalometric tracing • Diagnose various types of malocclusions • Summarize the edgewise treatment • Perform basic wire bending including ideal arch wires <p>【Study method・attention】 Documents are supposed to be distributed at the beginning of each lecture. Participants will be required to read the textbook and/or references designated before attending. One of the objectives of this course is to practically develop skills for critically evaluating and effectively utilizing generative AI. Students may actively use it for purposes such as brainstorming, assisting with information gathering, and checking logical structure. However, if it is used, this must be clearly stated, and students are required to independently fact-check any generated information and take full responsibility for the final work produced.</p>					
【Plan】					
No.	Date	Contents	Preparation and Review	Instructor	
1	4/8	Orthodontic treatment concept 1	Read through distributed documents, and those related references	Nihara, Oomori	
2	4/15	Materials for orthodontic diagnosis	Read through distributed documents, and those related references	Nihara, Oomori	

3	4/22	Cephalometric analysis	Arrange and summarize documents distributed	Nihara, Oomori
4	4/30	Cephalometric tracing 1	Arrange and summarize documents distributed	Nihara, Oomori
5	5/13	Cephalometric tracing 2	Arrange and summarize documents distributed	Nihara, Oomori
6	5/20	Analysis and diagnosis in orthodontics	Read through distributed documents, and those related references	Nihara, Oomori
7	5/27	Growth and development in orthodontics 1	Read through distributed documents, and those related references	Nihara, Oomori
8	6/3	Growth and development in orthodontics 2	Read through distributed documents, and those related references	Nihara, Oomori
9	6/10	Case analysis for mandibular prognathism	Look through distributed materials for case analysis	Nihara, Oomori
10	6/17	Case analysis for maxillary protrusion	Look through distributed materials for case analysis	Nihara, Oomori
11	6/24	Surgical orthodontic treatment	Read through distributed documents, and those related references	Nihara, Oomori
12	7/1	Summary of edgewise system and adult orthodontic treatment	Read through distributed documents, and those related references	Nihara, Oomori
13	7/8	Wire bending exercise 1	Verify the method of bending wires	Nihara, Oomori
14	7/15	Wire bending exercise 2	Verify the method of bending wires	Nihara, Oomori

15	7/22	Overall discussion	Arrange problems pertaining to the course	Nihara, Oomori
16	7/29	Exam (interview)	Arrangement and understanding of contents provided in the course	Nihara, Oomori

【Evaluation】

The participant(s) will be assessed by reports submitted (40%), interviews for case analysis (40%) and practical products (20%) such as several wires bended or cephalometric tracings.

【Media】

The textbook of CONTEMPORARY ORTHODONTICS (5th edition; W. Proffit, ed., Mosby Year Book, Inc.) (15,108 yen including tax) and relevant papers in each content.

Orthodontics for Dental Students (13,000 yen+tax)

【Reference book】

Edgewise System Vol. 1 (42,000 yen + tax)

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5609	1	Mon/1	4	9113	Lecture, Practice
260W7609		Mon/6			
Course	Course for functional evaluation of stomatognathic system				
Instructor	Prof. Makoto Inoue (Div. Dysphagia Rehabilitation) Associate Prof. Takanori Tsujimura (Div. Dysphagia Rehabilitation)				
Place	Seminar room (C5F), Dysphagia Rehabilitation Clinic at 2F, Clinic for outpatients at 5F				
<p>【Course outline】 Human need not only teeth but also surrounding muscles and nerves to accomplish normal stomatognathic function. The students are expected to grasp the knowledge of evaluating the functions to diagnose whether they are normal or abnormal.</p> <p>【Course aim】 The course deals with the methodology for evaluation of stomatognathic function including mastication, swallowing, phonation and respiration.</p> <p>【Attainment target】 The students will correctly understand anatomy and physiology of mastication- and swallow-related organs. The students will appropriately explain the examination for evaluation of stomatognathic function.</p> <p>【Study method・attention】 The students have to do a preparation for a lecture using textbooks or any source materials needed. Full contents the students have to prepare in each time will be supplied at the first time.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/13	Guidance	Out-of-Class Study	Inoue, Tsujimura	
2, 3	4/20, 27	Neuroanatomy and physiology of ingestion; peripheral function	Read handout before lecture	Inoue, Tsujimura	
4-6	5/7, 11, 18	Neuroanatomy and physiology of ingestion; brainstem function	Read handout before lecture	Inoue, Tsujimura	
7-9	5/25, 6/1, 8	Neuroanatomy and physiology of ingestion; higher brain function	Read handout before lecture	Inoue, Tsujimura	
10-12	6/15, 22, 29	Electromyography (EMG); principle and technical issue	Read handout before lecture	Inoue, Tsujimura	
13-15	7/6, 13, 27	Technical issues and assessment of surface and needle EMG recordings	Read handout before lecture	Inoue, Tsujimura	
16	8/3	Examination (possible, on remote)	Read handout before examination	Inoue, Tsujimura	

【Evaluation】

Oral and written examination (50% for each)

【Media】

Handout supplied by Div. Dysphagia Rehabilitation

【Reference book】

Principles of Deglutition (Springer)

【Use of Generative AI】

In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5610	1	Tue. 1st-2nd Lec.	4	9113	Lecture Observation Exercise
260W7610		Tue. 6th-7th Lec.			
Course	Course work of comprehensive prosthodontics				
Instructor	Prof. Kazuhiro Hori (Div. Comprehensive Prosthodontics) Lecturer Yoko Hasegawa (Div. Comprehensive Prosthodontics)				
Place	C4 Seminar Room, Clinic of Comprehensive Prosthodontics				
<p>【Course outline】</p> <p>This course work includes the lecture, clinical case presentation and PBL, which provides knowledge for diagnosing functional problems such as masticatory, swallowing and articulatory disorders and for applying an adequate prosthodontic approach to patients with maxillofacial defect or systemic disease.</p> <p>【Course aim】</p> <p>Recent diversity of functional disturbance, physical condition and living environment of patients has made the conventional system of prosthodontics based on the type of prosthesis less effective in our hyper-aged society. This course work of “Comprehensive prosthodontics” is established for training the professional clinician and researcher who can develop the innovative prosthodontic approach based on the objective functional diagnosis.</p> <p>【Attainment target】</p> <ol style="list-style-type: none"> 1. To explain normal and abnormal aspect of mastication and swallowing. 2. To explain and perform the evaluation of masticatory function. 3. To explain the impact of masticatory and swallowing disorders on the quality of life. 4. To explain eating and communication disorders in oral cancer patients. 5. To explain the concept of removable denture designing. 6. To explain the morphological consideration of removable partial denture. 7. To explain the maintenance of removable denture in the long time course. 8. To explain the each appliance in the maxillofacial prosthetics. 9. To plan the application of prosthesis in the rehabilitation medicine. <p>【Study method・attention】</p> <p>Detail of preparation for each lecture will be shown in the first lecture. Students have to read recommended articles and textbook before the lecture.</p> <p>【Use of Generative AI】</p> <p>In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/14	From mastication to swallow; normal aspects	Book 1,2) Additional materials	Kazuhiro Hori	
2	4/21	How to assess mastication (1) objective assessment	Book 1,2) Additional materials	Kazuhiro Hori	

3	4/28	How to assess mastication (2) subjective assessment	Book 1,2) Additional materials	Kazuhiro Hori
4	5/8	How masticatory disability relates swallowing	Book 1,2) Additional materials	Kazuhiro Hori
5	5/12	Impact of masticatory-swallowing disability on QOL	Book 1,2) Additional materials	Yoko Hasegawa
6	5/19	Masticatory-swallowing-speech disability in post-surgical oral cancer patients	Book 3-5) Additional materials	Kazuhiro Hori
7	5/26	Concept of removal denture design (how to establish support, bracing and retention)	Book 6,7) Additional materials	Yoko Hasegawa
8	6/2	Concept of removal denture design (mucosal, polished and occlusal surface)	Book 6,7) Additional materials	Yoko Hasegawa
9	6/9	Long-term adjustment and repair of removable denture	Book 6,7) Additional materials	Yoko Hasegawa
10	6/16	Maxillofacial prosthetics (1) obturator prosthesis	Book 3-5) Additional materials	Kazuhiro Hori
11	6/23	Maxillofacial prosthetics (2) PAP and PLP	Book 3-5) Additional materials	Kazuhiro Hori
12	6/30	Maxillofacial prosthetics (3) facial prosthesis	Book 3-5) Additional materials	Kazuhiro Hori
13	7/7	PBL: Prosthodontic approach in physical rehabilitation (1)	Book 2,8,9) Additional materials	Kazuhiro Hori
14	7/14	PBL: Prosthodontic approach in physical rehabilitation (2)	Book 2,8,9) Additional materials	Kazuhiro Hori
15	7/21	Future research subjects	Additional materials	Kazuhiro Hori
16	7/28	Examination		Kazuhiro Hori

【Evaluation】

Written examination (50%) and report (30%)

Presentation in the problem based learning (20%)

【Media】

The related references will be distributed

【Reference book】

- 1) 『新よくわかる顎口腔機能』(医歯薬出版)
- 2) 『成人～高齢者向け 咀嚼機能アップ BOOK』(クインテッセンス出版)
- 3) 『口腔中咽頭がんのリハビリテーション』(医歯薬出版)
- 4) 『新版 摂食・嚥下機能改善と装置の作り方超入門』(クインテッセンス出版)
- 5) 『歯科医師のための構音障害ガイドブック』(医歯薬出版)
- 6) 『無歯顎補綴治療学 (第4版)』(医歯薬出版)
- 7) 『聞くに聞けない補綴治療 100』(デンタルダイヤモンド社)

- 8) 『嚥下障害の臨床』(医歯薬出版)
- 9) 『嚥下障害の臨床 実践編』(医歯薬出版)

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5611	1	Thu/4・5	4	9113	Lecture
260W7611		Thu/6・7			
Course	Seminar on Diagnosis, Treatment and Postoperative Evaluation of Oral and Maxillofacial Diseases				
Instructor	Professor Shigehiro Ono (Div. of Reconstructive Surgery for Oral and Maxillofacial Region), Associate Professor Kanae Niimi (Patient Support Center, Niigata University Medical and Dental Hospital)				
Place	Conference Room in Div. Reconstructive Surgery for Oral and Maxillofacial Region, Clinic of Oral and Maxillofacial Surgery				
<p>【Course outline】 This seminar is designed to learn diagnostic methods, treatment planning, techniques of surgeries, reconstruction of the tissue defect, and postoperative morphological and functional assessments for oral and maxillofacial diseases.</p> <p>【Course aim】 The aim of this course is to master basic knowledge and technique to diagnose, treat and evaluate oral and maxillofacial diseases as a specialist of oral and maxillofacial surgery.</p> <p>【Attainment target】</p> <ul style="list-style-type: none"> ・To collect necessary materials and data for adequate diagnosis of oral and maxillofacial diseases. ・To diagnose oral and maxillofacial diseases. ・To make a plan of treatment from the diagnosis. ・To explain techniques of oral and maxillofacial surgeries. ・To master basic techniques of oral and maxillofacial surgeries. ・To assist oral and maxillofacial surgeries and manage the patients. ・To make a postoperative assessment of surgical treatment. <p>【Study method・attention】 This cause consists of lecture using some documents, slides and moving images. Students have to do research beforehand using textbooks or any source materials. The contents of each preparation are presented at a first seminar.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/9	Guidance	Read Chapter 2 of the textbook before class	Ono S	
2	4/16	Clinical examination for diagnosis	Read Chapter 2 of the textbook before class	Ono S	
3	4/23	Diagnostic imaging	Read Chapter 2 of the textbook before class	Ono S	
4	4/30	Inflammation	Read Chapter 5 of the textbook before class	Niimi K	

5	5/14	Trauma	Read Chapter 4 and 8 of the textbook before class	Niimi K
6	5/21	Mucosal disease / disease of the salivary gland	Read Chapter 6 and 10 of the textbook before class	Niimi K
7	5/28	Temporomandibular joint disease	Read Chapter 9 of the textbook before class	Niimi K
8	6/4	Developmental anomalies	Read Chapter 3 of the textbook before class	Ono S
9	6/11	Benign tumor	Read Chapter 7 of the textbook before class	Niimi K
10	6/18	Malignant tumor	Read Chapter 17 of the textbook before class	Niimi K
11	6/25	Surgical treatment techniques	Read Chapter 13 of the textbook before class	Ono S
12	7/2	Reconstruction of the tissue defect	Read Chapter 14 and 15 of the textbook before class	Ono S
13	7/9	Dental implant therapy for the bone defect	Read Chapter 14 and 15 of the textbook before class	Niimi K
14	7/16	Transplantation of teeth	Read Chapter 14 and 15 of the textbook before class	Niimi K
15	7/23	Morphological and functional assessments	Read Chapter 21 of the textbook before class	Niimi K
16	7/30	Oral examination, Case Presentation	Prepare for case presentation of designated case, review past lessons	Ono S

【Evaluation】

Evaluated by grades of oral examination (50%) and case presentation (50%)

【Media】

白砂兼光・古郷幹彦編著「口腔外科学 第4版」医歯薬出版

【Reference book】

日本口腔外科学会 編「イラストでみる口腔外科手術 第1-3巻」クインテッセンス出版

・Use of generative AI is strictly prohibited.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5612	1	Fri/3・4	4	9113	Lecture・Practice
260W7612		Fri/6・7			
Course	Dental Radiology Course Work (Oral and maxillofacial diagnostic imaging)				
Instructor	Prof. Takafumi Hayashi (Div. Oral and Maxillofacial Radiology) Ass. Prof. Hideyoshi Nishiyama (Div. Oral and Maxillofacial Radiology)				
Place	Laboratory in Div. Oral and Maxillofacial Radiology				
<p>【Course outline】</p> <p>In the field of dental practice, it is essential to recognize the image features of normal anatomy and functions of the oral cavity. This course provides the basic principles and clinical application of the image analysis of the oral structure and function using various diagnostic imaging techniques.</p> <p>【Course aim】</p> <p>In this course, learners are expected to learn the basic principles of normal morphological and functional status of the oral structures using conventional x-ray, computed tomography (CT), dental cone-beam CT (CBCT), MR imaging, ultrasonography and positron emission tomography (PET).</p> <p>【Attainment target】</p> <ol style="list-style-type: none"> 1) To identify the basic principle of intraoral radiography and the normal anatomy. 2) To identify the basic principle of panoramic radiography and the normal anatomy. 3) To identify the basic principle of CT and the normal anatomy of hard tissue. 4) To identify the normal anatomy of soft tissues in oral cavity on CT. 5) To identify the basic principle of dental CBCT and the normal anatomy. 6) To identify the basic principle of MRI and the normal anatomy. 7) To identify the basic principle of ultrasonography and the normal anatomy. 8) To identify the basic principle of PET and the normal functional status. <p>【Study method・attention】</p> <p>Lecture (1st period) and practical course using various imaging modalities (2nd period). Formative evaluation: pre and posttest. Lecture download website is provided. Real-time online lecture using Zoom would be provided. Computer device and internet access environment are required. Web pages: https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/coursework/ https://www5.dent.niigata-u.ac.jp/~radiology/postgraduate/</p> <p>【Regarding the Use of Generative AI】</p> <p>In this course, the use of generative AI (e.g., ChatGPT, Gemini, etc.) is conditionally permitted. If you choose to use generative AI, you must comply with the following requirements: If generative AI is used in reports or other assignments, you must clearly indicate the portions where it was used, following standard citation practices. The name and version of the AI must be specified in the format: “with [Name of Generative AI] [Version]” (*1). Do not use the generated content without modification. You must independently verify and revise the accuracy and appropriateness of the information. The student bears full responsibility for the final submitted work (*2). If inappropriate use (such as use beyond the permitted scope or infringement of others’ copyrights) is identified, strict action will be taken in accordance with university regulations.</p> <p>*1. When necessary, attach a link to the generative AI output, including the prompt used.</p>					

*2. When using generative AI, you must recognize that its use is your own responsibility and carefully consider its potential impact on your future qualification examinations and on patient care.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	4/10	Guidance of the course and basic principles of intraoral radiography	Provision of the intraoral radiography	H. Nishiyama
2	4/17	Normal anatomy on intraoral radiography	Provision of the normal anatomy on intraoral radiography	H. Nishiyama
3	4/24	Basic principles of ultrasonography	Provision of the basic principles of ultrasonography	T. Hayashi
4	5/1	Normal anatomy on ultrasonographic images	Provision of the normal anatomy on ultrasonographic images	T. Hayashi
5	5/15	Basic principles of CT	Provision of the basic principles of CT	T. Hayashi
6	5/22	Basic principles of panoramic radiography	Provision of the panoramic radiography	H. Nishiyama
7	5/29	Normal anatomy on panoramic radiography	Provision of the normal anatomy on panoramic radiography	H. Nishiyama
8	6/5	Normal anatomy of hard tissues on CT images	Provision of the normal anatomy of hard tissues on CT images	T. Hayashi
9	6/12	Normal anatomy of soft tissues on CT images	Provision of the normal anatomy of soft tissues on CT images	T. Hayashi
10	6/19	Basic principles of dental CBCT	Provision of the basic principles of CBCT	H. Nishiyama
11	6/26	Normal anatomy on dental CBCT images	Provision of the normal anatomy on CBCT images	H. Nishiyama
12	7/3	Basic principles of MR imaging	Provision of the basic principles of MRI	H. Nishiyama

13	7/10	Normal anatomy on MR images	Provision of the normal anatomy on MR images	H. Nishiyama
14	7/17	Basic principles of PET	Provision of the basic principles of PET	T. Hayashi
15	7/24	Normal functional status of oral cavity on PET images	Provision of the normal functional status of oral cavity on PET images	T. Hayashi
16	7/31	Examination	Review of the course	T. Hayashi

【Evaluation】

Summative evaluation (90%): multiple-choice and open-ended tests. Attitude in the lecture and interest in the field (10%). In-person exam will be held.

【Media】

Lecture notes should be downloaded prior to the lecture date.

【Reference book】

Hiroya Ojiri. Head and Neck Imaging Fourth Edition. Nankodo. ISBN978-4-524-22661-0 (JPY 19,800 including tax)

Madoka Furukawa Eds. Mastering Ultrasound Utilization in Head and Neck Practice. Shindan to Chiryō Sha, ISBN 978-4-7878-2666-4 (JPY 9,350 including tax).

【Related links】

<https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/coursework/>

<https://www5.dent.niigata-u.ac.jp/~radiology/postgraduate/>

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5613	1	Thu/3, 4	4	9113	Lecture
260W7613		Thu/6, 7			
Course	Basic science course for pain				
Instructor	Prof. Naotaka Kishimoto/Lecture. Yutaka Tanaka/Assist Prof. Toru Yamamoto (Div. of Dental Anesthesiology)				
Place	Outward patient clinic and conference room of Dental Anesthesia				
<p>【Course outline】 This course aims to understand the mechanism of peripheral cause, cognition and modulation of pain.</p> <p>【Course aim】 In this course, the students are requested to learn basic science of pain, e.g. cognition and modulation of pain. And they need to know scientific terminology.</p> <p>【Attainment target】 After this course, the students are able to</p> <ul style="list-style-type: none"> • understand orofacial pain feature • understand a terminology of pain medicine <p>【Study method・attention】 Contents of the preparations for the next class will be informed in the previous class. The students sometimes need to attend on the clinical activity in the outward patient clinics.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/9	Guidance	Refer to the textbook	Naotaka Kishimoto	
2	4/16	Etiology of pain	Refer to the textbook	Yutaka Tanaka	
3	4/23	Anatomy of peripheral nerve	Refer to the textbook	Toru Yamamoto	
4	4/30	Anatomy of pain pathway	Refer to the textbook	Naotaka Kishimoto	
5	5/14	Cognition of pain	Refer to the textbook	Naotaka Kishimoto	
6	5/21	Physiology of sensory neuron	Refer to the textbook	Toru Yamamoto	
7	5/28	Physiology of sensory neuron	Refer to the textbook	Toru Yamamoto	

8	6/4	Physiology of sensory neuron	Refer to the textbook	Toru Yamamoto
9	6/11	Symptoms of pain	Refer to the textbook	Yutaka Tanaka
10	6/18	Pathology of pain	Refer to the textbook	Yutaka Tanaka
11	6/25	Pathology of pain	Refer to the textbook	Yutaka Tanaka
12	7/2	Pathology of pain	Refer to the textbook	Yutaka Tanaka
13	7/9	Descending inhibition of pain	Refer to the textbook	Toru Yamamoto
14	7/16	Pain modulation	Refer to the textbook	Naotaka Kishimoto
15	7/23	Treatment of pain	Refer to the textbook	Naotaka Kishimoto
16	7/30	Examination	Refer to the textbook	Naotaka Kishimoto

【Evaluation】

Students need to pass the oral examination. (statement 50%, discussion 50%)

【Media】

Orofacial pain (Sessle, Lavigne, Lund, Dubner) second edition, Quintessence publishing

Text book of pain (Wall/Melzack) Churchill Livingstone

【Reference book】

Some manuscripts are provided during the course.

Specialized Program Subjects

(Integrated Lectures on Basic and Clinical Dentistry)

**Specialized Program Subjects
(Integrated Lectures on Basic and Clinical Dentistry)**

Course	Page
Basic and clinical researches on ingestion	72

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5701	2	Wed/5	2	9015	Lecture
Course	Basic and clinical researches on ingestion				
Instructor	Prof. Makoto Inoue (Div. Dysphagia Rehabilitation) Associate Prof. Takanori Tsujimura (Div. Dysphagia Rehabilitation) Lecturer Jin Magara (Dysphagia Rehabilitation Unit of Niigata University Medical and Dental Hospital) Prof. Takafumi Katoh (Osaka University) Prof. Masyuki Kobayashi (Nihon University) Prof. Makoto Sasaki (Iwate University) Prof. Noriatsu Shigemura (Kyushu University) Prof. Masamichi Shinoda (Nihon University) Prof. Yoichiro Sugiyama (Saga University) Dr. Taku Suzuki (Asahi Dental Clinic) Prof. Shiro Nakamura (Showa University) Prof. Yuji Masuda (Matsumoto Dental University)				
Place	Meeting room of Faculty of Dentistry				
<p>【Course outline】 Human need not only teeth but also surrounding muscles and nerves to accomplish normal stomatognathic function. The students are expected to grasp the knowledge of evaluating the functions to diagnose and learn the research update.</p> <p>【Course aim】 The course deals with the methodology for evaluation of stomatognathic function including mastication, swallowing, phonation and respiration.</p> <p>【Attainment target】 The students will correctly understand anatomy and physiology of related to swallowing function organs. The student will appropriately explain the newest information on the ingestion researches.</p> <p>【Study method・attention】 The students have to do a preparation for a lecture using textbooks or any source materials needed. Full contents the students have to prepare in each time will be supplied at the first time.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	10/7	Neurophysiology of taste sensation Swallowing physiology	Read handout before lecture	Noriatsu Shigemura	
2	10/14	Introduction	Read handout before lecture	Makoto Inoue	
3	10/21	Physiology of mastication Pain induced modulation of jaw movements	Read handout before lecture	Makoto Inoue	

4	10/28	Coordination of cough, respiration and swallowing	Read handout before lecture	Takanori Tsujimura
5	11/4	Swallowing initiation	Read handout before lecture	Takanori Tsujimura
6	11/11	Dysphagia management for elderly patients	Read handout before lecture	Taku Suzuki
7	11/18	Cortical excitability with swallowing	Read handout before lecture	Jin Magara
8	11/25	Surgical approach to dysphagia	Read handout before lecture	Yoishiro Sugiyama
9	12/2	Electromyography and kinesiology	Read handout before lecture	Makoto Sasaki
10	12/16	Frontiers in evaluation of lingual function	Read handout before lecture	Jin Magara
11	12/23	Pain induced modulation of jaw movements	Read handout before lecture	Masanori Shinoda
12	1/13	Neural control of cerebral cortex and brainstem in chewing	Read handout before lecture	Shiro Nakamura
13	1/27	Importance of chewing in clinical setting	Read handout before lecture	Yuji Masuda
14	2/10	Orofacial neural control during sleeping	Read handout before lecture	Takafumi Kato
15	2/24	Function of insular cortex in feeding	Read handout before lecture	Masayuki Kobayashi

【Evaluation】

Oral examination (50%) and report (50%).

【Media】

Handout supplied by Div. Dysphagia Rehabilitation

【Reference book】

Recent research papers will be provided every time.

【Use of Generative AI】

In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.

Specialized Program Subjects
(Department of Oral Health Science)

Specialized Program Subjects (Department of Oral Health Science)

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Advanced Seminar of Infectious Diseases A, B	76
Advanced Seminar of Bacteriology and Immunology A, B	79
Osteoimmunology A, B	82
Basic Molecular & Cell Biology & Genetics A, B	86
Advanced Course of Tissue Engineering A, B	90
Tissue Engineering Hands-on Seminar A, B	94
Endodontics A, B	98
Seminar on Endodontics A, B	101
Seminar on cariology A, B	104
Global Oral Epidemiology A, B	107
Practical Global Oral Health Science A, B	112
Seminar on Preventative dentistry A, B	117
Dentistry for Child Health and Development (DCHD) A, B	121
Practice of Pediatric Dentistry: Treatment of Children's Oral Disease A, B	125
Seminar on Special Needs Dentistry A, B	128
Surgical Approach for Temporomandibular Joint Diseases A, B	131
Seminar on Molecular diagnosis of the oral cancer A, B	136
Fixed Prosthodontic Treatment A, B	140
Dental Implant treatment A, B	143
Basic research seminar of Oral implant dentistry A	146
Digital technology in prosthodontics A	148
Clinical Dental Implantology A, B	150
Basic Physiology of Pain A, B	154
Clinical Seminar and practice training for treatment of dental caries based on clinical cariology A, B	157
Seminar on oral health policy A, B	161
Public health dentistry A, B	164
Seminar on Statistics of Hygiene and Social Welfare A, B	168
Seminar on Biomechanics Applied to Prosthodontics A, B	171
A course for short externship in the foreign dental schools/research institutes	175

Course for Global Oral Health Science

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Extramural Externship	177
Dissertation Interim Presentation	179
Dissertation Presentation of Global Oral Health Science at International Congress	181
Dissertation Proposal Development and Implementation for Global Oral Health Science	183
Dissertation defense	185

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5702	1	Tue/6 :A	2	9014	Lecture・Seminar
260W7702					
260W5703	2	Tue/6 :B	2	9015	Lecture・Seminar
260W7703					
Course	Advanced Seminar of Infectious Diseases A, B				
Instructor	Prof. Yutaka Terao (Division of Microbiology and Infectious Diseases)				
Place	Room E418				
A					
【Course outline】					
I will review and lecture the basic methodology and techniques about microbiological and immunological research among <i>in silico</i> and <i>in vitro</i> . In addition, this course includes various basic practices on molecular biological assays.					
【Course aim】					
The aim of this course is to learn the concepts and methods of various basic experiments of life science and infectious research.					
【Attainment target】					
(1) Describe the basic techniques on molecular microbiology.					
(2) Describe the basic techniques and the related laws of about recombinant DNA experiments.					
(3) Practice the basic methodology concerning with bioinformatics.					
【Study method・attention】					
In the first step, participants should learn the basic knowledge, and then participants will be judged by a written examination. After passing, participants will proceed with the basic experimental seminar. There will be a modest amount of material assigned for class preparation and self-study at each seminar. In this course, the use of generative AI is strictly prohibited for reports, exams, and other assignments. Furthermore, using generative AI to read any materials distributed in class is also prohibited. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.					
【Plan】					
No.	Date	Contents	Preparation and Review	Instructor	
1	4/14	Overview (A)	Organize the main points	Yutaka Terao	
2	4/21	Basic Bacteriology 1 (A)	Organize the main points	Yutaka Terao	
3	4/28	Basic Bacteriology 2 (A)	Organize the main points	Yutaka Terao	
4	5/12	Basic Bacteriology 3 (A)	Organize the main points	Yutaka Terao	
5	5/19	Basic Bacteriology 4 (A)	Organize the main points	Yutaka Terao	
6	5/26	Basic Molecular Biology 1 (A)	Organize the main points	Yutaka Terao	
7	6/2	Basic Molecular Biology 2 (A)	Organize the main points	Yutaka Terao	
8	6/9	Basic Cell Biology 1 (A)	Organize the main points	Yutaka Terao	

9	6/16	Basic Cell Biology 2 (A)	Organize the main points	Yutaka Terao
10	6/23	Basic Immunology 1 (A)	Organize the main points	Yutaka Terao
11	6/30	Basic Immunology 2 (A)	Organize the main points	Yutaka Terao
12	7/7	Basic Immunology 3 (A)	Organize the main points	Yutaka Terao
13	7/14	Basic Immunology 4 (A)	Organize the main points	Yutaka Terao
14	7/21	Discussion	Keyword organization	Yutaka Terao
15	7/28	Examination (A)	Review until the previous class	Yutaka Terao
16	8/4	Conclusion	Exam question review	Yutaka Terao

【Evaluation】

Written Examination 50%

Discussion and Debate 50%

【Media】

Molecular Cloning: A Laboratory Manual, 4th edition 3 volume set. Michael R Green and Joseph Sambrook. Cold Spring Harbor Laboratory Press. ISBN-13: 978-1605500560 / ISBN-10: 1936113422. (Paperback \$365.00)

【Reference book】

The research paper using in the lecture will be distributed in each practice.

B

【Course outline】

I will review and lecture the advanced methodology and techniques about microbiological and immunological research among *in silico* and *in vitro*. In addition, this course includes various advanced practices on molecular biological assays.

【Course aim】

The aim of this course is to learn the concepts and methods of various advanced current experiments of life science and infectious research.

【Attainment target】

- (1) Describe the advanced techniques on molecular microbiology.
- (2) Describe the advanced techniques and the related laws of about recombinant DNA experiments.
- (3) Practice the advanced methodology concerning with bioinformatics.

【Study method・attention】

In the first step, participants should learn the advanced knowledge, and then participants will be judged by a written examination. After passing, participants will proceed with the advanced experimental seminar. There will be a modest amount of material assigned for class preparation and self-study at each seminar. In this course, the use of generative AI is strictly prohibited for reports, exams, and other assignments. Furthermore, using generative AI to read any materials distributed in class is also prohibited. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.

【Plan】

No.	Date	Contents	Preparation and Review	Instructor
1	10/6	Overview (B)	Organize the main points	Yutaka Terao

2	10/20	Advanced Bacteriological Practice 1 (B)	Organize the main points	Yutaka Terao
3	10/27	Advanced Bacteriological Practice 2 (B)	Organize the main points	Yutaka Terao
4	11/10	Advanced Bacteriological Practice 3 (B)	Organize the main points	Yutaka Terao
5	11/17	Advanced Bacteriological Practice 4 (B)	Organize the main points	Yutaka Terao
6	11/24	Advanced Molecular Biological Practice 1 (B)	Organize the main points	Yutaka Terao
7	12/1	Advanced Molecular Biological Practice 2 (B)	Organize the main points	Yutaka Terao
8	12/8	Advanced Cell Biological Practice 1 (B)	Organize the main points	Yutaka Terao
9	12/15	Advanced Cell Biological Practice 2 (B)	Organize the main points	Yutaka Terao
10	12/22	Advanced Immunological Practice 1 (B)	Organize the main points	Yutaka Terao
11	1/12	Advanced Immunological Practice 2 (B)	Organize the main points	Yutaka Terao
12	1/19	Advanced Immunological Practice 3 (B)	Organize the main points	Yutaka Terao
13	1/26	Advanced Immunological Practice 4 (B)	Organize the main points	Yutaka Terao
14	2/2	Discussion	Keyword organization	Yutaka Terao
15	2/9	Examination (B)	Review until the previous class	Yutaka Terao
16	2/16	Conclusion	Exam question review	Yutaka Terao

【Evaluation】

Written Examination 50%

Discussion and Debate 50%

【Media】

Molecular Cloning: A Laboratory Manual, 4th edition 3 volume set. Michael R Green and Joseph Sambrook. Cold Spring Harbor Laboratory Press. ISBN-13: 978-1605500560 / ISBN-10: 1936113422. (Hardcover \$375.25, Paperback \$365.00)

【Reference book】

The research paper using in the lecture will be distributed in each practice.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5704	1	Fri/6 :A	2	9014	Lecture • Seminar
260W7704					
260W5705	2	Fri/6 :B	2	9015	Lecture • Seminar
260W7705					
Course	Advanced Seminar of Bacteriology and Immunology A, B				
Instructor	Associate Prof. Hisanori Domon (Division of Microbiology and Infectious Diseases)				
Place	Room E418				
A					
<p>【Course outline】 I will review on the basic research in microbiology and immunology. In addition, this course includes the lecture about the techniques of basic molecular and cellular biological research.</p> <p>【Course aim】 The aim of this course is to learn the basic techniques about microbiology and immunology.</p> <p>【Attainment target】 (1) Describe the basic techniques about microbiology. (2) Describe the basic techniques about molecular and cellular biology. (3) Practice the basic techniques about immunology.</p> <p>【Study method•attention】 The basic knowledge of microbiology, molecular cellular biology, and immunology will be provided by lecture. And then, participants will be evaluated by a written examination. After passing, participants will proceed with the experimental practice. There will be a modest amount of material assigned for class preparation and self-study at each practice. In this course, the use of generative AI is strictly prohibited for reports, exams, and other assignments. Furthermore, using generative AI to read any materials distributed in class is also prohibited. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.</p>					
【Plan】					
No.	Date	Contents	Preparation and Review	Instructor	
1	4/10	Overview (A)	Organize the main points	Hisanori Domon	
2	4/17	Basic Bacteriology 1	Organize the main points	Hisanori Domon	
3	4/24	Basic Bacteriology 2	Organize the main points	Hisanori Domon	
4	5/1	Basic Bacteriology 3	Organize the main points	Hisanori Domon	
5	5/15	Basic Oral Bacteriology 1	Organize the main points	Hisanori Domon	
6	5/22	Basic Oral Bacteriology 2	Organize the main points	Hisanori Domon	
7	5/29	Basic Oral Bacteriology 3	Organize the main points	Hisanori Domon	
8	6/5	Basic Molecular Biology 1	Organize the main points	Hisanori Domon	

9	6/12	Basic Molecular Biology 2	Organize the main points	Hisanori Domon
10	6/19	Basic Molecular Biology 3	Organize the main points	Hisanori Domon
11	6/26	Basic Molecular Biology 4	Organize the main points	Hisanori Domon
12	7/3	Basic Immunology 1	Organize the main points	Hisanori Domon
13	7/10	Basic Immunology 2	Organize the main points	Hisanori Domon
14	7/17	Basic Immunology 3	Organize the main points	Hisanori Domon
15	7/24	Conclusion and Oral Examination	Keyword organization	Hisanori Domon
16	7/31	Examination (A)	Exam question review	Hisanori Domon

【Evaluation】

Oral Examination 15%

Technical Examination 15%

Written Examination 30%

Discussion and Debate 40%

【Media】

(1) Current Protocols Essential Laboratory Techniques, Sean R. Gallagher and Emily A. Wiley (Wiley-Blackwell)

(2) Molecular Cloning Fourth Edition, Michael R. Green and Joseph Sambrook (Cold Spring Harbor Laboratory Press)

【Reference book】

The research paper using in the lecture will be distributed in each practice.

B

【Course outline】

I will review on the advanced researches in microbiology and immunology. In addition, this course includes the lecture about the techniques of advanced molecular and cellular biological research.

【Course aim】

The aim of this course is to learn the advanced techniques about microbiology and immunology.

【Attainment target】

- (1) Describe the advanced techniques about microbiology.
- (2) Describe the advanced techniques about molecular and cellular biology.
- (3) Practice the advanced techniques about immunology.

【Study method・attention】

In every class, the advanced knowledge of microbiology, molecular cellular biology, and immunology will be provided by lecture. And then, participants will be evaluated by a written examination. After passing, participants will proceed with the experimental practice. There will be a modest amount of material assigned for class preparation and self-study at each practice. In this course, the use of generative AI is strictly prohibited for reports, exams, and other assignments. Furthermore, using generative AI to read any materials distributed in class is also prohibited. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.

【Plan】				
No.	Date	Contents	Preparation and Review	Instructor
1	10/2	Overview (B)	Organize the main points	Hisanori Domon
2	10/9	Advanced Bacteriological Practice 1	Organize the main points	Hisanori Domon
3	10/16	Advanced Bacteriological Practice 2	Organize the main points	Hisanori Domon
4	10/23	Advanced Bacteriological Practice 3	Organize the main points	Hisanori Domon
5	10/30	Advanced Oral Bacteriological Practice 1	Organize the main points	Hisanori Domon
6	11/13	Advanced Oral Bacteriological Practice 2	Organize the main points	Hisanori Domon
7	11/20	Advanced Oral Bacteriological Practice 3	Organize the main points	Hisanori Domon
8	11/27	Advanced Molecular Biological Practice 1	Organize the main points	Hisanori Domon
9	12/4	Advanced Molecular Biological Practice 2	Organize the main points	Hisanori Domon
10	12/11	Advanced Molecular Biological Practice 3	Organize the main points	Hisanori Domon
11	12/18	Advanced Immunological Practice 1	Organize the main points	Hisanori Domon
12	12/25	Advanced Immunological Practice 2	Organize the main points	Hisanori Domon
13	1/8	Advanced Immunological Practice 3	Organize the main points	Hisanori Domon
14	1/15	Discussion and Oral Examination	Keyword organization	Hisanori Domon
15	1/29	Conclusion	Review until the previous class	Hisanori Domon
16	2/5	Examination (B)	Exam question review	Hisanori Domon
<p>【Evaluation】 Oral Examination 15% Technical Examination 15% Written Examination 30% Discussion and Debate 40%</p> <p>【Media】 (1) Current Protocols Essential Laboratory Techniques, Sean R. Gallagher and Emily A. Wiley (Wiley-Blackwell) (2) Molecular Cloning Fourth Edition, Michael R. Green and Joseph Sambrook (Cold Spring Harbor Laboratory Press)</p> <p>【Reference book】 The research paper using in the lecture will be distributed in each practice.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5706	1	Mon/5・A	2	9014	Lecture
260W7706		Mon/6・A			
260W5707	2	Mon/5・B	2	9015	Lecture
260W7707		Mon/6・B			
Course	Osteoimmunology A, B				
Instructor	Associate Prof. Tomoki Maekawa Assistant Prof. Rosenkranz Andrea Lynn				
Place	Room C605–Center for Advanced Oral Science				
A					
【Course outline】					
Lectures and experiments will be conducted on the connection between the cells that construct the bones and the immune cells from the viewpoint of basic medicine not only in the oral cavity but also in arthritis or hematopoiesis and cancer.					
【Course aim】					
By explaining osteoimmunology, in which links bone-metabolism and immunology, the students will be able to understand that whole body metabolisms are linked by closed coordination of organisms.					
【Attainment target】					
(1) Students will explain the origin and functions of immune cells.					
(2) Students will explain bone function and metabolism.					
(3) Students will explain the theory of osteoimmunology.					
【Study method・attention】					
Pre-learning of technical terms is recommended by pre-distributed prints.					
Classes are conducted in a lecture format using English.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/13	Guidance & introduction	Related papers	Maekawa Rosenkranz	
2	4/20	RANKL, a cytokine that links bone and the immune system	Related papers	Maekawa	
3	4/27	Molecular mechanism of osteoclast differentiation	Related papers	Maekawa	
4	5/7	Bone destruction and Th17 cells in rheumatoid arthritis	Related papers	Maekawa Rosenkranz	
5	5/11	Inflammatory cytokines and bone destruction	Related papers	Maekawa	
6	5/18	Joint destruction and osteoclasts	Related papers	Maekawa	

7	5/25	Bone environment and cancer cells	Related papers	Maekawa Rosenkranz
8	6/1	Bone marrow niche and hematopoiesis	Related papers	Maekawa
9	6/8	Hematopoietic stem cell regulation by osteoclasts	Related papers	Maekawa
10	6/15	Vitamin D and the immune system	Related papers	Maekawa
11, 12	6/22 6/29	Inflammatory cytokine signaling pathway 1,2	Related papers	Maekawa Rosenkranz
13	7/6	Molecular mechanism of osteoblast	Related papers	Maekawa
14, 15	7/13 7/27	Cross talk between bone and immune system 1,2	Related papers	Maekawa Rosenkranz
16	8/3	Conclusion, Discussion, and Examination	Related papers	Maekawa Rosenkranz

【Evaluation】

Written Examination 50%, Discussion and debate 30%, class attitude 20%. In-person examination

【Media】

Osteoimmunology (Ishiyaku Publisher Co.) 4,400 Yen (+tax)

Joneway' s immunobiology (Nankodo Co.) 8,715 Yen (+tax)

Osteoimmunology for dental student (Ishiyaku Publisher Co.) 6,600 Yen (+tax)

【Reference book】

Related scientific papers will be provided prior to lecture.

【Notes on the Use of Generative AI】

In this course, the use of Generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions.

If you choose to use these tools, you must comply with the following:

Transparency and Disclosure: If Generative AI is used in your reports or assignments, you must clearly state which parts were generated, the purpose of its use, the specific AI tool used, and the prompts provided.

Verification and Editing: Do not use AI-generated content as-is. You are required to personally verify the accuracy and appropriateness of the information and make any necessary corrections.

Personal Responsibility: The student bears full responsibility for the final quality and integrity of the submitted work.

Consequences of Misuse: Inappropriate use (such as exceeding the permitted scope of use or infringing on the copyrights of others) will be dealt with strictly in accordance with university regulations.

B

【Course outline】

Lectures on osteoimmunology and perform experiments on the pathogenesis in the treatment of osteoimmunology-related diseases.

【Course aim】

Understand the relationship between periodontal disease, rheumatoid arthritis, blood diseases and osteoimmunology.

【Attainment target】

(1) Students will the function of immune cells.

<p>(2) Students will bone metabolism-related diseases.</p> <p>(3) Students will the theory of osteoimmunology.</p> <p>【Study method・attention】</p> <p>Pre-learning of technical terms is recommended by pre-distributed prints.</p> <p>Classes are conducted in a lecture format using English.</p>				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/5	Guidance & introduction	Related papers	Maekawa Rosenkranz
2	10/13	Bone destruction and Th17 cells in rheumatoid arthritis	Related papers	Maekawa
3,4	10/19 10/26	Treatment strategies for inflammatory bone destruction. 1,2	Related papers	Maekawa Rosenkranz
5,6	11/2 11/9	Osteoimmunology and inflammatory cytokines 1,2	Related papers	Maekawa Rosenkranz
7	11/16	DAP12 and bone disease	Related papers	Maekawa
8	11/30	ITAM signal and osteoclast differentiation	Related papers	Maekawa
9	12/7	Dendritic cells and RANK signal	Related papers	Maekawa Rosenkranz
10	12/14	Thymic medullary epithelial cells and RANK signals	Related papers	Maekawa
11	12/21	Dendritic cells and OPG signal	Related papers	Maekawa
12	1/14	RNAK and OPG signaling	Related papers	Maekawa
13	1/22	Molecular mechanism of bone marrow GVHD	Related papers	Maekawa
14	1/25	Molecular mechanism of osteoclast differentiation	Related papers	Maekawa
15	2/1	Distant metastasis of cancer	Related papers	Maekawa
16	2/8	Conclusion, Discussion, and Examination	Related papers	Maekawa Rosenkranz
<p>【Evaluation】</p> <p>Written Examination 50%, Discussion and debate 30%, class attitude 20%. In-person examination</p> <p>【Media】</p> <p>Osteoimmunology (Ishiyaku Publisher Co.) 4,400 Yen (+tax)</p> <p>Joneway's immunobiology (Nankodo Co.) 8,715 Yen (+tax)</p> <p>Osteoimmunology for dental student (Ishiyaku Publisher Co.) 6,600 Yen (+tax)</p> <p>【Reference book】</p> <p>Pre-learning of technical terms is recommended by pre-distributed prints.</p>				

【Notes on the Use of Generative AI】

In this course, the use of Generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions.

If you choose to use these tools, you must comply with the following:

Transparency and Disclosure: If Generative AI is used in your reports or assignments, you must clearly state which parts were generated, the purpose of its use, the specific AI tool used, and the prompts provided.

Verification and Editing: Do not use AI-generated content as-is. You are required to personally verify the accuracy and appropriateness of the information and make any necessary corrections.

Personal Responsibility: The student bears full responsibility for the final quality and integrity of the submitted work.

Consequences of Misuse: Inappropriate use (such as exceeding the permitted scope of use or infringing on the copyrights of others) will be dealt with strictly in accordance with university regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5708	1	Thu/3 • A	2	9014	Lecture
260W7708		Thu/4 • A			
260W5709	2	Thu/3 • B	2	9015	Lecture
260W7709		Thu/4 • B			
Course	Basic Molecular & Cell Biology & Genetics A, B				
Instructor	Associate Prof. Tomoki Maekawa Assistant Prof. Rosenkranz Andrea Lynn				
Place	Room C605–Center for Advanced Oral Science				
A					
【Course outline】					
This course covers the major topics and research methods in molecular and cell biology and genetics in a lecture and interactive format.					
【Course aim】					
This course provides background knowledge in molecular and cell biology and genetics concepts that can be applied in both research and clinical settings.					
【Attainment target】					
Upon successfully completing this course, students should be able to:					
Understand basic biological concepts and how those concepts apply to research practices and clinical settings.					
【Study method•attention】					
This course is based on lectures and discussions.					
Pre-learning of technical terms is recommended by pre-distributed prints.					
Classes are conducted in a lecture format using English.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/9	Orientation & Introduction to Molecular Biology Central Dogma and DNA Replication	Related papers	Maekawa Rosenkranz	
2	4/16	DNA Mutations and Repair Mechanisms	Related papers	Maekawa	
3	4/23	Transcription and Control of Gene Expression	Related papers	Maekawa	
4	4/30	RNA and its Function in a Biological System	Related papers	Maekawa Rosenkranz	
5	5/14	Prokaryotic Translation	Related papers	Maekawa	
6	5/21	Eukaryotic Translation	Related papers	Maekawa	
7	5/28	Amino Acids and Introduction to Proteins	Related papers	Maekawa Rosenkranz	

8	6/4	Protein Processing and Protein Interactions	Related papers	Maekawa
9	6/11	Membranes and Transport	Related papers	Maekawa
10	6/18	Endocytosis, Phagocytosis, and Autophagy	Related papers	Maekawa
11, 12	6/25 7/2	Protein Degradation, Cellular Trafficking, Introduction to Carbohydrates	Related papers	Maekawa Rosenkranz
13	7/9	Introduction to Cell Metabolism and Glycolysis	Related papers	Maekawa
14, 15	7/16 7/23	Pentose Phosphate Pathway and Nucleic Acid Synthesis, Citric Acid Cycle and Cellular Respiration, Overview: Cell Signaling	Related papers	Maekawa Rosenkranz
16	7/30	Conclusion, Discussion, and Examination	Related papers	Maekawa Rosenkranz

【Evaluation】

Attendance 30%, Participation 30%, Written Examination 40%

【Media】

Albert' s Molecular Biology of the Cell 7th Edition English Version 15,399 Yen (+tax)

【Reference book】

Related scientific papers will be provided prior to lecture.

【Notes on the Use of Generative AI】

In this course, the use of Generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions. If you choose to use these tools, you must comply with the following:

Transparency and Disclosure: If Generative AI is used in your reports or assignments, you must clearly state which parts were generated, the purpose of its use, the specific AI tool used, and the prompts provided.

Verification and Editing: Do not use AI-generated content as-is. You are required to personally verify the accuracy and appropriateness of the information and make any necessary corrections.

Personal Responsibility: The student bears full responsibility for the final quality and integrity of the submitted work.

Consequences of Misuse: Inappropriate use (such as exceeding the permitted scope of use or infringing on the copyrights of others) will be dealt with strictly in accordance with university regulations.

B

【Course outline】

This course will introduce common molecular and cell biology experimental approaches through lectures and practical laboratories.

【Course aim】

This course provides background knowledge in molecular and cell biology experimental approaches that will be applied to a semester-long project in which laboratory techniques taught in part II and background knowledge taught in part I will be combined.

【Attainment target】

Upon successfully completing this course, students should be able to:

Understand the theory behind, perform, and design various experiments applicable to contemporary research questions.

【Study method•attention】

This course is based on lectures and practical laboratories.
 Pre-learning of technical terms is recommended by pre-distributed prints.
 Classes are conducted in a lecture format using English.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/8	Orientation and Introduction to Cell Culture	Related papers	Maekawa Rosenkranz
2	10/15	RNA and DNA Isolation Techniques	Related papers	Maekawa
3, 4	10/22 10/29	Methods for Evaluating RNA and DNA Quality, and Gel Electrophoresis	Related papers	Maekawa Rosenkranz
5, 6	11/5 11/12	Western Blotting I, Western Blotting II and Polyacrylamide Gel Staining Techniques	Related papers	Maekawa Rosenkranz
7	11/19	Molecular Cloning Techniques II	Related papers	Maekawa
8	11/26	Practical Methods for Checking Plasmid Construction and Sequencing	Related papers	Maekawa
9	12/3	Cellular Transfection and Protein Expression	Related papers	Maekawa Rosenkranz
10	12/10	Cell Lysate Preparation and Techniques for Nucleic Acid Detection and Immunoblotting	Related papers	Maekawa
11	12/17	Cell Imaging and Microscopy	Related papers	Maekawa
12	12/24	Primer Design and Polymerase Chain Reaction, Plasmid Construction, Molecular Cloning Techniques I, Bacterial Transformation	Related papers	Maekawa
13	1/7	Protein Purification Methods and Applications	Related papers	Maekawa
14	1/21	Cell Staining Methods and Applications	Related papers	Maekawa
15	1/28	Application of Learned Techniques to Literature Evaluation	Related papers	Maekawa
16	2/4	Semester Review, Student Presentations	Related papers	Maekawa Rosenkranz

【Evaluation】

Attendance 37.5%, Participation 37.5%, Oral Presentation 25%

【Media】

Review of written protocols distributed before class.

【Reference book】

Albert's Molecular Biology of the Cell 7th Edition English Version 15,399 Yen (+tax)

【Notes on the Use of Generative AI】

In this course, the use of Generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions. If you choose to use these tools, you must comply with the following:

Transparency and Disclosure: If Generative AI is used in your reports or assignments, you must clearly state which parts were generated, the purpose of its use, the specific AI tool used, and the prompts provided.

Verification and Editing: Do not use AI-generated content as-is. You are required to personally verify the accuracy and appropriateness of the information and make any necessary corrections.

Personal Responsibility: The student bears full responsibility for the final quality and integrity of the submitted work.

Consequences of Misuse: Inappropriate use (such as exceeding the permitted scope of use or infringing on the copyrights of others) will be dealt with strictly in accordance with university regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5710	1	Tue/1・A	2	9014	Lecture
260W7710		Tue/6・A			
260W5711	2	Tue/1・B	2	9015	Lecture
260W7711		Tue/6・B			
Course	Advanced Course of Tissue Engineering A, B				
Instructor	Prof. Kenji IZUMI (Div. Biomimetics)				
Place	C building seminar room (C412)				
A					
<p>【Course outline】 Outline of the triad of tissue engineering including stem cell biology is lectured. Time and/or vascularization, as an additional factor(s) of tissue engineering are also explained.</p> <p>【Course aim】 This course aims to study basic idea/strategy of tissue engineering utilized for cell therapy as well as the updates and trends in regenerative medicine. In addition, recent topics on iPS cells are described.</p> <p>【Attainment target】 Students will be able to realize characteristics of cells suitable for use in tissue engineering understand significance of time and vascularization in tissue engineering/regenerative medicine understand stem cell biology explain a variety of properties of scaffolds/biomaterials used for tissue engineering get roles and functions of growth factors supplemented in the culture medium describe critical factors to determine the fate of cell/tissue based products after transplantation learn utility values of iPS cells. discuss major challenges of regenerative medicine.</p> <p>【Study method・attention】 ・This class is basically lecture-style, and sometimes a journal-club presentation style is held. ・Lecture materials are provided prior to the class. ・Attending neither A nor B class is allowed.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI is permitted under certain conditions. If students choose to use it, students must comply with the following guidelines: 1. Students may allow generative AI to read materials distributed in class; however, the most reliable source of information is the designated textbook. All submitted work must be based on students' own knowledge and independent reasoning. 2. Do not use AI-generated content as is. Students must verify and revise the information to ensure its accuracy and appropriateness. 3. Full responsibility for the final submitted work rests solely with the students. 4. If inappropriate use is identified—such as using AI beyond the permitted scope or infringing on others' copyrights—strict measures will be taken in accordance with university regulations.</p>					

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	4/14	Introduction	The details are instructed in the class.	Kenji Izumi
2-4	4/21 4/28 5/8	Regarding cells to be used in tissue engineering	The details are instructed in the class.	Kenji Izumi
5, 6	5/12 5/19	Regarding somatic stem cell, especially iPS cell	The details are instructed in the class.	Kenji Izumi
7-9	5/26 6/2 6/9	Regarding scaffolds and biomaterials	The details are instructed in the class.	Kenji Izumi
10-12	6/16 6/23 6/30	Regarding growth factors (cytokines)	The details are instructed in the class.	Kenji Izumi
13, 14	7/7 7/14	Regarding vascularization occurring in host tissue after transplantation	The details are instructed in the class.	Kenji Izumi
15	7/21	Summary	Reviewing all previous lectures	Kenji Izumi
16	7/28	Examination	Reviewing all previous lectures	Kenji Izumi
<p>【Evaluation】 The grade is evaluated by face-to-face oral and written examination (50% each)</p> <p>【Media】 歯科再生医学【医歯薬出版株式会社】JPY 16,500</p> <p>【Reference book】 I will provide research papers if required.</p>				
B				
<p>【Course outline】 Outline of the triad of tissue engineering including stem cell biology is lectured. Time and/or vascularization, as an additional factor(s) of tissue engineering are also explained.</p> <p>【Course aim】 This course aims to study basic idea/strategy of tissue engineering utilized for cell therapy as well as the updates and trends in regenerative medicine. In addition, recent topics on iPS cells are described.</p>				

【Attainment target】

Students will be able to
 realize characteristics of cells suitable for use in tissue engineering
 understand significance of time and vascularization in tissue engineering/regenerative medicine
 understand stem cell biology
 explain a variety of properties of scaffolds/biomaterials used for tissue engineering
 get roles and functions of growth factors supplemented in the culture medium
 describe critical factors to determine the fate of cell/tissue based products after transplantation
 learn utility values of iPS cells.
 discuss major challenges of regenerative medicine.

【Study method・attention】

- This class is basically lecture-style, and sometimes a journal-club presentation style is held.
- Lecture materials are provided prior to the class.
- Attending neither A nor B class is allowed.

【Regarding the Use of Generative AI】

In this course, the use of generative AI is permitted under certain conditions. If students choose to use it, students must comply with the following guidelines:

1. Students may allow generative AI to read materials distributed in class; however, the most reliable source of information is the designated textbook. All submitted work must be based on students' own knowledge and independent reasoning.
2. Do not use AI-generated content as is. Students must verify and revise the information to ensure its accuracy and appropriateness.
3. Full responsibility for the final submitted work rests solely with the students.
4. If inappropriate use is identified—such as using AI beyond the permitted scope or infringing on others' copyrights—strict measures will be taken in accordance with university regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/6	Introduction	The details are instructed in the class.	Kenji Izumi
2-4	10/20 10/27 11/6	Regarding cells to be used in tissue engineering	The details are instructed in the class.	Kenji Izumi
5, 6	11/10 11/17	Regarding somatic stem cell, especially iPS cell	The details are instructed in the class.	Kenji Izumi
7-9	11/24 12/1 12/8	Regarding scaffolds and biomaterials	The details are instructed in the class.	Kenji Izumi
10-12	12/15 12/22 1/12	Regarding growth factors (cytokines)	The details are instructed in the class.	Kenji Izumi

13, 14	1/19 1/26	Regarding vascularization occurring in host tissue after transplantation	The details are instructed in the class.	Kenji Izumi
15	2/2	Summary	Reviewing all previous lectures	Kenji Izumi
16	2/9	Examination	Reviewing all previous lectures	Kenji Izumi

【Evaluation】

The grade is evaluated by face-to-face oral and written examination (50% each)

【Media】

歯科再生医学【医歯薬出版株式会社】JPY 16,500

【Reference book】

I will provide research papers if required.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5712	1	Wed/1・A	2	9014	Lecture・Practice
260W7712		Wed/6・A			
260W5713	2	Wed/1・B	2	9015	Lecture・Practice
260W7713		Wed/6・B			
Course	Tissue Engineering Hands-on Seminar A, B				
Instructor	Prof. Kenji IZUMI (Div. Biomimetics)				
Place	A204 Alliance etc.				
A					
<p>【Course outline】 Standard cell analyses applied to tissue engineering are conducted in this wet lab. Additionally, image analysis to measure cell/colony motion using time-lapse microscope is introduced.</p> <p>【Course aim】 The students will acquire several standard techniques to examine characteristics of cells in vitro using equipment such as a microplate reader, label-free live cell imaging, 3D bioprinting and confocal laser microscope. Furthermore, students will understand the principles of biophysical examinations using image analysis.</p> <p>【Attainment target】 The students will be able to</p> <ul style="list-style-type: none"> ・analyze characteristics of cells depending on specific aim of different researches. ・understand the principles of 3D bioprinting and learn how to operate the 3D bioprinter. ・perform confocal laser microscopic analysis. ・describe the relationship between live cell imaging analysis and cell/colony motion. <p>【Study method・attention】</p> <ul style="list-style-type: none"> ・This class provides hands-on experience. ・Study materials are provided prior to the class. ・Attending neither A nor B class is allowed. <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI is permitted under certain conditions. If students choose to use it, students must comply with the following guidelines:</p> <ol style="list-style-type: none"> 1. Students may allow generative AI to read materials distributed in class; however, the most reliable source of information is the designated textbook. All submitted work must be based on students' own knowledge and independent reasoning. 2. Do not use AI generated content as is. Students must verify and revise the information to ensure its accuracy and appropriateness. 3. Full responsibility for the final submitted work rests solely with the students. 4. If inappropriate use is identified—such as using AI beyond the permitted scope or infringing on others' copyrights—strict measures will be taken in accordance with university regulations. 					

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	4/8	Introduction	The details are instructed in the class.	Kenji Izumi
2, 3	4/15 4/22	Instruction manual of equipment	The details are instructed in the class.	Kenji Izumi
4-6	5/13 5/20 5/27	Analyses using a microplate reader	The details are instructed in the class.	Kenji Izumi
7, 8	6/3 6/10	Analysis of label-free live cell imaging	The details are instructed in the class.	Kenji Izumi
9-11	6/17 6/24 7/1	Principles of 3D bioprinting and operation system of 3D bioprinter	The details are instructed in the class.	Kenji Izumi
12-14	7/8 7/15 7/22	Confocal laser microscope	The details are instructed in the class.	Kenji Izumi
15	7/29	Presentation Summary	Each student presents and reports his/her own experiments etc.	Kenji Izumi
16	8/5	Examination	Reviewing all of the contents	Kenji Izumi
<p>【Evaluation】 The grade is evaluated by face-to-face examination (50%) and presentation (50%).</p> <p>【Media】 Copies of each equipment manual are provided.</p> <p>【Reference book】 I provide appropriate research papers if required.</p>				
B				
<p>【Course outline】 Standard cell analyses applied to tissue engineering are conducted in this wet lab. Additionally, image analysis to measure cell/colony motion using time-lapse microscope is introduced.</p> <p>【Course aim】 The students will acquire several standard techniques to examine characteristics of cells in vitro using equipment such as a microplate reader, label-free live cell imaging, 3D bioprinting and confocal laser</p>				

microscope. Furthermore, students will understand the principles of biophysical examinations using image analysis.

【Attainment target】

The students will be able to

- analyze characteristics of cells depending on specific aim of different researches.
- understand the principles of 3D bioprinting and learn how to operate the 3D bioprinter.
- perform confocal laser microscopic analysis.
- describe the relationship between live cell imaging analysis and cell/colony motion.

【Study method・attention】

- This class provides hands-on experience.
- Study materials are provided prior to the class.
- Attending neither A nor B class is allowed.

【Regarding the Use of Generative AI】

In this course, the use of generative AI is permitted under certain conditions. If students choose to use it, students must comply with the following guidelines:

1. Students may allow generative AI to read materials distributed in class; however, the most reliable source of information is the designated textbook. All submitted work must be based on students' own knowledge and independent reasoning.
2. Do not use AI generated content as is. Students must verify and revise the information to ensure its accuracy and appropriateness.
3. Full responsibility for the final submitted work rests solely with the students.
4. If inappropriate use is identified—such as using AI beyond the permitted scope or infringing on others' copyrights—strict measures will be taken in accordance with university regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/7	Introduction	The details are instructed in the class.	Kenji Izumi
2, 3	10/14 10/21	Instruction manual of equipment	The details are instructed in the class.	Kenji Izumi
4-6	10/28 11/4 11/11	Analyses using a microplate reader	The details are instructed in the class.	Kenji Izumi
7, 8	11/18 11/25	Analysis of label-free live cell imaging	The details are instructed in the class.	Kenji Izumi
9-11	12/2 12/9 12/16	Principles of 3D bioprinting and operation system of 3D bioprinter	The details are instructed in the class.	Kenji Izumi
12-14	12/23		The details are	Kenji Izumi

	1/13 1/20	Regarding confocal laser microscope	instructed in the class.	
15	1/27	Presentation Summary	Each student presents and reports his/her own experiments etc.	Kenji Izumi
16	2/3	Examination	Reviewing all of the contents	Kenji Izumi

【Evaluation】

The grade is evaluated by face-to-face examination (50%) and presentation (50%).

【Media】

Copies of each equipment manual are provided.

【Reference book】

I provide appropriate research papers if required.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5714	1	Fri/6・A	2	9114	Lectures, demonstrations, and laboratory practices
260W7714		Fri/7・A			
260W5715	2	Fri/6・B	2	9115	Lectures, demonstrations, and laboratory practices
260W7715		Fri/7・B			
Course	Endodontics A, B				
Instructor	Prof. Yuichiro Noiri (Div. of Cariology, Operative Dentistry & Endodontics) Prof. Hidefumi Maeda				
Place	Laboratory in Div. Cariology, Operative Dentistry & Endodontics				
A					
【Course outline】					
A: This course will offer current information on (i) biological processes involved in pulpal and apical periodontal diseases, and (ii) principles and clinical strategies in endodontic treatment.					
【Course aim】					
A: To understand (i) pathobiology of pulpal and apical periodontal diseases, and (ii) principles and clinical strategies in endodontic treatment.					
【Attainment target】					
A: After completing this course, the student should be able to:					
1. Describe the pathogenesis of pulpal diseases.					
2. Describe principles and techniques of vital pulp therapy.					
3. Describe the pathogenesis of apical periodontal diseases.					
4. Describe principles and techniques of root canal instrumentation.					
5. Describe current concepts in root canal irrigation and medication.					
6. Describe several root canal filling techniques					
7. Describe prognostic factors of endodontic treatment.					
【Study method・attention】					
We will indicate learning contents and methods without lecture at the beginning of the course.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/3	Guidance	The details will be provided at the first lecture.	Yuichiro Noiri	
2, 3	4/10 4/17	Pathogenesis of pulpal diseases①～②	Original handouts	Yuichiro Noiri	
4, 5	4/24 5/1	Vital pulp therapy①～②	Original handouts	Yuichiro Noiri	
6, 7	5/15 5/29	Pathogenesis of apical periodontal diseases①～②	Original handouts	Yuichiro Noiri	
8	6/12	Root canal instrumentation①	Original handouts	Yuichiro Noiri	

9	6/19	Special Lecture	The details will be provided at the first lecture.	Hidefumi Maeda
10	6/26	Root canal instrumentation②	Original handouts	Yuichiro Noiri
11	7/3	Root canal irrigation/medication①~②	Original handouts	Yuichiro Noiri
12	7/10	Root canal filling①	Original handouts	Yuichiro Noiri
13	7/17	Root canal filling②	Original handouts	Yuichiro Noiri
14, 15	7/24 7/31	Prognosis of endodontic treatment①~②	Original handouts	Yuichiro Noiri
16	8/7	Examination	Review	Yuichiro Noiri

【Evaluation】

Reports (50%) and oral examination (50%)

【Media】

Textbook of Endodontology 3rd ed. (Bergenholtz G *et al.*, Wiley-Blackwell, 2018) 16,252yen, related papers

Textbook of Endodontology 3rd ed. (Bergenholtz G *et al.*, Wiley-Blackwell, 2018) 16,252yen and related papers

【Reference book】

Consideration in Endodontology (Ishibashi M., Ishiyaku Shuppan, 1987)

Cohen' S Pathways of the Pulp, 12th ed. (Hargreaves KM, Mosby Elsevier, 2021) 25,693yen

【Regarding the Use of Generative AI】

This course permits the conditional use of generative AI tools (such as ChatGPT, Gemini, etc.). If you use them, please adhere to the following points:

1. If you use them in reports, etc., you must clearly state which part was generated, the purpose (e.g., question prompts), and which AI tool was used.
2. Do not use generated content verbatim; you must personally verify and revise the accuracy and appropriateness of the information.
3. Students bear full responsibility for the final deliverables.
4. Any inappropriate use (including unauthorized use or infringement of others' copyrights) will be strictly addressed in accordance with university regulations.

B

【Course outline】

This course will offer current information on newly developed/advanced strategies in endodontic treatment

【Course aim】

To understand advanced treatment strategies in endodontic diseases.

【Attainment target】

After completing this course, the student should be able to:

1. Describe the diagnostic methods of endodontic diseases.
2. Describe the use of CBCT in endodontic treatment.
3. Describe physical and biological properties and clinical application of MTA.
4. Describe principles and techniques of Ni-Ti rotary instrumentation.
5. Describe principles and techniques of microendodontics.
6. Describe current concepts and techniques in root canal retreatment.
7. Describe principles and techniques of surgical endodontic treatment,

8. Discuss considerations for the endodontic treatment of traumatized teeth.

【Study method・attention】

We will indicate learning contents and methods without lecture at the beginning of the course.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/2	Guidance	The details will be provided at the first lecture.	Yuichiro Noiri
2-5	10/9 10/16 10/23 10/30	Diagnosis of Endodontic disease/MS, CBCT 1-4	Original handouts	Yuichiro Noiri
6-10	11/13 11/27 12/4 12/11 12/18	Global standard of endodontic treatment 1-5	Original handouts	Yuichiro Noiri
11-15	12/25 1/8 1/15 1/29 2/5	Endodontic surgery/ micro-endo & Modern endo 1-5	Original handouts	Yuichiro Noiri
16	2/12	Examination	Review	Yuichiro Noiri

【Evaluation】

Reports (50%) and oral examination (50%)

【Media】

Textbook of Endodontology 3rd ed. (Bergenholtz G *et al.*, Wiley-Blackwell, 2018) 16,252 yen and related papers

【Reference book】

Global standard of clinical Endodontics, 2nd Ed. (Ishii H Ed, Ishiyaku Shuppan, 2020) 46,200 yen

Complete MTA book, 1st Ed. (Mahmoud Torabinejad Ed, Quintessence, 2017) 15,000 yen

【Regarding the Use of Generative AI】

This course permits the conditional use of generative AI tools (such as ChatGPT, Gemini, etc.). If you use them, please adhere to the following points:

1. If you use them in reports, etc., you must clearly state which part was generated, the purpose (e.g., question prompts), and which AI tool was used.
2. Do not use generated content verbatim; you must personally verify and revise the accuracy and appropriateness of the information.
3. Students bear full responsibility for the final deliverables.
4. Any inappropriate use (including unauthorized use or infringement of others' copyrights) will be strictly addressed in accordance with university regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5716	1	Tue/6・A	2	9114	Lectures, demonstrations, and laboratory practices
260W7716		Tue/7・A			
260W5717	2	Tue/6・B	2	9115	Lectures, demonstrations, and laboratory practices
260W7717		Tue/7・B			
Course	Seminar on Endodontics A, B				
Instructor	Associate Prof. Yuichiro Noiri (Div. Cariology, Operative Dentistry & Endodontics)				
Place	Laboratory in Div. Cariology, Operative Dentistry & Endodontics				
A					
【Course outline】					
In this course, we will discuss the clinical tests, diagnosis and treatment of pulpal and periapical diseases, and train current endodontic treatments using newly-developed materials and instruments.					
【Course aim】					
To understand the clinical tests and diagnosis methods and treatments of pulpal and periapical diseases.					
【Attainment target】					
After completing this course, the student should be able to:					
1. Describe the clinical tests and diagnosis methods of pulpal and periapical diseases.					
2. Describe the vital pulp therapy.					
Describe the properties and usage of pulp capping materials.					
【Study method・attention】					
We will indicate learning contents and methods without lecture at the beginning of the course.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/7	Guidance	The details will be provided at the first lecture.	Yuichiro Noiri	
2-5	4/14, 4/21, 4/28, 5/8	Etiology and pathogenesis of dental caries ①~④	Original handouts	Yuichiro Noiri	
6-10	5/12, 5/19, 5/26, 6/2, 6/9	Vital pulp therapy	Original handouts	Yuichiro Noiri	
11-15	6/16, 6/23, 6/30, 7/7, 7/14	Properties and usage of pulp capping materials	Original handouts	Yuichiro Noiri	
16	7/21	Examination	Review	Yuichiro Noiri	

<p>【Evaluation】 Reports (50%) and oral examination (50%)</p> <p>【Media】 Original handouts and related research papers</p> <p>【Reference book】 Textbook of Endodontology 3rd ed. (Bergenholtz G <i>et al.</i>, Wiley-Blackwell, 2018)16,252yen Cohens' Pathway of the pulp 12ed. (Hergreaves KM <i>et al.</i>, Elsevier, 2021)25,693yen</p> <p>【Regarding the Use of Generative AI】 This course permits the conditional use of generative AI tools (such as ChatGPT, Gemini, etc.). If you use them, please adhere to the following points: 1. If you use them in reports, etc., you must clearly state which part was generated, the purpose (e.g., question prompts), and which AI tool was used. 2. Do not use generated content verbatim; you must personally verify and revise the accuracy and appropriateness of the information. 3. Students bear full responsibility for the final deliverables. 4. Any inappropriate use (including unauthorized use or infringement of others' copyrights) will be strictly addressed in accordance with university regulations.</p>				
B				
<p>【Course outline】 In this course, we will discuss the clinical tests, diagnosis and treatment of pulpal and periapical diseases, and train current endodontic treatments using newly-developed materials and instruments.</p> <p>【Course aim】 To understand the clinical tests and diagnosis methods and treatments of pulpal and periapical diseases.</p> <p>【Attainment target】 1. Use a microscopy in endodontic treatment. 2. Prepare root canals with NiTi rotary instruments. 3. Obturate root canals with current techniques.</p> <p>【Study method・attention】 We will indicate learning contents and methods without lecture at the beginning of the course</p>				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/6	Guidance	The details will be provided at the first lecture.	Yuichiro Noiri
2-5	10/20, 10/27, 11/10, 11/17	Microscopy in endodontic treatment①~④	Original handouts	Yuichiro Noiri
6-10	11/24, 12/1, 12/8, 12/15, 12/22	Root canal preparation with NiTi rotary instruments①~⑤	Original handouts	Yuichiro Noiri
11-15	1/12, 1/19, 1/26, 2/2, 2/9	Root canal filling①~⑤	Original handouts	Yuichiro Noiri

16	2/16	Examination	Review	Yuichiro Noiri
<p>【Evaluation】 Reports (50%) and oral examination (50%)</p> <p>【Media】 Original handouts and related research papers</p> <p>【Reference book】 Textbook of Endodontology 3rd ed. (Bergenholtz G <i>et al.</i>, Wiley-Blackwell, 2018)16,252yen Cohens' Pathway of the pulp 12ed. (Hergreaves KM <i>et al.</i>, Elsevier, 2021)25,693yen</p> <p>【Regarding the Use of Generative AI】 This course permits the conditional use of generative AI tools (such as ChatGPT, Gemini, etc.). If you use them, please adhere to the following points:</p> <ol style="list-style-type: none"> 1. If you use them in reports, etc., you must clearly state which part was generated, the purpose (e.g., question prompts), and which AI tool was used. 2. Do not use generated content verbatim; you must personally verify and revise the accuracy and appropriateness of the information. 3. Students bear full responsibility for the final deliverables. 4. Any inappropriate use (including unauthorized use or infringement of others' copyrights) will be strictly addressed in accordance with university regulations. 				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5718	1	Fri/4・A	2	9114	Lectures, demonstrations, and laboratory practices
260W7718		Fri/5・A			
260W5719	2	Fri/4・B	2	9115	Lectures, demonstrations, and laboratory practices
260W7719		Fri/5・B			
Course	Seminar on cariology A, B				
Instructor	Senior Lecture Naoto Ohkura (Clinic of Cariology, Operative Dentistry & Endodontics) Prof. Yuichiro Noiri (Div. of Cariology, Operative Dentistry & Endodontics) Prof. Mikako Hayashi				
Place	Laboratory in Div. Cariology, Operative Dentistry & Endodontics				
A					
【Course outline】					
This course deals with basic and clinical cariology. We will discuss the cause, condition and risk factor of caries and also diagnosis methods and treatment of caries based on the risk factor analysis.					
【Course aim】					
To understand diagnosis methods of caries based on the risk factor analysis.					
【Attainment target】					
1. Describe the etiology and pathogenesis of dental caries.					
2. Analyze caries risk factors.					
3. Describe diagnosis methods of caries.					
【Study method・attention】					
Lectures, demonstrations, and laboratory practices					
We will indicate learning contents and methods at the beginning of the course.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/3	Guidance	The details will be provided at the first lecture.	Noiri Y	
2-5	4/10 4/17 4/24 5/1	Etiology and pathogenesis of dental caries 1-4	Original handouts	Ohkura N	
6-10	5/15 5/22 5/29 6/12 6/19	Caries risk factor analysis 1-5	Original handouts	Ohkura N	

11-15	6/26 7/3 7/17 7/24 7/31	Diagnosis methods of caries 1-5	Original handouts	Ohkura N
16	8/7	Examination	Review	Ohkura N
<p>【Evaluation】 Reports (50%) and oral examination (50%)</p> <p>【Media】 Original handouts and related research papers</p> <p>【Reference book】 Clinical Cariology (Kumagai T et al., Ishiyaku Publishers) 24,200 yen Illustrated Cariology (Suga S., Ishiyaku Publishers) 11,650 yen</p> <p>【Regarding the Use of Generative AI】 This course permits the conditional use of generative AI tools (such as ChatGPT, Gemini, etc.). If you use them, please adhere to the following points:</p> <ol style="list-style-type: none"> 1. If you use them in reports, etc., you must clearly state which part was generated, the purpose (e.g., question prompts), and which AI tool was used. 2. Do not use generated content verbatim; you must personally verify and revise the accuracy and appropriateness of the information. 3. Students bear full responsibility for the final deliverables. 4. Any inappropriate use (including unauthorized use or infringement of others' copyrights) will be strictly addressed in accordance with university regulations. 				
B				
<p>【Course outline】 This course deals with basic and clinical cariology. We will discuss the cause, condition and risk factor of caries and also diagnosis methods and treatment of caries based on the risk factor analysis.</p> <p>【Course aim】 To understand treatment of caries based on the risk factor analysis.</p> <p>【Attainment target】</p> <ol style="list-style-type: none"> 1. Describe caries treatment based on the risk factor analysis. 2. Describe and treat caries with laser. 3. Describe and treat caries with antibacterial agents. 4. Describe and treat caries with various pulp capping agents. <p>【Study method・attention】 Lectures, demonstrations, and laboratory practices We will indicate learning contents and methods at the beginning of the course.</p>				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/2	Guidance	The details will be provided at the first lecture.	Ohkura N

2-5	10/9 10/16 10/23 10/30	Caries treatment based on the risk factor analysis 1-4	Original handouts Original handouts Original handouts Original handouts	Ohkura N Ohkura N Ohkura N Ohkura N
6-11	11/13 11/27 12/4 12/11 12/18 12/25	Caries treatment with laser 1 (Special Lecture) Caries treatment with laser 2-5	Original handouts The details will be provided at the first lecture. Original handouts Original handouts	Ohkura N Hayashi M Ohkura N Ohkura N Ohkura N
12-16	1/8 1/15 1/29 2/5 2/12	Caries treatment with antibacterial agents 1-5	Original handouts	Ohkura N
17	2/19	Examination	Review	Ohkura N

【Evaluation】

Reports (50%) and oral examination (50%)

【Media】

Original handouts and related research papers

【Reference book】

Clinical Cariology (Kumagai T et al., Ishiyaku Publishers) 24,200 yen

Illustrated Cariology (Suga S., Ishiyaku Publishers) 11,650 yen

【Regarding the Use of Generative AI】

This course permits the conditional use of generative AI tools (such as ChatGPT, Gemini, etc.). If you use them, please adhere to the following points:

1. If you use them in reports, etc., you must clearly state which part was generated, the purpose (e.g., question prompts), and which AI tool was used.
2. Do not use generated content verbatim; you must personally verify and revise the accuracy and appropriateness of the information.
3. Students bear full responsibility for the final deliverables.
4. Any inappropriate use (including unauthorized use or infringement of others' copyrights) will be strictly addressed in accordance with university regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5720	1	TUE/1・A	2	9214	Lecture
260W7720		TUE/6・A			
260W5721	2	TUE/1・B	2	9215	Lecture
260W7721		TUE/6・B			
Course	Global Oral Epidemiology A, B				
Instructor	Prof. OGAWA Hiroshi (Div. Preventive Dentistry)				
Place	Seminar room (Div. Preventive Dentistry)				
A					
【Course outline】					
This course deals with changing pattern of oral disease so called natural history to develop programme of oral disease prevention and oral health promotion					
【Course aim】					
This course focus to learn several thematic units included basic philosophy, epidemiology of oral diseases, etiologies of oral disease, social and culture risk factors.					
【Attainment target】					
This course is designed to help English skills in the international dentistry. The aim is to give the students confidence to discuss about global oral health.					
【Study method・attention】					
In this tutorial, each of content will include a lecture component and a group discussion component. Lecture materials will be suggested accordingly.					
In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the results yourself. When using generative AI, please check the "Niigata University Generative AI Usage Promotion Guidelines" before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.					
【Plan】					
No.	Date	Contents	Preparing learning	Instructor	
1	April 14	Guidance	Lecture materials will be suggested accordingly	OGAWA Hiroshi	
2	April 21	Caries epidemiology I	Lecture materials will be suggested accordingly	OGAWA Hiroshi	
3	April 28	Caries epidemiology II	Lecture materials will be suggested accordingly	OGAWA Hiroshi	

4	May 8	Risk factor for dental caries I	Lecture materials will be suggested accordingly	OGAWA Hiroshi
5	May 12	Risk factor for dental caries II	Lecture materials will be suggested accordingly	OGAWA Hiroshi
6	May 19	Intervention for dental caries prevention	Lecture materials will be suggested accordingly	OGAWA Hiroshi
7	May 26	Caries epidemiology, risk factor and preventive intervention	Lecture materials will be suggested accordingly	OGAWA Hiroshi
8	June 2	Global epidemiology of periodontal disease I	Lecture materials will be suggested accordingly	OGAWA Hiroshi
9	June 9	Global epidemiology of periodontal disease II	Lecture materials will be suggested accordingly	OGAWA Hiroshi
10	June 16	Risk factor for periodontal diseases I	Lecture materials will be suggested accordingly	OGAWA Hiroshi
11	June 23	Risk factor for periodontal diseases II	Lecture materials will be suggested accordingly	OGAWA Hiroshi
12	June 30	Strategy for periodontal diseases prevention I	Lecture materials will be suggested accordingly	OGAWA Hiroshi
13	July 7	Strategy for periodontal diseases prevention II	Lecture materials will be suggested accordingly	OGAWA Hiroshi
14	July 14	Prevalence of oral cancer/ precancer I	Lecture materials will be suggested accordingly	OGAWA Hiroshi
15	July 21	Prevalence of oral cancer/ precancer II	Lecture materials will be suggested accordingly	OGAWA Hiroshi
16	July 28	Presentation	Preparation for presentation	OGAWA Hiroshi

【Evaluation】

Oral test or written examination (80%) and participation status (20%).

【Media】

The WHO Global Oral Health Report and related publications.

【Reference book】

References will be indicated if required.

B**【Course outline】**

This course provides students with conceptual and practical skills to design and evaluate global oral health promotion policies and programmes. Global oral health promotion draws on ideas from sociology, psychology, anthropology, education, epidemiology and other disciplines to understand how the oral health of global populations can be maintained and strengthened.

【Course aim】

Students should be able to demonstrate ability to apply knowledge of the core disciplines of global oral health, consisting oral health promotion, oral epidemiology, statistics, health economics and social research, distribution of oral diseases and conditions, prevention of oral diseases in public health, to real oral health problems globally.

【Attainment target】

By the end of this course, students should be able to demonstrate knowledge and understanding of the principal theories, methods and interventions used in oral health promotion, understand the development of the discipline of global oral health promotion, assess the appropriate use of population-wide versus targeted oral health promotion interventions, formulate oral health promotion policy and practice that is relevant to varying needs in diverse contexts, be able to appraise and communicate research evidence, apply the knowledge and analytical skills gained to inform oral health promotion policy-making, programme planning, implementation and evaluation.

【Study method・attention】

This is a discussion-based critical thinking course that examines the extensive relationship between oral health and global health, and concept development is heavily determined by course participation. Instructor will inform students of each class date and time, according to their schedule. Instructors explain how to prepare for each lecture on the 1st class.

In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the results yourself. When using generative AI, please check the "Niigata University Generative AI Usage Promotion Guidelines" before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.

【Plan】

No.	Date	Contents	Preparing learning	Instructor
1	October 6	Risk factor oral cancer/ precancer I	Lecture materials will be suggested accordingly	OGAWA Hiroshi
2	October 20	Risk factor oral cancer/ precancer II	Lecture materials will be suggested accordingly	OGAWA Hiroshi

3	October 27	Strategy for oral cancer/ precancer prevention	Lecture materials will be suggested accordingly	OGAWA Hiroshi
4	November 6	Oral health in developing countries	Lecture materials will be suggested accordingly	OGAWA Hiroshi
5	November 10	Oral health strategy in developing countries	Lecture materials will be suggested accordingly	OGAWA Hiroshi
6	November 17	Oral health planning in developing countries	Lecture materials will be suggested accordingly	OGAWA Hiroshi
7	November 24	Oral health activities in developing countries	Lecture materials will be suggested accordingly	OGAWA Hiroshi
8	December 1	Oral disease prevention programme I	Lecture materials will be suggested accordingly	OGAWA Hiroshi
9	December 8	Oral disease prevention programme II	Lecture materials will be suggested accordingly	OGAWA Hiroshi
10	December 15	Oral health policy I	Lecture materials will be suggested accordingly	OGAWA Hiroshi
11	December 22	Oral health policy II	Lecture materials will be suggested accordingly	OGAWA Hiroshi
12	January 12	Challenges of global oral health I	Lecture materials will be suggested accordingly	OGAWA Hiroshi
13	January 19	Challenges of global oral health II	Lecture materials will be suggested accordingly	OGAWA Hiroshi
14	January 26	Summary and discussion	Review the course	OGAWA Hiroshi
15	February 2	Summary and discussion	Review the course	OGAWA Hiroshi
16	February 9	Presentation	Preparation for presentation	OGAWA Hiroshi

【Evaluation】

Oral test or written examination (80%) and participation status (20%).

【Media】

The WHO Global Oral Health Report and related publications.

【Reference book】

References will be indicated if required.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5722	1	THU/4・A	2	9214	Practice
260W7722					
260W5723	2	THU/6・B	2	9215	Practice
260W7723					
Course	Practical Global Oral Health Science A, B				
Instructor	Prof. OGAWA Hiroshi (Div. Preventive Dentistry)				
Place	Seminar room (Div. Preventive Dentistry)				
A					
【Course outline】					
<p>This course provides students with a sound understanding of the theoretical and empirical basis of oral health promotion globally. Global oral health promotion draws on ideas from sociology, psychology, anthropology, education, epidemiology and other disciplines to understand how the oral health of global populations can be maintained and strengthened.</p>					
【Course aim】					
<p>Students should be deepen knowledge and skill of the core disciplines of global oral health, consisting oral health promotion, oral epidemiology, statistics, health economics and social research, distribution of oral diseases and conditions, prevention of oral diseases in public health, to real oral health problems globally.</p>					
【Attainment target】					
<p>Students should be able to demonstrate knowledge and understanding of the principal theories, methods and interventions used in oral health promotion, understand the development of the discipline of global oral health promotion.</p>					
【Study method・attention】					
<p>This is a discussion-based critical thinking course that examines the extensive relationship between oral health and global health, and concept development is heavily determined by course participation. Instructor will inform students of each class date and time, according to their schedule. Instructors explain how to prepare for each lecture on the 1st class.</p> <p>In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the results yourself. When using generative AI, please check the "Niigata University Generative AI Usage Promotion Guidelines" before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.</p>					
【Plan】					
No.	Date	Contents	Preparing learning	Instructor	
1	April 9	Guidance	Lecture materials will be suggested accordingly	OGAWA Hiroshi	
2	April 16	Health Promotion Theory, Approaches, Methods and	Lecture materials	OGAWA Hiroshi	

		Global Oral Health 1	will be suggested accordingly	
3	April 23	Health Promotion Theory, Approaches, Methods and Global Oral Health 2	Lecture materials will be suggested accordingly	OGAWA Hiroshi
4	April 30	Basic Epidemiology, Design & Analysis of Global Oral Epidemiological Studies 1	Lecture materials will be suggested accordingly	OGAWA Hiroshi
5	May 14	Basic Epidemiology, Design & Analysis of Global Oral Epidemiological Studies 2	Lecture materials will be suggested accordingly	OGAWA Hiroshi
6	May 21	Basic Statistics for Global Oral Health & Policy, Statistical Methods in Oral Epidemiology	Lecture materials will be suggested accordingly	OGAWA Hiroshi
7	May 28	Introduction to Global Oral Health Economics, Principles of Social Research	Lecture materials will be suggested accordingly	OGAWA Hiroshi
8	June 4	Global Oral Health Surveillance, Goals and Information System 1	Lecture materials will be suggested accordingly	OGAWA Hiroshi
9	June 11	Global Oral Health Surveillance, Goals and Information System 2	Lecture materials will be suggested accordingly	OGAWA Hiroshi
10	June 18	Oral Health Surveys Methods 1	Lecture materials will be suggested accordingly	OGAWA Hiroshi
11	June 25	Oral Health Surveys Methods 2	Lecture materials will be suggested accordingly	OGAWA Hiroshi
12	July 2	Oral Health Surveys Methods 3	Lecture materials will be suggested accordingly	OGAWA Hiroshi
13	July 9	Strategy and Approach in Oral Disease Prevention and Health Promotion Globally 1	Lecture materials will be suggested accordingly	OGAWA Hiroshi
14	July 16	Strategy and Approach in Oral Disease Prevention and Health Promotion Globally 2	Lecture materials will be suggested accordingly	OGAWA Hiroshi
15	July 23	Presentation and grand discussion 1	Preparation for presentation	OGAWA Hiroshi

16	July 30	Presentation and grand discussion 2	Preparation for presentation	OGAWA Hiroshi
<p>【Evaluation】 Evaluated by debates (20%), assignments (50%) and presentations (30%).</p> <p>【Media】 WHO World Oral Health Report, etc WHO publications.</p> <p>【Reference book】 References will be indicated if required.</p>				
B				
<p>【Course outline】 This course provides students with conceptual and practical skills to design and evaluate global oral health promotion policies and programmes. Global oral health promotion draws on ideas from sociology, psychology, anthropology, education, epidemiology and other disciplines to understand how the oral health of global populations can be maintained and strengthened.</p> <p>【Course aim】 Students should be able to demonstrate ability to apply knowledge of the core disciplines of global oral health, consisting oral health promotion, oral epidemiology, statistics, health economics and social research, distribution of oral diseases and conditions, prevention of oral diseases in public health, to real oral health problems globally.</p> <p>【Attainment target】 By the end of this course, students should be able to demonstrate knowledge and understanding of the principal theories, methods and interventions used in oral health promotion, understand the development of the discipline of global oral health promotion, assess the appropriate use of population-wide versus targeted oral health promotion interventions, formulate oral health promotion policy and practice that is relevant to varying needs in diverse contexts, be able to appraise and communicate research evidence, apply the knowledge and analytical skills gained to inform oral health promotion policy-making, programme planning, implementation and evaluation.</p> <p>【Study method・attention】 This is a discussion-based critical thinking course that examines the extensive relationship between oral health and global health, and concept development is heavily determined by course participation. Instructor will inform students of each class date and time, according to their schedule. Instructors explain how to prepare for each lecture on the 1st class. In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the results yourself. When using generative AI, please check the "Niigata University Generative AI Usage Promotion Guidelines" before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.</p>				
【Plan】				
No.	Date	Contents	Preparing learning	Instructor
1	October 8	Oral health care delivery system (Oral health services accessibility, delivery of oral health care)	Lecture materials will be suggested accordingly	OGAWA Hiroshi

2	October 15	Global status of oral health care delivery system	Lecture materials will be suggested accordingly	OGAWA Hiroshi
3	October 22	Roles that the workforce can play in improving the oral care delivery model	Lecture materials will be suggested accordingly	OGAWA Hiroshi
4	October 29	Evaluation of oral health care delivery system	Lecture materials will be suggested accordingly	OGAWA Hiroshi
5	November 5	Change and development of oral health care delivery system	Lecture materials will be suggested accordingly	OGAWA Hiroshi
6	November 12	Transform oral health care (Oral health care services and oral disease prevention into primary health care delivery sites)	Lecture materials will be suggested accordingly	OGAWA Hiroshi
7	November 19	Increase access to primary oral health care services and to oral disease preventive services	Lecture materials will be suggested accordingly	OGAWA Hiroshi
8	November 26	Strengthen the nation's health and human service infrastructure and workforce	Lecture materials will be suggested accordingly	OGAWA Hiroshi
9	December 3	Public Health Service (Structure of oral health coordinating committees)	Lecture materials will be suggested accordingly	OGAWA Hiroshi
10	December 10	Case study 1: Highlight the oral health needs of specific population groups	Lecture materials will be suggested accordingly	OGAWA Hiroshi
11	December 17	Case study 2: Identify successes and challenges of current oral health care delivery	Lecture materials will be suggested accordingly	OGAWA Hiroshi
12	December 24	Case study 3: Propose workforce innovations that would overcome access challenges	Lecture materials will be suggested accordingly	OGAWA Hiroshi
13	January 7	Case study 4: Present policy considerations aimed at advancing delivery system improvements	Lecture materials will be suggested accordingly	OGAWA Hiroshi
14	January 21	Presentation	Preparation for presentation	OGAWA Hiroshi
15	January 28	Presentation	Preparation for presentation	OGAWA Hiroshi

16	February 4	Summary and evaluation	Review the course	OGAWA Hiroshi
<p>【Evaluation】 Evaluated by debates (20%), assignments (50%) and presentations (30%).</p> <p>【Media】 WHO World Oral Health Report, etc WHO publications.</p> <p>【Reference book】 References will be indicated if required.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5724	1	WED/1・A	2	9214	Practice
260W7724		WED/6・A			
260W5725	2	WED/1・B	2	9214	Practice
260W7725		WED/6・B			
Course	Seminar on Preventative dentistry A, B				
Instructor	Associate Professor TAKEHARA Sachiko (Div Preventive Dentistry) Lecturer KANEKO Noboru (Preventive Dentistry Clinic) Professor NOHNO Kaname (Div Oral Health Promotion)				
Place	Laboratory in the Division of Preventive Dentistry				
<p>【Course outline】 This course deals with clinical preventive dentistry included halitosis.</p> <p>【Course aim】 The aim of this course is to learn basic knowledge of clinical preventive dentistry and acquire latest skills for examination, diagnosis and treatment.</p> <p>【Attainment target】 The students should be able to do as follows: <ul style="list-style-type: none"> ・to perform dental practices from the point of view in preventative dentistry, ・to examine patient's oral malodor by organoleptic test and gas chromatography measurement and ・to accurately explain the results of examinations and to precisely answer to patient's questions. </p> <p>【Study method・attention】 This course consists of lecture and practice component if students may deal with actual patients in the preventive dentistry clinic. In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the results yourself. When using generative AI, please check the "Niigata University Generative AI Usage Promotion Guidelines" before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.</p>					
A		【Plan】			
No.	Date	Contents	Preparing learning	Instructor	
1	April 8	Guidance	Lecture materials will be suggested accordingly	TAKEHARA Sachiko	
2	April 15	Communications with patients by medical interview	Lecture materials will be suggested accordingly	TAKEHARA Sachiko	
3	April 22	Oral health instruction and health promotion	Lecture materials will be suggested	TAKEHARA Sachiko	

			accordingly	
4	May 13	Clinical examinations and screening of dental caries	Lecture materials will be suggested accordingly	KANEKO Noboru
5	May 20	Instruments and devices for initial caries detection	Lecture materials will be suggested accordingly	KANEKO Noboru
6	May 27	Assessment of caries risk	Lecture materials will be suggested accordingly	KANEKO Noboru
7	June 3	Preventive care for dental caries (oral hygiene instruction)	Lecture materials will be suggested accordingly	KANEKO Noboru
8	June 10	Preventive care for dental caries (topical fluoride application)	Lecture materials will be suggested accordingly	KANEKO Noboru
9	June 17	Preventive care for caries (fissure sealant)	Lecture materials will be suggested accordingly	KANEKO Noboru
10	June 24	Clinical examinations and screening of periodontal diseases	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
11	July 1	Assessment of periodontal diseases risk	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
12	July 8	Preventive care for periodontal diseases (supra-gingival scaling)	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
13	July 15	Preventive care for periodontal diseases (scaling and root planning)	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
14	July 22	Formulation of the recall system	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
15	July 29	Summary and discussion	Review the course	TAKEHARA Sachiko
16	August 5	Presentation	Preparation for presentation	TAKEHARA Sachiko

B		【Plan】		
No.	Date	Contents	Preparing learning	Instructor
1	October 7	Interview to the patient who complains about halitosis	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
2	October 14	Organoleptic tests for halitosis	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
3	October 21	Halitosis examinations in the university hospital	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
4	October 28	Halitosis examinations in the university hospital	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
5	November 4	Halitosis examinations by a general practitioner	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
6	November 11	Halitosis examinations by a general practitioner	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
7	November 18	Diagnosis of genuine halitosis	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
8	November 25	Adequate treatment procedure according to diagnosis	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
9	December 2	How to deal with halitophobic patients	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
10	December 9	Mechanical cleaning for halitosis treatment	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
11	December 16	Chemical approach for halitosis prevention	Lecture materials will be suggested accordingly	TAKEHARA Sachiko
12	December 23	Psychosomatic backgrounds of halitosis	Lecture materials will be suggested accordingly	NOHNO Kaname
13	January	Brief psychotherapy for halitosis patients	Lecture materials	NOHNO Kaname

	13		will be suggested accordingly	
14	January 20	Summary and discussion	Review of the course	TAKEHARA Sachiko
15	January 27	Summary and discussion	Review of the course	TAKEHARA Sachiko
16	February 3	Presentation	Preparation for presentation	TAKEHARA Sachiko

【Evaluation】

Attendance attitude or oral test (80%) and attendance (20%).

【Media】

・Proceedings of the Fifth International Conference on Breath Odour, Int. Dent. J., 52 (Supplement), 175-247, 2002.

(In Japanese)

- ・口臭診療マニュアル：EBMに基づく診断と治療 宮崎秀夫編，第一歯科出版
- ・口臭の疫学，臨床家のための口臭治療のガイドライン 八重垣健編著，クインテッセンス出版
- ・予防歯科実践ハンドブック 予防歯科臨床教授協議会編，医歯薬出版

【Reference book】

References will be indicated if required.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5726	1	Tue /1・A	2	9114	Lecture
260W7726		Tue /6・A			
260W5727	2	Tue /1・B	2	9115	Lecture
260W7727		Tue /6・B			
Course	Dentistry for Child Health and Development (DCHD) A, B				
Instructor	Prof. HAYASAKI, Haruaki (Div. Pediatric Dentistry) Assistant Prof. SOTOME, Tetsuya (Div. Pediatric Dentistry)				
Place	Seminar Room in Division of Pediatric Dentistry				
A					
【Course outline】					
Dentistry for child health and development is the science for oral diseases that occur in the newborn, the infant, the school age, the adolescence and even the adult rears next generation, which is called as the reproduction cycle. In this lecture, the research method is discussed through several common oral diseases seen in the young population.					
【Course aim】					
1. To learn several oral diseases which occur in young population.					
2. To learn the epidemiological researches on the typical oral diseases in young population.					
3. To discuss the research methods concerning to dentistry for child health and development.					
【Attainment target】					
1. To explain chronologically several oral diseases which occur in young population.					
2. To enumerate the cause, the treatment course and the outcome of several oral diseases.					
3. To explain the characteristic of the research method of dentistry for child health and development.					
【Study method・attention】					
Read and understand the prepared literatures thoroughly by yourself before every lecture, and join in the discussion actively on every lecture. Styles of class are lecture and group study.					
It is not allowed to take both A and B courses.					
In this course, the use of generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions. When using generative AI, students must comply with the following guidelines:					
1. If generative AI is used for reports or other assignments, students must clearly state which parts were assisted by AI, the purpose of its use (e.g., the prompts or questions used), and which AI system was utilized.					
2. Students must not use AI-generated content as-is; they are required to independently verify and, if necessary, revise the content to ensure its accuracy and appropriateness.					
3. Students bear full responsibility for the final submitted work.					
4. If inappropriate use is identified (including use beyond the permitted scope or infringement of others' intellectual property rights), strict action will be taken in accordance with university regulations.					

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1, 2	4/7, 14	Outline of DCHD	Textbook pp2-10	HAYASAKI Haruaki
3, 4	4/21, 28	Background of Outline of DCHD	Textbook pp11-53	HAYASAKI Haruaki
5	5/12	DCHD and Cooperation	Textbook pp88-116	SOTOME Tetsuya
6	5/19	DCHD and Cooperation (Case Study)	Textbook pp118-138	SOTOME Tetsuya
7, 8	5/26, 6/2	Oral Disease in Child	Textbook pp54-79	SOTOME Tetsuya
9	6/9	Oral Habilitation of Young Child	Textbook pp200-246	HAYASAKI Haruaki
10	6/16	Evaluation of Oral Function in Child	Textbook pp518-556	HAYASAKI Haruaki
11	6/23	Self-maintenance of Oral Hygiene	Textbook pp460-489	SOTOME Tetsuya
12, 13	6/30, 7/7	Research of DCHD	Previous review.	SOTOME Tetsuya
14, 15	7/14, 21	Summary of DCHD	Previous review.	HAYASAKI Haruaki
16	7/28	Examination	Previous review.	HAYASAKI Haruaki

【Evaluation】

Reports as the formative estimation (30%) and final oral examination (70%)

【Media】

Textbook

Pediatric Dentistry - Infancy Through Adolescence-. WB Saunders Company. ISBN 0-7216-4695-6.

【Reference book】

1. Reference Books

- (1) Functional Occlusion. PE Dawson. MDP Company. ISGN 978-263-44313-2.
- (2) FACIAL GROWTH 3rd Edition. Donald H. Enlow. ISBN 0-7216-2843-5.

2. Reference Journals

- (1) Pediatric Dentistry
(*Journal of American Academy of Pediatric Dentistry*)
- (2) International Journal of Paediatric Dentistry
(*Journal of the British Society of Paediatric and the International Journal of Pediatric Dentistry*)
- (3) Pediatric Dental Journal
(*International Journal of Japanese Society of Pediatric Dentistry*)
- (4) The Journal of Clinical Pediatric Dentistry

B

【Course outline】

Dentistry for child health and development is the science for oral diseases that occur in the newborn, the infant, the school age, the adolescence and even the adult rears next generation, which is called as the reproduction cycle. In this lecture, the research method is discussed through several common oral diseases seen in the young population.

【Course aim】

1. To learn several oral diseases which occur in young population.
2. To learn the epidemiological researches on the typical oral diseases in young population.
3. To discuss the research methods concerning to dentistry for child health and development.

【Attainment target】

1. To explain chronologically several oral diseases which occur in young population.
2. To enumerate the cause, the treatment course and the outcome of several oral diseases.
3. To explain the characteristic of the research method of dentistry for child health and development.

【Study method・attention】

Read and understand the prepared literatures thoroughly by yourself before every lecture, and join in the discussion actively on every lecture.

It is not allowed to take both A and B courses.

In this course, the use of generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions. When using generative AI, students must comply with the following guidelines:

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3. Students bear full responsibility for the final submitted work.
4. If inappropriate use is identified (including use beyond the permitted scope or infringement of others' intellectual property rights), strict action will be taken in accordance with university regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1, 2	10/6, 20	Outline of DCHD	Textbook pp2-10	HAYASAKI Haruaki
3, 4	10/27, 11/6	Background of Outline of DCHD	Textbook pp11-53	HAYASAKI Haruaki
5	11/10	DCHD and Cooperation	Textbook pp88-116	SOTOME Tetsuya
6	11/17	DCHD and Cooperation (Case Study)	Textbook pp118-138	SOTOME Tetsuya
7, 8	11/24, 12/1	Oral Disease in Child	Textbook pp54-79	SOTOME Tetsuya
9	12/8	Oral Habilitation of Young Child	Textbook pp200-246	HAYASAKI Haruaki
10	12/15	Evaluation of Oral Function in Child	Textbook pp518-556	HAYASAKI Haruaki
11	12/22	Self-maintenance of Oral Hygiene	Textbook pp460-489	SOTOME Tetsuya
12, 13	1/12, 19	Research of DCHD	Previous review.	SOTOME Tetsuya
14, 15	1/26, 2/2	Summary of DCHD	Previous review.	HAYASAKI Haruaki
16	2/9	Examination	Previous review.	HAYASAKI Haruaki

【Evaluation】

【Media】

Textbook

Pediatric Dentistry - Infancy Through Adolescence-. WB Saunders Company. ISBN 0-7216-4695-6.

【Reference book】

1. Reference Books

(1) Functional Occlusion. PE Dawson. MDP Company. ISBN 978-263-44313-2.

(2) FACIAL GROWTH 3rd Edition. Donald H. Enlow. ISBN 0-7216-2843-5.

2. Reference Journals

(1) Pediatric Dentistry

(Journal of American Academy of Pediatric Dentistry)

(2) International Journal of Paediatric Dentistry

(Journal of the British Society of Paediatric and the International Journal of Pediatric Dentistry)

(3) Pediatric Dental Journal

(International Journal of Japanese Society of Pediatric Dentistry)

(4) The Journal of Clinical Pediatric Dentistry

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5728	1	Mon/6・A	2	9114	Lecture・Seminar
260W7728		Mon/7・A			
260W5729	2	Mon/6・B	2	9115	Lecture・Seminar
260W7729		Mon/7・B			
Course	Practice of Pediatric Dentistry: Treatment of Children's Oral Disease A, B				
Instructor	Associate Prof. NAKAMURA, Yuki (Div. Pediatric Dentistry) Assistant Prof. HOZAWA, Mio (Div. Pediatric Dentistry)				
Place	Laboratory Room, Division of Pediatric Dentistry, Clinic of Pediatric Dentistry and Special Needs Dentistry				
A					
【Course outline】					
This basic course deals with etiology, prevention, treatment and management of children's oral disease.					
【Course aim】					
In this course, students will practice the pediatric dental diagnosis and basic treatment for children's oral disease.					
【Attainment target】					
Students are expected to be able to:					
<ol style="list-style-type: none"> 1. explain the children's oral disease. 2. understand the differences between the children's oral disease and those of adults. 3. practice the pediatric dental diagnosis and basic treatment for children's oral disease. 					
【Study method・attention】					
Classes are the lectures and Practices. Read and understand the handouts and reference books thoroughly by yourself before every lecture, and join in the discussion actively on every lecture.					
In this course, the use of generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions. When using generative AI, students must comply with the following guidelines:					
<ol style="list-style-type: none"> 1. If generative AI is used for reports or other assignments, students must clearly state which parts were assisted by AI, the purpose of its use (e.g., the prompts or questions used), and which AI system was utilized. 2. Students must not use AI-generated content as-is; they are required to independently verify and, if necessary, revise the content to ensure its accuracy and appropriateness. 3. Students bear full responsibility for the final submitted work. 4. If inappropriate use is identified (including use beyond the permitted scope or infringement of others' intellectual property rights), strict action will be taken in accordance with university regulations. 					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/13	Guidance (Lecture)	Textbook2 pp102-116	Nakamura	
2,3	4/20	Oral disease in the developmental stage 1,2	Textbook2	Nakamura	

	4/27	(Lecture)	pp117-120, pp141-156	
4, 5	5/7 5/11	Children's dental caries and related disease 1,2 (Lecture)	Textbook2 pp167-192	Nakamura Hozawa
6, 7	5/18 5/25	Surgical treatment in Pediatric Dentistry 1,2 (Lecture)	Textbook2 pp121-125, pp193-203	Nakamura Hozawa
8-10	6/1 6/8 6/15	Dental anomalies and the effect on the occlusion 1-3 (Lecture)	Textbook2 pp126-140, pp210-226, pp234-242	Nakamura
11-15	6/22 6/29 7/6 7/13 7/27	Practice of Pediatric Dentistry 1-5 (Seminar)	Summary of handouts	Nakamura Hozawa
16	8/3	Conclusion (Lecture, examination)	Review	Nakamura

【Evaluation】

Reports as the formative estimation (30%) and final oral examination (70%)

【Media】

1. Original handouts (Pediatric Dentistry)
2. Laboratory and clinical practice 3rd edition (Ishiyaku Publishers, Inc.) 9,400 yen

【Reference book】

Pediatric Dentistry Clinical Text (Nagase shoten Inc.)
Dentistry for the child and adolescent 11th edition (Mosby Elsevier) 18,800 yen (reference price)
Pediatric Dentistry 6th Infancy through adolescent (Elsevier) 16,600 yen (reference price)

B

【Course outline】

This applied course deals with etiology, prevention, treatment and management of children's oral disease.

【Course aim】

In this course, students will practice the pediatric dental diagnosis and applied treatment for children's oral disease, and understand the treatment considering the effects of growth and development in craniofacial area.

【Attainment target】

Students are expected to be able to:

1. understand the effect of growth and development in craniofacial area.
2. understand the oral health care of the medically compromised children.
3. practice the pediatric dental diagnosis and applied treatment for children's oral disease.

【Study method・attention】

Classes are the lectures and Practices. Read and understand the handouts and reference books thoroughly by yourself before every lecture, and join in the discussion actively on every lecture. It is recommended that students have taken IA or IIA.

In this course, the use of generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions. When using generative AI, students must comply with the following guidelines:

1. If generative AI is used for reports or other assignments, students must clearly state which parts were

assisted by AI, the purpose of its use (e.g., the prompts or questions used), and which AI system was utilized.

2. Students must not use AI-generated content as-is; they are required to independently verify and, if necessary, revise the content to ensure its accuracy and appropriateness.
3. Students bear full responsibility for the final submitted work.
4. If inappropriate use is identified (including use beyond the permitted scope or infringement of others' intellectual property rights), strict action will be taken in accordance with university regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/5	Guidance (Lecture)	Textbook2 pp102-116	Nakamura
2, 3	10/13 10/19	Growth and development in craniofacial area 1,2 (Lecture)	Textbook2 pp117-140	Nakamura Hozawa
4, 5	10/26 11/2	Traumatic injury of the primary and permanent teeth 1,2 (Lecture)	Textbook2 pp204-209	Nakamura Hozawa
6, 7	11/9 11/16	Dental management of medically compromised children 1,2 (Lecture)	Textbook2 pp227-242	Nakamura
8-10	11/30 12/7 12/14	Dental anomalies and the effect on the occlusion 4-6 (Lecture)	Textbook2 pp210-226, pp260-270	Nakamura
11-15	12/21 1/14 1/22 1/25 2/1	Practice of Pediatric Dentistry 6-10 (Seminar)	Summary of handouts	Nakamura Hozawa
16	2/8	Conclusion (Lecture, examination)	Review	Nakamura

【Evaluation】

Reports as the formative estimation (30%) and final oral examination (70%)

【Media】

1. Original handouts (Pediatric Dentistry)
2. Laboratory and clinical practice 3rd edition (Ishiyaku Publishers, Inc.) 9,400 yen

【Reference book】

Pediatric Dentistry Clinical Text (Nagasue shoten Inc.)

Dentistry for the child and adolescent 11th edition (Mosby Elsevier) 18,800 yen (reference price)

Pediatric Dentistry 6th Infancy through adolescent (Elsevier) 16,600 yen (reference price)

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5730	1	Mon/1・A	2	9114	Lecture, Seminar
260W7730		Mon/6・A			
260W5731	2	Mon/1・B	2	9115	Lecture, Seminar
260W7731		Mon/6・B			
Course	Seminar on Special Needs Dentistry A, B				
Instructor	Lecturer Kuniko Ohshima (Div. Pediatric Dentistry) Assistant Prof. Yuuki Sasakawa (Div. Pediatric Dentistry)				
Place	Seminar room in pediatric dentistry				
A					
【Course outline】					
This seminar deals with managing techniques of the handicapped patient during dental treatment from physical and mental viewpoints.					
【Course aim】					
1. To learn about the physical and mental problem during dental treatment with disabled person 2. To learn the normalization in the dental situation					
【Attainment target】					
1. To explain the feature of handicapped patient 2. To explain the strategies for appropriate use of behavior management to the patient with behavior disorder					
【Study method・attention】					
Read and understand prepared handout thoroughly by yourself before every seminar and join in the seminar actively					
In this course, the use of generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions. When using generative AI, students must comply with the following guidelines:					
1. If generative AI is used for reports or other assignments, students must clearly state which parts were assisted by AI, the purpose of its use (e.g., the prompts or questions used), and which AI system was utilized. 2. Students must not use AI-generated content as-is; they are required to independently verify and, if necessary, revise the content to ensure its accuracy and appropriateness. 3. Students bear full responsibility for the final submitted work. 4. If inappropriate use is identified (including use beyond the permitted scope or infringement of others' intellectual property rights), strict action will be taken in accordance with university regulations.					
【Plan】					
No.	Date	Contents	Preparation and Review	Instructor	
1	4/13	Guidance	The details will be given in class	Ohshima K	
2	4/20	Basic concept of special needs dentistry	Textbook2 pp.2-37	Sasakawa Y	
3-5	4/27	Oral symptoms and dental characteristics of	Textbook2 pp.40-205	Ohshima K	

	5/7 5/11	various disorders 1-3		
6-8	5/18 5/25 6/1	Behavioral management 1-3	Textbook2 pp.208-244	Ohshima K
9, 10	6/8 6/15	Oral care and health promotion 1-2	Textbook2 pp.245-276	Ohshima K
11, 12	6/22 6/29	Risk management 1-2	Textbook2 pp.316-326	Ohshima K
13	7/6	Home dental care for children with disabilities	Handout	Sasakawa Y
14	7/13	Normalization in the dental situation	Textbook2 pp.2-37	Ohshima K
15	7/27	Summary	Review	Ohshima K
16	8/3	Examination		Sasakawa Y

【Evaluation】

Oral examination (50%) and report (50%).

【Media】

1. Handout supplied by Div. pediatric dentistry
2. Special Needs Dentistry 2nd edition (Ishiyaku Publishers. Inc)

B

【Course outline】

This seminar deals with managing techniques of the handicapped patient during dental treatment from physical and mental viewpoints.

【Course aim】

To understand the physical, mental and psychological characteristics of people with special needs in order to practice their dental health and treatment.

【Attainment target】

1. To explain the behavior management method necessary for dental treatment to people with special needs.
2. To make a dental health and dental treatment plan for people with special needs.
3. To practice dental treatment for people with special needs.

【Study method・attention】

Read and understand prepared handout thoroughly by yourself before every seminar and join in the seminar actively

In this course, the use of generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions. When using generative AI, students must comply with the following guidelines:

1. If generative AI is used for reports or other assignments, students must clearly state which parts were assisted by AI, the purpose of its use (e.g., the prompts or questions used), and which AI system was utilized.
2. Students must not use AI-generated content as-is; they are required to independently verify and, if necessary, revise the content to ensure its accuracy and appropriateness.
3. Students bear full responsibility for the final submitted work.
4. If inappropriate use is identified (including use beyond the permitted scope or infringement of others' rights), the student may be required to withdraw from the course.

intellectual property rights), strict action will be taken in accordance with university regulations.				
【Plan】				
No.	Date	Contents	Preparation and Review	Instructor
1	10/5	Guidance	The details will be given in class	Ohshima K
2-4	10/13 10/19 10/26	Management problems in the handicapped patient 1-3	Textbook2 pp.277-315	Ohshima K
5,6	11/2 11/9	Case based discussion : Intellectual disability	Handout (distributed later)	Ohshima K
7,8	11/16 11/30	Case based discussion : Autism spectrum disorder	Handout	Ohshima K
9	12/7	Case based discussion : Cerebral palsy	Handout	Ohshima K
10	12/14	Case based discussion : Muscular dystrophy	Handout	Sasakawa Y
11	12/21	Case based discussion : Sensory disorder	Handout	Ohshima K
12	1/14	Case based discussion : SMID (severe motor and intellectual disabilities)	Handout	Sasakawa Y
13	1/22	Case based discussion : Schizophrenia, depressive disorder	Handout	Sasakawa Y
14	1/25	Case based discussion : Epilepsy and syndrome	Handout	Ohshima K
15	2/1	Summary and	Review	Sasakawa Y
16	2/8	Examination		Ohshima K
【Evaluation】 Oral examination (50%) and report (50%). 【Media】 Handout supplied by Div. pediatric dentistry 【Reference book】 Special Needs Dentistry 2nd edition (Ishiyaku Publishers. Inc)				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5732	1	Mon/5・6 A	2	9114	Lecture ・ Seminar ・ Practice
260W7732		Thu/5・6 A			
260W5733	2	Mon/5・6 B	2	9115	Lecture ・ Seminar ・ Practice
260W7733		Thu/5・6 B			
Course	Surgical Approach for Temporomandibular Joint Diseases A, B				
Instructor	Associate Professor Hideaki Hirai.				
Place	Laboratory in Div. Oral and Maxillofacial Surgery.				
A					
<p>【Course outline】 This course deal with disease around temporomandibular joints. We discuss on diagnosis and treatment, especially surgical approach, for TMJ disease including postoperative management and prognosis.</p> <p>【Course aim】 The aim of this course is to obtain the accurate diagnosis for TMJ diseases, and to explain the indication and the complication of surgical approach and postoperative management.</p> <p>【Attainment target】 To explain the classification of functional disorders associated with jaw movement. To explain the diagnostic methods for functional disorders associated with jaw movement. To explain the diseases originated from TMJ and its differential diagnosis. To explain the classification of TMJ disorders and its differential diagnosis. To explain the surgical approaches for TMJ diseases. To explain the indication of surgical approaches to the TMJ. To explain the complications associated with the surgical approaches to the TMJ. To explain the long-term prognosis after surgical approaches to the TMJ.</p> <p>【Study method・attention】 To have a lecture on diagnostic strategies and puncture technique for TMJ disorders using some documents, slides, and/or DVD. We also discuss the prognosis of the puncture from literatures published on academic journals.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI is strictly prohibited in the preparation of reports, examinations, and all other assignments. In addition, all materials distributed in class must not be uploaded to or processed by generative AI tools. All submitted work must be created solely on the basis of the student's own knowledge and reasoning. If the use of generative AI is confirmed, it will be regarded as academic misconduct and will be dealt with strictly in accordance with university regulations.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/9	Orientations and explanation on how to collect the literatures.	The details are instructed in the class.	Hirai	

2	4/13	Functional disorders associated with the TMJ.	The details are instructed in the class.	Hirai
3	4/16	Diagnostic strategies for evaluation of functional disorders TMJ.	The details are instructed in the class.	Hirai
4	4/20	How to use the diagnostic tuelles for functional disorders associated with jaw movement.	The details are instructed in the class.	Hirai
5	4/23	Diseases originated from TMJ and its differential diagnosis.	The details are instructed in the class.	Hirai
6	4/27	Classification of TMJ disorders and differential diagnosis.	The details are instructed in the class.	Hirai
7	4/30	Indications of surgical diagnosis.	The details are instructed in the class.	Hirai
8	5/11	Pre-surgical preparation of TMJ surgeries.	The details are instructed in the class.	Hirai
9	5/14	Video presentation of the surgical approaches.	The details are instructed in the class.	Hirai
10	5/18	Post-surgical management for TMJ surgeries.	The details are instructed in the class.	Hirai
11	5/21	Literature discussion: long-term prognosis after TMJ fractures.	The details are instructed in the class.	Hirai
12	5/25	Literature discussion: long-term prognosis of surgical approaches for trismus.	The details are instructed in the class.	Hirai
13	5/28	Literature discussion: long-term prognosis of surgical approaches for internal derangement of TMJ.	The details are instructed in the class.	Hirai
14	6/1	Literature discussion: long-term prognosis after Rheumatoid arthritis.	The details are instructed in the class.	Hirai
15	6/4	Literature discussion: long-term prognosis after	The details are	Hirai

		total reconstruction of TMJ.	instructed in the class.	
16	6/8	Make some reports on literatures of TMJ surgeries.	The details are instructed in the class.	Hirai
<p>【Evaluation】 We evaluate totally collection of literatures (20%), discussion (30%), and reports (50%).</p> <p>【Media】 We indicate some guideline for TMJ treatment.</p> <p>【Reference book】 We indicate some key words for research papers and decide several literatures for discussion.</p>				
B				
<p>【Course outline】 This course deal with internal derangement of temporomandibular joints. We discuss on diagnosis and treatment using puncture technique for articular spaces including postoperative management and prognosis.</p> <p>【Course aim】 The aim of this course is to obtain basic knowledge about the puncture to the articular space, for example its purpose, effectiveness, and technique.</p> <p>【Attainment target】 To explain the differential diagnosis of classification on TMJ disorders. To explain the clinical feature and mechanism of the internal derangement of TMJ. To explain the surgical strategies for TMJ. To explain the puncture technique for the articular space of TMJ. To explain the indication of puncture technique for the articular space of TMJ. To explain the complication at puncture for articular space of TMJ. To explain the long-term prognosis of puncture strategies for TMJ disorders.</p> <p>【Study method・attention】 To have a lecture on diagnostic strategies and puncture technique for TMJ disorders using some documents, slides, and/or DVD. We also discuss the prognosis of the puncture from literatures published on academic journals.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI is strictly prohibited in the preparation of reports, examinations, and all other assignments. In addition, all materials distributed in class must not be uploaded to or processed by generative AI tools. All submitted work must be created solely on the basis of the student's own knowledge and reasoning. If the use of generative AI is confirmed, it will be regarded as academic misconduct and will be dealt with strictly in accordance with university regulations.</p>				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/5	Orientations and explanation on how to collect the literature.	The details are instructed in the class.	Hirai
2	10/8	Clinical features and classification of TMJ	The details are	Hirai

		dysordeers.	instructed in the class.	
3	10/15	Clinical features and diagnostic and treatment strategies of internal derangement of TMJ.	The details are instructed in the class.	Hirai
4	10/19	Puncture techniques.	The details are instructed in the class.	Hirai
5	10/22	Arthrography and its ability of a diagnostic tulle.	The details are instructed in the class.	Hirai
6	10/26	Pumping Manipulation.	The details are instructed in the class.	Hirai
7	10/29	Arthrocentesis.	The details are instructed in the class.	Hirai
8	11/2	Drug injections to the articular space of TMJ.	The details are instructed in the class.	Hirai
9	11/5	Arthroscope for TMJ disorders as a diagnostic and treatment tulle.	The details are instructed in the class.	Hirai
10	11/9	Literature discussion: Pumping Manipulation.	The details are instructed in the class.	Hirai
11	11/12	Literature discussion: Arthrocentesis.	The details are instructed in the class.	Hirai
12	11/16	Literature discussion: drug injection for TMJ articular space.	The details are instructed in the class.	Hirai
13	11/19	Literature discussion: Arthroscopic surgeries.	The details are instructed in the class.	Hirai
14	11/26	Literature discussion: natural course on internal derangements of TMJ TypeIII.	The details are instructed in the class.	Hirai
15	11/30	Literature discussion: natural course on internal derangements of TMJ typeIV.	The details are instructed in the class.	Hirai

			class.	
16	12/3	Make some reports on puncture techniques.	The details are instructed in the class.	Hirai
<p>【Evaluation】 We evaluate totally collection of literatures and discussion (50%), additionally reports (50%).</p> <p>【Media】 We indicate some guideline for TMJ treatment.</p> <p>【Reference book】 We indicate some key words for research papers and decide several literatures for discussion.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5734	1	Wed/5・A	2	9114	Lecture・Exercise
260W7734		Wed/6・A			
260W5735	2	Wed/5・B	2	9114	Lecture・Exercise
260W7735		Wed/6・B			
Course	Seminar on Molecular diagnosis of the oral cancer A, B				
Instructor	Professor Kei Tomihara				
Place	Lecture room will be informed on submission.				
A					
【Course outline】					
Lectures will review the genetic variation that causes oral tumors and the recent topics of those molecular diagnostic procedures.					
【Course aim】					
To understand the molecular diagnostic procedures and the optimized treatment plan for each individual case.					
【Attainment target】					
Acquirement of the capability for understanding the methods for detecting the genetic change and molecular biological characteristics, and for subjectively explaining the treatment plan based on the data of biomarkers.					
【Study method・attention】					
Review of related articles, diagnostic methods, and basics of the technologies. Exercise of molecular diagnosis by statistical procedure using clinical data with biomarkers.					
In this course, the use of generative AI tools (such as ChatGPT, Gemini, etc.) is permitted under certain conditions. If you choose to use them, please adhere to the following requirements:					
<ol style="list-style-type: none"> 1. When using AI for reports or other assignments, you must clearly state which parts were generated, for what purpose (e.g., the prompt you used), and which AI tool was utilized. 2. Do not use the generated content in its original form. You are responsible for verifying and revising the information to ensure its accuracy and appropriateness. 3. Students bear full responsibility for the final submitted work. 4. If inappropriate use is identified, including use beyond the permitted scope or infringement of others' copyrights, strict measures will be taken in accordance with university regulations. 					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/8	Article review, lecture of diagnostic methods	The details are instructed in the class.	Kei Tomihara	
2	4/15	Article review, lecture of diagnostic methods	The details are instructed in the class.	Kei Tomihara	
3	4/22	Article review, lecture of diagnostic methods	The details are instructed in the class.	Kei Tomihara	

			class.	
4	4/30	Lecture of the technology of molecular analysis	The details are instructed in the class.	Kei Tomihara
5	5/13	Lecture of the technology of molecular analysis	The details are instructed in the class.	Kei Tomihara
6	5/20	Lecture of the technology of molecular analysis	The details are instructed in the class.	Kei Tomihara
7	5/27	Experimental data analysis	The details are instructed in the class.	Kei Tomihara
8	6/3	Experimental data analysis	The details are instructed in the class.	Kei Tomihara
9	6/10	Experimental data analysis	The details are instructed in the class.	Kei Tomihara
10	6/17	Comparative analysis of experimental and clinical data	The details are instructed in the class.	Kei Tomihara
11	6/24	Comparative analysis of experimental and clinical data	The details are instructed in the class.	Kei Tomihara
12	7/1	Comparative analysis of experimental and clinical data	The details are instructed in the class.	Kei Tomihara
13	7/8	Exercise of the statistical analysis	The details are instructed in the class.	Kei Tomihara
14	7/15	Exercise of the statistical analysis	The details are instructed in the class.	Kei Tomihara
15	7/22	Summary and conclusions	The details are instructed in the class.	Kei Tomihara

<p>【Evaluation】 Oral examination 20%, written examination 60%, Report 20%</p> <p>【Media】 *No indicated text books. *Printed materials will be handed if necessary.</p>				
B				
<p>【Course outline】 Lectures will review the genetic (genomic) variation that cause oral tumors and the recent topics of those molecular diagnostic procedures.</p> <p>【Course aim】 To understand the genomic diagnosis procedures and the optimized treatment plan for each individual case.</p> <p>【Attainment target】 Acquirement of the capability for understanding the methods for detecting the genetic change and molecular biological characteristics, and for subjectively explaining the treatment plan based on the data of biomarkers.</p> <p>【Study method・attention】 Review of related articles, diagnostic methods, and basics of the technologies. Exercise of molecular diagnosis by statistical procedure using clinical data with biomarkers. In this course, the use of generative AI tools (such as ChatGPT, Gemini, etc.) is permitted under certain conditions. If you choose to use them, please adhere to the following requirements:</p> <ol style="list-style-type: none"> 1. When using AI for reports or other assignments, you must clearly state which parts were generated, for what purpose (e.g., the prompt you used), and which AI tool was utilized. 2. Do not use the generated content in its original form. You are responsible for verifying and revising the information to ensure its accuracy and appropriateness. 3. Students bear full responsibility for the final submitted work. 4. If inappropriate use is identified, including use beyond the permitted scope or infringement of others' copyrights, strict measures will be taken in accordance with university regulations. 				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/7	Article review, lecture of diagnostic methods	The details are instructed in the class.	Kei Tomihara
2	10/14	Article review, lecture of diagnostic methods	The details are instructed in the class.	Kei Tomihara
3	10/21	Article review, lecture of diagnostic methods	The details are instructed in the class.	Kei Tomihara
4	10/28	Lecture of the technology of molecular analysis	The details are instructed in the class.	Kei Tomihara

5	11/4	Lecture of the technology of molecular analysis	The details are instructed in the class.	Kei Tomihara
6	11/11	Lecture of the technology of molecular analysis	The details are instructed in the class.	Kei Tomihara
7	11/18	Article review 1, lecture of diagnostic methods and scientific backgrounds	The details are instructed in the class.	Kei Tomihara
8	11/25	Article review 1, lecture of diagnostic methods and scientific backgrounds	The details are instructed in the class.	Kei Tomihara
9	12/2	Article review 2, lecture of diagnostic methods and scientific backgrounds	The details are instructed in the class.	Kei Tomihara
10	12/9	Article review 2, lecture of diagnostic methods and scientific backgrounds	The details are instructed in the class.	Kei Tomihara
11	12/16	Article review 3, lecture of diagnostic methods and scientific backgrounds	The details are instructed in the class.	Kei Tomihara
12	12/23	Article review 3, lecture of diagnostic methods and scientific backgrounds	The details are instructed in the class.	Kei Tomihara
13	1/13	Article review 4, lecture of diagnostic methods and scientific backgrounds	The details are instructed in the class.	Kei Tomihara
14	1/20	Article review 4, lecture of diagnostic methods and scientific backgrounds	The details are instructed in the class.	Kei Tomihara
15	1/27	Summary and conclusions	The details are instructed in the class.	Kei Tomihara

【Evaluation】

Oral examination 20%, written examination 60%, Report 20%

【Media】

*No indicated text books.

*Printed materials will be handed if necessary.

【Reference book】

• Fonseca R. J., eds. Oral and Maxillofacial Surgery. Philadelphia (1999)

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5736	1	(Mon/7)・A	2	9114	Lecture, Seminar
260W7736					
260W5737	2	(Mon/7)・B	2	9115	Lecture, Seminar
260W7737					
Course	Fixed Prosthodontic Treatment A, B				
Instructor	Masaru Kaku: Associate Prof., Yoshiki Ono: Assistant Prof.				
Place	Common Seminar Room (C412)				
A					
<p>【Course outline】 Appropriate design and accurate occlusal contact adjustment are crucial for the proper function and longevity of prosthodontic treatment. Classic prosthodontics tend to rely on the doctors' experiences, however, recent prosthodontics gradually shifting to the clinical/etiological evidence-based treatment. In fact, Japan Prosthodontic Society has been consolidating the treatment guideline for some basic prosthodontic treatment. This course is aiming to obtain the indispensable knowledge about the fixed prosthodontic treatment, mainly by reviewing the literature evidence.</p> <p>【Course aim】 The aim of this course is to acquire the knowledge which is necessary for the fixed prosthodontic treatment by literature review.</p> <p>【Attainment target】</p> <ol style="list-style-type: none"> 1. To explain the significance of fixed prosthodontics 2. To explain the type of fixed prosthodontics 3. To explain the indication of fixed prosthodontics 4. To explain the pros and cons of fixed prosthodontics 5. To explain the technical procedure of fixed prosthodontics 6. To enumerate the occlusal relationship of fixed prosthodontics 7. To explain the periodontal reaction induced by the inappropriate fixed prosthodontics 8. To explain the diagnosis and handling of periodontal destruction caused by the inappropriate fixed prosthodontics <p>【Study method・attention】 References will be provided as needed but you should learn the outline of fixed prosthodontics by textbook in advance.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/6	Guidance	The details will be given in the lecture.	KAKU	
2	4/13 4/20	Significance and Type of Fixed Prosthodontic	Preparing learning with provided text.	KAKU	

3	4/27 5/11 5/18 5/25	Indication of Fixed Prosthodontic	Preparing learning with provided text.	KAKU
4	6/1 6/8 6/15 6/22	Pros and Cons of Fixed Prosthodontic	Preparing learning with provided text.	KAKU
5	6/29 7/6 7/13 7/27	Treatment Planning Case 1~4	Preparing learning with provided text.	KAKU
6	8/3	Summary and Examination	Review of previous lectures	KAKU

【Evaluation】

Attendance attitude (20%)

Reports imposed during the course (20%)

Written examination (60%)

【Media】

The handout will be provided in each lecture.

【Reference book】

Contemporary Fixed Prosthodontics, 4th Edition, Stephen Rosenstiel, Martin Land, Junhei Fujimoto

B

【Course outline】

Appropriate design and accurate occlusal contact adjustment are crucial for the proper function and longevity of prosthodontic treatment. Classic prosthodontics tend to rely on the doctors' experiences, however, recent prosthodontics gradually shifting to the clinical/etiological evidence-based treatment. In fact, Japan Prosthodontic Society has been consolidating the treatment guideline for some basic prosthodontic treatment. This course is aiming to obtain the indispensable knowledge about the fixed prosthodontic treatment, mainly by reviewing the literature evidence.

【Course aim】

The aim of this course is to acquire the knowledge which is necessary for the fixed prosthodontic treatment by advanced literature review.

【Attainment target】

1. To explain the significance of fixed prosthodontics
2. To explain the type of fixed prosthodontics
3. To explain the indication of fixed prosthodontics
4. To explain the pros and cons of fixed prosthodontics
5. To explain the technical procedure of fixed prosthodontics
6. To enumerate the occlusal relationship of fixed prosthodontics
7. To explain the periodontal reaction induced by the inappropriate fixed prosthodontics
8. To explain the diagnosis and handling of periodontal destruction caused by the inappropriate fixed prosthodontics

【Study method・attention】				
References will be provided as needed and but you should learn the outline of fixed prosthodontics by textbook in advance.				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/5	Guidance	The details will be given in the lecture.	KAKU
2	10/19 10/26	Technical Procedure of Fixed Prosthodontic	Preparing learning with provided text.	KAKU, ONO
3	11/2 11/9	Occlusal Relationship of Fixed Prosthodontics	Preparing learning with provided text.	KAKU, ONO
4	11/16 11/30	Periodontal Reaction Induced by the Inappropriate Fixed Prosthodontics	Preparing learning with provided text.	KAKU, ONO
5	12/7 12/14	Diagnosis and Handling of Periodontal Destruction Caused by the Inappropriate Fixed Prosthodontics	Preparing learning with provided text.	KAKU, ONO
6	12/21 1/22 1/25 2/1	Treatment Planning Case 1~4	Preparing learning with provided text.	KAKU, ONO
7	2/8	Summary and Examination	Review of previous lectures	KAKU
【Evaluation】				
Attendance attitude (20%)				
Reports imposed during the course (20%)				
Written examination (60%)				
【Media】				
The handout will be provided in each lecture.				
【Reference book】				
Contemporary Fixed Prosthodontics, 4th Edition, Stephen Rosenstiel, Martin Land, Junhei Fujimoto				
【Use of Generative A】				
In this course, the use of generative AI tools (e.g., ChatGPT, Gemini) is permitted under certain conditions. When using such tools, students must comply with the following rules:				
1. If generative AI is used in reports or other assignments, students must clearly state which parts were assisted, for what purpose (e.g., the prompts or questions used), and which AI tool was used.				
2. Content generated by AI must not be used verbatim. Students are required to independently verify, evaluate, and revise the information for accuracy and appropriateness.				
3. Students bear full responsibility for the final submitted work.				
4. If inappropriate use is identified—such as use beyond the permitted scope or infringement of third-party copyrights—strict action will be taken in accordance with university regulations.				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5738	1	Tue/6・A	2	9114	Lecture, Seminar
260W7738					
260W5739	2	Tue/6・B	2	9115	Lecture, Seminar
260W7739					
Course	Dental Implant treatment A, B				
Instructor	Assoc. Prof. Masaru Kaku / Asst. Prof. Masako Nagasawa				
Place	C412 Common Seminar Room				
A					
<p>【Course outline】 Although, dental implant is one of the very effective treatment option of prosthetic dentistry, it is at higher risk of serious accident in compared with conventional prosthetic treatment. For leading dental implant treatment to a success, it is necessary to perform appropriately diagnosis and treatment planning. Among the necessary knowledge and technique regarding the dental implant treatment, this course focusing on the acquirement of treatment planning and computer aided simulation.</p> <p>【Course aim】 The aim of this course is to acquire the rudimentary knowledge and treatment planning of dental implant.</p> <p>【Attainment target】</p> <ol style="list-style-type: none"> To explain the pros and cons of dental implants To explain the dangers of dental implants To explain the clinical procedures of dental implant To explain the computer aided simulation system of dental implant <p>【Study method・attention】 Clinical skill will be acquired according to the recognition system of Oral Implant Clinic in Niigata University Medical and Dental Hospital. Necessary text will be provided prior to the lectures and please study these contents in advance.</p> <p>*Use of Generative AI In this course, the use of generative AI tools (such as ChatGPT, Gemini, etc.) is permitted under certain conditions. If you choose to use them, you must comply with the following requirements:</p> <ol style="list-style-type: none"> When using AI for reports or other assignments, you must clearly state which parts were generated, for what purpose (e.g., prompts used), and which AI tool was utilized. Do not use AI-generated content as-is. You are responsible for verifying and revising the information to ensure its accuracy and appropriateness. Students bear full responsibility for the final submitted work. If inappropriate use is detected—such as using AI beyond the permitted scope or infringing on others' copyrights—strict measures will be taken in accordance with university regulations. 					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/14	Guidance	The details will be given in the lecture.	Kaku	

2, 3	4/21 4/28	Overview and Recent Trends	Web search about implant therapy.	Kaku/Nagasa wa
4, 5	5/12 5/19	Anatomy for implant installation and computer simulation(lecture)	Preparing learning with provided text.	Kaku/Nagasa wa
6, 7	5/26 6/2	Anatomy for implant installation and computer simulation(seminar)	Preparing learning with provided text.	Kaku/Nagasa wa
8-14	6/9 6/16 6/23 6/30 7/7 7/14 7/21	Treatment Planning Case1~7	The outline of dental implant should be understood by some textbook.	Kaku/Nagasa wa
15	7/28	Summary and Examination	Review of previous lectures	Nagasawa

【Evaluation】

Attendance attitude (20%)

Reports imposed during the course (20%)

Written examination(60%)

【Media】

The handout will be provided in each lecture.

【Reference book】

Lindhe, T Karring, NP Lang, Clinical periodontology and implant dentistry, John Wiley & Sons, Apr 15, 2009

B

【Course outline】

Although, dental implant is one of the very effective treatment option of prosthetic dentistry, it is at higher risk of serious accident in compared with conventional prosthetic treatment. Furthermore, usage of dental implant make the treatment planning more complicated. For leading dental implant treatment to a success, it is necessary no only to perform appropriately diagnosis and treatment planning, but also selection of superstructure and occlusal adjustment are important. Among the necessary knowledge and technique regarding the dental implant treatment, this course focusing on the treatment planning from the prosthodontics point of view.

【Course aim】

The aim of this course is to acquire the advanced knowledge and treatment planning of dental implant.

【Attainment target】

1. To explain the pros and cons of dental implants
2. To explain the dangers of dental implants
3. To explain the clinical procedures of dental implant
4. To explain the superstructure of dental implant
5. To explain the occlusion of dental implant
6. To explain the factors affecting the prognosis of dental implant

【Study method・attention】

Clinical skill will be acquired according to the recognition system of Oral Implant Clinic in Niigata University Medical and Dental Hospital. Necessary text will be provided prior to the lectures and please study these contents in advance.

*Use of Generative AI

In this course, the use of generative AI tools (such as ChatGPT, Gemini, etc.) is permitted under certain conditions. If you choose to use them, you must comply with the following requirements:

1. When using AI for reports or other assignments, you must clearly state which parts were generated, for what purpose (e.g., prompts used), and which AI tool was utilized.
2. Do not use AI-generated content as-is. You are responsible for verifying and revising the information to ensure its accuracy and appropriateness.
3. Students bear full responsibility for the final submitted work.
4. If inappropriate use is detected—such as using AI beyond the permitted scope or infringing on others' copyrights—strict measures will be taken in accordance with university regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/6	Guidance	The details will be given in the lecture.	Kaku
2, 3	10/20 10/27	Overview and Recent Trends	Web search about implant therapy.	Kaku/Nagasawa
4-8	11/10 11/17 11/24 12/1 12/8	Treatment Planning Case1~5	The outline of dental implant should be understood by some textbook.	Kaku/Nagasawa
9-12	12/15 12/22 1/12 1/19	Implant Superstructure and Occlusion	Preparing learning with provided text.	Nagasawa
13, 14	1/26 2/2	Factors Affecting Implant Prognosis	Preparing learning with provided text.	Nagasawa
15	2/9	Summary and Examination	Review of previous lectures	Nagasawa

【Evaluation】

Attendance attitude (20%)

Reports imposed during the course (20%)

Written examination(60%)

【Media】

The handout will be provided in each lecture.

【Reference book】

Lindhe, T Karring, NP Lang, Clinical periodontology and implant dentistry, John Wiley & Sons, Apr 15, 2009

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5740	1	Wed/7・A	2	9114	Seminar
260W7740					
Course	Basic research seminar of Oral implant dentistry A				
Instructor	Lecturer Yosuke Akiba (Div. of Bio-Prosthodontics)				
Place	C412 C4 Seminar Room				
A					
<p>【Course outline】 A clinical demand has been increased as a prosthodontics option recently. The purpose of this seminar is to understand the basics sciences of dental implant clinic such as peri-implant tissue and materials of implant fixture and to understand the outline of basic research. This seminar should contribute to the understanding and improvement of dental implant therapy for graduate student.</p> <p>【Course aim】 To acquire the basic knowledge, skill, and attitude concerning dental implant research for success of implant therapy.</p> <p>【Attainment target】</p> <ol style="list-style-type: none"> 1. To explain the history of the dental implant. 2. To enumerate the importance of the dental implant. 3. The research on the dental implant until present is outlined. 4. To enumerate the problems of the dental implant research. 5. To enumerate the topics of dental implant research. 6. To enumerate the techniques of dental implant research. 7. To practice the basic skills for dental implant research. <p>【Study method・attention】 Regarding the research, past papers should be searched and read so that you will understand the outline of it. Then, the research techniques necessary to solve the current basic science problems will be studied through the lectures and the practical courses. The internet environment is indispensable because it is necessary to access the Web site frequently, and to retrieve the document while the course. Necessary text will be provided prior to the lectures and please study these contents in advance.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI is strictly prohibited in the preparation of reports, examinations, and any other assignments. Furthermore, students are not permitted to upload, input, or otherwise provide any materials distributed during the course to generative AI systems. All submitted work must be created solely on the basis of the student's own knowledge and independent thinking. Any confirmed use of generative AI will be regarded as academic misconduct and will be dealt with strictly in accordance with the university regulations.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/8	Guidance	The details will be	Akiba Y	

			given in the lecture.	
2	4/15 4/22 5/13	Outline of dental implants 1-4	Preparing learning with provided text.	Akiba Y
3	5/20	Anatomy for dental implants	Preparing learning with provided text.	Akiba Y
4	5/27	The kind and indications of the dental implant	Preparing learning with provided text.	Akiba Y
5	6/3	History of dental implant basic research	Preparing learning with provided text.	Akiba Y
6	6/10	Outline of dental implant basic research	Preparing learning with provided text.	Akiba Y
7	6/17 6/24 7/15 7/22	Reading of dental implant related papers 1-6	Select one implant related research paper and read.	Akiba Y
8	7/29	Theme and methodology of dental implant research/examination	Preparing learning with provided text	Akiba Y

【Evaluation】

Attendance to the lectures and practical courses (20%)

Reports imposed during the course (20%)

Written examination at the end (60%)

【Media】

The Power Point file used in the lectures will be printed out and distributed in each lecture. Additionally, texts will be distributed if necessary.

【Reference book】

To be announced.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5741	1	Thu/6・A	2	9114	Lecture・Practice
260W7741					
Course	Digital technology in prosthodontics A				
Instructor	Associate Prof. Masaru Kaku/ Assistant Prof. Kaori Eguchi (Div. of Bio-Prosthodontics)				
Place	C412 Common Seminar Room				
A					
【Course outline】					
<p>The digitization of dental care is progressing rapidly thanks to the development of digital technologies. In prosthodontic treatment, almost all of the processes are already being digitized, which provides various benefits to the clinical and dental laboratory procedures; however there are still challenges. In this course, the students will learn about the current state of digitization in prosthodontic treatment and its issues, based on the literature. Furthermore, the students will learn and practice how to design crowns using the digital/ optical impression methods and CAD/CAM system.</p>					
【Course aim】					
<p>The aim of this course is to acquire the basic knowledge and skills necessary for prosthodontic treatment using digital technology.</p>					
【Attainment target】					
<p>At the end of the course, the students will be able to:</p> <ol style="list-style-type: none"> 1. Explain how to utilize digital technology in prosthodontic treatments. 2. Explain the digital workflow in the prosthodontic treatments. 3. Explain the pros and cons of digitization in clinical and dental laboratory procedures. 4. Practice how to take digital impressions using an intraoral scanner. 5. Practice how to design crowns using CAD systems. 6. Explain the indications and the type of materials used in fixed dental prosthesis with CAD/CAM systems. 					
【Study method・attention】					
<p>This course consists of lectures and practice. Necessary literature will be provided prior to the lectures. Please study these contents in advance.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/9	Guidance Outline of digital technologies in dental care	The details will be given in the lecture.	Kaku/ Eguchi	
2, 3	4/16 4/23	The use of digital technologies in prosthetic treatment examination and diagnosis	Preparing learning with provided text.	Kaku/ Eguchi	
4, 5	4/30 5/14	The use of digital technologies in crowns and fixed partial dentures	Preparing learning with provided text.	Kaku/ Eguchi	
6, 7	5/21 5/28	The use of digital technologies in removable partial dentures and complete dentures	Preparing learning with provided text.	Kaku/ Eguchi	

8, 9	6/4 6/11	The use of digital technologies in dental implants	Preparing learning with provided text.	Kaku/ Eguchi
10	6/18	Comparison of analog and digital methods	Preparing learning with provided text.	Kaku/ Eguchi
11	6/25	Digital impression methods (lecture)	Preparing learning with provided text.	Kaku/ Eguchi
12	7/2	How to take digital impressions using oral scanner (seminar)	Preparing learning with provided text.	Kaku/ Eguchi
13	7/9	How to design crowns using CAD systems (lecture)	Preparing learning with provided text.	Kaku/ Eguchi
14, 15	7/16 7/23	How to design crowns using CAD systems (seminar)	Preparing learning with provided text.	Kaku/ Eguchi
16	7/30	Summary and Examination	Review of previous lectures	Kaku/ Eguchi

【Evaluation】

Attendance attitude (20%)

Reports assigned during the course (20%)

Oral examination (60%)

【Media】

To be announced during the course. The handouts will be provided in each lecture.

【Reference book】

To be announced during the course.

【Remarks】

In this course, the use of generative AI is strictly prohibited. It is also forbidden to upload or input any of the distributed class materials into generative AI systems. All assignments and submissions must be created based on your own knowledge and thinking. If the use of generative AI is detected, it will be regarded as academic misconduct and will be dealt with strictly in accordance with university regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5742	1	Wed/6・A	2	9114	Lecture and Report Writing
260W7742		Wed/7・A			
260W5743	2	Wed/6・B	2	9115	Lecture and Group work/discussion
260W7743		Wed/7・B			
Course	Clinical Dental Implantology A, B				
Instructor	Prof. Noritaka Fujii				
Place	Dental seminar room on 2F of west-wing hospital building, Preclinical practice room on 4F of dental school building				
A					
<p>【Course outline】 The lecture concerning the principle on install operation and prosthodontic methods of the dental implant will be given.</p> <p>【Course aim】 This course aims to understand the concept of recovering treatment for missing teeth with the dental implant.</p> <p>【Attainment target】 The students will be required to explain: surgical procedure of the dental implant attention to install the dental implant components of the dental implant</p> <p>【Study method・attention】 After the lecture, students will complete individual assignments (report writing) and summarize each section. Preparation for each lecture will be suggested at the start of the course.</p> <p>・Regarding the Use of Generative AI This course permits the use of generative AI under certain conditions. When using it, adhere to the following points: 1. Do not use generated content as-is. Always verify the accuracy and appropriateness of the information yourself and make necessary revisions. 2. Students bear full responsibility for their final deliverables. 3. Any inappropriate use (including use beyond permitted scope or infringement of others' copyrights) will be strictly addressed in accordance with university regulations.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/8	Guidance	Textbook p62-79	N. Fujii	
2	4/15	The history of the dental implant	Textbook p54-60 Survey on previous type of the dental implant	N. Fujii	
3-5	4/22, 5/13, 20	The tissue property of around the dental implant	Textbook p38-53 Understanding on	N. Fujii	

			epithelial/connective tissue/bone around the implant	
6, 7	5/27, 6/3	The diagnostic method of the dental implant	Textbook p80-91 Survey on how to fabricate diagnostic stent	N. Fujii
8-10	6/10, 17, 24	The procedure and the attention of the dental implant installation	Textbook p155-169, 172-193, 226-238 Survey on general installation method of dental implant	N. Fujii
11-14	7/1, 8, 15, 22	The prosthodontic method for the dental implant	Textbook p266-276, 278-301, 302-307, 328-347 Survey on prosthodontic concept for dental implant	N. Fujii
15	7/29	Conclusion	Preparation for report submission	N. Fujii
16	8/5	Examination		N. Fujii
<p>【Evaluation】 Oral examination (40%), Discussion (30%) and report (30%)</p> <p>【Textbook】 M. Yamazaki, T. Takahashi et al., Ultimate Guide IMPLANTS, Ishiyaku Pub (2004), 23,000yen The presentation file using in the lecture will be distributed in each lecture.</p> <p>【Reference book】 N. Sato, Implant site development, Quintessence Pub (2001), 28,000yen</p>				
B				
<p>【Course outline】 This course deal with prosthesis by dental implant. Especially focused on the tissue reaction surrounding the implant and the function required for superstructure of the implant will be discussed</p> <p>【Course aim】 This course aims to acquire the basic knowledge about the tissue surrounding the implant and the characteristic caution with the superstructure of the implant. Furthermore, the students are expected to be able to point out on clinical obscure points of the dental implant.</p> <p>【Attainment target】 The students attending this course will be required to explain or understand</p> <ol style="list-style-type: none"> 1. detail of interface between the implant and the surrounding bone 2. detail of interface between the implant and the surrounding soft tissue 3. morphological differences between the junctional epithelium and the peri-implant epithelium 4. the innervation around the implant 				

5. the characteristic property on the movement of the implant under the pressure
6. the attention in the case of reconstructing anterior guidance by the implant
7. an ideal occlusion for the implant installed in molar region
8. the method to make the superstructure achieving good function and shape

【Study method・attention】

After presentations based on group discussions, a plenary discussion and summary will be held.

Preparation for each lecture will be suggested at the start of the course

- Regarding the Use of Generative AI

This course permits the use of generative AI under certain conditions.

When using it, adhere to the following points:

1. Do not use generated content as-is. Always verify the accuracy and appropriateness of the information yourself and make necessary revisions.
2. Students bear full responsibility for their final deliverables.
3. Any inappropriate use (including use beyond permitted scope or infringement of others' copyrights) will be strictly addressed in accordance with university regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/7	Guidance	Textbook p887-908	N. Fujii
2-5	10/14, 21, 28, 11/4	The Peri-implant tissues vs Periodontal tissues	Textbook p909-917 Contests Organization and understanding for given materials	N. Fujii
6	11/11	Presentation and Discussion	Preparation for the presentation and Report submission	N. Fujii
7-9	11/18, 25, 12/2	The properties of the superstructure and the technical procedure for the dental implant	Textbook p999-1024, 1030-1065 Contests Organization and understanding for given materials	N. Fujii
10	12/9	Presentation and Discussion	Preparation for the presentation and Report submission	N. Fujii
11-13	12/16, 23, 1/13	The discussion about the ideal occlusion for the dental implant	Contests Organization and understanding for given materials	N. Fujii
14	1/20	Presentation and Discussion	Preparation for the presentation and Report submission	N. Fujii
15	1/27	Conclusion	Preparation for the Discussion	N. Fujii

16	2/3	Examination		N. Fujii
<p>【Evaluation】 Discussion (30%), report (30%) and Presentation (40%)</p> <p>【Textbook】 J. Lindhe Clinical Periodontology and Implant Dentistry, Quintessence Pub (2005), 18,000yen The presentation file using in the lecture will be distributed in each lecture.</p> <p>【Reference book】 S. Hobo, H. Hosoyama, Occlusion for Implant, Quintessence Pub (2006), 23,000yen M. Gross, The Science and Art of Occlusion and Oral Rehabilitation, Quintessence Pub (2016), 38,000yen</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5744	1	Thu/6 A	2	9114	Lecture, Seminar
260W7744		Thu/7 A			
260W5745	2	Thu/6 B	2	9115	Lecture, Seminar
260W7745		Thu/7 B			
Course	Basic Physiology of Pain A, B				
Instructor	Lecturer Mana Hasegawa (General Dentistry and Clinical Education Unit)				
Place	Dental seminar room on 2F of west-wing hospital building				
A					
<p>【Course outline】 In this lecture, students can learn the neural mechanisms underlying the sense of pain, which is one of the sensory functions of the body and is particularly relevant to clinical dentistry</p> <p>【Course aim】 Acquire basic neurophysiological knowledge of somatosensory perception, with a focus on the sense of pain.</p> <p>【Attainment target】</p> <ol style="list-style-type: none"> 1. Explain the basic structure and function of the peripheral and central nervous systems. 2. Explain the function of neurons and the mechanism of excitatory conduction. 3. Explain peripheral mechanisms of pain and ascending pathways. 4. Describe the cranial neural mechanisms of the descending pain suppression system <p>【Study method・attention】 The course will be conducted in the form of lectures and exercises (group discussions). Students are expected to prepare well for the handouts and actively participate in discussions.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI is permitted under certain conditions. If you choose to use it, you must comply with the following: Do not use generated content as-is. You must personally verify its accuracy and appropriateness, and revise it as necessary. The student bears full responsibility for the final submitted work. If improper use is identified (including use beyond the permitted scope or infringement of others' copyrights), it will be handled strictly in accordance with university regulations.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/9	Guidance	Handouts and Papers	Hasegawa	
2-4	4/16, 23, 30	Neurons, action potentials and excitation conduction	Handouts and Papers	Hasegawa	
5-7	5/14, 21, 28	Peripheral and Central nervous system	Handouts and Papers	Hasegawa	
8, 9	6/4, 11	Somatic Sensory General Theory	Handouts and Papers	Hasegawa	

10, 11	6/18, 25	Ascending pain pathway (1) Peripheral nerve mechanism	Handouts and Papers	Hasegawa
12, 13	7/2, 9	Ascending pain pathway (2) Central nerve mechanism	Handouts and Papers	Hasegawa
14, 15	7/16, 23	Descending pain modulatory system	Handouts and Papers	Hasegawa
16	7/30	Conclusion and Examination	Previously Reviewed	Hasegawa
<p>【Evaluation】 Report (30%) and oral examination (40%), participation in group discussion (30%)</p> <p>【Media】 Handouts and papers will be distributed as needed.</p> <p>【Reference book】 N/A</p>				
B				
<p>【Course outline】 The second semester will focus specifically on chronic pain, with research topics on related cranial nerve mechanisms.</p> <p>【Course aim】 Learn the cranial nerve mechanisms underlying the control of chronic pain in the oral-facial region. Consider the connection between basic research and clinical dentistry.</p> <p>【Attainment target】</p> <ol style="list-style-type: none"> 1. Explain the characteristics and differences between acute and chronic pain. 2. Explain the classification of pain. 3. Explain the brain neural mechanisms of stress-induced chronic pain. 4. Explain the control of stress-induced chronic pain. <p>【Study method・attention】 The course will be conducted in the form of lectures and exercises (group discussions). Students are expected to prepare well for the handouts and actively participate in discussions.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI is permitted under certain conditions. If you choose to use it, you must comply with the following: Do not use generated content as-is. You must personally verify its accuracy and appropriateness, and revise it as necessary. The student bears full responsibility for the final submitted work. If improper use is identified (including use beyond the permitted scope or infringement of others' copyrights), it will be handled strictly in accordance with university regulations.</p>				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/1	Guidance	Handouts and Papers	Hasegawa
2-4	10/8, 15, 22	Acute pain and chronic pain	Handouts and Papers	Hasegawa
5, 6	10/29	Nociplastic pain	Handouts and Papers	Hasegawa

	11/12			
7, 8	11/19, 26	Orofacial chronic pain	Handouts and Papers	Hasegawa
9, 10	12/3, 10	Relationship between psychosocial stress and chronic pain	Handouts and Papers	Hasegawa
11, 12	12/17, 24	Chronic pain and exercise	Handouts and Papers	Hasegawa
13, 14	1/7, 21	Chronic Pain and Rice Fermented Extract - Sake Lees	Handouts and Papers	Hasegawa
15	1/28	Conclusion	Handouts and Papers	Hasegawa
16	2/4	Examination	Previously Reviewed	Hasegawa
<p>【Evaluation】 Report (30%) and oral examination (40%), participation in group discussion (30%)</p> <p>【Media】 Handouts and papers will be distributed as needed.</p> <p>【Reference book】 N/A</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5746	1	Tue/6, 7 • A	2	9114	Lecture and preclinical practice
260W7746					
260W5747	2	Tue/6, 7 • B	2	9115	Lecture and preclinical practice
260W7747					
Course	Clinical seminar and practice training for treatment of dental caries based on clinical cariology A, B				
Instructor	Associate Prof. Shoji Takenaka (Div. Cariology, Operative Dentistry & Endodontics)				
Place	Laboratory in Div. Cariology, Operative Dentistry & Endodontics Preclinical basic practice room on 3F of dental school building B (B302)				
A					
<p>【Course outline】 FDI proposed the Minimal intervention dentistry (MI), emphasizing the importance of dental preservation in 2000. Adhesive dentistry and clinical cariology are the basis of the MI-based restorative treatment. The success of adhesive treatment depends on clinical techniques. In this course, students will learn basic clinical techniques for MI-based restorative treatment through practical training using a dental model.</p> <p>【Course aim】 Students will learn about basic knowledge and skills for adhesive dentistry based on MI concept.</p> <p>【Attainment target】 The students will be able to:</p> <ul style="list-style-type: none"> - explain MI concepts. - explain the significance of dentin preservation in restorative treatment. - explain the theory of dental adhesion. - learn how to remove infected dentin based on MI through practical training. - perform class II and IV composite restorations through dental model training <p>【Study method・attention】 We will indicate learning contents and methods without lecture at the beginning of the course. Study was provided by lectures and practical training. The materials to prepare for practical training will be announce in advance. (Ex. Extracted human teeth, dental model). Short-term lending of reference books will be provided to a person who wants.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/7	Guidance	The details will be given in the lecture.	S. Takenaka	
2, 3	4/14, 4/21	Outline of clinical cariology (lecture)	Reference book ① part I and II	S. Takenaka	
4, 5	4/28, 5/12	Caries detection and removal of carious lesion (lecture)	Reference book ① part III CQ4-13	S. Takenaka	

6, 7	5/19, 5/26	Caries detection and removal of carious lesion (Preclinical practice)	Prepare a dental model and review previous lesson.	S. Takenaka
8, 9	6/2 6/9	Direct bonded restoration (lecture)	Reference book ① part III CQ14-19, part IV	S. Takenaka
10	6/16	Direct bonded restoration- management of polymerization shrinkage (lecture)	The details will be given in the lecture.	S. Takenaka
11-15	6/23, 6/30, 7/7, 7/14 7/21	Direct bonded class II and IV restoration (Preclinical practice)	Prepare a dental model and review previous lesson.	S. Takenaka
16	7/28	Examination	Review previous lesson.	S. Takenaka

【Evaluation】

Attitude (40%), products (30%), and oral examination (30%)

【Media】

Unspecified

【Reference book】

Main reference book

① http://www.hozon.or.jp/member/publication/guideline/file/guideline_2015.pdf

A summary will be distributed in English.

【Regarding the Use of Generative AI】

This course permits the conditional use of generative AI tools (such as ChatGPT, Gemini, etc.). If you use them, please adhere to the following points:

1. If you use them in reports, etc., you must clearly state which part was generated, the purpose (e.g., question prompts), and which AI tool was used.
2. Do not use generated content verbatim; you must personally verify and revise the accuracy and appropriateness of the information.
3. Students bear full responsibility for the final deliverables.
4. Any inappropriate use (including unauthorized use or infringement of others' copyrights) will be strictly addressed in accordance with university regulations.

B

【Course outline】

With the promotion of dental and oral health, the number of people who achieved 8020 exceeded 50%. While maintenance of occlusal function is being achieved, root caries in the elderly continues to increase and has become an important issue. The social demand for aesthetic dentistry is also increasing with the interest of the mouth. It is necessary to acquire skills to recover the natural morphology, color tone, and arrangement of teeth, rather than simply restoring occlusal function.

In this course, students will learn the knowledge and skills to deal with root caries and aesthetic dentistry that are often encountered in clinical practice.

【Course aim】				
Students will learn evidence-based strategies for active root caries of permanent teeth. Students will also learn the basic knowledge and skills for aesthetic restoration of teeth.				
【Attainment target】				
The students will be able to:				
<ul style="list-style-type: none"> - explain how to manage active root caries of permanent teeth. - explain the types, characteristics, and indications of dental aesthetic restoration. - restore the morphology and color tone of natural teeth according to the MI concept. 				
【Study method・attention】				
We will indicate learning contents and methods without lecture at the beginning of the course.				
Study was provided by lectures and practical training. The materials to prepare for practical training will be announce in advance. (Ex. Extracted human teeth, dental model). Short-term lending of reference books will be provided to a person who wants.				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/6	Guidance	The details will be given in the lecture.	S. Takenaka
2	10/20	Management for active root caries of permanent teeth (lecture)	Reference book ①	S. Takenaka
3	10/27	Management for active root caries of permanent teeth (preclinical practice)	Prepare a dental model and review previous lesson.	S. Takenaka
4	11/6	Composite restoration (lecture)	The details will be given in the lecture.	S. Takenaka
5-8	11/10 11/17 11/24 12/1	Composite restoration (preclinical practice)	Prepare a dental model and review previous lesson.	S. Takenaka
9	12/8	Principles of adhesive dentistry and laminate veneer (lecture)	Reference book ② P2-32, 51, 120-170.	S. Takenaka
10	12/15	Tooth preparation for laminate veneer (preclinical practice)	Prepare a dental model and review previous lesson.	S. Takenaka
11	12/22	Tooth whitening and immediate color recovery (tooth manicure) (lecture)	The details will be given in the lecture.	S. Takenaka
12	1/12	Office whitening and immediate color recovery (preclinical practice)	Prepare a dental model and review previous lesson.	S. Takenaka
13	1/19	Home whitening (preclinical practice)	Prepare a dental model and review	S. Takenaka

			previous lesson.	
14	1/26	CAD/CAM and direct crown restoration (lecture)	Reference book ② P36-53.	S. Takenaka
15	2/2	Tooth preparation for CAD/CAM inlay (preclinical practice)	Prepare a dental model and review previous lesson.	S. Takenaka
16	2/9	Examination	Review previous lesson.	S. Takenaka

【Evaluation】

Attitude (40%), products (30%), and oral examination (30%)

【Media】

Unspecified

【Reference book】

Main reference book

① http://www.hozon.or.jp/member/publication/guideline/file/guideline_2020.pdf

② A summary will be distributed in English.

【Regarding the Use of Generative AI】

This course permits the conditional use of generative AI tools (such as ChatGPT, Gemini, etc.). If you use them, please adhere to the following points:

1. If you use them in reports, etc., you must clearly state which part was generated, the purpose (e.g., question prompts), and which AI tool was used.
2. Do not use generated content verbatim; you must personally verify and revise the accuracy and appropriateness of the information.
3. Students bear full responsibility for the final deliverables.
4. Any inappropriate use (including unauthorized use or infringement of others' copyrights) will be strictly addressed in accordance with university regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5748	1	Thu/2・A	2	9214	Lecture・Seminar
260W7748		Thu/7・A			
260W5749	2	Tue/2・B	2	9215	Lecture・Seminar
260W7749		Tue/7・B			
Course	Seminar on oral health policy A, B				
Instructor	Prof. Akitugu Ohuchi (Div. of Social Welfare, Dep. of Oral Health and Welfare)				
Place	Seminar room in the Dept. of Oral Health and Welfare (Building C-7F)				
A					
【Course outline】					
This seminar deals with Analysis of various problems on oral health policy, which based on various investigation / statistics documents and methodology of policy planning to correspond to those problems.					
【Course aim】					
In this course, students will understand the present condition and the problems of Oral health service in Japan, which like the supply and demand of the dental professionals and learning the methodology of policy planning to correspond to those problems.					
【Attainment target】					
After this course, students should be able to;					
<ul style="list-style-type: none"> ・ explain the history and backgrounds of Oral health policy in Japan. ・ explain the present condition and the problems of the supply and demand of the dental professionals. ・ state opinions about countermeasures for the supply and demand of the dental professionals . 					
【Study method・attention】					
The internet environment is indispensable to access the Statistics database Web site. Students will be required to read the pre-distributed reference documents, and to summarize the main points and your questions before each attendance.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/9	Guidance	Summarize the origins and contents of the Dentist Act, Dental Hygienist Act, and Dental Technician Act	Ohuchi	
2-4	4/16 4/23 4/30	The history and backgrounds of Oral health policy	Summarize the history of Oral health policy. Details will be given in class.	Ditto	
5-8	5/14 5/21	The present condition and the problems of the supply and demand of dentists in Japan	Summarize about the Estimating dentist	Ditto	

	5/28 6/ 4		supply and demand in the past. Details will be given in class.	
9-11	6/11 6/18 6/25	The present condition and the problems of the supply and demand of dental hygienists and dental technicians in Japan	Summarize the Employment status of dental hygienists and Dental Technicians. Details will be given in class.	Ditto
12-15	7/ 2 7/ 9 7/16 7/23	Policy making practice	Review previous work and Summarize your opinion. Details will be given in class.	Ditto
16	7/30	Summary and Oral examination	Review previous work	Ditto

【Evaluation】

Oral examination based on report of practice

【Media】

No particular textbook

【Reference book】

Related papers for public health dentistry

【Use of Generative AI】

Generative AI may be used to support brainstorming and references searches, but it must not be used to write the substantive portions of a report. Any references or data must be verified against the original source, and the source must be clearly and properly cited.

B

【Course outline】

This seminar deals with Analysis of various problems on oral health policy, which based on various investigation / statistics documents and methodology of policy planning to correspond to those problems.

【Course aim】

In this course, students will understand the present condition and the problems of Oral health service in Japan, which like the supply and demand of the dental professionals and learning the methodology of policy planning to correspond to those problems.

【Attainment target】

After this course, students should be able to;

- explain the provision system of dental health care services.
- explain the present condition and the problems (including medical economics) of dental care institutions.
- state opinions about countermeasures for the provision system of dental health care services.

【Study method・attention】

The internet environment is indispensable to access the Statistics database Web site.

Students will be required to read the pre-distributed reference documents, and to summarize the main points and your questions before each attendance.

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/ 6	Guidance	Summarize the distribution of medical institutions in Japan.	Ohuchi
2-4	10/20 10/27 11/ 6	The present conditions of oral health service system	Summarize The present conditions of oral health service system. Details will be given in class.	Ditto
5-7	11/10 11/17 11/24	the present condition and the problems of dental clinics and hospitals	Summarize the number of patients at dental institutions. Details will be given in class.	Ditto
8-10	12/ 1 12/ 8 12/15	Macro-economy of Oral health service	Summarize the changes in dental care expenses. Details will be given in class.	Ditto
11-15	12/22 1/12 1/19 1/26 2/ 2	Policy making practice	Summarize the changes in dental care expenses. Details will be given in class.	Ditto
16	2/ 9	Summary and Oral examination	Review previous work	Ditto
<p>【Evaluation】 Oral examination based on report of practice</p> <p>【Media】 No particular textbook</p> <p>【Reference book】 Related papers for public health dentistry</p> <p>【Use of Generative AI】 Generative AI may be used to support brainstorming and references searches, but it must not be used to write the substantive portions of a report. Any references or data must be verified against the original source, and the source must be clearly and properly cited.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5750	1	Fri 3・A	2	9114	Lecture
260W7750		Fri 5・A			
260W5751	2	Fri 3・B	2	9115	Lecture
260W7751		Fri 5・B			
Course	Public health dentistry A, B				
Instructor	Prof. Kaname NOHNO (Div. Oral Health and Welfare)				
Place	Conference room at Div. Oral Health and Welfare				
A					
<p>【Course outline】 This course deals with epidemiological study in order to research valid diagnostic methods and risk factors for occurrence or progression of oral disease such as dental caries and periodontal disease, and protective factors for healthy improvement, and with the information processing: data collection and analysis using appropriate statistical method.</p> <p>【Course aim】 In this course, students master research design and statistical analysis method from epidemiology. In addition, they establish risk factors for occurrence and progression of oral diseases such as dental caries and periodontal disease.</p> <p>【Attainment target】 After this course, the students should be able to do for dental caries and periodontal disease as follows, • master research design and bias for making research protocol. • master how to make data files for analysis. • master statistical methods for analysis. • explain the risk factors and protective factors for occurrence or progression of oral diseases.</p> <p>【Study method・attention】 A lecture and field work Each the lecture or field work will be conducted based on the original documents. As you distribute a document beforehand, you should confirm the documents by the day.</p>					
【Plan】					
No.	Date	Contents	Preparation and Review	Instructor	
1-2	4/10, 4/17	Guidance	It is not particularly necessary	Kaname NOHNO	
3-8	4/24, 5/ 1, 5/15, 5/22, 5/29, 6/ 5	Methodology for planning of epidemiological survey and data analysis	Confirm a document about methodology for planning of epidemiological survey and data analysis to distribute beforehand	Kaname NOHNO	

9-12	6/12, 6/19, 6/26, 7/ 3	Diagnosis of dental caries	Confirm a document about diagnosis of dental caries to distribute beforehand	Kaname NOHNO
13-14	7/10, 7/17	Risk and protective factors of dental caries	Confirm a document about risk and protective factors of dental caries to distribute beforehand	Kaname NOHNO
15	7/24	Diagnosis of periodontal disease	Confirm a document about diagnosis of periodontal disease to distribute beforehand	Kaname NOHNO
16	7/31	Examination	Review until the last session	Kaname NOHNO

【Evaluation】

Oral test (40%) and report (60%).

【Media】

The textbook is not used in the class.

【Reference book】

Main reference book: Dentistry, Dental Practice and the Community 7th Edition

B. A. Burt, S. A. Eklund, W. B. (Saunders Co). 12,466yen.

We provide research papers if required.

【Regarding the Use of Generative AI】

In this course, the use of generative AI is strictly prohibited for reports, examinations, and other assignments, unless specifically instructed otherwise. Furthermore, it is forbidden to input any materials distributed during lectures into generative AI systems. All work must be produced based on the student's own knowledge and thinking. Any confirmed use will be treated as academic misconduct and dealt with strictly in accordance with university regulations.

B

【Course outline】

This course deals with epidemiological study in order to research valid diagnostic methods and risk factors for occurrence or progression of oral diseases which are associated with general condition, and protective factors for healthy improvement, and with the information processing: data collection and analysis using appropriate statistical method. Furthermore, it allows to examine an example and to build an investigation plan based on related documents.

【Course aim】

In this course, students master research design and statistical analysis method from epidemiology and risk factors for occurrence and progression of oral diseases which are associated with general condition,

【Attainment target】

After this course, the students should be able to do for bone metabolism, nutrition, genetic polymorphisms, senile pneumonia and physical fitness which are related with oral disease as follows,

- master research design and bias for making research protocol.

- master how to make data files for analysis.
- master statistical methods for analysis.
- explain the risk factors and protective factors for occurrence or progression of oral diseases.

【Study method・attention】

Each the lecture or field work will be conducted based on the original documents. As you distribute a document beforehand, you should confirm the documents by the day.

【Plan】

No.	Date	Contents	Preparation and Review	Instructor
1-2	10/ 2, 10/ 9	Guidance	It is not particularly necessary	Kaname NOHNO
3-5	10/16, 10/23, 10/30	Risk and protective factors of periodontal disease	Confirm a document about risk and protective factors of periodontal disease to distribute beforehand	Kaname NOHNO
6-7	11/13, 11/20	Risk and protective factors for tooth loss	Confirm a document about risk and protective factors for tooth loss to distribute beforehand	Kaname NOHNO
8-9	11/27, 12/ 4	Oral disease and bone metabolism	Confirm a document about oral disease and bone metabolism to distribute beforehand	Kaname NOHNO
10-11	12/11, 12/18	Oral disease and nutrition	Confirm a document about oral disease and nutrition to distribute beforehand	Kaname NOHNO
12-13	12/25, 1/ 8	Oral disease and genetic polymorphisms	Confirm a document about oral disease and genetic polymorphisms to distribute beforehand	Kaname NOHNO
14-15	1/15, 1/29	Oral care and senile pneumonia and physical fitness	Confirm a document about Oral care and senile pneumonia and physical fitness to distribute beforehand	Kaname NOHNO
16	2/5	Examination	Review until the last session	Kaname NOHNO

【Evaluation】

Oral test (40%) and report (60%).

【Media】

The textbook is not used in the class.

【Reference book】

Main reference book: Dentistry, Dental Practice and the Community 7th Edition

B. A. Burt, S. A. Eklund, W. B. (Saunders Co). 12,466yen.

We provide research papers if required.

【Regarding the Use of Generative AI】

In this course, the use of generative AI is strictly prohibited for reports, examinations, and other assignments, unless specifically instructed otherwise. Furthermore, it is forbidden to input any materials distributed during lectures into generative AI systems. All work must be produced based on the student's own knowledge and thinking. Any confirmed use will be treated as academic misconduct and dealt with strictly in accordance with university regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5752	1	Thurs/4・A	2	9214	Lecture
260W7752		Thurs/6・A			
260W5753	2	Thurs/4・B	2	9215	Lecture
260W7753		Thurs/6・B			
Course	Seminar on Statistics of Hygiene and Social Welfare A, B				
Instructor	Prof. Kaname NOHNO (Div. Oral Science for Health Promotion)				
Place	The second room, C710, Laboratory in Department of Oral Health and Welfare				
A					
	<p>【Course outline】 Seminar on Statistics of Hygiene and Social Welfare contains study design and setting of subjects for hygiene and social welfare.</p> <p>【Course aim】 Students will understand practicing of the study in hygiene and social welfare.</p> <p>【Attainment target】 Students will be able to set up study design for hygiene and social welfare.</p> <p>【Study method・attention】 Basic knowledge of statistics will be required. Lecture</p>				
	【Plan】				
No.	Date	Contents	Preparation and Review	Instructor	
1-2	4/ 9, 4/16	Guidance Introduction: Some basic concept	Textbook pp1-4, pp22-29	Kaname NOHNO	
3-4	4/23, 4/30	Introduction: Trends and current application	Textbook pp5-16	Kaname NOHNO	
5-7	5/14, 5/21, 5/28	Introduction: Risk factors	Textbook pp17-21, pp30-32	Kaname NOHNO	
8-9	6/ 4, 6/11	Research Methodology: Design elements and sampling	Textbook pp33-47	Kaname NOHNO	
10-11	6/18, 6/25	Research Methodology: Subject allocation and randomization	Textbook pp48-56	Kaname NOHNO	
12-13	7/ 2, 7/ 9	Research Methodology: Validity and research strategies	Textbook pp57-92	Kaname NOHNO	

14-15	7/16, 7/23	Research Methodology: Meta-analysis	Textbook pp85-92	Kaname NOHNO
16	7/30	Examination	Review until the last session	Kaname NOHNO

【Evaluation】

Oral test (40%) and report (60%).

【Media】

Translation: Masako Kihara and Masahiro Kihara: Evaluating Clinical and Public Health Interventions: A Practical Guide to Study Design and Statistics, (Medical science international) 4,070 yen.

【Reference book】

Mitchell H. Katz: Evaluating Clinical and Public Health Interventions: A Practical Guide to Study Design and Statistics, (Cambridge University Press) 19,641 yen.

【Regarding the Use of Generative AI】

In this course, the use of generative AI is strictly prohibited for reports, examinations, and other assignments, unless specifically instructed otherwise. Furthermore, it is forbidden to input any materials distributed during lectures into generative AI systems. All work must be produced based on the student's own knowledge and thinking. Any confirmed use will be treated as academic misconduct and dealt with strictly in accordance with university regulations.

B

【Course outline】

Seminar on Statistics of Hygiene and Social Welfare contains measures of statistical analysis associated with for hygiene and social welfare.

【Course aim】

Students will understand practicing for analysis of the study in hygiene and social welfare.

【Attainment target】

Students will be able to practice the sampling of subjects according to statistical methods.
Students will be able to perform basic analyze using with computer-based statistical software.

【Study method・attention】

Basic knowledge of statistics will be required.

Lecture

【Plan】

No.	Date	Contents	Preparation and Review	Instructor
1-2	10/ 1, 10/ 8	Guidance Measurement: Introduction of statistical analysis	Textbook pp93-96	Kaname NOHNO
3-4	10/22, 10/29	Measurement: Type of variables	Textbook pp97	Kaname NOHNO
5-6	11/ 5, 11/12	Measurement: Measurement with categorical variables - Kai square test	Textbook pp98-125	Kaname NOHNO
7-8	11/19, 11/26	Measurement: Measurement with continuous variables - Analysis of variance	Textbook pp126-142	Kaname NOHNO

9-10	12/ 3, 12/10	Assessing Causation: The criteria and Correlation	Textbook pp143-150	Kaname NOHNO
11-12	12/17, 12/24	Assessing Causation: Regression Analysis	Textbook pp151	Kaname NOHNO
13-14	1/ 7 1/21	Choosing the statistical methods	Textbook pp152-158	Kaname NOHNO
15	1/28	Ethics: FREELY GIVEN and INFORMED CONSENT	Textbook pp159-176	Kaname NOHNO
16	2/ 4	Examination	Review until the last session	Kaname NOHNO

【Evaluation】

Oral test (40%) and report (60%).

【Media】

Translation: Masako Kihara and Masahiro Kihara: Evaluating Clinical and Public Health Interventions: A Practical Guide to Study Design and Statistics, (Medical science international) 4,070 yen.

【Reference book】

Mitchell H. Katz: Evaluating Clinical and Public Health Interventions: A Practical Guide to Study Design and Statistics, (Cambridge University Press) 19,641 yen.

【Regarding the Use of Generative AI】

In this course, the use of generative AI is strictly prohibited for reports, examinations, and other assignments, unless specifically instructed otherwise. Furthermore, it is forbidden to input any materials distributed during lectures into generative AI systems. All work must be produced based on the student's own knowledge and thinking. Any confirmed use will be treated as academic misconduct and dealt with strictly in accordance with university regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5754	1	Thu /5 A	2	9114	Seminar
260W7754		Thu /6 A			
260W5755	2	Thu /5 B	2	9115	Seminar
260W7755		Thu /6 B			
Course	Seminar on Biomechanics Applied to Prosthodontics A, B				
Instructor	Associate Prof. Roxana STEGAROIU (Dept. of Oral Health and Welfare, Div. of Oral Science for Health Promotion)				
Place	Research room #1, Dept. of Oral Health and Welfare				
A					
【Course outline】					
Before each class, the graduate students will review the mechanical principles related to the behavior of prosthetic restorations, abutment teeth, implants, and their surrounding bone, and the basic biomechanical testing methods. Based on this knowledge, they will discuss under the instructor guidance about each lesson topic and then summarize the debate results in a report.					
【Course aim】					
Students will learn about basic biomechanical principles and research methods with application in prosthodontics and implant dentistry.					
【Attainment target】					
At the end of the course, the students will be able to:					
<ul style="list-style-type: none"> - explain about the application of fatigue testing in prosthodontics and implant dentistry; - explain about the application of 3D finite element method in prosthodontics and implant dentistry; - explain about the influence of dental material aging on the abutment teeth and surrounding tissues from a biomechanical viewpoint. 					
【Study method*attention】					
After a concise lecture on each class topic, related articles will be discussed in seminar style.					
In this course, the use of AI tools is permitted as an aid for gathering information when writing reports; however, using AI tools to generate the main body of the report is prohibited. If such tools are used, this must be clearly stated. Students are responsible for fact-checking all generated information and hold final responsibility for the submitted work. Furthermore, all cited literature must be verified against the original source, and proper citations must be included.					
【Plan】					
No.	Date	Contents	Preparing learning	Instructor	
1	4/9	Guidance	The details will be provided in class	Stegaroiu R.	
2-4	4/16 4/23 4/30	Biomechanical principles with relevance for prosthodontics 1-3	Textbook① pp 1-48, 96-114, 201-216	Stegaroiu R.	

5, 6	5/14 5/21	Research methods in biomechanics 1: Basics of mechanical and fatigue testing 1,2	Textbook① pp139-151, 173-183, 339-358	Stegaroiu R.
7	5/28	Research methods in biomechanics 2: Strain gauge measurements	Textbook② pp 1-84	Stegaroiu R.
8-10	6/4 6/11 6/18	Research methods in biomechanics 3: 3D finite element method (3D FEM) 1-3	Textbook③ pp 1-24, 48-69, 73-102	Stegaroiu R.
11, 12	6/25 7/2	In vivo aging of materials used in prosthodontics 1,2	Textbook④ pp 3-58	Stegaroiu R.
13, 14	7/9 7/16	Case study: Post and core types, retention and tooth fracture risk 1,2	Textbook⑤ pp 313-356	Stegaroiu R.
15	7/23	Summary and conclusions	Recapitulation of lessons 1-14	Stegaroiu R.
16	7/30	Oral examination	Recapitulation of lessons 1-15	Stegaroiu R.

【Evaluation】

Oral examination (50%) and written report (50%).

【Media】

No particular textbook.

【Reference book】

- ① Mechanical Behavior of Materials: engineering methods for deformation, fracture, and fatigue (Dowling NE, Prentice Hall) 8,500 yen
- ② Strain Gauge technology 2nd edition (Window AL, Elsevier Applied Science) 10,000 yen
- ③ The Finite Element Method, (Zienkiewicz OC, McGraw-Hill) 14,500 yen
- ④ Dental Materials in Vivo Aging and Related Phenomena (Eliades G et al., Quintessence) 16,000 yen
- ⑤ Contemporary Fixed Prosthodontics 5th edition (Rosenstiel SF et al.) 45,000 yen.

B

【Course outline】

The graduate students will search for and read related articles about the types, designs, materials and dimensions of different prosthetic restorations, including implant superstructures, and relate their selection to the biomechanical principles studied in the previous semester. Based on this knowledge, they will discuss under the instructor guidance about appropriate selection of prosthetic restorations/implant characteristics for typical clinical cases and then summarize the debate results in a report.

【Course aim】

Through various case studies, students will learn about basic applications of biomechanical principles in prosthodontics and implant dentistry.

【Attainment target】

At the end of the course, the students will be able to:

- explain how the type, design, and dimensions of the dental arch restoration will influence mechanical stresses and strains in the abutment teeth;

- explain how dental implant and superstructure types, dimensions, and materials will influence mechanical stresses and strains in the bone around implants.

【Study method・attention】

After a concise lecture on the topic of each lesson, related articles will be discussed in seminar style.

In this course, the use of AI tools is permitted as an aid for gathering information when writing reports; however, using AI tools to generate the main body of the report is prohibited. If such tools are used, this must be clearly stated. Students are responsible for fact-checking all generated information and hold final responsibility for the submitted work. Furthermore, all cited literature must be verified against the original source, and proper citations must be included.

【Plan】

No.	Date	Contents	Preparing learning	Instructor
1	10/8	Guidance	The details will be provided in class	Stegaroiu R.
2, 3	10/15 10/22	Case study 1: Biomechanical principles and dental arch reconstruction 1, 2	Textbook① pp 85-118	Stegaroiu R.
4, 5	10/29 11/5	Case study 2: Bone adaptation to mechanical stress/strain 1, 2	Textbook② pp 485-507	Stegaroiu R.
6, 7	11/12 11/19	Case study 3: Superstructure type and stress in and around implants 1, 2	Search for and summarize articles related to Case study 3	Stegaroiu R.
8, 9	11/26 12/3	Case study 4: Superstructure material and stress/strain in and around implants 1, 2	Search for and summarize articles related to Case study 4	Stegaroiu R.
10, 11	12/10 12/17	Case study 5: Implant type and dimensions and stress in and around implants 1, 2	Search for and summarize articles related to Case study 5	Stegaroiu R.
12, 13	12/24 1/7	Case study 6: 3D finite element analysis of precisely simulated trabecular bone 1, 2	Textbook③ pp 126-149	Stegaroiu R.
14	1/21	Case study 7: Conventional prostheses vs. implants (selection of the appropriate treatment option)	Search for and summarize articles related to Case study 7	Stegaroiu R.
15	1/28	Summary and conclusions	Recapitulation of lessons 1-14	Stegaroiu R.
16	2/4	Oral examination	Recapitulation of lessons 1-15	Stegaroiu R.

【Evaluation】

Evaluation based on a written report (100%)

【Media】

No particular textbook.

【Reference book】

- ① Fundamentals of Fixed Prosthodontics 3th ed. (Shillingburg HT Jr. et al, Quintessence) 13,500 yen
- ② Principles of Bone Biology 2nd ed. (Bilezikian JP et al, editors, Academic Press) 20,000 yen
- ③ Cellular Materials in Nature and Medicine (Gibson LJ et al, Cambridge University Press) 16,600 yen

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5756	Any time	Any time	1	9014	Lecture, Seminar, Practice
Course	A course for short externship in the foreign dental schools/research institutes				
Instructor	Prof. OGAWA Hiroshi (Div. Preventive Dentistry)				
Place	Sister/Brother schools in the foreign countries				
<p>【Course outline】</p> <p>This course is a local activity-type program aimed at becoming a researcher with an international perspective who can actively engage in various academic activities and oral health activities in both developed and developing countries. Graduate students are expected to introduce and discuss their own research outcomes as well as to conduct medical supports and oral health activities, during their short stay (8 days to 2 weeks) at foreign dental schools or educational institutions. Students are expected to acquire a wide field of view through these activities. The contents of the program will be drafted through discussions with the recipient schools, and a detailed report must be submitted promptly after returning to Japan.</p> <p>【Course aim】</p> <ol style="list-style-type: none"> 1. Putting themselves in English language environment and improving communication skills with local researchers and faculty members. 2. Increasing their motivation for future long-term study abroad through short-term stays at overseas dental schools or education institutions. 3. Comparing and understanding the dental environment and dental research environment of foreign countries and their own country. 4. Finding the fields to which they can contribute as dentists both internationally and domestically to expand their potential. <p>【Attainment target】</p> <ol style="list-style-type: none"> 1. Make arrangements with the other party in advance using various means. 2. Plan short-term activities at dental schools or research institutes overseas. 3. Actively communicate in English during the stay. 4. Compare and understand the dental environment between other countries and their own country. 5. Compare and understand the dental research environment in other countries and their own. <p>【Study method・attention】</p> <ol style="list-style-type: none"> 1. Make preliminary meetings thoroughly with your destination. 2. Actively communicate in English. 3. Actively participate in the activities provided by your school or institution. 4. Be sure to purchase overseas travel insurance for students specified by our university. 5. Always collect information from the Ministry of Foreign Affairs Overseas Safety Website. 6. Register the period of your stay and place at “Tabi-regi” provided by the Ministry of Foreign Affairs. <p>In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the results yourself. When using generative AI, please check the “Niigata University Generative AI Usage Promotion Guidelines” before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.</p>					

【Plan】				
No.	Date	Contents	Preparing learning	Instructor
1	Any time	They are supposed to plan and execute the programs based on a meeting with the foreign dental school or intuition.	Make preliminary meetings thoroughly	Supervisors in Niigata/on-site
<p>【Evaluation】 The instructor of Niigata University will assess the evaluation of the instructors of the other party, a detailed report of the activities during the stay and self-evaluation of the stay. Then, upon approval by the Academic Affairs Committee of the Graduate School of Medical and Dental sciences (Dental), a course credit will be given to the participant.</p> <p>【Media】 Scientific papers and others would be indicated if necessary.</p> <p>【Reference book】 Literatures would be indicated if necessary.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5757	1 or 2	Flexible	4	9214	Practice
Course	Extramural Externship				
Instructor	Prof. OGAWA Hiroshi (Div. Preventive Dentistry)				
Place	According to the details of PhD candidate's externship programme				
<p>【Course outline】 A practice-based training as a global oral health team leader in assimilating and applying related sciences & technologies in the promotion of oral health of the global citizen covering scopes of global oral health concern in a real situation in developing countries or marginalized population where global oral health in terms of inequality and disparity exists including translation of oral health sciences into the population and global application to improve oral health taking into account of social and economic determinants at all levels from individual tooth to global level or vice versa. The training will be in collaboration with education institutes in a selected country.</p> <p>【Course aim】 The extramural externship will provide at least three mutual benefits among the associated parties.</p> <ol style="list-style-type: none"> 1. Student: Apply global oral health knowledge taught in class into practice in the community, develop skills and extend experience in the actual world of global oral health burdens. 2. Community: Working with the Site supervisor at the neighborhood collaborating institutions to improve the oral health and general health of the community through services provided by the future global oral health workforce. 3. Neighborhood Collaborating Institution: Nurture a close relationship between the Niigata University Division of Preventive Dentistry, the faculty, the extramural externship setting, students and the community. <p>【Attainment target】 The students are required to establish an extramural project, plan or scope of work based upon the community's needs, work, or institutional mission. The project should include externship location, date and period, list of works to be done and achieved, travelling plan, proposed budget and possible financial support.</p> <ol style="list-style-type: none"> 1. Main learning outcomes of the extramural externship will allow the student a significant chance to utilize knowledge and skills from the classroom to real setting where global oral health burdens in terms of inequality and disparity exists in the followings. 2. Plans for developing or improving the extramural externship experience activities. <p>【Study method・attention】</p> <ol style="list-style-type: none"> 1. The extramural externship training will occur when: 2. Organizational structure 3. Student Activities 4. Student Assignments or 5. Follow up Activities with Students 6. Responsibilities of Supervising Staff in the extramural externship setting 7. Responsibilities of the Course Director and Academic Advisor from the Niigata University 8. Arrangements made for student guidance and support 9. Facilities and support required at the extramural externship location <p>Information and materials will be provided prior to the programme. In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the</p>					

<p>results yourself. When using generative AI, please check the "Niigata University Generative AI Usage Promotion Guidelines" before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.</p>				
<p>【Plan】</p>				
No.	Date	Contents	Preparing learning	Instructor
1~15		According to the details of each student' s externship programme	Guidance will be provided accordingly	Supervisor in Niigata and Supervisor on-site
16		Report and presentation	Preparation for presentation	Supervisor in Niigata and Supervisor on-site
<p>【Evaluation】</p> <p>Methods of assessment: Self-evaluation/On-site observation/Logbook and portfolio/Conduct and behavior during the extramural externship period/Comments and feedback from community and stakeholders/Effectively giving an oral presentation to the local community and at the international scientific meeting.</p> <p>【Media】</p> <p>Textbooks will be indicated if required.</p> <p>【Reference book】</p> <p>References will be indicated if required.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5758	1 or 2	Flexible	1	9214	Seminar
Course	Dissertation Interim Presentation				
Instructor	Prof. OGAWA Hiroshi (Div. Preventive Dentistry)				
Place	According to the details of PhD candidate's externship programme				
<p>【Course outline】 Candidates have to present their proposal and investigation as interim presentation.</p> <p>【Course aim】 In this course, candidates should do as follows:</p> <ol style="list-style-type: none"> 1. Evaluate data objectively 2. Summarize theoretically the purpose, material and method, results and consideration 3. Present their research to audience effectively at a congress <p>【Attainment target】 To present positively the research of Global Oral Health Science To recognize circumstances of the research topic and needed contents through question and answer session To obtain more knowledge in order to improve the dissertation</p> <p>【Study method・attention】 Candidates should undertake the coaching of presentation by their supervisors. They are also requested to present as a rehearsal at their department. Requested materials will be provided prior to every time. In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the results yourself. When using generative AI, please check the "Niigata University Generative AI Usage Promotion Guidelines" before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.</p>					
【Plan】					
No.	Date	Contents	Preparing learning	Instructor	
1~15		<ol style="list-style-type: none"> 1. Plan a schedule to present based on their research. 2. Consider the contents and make a presentation material. 3. Practice the presentation with their supervisor and colleagues. 4. Revise the contents/materials again if they are pointed out. 5. After presentation, re-consider whether they could explain the prepared contents sufficiently or not, and apply it to improve their research hereafter. 6. Have a good communication with involved people. 	Guidance will be provided accordingly	OGAWA Hiroshi	

16		Presentation	Preparation for presentation	OGAWA Hiroshi
<p>【Evaluation】 Evaluated by performance included debates, assignments and presentations (80%), and attitude (20%).</p> <p>【Media】 Textbooks will be indicated if required.</p> <p>【Reference book】 References will be indicated if required.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5759	1 or 2	Flexible	1	9215	Seminar
Course	Dissertation Presentation of Global Oral Health Science at International Congress				
Instructor	Prof. OGAWA Hiroshi (Div. Preventive Dentistry)				
Place	According to the details of PhD candidate's externship programme				
<p>【Course outline】 Candidates have to present their research at an international congress.</p> <p>【Course aim】 In this course, candidates should obtain skills of presentation in order to express the research outcome properly at international congresses.</p> <p>【Attainment target】 To present positively the research of Global Oral Health Science To recognize circumstances of the research topic and needed contents through question and answer session To obtain more knowledge in order to improve the dissertation To execute everything above in English</p> <p>【Study method・attention】 Candidates should undertake the coaching of presentation by their supervisors. They are also requested to present as a rehearsal at their department. Requested materials will be provided prior to each study. In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the results yourself. When using generative AI, please check the "Niigata University Generative AI Usage Promotion Guidelines" before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.</p>					
【Plan】					
No.	Date	Contents	Preparing learning	Instructor	
1~15		<ol style="list-style-type: none"> Plan a schedule to present based on their research. Consider the contents and make a presentation material. Practice the presentation with their supervisor and colleagues. Revise the contents/materials again if they are pointed out. After presentation, re-consider whether they could explain the prepared contents sufficiently or not, and apply it to improve their research hereafter. Have a good communication with involved people. 	Guidance will be provided accordingly	OGAWA Hiroshi	

16		Presentation	Preparation for presentation	OGAWA Hiroshi
<p>【Evaluation】 Evaluated by preparation for presentation, comprehension, debates, assignments and presentations.</p> <p>【Media】 Textbooks will be indicated if required.</p> <p>【Reference book】 References will be indicated if required.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5760	Year	Flexible	8	9214	Seminar
Course	Dissertation Proposal Development and Implementation for Global Oral Health Science				
Instructor	Prof. OGAWA Hiroshi (Div. Preventive Dentistry)				
Place	According to the details of PhD candidate's externship programme				
<p>【Course outline】 This course is designed to get started to make a dissertation. Candidates should make their proposal and undertake defense. After passing the proposal defense, candidates can start to implement their research.</p> <p>【Course aim】 In this course, candidates will be able to make a research plan in Global Oral Health Science.</p> <p>【Attainment target】 To make a research proposal contributing to Global Oral Health To implement the proposal with knowledge and methodology they obtained by coursework subjects To utilize overseas resource and collaboration when needed</p> <p>【Study method・attention】 Candidates should be guided by supervisors when they get started to make a research proposal. When they complete, they have to undertake the proposal defense at the Graduate Study Administrative Committee in the Division of Preventive Dentistry. Research materials will be provided prior to each study. In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the results yourself. When using generative AI, please check the "Niigata University Generative AI Usage Promotion Guidelines" before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.</p>					
A		【Plan】			
No.	Date	Contents	Preparing learning	Instructor	
1~15		Design of study proposal for the thesis of PhD. The validity of the proposal is considered at the point of view as follows: ✓ To be based on previous studies ✓ To have academic significance, novelty, creativity and applicability To contribute to the candidate's discipline and related disciplines	Guidance will be provided accordingly	OGAWA Hiroshi	
16		Summary	Review the course	OGAWA Hiroshi	
B		【Plan】			
No.	Date	Contents	Preparing learning	Instructor	
1~15		The validity of the proposal is evaluated at the point of view as follows:	Guidance will be provided	OGAWA Hiroshi	

		<ul style="list-style-type: none"> ✓ To be based on previous studies ✓ To have academic significance, novelty, creativity and applicability <p>To contribute to the candidate' s discipline and related disciplines</p>	accordingly	
16		<p>Presentation</p> <p>Study will be implemented after the proposal is accepted</p>	Prepare for presentation	OGAWA Hiroshi

【Evaluation】

Evaluated by performance included debates, assignments and presentations (80%), and attitude (20%).

【Media】

Textbooks will be indicated if required.

【Reference book】

References will be indicated if required.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5761	2	Flexible	4	9215	Seminar
Course	Dissertation defense (Global Oral Health Science)				
Instructor	Prof. OGAWA Hiroshi (Div. Preventive Dentistry)				
Place	According to the details of PhD candidate's externship programme				
<p>【Course outline】 Candidates should complete their dissertation regarding Global Oral Health Science, submit and undertake their defenses.</p> <p>【Course aim】 In this course, candidates should complete their dissertation on the purpose of the graduation for PhD course of Global Oral Health Science.</p> <p>【Attainment target】 Candidates are able to integrate all the data obtained by investigation, knowledge acquired by didactic courseworks, experiences by externship, discussion of Q and A session at interim presentation and international congress presentation and accomplish their dissertation.</p> <p>【Study method・attention】 Candidates should undertake the coaching of writing their dissertation by their supervisors. Requested materials will be provided prior to every time. When completed, candidates submit it and apply for the defense in accordance with the regulation of final thesis defense. In this course, the use of generative AI (ChatGPT, Gemini, etc.) as an aid for data analysis and study is permitted, but please be sure to check the validity of the generated content and interpret and consider the results yourself. When using generative AI, please check the "Niigata University Generative AI Usage Promotion Guidelines" before using it. In addition, if inappropriate use (such as unauthorized use or copyright infringement of others) is confirmed, we will take strict action.</p>					
【Plan】					
No.	Date	Contents	Preparing learning	Instructor	
1~15		<p>At the final thesis defense, candidates are evaluated as follows:</p> <ul style="list-style-type: none"> ✓ Research methodology and main thesis: ✓ Selected appropriate methods based on previous studies ✓ Described materials and methods clearly/specifically ✓ Searched, read and evaluated previous investigation and related papers sufficiently/precisely ✓ Collected, analyzed and interpreted data adequately ✓ Explicated the results, analysis and 	Guidance will be provided accordingly	OGAWA Hiroshi	

		<p>consideration theoretically/convincingly</p> <p>Academic Importance of the research:</p> <ul style="list-style-type: none"> ✓ To have originality and novel perception ✓ To be verified sufficiently ✓ To be considered how to deal with unclear questions ✓ To contribute to education, research and clinical work <p>Construction of the dissertation:</p> <ul style="list-style-type: none"> ✓ To have sufficient format and volume fitting the topic <p>To be designed appropriately to submit for scientific journals with exact grammar, words and clear expression</p>		
16		Presentation	Preparation for presentation	OGAWA Hiroshi

【Evaluation】

Evaluated by preparation for presentation, comprehension, debates, assignments and presentations.

【Media】

Textbooks will be indicated if required.

【Reference book】

References will be indicated if required.

Specialized Program Subjects
(Department of Oral Biological Science)

Specialized Program Subjects (Department of Oral Biological Science)

Course	Page
Oral and Maxillofacial Anatomy A, B	188
Oral and Maxillofacial Anatomy Seminar A, B	191
Orofacial motor function A, B	195
Basic Neuroscience A, B	199
Advanced lecture on Molecular Neurobiology A, B	203
Dentofacial Orthodontics A, B	207
Seminar on clinical orthodontics A, B	210
Seminar for clinical orthodontic treatments A, B	213
Dysphagia Rehabilitation A, B	216
Assessment of Dysphagia A, B	219
Seminar on Evaluation of Feeding Function A, B	222
Periodontal Therapy: Basic Course A, B	226
Periodontal Regenerative Therapy A, B	230
Seminar for Periodontal therapy A, B	234
Infection control and restoration of tissue integrity A, B	238

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5801	1	Wed/4・A	2	9014	Lecture/Seminar
260W7801		Wed/5・A			
260W5802	2	Wed/4・B	2	9015	Lecture/Seminar
260W7802		Wed/5・B			
Course	Oral and Maxillofacial Anatomy A, B				
Instructor	Assoc. Prof. Tomoki Maekawa, Assist. Prof. Yurie Sato				
Place	Wing C 6F Room C611				
A					
【Course outline】					
This course deals with normal structure and development of human organs in orofacial region from the macro- and microscopic and cell biological viewpoints.					
【Course aim】					
By explaining the complex structure in orofacial region from its developmental aspect, the students will be able to understand that the delicate and complex functions of orofacial region can be achieved by coordination of each structure.					
【Attainment target】					
The students can explain the normal structure and developmental process of orofacial region from the of macroscopic and microscopic levels.					
【Study method・attention】					
Before this class, the students are requested to read through the designated pages and handouts. In principle, lectures/seminar are given face-to-face.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/8	Guidance & introduction	p. 2-11	Maekawa, Sato	
2	4/15	Normal development of orofacial organs	p. 12-48	Maekawa, Sato	
3	4/22	↓	p. 12-48	Maekawa, Sato	
4	5/13	↓	p. 12-48	Maekawa, Sato	
5	5/20	Bone morphometry of orofacial region	p. 246-259	Maekawa, Sato	
6	5/27	↓	p. 246-259	Maekawa, Sato	
7	6/3	↓	p. 246-259	Maekawa, Sato	
8	6/10	Circulation & nervous systems of orofacial region	p. 122-158	Maekawa, Sato	
9	6/17	↓	p. 122-158	Maekawa, Sato	
10	6/24	↓	p. 122-158	Maekawa, Sato	

11	7/1	Splanchnology of orofacial region	p. 186-220	Maekawa, Sato
12	7/8	↓	p. 186-220	Maekawa, Sato
13	7/15	Structure & ultrastructure of tooth/oral cavity	p. 49-121	Maekawa, Sato
14	7/22	↓	p. 49-121	Maekawa, Sato
15	7/29	↓	p. 49-121	Maekawa, Sato
16	8/5	Examination		Maekawa, Sato

【Evaluation】

Oral examination (80%), class attitude (20%).

【Media】

Oral Histology and Embryology 3rd eds. (Ishiyaku Publisher Co.) 12,000 Yen (+tax)

【Reference book】

Oral Anatomy 2nd eds (Ishiyaku Publisher Co.) 11,000 Yen (+tax)

Netter' s Head and Neck Anatomy for Dentistry, 3rd eds. (Ishiyaku Publisher Co.) 12,000 Yen (+tax)

Related papers will be provided prior to lecture.

【Notes on the Use of Generative AI】

In this course, the use of Generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions. If you choose to use these tools, you must comply with the following:

Transparency and Disclosure: If Generative AI is used in your reports or assignments, you must clearly state which parts were generated, the purpose of its use, the specific AI tool used, and the prompts provided.

Verification and Editing: Do not use AI-generated content as-is. You are required to personally verify the accuracy and appropriateness of the information and make any necessary corrections.

Personal Responsibility: The student bears full responsibility for the final quality and integrity of the submitted work.

Consequences of Misuse: Inappropriate use (such as exceeding the permitted scope of use or infringing on the copyrights of others) will be dealt with strictly in accordance with university regulations.

B

【Course outline】

This course provides topographical anatomical knowledge, and deals with tissue reactions to dental and/or surgical treatments in orofacial regions.

【Course aim】

The students will be able to understand tissue repair and regeneration mechanisms for clinical procedures in dentistry.

【Attainment target】

The students can explain the tissue repair and regeneration processes of orofacial region from the microscopic view.

【Study method・attention】

Before this class, the students are requested to read through the designated pages and handouts. In principle, lectures/seminar are given face-to-face.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
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1	10/7	Guidance & introduction	p. 2-11	Maekawa, Sato
2	10/14	Mechanism of development in nervous system	Related papers	Maekawa, Sato
3	10/21	↓	Related papers	Maekawa, Sato
4	10/28	Mechanism of regeneration in nervous system	p. 122-158	Maekawa, Sato
5	11/4	↓	p. 122-158	Maekawa, Sato
6	11/11	Plasticity of nerves in pulp & PDL	p. 122-158	Maekawa, Sato
7	11/18	↓	p. 122-158	Maekawa, Sato
8	11/25	Mechanism of regeneration of hard tissue	Related papers	Maekawa, Sato
9	12/2	↓	Related papers	Maekawa, Sato
10	12/9	Cell biology of temporomandibular joint ↓	p. 168-185	Maekawa, Sato
11	12/16	Pathophysiology of temporomandibular joint	p. 168-185	Maekawa, Sato
12	12/23	↓	p. 168-185	Maekawa, Sato
13	1/13	Tissue reactions to dental implant	p. 221-245	Maekawa, Sato
14	1/20	↓	p. 221-245	Maekawa, Sato
15	1/27	↓	p. 221-245	Maekawa, Sato
16	2/3	Examination		Maekawa, Sato

【Evaluation】

Oral examination (80%), class attitude (20%).

【Media】

Oral Histology and Embryology 3rd eds (Ishiyaku Publisher Co.) 12,000 Yen (+tax)

【Reference book】

Oral Anatomy 2nd eds (Ishiyaku Publisher Co.) 11,000 Yen (+tax)

Netter' s Head and Neck Anatomy for Dentistry, 3rd eds. (Ishiyaku Publisher Co.) 12,000 Yen (+tax)

Related papers will be provided prior to lecture.

【Notes on the Use of Generative AI】

In this course, the use of Generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions. If you choose to use these tools, you must comply with the following:

Transparency and Disclosure: If Generative AI is used in your reports or assignments, you must clearly state which parts were generated, the purpose of its use, the specific AI tool used, and the prompts provided.

Verification and Editing: Do not use AI-generated content as-is. You are required to personally verify the accuracy and appropriateness of the information and make any necessary corrections.

Personal Responsibility: The student bears full responsibility for the final quality and integrity of the submitted work.

Consequences of Misuse: Inappropriate use (such as exceeding the permitted scope of use or infringing on the copyrights of others) will be dealt with strictly in accordance with university regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5803	1	Tue / 3 · A	2	9014	Lecture · Practice
260W7803		Tue / 7 · A			
260W5804	2	Tue / 3 · B	2	9014	Lecture · Practice
260W7804		Tue / 7 · B			
Course	Oral and Maxillofacial Anatomy Seminar A, B				
Instructor	Prof. Atsushi Ohazama (Div. Oral Anatomy) Assoc. Prof. Maiko Kawasaki (Div. Oral Anatomy) Assist. Prof. Katsushige Kawasaki (Ctr. Advanced Oral Science)				
Place	Oran Anatomy Lab				
A					
<p>【Course outline】 This course performs standard molecular biological analyses requires for understanding normal structures and functions of orofacial organs.</p> <p>【Course aim】 The students acquire updated skills of morphological analyses by using flow cytometer and confocal laser microscope.</p> <p>【Attainment target】 Student can understand how flow cytometer functions and operate the equipment. Student can perform confocal laser microscopic analysis. Student can perform laser microdissection analysis.</p> <p>【Study method・attention】 Handout will be provided in advance.</p> <p>【Use of Generative AI】 This course permits the conditional use of generative AI (such as ChatGPT, Gemini, etc.). When using such tools, please adhere to the following points:</p> <ol style="list-style-type: none"> 1. If utilized in reports or similar work, you must explicitly state which sections were generated, the purpose for which they were used (e.g., question prompts), and which specific AI tool was employed. 2. Do not use generated content verbatim; you must personally verify and amend the information for accuracy and appropriateness. 3. Students bear full responsibility for the final deliverable. 4. Any inappropriate use (including unauthorized usage or infringement of others' copyright) will be dealt with strictly in accordance with university regulations. 					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	April 14	Introduction	Details will be given in class.	Atsushi Ohazama	
2	April 21	Molecular analysis of orofacial tissues	Details will be given in class.	Atsushi Ohazama	

3	April 28	Molecular analysis of periodontal ligament tissues	Details will be given in class.	Atsushi Ohazama
4	May 8	Molecular analysis of cementum tissues	Details will be given in class.	Atsushi Ohazama
5	May 12	Molecular analysis of orofacial bone	Details will be given in class.	Maiko Kawasaki
6	May 19	Molecular analysis of oral mucosal tissues	Details will be given in class.	Katsushige Kawasaki
7	May 26	Molecular analysis of salivary gland	Details will be given in class.	Atsushi Ohazama
8	June 2	Molecular analysis of skeletal muscle	Details will be given in class.	Atsushi Ohazama
9	June 9	Molecular analysis of dental pulp	Details will be given in class.	Maiko Kawasaki
10	June 16	Molecular analysis of nerve tissues	Details will be given in class.	Maiko Kawasaki
11	June 23	Molecular analysis of gingival tissues	Details will be given in class.	Katsushige Kawasaki
12	June 30	Molecular analysis of salivary glands	Details will be given in class.	Katsushige Kawasaki
13	July 7	Molecular analysis of junctional epithelium	Details will be given in class.	Atsushi Ohazama
14	July 14	Molecular analysis of tongue	Details will be given in class.	Atsushi Ohazama
15	July 21	Discussion	Details will be given in class.	Atsushi Ohazama
16	July 28	Summary and Examination	Details will be given in class.	Atsushi Ohazama, Maiko Kawasaki, Katsushige Kawasaki

【Evaluation】

Oral examination (100%)

【Media】

A Manual of Histologic Preparation edited by Div. Oral Anatomy

【Reference book】

We provide research papers if required.

B**【Course outline】**

This course introduces the essential knowledge on molecular mechanisms of craniofacial development including current research trend and methodology.

【Course aim】

Students acquire the knowledge on molecular developmental biology, which is essential to understand prospective regenerative therapy.

【Attainment target】

Student can understand the molecular mechanisms of craniofacial development

Student can explain the fundamental mechanisms on organ culture techniques

Student can understand the basic skills on molecular biology

【Study method・attention】

The instruction will be done by the procedure indicated by our original text. Text will be provided in advance.

【Use of Generative AI】

This course permits the conditional use of generative AI (such as ChatGPT, Gemini, etc.). When using such tools, please adhere to the following points:

1. If utilized in reports or similar work, you must explicitly state which sections were generated, the purpose for which they were used (e.g., question prompts), and which specific AI tool was employed.
2. Do not use generated content verbatim; you must personally verify and amend the information for accuracy and appropriateness.
3. Students bear full responsibility for the final deliverable.
4. Any inappropriate use (including unauthorized usage or infringement of others' copyright) will be dealt with strictly in accordance with university regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	October 6	Overview	Details will be given in class.	Atsushi Ohazama
2	October 20	Neural crest-derived cells	Details will be given in class.	Atsushi Ohazama
3	October 27	Epithelial-mesenchymal interaction	Details will be given in class.	Atsushi Ohazama
4	November 6	Molecular mechanisms of tooth development	Details will be given in class.	Atsushi Ohazama
5	November 10	Molecular mechanisms of eyelid development	Details will be given in class.	Katsushige Kawasaki
6	November 17	Molecular mechanisms of hair development	Details will be given in class.	Atsushi Ohazama
7	November 24	Molecular mechanisms of palate development	Details will be given in class.	Maiko Kawasaki

8	December 1	Molecular mechanisms of lip development	Details will be given in class.	Atsushi Ohazama
9	December 8	Molecular mechanisms of tongue development	Details will be given in class.	Maiko Kawasaki
10	December 15	Trowell-type organ culture technique	Details will be given in class.	Katsushige Kawasaki
11	December 22	Whole embryo culture by rolling culture bottle system	Details will be given in class.	Atsushi Ohazama
12	January 12	Sliced tissue culture technique	Details will be given in class.	Maiko Kawasaki
13	January 19	Organ culture experiments using transgenic mice	Details will be given in class.	Katsushige Kawasaki
14	January 26	Discussion	Details will be given in class.	Atsushi Ohazama
15	February 2	Discussion	Details will be given in class.	Atsushi Ohazama
16	February 9	Summary and Examination	Details will be given in class.	Atsushi Ohazama, Maiko Kawasaki, Katsushige Kawasaki
<p>【Evaluation】 Oral examination (100%)</p> <p>【Media】 A Manual of Histologic Preparation edited by Div. Oral Anatomy</p> <p>【Reference book】 We provide research papers if required.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5805	1	Wed/2・A	2	9014	Lecture・Seminar・Practice
260W7805		Wed/6・A			
260W5806	2	Wed/2・B	2	9014	Lecture・Seminar・Practice
260W7806		Wed/6・B			
Course	Orofacial motor function A, B				
Instructor	Prof. Kensuke Yamamura (Div. Oral Physiology)				
Place	Laboratory of Oral Physiology				
A					
<p>【Course outline】 Technological innovation in bioelectric measurements enabled us to easily record various bioelectric signals, and such method (e.g. electromyogram: EMG) is frequently used in clinical studies as well as basic researches. On the other hand, many young researchers need advice for proper recording, proper signal processing, and proper interpretation of data. In the first semester, we study fundamental knowledge of bodily motor function on the viewpoints of kinesiology and neuroscience. We also learn techniques of EMG recordings.</p> <p>【Course aim】 The aim of this course is to obtain fundamental knowledge of motor function, and learn how to record electromyograms.</p> <p>【Attainment target】</p> <ul style="list-style-type: none"> ● Correlate the structures of orofacial motor organs with their motor function. ● Explain differences between voluntary and semiautomatic movements. ● Explain neural regulatory mechanisms of muscle contraction force. ● Explain how to record and analyze electromyograms. ● Perform EMG recordings properly. <p>【Study method・attention】 Seminar and/or discussion style is employed. Students require sufficient preparations prior to each lecture. Although the face to face seminar is held; however, the on-line lecture/seminar (real time) with the Zoom could be possible when necessary.</p> <p>【Regarding the use of Generative AI】 In this course, the use of generative AI is permitted under certain conditions. If you choose to use it, you must comply with the following rules: 1) When you use generative AI for reports or other assignments, you must state which parts were generated, for what purpose, and which AI system was used. 2) You must not use the generated content as is; you are required to verify and, if necessary, correct its accuracy and appropriateness on your own. 3) The student bears full responsibility for the final submitted work. 4) If inappropriate use is identified, strict action will be taken in accordance with the university regulations</p>					
【Plan】					
No.	Date	Contents		Out-of-Class Study	Instructor
1	4/8	Guidance		N. A.	Yamamura

2	4/15	Kinesiology of orofacial motor function (lecture)	Organizing the main points of the materials distributed at the class	Yamamura
3, 4	4/22 5/13	Kinesiology of orofacial motor function (article reading)	Read the research article introduced at the class	Yamamura
5	5/20	Voluntary and semiautomatic movements (lecture)	Organizing the main points of the materials distributed at the class	Yamamura
6, 7	5/27 6/3	Voluntary and semiautomatic movements (article reading)	Read the research article introduced at the class	Yamamura
8	6/10	Regulatory mechanisms of muscle contraction force. (lecture)	Organizing the main points of the materials distributed at the class	Yamamura
9, 10	6/17 6/24	Regulatory mechanisms of muscle contraction force (reading)	Read the research article introduced at the class	Yamamura
11	7/1	How to record electromyogram (EMG) (lecture)	Organizing the main points of the materials distributed at the class	Yamamura
12	7/8	How to record electromyogram (EMG) (practice)	Review of previous class	Yamamura
13	7/15	Waveform processing to reduce noise (lecture)	Organizing the main points of the materials distributed at the class	Yamamura
14	7/22	Waveform processing to reduce noise (practice)	Review of previous class	Yamamura
15	7/29	Conclusion and discussion	Review of previous classes	Yamamura
16	8/5	Examination	Review of previous classes	Yamamura

【Evaluation】

Report and Examination (50%), Observation record during reading and experiment (50%). The oral examination is conducted by face to face with the instructor.

【Media】

N. A.

【Reference book】

Neil R. Carlson, Physiology of Behavior 11th edition (Pearson, 2013) ISBN-13: 978-0205239399

B**【Course outline】**

In the second semester, we focus on orofacial motor functions. For mandibular movement, tongue movement, facial movements and masticatory movement, lectures are given from the viewpoint of kinematics and neurology. Then students enhance understanding by reading recent papers. Students also learn techniques of EMG recordings and analytic methods of EMG data during mastication.

【Course aim】

The aim of this course is to understand orofacial motor function on the viewpoints of kinesiology and neuroscience too study orofacial motor function and its regulatory mechanisms.

【Attainment target】

- Explain neural control mechanisms of jaw movements.
- Explain neural control mechanisms of tongue and facial movements.
- Explain neural control mechanisms of masticatory movements.
- Perform EMG recordings and analysis of data during orofacial voluntary movements.
- Perform EMG recordings and analysis of data during mastication.

【Study method・attention】

Seminar and/or discussion style is employed. Students require sufficient preparations prior to each lecture. Although the face to face seminar is held; however, the on-line lecture/seminar (real time) with the Zoom could be possible when necessary.

【Regarding the use of Generative AI】

In this course, the use of generative AI is permitted under certain conditions. If you choose to use it, you must comply with the following rules: 1) When you use generative AI for reports or other assignments, you must state which parts were generated, for what purpose, and which AI system was used. 2) You must not use the generated content as is; you are required to verify and, if necessary, correct its accuracy and appropriateness on your own. 3) The student bears full responsibility for the final submitted work. 4) If inappropriate use is identified, strict action will be taken in accordance with the university regulations

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/7	Guidance	N. A.	Yamamura
2	10/14	Neural control mechanisms of jaw movements (lecture)	Organizing the main points of the materials distributed at the class	Yamamura
3, 4	10/21 10/28	Neural control mechanisms of jaw movements (reading)	Read the research article introduced at the class	Yamamura
5	11/4	Neural control mechanisms of tongue and facial	Organizing the main	Yamamura

		movements (lecture)	points of the materials distributed at the class	
6, 7	11/11 11/18	Neural control mechanisms of tongue and facial movements (reading)	Read the research article introduced at the class	Yamamura
8	11/25	Neural control mechanisms of masticatory movements (lecture)	Organizing the main points of the materials distributed at the class	Yamamura
9, 10	12/2 12/9	Neural control mechanisms of masticatory movements (reading)	Read the research article introduced at the class	Yamamura
11, 12	12/16 12/23	Electromyographic recording and analysis of orofacial voluntary movements(experiment)	Review of previous classes	Yamamura
13, 14	1/13 1/20	Electromyographic recording and analysis of masticatory movement (experiment)	Review of previous classes	Yamamura
15	1/27	Conclusion and discussion	Review of previous classes	Yamamura
16	2/3	Examination	Review of previous classes	Yamamura

【Evaluation】

Report and Examination (50%), Observation record during reading and experiment (50%). The oral examination is conducted by face to face with the instructor.

【Media】

N. A

【Reference book】

Neil R. Carlson, Physiology of Behavior 11th edition (Pearson, 2013) ISBN-13: 978-0205239399

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5807	1	Tue/4 A	2	9014	Lecture, Seminar
260W7807		Tue/6 A			
260W5808	2	Tue/4 B	2	9015	Lecture, Seminar
260W7808		Tue/6 B			
Course	Basic Neuroscience A, B				
Instructor	Associate Prof. Keiichiro Okamoto (Div. Oral Physiology)				
Place	Laboratory of Oral Physiology (E513)				
A					
<p>【Course outline】</p> <p>Human body has various functions to react and adapt the changes of external and internal environmental changes to maintain homeostasis. Peripheral and central nervous systems appear to play critical roles on it. This course presents overview of the fundamental mechanisms for the nervous systems that could involve the regulation of body functions. Students can learn basic mechanisms of peripheral and central nervous systems that regulate physiological functions through this seminar and scientific articles.</p> <p>【Course aim】</p> <p>The aims of this seminar include several issues to learn fundamental knowledge of neuroscience such as function of central and peripheral nervous systems and basic experimental methodology for neuroscience research.</p> <p>【Attainment target】</p> <ol style="list-style-type: none"> 1. Explain the significant reason why we have various physiological function in a body 2. Explain the technical terms used in the field of neuroscience 3. Explain the basic theory including Action Potential and Synaptic Function in English. 4. Explain the methodologies to record and visualize neural excitability. Explain the significant reason why we have various physiological function in a body 5. Explain the technical terms used in the field of neuroscience 6. Explain the basic theory including Action Potential and Synaptic Function in English. 7. Explain the methodologies to record and visualize neural excitability. <p>【Study method・attention】</p> <p>Seminar and/or discussion style is employed. Students require sufficient preparations prior to each lecture. Although the face to face seminar is held; however, the on-line lecture/seminar (real time) through the Zoom could be possible when necessary.</p> <p>【Regarding the use of Generative AI】</p> <p>In this course, the use of generative AI is permitted under certain conditions. If you choose to use it, you must comply with the following rules: 1) When you use generative AI for reports or other assignments, you must state which parts were generated, for what purpose, and which AI system was used. 2) You must not use the generated content as is; you are required to verify and, if necessary, correct its accuracy and appropriateness on your own. 3) The student bears full responsibility for the final submitted work. 4) If inappropriate use is identified, strict action will be taken in accordance with the university regulations.</p>					

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	4/14	Guidance and Introduction of neuroscience.	N/A	Okamoto
2, 3	4/21 4/28	Neuron, Glia Cell.	Text① p19-42	Okamoto
4, 5	5/08 5/12	How to know the Action Potential 1, 2	Text① p61-80	Okamoto
6, 7	5/19 5/26	Resting and Action Potentials 1, 2	Text① p3-18	Okamoto
8, 9	6/02 6/09	How to know neural and muscle activities. Discussion, Present their knowledge that students learned in 9 seminar series	Text① p61-80 Discussion after Oral presentation	Okamoto
10, 11	6/16 6/23	Synapse 1, 2	Text① p81-106	Okamoto
12, 13	6/30 7/07	Receptors 1, 2	Text① p107-1-134	Okamoto
14, 15	7/14 7/21	Discussion, Present their knowledges that students learned in all seminar series.	Discussion after Oral presentation	Okamoto
16	7/28	Examination	Oral examination	Okamoto

【Evaluation】

Report and oral examination (90%), Discussion and debate at the seminar (10%). The oral examination is conducted by face to face with the instructor.

【Media】

Text①、Neuroscience Exploring the Brain 2nd Edition、Bear et a. 7600 円 ISBN 0-7817-3944-6.

【Reference book】

N/A

B

【Course outline】

In the 2nd semester, students will learn neuroscience much deeper and more specifically. As learned in the 1st semester, homeostasis is maintained by various physiological functions in the body, and sensory processing plays critical roles in it. This seminar will focus on the basis for the somatosensory processing in the peripheral and central nervous systems. Emphasis is directed on the study of pain processing, especially chronic pain conditions, since treatment for chronic pain appeared to be hard that could be due to less understanding of the basic mechanisms, clinically. Students will learn the pain mechanisms from the aspects of brain function.

【Course aim】

The main purpose of this seminar is to understand and explain the neural mechanisms underlying pain conditions.

【Attainment target】

1. Explain basic mechanisms underlying pain conditions.

<p>2. Explain the differences between acute and chronic pain.</p> <p>3. Explain neural mechanisms for orofacial pain.</p> <p>4. Explain several factors that influences pain responses.</p> <p>【Study method・attention】</p> <p>Seminar and/or discussion style will be conducted. Students require sufficient preparations prior to each lecture. The face to face seminar is held; however, the on-line lecture/seminar (real time) through the Zoom could be possible when necessary.</p>				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/06	Guidance	N/A	Okamoto
2	10/20	Somatosensory system, brain pathways.	Paper being provided.	Okamoto
3	10/27	Pain (Peripheral mechanism)	Paper being provided.	Okamoto
4	11/06	Pain (Spinal, trigeminal caudalis mechanism)	Paper being provided. Text② p73-89.	Okamoto
5	11/10	Pain (Plastic changes in the dorsal horn)	Paper being provided. Text② p91-105.	Okamoto
6	11/17	Pain (Descending pain controls)	Paper being provided. Text② p125-142.	Okamoto
7	11/24	Discussion and presentation	Paper being provided.	Okamoto
8	12/01	Basis for Inflammatory pain, and neuropathic pain.	Paper being provided. Text② p49-72.	Okamoto
9	12/08	Pain conditions in the trigeminal areas	Paper being provided.	Okamoto
10	12/15	Pain (trigeminal root ganglion, trigeminal subnucleus caudalis)	Paper being provided.	Okamoto
11	12/22	Basis for headache and dry eye syndrome	Paper being provided. Text② p833-850.	Okamoto
12, 13	1/12 1/19	Basis for temporomandibular joint disorder (TMD) and stress conditions Basis for TMD and sex steroids	Paper being provided. Paper being provided. Text② p1181-1198.	Okamoto
14	1/26	Reading papers about pain mechanisms in the trigeminal area	Paper being provided.	Okamoto
15	2/02	Discussion	Discussion after Oral presentation	Okamoto
16	2/09	Examination	Oral examination	Okamoto
【Evaluation】				

Report and oral examination (90%), Discussion and debate at the seminar (10%). The oral examination is conducted by face to face with the instructor.

【Media】

Text② Textbook of Pain by Stephen McMahon and Martin Koltzenburg, Elseviere (5th).

ISBN13: 978-0702040597, 19,121 円。

【Reference book】

N/A

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5809	1	Tue/6 A	2	9014	Hands on practical
260W7809		Tue/7 A			
260W5810	2	Tue/6 B	2	9014	Hands on practical
260W7810		Tue/7 B			
Course	Advanced lecture on Molecular Neurobiology A, B				
Instructor	Prof. Miho Terunuma, Assis Prof. Takako Ichiki (Div. Oral Biochemistry)				
Place	Laboratory of Oral Biochemistry				
A					
<p>【Course outline】 This course aims to provide you with the foundational knowledge that you will need in basic neuroscience and neurobiology. In semester 1, the molecular and cellular mechanisms in the organization and functions of the central nervous system will be discussed.</p> <p>【Course aim】 Students will perform various research techniques in neurobiology using primary cultured neurons/glia cells and brain slices.</p> <p>【Attainment target】 Students will be able to:</p> <ul style="list-style-type: none"> • Prepare primary cultured neurons/glia cells from rodents. • Examine the localization and function of the molecules of interest. • Analyze the data and correctly interpret the results. <p>【Study method・attention】 This class provides hands-on research experience. Handout will be provided at the beginning of each session.</p> <p>【Use of Generative Artificial Intelligence (AI)】 This course aims to help students develop practical skills in critically examining and effective use of generative AI. Its active use is recommended for brainstorming, research support, and logical structure verification.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	Apr 14	Introduction to Neurobiology	The details are instructed in the class.	Terunuma M	
2	Apr 21	Preparation of primary cell culture	The details are instructed in the class.	Terunuma M	
3	Apr 28	Primary culture (neuron)	The details are instructed in the class.	Terunuma M	
4	May 8	Primary culture (astrocytes)	The details are	Terunuma M	

			instructed in the class.	
5	May 12	Transfection	The details are instructed in the class.	Terunuma M
6	May 19	Immunocytochemistry	The details are instructed in the class.	Terunuma M
7	May 26	Confocal microscopy	The details are instructed in the class.	Terunuma M
8	June 2	Fractionation	The details are instructed in the class.	Terunuma M
9	June 9	Preparation of cell lysates, protein assay	The details are instructed in the class.	Terunuma M
10	June 16	SDS-PAGE	The details are instructed in the class.	Terunuma M
11	June 23	↓	The details are instructed in the class.	Terunuma M
12	June 30	Data analysis	The details are instructed in the class.	Terunuma M
13	July 7	Data presentation	The details are instructed in the class.	Terunuma M
14	July 14	Summary of the program	The details are instructed in the class.	Terunuma M
15	July 21	Examination	The details are instructed in the class.	Terunuma M
16	July 28	↓	The details are instructed in the class.	Terunuma M
【Evaluation】				

Attendance (60%), Report (40%)				
【Media】				
Neurobiology, Third Edition by Gordon M. Shepherd				
【Reference book】				
Molecular Biology of the Cell, Sixth Edition				
B				
【Course outline】				
This course aims to provide you with the foundational knowledge that you will need in basic neuroscience and neurobiology. In semester 2, an up-to-date knowledge of the research methodology will be introduced.				
【Course aim】				
Students will perform various research techniques in neurobiology using primary cultured neurons/glia cells and brain slices.				
【Attainment target】				
Students will be able to:				
<ul style="list-style-type: none"> • Explain post-translational modification and the way to analyze it. • Explain the methods of analyzing neuronal and non-neuronal activity • Explain the methods of detecting cellular death • Explain the techniques of examining protein trafficking 				
【Study method・attention】				
This class provides hands-on research experience. Handout will be provided at the beginning of each session.				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	Oct 6	Techniques for studying post-translational modification	The details are instructed in the class.	Terunuma M
2	Oct 20	↓	The details are instructed in the class.	Terunuma M
3	Oct 27	↓	The details are instructed in the class.	Terunuma M
4	Nov 6	Techniques for studying cell activity (Calcium imaging)	The details are instructed in the class.	Terunuma M
5	Nov 10	↓	The details are instructed in the class.	Terunuma M
6	Nov 17	↓	The details are instructed in the class.	Terunuma M

7	Nov 24	Techniques for studying cell death	The details are instructed in the class.	Terunuma M
8	Dec 1	↓	The details are instructed in the class.	Terunuma M
9	Dec 8	↓	The details are instructed in the class.	Terunuma M
10	Dec 15	Techniques for studying protein trafficking	The details are instructed in the class.	Terunuma M
11	Dec 22	↓	The details are instructed in the class.	Terunuma M
12	Jan 12	↓	The details are instructed in the class.	Terunuma M
13	Jan 19	Data analysis	The details are instructed in the class.	Terunuma M
14	Jan 26	Data presentation	The details are instructed in the class.	Terunuma M
15	Feb 2	Summary of the program	The details are instructed in the class.	Terunuma M
16	Feb 9	Examination	The details are instructed in the class.	Terunuma M

【Evaluation】

Attendance (60%), Report (40%)

【Media】

Neurobiology, Third Edition by Gordon M. Shepherd

【Reference book】

Molecular Biology of the Cell, Sixth Edition

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5811	1	Fri/6 A	2	9114	Lecture • Seminar
260W7811		Fri/7 A			
260W5812	2	Fri/6 B	2	9115	Lecture • Seminar
260W7812		Fri/7 B			
Course	Dentofacial Orthodontics A, B				
Instructor	Lecture Kojiro Takahashi (Div. Orthodontics)				
Place	Seminar room for practice or cephalometric analysis, or orthodontic clinic				
A					
<p>【Course outline】 This course will provide information on normal occlusion and etiology of dental/skeletal malocclusion.</p> <p>【Course aim】 Basic knowledge of orthodontics will be provided to participant(s) for orthodontic analysis and diagnosis.</p> <p>【Attainment target】 Participant(s) can:</p> <ul style="list-style-type: none"> • Explain definition of normal occlusion • Explain methods for cephalometric analysis • Describe various types of malocclusion and their characteristics • Diagnose various types of malocclusion and show adequate treatment plan in respective case <p>【Study method•attention】 Documents are supposed to be distributed before the beginning of each lecture. Participant(s) will be required to read the textbook and/or references designated before attending.</p> <p>One of the objectives of this course is to practically develop skills for critically evaluating and effectively utilizing generative AI. Students may actively use it for purposes such as brainstorming, assisting with information gathering, and checking logical structure. However, if it is used, this must be clearly stated, and students are required to independently fact-check any generated information and take full responsibility for the final work produced.</p>					
【Plan】					
No.	Date	Contents	Preparation and Review	Instructor	
1	4/10	Orientation	Read through distributed documents, and those related references	Takahashi	
2-4	4/17, 4/24, 5/1	Normal occlusion	Read through distributed documents, and those related references	Takahashi	
5-9	5/8, 5/15,	Etiology of malocclusion	Look through	Takahashi	

	5/22, 5/29, 6/5		distributed materials for case analysis	
10-15	6/12, 6/19, 6/26, 7/3, 7/10, 7/17	Diagnosis of malocclusion	Look through distributed materials for case analysis	Takahashi
16	7/24	Exam (interview)	Arrangement and understanding of contents provided in the course	Takahashi

【Evaluation】

The students will be evaluated by interviews (100%) for contents of the lecture provided.

【Media】

The textbook of CONTEMPORARY ORTHODONTICS (5th edition; W. Proffit, ed., Mosby Year Book, Inc.) (15,108 yen including tax) and relevant papers in each content.

【Reference book】

Stomatology: Totsuka Y and Takato, T Ed., Asakura publisher. (27,000 yen+tax) .

The basic science and concepts of clinical orthodontics: Yogosawa Society of Orthodontists Ed., Quintessence publisher. (30,000 yen+tax)

B

【Course outline】

This course will include etiology of dental/skeletal malocclusion, changes in dentofacial complex, and occlusion with orthodontic treatment. The differences in orthodontic treatment effects between individual cases will be also discussed.

【Course aim】

Changes in craniofacial structure and occlusion during growth stage will be described, and the differences in orthodontic treatment effects on individual cases with various malocclusions will be mentioned.

【Attainment target】

Participant(s) can:

- Summarize changes in craniofacial morphology during growth stage
- Explain treatment methods for various types of malocclusion
- Explain the differences in orthodontic treatment effects on individual cases

【Study method・attention】

Documents are supposed to be distributed at the beginning of each lecture. Participant(s) will be required to read the textbook and/or references designated before attending.

One of the objectives of this course is to practically develop skills for critically evaluating and effectively utilizing generative AI. Students may actively use it for purposes such as brainstorming, assisting with information gathering, and checking logical structure. However, if it is used, this must be clearly stated, and students are required to independently fact-check any generated information and take full responsibility for the final work produced.

【Plan】

No.	Date	Contents	Preparing learning	Instructor
1-5	10/2, 10/9,	Changes in dentofacial complex and occlusion	Read through	Takahashi

	10/23, 10/30, 11/6	with orthodontic treatment	distributed documents, and those related references	
6-10	11/13, 11/20 11/27, 12/4, 12/11	Methods for orthodontic correction	Read through distributed documents, and those related references	Takahashi
11-14	12/18, 12/25, 1/8, 1/15	Presentation of various cases treated by orthodontic treatment alone or with orthognathic surgery	Look through distributed materials for case analysis	Takahashi
15	1/22	Overall discussion	Arrange problems pertaining to the course	Takahashi
16	1/29	Exam (interview)	Arrangement and understanding of contents provided in the course	Takahashi

【Evaluation】

The participant(s) will be evaluated by interviews (100%) for contents of the lecture provided and case analysis.

【Media】

The textbook of CONTEMPORARY ORTHODONTICS (5th edition; W. Proffit, ed., Mosby Year Book, Inc.) (15,108 yen including tax) and relevant papers in each content.

【Reference book】

Stomatology: Totsuka Y and Takato, T Ed., Asakura publisher. (27,000 yen+tax) .

Clinical Biomechanics on Tooth Movement-Dynamism of Bone and Periodontal Ligament: Shimono M. et al. Ed., Ishiyaku publisher (13,000 yen+tax) .

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5813	1	Thu/6 A	2	9114	Lecture・Seminar
260W7813		Thu/7 A			
260W5814	2	Thu/6 B	2	9115	Lecture・Seminar
260W7814		Thu/7 B			
Course	Seminar on clinical orthodontics A, B				
Instructor	Lecture Kojiro Takahashi (Div. Orthodontics) Assistant Prof. Kanako Okawa (Div. Orthodontics)				
Place	Seminar room of division of orthodontics				
A					
【Course outline】 This course deals with the practice of orthodontic treatment.					
【Course aim】 This course provides fundamental knowledge and skill for basic orthodontic treatment.					
【Attainment target】 Participants can; Explain aim of orthodontic treatment Explain early orthodontic treatment Explain orthodontic treatment in permanent dentition					
【Study method・attention】 Participant(s) will be required to read the textbook and/or references designated before attending. This course format will be lecture/ seminar. One of the objectives of this course is to practically develop skills for critically evaluating and effectively utilizing generative AI. Students may actively use it for purposes such as brainstorming, assisting with information gathering, and checking logical structure. However, if it is used, this must be clearly stated, and students are required to independently fact-check any generated information and take full responsibility for the final work produced.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/9	Guidance	Details are indicated at the class.	Takahashi, Okawa	
2-4	4/16, 4/23, 5/7	Aim of orthodontic treatment	Textbook pp1-13, 31-39, 161-188	Takahashi, Okawa	
5-7	5/14, 5/21, 5/28	The first phase orthodontic treatment	Textbook pp189-205, 266-286	Takahashi, Okawa	
8-11	6/4, 6/11, 6/18, 6/25	Orthodontic treatment in permanent dentition 1	Textbook pp206-243, 266~286, 329~361	Takahashi, Okawa	

12-14	7/2, 7/9, 7/16	Orthodontic treatment in permanent dentition 2	Textbook pp363-410	Takahashi, Okawa
15	7/23	Summary and Examination	Review until last time	Takahashi, Okawa

【Evaluation】

The participants will be assessed by reports submitted (50%), interviews (40%) and their attitude during the class (10%).

【Media】

The basic science and concepts of clinical orthodontics: edited and written by Yogosawa orthodontic society, Quintessence (30,000 yen + Tax)

【Reference book】

Edgewise system Vol I: written by Fumio Yogosawa, Quintessence (42,000 yen + Tax)

Edgewise system Vol II: written by Fumio Yogosawa, Quintessence (45,000 yen + Tax)

B

【Course outline】

This course deals with the practice of orthodontic treatment.

【Course aim】

This course provides skill for advanced orthodontic treatment.

【Attainment target】

Participants can;

Explain the surgical orthodontic treatment

Explain the role of orthodontist in interdisciplinary dentistry

【Study method・attention】

Participant(s) will be required to read the textbook and/or references designated before attending. The class format will be lecture/seminar.

One of the objectives of this course is to practically develop skills for critically evaluating and effectively utilizing generative AI. Students may actively use it for purposes such as brainstorming, assisting with information gathering, and checking logical structure. However, if it is used, this must be clearly stated, and students are required to independently fact-check any generated information and take full responsibility for the final work produced.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/1	Guidance	Details are indicated at the class.	Takahashi, Okawa
2-4	10/8, 10/22, 10/29	The orthodontic treatment in cleft lip and/or palate	Textbook pp411-417	Takahashi, Okawa
5-7	11/5, 11/12, 11/19	The surgical orthodontic treatment	Textbook pp421-427	Takahashi, Okawa

8-11	11/26, 12/3, 12/10, 12/17	The orthodontic treatment in interdisciplinary dentistry 1	Textbook pp418-420, 428-433	Takahashi, Okawa
12-14	1/7, 1/21, 1/28	The orthodontic treatment in interdisciplinary dentistry 2	Textbook pp434-440	Takahashi, Okawa
15	2/4	Summary and Examination	Review until last time	Takahashi, Okawa

【Evaluation】

The participants will be assessed by reports submitted (50%), interviews (40%) and their attitude during the class (10%).

【Media】

The basic science and concepts of clinical orthodontics: edited and written by Yogosawa orthodontic society, Quintessence (30,000 yen + Tax)

【Reference book】

Edgewise system Vol I: written by Fumio Yogosawa, Quintessence (42,000 yen + Tax)

Edgewise system Vol II: written by Fumio Yogosawa, Quintessence (45,000 yen + Tax)

Clinical Periodontology and Implant Dentistry, 4th edition: written by Jan Lindhe et al., Quintessence (27,000 yen + Tax)

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5815	1	Mon/6・A	2	9114	Lecture
260W7815		Mon/7・A			
260W5816	2	Mon/6・B	2	9115	Lecture
260W7816		Mon/7・B			
Course	Seminar for clinical orthodontic treatments A, B				
Instructor	Professor Jun Nihara (Div. of Orthodontics)				
Place	Seminar room of division of orthodontics				
A					
【Course outline】					
This course deals with the physical and biomechanical topics for orthodontic treatment.					
【Course aim】					
This course provides physical and biomechanical knowledge needed for orthodontic treatment.					
【Attainment target】					
Participants can:					
Explain physical and biomechanical theory for orthodontic treatment.					
Explain effects of orthodontic appliances.					
Explain side effect of orthodontic appliances and management.					
【Study method・attention】					
Lectures					
One of the objectives of this course is to practically develop skills for critically evaluating and effectively utilizing generative AI. Students may actively use it for purposes such as brainstorming, assisting with information gathering, and checking logical structure. However, if it is used, this must be clearly stated, and students are required to independently fact-check any generated information and take full responsibility for the final work produced.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/13	Guidance	Read references	Nihara	
2	4/20	Principles of biomechanics	Read references	Nihara	
3	4/27	Properties and structures of orthodontic wire materials	Read references	Nihara	
4	5/7	How to select an archwire	Read references	Nihara	
5	5/11	Anchorage and mechanics for orthodontic treatment	Read references	Nihara	
6	5/18	Equilibrium	Read references	Nihara	
7	5/25	The role of friction in orthodontic appliances	Read references	Nihara	
8	6/1	3D concepts in tooth movement	Read references	Nihara	

9	6/8	Stress, strain, and the biologic response	Read references	Nihara
10	6/15	Mechanics of Headgear	Read references	Nihara
11	6/22	Mechanics of maxillomandibular elastics	Read references	Nihara
12	6/29	Mechanics for overbite correction	Read references	Nihara
13	7/6	Mechanics of lingual arch	Read references	Nihara
14	7/13	Extraction therapies and space closure	Read references	Nihara
15	7/27	Biomechanics and treatment of dentofacial deformity	Read references	Nihara
16	8/3	Summary and Examination	Read references	Nihara

【Evaluation】

The participants will be assessed by reports submitted (50%), interviews (40%) and their attitude during the class (10%).

【Media】

Orthodontics: Current Principles and Techniques, 6th Edition: Lee Graber; 2016

Contemporary Orthodontics, 6th Edition: William Proffit, Mosby; 2018

【Reference book】

The Biomechanical Foundation of Clinical Orthodontics: Charles J. Burstone: Quintessence Pub Co;2015

B

【Course outline】

This course deals with the physical and biomechanical topics for orthodontic treatment especially using orthodontic anchor screws(OAS).

【Course aim】

This course provides physical and biomechanical knowledge needed for orthodontic treatment with OAS following skills learned in course IA/IIA.

【Attainment target】

Participants can:

Explain physical and biomechanical theory for orthodontic treatment using OAS.

Explain effects of orthodontic appliances using OAS.

Explain side effect and management of orthodontic treatment using OAS.

【Study method・attention】

Lectures

One of the objectives of this course is to practically develop skills for critically evaluating and effectively utilizing generative AI. Students may actively use it for purposes such as brainstorming, assisting with information gathering, and checking logical structure. However, if it is used, this must be clearly stated, and students are required to independently fact-check any generated information and take full responsibility for the final work produced.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/5	Guidance	Read references	Nihara

2-4	10/13, 10/19, 10/26	Management in orthodontic treatment using OAS	Read references	Nihara
5-7	11/2, 11/9, 11/16	How to use OAS in treatment for maxillary protrusion case	Read references	Nihara
8-10	11/30, 12/7, 12/14	How to use OAS in treatment for mandibular protrusion case	Read references	Nihara
11-13	12/21, 1/14, 1/22	How to use OAS in treatment for openbite and deepbite case	Read references	Nihara
14-15	1/25, 2/1	How to use OAS in treatment for MTM case	Read references	Nihara
16	2/8	Summary and Examination	Read references	Nihara

【Evaluation】

The participants will be assessed by reports submitted (50%), interviews (40%) and their attitude during the class (10%).

【Media】

Case study of utilization technique with orthodontic anchor screw, Shigemi Goto et al, Ishiyaku Publishers, Inc., 2019

【Reference book】

The Biomechanical Foundation of Clinical Orthodontics: Charles J. Burstone: Quintessence Pub Co;2015

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5817	1	Fri/3・A	2	9114	Lecture
260W7817		Fri/6・A			
260W5818	2	Fri/3・B	2	9115	Lecture
260W7818		Fri/6・B			
Course	Dysphagia Rehabilitation A, B				
Instructor	Prof. Makoto Inoue (Div. Dysphagia Rehabilitation)				
Place	Meeting room of Div. Dysphagia Rehabilitation				
A					
【Course outline】					
This course deals with aging change of orofacial function about ingestion. We discuss the diagnosis method in dysphasia that occurred by cerebral vascular disease or post operation of head neck cancer. Moreover, this course deals with medical system, social welfare, social security including care insurance for elderly.					
【Course aim】					
The course deals with the acquirement of knowledge for assessment and diagnose of dysphagia.					
【Attainment target】					
The student will appropriately explain the examination for evaluation of stomatognathic function. The students will select and perform the examination needed according to the purpose.					
【Study method・attention】					
The students have to do a preparation for a lecture using textbooks or any source materials needed. Full contents the students have to prepare in each time will be supplied at the first time.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/10	Guidance	Read handout before lecture	Makoto Inoue	
2-3	4/17, 24	Introduction	Read handout before lecture	Makoto Inoue	
4-5	5/1, 15	Screening test	Read handout before lecture	Makoto Inoue	
6-7	5/22, 29	Videofluorography	Read handout before lecture	Makoto Inoue	
8-9	6/5, 12	Videoendoscopy	Read handout before lecture	Makoto Inoue	
10-11	6/19, 26	EMG, manometry	Read handout before lecture	Makoto Inoue	

12-13	7/3, 10	EEG, MRI, NIRS	Read handout before lecture	Makoto Inoue
14-15	7/17, 24	Meal assessment	Read handout before lecture	Makoto Inoue
16	7/31	Summary and examination (possible, on remote)	Review all the contents	Makoto Inoue

【Evaluation】

Oral examination (50%) and report (50%).

【Media】

Handout if needed

【Reference book】

Dysphagia, Clinical management in adults and children (Elsevier)

【Use of Generative AI】

In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.

B

【Course outline】

This course deals with aging change of orofacial function about ingestion. We discuss the diagnosis method in dysphasia that occurred by cerebral vascular disease or post operation of head neck cancer. Moreover, this course deals with medical system, social welfare, social security including care insurance for elderly.

【Course aim】

The course deals with the acquirement of knowledge for assessment and diagnose of dysphagia.

【Attainment target】

The student will appropriately explain the examination for evaluation of stomatognathic function.

The students will select and perform the examination needed according to the purpose.

【Study method・attention】

The students have to do a preparation for a lecture using textbooks or any source materials needed. Full contents the students have to prepare in each time will be supplied at the first time.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/2	Guidance	Read handout before lecture	Makoto Inoue
2-3	10/9, 16	Indirect therapy for orofacial and tongue muscles	Read handout before lecture	Makoto Inoue
4-5	10/23, 30	Indirect therapy for throat muscles	Read handout before lecture	Makoto Inoue
6-7	11/13, 20	Direct therapy (how we should select meal items)	Read handout before lecture	Makoto Inoue

8-9	11/27, 12/4	Direct therapy (swallowing maneuver)	Read handout before lecture	Makoto Inoue
10-11	12/11, 18	Oral care with thermal tactile stimulation	Read handout before lecture	Makoto Inoue
12-13	12/25, 1/8	Environmental setting	Read handout before lecture	Makoto Inoue
14-15	1/15, 29	Surgery	Read handout before lecture	Makoto Inoue
16	2/5	Summary and examination (possible, on remote)	Review all the contents	Makoto Inoue

【Evaluation】

Oral examination (50%) and report (50%).

【Media】

Handout if needed

【Reference book】

Dysphagia, Clinical management in adults and children (Elsevier)

【Use of Generative AI】

In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5819	1	Fri/5・A	2	9114	Lecture・Seminar
260W7819		Fri/7・A			
260W5820	2	Fri/5・B	2	9115	Lecture・Seminar
260W7820		Fri/7・B			
Course	Assessment of Dysphagia A, B				
Instructor	Associate Prof. Takanori Tsujimura				
Place	Laboratory of Div. Dysphagia Rehabilitation				
A					
【Course outline】					
The appropriate method for swallowing function should be selected, since the many organs including tongue, larynx, and muscles should work coordinately for normal swallowing. The course deals with the methodology for assessment of various organs related with swallowing.					
【Course aim】					
The course is designed to master the knowledge and technique for assessment of swallow related organs which required for diagnosis of dysphagia.					
【Attainment target】					
The students will correctly understand physiology of related organs.					
The students will appropriately explain the examination for evaluation of stomatognathic function.					
The students will select and perform the examination needed according to the purpose.					
The students will list the needful examination according to the possible malfunction of mastication and swallowing.					
【Study method・attention】					
The students have to do a preparation for a lecture using textbooks or any source materials needed. Full contents the students have to prepare in each time will be supplied at the first time.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/10	Introduction	Read handout before lecture	Tsujimura	
2	4/17	Property of various sensors	Read handout before lecture	Tsujimura	
3	4/24	Assessment of tongue movement	Read handout before lecture	Tsujimura	
4-5	5/1, 15	Measurement of tongue pressure	Read handout before lecture	Tsujimura	
6-7	5/22, 29	Measurement with manometry	Read handout before lecture	Tsujimura	

8-9	6/5, 12	Assessment of laryngeal movement	Read handout before lecture	Tsujimura
10-11	6/19, 26	Motion capture	Read handout before lecture	Tsujimura
12-13	7/3, 10	Assessment of coordination of related organs	Read handout before lecture	Tsujimura
14-15	7/17, 24	Simultaneous recording and analysis	Read handout before lecture	Tsujimura
16	7/31	Summary and examination (possible, on remote)	Review all the contents	Tsujimura

【Evaluation】

Oral test or written examination (50%) and report (50%).

【Media】

Handout supplied by Div. Dysphagia Rehabilitation

【Reference book】

Dysphagia Clinical Management in Adults and Children second edition, Elsevier

【Use of Generative AI】

In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.

B

【Course outline】

The appropriate method for swallowing function should be selected, since the many organs including tongue, larynx, and muscles should work coordinately for normal swallowing. The course deals with the methodology for clinical assessment using case example.

【Course aim】

The course is designed to master the clinical knowledge and technique for diagnosis of dysphagia using result of actual clinical test.

【Attainment target】

The students will assess swallowing function and diagnose dysphagia using case example.
The students will list the needful examination according to the possible malfunction of mastication and swallowing.

【Study method・attention】

The students have to do a preparation for a lecture using textbooks or any source materials needed. Full contents the students have to prepare in each time will be supplied at the first time.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/2	Introduction	Read handout before lecture	Tsujimura

2-3	10/9, 16	Screening test	Read handout before lecture	Tsujimura
4-5	10/23, 30	Videofluorography	Read handout before lecture	Tsujimura
6-7	11/13, 20	Videoendoscopy	Read handout before lecture	Tsujimura
8-9	11/27, 12/4	Assessment of rehabilitation	Read handout before lecture	Tsujimura
10-11	12/11, 18	Assessment of QOL	Read handout before lecture	Tsujimura
12-13	12/25, 1/8	Food texture and swallowing function	Read handout before lecture	Tsujimura
14-15	1/15, 29	Assessment of ingestive function	Read handout before lecture	Tsujimura
16	2/5	Summary and examination (possible, on remote)	Review all the contents	Tsujimura

【Evaluation】

Oral test or written examination (50%) and report (50%).

【Media】

Handout supplied by Div. Dysphagia Rehabilitation

【Reference book】

Dysphagia Clinical Management in Adults and Children second edition, Elsevier

【Use of Generative AI】

In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5821	1	Mon/5・A	2	9114	Lecture・Seminar・Practice
260W7821		Mon/7・A			
260W5822	2	Mon/5・B	2	9115	Lecture・Seminar・Practice
260W7822		Mon/7・B			
Course	Seminar on Evaluation of Feeding Function A, B				
Instructor	Lecturer Jin Magara (Dysphagia Rehabilitation Unit)				
Place	Laboratory of Div. Dysphagia Rehabilitation & Alliance laboratory E105				
A					
【Course outline】					
The purpose of this seminar is to progress the fundamental knowledge about the ingestion using assessment of feeding function. The aim of this seminar is also to understand how to utilize videofluorography and videoendoscopy and analyze obtained images.					
【Course aim】					
This course provides students the technical knowledge and basic technique for assessment of feeding function and for clinical approaches to dysphagic patients.					
【Attainment target】					
Students will be able to understand the purpose of the evaluation for feeding function and to practice the basic procedure.					
Students will be able to evaluate the feeding function and explain how to analyze the images.					
【Study method・attention】					
The students have to do a preparation for a lecture using textbooks, literature or any source materials needed. Full contents the students have to prepare in each time will be supplied at the first time.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/13	Guidance	Check the key points of the handout	Jin Magara	
2	4/20	Outline of Screening test	Check the key points of the handout	Jin Magara	
3-4	4/27 5/7	Practice of Screening test	Check the key points of the handout regarding Screening test	Jin Magara	
5-6	5/11 5/18	Practice of Videofluorography	Summarize the handout of Videofluorography	Jin Magara	
7-8	5/25 6/1	Analysis of Videofluorography	Read and summarize the paper regarding	Jin Magara	

			Videofluorography	
9-10	6/8 6/15	Practice of Videoendoscopy	Summarize the handout of Videoendoscopy	Jin Magara
11-12	6/22 6/29	Analysis of Videoendoscopy	Read and summarize the paper regarding Videoendoscopy	Jin Magara
13-14	7/6 7/13	Assessment of Oral function	Summarize the handout of Oral function	Jin Magara
15	7/27	Interpretation of assessment of Oral hypofunction	Read and summarize the paper regarding Oral hypofunction	Jin Magara
16	8/3	Examination (possible, on remote)	Check the key points of the handout	Jin Magara

【Evaluation】

Oral test or written examination (50%) and report (50%).

【Media】

Handout supplied by Div. Dysphagia Rehabilitation

【Reference book】

Dysphagia: Clinical Management in Adults and Children, Michael E. Groher, Michael A. Crary

Endoscopic Evaluation and Treatment of Swallowing Disorders 2nd Edition, Susan Langmore

Oropharyngeal Dysphagia: Videoendoscopy-Guided Work-up and Management, Gauthier Desuter

【Use of Generative AI】

In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.

B

【Course outline】

Lectures are aimed to understand rehabilitation technique based on the dysphagia assessment the through several dysphagia clinical cases.

【Course aim】

This course provides students the technical knowledge and basic technique for assessment of feeding function and for clinical approaches to dysphagic patients.

【Attainment target】

Students will be able to understand the purpose of the evaluation for feeding function and to practice the basic procedure.

Students will be able to understand and explain the purpose of dysphagia rehabilitation and acquire the basic procedure.

【Study method・attention】

The students have to do a preparation for a lecture using textbooks, literature or any source materials needed. Full contents the students have to prepare in each time will be supplied at the first time.

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/5	Guidance	Check the key points of the handout	Jin Magara
2	10/13	Outline of therapy	Check the key points of the handout	Jin Magara
3-4	10/19 10/26	Basic of Indirect therapy	Check the points of the Indirect therapy	Jin Magara
5-6	11/2 11/9	Practice of Indirect therapy	Read and summarize the paper regarding Indirect therapy	Jin Magara
7-8	11/16 11/30	Basic of Direct therapy	Check the key points of the handout	Jin Magara
9-10	12/7 12/14	Practice of Direct therapy	Read and summarize the paper regarding Direct therapy	Jin Magara
11	12/21	Compensation Method	Check the points of the Compensation Method	Jin Magara
12	1/14	Compensation Method	Read and summarize the paper regarding Compensation Method	Jin Magara
13	1/22	Prosthetic Treatment for Dysphagia patients	Check the key points of the handout	Jin Magara
14-15	1/25 2/1	Nutritional Assessment	Check the points of the Nutritional Assessment	Jin Magara
16	2/8	Examination (possible, on remote)	Check the key points of the handout	Jin Magara
<p>【Evaluation】 Oral test or written examination (50%) and report (50%).</p> <p>【Media】 Handout supplied by Div. Dysphagia Rehabilitation</p> <p>【Reference book】 Dysphagia: Clinical Management in Adults and Children, Michael E. Groher, Michael A. Crary Endoscopic Evaluation and Treatment of Swallowing Disorders 2nd Edition, Susan Langmore Oropharyngeal Dysphagia: Videoendoscopy-Guided Work-up and Management, Gauthier Desuter</p> <p>【Use of Generative AI】</p>				

In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5823	1	Mon/1・A	2	9114	Lecture
260W7823		Mon/5・A			
260W5824	2	Mon/1・B	2	9115	Lecture
260W7824		Mon/5・B			
Course	Periodontal Therapy: Basic Course A, B				
Instructor	Prof. Koichi Tabeta, Assistant Professor. Keisuke Sato.				
Place	Laboratory (E411) at Division of Periodontology, E4 Refresh room (E417)				
A					
【Course outline】					
Periodontal diseases are multifactorial and inflammatory diseases. It is important to conduct the treatment based on a strategic treatment planning with deep knowledge of periodontology and periodontics from basic and clinical aspect. This course will provide knowledge required for a periodontist.					
【Course aim】					
Students will obtain current knowledge and concept for periodontics and periodontology.					
Students will obtain critical knowledge required for treating periodontal disease as a specialist.					
【Attainment target】					
Students will be able to					
1) explain etiology for periodontal diseases.					
2) explain treatments and evidences in periodontal therapy.					
3) explain statistics of data analyses.					
4) explain regenerative periodontal therapy.					
【Study method・attention】					
The lecture will be provided using slides and video. Students are required to read the textbook before attending the class.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/13	Etiology and symptom	Textbook①pp16-23	Tabeta Sato	
2	4/20	Basic periodontal examination, Diagnosis, Treatment planning	Textbook①pp112-119	Tabeta Sato	
3	4/27	Plaque control	Textbook①pp143-153	Tabeta Sato	
4	5/7	Scaling and root planing	Textbook①pp154-168	Tabeta Sato	
5	5/11	Drug therapeutics	Textbook①pp329-336	Tabeta Sato	

6	5/18	Periodontal surgery	Textbook①pp184-198	Tabeta Sato
7	5/25	Furcation treatment	Textbook①pp249-261	Tabeta Sato
8	6/1	Maintenance and supportive periodontal treatment	Textbook①pp319-328	Tabeta Sato
9	6/8	New periodontal examination for regenerative therapy	Textbook①pp120-128	Tabeta Sato
10	6/15	Biological evidence for bone grafting procedure with artificial graft materials	Textbook①pp239-243	Tabeta Sato
11	6/22	Biological evidence for GTR procedure with resorbable membrane	Textbook①pp218-224	Tabeta Sato
12	6/29	Concept and review for surgery with enamel matrix derivative protein	Textbook①pp225-229	Tabeta Sato
13	7/6	Concept and review for surgery with basic FGF growth factor	Textbook①pp230-238	Tabeta Sato
14	7/13	Concept and review for surgery with platelet-derived growth factor	Textbook①pp244-248	Tabeta Sato
15	7/27	Concept and review for surgery with autologous cultured periosteal sheet Examination	Textbook①pp212-217	Tabeta Sato

【Evaluation】

Reports (50%), Oral examination (50%)

【Media】

① Clinical Periodontology 4th edition (ISBN978-4-263-45701-6, Ishiyaku Publishers, Inc., 11, 550yen)

【Reference book】

- Regeneration (ISBN978-4-87417-881-2, Quintessence Publishing, 14, 300yen)
- Dental Regenerative Medicine (ISBN978-4-263-45838-9, Ishiyaku Publishers, Inc., 16, 500yen)

【Remarks】

Use of Generative AI:

In this course, the use of generative AI is strictly prohibited for reports, examinations, and any other assessment tasks. In addition, students are not permitted to upload or input any materials distributed in class into generative AI systems. All submitted work must be created based on the student's own knowledge and independent thinking. If the use of generative AI is confirmed, it will be regarded as academic misconduct and will be dealt with strictly in accordance with university regulations.

B

【Course outline】

This course is designed to provide essential clinical knowledge for professional periodontal treatment with scientific viewpoints. The course will cover the latest findings on the etiology and pathogenesis of periodontal disease and the techniques used in periodontal surgery.

【Course aim】				
Students will obtain current knowledge and concept for periodontics and periodontology.				
Students will obtain critical knowledge required for treating periodontal disease as a specialist.				
【Attainment target】				
Students will be able to				
1) explain etiology for periodontal diseases.				
2) explain regenerative periodontal therapy.				
【Study method・attention】				
The lecture will be provided using slides and video. Students are required to read the textbook before attending the class.				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/5	Pathological change of periodontium	Textbook①pp2-15	Tabeta Sato
2	10/13	Classification	Textbook①pp72-81	Tabeta Sato
3	10/19	Epidemiology, prevention and statistics	Textbook①pp90-99	Tabeta Sato
4	10/26	Bacterial plaque	Textbook①pp33-42	Tabeta Sato
5	11/2	Inflammatory and immunological responses	Textbook①pp43-50	Tabeta Sato
6	11/9	Genetic factors	Textbook①pp66-71	Tabeta Sato
7	11/16	Risk factors	Textbook①pp24-32	Tabeta Sato
8	11/30	Procedure of regenerative surgery with autogenous and/or allo bone graft	Textbook②pp20-29	Tabeta Sato
9	12/7	Procedure of regenerative surgery with artificial bone graft materials	Textbook②pp20-29	Tabeta Sato
10	12/14	Procedure of regenerative surgery with resorbable GTR membrane	Textbook②pp30-41	Tabeta Sato
11	12/21	Procedure of regenerative surgery with enamel matrix derivative protein	Textbook②pp42-55	Tabeta Sato
12	1/14	Procedure of regenerative surgery with basic FGF growth factor	Textbook②pp68-77	Tabeta Sato
13	1/22	Procedure of regenerative surgery with platelet rich fibrin membrane	Textbook②pp56-66	Tabeta Sato

14	1/25	Procedure of regenerative surgery with autologous cultured periosteal sheet	Textbook②pp132-141	Tabeta Sato
15	2/1	Case presentation, Summary Examination	Textbook①pp354-364	Tabeta Sato

【Evaluation】

Reports (50%), Oral examination (50%)

【Media】

① Clinical Periodontology 4th edition (ISBN978-4-263-45701-6, Ishiyaku Publishers, Inc., 11,550yen)

【Reference book】

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【Remarks】

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Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5825	1	Wed/5・A	2	9114	Lecture・Seminar
260W7825					
260W5826	2	Wed/5・B	2	9115	Lecture・Seminar
260W7826					
Course	Periodontal Regenerative Therapy A, B				
Instructor	Prof. Koichi Tabeta, Assistant Professor. Noriko Sugita.				
Place	Laboratory (E411) at Division of Periodontology, E4 Refresh room (E417)				
A					
【Course outline】					
The course will offer the basic knowledge, concept and guideline for periodontal regenerative therapy by lecture.					
【Course aim】					
The aims of this course are to understand each topics as followed, examination, diagnosis, guideline, basic flap surgery, bone graft procedure, GTR method, and advanced surgeries by enamel matrix derivative, platelet rich plasma, platelet rich fibrin, and autologous cultured periosteum.					
【Attainment target】					
The goals in this course are 1) to understand and learn basic knowledge and concept for periodontal regenerative therapy, 2) to master guideline for each regenerative periodontal surgeries, 3) to learn how to gather and organize clinical data.					
【Study method・attention】					
The lecture will be conducted with slides and video. Participants should be read the textbook designated and/or contents-relevant papers before attending. The concrete content of the preparations learning of each time will be indicated at the time of a first class.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/8	New periodontal examination for regenerative therapy	Textbook①pp100-111	Tabeta Sugita	
2	4/15	New technique of standardized examination of attachment level and bone level	Textbook①pp100-111	Tabeta Sugita	
3	4/22	Guideline of periodontal regenerative therapy for periodontitis patients	Textbook①pp100-111	Tabeta Sugita	
4	5/13	Biological evidence for bone grafting procedure with autogenous and/or allo graft	Textbook①pp239-243	Tabeta Sugita	
5	5/20	Biological evidence for bone grafting procedure with artificial graft materials	Textbook①pp239-243	Tabeta Sugita	

6	5/27	Biological evidence for GTR procedure with non-resorbable membrane	Textbook①pp218-224	Tabeta Sugita
7	6/3	Biological evidence for GTR procedure with resorbable membrane	Textbook①pp218-224	Tabeta Sugita
8	6/10	Concept and review for surgery with enamel matrix derivative protein	Textbook①pp225-229	Tabeta Sugita
9	6/17	Concept and review for surgery with basic FGF growth factor	Textbook①pp230-238	Tabeta Sugita
10	6/24	Concept and review for surgery with platelet-derived growth factor	Textbook①pp244-248	Tabeta Sugita
11	7/1	Concept and review for surgery with tissue-engineering	Textbook①pp212-217	Tabeta Sugita
12	7/8	Concept and review for surgery with platelet rich plasma	Textbook①pp244-248	Tabeta Sugita
13	7/15	Concept and review for surgery with platelet rich fibrin membrane	Textbook①pp244-248	Tabeta Sugita
14	7/22	Concept and review for surgery with autologous cultured periosteal sheet	Textbook①pp244-248	Tabeta Sugita
15	7/29	How to gather and organize clinical data Examination	Textbook①pp354-364	Tabeta Sugita

【Evaluation】

Reports (50%), Oral examination (50%)

【Media】

① Clinical Periodontology 3rd edition (ISBN978-4-263-45844-0, Ishiyaku Publishers, Inc., 11,000yen)

【Reference book】

- Regeneration (ISBN978-4-87417-881-2, Quintessence Publishing, 14,300yen)
- Dental Regenerative Medicine (ISBN978-4-263-45838-9, Ishiyaku Publishers, Inc., 16,500yen)

【Remarks】

Use of Generative AI:

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B

【Course outline】

The course will offer the advanced knowledge, concept and guideline for periodontal regenerative therapy by lecture.

【Course aim】

The aims of this course are to understand more practical knowledge about follow topics, basic flap surgery,

bone graft procedure, GTR method, and advanced surgeries by enamel matrix derivative, platelet rich plasma, platelet rich fibrin, and autologous cultured periosteum.

【Attainment target】

The goals in this course are 1) to understand and learn advanced knowledge and concept for periodontal regenerative therapy, 2) to master procedures for each regenerative periodontal surgeries, 3) to learn how to gather and organize clinical data.

【Study method・attention】

The lecture will be conducted with slides and video. Participants should be read the textbook designated and/or contents-relevant papers before attending. The concrete content of the preparations learning of each time will be indicated at the time of a first class.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/7	New technique of standardized examination of attachment level and bone level	Textbook①pp100-111	Tabeta Sugita
2	10/14	New technique to sharpen periodontal curettes	Textbook①pp154-168	Tabeta Sugita
3	10/21	Procedures to make full-thickness flap and /or partial thickness flap	Textbook①pp201-206	Tabeta Sugita
4	10/28	Procedures to master some suture techniques	Textbook①pp190-192	Tabeta Sugita
5	11/4	Procedure of regenerative surgery with autogenous and/or allo bone graft	Textbook①pp239-243	Tabeta Sugita
6	11/11	Procedure of regenerative surgery with artificial bone graft materials	Textbook①pp239-243	Tabeta Sugita
7	11/18	Procedure of regenerative surgery with non-resorbable GTR membrane	Textbook①pp218-224	Tabeta Sugita
8	11/25	Procedure of regenerative surgery with resorbable GTR membrane	Textbook①pp218-224	Tabeta Sugita
9	12/2	Procedure of regenerative surgery with enamel matrix derivative protein	Textbook①pp225-229	Tabeta Sugita
10	12/9	Procedure of regenerative surgery with basic FGF growth factor	Textbook①pp230-238	Tabeta Sugita
11	12/16	Procedure of regenerative surgery with platelet-derived growth factor	Textbook①pp244-248	Tabeta Sugita
12	12/23	Procedure of regenerative surgery with platelet rich plasma	Textbook①pp244-248	Tabeta Sugita
13	1/13	Procedure of regenerative surgery with platelet rich fibrin membrane	Textbook①pp244-248	Tabeta Sugita

14	1/20	Procedure of regenerative surgery with autologous cultured periosteal sheet	Textbook①pp244-248	Tabeta Sugita
15	1/27	Case presentation, Summary Examination	Textbook①pp354-364	Tabeta Sugita

【Evaluation】

Reports (50%), Oral examination (50%)

【Media】

① Clinical Periodontology 3rd edition (ISBN978-4-263-45844-0, Ishiyaku Publishers, Inc., 11,000yen)

【Reference book】

- Regeneration (ISBN978-4-87417-881-2, Quintessence Publishing, 14,300yen)
- Dental Regenerative Medicine (ISBN978-4-263-45838-9, Ishiyaku Publishers, Inc., 16,500yen)

【Remarks】

Use of Generative AI:

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Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5827	1	Wed/1・A	2	9114	Lecture・Seminar
260W7827		Wed/6・A			
260W5828	2	Wed/1・B	2	9115	Lecture・Seminar
260W7828		Wed/6・B			
Course	Seminar for Periodontal therapy A, B				
Instructor	Prof. Koichi Tabeta, Assistant Professor. Hikaru Tamura.				
Place	Laboratory (E411) at Division of Periodontology, E4 Refresh room (E417)				
A					
<p>【Course outline】 Seminar on Periodontal therapy is the lecture and seminar to obtain knowledge of basic structure of the periodontal tissues and classification of periodontal disease to learn the process of diagnosis. Additionally, presentation and discussion will be performed for understanding the relationship between periodontal diseases and systemic diseases.</p> <p>【Course aim】 The aim of this course is to:</p> <ul style="list-style-type: none"> ・Understand the structure of periodontal tissues ・Understand the classification, symptoms and causes of periodontal disease ・Understand the process for diagnosis of periodontal disease ・Understand the relationship between periodontitis and systemic diseases <p>【Attainment target】 Students should be able to:</p> <ul style="list-style-type: none"> ・Explain the characterization of periodontal tissues ・List the types of periodontal disease and explain their symptoms and causes ・Explain the process to diagnose periodontal disease ・Describe the relationship between periodontitis and systemic diseases <p>【Study method・attention】 This course consists of lectures and seminar. Participants will be required to obtain the fundamental knowledge through handouts and reference books prior to each class. The details will be announced at the guidance.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/8	Guidance	The details will be given in class	Tabeta Tamura	
2	4/15	Structure of periodontal tissue	Summary of handouts	Tabeta Tamura	
3	4/22	Classification of periodontal diseases	Summary of handouts	Tabeta Tamura	

4	5/13	Symptoms of periodontal diseases	Summary of handouts	Tabeta Tamura
5	5/20	Pathogenesis of periodontitis	Summary of handouts	Tabeta Tamura
6	5/27	Microbiology of periodontal disease	Summary of handouts	Tabeta Tamura
7	6/3	Susceptibility of periodontitis	Summary of handouts	Tabeta Tamura
8	6/10	Case presentation	Summary of handouts	Tabeta Tamura
9	6/17	Trauma and occlusion	Summary of handouts	Tabeta Tamura
10	6/24	Endodontics and periodontics	Summary of handouts	Tabeta Tamura
11	7/1	Cysts and tumors in periodontium	Summary of handouts	Tabeta Tamura
12	7/8	Systemic diseases and periodontal diseases 1 (Presentation)	Preparation for presentation	Tabeta Tamura
13	7/15	Systemic diseases and periodontal diseases 2 (Presentation)	Preparation for presentation	Tabeta Tamura
14	7/22	Systemic diseases and periodontal diseases 3 (Presentation)	Preparation for presentation	Tabeta Tamura
15	7/29	Summary and Examination	Review	Tabeta Tamura

【Evaluation】

Presentation・Reports (50%), Oral examination (50%)

【Media】

Original handouts and related research papers

【Reference book】

1. Main reference books

・Clinical Periodontology 4th edition (Ishiyaku Publishers, Inc., Saito A et al, edited, 11,550 yen)

2. Recommended books

・Glossary of periodontal terms 3rd edition 2019 (Ishiyaku Publishers, Inc., Japanese Society of Periodontology edited, 3,740 yen)

・Guideline of periodontal treatment 2022 (Ishiyaku Publishers, Inc., Japanese Society of Periodontology edited, 2,420 yen)

【Remarks】

Use of Generative AI:

In this course, the use of generative AI is strictly prohibited for reports, examinations, and any other assessment tasks. In addition, students are not permitted to upload or input any materials distributed in

class into generative AI systems. All submitted work must be created based on the student's own knowledge and independent thinking. If the use of generative AI is confirmed, it will be regarded as academic misconduct and will be dealt with strictly in accordance with university regulations.

B

【Course outline】

This course is the lecture and seminar to acquire the skills of clinical examinations and treatment planning.

【Course aim】

The aim of this course is to:

- Acquire the procedures of clinical periodontal examination to make a treatment plan
- Understand the content of a series of periodontal treatments
- Understand the content of comprehensive approach for periodontal treatment

【Attainment target】

Students should be able to:

- Explain the procedures of the examination to diagnose periodontal disease
- Explain the content of a series of periodontal treatments
- Explain the overview of comprehensive periodontal treatment

【Study method・attention】

This course consists of lectures and seminar. Participants will be required to obtain the fundamental knowledge through handouts and reference books prior to each class. The details will be announced at the guidance.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/7	Guidance	The details will be given in class	Tabeta Tamura
2	10/14	Periodontal Examination	Summary of handouts	Tabeta Tamura
3	10/21	Diagnosis of periodontal disease	Summary of handouts	Tabeta Tamura
4	10/28	Treatment Planning	Summary of handouts	Tabeta Tamura
5	11/4	Basic Periodontal Therapy	Summary of handouts	Tabeta Tamura
6	11/11	Periodontal surgery 1 -Flap operation	Summary of handouts	Tabeta Tamura
7	11/18	Periodontal surgery 2 -Periodontal plastic surgery	Summary of handouts	Tabeta Tamura
8	11/25	Periodontal surgery 3 -Regenerative periodontal therapy	Summary of handouts	Tabeta Tamura

9	12/2	Furcation treatment	Summary of handouts	Tabeta Tamura
10	12/9	Occlusal therapy	Summary of handouts	Tabeta Tamura
11	12/16	Prosthodontics, Orthodontics, Implants and periodontics	Summary of handouts	Tabeta Tamura
12	12/23	Maintenance and supportive periodontal treatment	Summary of handouts	Tabeta Tamura
13	1/13	Treatment Planning 1 (Presentation)	Preparation for presentation	Tabeta Tamura
14	1/20	Treatment Planning 2 (Presentation)	Preparation for presentation	Tabeta Tamura
15	1/27	Summary and Examination	Review	Tabeta Tamura

【Evaluation】

Presentation・Reports (50%), Oral examination (50%)

【Media】

Original handouts and related research papers

【Reference book】

1. Main reference books

• Clinical Periodontology 4th edition (Ishiyaku Publishers, Inc., Saito A et al, edited, 11,000 yen)

2. Recommended books

• Glossary of periodontal terms 3rd edition 2019 (Ishiyaku Publishers, Inc., Japanese Society of Periodontology edited, 3,740 yen)

• Guideline of periodontal treatment 2022 (Ishiyaku Publishers, Inc., Japanese Society of Periodontology edited, 2,420 yen)

【Remarks】

Use of Generative AI:

In this course, the use of generative AI is strictly prohibited for reports, examinations, and any other assessment tasks. In addition, students are not permitted to upload or input any materials distributed in class into generative AI systems. All submitted work must be created based on the student's own knowledge and independent thinking. If the use of generative AI is confirmed, it will be regarded as academic misconduct and will be dealt with strictly in accordance with university regulations.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5829	1	Mon/2・A	2	9114	Lecture
260W7829		Mon/6・A			
260W5830	2	Mon/2・B	2	9115	Lecture
260W7830		Mon/6・B			
Course	Infection control and restoration of tissue integrity A, B				
Instructor	Prof. Koichi Tabeta, Assistant Professor. Miki Hara.				
Place	Laboratory (E411) at Division of Periodontology, E4 Refresh room (E417)				
A					
【Course outline】					
This course demonstrates the characteristics of periodontal tissues and the immunopathogenesis of periodontal diseases.					
【Course aim】					
The aim of this course is to understand and acquire the basic knowledge about the characteristics of periodontal tissue and the pathogenesis of periodontal disease for conducting periodontal research.					
【Attainment target】					
Explain the characteristics of periodontal tissue.					
Explain the pathogenesis of periodontal disease.					
【Study method・attention】					
This course consists of lectures. Participants will be required to obtain the fundamental knowledge through handouts and reference books prior to each class. The details will be announced at the first class.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/13	Characteristic feature of periodontal tissue 1	Summary of handouts	Tabeta Hara	
2	4/20	Characteristic feature of periodontal tissue 2	Summary of handouts	Tabeta Hara	
3	4/27	Characteristic feature of periodontal tissue 3	Summary of handouts	Tabeta Hara	
4	5/7	Periodontopathic bacteria 1	Summary of handouts	Tabeta Hara	
5	5/11	Periodontopathic bacteria 2	Summary of handouts	Tabeta Hara	
6	5/18	Periodontopathic bacteria 3	Summary of handouts	Tabeta Hara	

7	5/25	Innate immune system 1	Summary of handouts	Tabeta Hara
8	6/1	Innate immune system 2	Summary of handouts	Tabeta Hara
9	6/8	Innate immune system 3	Summary of handouts	Tabeta Hara
10	6/15	Acquired immune system 1	Summary of handouts	Tabeta Hara
11	6/22	Acquired immune system 2	Summary of handouts	Tabeta Hara
12	6/29	Acquired immune system 3	Summary of handouts	Tabeta Hara
13	7/6	Immunopathogenesis of periodontal disease 1	Summary of handouts	Tabeta Hara
14	7/13	Immunopathogenesis of periodontal disease 2	Summary of handouts	Tabeta Hara
15	7/27	Immunopathogenesis of periodontal disease 3 Examination	Summary of handouts	Tabeta Hara

【Evaluation】

Reports (50%), Oral examination (50%)

【Media】

Original handouts and related research papers

【Reference book】

Clinical Periodontology 4th edition (Ishiyaku Publishers, Inc., Saito A et al, edited, 11,000 yen)

【Remarks】

Use of Generative AI:

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B

【Course outline】

This course demonstrates principal of periodontal tissue regeneration based on the immune pathology. In addition, we discuss the relationship between periodontal diseases and systemic diseases to understand contribution of oral health for maintaining systemic health.

【Course aim】

The aim of this course is to understand and acquire the basic knowledge about the periodontal tissue

regeneration and periodontal medicine for conducting periodontal research.				
【Attainment target】				
Explain the immunological mechanisms of periodontal tissue regeneration.				
Explain the relationship between periodontal diseases and systemic disease.				
【Study method・attention】				
This course consists of lectures. Participants will be required to obtain the fundamental knowledge through handouts and reference books prior to each class. The details will be announced at the first class.				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/5	Immunological basis of periodontal tissue regeneration 1	Summary of handouts	Tabeta Hara
2	10/13	Immunological basis of periodontal tissue regeneration 2	Summary of handouts	Tabeta Hara
3	10/19	Immunological basis of periodontal tissue regeneration 3	Summary of handouts	Tabeta Hara
4	10/26	Immunological basis of periodontal tissue regeneration, Discussion	Summary of handouts	Tabeta Hara
5	11/2	Periodontal disease and systemic diseases, Introduction	Summary of handouts	Tabeta Hara
6	11/9	Role of commensal bacteria	Summary of handouts	Tabeta Hara
7	11/16	Periodontal disease and systemic diseases 1	Summary of handouts	Tabeta Hara
8	11/30	Periodontal disease and systemic diseases 2	Summary of handouts	Tabeta Hara
9	12/7	Periodontal disease and systemic diseases 3	Summary of handouts	Tabeta Hara
10	12/14	Periodontal disease and systemic diseases 4	Summary of handouts	Tabeta Hara
11	12/21	Periodontal disease and systemic diseases 5	Summary of handouts	Tabeta Hara
12	1/14	Periodontal disease and systemic diseases 6	Summary of handouts	Tabeta Hara
13	1/22	Recent research topics 1	Summary of handouts	Tabeta Hara
14	1/25	Recent research topics 2	Summary of handouts	Tabeta Hara

15	2/1	Recent research topics 3 Examination	Summary of handouts	Tabeta Hara
<p>【Evaluation】 Reports (50%), Oral examination (50%)</p> <p>【Media】 Original handouts and related research papers</p> <p>【Reference book】 Clinical Periodontology 4th edition (Ishiyaku Publishers, Inc., Saito A et al, edited, 11,000 yen)</p> <p>【Remarks】 Use of Generative AI: In this course, the use of generative AI is strictly prohibited for reports, examinations, and any other assessment tasks. In addition, students are not permitted to upload or input any materials distributed in class into generative AI systems. All submitted work must be created based on the student's own knowledge and independent thinking. If the use of generative AI is confirmed, it will be regarded as academic misconduct and will be dealt with strictly in accordance with university regulations.</p>				

Specialized Program Subjects
(Department of Tissue Regeneration and
Reconstruction)

Specialized Program Subjects (Department of Tissue Regeneration and Reconstruction)

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Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5901	1	Mon/ 5 · A	2	9014	Lecture and Practice
260W7901		Tue/ 6 · A			
260W5902	2	Thu/ 5 · B	2	9015	Lecture and Practice
260W7902		Wed/ 6 · B			
Course	Anatomy and Cell Biology of the Hard Tissue A, B				
Instructor	Prof. Hayato Ohshima (Div. Anatomy and Cell Biology of the Hard Tissue), ext. 2812, e-mail: histoman@dent.niigata-u.ac.jp				
Place	Seminar Room in Div. Anatomy and Cell Biology of the Hard Tissue				
A	<p>【Course outline】 This course deals with tooth developmental biology based on the morphological research of hard tissue.</p> <p>【Course aim】 The students shall understand tooth developmental biology based on the morphological research of hard tissue.</p> <p>【Attainment target】</p> <ul style="list-style-type: none"> • The students can explain craniofacial development. • The students can explain tooth development. • The students can explain amelogenesis. • The students can explain enamel. • The students can explain dentinogenesis. • The students can explain dentin-pulp complex. • The students can explain development of the periodontium. • The students can explain periodontium. • The students can explain tooth eruption, shedding, and replacement. • The students can explain dentogingival junction. • The students can explain temporomandibular joint. • The students can explain bone biology. <p>【Study method・attention】 The students have to study the printed synopses beforehand and to study continuously during this course.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI (such as ChatGPT and Gemini) is permitted under certain conditions. If you choose to use it, please adhere to the following guidelines:</p> <ol style="list-style-type: none"> 1. If you use generative AI in reports or other assignments, you must clearly indicate which parts were generated, the purpose (such as the prompt used), and which AI tool was used. 2. Do not use the generated content as-is; you must verify and revise the information yourself to ensure its accuracy and appropriateness. 3. Students are solely responsible for the final deliverables. 4. If inappropriate use (such as use beyond the permitted scope or infringement of others' copyrights) is confirmed, strict disciplinary action will be taken in accordance with university regulations. 				
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/13 class	Guidance		Hayato	

	5 or 4/14 class 6			Ohshima
2	4/20 class 5 or 4/21 class 6	Craniofacial development	Text p. 23-	Hayato Ohshima
3	4/27 class 5 or 4/28 class 6	Tooth development	Text p. 68-	Hayato Ohshima
4	5/7 class 5 or 5/8 class 6	Amelogenesis	Text p. 118-	Hayato Ohshima
5	5/11 class 5 or 5/12 class 6	Enamel	Text p. 118-	Hayato Ohshima
6	5/18 class 5 or 5/19 class 6	Dentinogenesis	Text p. 68-	Hayato Ohshima
7	5/25 class 5 or 5/26 class 6	Dentin-pulp complex (1)	Text p. 157-	Hayato Ohshima
8	6/1 class 5 or 6/2 class 6	Dentin-pulp complex (2)	Text p. 157-	Hayato Ohshima
9	6/8 class 5 or 6/9 class 6	Development of the periodontium	Text p. 68-	Hayato Ohshima
10	6/15 class 5 or 6/16 class 6	Periodontium	Text p. 193-	Hayato Ohshima
11	6/22 class 5 or 6/23 class 6	Tooth eruption, shedding, and replacement	Text p. 218-	Hayato Ohshima
12	6/29 class 5 or 6/30 class 6	Dentogingival junction	Text p. 193-	Hayato Ohshima
13	7/6 class 5 or 7/7 class 6	Temporomandibular joint	Text p. 289-	Hayato Ohshima
14	7/13 class 5 or 7/14	Bone Biology	Text p. 91-	Hayato Ohshima

	class 6			
15	7/27 class 5 or 7/21 class 6	Summary and Examination		Hayato Ohshima

【Evaluation】

Comprehensive evaluation to assess whether the students achieve attainment targets or not is performed by oral tests (20%) and evaluation of submitted reports (80%).

【Media】

- Ten Cate' s Oral Histology. Development, structure, and formation, 9th Ed. (A. Nanci, ed., Mosby Co.)

【Reference book】

- Textbook and Color Atlas of Traumatic Injuries to the Teeth, 5th Ed. (J.O. Andreasen, F.M. Andreasen and L. Andersson ed., Blackwell)

B

【Course outline】

This course deals with a series of processes on the morphological research of hard tissue from experimental design to presentation. The students shall learn how to determine the subject, make an experiment, understand the findings, write an article, and so on.

【Course aim】

The students shall understand a series of processes on the morphological research of hard tissue.

【Attainment target】

- The students can explain the composition of a research paper and how to write the manuscript.
- The students can perform the effective PubMed search.
- The students can make an experimental design.
- The students can perform the perfusion fixation
- The students can prepare paraffin sections.
- The students can take photographs using a microscope.
- The students can perform the immunohistochemistry.
- The students can use the confocal laser microscope.
- The students can process the images using Photo shop.
- The students can give a presentation on the research objective and strategy.

【Study method・attention】

The students have to study the printed synopses beforehand and to study continuously during this course.

【Regarding the Use of Generative AI】

In this course, the use of generative AI (such as ChatGPT and Gemini) is permitted under certain conditions. If you choose to use it, please adhere to the following guidelines:

1. If you use generative AI in reports or other assignments, you must clearly indicate which parts were generated, the purpose (such as the prompt used), and which AI tool was used.
2. Do not use the generated content as-is; you must verify and revise the information yourself to ensure its accuracy and appropriateness.
3. Students are solely responsible for the final deliverables.
4. If inappropriate use (such as use beyond the permitted scope or infringement of others' copyrights) is confirmed, strict disciplinary action will be taken in accordance with university regulations.

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/7 class 6 or 10/8 class 5	Guidance		Hayato Ohshima
2	10/14 class 6 or 10/15 class 5	Reading of research paper	Printed synopses	Hayato Ohshima
3	10/21 class 6 or 10/22 class 5	Research objective and strategy	Printed synopses	Hayato Ohshima
4	10/28 class 6 or 10/29 class 5	PubMed search	Printed synopses	Hayato Ohshima
5	11/4 class 6 or 11/5 class 5	Experimental design	Printed synopses	Hayato Ohshima
6	11/11 class 6 or 11/12 class 5	Theory and practice of the perfusion fixation	Printed synopses	Hayato Ohshima
7	11/18 class 6 or 11/19 class 5	Theory and practice of the sample preparation (1)	Printed synopses	Hayato Ohshima
8	11/25 class 6 or 11/26 class 5	Theory and practice of the sample preparation (2)	Printed synopses	Hayato Ohshima
9	12/2 class 6 or 12/3 class 5	Theory and practice of the microscopic photography	Printed synopses	Hayato Ohshima
10	12/9 class 6 or 12/10 class 5	Theory and practice of the immunohistochemistry (1)	Printed synopses	Hayato Ohshima
11	12/16 class 6 or	Theory and practice of the immunohistochemistry (2)	Printed synopses	Hayato Ohshima

	12/17 class 5			
12	12/23 class 6 or 12/24 class 5	Theory and practice of the confocal laser microscopy	Printed synopses	Hayato Ohshima
13	1/13 class 6 or 1/7 class 5	Image process	Printed synopses	Hayato Ohshima
14	1/20 class 6 or 1/21 class 5	Presentation	Printed synopses	Hayato Ohshima
15	1/27 class 6 or 1/28 class 5	Summary and Examination		Hayato Ohshima

【Evaluation】

Comprehensive evaluation to assess whether the students achieve attainment targets or not is performed by oral test (20%) and evaluation of presentation (80%).

【Media】

Printed synopses will be distributed beforehand.

【Reference book】

- Ten Cate's Oral Histology. Development, structure, and formation, 9th Ed. (A. Nanci, ed., Mosby Co.)
- Textbook and Color Atlas of Traumatic Injuries to the Teeth, 5th Ed. (J.O. Andreasen, F.M. Andreasen and L. Andersson ed., Blackwell)

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5903	1	Fri/5・A	2	9014	Lecture・Practice
260W7903		Fri/6・A			
260W5904	2	Fri/5・B	2	9015	Lecture・Practice
260W7904		Fri/6・B			
Course	Seminar on morphology of hard tissues A, B				
Instructor	Associate Prof. Hiroko Ida				
Place	Laboratory in Div. Anatomy and Cell Biology of the Hard Tissue				
A					
<p>【Course outline】 This course will offer a practical training to observe hard tissues morphologically.</p> <p>【Course aim】 The students shall learn a series of experimental techniques of hard tissue research from preparation of the samples to μCT and microscopic analysis.</p> <p>【Attainment target】 The students can</p> <ul style="list-style-type: none"> perform different types of analysis to observe hard tissues depending on the purpose. perform some histological and immunohistochemical stainings and understand the findings. <p>【Study method・attention】 Lecture and practice. The students have to study the printed synopses beforehand. This course does not allow the use of generative AI in preparing papers or other assignments.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI (such as ChatGPT and Gemini) is permitted under certain conditions. If you choose to use it, please adhere to the following guidelines:</p> <ol style="list-style-type: none"> If you use generative AI in reports or other assignments, you must clearly indicate which parts were generated, the purpose (such as the prompt used), and which AI tool was used. Do not use the generated content as-is; you must verify and revise the information yourself to ensure its accuracy and appropriateness. Students are solely responsible for the final deliverables. If inappropriate use (such as use beyond the permitted scope or infringement of others' copyrights) is confirmed, strict disciplinary action will be taken in accordance with university regulations. 					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/10	Guidance	Read the handout	Hiroko Ida	
2	4/17	Methods for analysis of hard tissue	Read the handout	Hiroko Ida	
3	4/24	Methods for sample preparation (Fixation)	Read the handout	Hiroko Ida	
4	5/1	Micro CT analysis	Read the handout	Hiroko Ida	

5	5/15	Methods for sample preparation (Decalcification)	Read the handout	Hiroko Ida
6	5/22	Methods for sample preparation (dehydration, Embedding)	Read the handout	Hiroko Ida
7, 8	5/29 6/5	Methods for sample preparation (paraffin section) 1, 2	Read the handout	Hiroko Ida
9	6/12	Methods for sample preparation (frozen section)	Read the handout	Hiroko Ida
10, 11	6/19 6/26	Methods for histological stainings 1, 2	Read the handout	Hiroko Ida
12-14	7/3 7/10 7/17	Methods for immunohistochemical stainings 1-3	Read the handout	Hiroko Ida
15	7/24	Summary of hard tissue research	Read the handout	Hiroko Ida
16	7/31	Examination	Review the course	Hiroko Ida

【Evaluation】

Oral examination (50%), Reports (50%)

【Media】

Printed synopses will be distributed beforehand.

【Reference book】

Research papers will be provided if needed.

B

【Course outline】

The students shall practice a series of experimental techniques of tooth germ research from histological analysis and organ culture to gene analysis.

【Course aim】

The students are required to understand the histological features of tooth germs, and shall learn *in vivo* and *in vitro* experimental techniques to analyze murine tooth germs.

【Attainment target】

The students can

- explain the development and histology of tooth germs.
- prepare paraffin sections to observe tooth germs.
- perform the organ culture of tooth germs.

【Study method・attention】

Lecture and practice. The students have to study the printed synopses beforehand.

【Regarding the Use of Generative AI】

In this course, the use of generative AI (such as ChatGPT and Gemini) is permitted under certain conditions. If you choose to use it, please adhere to the following guidelines:

1. If you use generative AI in reports or other assignments, you must clearly indicate which parts were generated, the purpose (such as the prompt used), and which AI tool was used.
2. Do not use the generated content as-is; you must verify and revise the information yourself to ensure its accuracy and appropriateness.
3. Students are solely responsible for the final deliverables.

4. If inappropriate use (such as use beyond the permitted scope or infringement of others' copyrights) is confirmed, strict disciplinary action will be taken in accordance with university regulations.				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/2	Guidance, summary of tooth germ research	Read the handout	Hiroko Ida
2	10/9	Histological features of the tooth germ	Read the handout	Hiroko Ida
3	10/16	The molecular mechanisms during tooth morphogenesis	Read the handout	Hiroko Ida
4	10/23	Preparation of paraffin sections for tooth germ research	Read the handout	Hiroko Ida
5	10/30	Staining of paraffin sections for tooth germ research (embryonic tooth germ)	Read the handout	Hiroko Ida
6	11/13	Staining of paraffin sections for tooth germ research (postnatal tooth germ)	Read the handout	Hiroko Ida
7	11/20	Staining of paraffin sections for tooth germ research	Read the handout	Hiroko Ida
8	11/27	Organ culture of the tooth germ (Lecture)	Read the handout	Hiroko Ida
9, 10	12/4 12/11	Organ culture of the tooth germ (Practice) 1, 2	Read the handout	Hiroko Ida
11, 12	12/18 12/25	Gene analysis of the tooth germ (RT-PCR) 1, 2	Read the handout	Hiroko Ida
13	1/8	Gene analysis of the tooth germ (methods of regulating gene expression)	Read the handout	Hiroko Ida
14	1/15	The topics of tooth regeneration research	Read the handout	Hiroko Ida
15	1/29	Summary of tooth germ research	Read the handout	Hiroko Ida
16	2/5	Examination	Review the course	Hiroko Ida
【Evaluation】 Oral examination (50%), Reports (50%), 【Media】 Printed synopses will be distributed beforehand. 【Reference book】 Research papers will be provided if needed.				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5905	1	Wednesday/5・A	2	9014	Lecture・Seminar・Practice (face-to-face class)
260W7905					
260W5906	2	Wednesday/5・B	2	9015	Lecture・Seminar・Practice (face-to-face class)
260W7906					
Course	Oral pathology diagnostics A, B				
Instructor	Prof. Jun-ichi Tanuma (Division of Oral Pathology)				
Place	Laboratory room of Division of Oral Pathology				
A					
<p>【Course outline】 Seminar on oral pathology diagnostics is that it deals with the pathological concept of oral and salivary gland tumors from their pathogenesis based on the modern pathological methodology to their diagnostic issues based on the correlation between pathological and clinical findings.</p> <p>【Course aim】 Students will understand the pathogenesis of oral and salivary gland tumors from their causative factors, molecular mechanism, clinical processes, to prognoses. Clinic-pathological aspects of their diagnostic criteria will be emphasized towards the end of their prevention and treatments.</p> <p>【Attainment target】 Student will understand this course as follows; <ul style="list-style-type: none"> ・Distinguishing clinicopathological features between benign and malignant oral and salivary gland tumors. ・Understanding possible pathogenetic processes of oral and salivary gland tumors. ・Understanding clinical and pathological diagnostic issues on oral and salivary gland tumors. ・Understanding possible prevention strategies against oral and salivary gland tumors. ・Understanding possible prevention strategies against oral cytology. </p> <p>【Study method・attention】 Lecture, seminar and practice. To prepare for the class, students need to read textbooks and papers.</p> <p>【Use of Generative AI】 The use of generative AI (e.g., ChatGPT, Gemini) is permitted on this course under the following conditions: <ol style="list-style-type: none"> 1. Clearly state where, for what purpose (including prompts), and which AI tool was used. 2. Do not use AI-generated content as it is; check and revise it for accuracy and appropriateness. 3. The student is fully responsible for the final submission. 4. Inappropriate use (e.g., unauthorized use or copyright infringement) will be handled strictly in accordance with the university regulations. </p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	04/08	Guidance	The details will be given in class	Jun-ichi Tanuma	
2	04/15	Varieties of oral potentially malignant disorders	Textbook 1 pp239-256	Jun-ichi Tanuma	

3	04/22	Clinical features of oral potentially malignant disorders (OPMDs)	Textbook 1 pp239-256	Jun-ichi Tanuma
4	05/13	Histopathological features of OPMDs	Textbook 1 pp239-256	Jun-ichi Tanuma
5	05/20	Corresponds to the clinical diagnosis of pathology of OPMDs	Textbook 1 pp239-256	Jun-ichi Tanuma
6	05/27	Varieties of oral cancer	Textbook 1 pp239-256	Jun-ichi Tanuma
7	06/03	Clinical features of oral cancer	Textbook 1 pp239-256	Jun-ichi Tanuma
8	06/10	Histopathological features of oral cancer	Textbook 1 pp239-256	Jun-ichi Tanuma
9	06/17	Corresponds to the clinical diagnosis of pathology of oral cancer	Textbook 1 pp239-256	Jun-ichi Tanuma
10	06/24	Screening and prevention of oral cancer	Textbook 1 pp239-256	Jun-ichi Tanuma
11	07/01	Varieties of salivary gland tumors	Textbook 1 pp257-270	Jun-ichi Tanuma
12	07/08	Clinical features of salivary gland tumors	Textbook 1 pp257-270	Jun-ichi Tanuma
13	07/15	Histopathological features of salivary gland tumors	Textbook 1 pp271-282	Jun-ichi Tanuma
14	07/22	Corresponds to the clinical diagnosis of pathology of salivary gland tumors	Textbook 1 pp271-282	Jun-ichi Tanuma
15	07/29	Screening of oral cytology	Textbook 2 pp1-120	Jun-ichi Tanuma
16	08/05	Examination	The details will be given in class	Jun-ichi Tanuma

【Evaluation】

Examination (30%), Handing in papers (30%) and oral examinations (40%)

【Media】

Textbook 1: New Oral Pathology (3rd ed.) (Ishiyaku Pub., Inc.) 11,000 yen

Textbook 2: Oral Cytology (1nd ed.) (Ishiyaku Pub., Inc.) 6,600 yen

【Reference book】

Basic Pathology for Dental Students (1st ed.) (Ishiyaku Pub., Inc.) 10,000 yen

【Course outline】

Seminar on oral pathology diagnostics is that it deals with the pathological concept of odontogenic and bone-related tumors from their pathogenesis based on the pathological methodology to their diagnostic issues based on the correlation between pathological and clinical findings.

【Course aim】

Students will understand the pathogenesis of odontogenic and bone-related tumors from their causative

factors, molecular mechanism, clinical processes, to prognoses. Clinic-pathological aspects of their diagnostic criteria will be emphasized towards the end of their prevention and treatments.

【Attainment target】

Student will understand this course as follows;

- Distinguishing clinicopathological features between benign and malignant odontogenic and bone-related tumors.
- Understanding possible pathogenetic processes of odontogenic and bone-related tumors.
- Understanding clinical and pathological diagnostic issues on odontogenic and bone-related tumors.
- Understanding possible prevention strategies against odontogenic and bone-related tumors.

【Study method・attention】

Lecture, seminar and practice. To prepare for the class, students need to read textbooks and papers.

【Use of Generative AI】

The use of generative AI (e.g., ChatGPT, Gemini) is permitted on this course under the following conditions:

1. Clearly state where, for what purpose (including prompts), and which AI tool was used.
2. Do not use AI-generated content as it is; check and revise it for accuracy and appropriateness.
3. The student is fully responsible for the final submission.
4. Inappropriate use (e.g., unauthorized use or copyright infringement) will be handled strictly in accordance with the university regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/07	Varieties of odontogenic tumors	The details will be given in class	Jun-ichi Tanuma
2	10/14	Clinical features of odontogenic tumors	Textbook 1 pp196-211	Jun-ichi Tanuma
3	10/21	Histopathological features of odontogenic tumors	Textbook 1 pp196-211	Jun-ichi Tanuma
4	10/28	Corresponds to clinical diagnosis of pathology of odontogenic tumors	Textbook 1 pp196-211	Jun-ichi Tanuma
5	11/04	Screening and prevention of odontogenic tumors	Textbook 1 pp196-211	Jun-ichi Tanuma
6	11/11	Varieties of jaw and temporomandibular joint tumors	Textbook 1 pp212-238	Jun-ichi Tanuma

7	11/18	Clinical features of jaw tumors	Textbook 1 pp212-238	Jun-ichi Tanuma
8	11/25	Histopathological features of jaw tumors	Textbook 1 pp212-238	Jun-ichi Tanuma
9	12/02	Corresponds to clinical diagnosis of pathology of jaw tumors	Textbook 1 pp212-238	Jun-ichi Tanuma
10	12/09	Screening and prevention of jaw tumors	Textbook 1 pp212-238	Jun-ichi Tanuma
11	12/16	Varieties of soft tissue tumors	Textbook 1 pp212-238	Jun-ichi Tanuma
12	12/23	Clinical features of soft tissue tumors	Textbook 1 pp212-238	Jun-ichi Tanuma
13	01/13	Histopathological features of soft tissue tumors	Textbook 1 pp212-238	Jun-ichi Tanuma
14	01/20	Corresponds to clinical diagnosis of pathology of soft tissue tumors	Textbook 1 pp212-238	Jun-ichi Tanuma
15	01/27	Screening and prevention of soft tissue tumors	Textbook 1 pp212-238	Jun-ichi Tanuma
16	02/03	Examination	The details will be given in class	Jun-ichi Tanuma
<p>【Evaluation】 Examination (30%), Handing in papers (30%) and oral examinations (40%)</p> <p>【Media】 Textbook 1: New Oral Pathology (3rd ed.) (Ishiyaku Pub., Inc.) 11,000 yen Textbook 2: Basic Pathology for Dental Students (1nd ed.) (Ishiyaku Pub., Inc.) 11,000 yen</p> <p>【Reference book】 Basic Pathology for Dental Students (1st ed.) (Ishiyaku Pub., Inc.) 10,000 yen</p> <p>【Reference website】 Div. of Oral Pathology HP: http://www5.dent.niigata-u.ac.jp/~opatho/</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5907	1	Friday/6・A	2	9014	Lecture・Seminar・Practice (face-to-face class)
260W7907					
260W5908	2	Friday/6・B	2	9015	Lecture・Seminar・Practice (face-to-face class)
260W7908					
Course	The molecular biological experimental methods for oral pathological research A, B				
Instructor	Prof. Jun-ichi Tanuma, Assistant Prof. Tatsuya Abé				
Place	Laboratory room of Division of Oral Pathology				
A					
<p>【Course outline】 Seminar on the molecular biological experimental methods for oral pathological research course is that it deals with the essential knowledge and research technique on molecular pathology for elucidating the mechanism of the pathogenesis, progresses and outcomes of various diseases in oral and maxillofacial region by lectures and practices.</p> <p>【Course aim】 Students will acquire the fundamental methodology of molecular pathology research. Furthermore, they will learn additional techniques of collection and preservation of the cell and fresh tissue samples, the nucleic acid extraction and purification, laser-capture microdissection, polymerase chain reaction (PCR), reversed transcriptase-PCR (RT-PCR) and loss of heterozygosity (LOH).</p> <p>【Attainment target】 Student will understand this course as follows;</p> <ul style="list-style-type: none"> ・ be able to collect and preserve for the cell and fresh tissue samples ・ be able to extract and purify the nucleic acid from cell and tissue samples ・ be able to work on PCR and RT-PCR by the laser-capture microdissection ・ be able to explain the methodology and perform experimental procedure of loss of heterozygosity (LOH) analysis <p>【Study method・attention】 Lecture, seminar and practice. To prepare for the class, students need to read reference textbooks and papers.</p> <p>【Use of Generative AI】 The use of generative AI (e.g., ChatGPT, Gemini) is permitted on this course under the following conditions:</p> <ol style="list-style-type: none"> 1. Clearly state where, for what purpose (including prompts), and which AI tool was used. 2. Do not use AI-generated content as it is; check and revise it for accuracy and appropriateness. 3. The student is fully responsible for the final submission. 4. Inappropriate use (e.g., unauthorized use or copyright infringement) will be handled strictly in accordance with the university regulations. 					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	04/10	Guidance	The details will be given in class	Jun-ichi Tanuma	

2-5	04/17 04/24 05/01 05/15	Collection and preservation of the cell and fresh tissue samples, and DNA & RNA extraction and purification 1-4	Textbook1 pp27-43 Textbook1 pp63-67	Tatsuya Abé Jun-ichi Tanuma
6-7	05/22 05/29	Polymerase chain reaction (PCR) 1-2	Textbook1 pp68-81	Tatsuya Abé Jun-ichi Tanuma
8-9	06/05 06/12	Electrophoresis 1-2	Textbook1 pp68-81	Tatsuya Abé Jun-ichi Tanuma
10-11	06/19 06/26	Quantitative Real time PCR 1-2	Textbook1 pp179-185	Tatsuya Abé Jun-ichi Tanuma
12-14	07/03 07/10 07/17	Loss of heterozygosity (LOH) analysis 1-3	Textbook1 pp176-178	Tatsuya Abé Jun-ichi Tanuma
15	07/24	Summary	Review of Practice	Jun-ichi Tanuma
16	07/31	Examination	The details will be given in class	Jun-ichi Tanuma

【Evaluation】

Examination (30%), Handing in papers (30%) and oral examinations (40%)

【Media】

Textbook 1: Mouse Lab manual (2nd ed.) (Springer Co., Ltd.) 8,000 yen

【Reference book】

Molecular Biology of Cancer (3rd ed.) (Medical • Science • International Pub., Inc.) 4,800 yen

B

【Course outline】

Seminar on the molecular biological experimental methods for oral pathological research course is that it deals with the essential knowledge and research technique on molecular pathology for elucidating the mechanism of the pathogenesis, progresses and outcomes of various diseases in oral and maxillofacial region by lectures and practices.

【Course aim】

Students will learn additional techniques of collection and preservation of the cell and fresh tissue samples, DNA sequencing, *in situ* hybridization, fluorescence *in situ* hybridization (FISH), and immunohistochemistry.

【Attainment target】

Student will understand this course as follows;

- be able to collect and preserve for the cell and fresh tissue samples
- be able to extract and purify the nucleic acid from cell and tissue samples
- be able to understand DNA sequencing
- be able to do *in situ* hybridization
- be able to understand fluorescence *in situ* hybridization (FISH)
- be able to do immunohistochemical staining and immunofluorescence staining

【Study method•attention】

Lecture, seminar and practice. To prepare for the class, students need to read reference textbooks and papers.

【Use of Generative AI】

The use of generative AI (e.g., ChatGPT, Gemini) is permitted on this course under the following conditions:

1. Clearly state where, for what purpose (including prompts), and which AI tool was used.
2. Do not use AI-generated content as it is; check and revise it for accuracy and appropriateness.
3. The student is fully responsible for the final submission.
4. Inappropriate use (e.g., unauthorized use or copyright infringement) will be handled strictly in accordance with the university regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/02	Guidance	The details will be given in class	Jun-ichi Tanuma
2-5	10/09 10/16 10/23 10/30	DNA sequencing 1-4	Textbook1 pp171-175	Tatsuya Abé Jun-ichi Tanuma
6-7	11/13 11/20	<i>in situ</i> hybridization 1-2	Textbook1 pp194-219	Tatsuya Abé Jun-ichi Tanuma
8-9	11/27 12/04	Fluorescence <i>in situ</i> hybridization 1-2	Textbook1 pp108-133	Tatsuya Abé Jun-ichi Tanuma
10-11	12/11 12/18	Immunohistochemical staining and immunofluorescence staining 1-2	Textbook2 pp248-266	Tatsuya Abé Jun-ichi Tanuma
12-14	12/25 01/08 01/15	Immunofluorescence staining 1-2	Textbook2 pp248-266	Tatsuya Abé Jun-ichi Tanuma
15	01/29	Summary	Review of lectures	Jun-ichi Tanuma
16	02/05	Examination	The details will be given in class	Jun-ichi Tanuma

【Evaluation】

Examination (30%), Handing in papers (30%) and oral examinations (40%)

【Media】

Textbook 1: Mouse Lab manual (2nd ed.) (Springer Pub., Inc.) 8,000 yen

Textbook 2: Pathology and Clinical Medicine Vol.25 (Bunkodo Co., Ltd.) 8,400 yen

【Reference book】

Molecular Biology of Cancer (3rd ed.) (Medical • Science • International Pub., Inc.) 4,800 yen

【Reference website】

Div. of Oral Pathology HP: <http://www5.dent.niigata-u.ac.jp/~opatho/>

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5909	1	Tue/6・A	2	9014	Seminar
260W7909					
260W5910	2	Tue/6・B	2	9015	Seminar
260W7910					
Course	Clinical oral pathology diagnostics seminars A, B				
Instructor	Lecturer Satoshi Maruyama, Associate Prof. Manabu Yamazaki				
Place	Division of Oral Pathology				
A					
【Course outline】					
This course deals with the methodology for research on pathogenesis of oral and maxillofacial diseases from the aspect of clinical pathology diagnostics. Modern trends in molecular biology technology which should be applied in pathological research on oral and maxillofacial diseases will be lectured.					
【Course aim】					
In this course, students will understand the pathogenesis of oral and maxillofacial diseases, from their causative factors, generation mechanism, clinical processes, to prognoses. Clinic-pathological aspects of their diagnostic criteria will be emphasized towards the end of their prevention and treatments.					
【Attainment target】					
Understanding various clinical characteristics of oral and maxillofacial diseases					
Understanding possible pathogenetic processes of oral and maxillofacial diseases					
【Study method・attention】					
Lecture and discussion. To prepare for the class, students need to read reference textbooks and papers.					
【Use of Generative AI】					
The use of generative AI (e.g., ChatGPT, Gemini) is permitted on this course under the following conditions:					
1. Clearly state where, for what purpose (including prompts), and which AI tool was used.					
2. Do not use AI-generated content as it is; check and revise it for accuracy and appropriateness.					
3. The student is fully responsible for the final submission.					
4. Inappropriate use (e.g., unauthorized use or copyright infringement) will be handled strictly in accordance with the university regulations.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/14	Guidance	The details tell by a class	Maruyama S Yamazaki M	
2-3	4/21, 4/28	Practice for tooth and periodontal tissue lesions 1-2	Textbook① pp49-159	Maruyama S	
4-6	5/8, 5/12, 5/19	Practice for oral mucosal lesions 1-3	Textbook① pp331-401	Maruyama S Yamazaki M	

7-9	5/26, 6/2, 6/9	Practice for salivary gland lesions 1-3	Textbook① pp422-465	Maruyama S
10-11	6/16, 6/23	Practice for odontogenic lesions 1-2	Textbook① pp632-681	Maruyama S Yamazaki M
12-13	6/30, 7/7	Practice for jaw and temporomandibular lesions 1-2	Textbook① pp572-622	Maruyama S
14-15	7/14, 7/21	Practice for mesenchymal soft tissue lesions 1-2	Textbook① pp473-525	Maruyama S Yamazaki M
16	7/28	Summary and Examination	Review until the last time	Maruyama S

【Evaluation】

Handing in papers or oral examinations or written examinations (50% each)

【Media】

① Oral and Maxillofacial Pathology (4th edition; Bead W. Neville, et al, Elsevier.), 20,000yen

【Reference book】

Related research papers

B

【Course outline】

This course deals with the methodology for research on pathogenesis of oral and maxillofacial diseases from the aspect of clinical pathology diagnostics. Modern trends in molecular biology technology which should be applied in pathological research on oral and maxillofacial diseases will be lectured.

【Course aim】

In this course, students will understand the pathogenesis of oral and maxillofacial diseases, from their causative factors, generation mechanism, clinical processes, to prognoses. Clinic-pathological aspects of their diagnostic criteria will be emphasized towards the end of their prevention and treatments.

【Attainment target】

Distinguishing clinicopathological features for oral and maxillofacial diseases

Understanding clinical and pathological diagnostic issues on of oral and maxillofacial diseases

Understanding possible prevention strategies against of oral and maxillofacial diseases

【Study method•attention】

Lecture and discussion. To prepare for the class, students need to read reference textbooks and papers.

【Use of Generative AI】

The use of generative AI (e.g., ChatGPT, Gemini) is permitted on this course under the following conditions:

1. Clearly state where, for what purpose (including prompts), and which AI tool was used.
2. Do not use AI-generated content as it is; check and revise it for accuracy and appropriateness.
3. The student is fully responsible for the final submission.
4. Inappropriate use (e.g., unauthorized use or copyright infringement) will be handled strictly in accordance with the university regulations.

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/6	Guidance	The details tell by a class	Maruyama S Yamazaki M
2-3	10/20, 10/27	Practical training for tooth and periodontal tissue lesions 1-2	Textbook① pp49-159	Maruyama S
4-6	11/6, 11/10, 11/17	Practical training for oral mucosal lesions 1-3	Textbook① pp331-401 Textbook② pp253-294	Maruyama S Yamazaki M
7-9	11/24, 12/1, 12/8	Practical training for salivary gland lesions 1-2	Textbook② pp159-252	Maruyama S
10-11	12/15, 12/22	Practical training for odontogenic lesions 1-2	Textbook② pp305-378	Maruyama S Yamazaki M
12-13	1/12, 1/19	Practical training for jaw and temporomandibular lesions 1-2	Textbook② pp379-422	Maruyama S
14-15	1/26, 2/2	Practical training for mesenchymal soft tissue lesions 1-2	Textbook② pp459-536	Maruyama S Yamazaki M
16	2/9	Summary and Examination	Review until the last time	Maruyama S
<p>【Evaluation】 Handing in papers or oral examinations or written examinations (50% each)</p> <p>【Media】 ① Oral and Maxillofacial Pathology (4th edition; Bead W. Neville, et al, Elsevier.), 20,000 円 ② WHO Classification of Head and neck Tumors. (5th edition; Subasri Armon, et al, IARC.), 35,000 円</p> <p>【Reference book】 Related research papers</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5911	1	Fri/5・A	2	9014	Lecture・Seminar (face-to-face class)
260W7911					
260W5912	2	Fri/5・B	2	9015	Lecture・Seminar (face-to-face class)
260W7912					
Course	Seminar on oral clinical cytology A, B				
Instructor	Associate Professor Manabu Yamazaki, Lecturer Satoshi Maruyama				
Place	Laboratory room of the Division of Oral Pathology				
A					
【Course outline】					
In this seminar, the pathogenesis of various diseases occurring in the oral and maxillofacial region will be outlined, and lectures and practices will be given on the basic knowledge and techniques of cytological diagnostics.					
【Course aim】					
This course aims to learn histopathological and cytological findings of various oral and maxillofacial region diseases through lectures and seminars and to understand the significance of pathological screening and diagnostic studies.					
【Attainment target】					
<ul style="list-style-type: none"> ・To understand the significance and indications of cytology for oral and maxillofacial diseases. ・To understand cellular findings in various diseases. ・To understand how to observe cytological specimens. 					
【Study method・attention】					
Lecture, seminar, and practice. Students need to read textbooks and papers to prepare for the class.					
【Use of Generative AI】					
The use of generative AI (e.g., ChatGPT, Gemini) is permitted on this course under the following conditions:					
1. Clearly state where, for what purpose (including prompts), and which AI tool was used.					
2. Do not use AI-generated content as it is; check and revise it for accuracy and appropriateness.					
3. The student is fully responsible for the final submission.					
4. Inappropriate use (e.g., unauthorized use or copyright infringement) will be handled strictly in accordance with the university regulations.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	04/10	Guidance	The details will be given in class	Yamazaki	
2-3	04/17 04/24	Introduction of Clinical Cytology 1-2	Textbook 1, pp2-8 Textbook 2, pp1-50	Yamazaki	
4-5	05/01 05/15	Cytological procedures of sampling, preparation, and staining 1-2	Textbook 1, pp10-20 Textbook 2, pp51-83	Yamazaki	

6-7	05/22 05/29	Observation of cytological specimens Findings of normal oral mucosal cells	Textbook 1, pp21-30 Textbook 2, pp87-104	Yamazaki
8-9	06/05 06/12	Infectious diseases in oral and maxillofacial regions	Textbook 1, pp38-78	Maruyama
10-11	06/19 06/26	Non-neoplastic diseases of oral mucosa	Textbook 1, pp38-78	Maruyama
12-13	07/03 07/10	Neoplastic diseases of oral mucosa and oral Bethesda system	Textbook 1, pp32-63	Maruyama
14-15	07/17 07/24	Diseases of salivary glands and the Milan system	Textbook 1, pp80-93	Maruyama
16	07/31	Summary and examination	The details will be given in class	Yamazaki

【Evaluation】

Examination or oral examination (50%), Handing in papers (50%)

【Media】

Textbook 1: Oral Cytology (1st ed.) (Ishiyaku Pub., Inc.) 6,000 yen

Textbook 2: Cytology for the Beginners (5th ed.) (IGAKU-SHOIN Ltd.) 9,800 yen

【Reference book】

References will be given in class.

B

【Course outline】

In this seminar, the pathogenesis of various diseases of the oral and maxillofacial region and major organs of the body will be outlined. Lectures and practice will be given on the basics of cytological diagnostics and its application to pathological research.

【Course aim】

Students will learn histopathological and cytological findings of various diseases, mainly in the oral and maxillofacial region, understand the significance of screening and diagnosis, and aim to provide feedback to clinical oral surgery and develop applications in pathological research.

【Attainment target】

- To understand the significance and indications of cytology in the oral and maxillofacial regions and organs of the body.
- To understand cellular findings in various diseases.
- To understand the observation and evaluation of cytological specimens.
- To practice various experimental methods using cytological specimens.

【Study method・attention】

Lectures, seminars using specimens, and discussions will be given. Preparation with handouts and reference books is required.

【Use of Generative AI】

The use of generative AI (e.g., ChatGPT, Gemini) is permitted on this course under the following conditions:

1. Clearly state where, for what purpose (including prompts), and which AI tool was used.
2. Do not use AI-generated content as it is; check and revise it for accuracy and appropriateness.

3. The student is fully responsible for the final submission.				
4. Inappropriate use (e.g., unauthorized use or copyright infringement) will be handled strictly in accordance with the university regulations.				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/02	Guidance	The details will be given in class	Yamazaki
2-3	10/09 10/16	Neoplastic diseases of oral mucosa 1-2	Textbook 1, pp32-63	Maruyama
4-5	10/23 10/30	Odontogenic tumors 1-2	Textbook 1, pp94-96	Maruyama
6-7	11/13 11/20	Salivary gland tumors 1-2	Textbook 1, pp80-93	Maruyama
8-9	11/27 12/04	Cytology in systemic organs (Gynecological and respiratory systems)	Textbook 2, pp130-203	Yamazaki
10-11	12/11 12/18	Cytology in systemic organs (Other than gynecological and respiratory systems)	Textbook 2, pp228-350	Yamazaki
12-13	12/25 01/08	Immunocytochemistry on cytological specimens 1-2	The details will be given in class	Maruyama
14-15	01/15 01/29	Gene extraction methods from cytological specimens 1-2	The details will be given in class	Yamazaki
16	02/05	Summary and examination	The details will be given in class	Yamazaki
【Evaluation】				
Examination or oral examination (50%), Handing in papers (50%)				
【Media】				
Textbook 1: Oral Cytology (1st ed.) (Ishiyaku Pub., Inc.) 6,000 yen				
Textbook 2: Cytology for the Beginners (5th ed.) (IGAKU-SHOIN Ltd.) 9,800 yen				
【Reference book】				
References will be given in class.				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5913	1	Thu/5・A	2	9014	Lecture・Practice
260W7913		Thu/6・A			
260W5914	2	Thu/5・B	2	9015	Lecture・Practice
260W7914		Thu/6・B			
Course	Practice for pharmacology A, B				
Instructor	Prof. Miho Terunuma (Div. Oral Biochemistry) Asst. Prof. Yoshito Kakihara (Div. Dental Pharmacology)				
Place	Laboratory of Division of Dental Pharmacology (E305, 3 rd floor, E Bldg.)				
A					
<p>【Course outline】 Pharmacology is the study of drug-body interactions and mechanisms of action at the molecular level. In this course, we will focus on drugs related to the regulation of bone metabolism and their mechanisms of action. In this course, experimental techniques and analytical methods using osteoclast and osteoblast cell cultures will be outlined and practices will be conducted.</p> <p>【Course aim】 Students will learn about the characteristics of osteoclasts and osteoblasts involved in bone metabolism and acquire basic laboratory techniques for these cells.</p> <p>【Attainment target】 (1) To be able to explain the characteristics of osteoclasts, the differentiation induction method, and its analysis method. (2) To be able to explain the characteristics of osteoblasts, the differentiation induction method, and its analysis method. (3) To be able to perform basic experimental techniques on osteoclasts and osteoblasts.</p> <p>【Study method・attention】 This lecture will consist of classroom lectures and practices. Students will learn basic knowledge and perform practices based on the handouts. Students are expected to prepare and review for each lecture. The use of generative AI is permitted in this course under the following conditions:</p> <ul style="list-style-type: none"> • Students bear full responsibility for the final output. If the submitted work is judged to exceed the student's own level of understanding, an oral examination or interview may be conducted to verify comprehension. • Generative AI may produce inaccurate information (hallucinations). Students must verify the accuracy and validity of all AI-generated content against primary sources (official data, academic literature, etc.) and reconstruct the content based on their own insights. • When using AI, students must clearly state the name of the AI used (e.g., Gemini 3 Flash) and the specific process in which it was utilized (e.g., "Drafting the structure," "Brainstorming ideas") at the end of the assignment. • Copying from others' copyrighted works or submitting AI-generated content without significant modification is considered plagiarism or academic misconduct. If such actions are confirmed, strict disciplinary measures will be taken in accordance with university regulations. 					

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	4/9	Handling of Drugs and Laboratory Equipment	Summarizing class content	Kakihara
2-3	4/16 4/23	Handling of osteoclasts and induction of differentiation	Summarizing class content	Kakihara
4-5	4/30 5/14	Morphological imaging of osteoclasts	Summarizing class content	Kakihara
6	5/21	Differentiation evaluation of osteoclasts by staining method	Summarizing class content	Kakihara
7-8	5/28 6/4	Detection of differentiation markers of osteoclasts	Summarizing class content	Kakihara
9-10	6/11 6/18	Handling of osteoblasts and differentiation induction	Summarizing class content	Kakihara
11-12	6/25 7/2	Morphological imaging of osteoblast morphology	Summarizing class content	Kakihara
13	7/9	Staining of osteoblast-derived collagen	Summarizing class content	Kakihara
14-15	7/16 7/23	Methods for detection of osteoblast differentiation markers	Summarizing class content	Kakihara
<p>【Evaluation】 Oral exam (80%) and Attitude in class (20%).</p> <p>【Media】 Materials will be distributed prior to the lecture.</p> <p>【Reference book】 It will be given as appropriate.</p>				
B				
<p>【Course outline】 Pharmacology is the study of drug-body interactions and mechanisms of action at the molecular level. In this course, students focus on drugs related to the regulation of bone metabolism, learn about their mechanisms of action, and master experimental techniques and analytical methods through exercises. In this course, students will learn how to analyze the mechanism of action of drugs in osteoclast and osteoblast differentiation using the techniques acquired in IA and IIA, while actually using the drugs.</p> <p>【Course aim】 To learn how to analyze the mechanism of action of drugs that regulate osteoclast and osteoblast differentiation, which are involved in bone metabolism.</p>				

【Attainment target】

- (1) To be able to explain drugs that regulate osteoclast differentiation and their mechanisms of action.
- (2) To be able to explain drugs that regulate osteoblast differentiation and their mechanisms of action.
- (3) To be able to discuss and debate the experimental data appropriately.
- (4) To be able to summarize experimental data, prepare presentation materials, and give a presentation.

【Study method・attention】

This lecture will consist of classroom lectures and practices. Students will learn basic knowledge and perform practices based on the handouts. Students are expected to prepare and review for each lecture.

The use of generative AI is permitted in this course under the following conditions:

- Students bear full responsibility for the final output. If the submitted work is judged to exceed the student's own level of understanding, an oral examination or interview may be conducted to verify comprehension.
- Generative AI may produce inaccurate information (hallucinations). Students must verify the accuracy and validity of all AI-generated content against primary sources (official data, academic literature, etc.) and reconstruct the content based on their own insights.
- When using AI, students must clearly state the name of the AI used (e.g., Gemini 3 Flash) and the specific process in which it was utilized (e.g., "Drafting the structure," "Brainstorming ideas") at the end of the assignment.
- Copying from others' copyrighted works or submitting AI-generated content without significant modification is considered plagiarism or academic misconduct. If such actions are confirmed, strict disciplinary measures will be taken in accordance with university regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/1	Drugs that act on bone metabolism	Summarizing class content	Kakihara
2-3	10/8 10/15	Drugs that regulate osteoclast differentiation	Summarizing class content	Kakihara
4-5	10/22 10/29	Evaluation of cellular morphology of differentiated osteoclasts by imaging	Summarizing class content	Kakihara
6-7	11/5 11/12	Analysis of the mechanism of action by osteoclast molecular markers	Summarizing class content	Kakihara
8-9	11/19 11/26	Drugs that regulate osteoblast differentiation	Summarizing class content	Kakihara
10-11	12/3 12/10	Evaluation of cellular morphology of differentiated osteoblasts by imaging	Summarizing class content	Kakihara
12-13	12/17 12/24	Analysis of the mechanism of action by molecular markers of osteoblasts	Summarizing class content	Kakihara
14	1/7	Methodology of data presentation	Summarizing class content	Kakihara
15	1/21	Data presentation	Preparation for	Kakihara

			presentation	
<p>【Evaluation】 Oral exam (80%) and Attitude in class (20%).</p> <p>【Media】 Materials will be distributed prior to the lecture.</p> <p>【Reference book】 It will be given as appropriate.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5915	1	Thu/1 A	2	9014	lecture
260W7915		Thu/6 A			
260W5916	2	Thu/1 B	2	9015	lecture
260W7916		Thu/6 B			
Course	Seminar on the Reconstruction of Occlusal Functioning A, B				
Instructor	Prof. Kazuhiro Hori (Div. Comprehensive Prosthodontics) Assistant Prof. Kazuhiro Murakami (Div. Comprehensive Prosthodontics)				
Place	Laboratory of Div. Comprehensive Prosthodontics				
A					
【Course outline】					
This course work includes the lecture and critical reading of related articles, which provides knowledge for diagnosing functional problems such as masticatory, swallowing and articulatory disorders and for applying an adequate prosthodontic approach to patients with maxillofacial defect or systemic disease.					
【Course aim】					
Recent diversity of functional disturbance, physical condition and living environment of patients has made the conventional system of prosthodontics based on the type of prosthesis less effective in our hyper-aged society. This course work of “Comprehensive prosthodontics” is established for training the professional clinician and researcher who can develop the innovative prosthodontic approach and collaboration with surrounding fields based on the objective functional diagnosis.					
【Attainment target】					
<ol style="list-style-type: none"> 1. To explain normal and abnormal aspect of mastication and swallowing. 2. To explain and perform the evaluation of masticatory function. 3. To explain the impact of masticatory and swallowing disorders on the quality of life. 4. To explain masticatory and swallowing disorders in oral cancer patients. 5. To explain masticatory and swallowing disorders in stroke patients. 6. To explain masticatory and swallowing disorders in neurologic disease patients. 					
【Study method・attention】					
Detail of preparation for each lecture will be shown in the first lecture. Students have to read recommended articles and textbook before the lecture.					
【Use of Generative AI】					
In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student’s own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/9	Guidance		Kazuhiro Hori	

2	4/16	From mastication to swallow; normal aspects	Reference book 1) Related articles	Kazuhiro Hori
3	4/23	Circulatory response during chewing	Reference book 1) Related articles	Kazuhiro Hori
4	4/30	Masticatory performance and health	Reference book 2) Related articles	Kazuhiro Hori
5	5/14	Masticatory behavior and health	Reference book 2) Related articles	Kazuhiro Hori
6	5/21	How to assess mastication (1) objective assessment	Reference book 2) Related articles	Kazuhiro Murakami
7	5/28	How to assess mastication (2) subjective assessment	Reference book 2) Related articles	Kazuhiro Murakami
8	6/4	How masticatory disability relates swallowing	Reference book 1,2) Related articles	Kazuhiro Murakami
9	6/11	Impact of masticatory-swallowing disability on QOL	Reference book 1,2) Related articles	Kazuhiro Murakami
10	6/18	Masticatory and swallowing disability in oral cancer patients (1)	Reference book 3-6) Related articles	Kazuhiro Hori
11	6/25	Masticatory and swallowing disability in oral cancer patients (2)	Reference book 3-6) Related articles	Kazuhiro Hori
12	7/2	Masticatory and swallowing disability in stroke patients (1)	Reference book 4-7) Related articles	Kazuhiro Hori
13	7/9	Masticatory and swallowing disability in stroke patients (2)	Reference book 4-7) Related articles	Kazuhiro Hori
14	7/16	Masticatory and swallowing disability in neurologic disease patients	Reference book 4-7) Related articles	Kazuhiro Murakami
15	7/23	Oral frailty and hypofunction	Reference book 4, 8)	Kazuhiro Hori
16	7/30	Examination		Kazuhiro Hori

【Evaluation】

- ・ Written examination (50%) and report (30%)
- ・ Presentation in the critical reading (20%)

【Media】

The related references will be distributed

【Reference book】

- 1) 『新よくわかる顎口腔機能』(医歯薬出版)
- 2) 『成人～高齢者向け 咀嚼機能アップ BOOK』(クインテッセンス出版)
- 3) 『口腔中咽頭がんのリハビリテーション』(医歯薬出版)
- 4) 『新版 摂食・嚥下機能改善と装置の作り方超入門』(クインテッセンス出版)

- 5) 『嚥下障害の臨床』(医歯薬出版)
- 6) 『嚥下障害の臨床 実践編』(医歯薬出版)
- 7) 『疾患別に診る嚥下障害』(医歯薬出版)

B

【Course outline】

This course work includes the lecture and critical reading of related articles, which provides knowledge for diagnosing functional problems such as masticatory, swallowing and articulatory disorders and for applying an adequate prosthodontic approach to patients with maxillofacial defect or systemic disease.

【Course aim】

Recent diversity of functional disturbance, physical condition and living environment of patients has made the conventional system of prosthodontics based on the type of prosthesis less effective in our hyper-aged society. This course work of “Comprehensive prosthodontics” is established for training the professional clinician and researcher who can develop the innovative prosthodontic approach and collaboration with surrounding fields based on the objective functional diagnosis.

【Attainment target】

1. To explain the concept of removable denture designing.
2. To explain the morphological consideration of removable partial denture.
3. To explain the maintenance of removable denture in the long time course.
4. To explain the each appliance in the maxillofacial prosthetics.
5. To explain the application of prosthesis in the rehabilitation medicine.
6. To explain the prosthodontic approach for elderly requiring long-term care
7. To explain the future research aspect of prosthodontics.

【Study method・attention】

Detail of preparation for each lecture will be shown in the first lecture.
Students have to read recommended articles and textbook before the lecture.

【Use of Generative AI】

In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student’s own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/8	Design concept of removable denture (support, bracing and retention)	Reference 1,2) Additional material	Kazuhiro Hori
2	10/15	Morphological consideration of removable denture	Reference 1,2) Additional material	Kazuhiro Hori
3	10/22	Technical consideration of RPD (1) impression	Reference 1,2) Additional material	Kazuhiro Murakami
4	10/29	Technical consideration of RPD (2) maxillo-mandibular relationship	Reference 1,2) Additional material	Kazuhiro Murakami

5	11/5	Technical consideration of RPD (3) teeth arrangement, gum forming	Reference 1,2) Additional material	Kazuhiro Murakami
6	11/12	Maintenance of removable denture	Reference 1,2) Additional material	Kazuhiro Murakami
7	11/19	Maxillofacial prosthetics (1) maxillary obturator	Reference 3,4) Additional material	Kazuhiro Hori
8	11/26	Maxillofacial prosthetics (2) palatal augmentation prosthesis	Reference 3,4) Additional material	Kazuhiro Hori
9	12/3	Maxillofacial prosthetics (3) facial prosthesis	Reference 3,4) Additional material	Kazuhiro Hori
10	12/10	Prosthodontic approach in rehabilitation medicine (1)	Reference 4-8) Additional material	Kazuhiro Hori
11	12/17	Prosthodontic approach in rehabilitation medicine (2)	Reference 4-8) Additional material	Kazuhiro Hori
12	12/24	Prosthodontic approach for elderly requiring long-term care	Reference 4-8) Additional material	Kazuhiro Hori
13	1/7	Future research aspect (1) Diagnosis	Reference 5-9) Additional material	Kazuhiro Hori
14	1/21	Future research aspect (2) Treatment and rehabilitation	Reference 3-9) Additional material	Kazuhiro Hori
15	1/28	Future research aspect (3) Food science	Reference 9,10) Additional material	Kazuhiro Murakami
16	2/4	Examination		Kazuhiro Hori
<p>【Evaluation】</p> <ul style="list-style-type: none"> ・Written examination (50%) and report (30%) ・Presentation in the critical reading (20%) <p>【Media】</p> <p>The related references will be distributed</p> <p>【Reference book】</p> <ol style="list-style-type: none"> 1) 『無歯顎補綴治療学 第3版』(医歯薬出版) 2) 『有床義歯補綴学』(永末書店) 3) 『口腔中咽頭がんのリハビリテーション』(医歯薬出版) 4) 『新版 摂食・嚥下機能改善と装置の作り方超入門』(クインテッセンス出版) 5) 『成人～高齢者向け 咀嚼機能アップBOOK』(クインテッセンス出版) 6) 『嚥下障害の臨床』(医歯薬出版) 7) 『嚥下障害の臨床 実践編』(医歯薬出版) 8) 『疾患別に診る嚥下障害』(医歯薬出版) 9) 『新よくわかる顎口腔機能』(医歯薬出版) 10) 『ヒトの感性に訴える製品開発とその評価』(技術情報協会) 				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5917	1	Wed/1・A	2	9014	Seminar
260W7917		Wed/6・A			
260W5918	2	Wed/1・B	2	9015	Seminar
260W7918		Wed/6・B			
Course	Evaluation of Stomatognathic Function by Digital Devices A, B				
Instructor	Prof. Kazuhiro Hori (Div. Comprehensive Prosthodontics) Assistant Prof. Jumpei Okawa (Div. Comprehensive Prosthodontics)				
Place	Laboratory of Div. Comprehensive Prosthodontics				
A					
【Course outline】					
The appropriate method for mastication and swallowing function should be selected, since the many organs including mandibular, tongue, larynx, and muscles should work coordinately for normal function. The course deals with the methodology for assessment of various organs related with mastication, swallowing and pronunciation.					
【Course aim】					
The course is designed to master the knowledge and technique for assessment of related organs which required for diagnosis of mastication and swallowing disorders.					
【Attainment target】					
The students will correctly understand physiology of related organs.					
The student will appropriately explain the examination for evaluation of stomatognathic function.					
The students will select and perform the examination needed according to the purpose.					
The students will list the needful examination according to the possible malfunction of mastication and swallowing.					
【Study method・attention】					
The students have to do a preparation for a lecture using textbooks or any source materials needed. Concrete contents of preparation for each lecture will be shown at the first class.					
【Use of Generative AI】					
In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/8	Introduction	Detail will be given in class.	Kazuhiro Hori	
2	4/15	Property of various sensors	Prepare the textbook.	Kazuhiro Hori	
3	4/22	Assessment of Tongue movement	Prepare the textbook.	Kazuhiro Hori	

4-5	5/13, 20	Measurement of tongue pressure	Prepare the textbook.	Jumpei Okawa
6-7	5/27, 6/3	Measurement with manometry	Prepare the textbook.	Kazuhiro Hori
8	6/10	Assessment of jaw movement	Prepare the textbook.	Kazuhiro Hori
9-10	6/17, 24	Measurement of jaw movement	Prepare the textbook.	Kazuhiro Hori
11-12	7/1, 8	Analysis of jaw movement	Prepare the textbook.	Jumpei Okawa
13-14	7/15, 22	Motion capture	Prepare the textbook.	Jumpei Okawa
15-16	7/29, 8/5	Measurement of laryngeal movement	Prepare the textbook.	Kazuhiro Hori

【Evaluation】

Oral test or written examination (50%) and report (50%).

【Media】

Handout supplied by Div. Comprehensive Prosthodontics

【Reference book】

新よくわかる顎口腔機能 咬合・摂食嚥下・発音を理解する（日本顎口腔機能学会編，医歯薬出版社）

ISBN978-4-263-44489-4, 8640 円

Research papers will be provided if needed.

B

【Course outline】

The appropriate method for mastication and swallowing function should be selected, since the many organs including mandibular, tongue, larynx, and muscles should work coordinately for normal function. The course deals with the methodology for clinical mastication and swallowing assessment using case example.

【Course aim】

The course is designed to master the clinical knowledge and technique for stomatognathic function using result of actual clinical test.

【Attainment target】

The students will correctly understand physiology of related organs.

The student will appropriately explain the examination for evaluation of stomatognathic function.

The students will select and perform the examination needed according to the purpose.

The students will list the needful examination according to the possible malfunction of mastication and swallowing.

【Study method・attention】

The students have to do a preparation for a lecture using textbooks or any source materials needed. Concrete contents of preparation for each lecture will be shown at the first class.

【Use of Generative AI】

In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/7	Introduction	Detail will be given in class.	Kazuhiro Hori
2-3	10/14, 21	Assessment of coordination of related organs	Prepare the textbook.	Kazuhiro Hori
4-5	10/28, 11/4	Simultaneous recording and analysis	Prepare the textbook.	Kazuhiro Hori
6-7	11/11, 18	Assessment of mastication	Prepare the textbook.	Jumpei Okawa
8	11/25	Measurement of occlusal force	Prepare the textbook.	Jumpei Okawa
9-10	12/2, 9	Assessment of swallowing	Prepare the textbook.	Kazuhiro Hori
11-12	12/16, 23	Assessment of pronunciation	Prepare the textbook.	Kazuhiro Hori
13-14	1/13, 20	Assessment of QOL	Prepare the textbook.	Kazuhiro Hori
15-16	1/27, 2/3	Food texture and swallowing function	Prepare the textbook.	Jumpei Okawa
<p>【Evaluation】 Oral test or written examination (50%) and report (50%).</p> <p>【Media】 Handout supplied by Div. Comprehensive Prosthodontics</p> <p>【Reference book】 新よくわかる顎口腔機能 咬合・摂食嚥下・発音を理解する（日本顎口腔機能学会編，医歯薬出版社） ISBN978-4-263-44489-4, 8640 円</p> <p>Research papers will be provided if needed.</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5919	1	Wed/5・A	2	9014	Lecture・Seminar
260W7919					
260W5920	2	Wed/5・B	2	9014	Lecture・Seminar
260W7920					
Course	Advanced Dental Implant Therapy A, B				
Instructor	Associate Prof. Yoshiaki Arai				
Place	Laboratory in Temporomandibular Joint and Oral Implant Clinic				
A					
【Course outline】					
This course deals with the care for edentulous patient by dental implant.					
【Course aim】					
The student will understand the therapeutic planning for edentulous patient by dental implant.					
【Attainment target】					
Able to understand the implant treatment for edentulous patient and the characteristic.					
Able to diagnosis a jaw bone of edentulous patient					
【Study method・attention】					
Lecture					
Analysis of data and learns diagnosis methods.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/8	Guidance	Textbook1, p29-50	Arai	
2	4/15	Implant treatment for edentulous patient	Textbook1, p51-72	Arai	
3	4/22	Implant treatment for edentulous patient	Textbook1, p91-115	Arai	
4	5/13	Implant over denture (IOD)	Textbook1, p91-115	Arai	
5	5/20	Implant over denture (IOD)	Textbook1, p116-123	Arai	
6	5/27	Implant-Supported bridge	Textbook1, p193-202	Arai	
7	6/3	Implant-Supported bridge	Textbook1, p177-192	Arai	
8	6/10	Concept of All-on-4	Textbook1, p177-192	Arai	
9	6/17	Concept of All-on-4	Textbook1, p29-45	Arai	
10	6/24	Examination and Diagnosis of edentulous patient	Textbook1, p29-45	Arai	
11	7/1	Examination and Diagnosis of edentulous patient	Textbook1, p29-50	Arai	

12	7/8	Analysis of CT images	Textbook1, p29-45	Arai
13	7/15	Analysis of CT images	Textbook1, p29-45	Arai
14	7/22	Computer Guided Implant Treatment	Textbook1, p203-212	Arai
15	7/29	Summary		Arai
16	8/5	Examination		Arai

【Evaluation】

Attendance situation to a class (50%), presentation and discussion results (50%).

【Media】

1. ITI Treatment Guide: Loading Protocols in Implant Dentistry Edentulous Patients. Wismeijer D. Buser D, Belser UC. 2010, Quintessence. ¥11,528.

【Reference book】

1. Implant Overdentures: The Standard of Care for Edentulous Patients. Feine JS, Carlsson GE. 2003, Quintessence.
2. All-on-4® treatment concept Procedures manual. Nobel Biocare, free PDF.
3. Simplant Procedure Manual from scan, to plan, to guide. Dentsply, free PDF.

【Guidelines for the Use of Generative AI】

In this course, the use of generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions. If you choose to use these tools, you must adhere to the following rules:

1. Disclosure and Transparency: When using AI for reports or assignments, you must explicitly state which parts were generated, the purpose of use (including the specific prompts used), and the name of the AI tool employed.
2. Verification and Refinement: Do not use AI-generated content as-is. You are required to personally verify the accuracy and appropriateness of the information and make all necessary corrections.
3. Accountability: Students bear full and final responsibility for the content and integrity of their submitted work.
4. Strict Penalties for Misuse: Any inappropriate use—such as exceeding the permitted scope of use or infringing on the copyrights of others—will be handled strictly in accordance with university/school regulations.

B

【Course outline】

This course deals with the care for edentulous patient by dental implant.

【Course aim】

The student will understand the therapeutic planning for edentulous patient by dental implant.

【Attainment target】

Able to understand the implant treatment for edentulous patient and the characteristic.

Able to diagnosis a jaw bone of edentulous patient

【Study method*attention】

Lecture

Analysis of data and learns diagnosis methods.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/7	Guidance		Arai
2	10/14	Computer simulation	Instructed in the class	Arai
3	10/21	Computer simulation	Textbook1, p51-72	Arai
4	10/28	Treatment planning	Instructed in the class	Arai
5	11/4	Treatment planning	Instructed in the class	Arai
6	11/11	Treatment planning	Instructed in the class	Arai
7	11/18	Treatment	Instructed in the class	Arai
8	11/25	Treatment	Instructed in the class	Arai
9	12/2	Treatment	Instructed in the class	Arai
10	12/9	Complications	Textbook1, p213-236	Arai
11	12/16	Case Presentation	Instructed in the class	Arai
12	12/23	Case Presentation	Instructed in the class	Arai
13	1/13	Case Presentation	Instructed in the class	Arai
14	1/20	Maintenance	Instructed in the class	Arai
15	1/27	Summary		Arai
16	2/3	Examination		Arai

【Evaluation】

Attendance situation to a class (50%), presentation and discussion results (50%).

【Media】

1. ITI Treatment Guide: Loading Protocols in Implant Dentistry Edentulous Patients. Wismeijer D. Buser D, Belser UC. 2010, Quintessence. ¥11,528.

【Reference book】

1. Implant Overdentures: The Standard of Care for Edentulous Patients. Feine JS, Carlsson GE. 2003, Quintessence.

2. All-on-4® treatment concept Procedures manual. Nobel Biocare, free PDF.
3. Siplant Procedure Manual from scan, to plan, to guide. Dentsply, free PDF.

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In this course, the use of generative AI (such as ChatGPT, Gemini, etc.) is permitted under specific conditions. If you choose to use these tools, you must adhere to the following rules:

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Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5921	1	Tue /5・A	2	9014	Seminar
260W7921		Tue /6・A			
260W5922	2	Tue /5・B	2	9015	Seminar
260W7922		Tue /6・B			
Course	Seminar on Oral and Maxillofacial Tissue Reconstructive Surgery A, B				
Instructor	Prof. Shigehiro Ono Assistant Prof. Daichi Hasebe				
Place	Conference Room in Div. Reconstructive Surgery for Oral and Maxillofacial Region, Clinic of Oral and Maxillofacial Surgery				
A					
【Course outline】					
The course is designed to learn and discuss about the theories and procedures about the diagnosis and surgical therapy for the tumor in oral and maxillofacial region including reconstructive surgery for tissue defect and application of tissue engineering and regenerative medicine.					
【Course aim】					
The aim of this course is to obtain the basic knowledge surgical of resection and reconstruction of tumor in oral and maxillofacial region for oral and maxillofacial surgeons. Knowledge for tissue engineering and regenerative medicine should be understood.					
【Attainment target】					
<ul style="list-style-type: none"> ・To explain and evaluate biopsy, imaging and the laboratory data for diagnosis and planning the treatments for tumor in oral and maxillofacial region. ・To explain indication and methods of tumor resection and reconstruction. ・To explain the concept of tissue engineering and its triad “cell”, “biomaterial as scaffold” and “signaling molecules” 					
【Study method・attention】					
This course consists of lecture and setting task of report and presentation. Students have to research beforehand using textbook or any academic resources. The contents of each preparation are presented at a first seminar.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/7	Treatment of tumor in oral and maxillofacial region and tissue and functional reconstruction	The details are given in class	Shigehiro Ono	
2	4/14	Diagnosis and treatment planning for tumor in oral and maxillofacial region	The details are given in class	Shigehiro Ono	
3	4/21	Surgical resection of tumor in oral and maxillofacial region	The details are given in class	Shigehiro Ono	
4	4/28	Fundamental procedures and methods of tumor resection	The details are given in class	Shigehiro Ono	

5	5/12	Preoperative evaluation of tissue defect and function caused by tumor resection	The details are given in class	Shigehiro Ono
6	5/19	Methods for reconstruction in oral and maxillofacial region	The details are given in class	Shigehiro Ono
7	5/26	Planning and selection of reconstructive surgery and materials for reconstruction	The details are given in class	Daichi Hasebe
8	6/2	Materials of reconstruction (Local flap)	The details are given in class	Daichi Hasebe
9	6/9	Materials of reconstruction (Pedicle flap)	The details are given in class	Daichi Hasebe
10	6/16	Materials of reconstruction (Vascularized free flap)	The details are given in class	Daichi Hasebe
11	6/23	Materials of reconstruction (Biomaterial)	The details are given in class	Daichi Hasebe
12	6/30	Oral rehabilitation using dental implants	The details are given in class	Daichi Hasebe
13	7/7	Presentation 1	The details are given in class	Ono Hasebe
14	7/14	Presentation 2	The details are given in class	Ono Hasebe
15	7/21	Presentation 3	The details are given in class	Ono Hasebe
16	7/28	Examination	Review of the course	Ono Hasebe
<p>【Evaluation】 Reports 10%, Presentation 40%, Examination 50%</p> <p>【Media】 Takato T, Toduka Y: Stomatology (Asakura Shoten), ¥27,000</p> <p>【Reference book】 An Atlas of Head and Neck Surgery, Lore JM and Medina JE, Elsevier Saunders. ¥22,790 Atlas of Regional and Free Flaps for Head and Neck Reconstruction, Urken ML, Cheney ML, Blackwell KE, Harris JR, Hadlock TA, Futran N, Wolters Kluwer / Lippincott Williams&Wilkins. ¥30,799 New Trends In Tissue Engineering And Regenerative Medicine - Official book of the Japanese society for regenerative medicine, Hibi H, Ueda M, INTECH • Use of generative AI is strictly prohibited.</p>				
B				
<p>【Course outline】 The course is designed to learn and discuss about the surgeries for tumor and reconstructive surgery for tissue defect after oral and maxillofacial cancer resection including application of tissue engineering and</p>				

regenerative medicine.

【Course aim】

The aim of this course is to obtain the clinical procedure for surgical of resection and reconstruction of tumor in oral and maxillofacial region as a specialist of oral and maxillofacial surgeons. Tissue engineering and regenerative medicine should be also recognized as the method for reconstruction.

【Attainment target】

- To explain the clinical procedures about the materials and methods for oral and maxillofacial reconstruction.
- To explain materials and methods for reconstruction, advantages and disadvantages of reconstructive methods as well as patients' care after the surgery.
- To explain application of regenerative medicine to reconstructive surgery in oral and maxillofacial region including dental implant application.

【Study method・attention】

This course consists of lecture and setting task of report and presentation. Students have to research beforehand using textbook or any academic resources. The contents of each preparation are presented at a first seminar.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/6	Reconstructive surgery (tongue)	The details are given in class	Daichi Hasebe
2	10/20	Reconstructive surgery (oral floor)	The details are given in class	Daichi Hasebe
3	10/27	Reconstructive surgery (mandible)	The details are given in class	Daichi Hasebe
4	11/6	Reconstructive surgery (maxilla and palate)	The details are given in class	Daichi Hasebe
5	11/10	Reconstructive surgery and neck dissection	The details are given in class	Daichi Hasebe
6	11/17	Postoperative complications and patients' care of reconstructive surgery	The details are given in class	Daichi Hasebe
7	11/24	Evaluation after reconstructive surgery	The details are given in class	Shigehiro Ono
8	12/1	Tissue engineering and regenerative medicine	The details are given in class	Shigehiro Ono
9	12/8	Application of regenerative medicine to oral and maxillofacial region	The details are given in class	Shigehiro Ono
10	12/15	Application of regenerative medicine to oral and maxillofacial region	The details are given in class	Shigehiro Ono
11	12/22	Stem cell therapy for maxillofacial bone diseases	The details are given	Shigehiro Ono

		including osteoporosis and osteonecrosis of jaw	in class	
12	1/12	Regenerative medicine of peripheral nerve	The details are given in class	Shigehiro Ono
13	1/19	Presentation 1	The details are given in class	Ono Hasebe
14	1/26	Presentation 2	The details are given in class	Ono Hasebe
15	2/2	Presentation 3	The details are given in class	Ono Hasebe
16	2/9	Examination	Review of the course	Ono Hasebe

【Evaluation】

Reports 10%, Presentation 40%, Examination 50%

【Media】

Takato T, Toduka Y: Stomatology (Asakura Shoten), ¥27,000

【Reference book】

An Atlas of Head and Neck Surgery, Lore JM and Medina JE, Elsevier Saunders. ¥22,790

Atlas of Regional and Free Flaps for Head and Neck Reconstruction, Urken ML, Cheney ML, Blackwell KE,

Harris JR, Hadlock TA, Futran N, Wolters Kluwer / Lippincott Williams&Wilkins. ¥30,799

New Trends In Tissue Engineering And Regenerative Medicine

- Official book of the Japanese society for regenerative medicine, Hibi H, Ueda M, INTECH

• Use of generative AI is strictly prohibited.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5923	1	Wed/5・A	2	9014	Lecture
260W7923		Wed/6・A			
260W5924	2	Wed/5・B	2	9015	Lecture・Practice
260W7924		Wed/6・B			
Course	Seminar on Oral Oncology A, B				
Instructor	Professor Shigehiro Ono, Lecture Akinori Funayama				
Place	Conference Room in Div. Reconstructive Surgery for Oral and Maxillofacial Region, Clinic of Oral and Maxillofacial Surgery				
A					
【Course outline】					
The course is designed to learn the anatomy of the maxillofacial and cervical region, epidemiology, etiology, histopathology, development, invasion, and metastasis by lecture and read the related literature for recognition of the nature of oral cancer.					
【Course aim】					
The aim of this course is to provide introduction to the basic principle of oral cancer and its treatment, and presentation skills for oral cancer management.					
【Attainment target】					
<ul style="list-style-type: none"> ● Explain the anatomy of the oral region (oral mucosa, jawbone, vasculature, and nerves) where oral cancer occurs. ● Explain the epidemiology, etiology, and precancerous lesions and conditions of oral cancer. ● Explain the mechanism of oral cancer development, invasion and metastasis. 					
【Study method・attention】					
Refer to the textbook of general oncology and related literature and read the related literature of oral cancer					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/8	Guidance	The details are given in class	Funayama	
2	4/15	Anatomy of maxillofacial and cervical region	Textbook1 pp38-54	Funayama	
3	4/22	Epidemiology of oral cancer (1): Etiology	Textbook2 pp1-7	Funayama	
4	5/13	Epidemiology of oral cancer (2): Precancerous lesions and conditions	Textbook2 pp8-17	Funayama	
5	5/20	Diagnosis of oral cancer: Histopathology and immunohistochemistry	Textbook3 pp12-17	Funayama	
6	5/27	Summary and Evaluation (1)	Review of lecture No.	Funayama	

			1-5	
7	6/3	Development of oral cancer: Multi-step cancerization	Textbook2 pp8-30	Funayama
8	6/10	Development of oral cancer: Field cancerization	Textbook2 pp31-37	Funayama
9	6/17	Invasion of oral cancer: Differentiation and pattern of invasion	Textbook2 pp66-98	Ono
10	6/24	Invasion of oral cancer: Epithelial-mesenchymal transition (EMT)	Textbook3 pp213-215	Ono
11	7/1	Metastasis of oral cancer (1): Invasion-metastasis cascade	Textbook3 pp215-222	Ono
12	7/8	Metastasis of oral cancer (2): Lymph node and distant metastasis	Textbook2 pp98-106	Ono
13	7/15	Treatment of oral cancer (1): Surgical treatment	Textbook3 pp647-668	Ono
14	7/22	Treatment of oral cancer (2): Radiation therapy and Chemotherapy	Textbook3 pp668-685	Ono
15	7/29	Treatment of oral cancer (3): molecular-targeted therapy	Textbook3 pp685-691	Ono
16	8/5	Test	Review of all lectures	Ono

【Evaluation】

Clinical presentation and discussion are main events of evaluation (50%), and additionally the attendance of meeting (10%), and paper tests (40%).

【Media】

- ①ORAL CANCER ;Diagnosis, Management, and Rehabilitation : John W. Werning, 13,911 円
- ②口腔癌取り扱い規約 (第2版), 金原出版, 4,180 円
- ③宮崎 正著 : 口腔外科学(第4版), 医歯薬出版, 29,700 円

【Reference book】

NCCN Guidelines Head and Neck Cancers.Version 1, 2026

- Use of generative AI is strictly prohibited.

B

【Course outline】

The course is designed to learn diagnostic methods, treatment planning and basic techniques for oral surgeons by lectures, trial practical training in out and/in patients, case presentations for oral diseases and oral cancers.

【Course aim】

The aim of this course is to master diagnostic methods, principal knowledge and skills about oral cancer for general dentist and oral surgeon.

【Attainment target】

- Perform taking the medical history for diagnosis of oro-facial diseases
- Perform the basic surgical practices; instruments handling, local anesthesia, tooth extraction, incision,

suturing, and wound repair) for management of oral and maxillofacial diseases

- Explain and evaluate the methods of diagnosis for oral cancers; biopsy techniques, vital staining, and imaging
- Explain and planning the treatments for oral cancer; surgery, chemotherapy and radiotherapy
- Explain the methods of assessment for swallowing and speech functions, and maxillofacial prosthetics

【Study method・attention】

Managements of out and/or In-patients

Discussion and presentation of various cases of oral cancer

The contents of each preparation are presented at a first seminar.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/7	Guidance	The details are given in class	Funayama
2	10/14	Medical interview and physical examination	Textbook1 pp12-48	Funayama
3	10/21	Basic surgical procedures (1): Instruments, local anesthesia and extraction	Textbook2 pp1-21	Funayama
4	10/28	Basic surgical procedures (2): Incision, suture and wound management	Textbook2 pp23-90	Funayama
5	11/4	Principles of infection control and Evaluation (1)	Textbook1 pp487-494, Review of lecture No. 1-4	Funayama
6	11/11	Diagnosis of oral cancer (1): Biopsy and vital staining	Textbook3 pp114-128	Funayama
7	11/18	Diagnosis of oral cancer (2): Histopathology and immunohistochemistry	Textbook3 pp66-107	Funayama
8	11/25	Diagnosis of oral cancer (3): Various imaging modalities	Textbook3 pp42-65	Funayama
9	12/2	Treatment of oral cancer (1-1): Surgical treatment	Textbook4 pp78-179	Ono
10	12/9	Treatment of oral cancer (1-2): method of reconstruction	Textbook4 pp180-236	Ono
11	12/16	Treatment of oral cancer (2): Radiation therapy	Textbook4 pp237-250	Ono
12	12/23	Treatment of oral cancer (3): Chemotherapy	Textbook4 pp251-261	Ono
13	1/13	Treatment of oral cancer (4): Complications and its management	Textbook4 pp262-303	Ono
14	1/20	Morphological and functional assessments: Swallowing and speech	Textbook4 pp304-308	Ono

15	1/27	Reporting of cases, presentation and discussion.	Preparation for case presentation	Ono
16	2/3	Test	Review of all lectures	Ono

【Evaluation】

Case presentation and discussion are main events of evaluation (50%), and additionally the attendance of meeting (10%), technique of simulated operation (10%) and paper tests (30%).

【Media】

- ①宮崎 正著：口腔外科学(第4版)，医歯薬出版，29,700円
- ②杉崎 正志編著：切開と縫合の基本と臨床，ヒョーロン・パブリッシャーズ，9,000円
- ③口腔癌取り扱い規約（第2版），金原出版，4,180円
- ④ORAL CANCER ; Diagnosis, Management, and Rehabilitation : John W. Werning, 13,911円

【Reference book】

NCCN Guidelines for Head and Neck Cancers.Version 1, 2026

- Use of generative AI is strictly prohibited.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5925	1	Mon/5・A	2	9014	Lecture
260W7925		Mon/7・A			
260W5926	2	Mon/5・B	2	9015	Lecture・Practice
260W7926		Mon/7・B			
Course	Diagnosis and Treatment of Developmental Maxillofacial Anomalies A, B				
Instructor	Professor. Shigehiro Ono, Assistant Professor. Daisuke Saito				
Place	Conference Room in Div. Reconstructive Surgery for Oral and Maxillofacial Region, Clinic of Oral and Maxillofacial Surgery				
A					
【Course outline】					
The course is designed to learn diagnostic methods and treatment planning for developmental maxillofacial anomalies.					
【Course aim】					
The aim of this course is to obtain basic knowledge and technique to diagnose and treat developmental maxillofacial anomalies as oral and maxillofacial surgeon.					
【Attainment target】					
<ul style="list-style-type: none"> ・To collect necessary materials and data for adequate diagnosis of developmental maxillofacial anomalies. ・To diagnose dentofacial morphology and malalignment of teeth from many materials and data. ・To make a plan of surgical orthodontic treatment. 					
【Study method・attention】					
This course consists of lecture using some documents, slides and moving images. Students have to do research beforehand using textbooks or any source materials. The contents of each preparation are presented at a first seminar.					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/13	Clinical condition of developmental maxillofacial anomalies	The details are given in class	Saito D	
2	4/20	Pathogenesis of developmental maxillofacial anomalies	The details are given in class	Saito D	
3	4/27	Collection of necessary materials and data for diagnosis	The details are given in class	Saito D	
4	5/11	Cephalometric analysis 1	The details are given in class	Saito D	
5	5/18	Cephalometric analysis 2	The details are given in class	Saito D	

6	5/25	Computed tomography imaging 1	The details are given in class	Ono S
7	6/1	Computed tomography imaging 2	The details are given in class	Ono S
8	6/8	Analysis of facial photograph	The details are given in class	Ono S
9	6/15	Analysis of dental cast	The details are given in class	Ono S
10	6/22	Analysis of stomatognathic functions 1	The details are given in class	Ono S
11	6/29	Analysis of stomatognathic functions 2	The details are given in class	Ono S
12	7/6	Planning of surgical orthodontic treatment	The details are given in class	Saito D
13	7/13	Simulation of orthognathic surgery 1	The details are given in class	Saito D
14	7/27	Simulation of orthognathic surgery 2	The details are given in class	Saito D
15	8/3	Presentation and conclusion	The details are given in class	Ono S

【Evaluation】

Oral test and clinical presentation

【Media】

顎変形症治療アトラス 高橋庄二郎・黒田敬之・飯塚忠彦 編 医歯薬出版、23,000 円

【Reference book】

Modern practice in orthognathic and reconstructive surgery Edited by William H Bell W.B. Saunders Company
 ・Use of generative AI is strictly prohibited.

B

【Course outline】

The course is designed to learn treatment planning, techniques of orthognathic surgeries and postoperative evaluation for developmental maxillofacial anomalies.

【Course aim】

The aim of this course is to obtain basic knowledge and technique to treat developmental maxillofacial anomalies as oral and maxillofacial surgeon.

【Attainment target】

- ・To explain techniques of orthognathic surgeries and the indications.
- ・To assist orthognathic surgeries and manage the patients.
- ・To make a postoperative assessment of surgical orthodontic treatment.

【Study method・attention】

<p>This course consists of lecture using some documents, slides and moving images. Students have to do research beforehand using textbooks or any source materials. The contents of each preparation are presented at a first seminar.</p>				
<p>【Plan】</p>				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/5	Orthognathic surgery 1 (Le Fort I osteotomy)	The details are given in class	Saito D
2	10/13	Orthognathic surgery 2 (sagittal split ramous osteotomy)	The details are given in class	Saito D
3	10/19	Orthognathic surgery 3 (segmental maxillary osteotomies and subapical mandibular osteotomies)	The details are given in class	Saito D
4	10/26	Orthognathic surgery 4 (genioplasty)	The details are given in class	Saito D
5	11/2	Orthognathic surgery 5 (distraction osteogenesis)	The details are given in class	Saito D
6	11/9	Perioperative management 1 (respiratory management)	The details are given in class	Ono S
7	11/16	Perioperative management 2 (intermaxillary fixation and nutritional management)	The details are given in class	Ono S
8	11/30	Perioperative management 3 (paresthesia and eustachian tube function)	The details are given in class	Ono S
9	12/7	Postoperative assessment 1 (postoperative maxillomandibular stability)	The details are given in class	Ono S
10	12/14	Postoperative assessment 2 (temporomandibular joint function)	The details are given in class	Ono S
11	12/21	Postoperative assessment 3 (masticatory function)	The details are given in class	Saito D
12	1/14	Postoperative assessment 4 (respiratory function during sleep)	The details are given in class	Saito D
13	1/22	Postoperative assessment 5 (psychological assessment)	The details are given in class	Ono S
14	1/25	Postoperative assessment 6 (subjective evaluation)	The details are given in class	Ono S
15	2/1	Presentation and conclusion	The details are given in class	Ono S

【Evaluation】

Oral test and clinical presentation

【Media】

顎変形症治療アトラス 高橋庄二郎・黒田敬之・飯塚忠彦 編 医歯薬出版、23,000 円

【Reference book】

Modern practice in orthognathic and reconstructive surgery Edited by William H Bell W.B. Saunders Company

• Use of generative AI is strictly prohibited.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5927	1	Thu/3・A	2	9114	Lecture・Seminar
260W7927		Thu/6・A			
260W5928	2	Thu/3・B	2	9115	Lecture・Seminar
260W7928		Thu/6・B			
Course	Oral and Maxillofacial Radiology A, B				
Instructor	Prof. Takafumi Hayashi (Div. Oral and Maxillofacial Radiology)				
Place	Laboratory in Div. Oral and Maxillofacial Radiology				
A					
<p>【Course outline】 In the field of dental practice, it is mandatory to recognize the image features of pathological status of the oral cavity. This course provides the typical imaging findings using various diagnostic imaging techniques.</p> <p>【Course aim】 In this course, learners are expected to learn the typical imaging findings of various lesions in the maxillofacial region using conventional x-ray, computed tomography (CT), dental cone-beam CT (CBCT), MR imaging (MRI), ultrasonography (US) and positron emission tomography (PET).</p> <p>【Attainment target】</p> <ol style="list-style-type: none"> 1) To describe the imaging interpretation of the dental and periodontal diseases. 2) To describe the imaging interpretation of the congenital and developmental anomaly. 3) To describe the imaging interpretation of the systemic diseases affecting jaw bone. 4) To describe the imaging interpretation of the facial trauma. 5) To describe the imaging interpretation of the inflammatory disease. 6) To describe the imaging interpretation of the cystic lesion. 7) To describe the imaging interpretation of the benign neoplasms. 8) To describe the imaging interpretation of the malignant neoplasms. 9) To describe the imaging interpretation of the salivary gland diseases. 10) To describe the imaging interpretation of the fibro-osseous lesions. 11) To describe the imaging interpretation of the oral soft tissue lesions. 12) To describe the imaging interpretation of the soft tissue lesions of the neck. 13) To describe the imaging interpretation of the temporomandibular joint lesions. 14) To describe the imaging interpretation of the maxillary sinus diseases. 15) To describe the imaging interpretation of the miscellaneous diseases of the jaw bone. <p>【Study method・attention】 Formative evaluation: pre and posttest. Lecture download website is provided. Real-time online lecture using Zoom would be provided. Computer device and internet access environment are required. https://www5.dent.niigata-u.ac.jp/~radiology/postgraduate/</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI (e.g., ChatGPT, Gemini, etc.) is conditionally permitted. If you choose to use generative AI, you must comply with the following requirements: If generative AI is used in reports or other assignments, you must clearly indicate the portions where it was used, following standard citation practices. The name and version of the AI must be specified in the</p>					

format: “with [Name of Generative AI] [Version]” (*1).

Do not use the generated content without modification. You must independently verify and revise the accuracy and appropriateness of the information.

The student bears full responsibility for the final submitted work (*2).

If inappropriate use (such as use beyond the permitted scope or infringement of others’ copyrights) is identified, strict action will be taken in accordance with university regulations.

*1. When necessary, attach a link to the generative AI output, including the prompt used.

*2. When using generative AI, you must recognize that its use is your own responsibility and carefully consider its potential impact on your future qualification examinations and on patient care.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	4/9	Guidance of the course and the imaging interpretation of the dental and periodontal diseases	Summarization of textbook chapter 2	T. Hayashi
2	4/23	The imaging interpretation of the congenital and developmental anomaly	Summarization of textbook chapter 3	T. Hayashi
3	4/30	The imaging interpretation of the systemic diseases affecting jaw bone	Summarization of textbook chapter 8	T. Hayashi
4	5/14	The imaging interpretation of the facial trauma	Summarization of textbook chapter 3	T. Hayashi
5	5/21	The imaging interpretation of the inflammatory disease	Summarization of textbook chapter 3	T. Hayashi
6	5/28	The imaging interpretation of the cystic lesion	Summarization of textbook chapter 3	T. Hayashi
7	6/4	The imaging interpretation of the benign neoplasms	Summarization of textbook chapter 3	T. Hayashi
8	6/11	The imaging interpretation of the malignant neoplasms	Summarization of textbook chapter 3	T. Hayashi
9	6/18	The imaging interpretation of the salivary gland diseases	Summarization of textbook chapter 6	T. Hayashi
10	6/25	The imaging interpretation of the fibro-osseous lesions	Summarization of textbook chapter 3	T. Hayashi
11	7/2	The imaging interpretation of the oral soft tissue lesions	Summarization of textbook chapter 7	T. Hayashi
12	7/9	The imaging interpretation of the soft tissue lesions of the neck	Summarization of textbook chapter 7	T. Hayashi
13	7/16	The imaging interpretation of the	Summarization of	T. Hayashi

		temporomandibular joint lesions	textbook chapter 5	
14	7/23	The imaging interpretation of the maxillary sinus diseases	Summarization of textbook chapter 4	T. Hayashi
15	7/30	The imaging interpretation the miscellaneous diseases of the jaw bone	Summarization of textbook chapter 3	T. Hayashi
16	8/6	Examination	Review of the course	T. Hayashi

【Evaluation】

Summative evaluation (90%): multiple-choice and open-ended tests.
Attitude in the lecture and interest in the field (10%).

【Media】

Diagnostic imaging atlas in dental clinical practice (2nd ed.) Ishiyaku Publishers, Inc. ISBN978-4-263-45847-1 (JPY 13,200 including tax)

【Reference book】

Hiroya Ojiri. Head and Neck Imaging Fourth Edition. Nankodo. ISBN978-4-524-22661-0 (JPY 19,800 including tax)

Tadaaki Kirita, Hiroyuki Harada Eds. Oral Cancer Ishiyaku Publishers, Inc. ISBN978-4-263-42315-8 (JPY 66,000 including tax)

【Related links】

<https://www5.dent.niigata-u.ac.jp/~radiology/postgraduate/>

B

【Course outline】

In the field of dental practice, it is mandatory to recognize the image features of pathological status of the oral cavity. This course provides the advanced diagnostic imaging using various diagnostic imaging techniques.

【Course aim】

In this course, learners are expected to perform the advanced diagnostic imaging of various lesions in the maxillofacial region using conventional x-ray, computed tomography (CT), dental cone-beam CT (CBCT), MR imaging (MRI), ultrasonography (US) and positron emission tomography (PET).

【Attainment target】

- 1) To perform the diagnostic imaging of the dental and periodontal diseases.
- 2) To perform the diagnostic imaging of the congenital and developmental anomaly.
- 3) To perform the diagnostic imaging of the systemic disease affecting jaw bone.
- 4) To perform the diagnostic imaging of the facial trauma.
- 5) To perform the diagnostic imaging of the inflammatory disease.
- 6) To perform the diagnostic imaging of the cystic lesion.
- 7) To perform the diagnostic imaging of the benign neoplasms.
- 8) To perform the diagnostic imaging of the malignant neoplasms.
- 9) To perform the diagnostic imaging of the salivary gland diseases.
- 10) To perform the diagnostic imaging of the fibro-osseous lesions.
- 11) To perform the diagnostic imaging of the oral soft tissue lesions.
- 12) To perform the diagnostic imaging of the soft tissue lesions of the neck.
- 13) To perform the diagnostic imaging of the temporomandibular joint lesions.
- 14) To perform the diagnostic imaging of the maxillary sinus diseases.

15) To perform the diagnostic imaging of the miscellaneous diseases of the jaw bone.

【Study method・attention】

Formative evaluation: pre and posttest. Lecture download website is provided. It is preferable to have completed IA or IIA courses.

Real-time online lecture using Zoom would be provided. Computer device and internet access environment are required. <https://www5.dent.niigata-u.ac.jp/~radiology/postgraduate/>

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/8	Guidance of the course and the diagnostic imaging of the dental and periodontal diseases	Summarization of textbook chapter 2	T. Hayashi
2	10/15	The diagnostic imaging of the congenital and developmental anomaly	Summarization of textbook chapter 3	T. Hayashi
3	10/22	The diagnostic imaging of the systemic diseases affecting jaw bone	Summarization of textbook chapter 8	T. Hayashi
4	10/29	The diagnostic imaging of the facial trauma	Summarization of textbook chapter 3	T. Hayashi
5	11/5	The diagnostic imaging of the inflammatory disease	Summarization of textbook chapter 3	T. Hayashi
6	11/12	The diagnostic imaging of the cystic lesion	Summarization of textbook chapter 3	T. Hayashi
7	11/19	The diagnostic imaging of the benign neoplasms	Summarization of textbook chapter 3	T. Hayashi
8	11/26	The diagnostic imaging of the malignant neoplasms	Summarization of textbook chapter 3	T. Hayashi
9	12/3	The diagnostic imaging of the salivary gland diseases	Summarization of textbook chapter 6	T. Hayashi
10	12/10	The diagnostic imaging of the fibro-osseous lesions	Summarization of textbook chapter 3	T. Hayashi
11	12/17	The diagnostic imaging of the oral soft tissue lesions	Summarization of textbook chapter 7	T. Hayashi
12	12/24	The diagnostic imaging of the soft tissue lesions of the neck	Summarization of textbook chapter 7	T. Hayashi
13	1/7	The diagnostic imaging of the temporomandibular joint lesions	Summarization of textbook chapter 5	T. Hayashi
14	1/21	The diagnostic imaging of the maxillary sinus diseases	Summarization of textbook chapter 4	T. Hayashi

15	1/28	The diagnostic imaging the miscellaneous diseases of the jaw bone	Summarization of textbook chapter 3	T. Hayashi
16	2/4	Examination	Review of the course	T. Hayashi
<p>【Evaluation】 Summative evaluation (90%): multiple-choice and open-ended tests. Attitude in the lecture and interest in the field (10%).</p> <p>【Media】 Diagnostic imaging atlas in dental clinical practice (2nd ed.) Ishiyaku Publishers, Inc. (JPY 13,200 with tax)</p> <p>【Reference book】 Hiroya Ojiri. Head and Neck Imaging Fourth Edition. Nankodo. (JPY 19,800 with tax)</p> <p>【Related links】 https://www5.dent.niigata-u.ac.jp/~radiology/postgraduate/</p>				

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5929	1	Wed/4・A(B)	2	9014	Lecture・Seminar
260W7929		Wed/6・A(B)			
260W5930	2	Wed/4・B(A)	2	9015	Lecture・Seminar
260W7930		Wed/6・B(A)			
Course	Seminar on Diagnostic Imaging Practice in the Oral and Maxillofacial Region A, B				
Instructor	Associate Prof. Hideyoshi Nishiyama (Div. Oral and Maxillofacial Radiology)				
Place	Laboratory in Div. Oral and Maxillofacial Radiology, or each computer connected to the internet.				
A					
<p>【Course outline】</p> <p>CT and MRI images are usually processed by filters and stored as DICOM images. If you want to diagnose and study those images, you should learn about the image processing methods. In the beginning, this course provides practices for handling DICOM formatted images and for training in image processing methods. Then, you can learn about making the MPR or ADC map from DICOM formatted images, and practice in the diagnostic imaging of oral and maxillofacial region using image processing.</p> <p>【Course aim】</p> <p>Students will acquire the knowledge and skills of image processing methods for diagnostic imaging of oral and maxillofacial region and to use them for some cases.</p> <p>【Attainment target】</p> <p>Students will diagnose DICOM formatted images (CT, MRI etc.) with suitable image processing.</p> <ol style="list-style-type: none"> 1) Students will explain about DICOM and understand about image formats and characteristics. 2) Students will perform the digital image processing. 3) Students will explain and make the MPR formatted images. 4) Students will change the coordinate of any point on DICOM images with affine transformation method. 5) Students will extract and analyze necessary information from DICOM tags for dynamic contrast enhanced images, DWI and ADC map. <p>【Study method・attention】</p> <p>Course B requires students to take Course A. Autumn enrollees can take Course A in the second semester of this year and Course B in the first semester of the following year.</p> <p>If you decide to take this course, please contact me by E-mail to “nisiyama@dent.niigata-u.ac.jp”.</p> <p>This course is online based system. You can download the text and assignments from the following web site. Site URL for the Diagnostic Imaging Practice: https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/</p> <p>After doing assignments, you should send back the products by E-mail. After submission of products, you can download the answer and explication with the password. After reviewing the answers and explanations, do more self-study as needed.</p> <p>The Python and “ImageJ” (NIH: National Institutes of Health) or Fiji as image processing software will be used in this practical course, or you can use other software that managing the DICOM format. Instructions for installing the software will be given during the first exercise.</p> <p>【About the use of generative AI】</p> <p>In this course, the use of generative AI (ChatGPT, Gemini, etc.) is permitted under certain conditions.</p>					

If you use it, please observe the following points.

1. When using it in a report or other document, be sure to clearly state the AI name and version for the used part in the format "with [generated AI name] / [version name]," as is standard for other source citations. (*1)
2. Do not use the generated content as is; be sure to verify and correct the information yourself for accuracy and appropriateness.
3. Students are solely responsible for the final product. (*2)
4. If inappropriate use (such as use within unauthorized scope or infringement of another person's copyright) is confirmed, strict action will be taken in accordance with university regulations.

*1. If necessary, please attach a link to the generative AI's output, including prompts.

*2. Be aware that your use of generative AI is your own responsibility, and fully consider the impact it may have on your future qualification exam results and the impact on the patients you treat and for whom you are accountable.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	4/8 (10/7)	Guidance, About image processing software	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/	H. Nishiyama
2	4/15 (10/14)	About the tag information in DICOM data	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/	H. Nishiyama
3	4/22 (10/21)	About the image formats in DICOM data	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/	H. Nishiyama
4	5/13 (10/28)	About the 3D view and MPR on DICOM images.	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/	H. Nishiyama
5	5/20 (11/4)	Problem of gantry (detector) tilt angle.	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/	H. Nishiyama
6	5/27 (11/11)	About the line profile and measuring accuracy on CT images.	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/	H. Nishiyama
7	6/3 (11/18)	About the filters (or kernels) for image processing on CT images.	Do the exercises of the day. https://www5.dent.niigata	H. Nishiyama

			-u. ac. jp/~nisiyama/ grad/	
8	6/10 (11/25)	About the 2D affine transformation.	Do the exercises of the day. https://www5.dent.niigata-u. ac. jp/~nisiyama/ grad/	H. Nishiyama
9	6/17 (12/2)	About the 3D affine transformation (1).	Do the exercises of the day. https://www5.dent.niigata-u. ac. jp/~nisiyama/ grad/	H. Nishiyama
10	6/24 (12/9)	About the 3D affine transformation (2).	Do the exercises of the day. https://www5.dent.niigata-u. ac. jp/~nisiyama/ grad/	H. Nishiyama
11	7/1 (12/16)	About the diagnostic imaging with affine transformation.	Do the exercises of the day. https://www5.dent.niigata-u. ac. jp/~nisiyama/ grad/	H. Nishiyama
12	7/8 (12/23)	About the diagnostic CT imaging with ROI.	Do the exercises of the day. https://www5.dent.niigata-u. ac. jp/~nisiyama/ grad/	H. Nishiyama
13	7/15 (1/13)	About the use of DICOM tag for diagnostic MR imaging.	Do the exercises of the day. https://www5.dent.niigata-u. ac. jp/~nisiyama/ grad/	H. Nishiyama
14	7/22 (1/20)	About the use of DICOM tag for diagnostic MR imaging with dynamic contrast enhancement.	Do the exercises of the day. https://www5.dent.niigata-u. ac. jp/~nisiyama/ grad/	H. Nishiyama
15	7/29 (1/27)	About the DWI, ADC map and water flow for the diagnostic MR imaging.	Do the exercises of the day. https://www5.dent.niigata-u. ac. jp/~nisiyama/ grad/	H. Nishiyama
16	8/5 (2/3)	Examination multi-choice objective test	Review of the course	H. Nishiyama

【Evaluation】

The evaluation is performed by the multi-choice objective test (60%) and exercise submissions (40%).

The exam will be conducted using the "Mini Test" function of the campus web (campus portal) information system. Please note that all materials, online or offline, will be allowed to be referenced in order to assess practical skills rather than memorization. However, the act of inquiring or asking questions to others (including ChatGPT) and exchanging information between examinees are prohibited.

【Media】

For manuals and reference materials related to ImageJ and Fiji, search and use on the web.

For example, see below:

<https://imagej.nih.gov/ij/docs/index.html>

<https://imagej.net/Cookbook>

In this course, CT and MRI texts are not specified. If the information on the web is insufficient, use text according to your ability as follows.

For MATLAB, please refer to online materials.

【Reference book】

1. Main reference books.

Image Processing with ImageJ (Packt Publishing / By José María Mateos Perez, Javier Pascau) Paperback: about \$33 online shop.

2. Recommended books.

- 1) Digital Image Processing for Medical Applications, 1st edition (Cambridge University Press / Geoff Dougherty) Paperback: about \$50 online shop.
- 2) MRI in Practice 5th Edition (Wiley-Blackwell / Catherine Westbrook, John Talbot) about \$62 online shop.
- 3) Head and Neck Imaging 5th Edition (Mosby / Peter M. Som MD, Hugh D. Curtin MD) Hardcover about \$401 online shop.

B**【Course outline】**

Deep learning in image recognition has recently attracted attention as an area that has evolved significantly in the history of artificial intelligence, especially machine learning systems. However, in deep learning systems based mainly on multilayer convolutional neural networks or Vision-Transformer (ViT), the image recognition method must be treated as a black box. For this reason, the Ministry of Health, Labor and Welfare and the Ministry of Internal Affairs and Communications publish about accountability on the system development side and user responsibilities of doctors and dentists.

In this exercise, you will understand the mechanism and learn the applicable range and limitations through exercises on AI, machine learning, and deep learning in diagnostic imaging.

【Course aim】

By applying the knowledge of image processing acquired in Course A, especially the matrix operation used in affine transformation in three-dimensional space, and the concept of convolution filter, students will be able to understand the mechanism of deep learning in image diagnosis and to learn the adaptation range and limitations in the first half.

In the second half, students will learn about the overview and problems of the latest systems and models, including Vision-Transformer (ViT) as an image recognition system and Stable Diffusion as an image generation system.

【Attainment target】

Students will learn the mechanism and operation of machine learning step by step, and practice multi-layer convolutional neural networks, auto-encoders, and GANs (Generative Adversarial Networks) to understand the applicable range and limitations.

- 1) Students will program and execute 2D rotation and translation (part of affine transformation) using Python and NumPy.
- 2) Students will explain the basic concepts of machine learning.
- 3) Students will explain the classification algorithm, logistic regression, and maximum likelihood estimation.

- 4) Students will explain softmax, minibatch, stochastic gradient descent, and calculation errors.
- 5) Students will explain neural networks, activation functions, hidden layers, and the differences between single-layer and multilayer.
- 6) Students will explain the classification of images using convolution filters, pooling layers, and feature variables, and dynamic learning of filters.
- 7) Students will explain heat maps through an exercise in an automatic handwritten character recognition application.
- 8) Students will explain the basis for judgment of machine learning models.
- 9) Students will explain the black box problem of AI (accountability), the bias problem of AI (fairness), the vulnerability problem of AI, the quality assurance problem of AI, the fake video problem, and the thinking guidance problem by social media.
- 10) Students will explain ResNet and U-Net.
- 11) Students will explain the auto encoder.
- 12) Students will explain the outline and problems of GAN (Generative Adversarial Network).
- 13) Students will explain the difference between machine learning recognition and human recognition in image diagnosis.
- 14) Students will explain the overview and problems of various system models including Vision-Transformer (ViT).

【Study method・attention】

The main textbook is in Japanese. There are several similar English textbooks, but they are not the same. The content of each assignment is provided in English, just like in Course A, but you cannot answer the questions unless you read and understand the Japanese textbook.

For those who have difficulty taking the course in Japanese, the content of lessons 1 to 14 can be substituted with the English MATLAB course (see below).

Course B requires students to take Course A. Autumn enrollees can take Course A in the second semester of this year and Course B in the first semester of the following year.

If you decide to take this course, please contact me by E-mail to “nisiyama@dent.niigata-u.ac.jp” .

This course is online based system. You can download the text and assignments from the following web site.

Site URL for the Diagnostic Imaging Practice: <https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/>

After doing assignments, you should send back the products by E-mail. After submission of products, you can download the answer and explication with the password.

** Python and MATLAB courses

● Python course

Jupyter notebook and Neural network console (Sony) will be used for the execution environment. VS-Code is the recommended editor. In the first half, you can use the online version if you do not use medical images, but exercises using medical images must be performed on a locally operating system (offline version). If it is difficult to construct a local environment, exercises will be conducted at a designated terminal in the Division of Oral and Maxillofacial Radiology.

● MATLAB course

By taking the following course (approximately 12 hours) through the “Self-Paced Online Courses” (<https://matlabacademy.mathworks.com/en/>) and obtaining a certificate of completion, you can substitute for taking sessions 1-14 of this exercise.

1) MATLAB Onramp [2hr]

<https://matlabacademy.mathworks.com/details/matlab-onramp/gettingstarted>

2) Image Processing Onramp [2hr]

<https://matlabacademy.mathworks.com/details/image-processing-onramp/imageprocessing>

3) Image Filtering and Enhancement [2hr]

<https://matlabacademy.mathworks.com/details/image-filtering-and-enhancement/otmlife>

4) Deep Learning Onramp [1.5hr]

<https://matlabacademy.mathworks.com/details/deep-learning-onramp/deeplearning>

5) Deep Learning Techniques in MATLAB for Image Applications [4hr]

<https://matlabacademy.mathworks.com/details/deep-learning-techniques-in-matlab-for-image-applications/lpmlldt>

** Depending on the student's ability, the reference book may be changed to the main textbook.

【About the use of generative AI】

In this course, the use of generative AI (ChatGPT, Gemini, etc.) is permitted under certain conditions. If you use it, please observe the following points.

1. When using it in a report or other document, be sure to clearly state the AI name and version for the used part in the format "with [generated AI name] / [version name]," as is standard for other source citations. (*1)
2. Do not use the generated content as is; be sure to verify and correct the information yourself for accuracy and appropriateness.
3. Students are solely responsible for the final product. (*2)
4. If inappropriate use (such as use within unauthorized scope or infringement of another person's copyright) is confirmed, strict action will be taken in accordance with university regulations.

*1. If necessary, please attach a link to the generative AI's output, including prompts.

*2. Be aware that your use of generative AI is your own responsibility, and fully consider the impact it may have on your future qualification exam results and the impact on the patients you treat and for whom you are accountable.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/7 (4/8)	Guidance, Exercises using Python, NumPy, Jupyter. About system installation according to the learning environment.	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/	H. Nishiyama
2	10/14 (4/15)	AI & Machine Learning & Deep Learning. Part 1. About 3 steps of machine learning model About error function, steepest descent method, meaning and importance of differentiable function.	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/ Specified textbook [1]: Chapter 1-1, 1-2 (p. 15-60)	H. Nishiyama
3	10/21 (4/22)	AI & Machine Learning & Deep Learning. Part 2. About neural networks, deep learning, classification problems, maximum likelihood estimation, logistic regression	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/ Specified textbook [1]: Chapter 1-3, 2-1-2 (p. 61-89)	H. Nishiyama
4	10/28 (5/13)	AI & Machine Learning & Deep Learning. Part 3. About learning by least squares method	Do the exercises of the day.	H. Nishiyama

		(polynomial approximation, regression curve), and differences between model selection bias and overfitting	https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/ Specified textbook [1]: Chapter 2-1-3 (p.90-94)	
5	11/4 (5/20)	AI & Machine Learning & Deep Learning. Part 4. About softmax, minibatch, and stochastic gradient descent method.	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/ Specified textbook [1]: Chapter 2-2 (p.95-118)	H. Nishiyama
6	11/11 (5/27)	AI & Machine Learning & Deep Learning. Part 5. About neural networks, activation functions, hidden layers, and the difference between single-layer and multi-layer.	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/ Specified textbook [1]: Chapter 3 (p.119-156)	H. Nishiyama
7	11/18 (6/3)	About the Machine and Deep Learning System and image diagnosis. Part 1. About convolution filters, pooling layers, image classification by features / features variables, and dynamic filter learning	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/ Specified textbook [1]: Chapter 4 (p.157-198)	H. Nishiyama
8	11/25 (6/10)	About the Machine and Deep Learning System and image diagnosis. Part 2. About multi-layered convolution filters, creating automatic handwriting recognition systems, and heatmaps	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/ Specified textbook [1]: Chapter 5.1-5.3.1 (p.199-234)	H. Nishiyama
9	12/2 (6/17)	About the Machine and Deep Learning System and image diagnosis. Part 3. About autoencoder and anomaly detection	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/ Specified textbook [1]: Chapter 5.3.2 (p.199-234)	H. Nishiyama
10	12/9 (6/24)	About the Machine and Deep Learning System and image diagnosis. Part 4. About image generation by DCGAN	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/ Specified textbook [1]: Chapter 5.3.2 (p.241-252)	H. Nishiyama
11	12/16 (7/1)	About the Machine and Deep Learning System and image diagnosis. Part 5.	Do the exercises of the day.	H. Nishiyama

		About Sony Neural Network Console Exercises with LeNet	https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/ Specified textbook [2]: p. 15-47	
12	12/23 (7/8)	About the Machine and Deep Learning System and image diagnosis. Part 6. About segmentation by U-Net using chest X-ray image	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/ Specified textbook [2]: p. 48-56	H. Nishiyama
13	1/13 (7/15)	About the Machine and Deep Learning System and image diagnosis. Part 7. About GAN (Generative Adversarial Network) using chest X-ray images. About Image generation system (including Stable Diffusion)	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/ Specified textbook [2]: p. 72-78	H. Nishiyama
14	1/20 (7/22)	About the Machine and Deep Learning System and image diagnosis. Part 8. About autoencoder in Neural network console About super-resolution (PLUSE, StyleGAN2) About ViT (Visual Transformer)	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/	H. Nishiyama
15	1/27 (7/29)	About the Machine and Deep Learning System and image diagnosis, summary. About the difference between the features captured by artificial intelligence and the features captured by humans in "image recognition" About the Adversarial example About the limits of deep learning About the difference between "diagnosis support" and "diagnosis" by artificial intelligence About using for other than images About OECD, and Japanese Law	Do the exercises of the day. https://www5.dent.niigata-u.ac.jp/~nisiyama/grad/	H. Nishiyama
16	2/3 (8/5)	Examination multi-choice objective test	Review of the course	H. Nishiyama

【Evaluation】

The evaluation is performed by the multi-choice objective test (60%) and exercise submissions (40%).

The exam will be conducted using the "Mini Test" function of the campus web (campus portal) information system. Please note that all materials, online or offline, will be allowed to be referenced in order to assess practical skills rather than memorization. However, the act of inquiring or asking questions to others (including ChatGPT) and exchanging information between examinees are prohibited.

【Media】

The main text is Japanese. Here are some similar English texts, but none are the same. The content and

materials of the assignment study will be presented in English as in Course A.

If you find it difficult to take the course in Japanese, please obtain a certificate of completion from MATLAB online "Self-Paced Courses" "AI, Machine Learning, and Deep Learning". This certificate of completion will be used in place of the 1st to 14th classes. (<https://matlabacademy.mathworks.com/en/>)

Specified textbook [1]:TensorFlowとKerasで動かしながら学ぶ ディープラーニングの仕組み ~畳み込みニューラルネットワーク徹底解説~ (マイナビ / 中井悦司) 本体2,690円 (税別)

*There are no English-language books corresponding to the Japanese version, but similar books as follows: Machine Learning with PyTorch and Scikit-Learn: Develop Machine Learning and Deep Learning Models with Python. (Packt Publishing / by Raschka, S., Liu, Y. & Mirjalili, V.) Paperback: about \$30 online shop.

Specified textbook [2]:医療AIとディープラーニングシリーズ 標準 医用画像のためのディープラーニング: 入門編 (オーム社 / 福岡 大輔; 著・編集, 藤田 広志; 監修) 本体2,800円 (税別)

*This is a Japanese book specialized for Sony's neural network console system. There is no corresponding English book, but there are English-related materials at the following site.

<https://dl.sony.com/>

<https://support.dl.sony.com/>

【Reference book】

1. Main reference books

- 1) Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow: Concepts, Tools, and Techniques to Build Intelligent Systems, Third Edition (O'Reilly Media / by Aurélien Géron) Paperback: about \$78.71 online shop.
- 2) Deep Learning with Python, Third Edition (Manning Publications / Francois Chollet) Paperback: about \$73 online shop.
- 3) Jupyter Notebook 101 (Bowker / by Michael Driscoll) Paperback: about \$24.52 online shop.
- 4) Deep Learning for Medical Image Analysis (The MICCAI Society book Series) 2nd Edition (Academic Press / S. Kevin Zhou, Hayit Greenspan, Dinggang Shen) Paperback: about \$123 online shop.

2. Recommended books and site (URL)

- 1) Probabilistic Machine Learning: An Introduction (Adaptive Computation and Machine Learning series) (The MIT Press / Kevin P. Murphy) Hardcover: about \$116.86
- 2) Probabilistic Machine Learning: Advanced Topics (Adaptive Computation and Machine Learning series) (The MIT Press / Kevin P. Murphy) Hardcover: about \$135.22
- 3) AI-first Healthcare: AI Applications in the Business and Clinical Management of Health (O'Reilly Media / by Kerrie L. Holley, Siupo Becker) Paperback: about \$53.00 online shop.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5931	1	Wed/3・A	2	9114	Lecture and Practice
260W7931		Wed/6・A			
260W5932	2	Wed/3・B	2	9115	Lecture and Practice
260W7932		Wed/6・B			
Course	Head and neck radiation oncology A, B				
Instructor	Lecturer Katsura Kouji (Div. Oral and dental Radiology, Medical and Dental Hospital)				
Place	Laboratory in Div. Oral and Maxillofacial Radiology				
A					
	<p>【Course outline】 Radiotherapy plays an important role in cancer treatment of the head and neck region including the oral cavity. This course systematically covers the basics of head and neck radiotherapy. This course is taught by an instructor experienced in head and neck radiology.</p> <p>【Course aim】 The head and neck region are complex in function and appearance. Therefore, radiotherapy, which can preserve function and appearance, has become more opportunities of choice in cancer treatment of these regions. Learn about head and neck radiotherapy in a systematic way, from the physics and biology of radiation to the basics of clinical radiation oncology in this course.</p> <p>【Attainment target】 1) To explain the overview of head and neck radiotherapy. 2) To explain the concept of radiotherapy. 3) To explain the protection and safety management in radiotherapy. 4) To explain the physics for radiotherapy. 5) To explain the biology for radiotherapy.</p> <p>【Study method・attention】 Formative evaluation: This course consists of group work and lectures. After each class, there will be a question-and-answer session between the instructor and the students to confirm how much knowledge the students could increase and organize. This course is based on face-to-face class.</p> <p>【Use of generative AI】 In this course, the use of generative AI (e.g., ChatGPT, Gemini, etc.) is conditionally permitted. If you choose to use generative AI, you must comply with the following requirements: If generative AI is used in reports or other assignments, you must clearly indicate the portions where it was used, following standard citation practices. The name and version of the AI must be specified in the format: “with [Name of Generative AI] [Version]” (*1). Do not use the generated content without modification. You must independently verify and revise the accuracy and appropriateness of the information. The student bears full responsibility for the final submitted work (*2). If inappropriate use (such as use beyond the permitted scope or infringement of others’ copyrights) is identified, strict action will be taken in accordance with university regulations. *1. When necessary, attach a link to the generative AI output, including the prompt used. *2. When using generative AI, you must recognize that its use is your own responsibility and carefully consider its potential impact on your future qualification examinations and on patient care.</p>				

【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	4/8	Guidance	Details are instructed in class	K. Katsura
2-6	4/15 4/22 5/13 5/20 5/27	Practice of head and neck radiotherapy • Oral cancer • Pharyngeal cancer • Other cancers • Lymphoma • Palliative radiotherapy	Textbook pp 4~14, pp 26~43, pp 87~92	K. Katsura
7-8	6/3 6/10	Concept of radiotherapy	Textbook pp 119~129.	K. Katsura
9	6/17	Protection and safety management in radiotherapy	Textbook pp 130~139.	K. Katsura
10-12	6/24 7/1 7/8	Physics for radiotherapy • What's a radiotherapy • Radiation treatment planning • Irradiation methods	Textbook pp 142~169.	K. Katsura
13-15	7/15 7/22 7/29	Biology for radiotherapy • Biological theories • Modifications for radiotherapy • Temporal dose distribution for radiotherapy	Textbook pp 177~198.	K. Katsura
16	8/5	Summary and examination	Review the lecture materials for this course.	K. Katsura

【Evaluation】

Summative evaluation (70%): multiple-choice and open-ended tests or presentation. Attitude in the lecture and interest in the field (30%).

【Media】

Easy understanding text for radiotherapy, revised 2nd ed. (Gakken) ISBN_10 : 4-05-520052-8 (JPY 3,520 with tax)

【Reference book】

Cancer • radiotherapy, revised 8th ed. (Gakken) ISBN_10 : 4-05-520052-8 (JPY 36,300 with tax)

【Link】

<https://www.jastro.or.jp/medicalpersonnel/guideline/jastro/2020.html>

B

【Course outline】

Radiotherapy plays an important role in cancer treatment of the head and neck region including the oral cavity. In addition, a correct understanding of radiotherapy and radiation-related adverse events is also essential for oral supportive care in head and neck radiotherapy. This course systematically covers the practice of head and neck radiotherapy and oral supportive care for head and neck radiotherapy patients.

【Course aim】

Recently, cancer can be cured through improved treatment techniques such as radiotherapy. Considering the

patient's quality of life after treatment, radiotherapy, which can preserve function and appearance, has become more opportunities of choice in cancer treatment of head and neck region because the region is complex in function and appearance. On the other hand, several oral adverse events develop during and after radiotherapy and can have a negative impact on patient's quality of life and prognosis. Therefore, dentists who can provide appropriate oral health management are needed. Learn about head and neck radiotherapy and oral supportive care in a systematic way, from the basics to the latest medical knowledge in this course.

【Attainment target】

- 1) To explain the overview of head and neck radiotherapy.
- 2) To explain the protection and safety management in radiotherapy.
- 3) To explain the normal tissue reactions to radiation.
- 4) To explain the radiotherapy for head and neck cancer recommended by the guidelines.
- 5) To explain the adverse events of head and neck radiotherapy and its measures.

【Study method・attention】

Formative evaluation: This course consists of group work and lectures. After each class, there will be a question-and-answer session between the instructor and the students to confirm how much knowledge the students could increase and organize. This course is based on face-to-face class.

【Use of generative AI】

In this course, the use of generative AI (e.g., ChatGPT, Gemini, etc.) is conditionally permitted. If you choose to use generative AI, you must comply with the following requirements:

If generative AI is used in reports or other assignments, you must clearly indicate the portions where it was used, following standard citation practices. The name and version of the AI must be specified in the format: "with [Name of Generative AI] [Version]" (*1).

Do not use the generated content without modification. You must independently verify and revise the accuracy and appropriateness of the information.

The student bears full responsibility for the final submitted work (*2).

If inappropriate use (such as use beyond the permitted scope or infringement of others' copyrights) is identified, strict action will be taken in accordance with university regulations.

*1. When necessary, attach a link to the generative AI output, including the prompt used.

*2. When using generative AI, you must recognize that its use is your own responsibility and carefully consider its potential impact on your future qualification examinations and on patient care.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/7	Guidance	Details are instructed in class.	K. Katsura
2	10/14	Overview of head and neck radiotherapy treatment planning	Textbook 1 pp 2-7	K. Katsura
3	10/21	Risk management for head and neck radiotherapy	Textbook 1 pp 22-28	K. Katsura
4-5	10/28 11/4	Normal tissue reactions • Overviews • Detail practice	Textbook 1 pp 48-59	K. Katsura
6	11/11	Overview of head and neck radiotherapy.	Textbook 1 pp 94-101	K. Katsura
7-12	11/18 11/25	Head and neck radiation therapy recommended by the guidelines	Textbook 1 pp 105-158, pp 306-330	K. Katsura

	12/2 12/9 12/16 12/23	<ul style="list-style-type: none"> • Oral cancer(excluding tongue cancer) • Tongue cancer • Maxillary sinus cancer • Nasopharyngeal cancer • Oropharyngeal cancer • Hypopharyngeal cancer • Lymphoma(including head and neck region) 		
13-15	1/13 1/20 1/27	<p>Adverse events of head and neck radiotherapy and its measures</p> <ul style="list-style-type: none"> • Oral mucositis • Trismus and osteoradionecrosis • Salivary dysfunction 	Textbook 2 pp 99-122, pp 141-150, pp203-224	K. Katsura
16	2/3	Summary and examination	Review the lecture materials for this course.	K. Katsura

【Evaluation】

Summative evaluation (70%): multiple-choice and open-ended tests or presentation. Attitude in the lecture and interest in the field (30%).

【Media】

JASTRO guidelines 2024 for radiotherapy treatment planning (Kanehara) ISBN_978-4-307-07131-4 (JPY 4,950 with tax)

Oral Complications of Cancer and its Management (Nagasueshoten) ISBN_978-4-8160-1328-7 (JPY 9,350 with tax)

【Reference book】

Cancer • radiotherapy, revised 8th ed. (Gakken) ISBN_10 : 4-05-520049-8 (JPY 33,000 with tax)

【Link】

<https://www.jastro.or.jp/medicalpersonnel/guideline/jastro/2020.html>

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5933	1	Fri/3・4・A	2	9114	Practice
260W7933		Fri/6・7・A			
260W5934	2	Fri/3・4・B	2	9115	Practice
260W7934		Fri/6・7・B			
Course	Seminar on Peripheral nerve regeneration A, B				
Instructor	Prof. Naotaka Kishimoto				
Place	A204 Alliance				
A					
<p>【Course outline】 Seminar on peripheral nerve regeneration is to prepare cell extract from two types of stem cells derived from adipose tissue and to evaluate the effect on neural cells</p> <p>【Course aim】 Students will learn the basic techniques of cell culture and understand the characteristics of stem cell derived cell extract and its effect on neural cells.</p> <p>【Attainment target】 Students will explain the basic operation for cell culture. Students will explain how to isolate stem cells. Students will explain how to prepare cell extract.</p> <p>【Study method・attention】 Preparations for the next class will be informed in the previous class. Students can take either A or B courses.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/10	Guidance	Preparations will be informed in the previous class.	Kishimoto	
2	4/17	Handling of cell culture instruments	Preparations will be informed in the previous class.	Kishimoto	
3	4/24	Basic techniques for cell culture -part 1-	Preparations will be informed in the previous class.	Kishimoto	

4	5/1	Basic techniques for cell culture -part 2-	Preparations will be informed in the previous class.	Kishimoto
5	5/15	Isolation of dedifferentiated fat cells	Preparations will be informed in the previous class.	Kishimoto
6	5/22	Preparation of cell extract derived from dedifferentiated fat cells	Preparations will be informed in the previous class.	Kishimoto
7	5/29	Analysis of characteristics of cell extract derived from dedifferentiated fat cells -part 1-	Preparations will be informed in the previous class.	Kishimoto
8	6/5	Analysis of characteristics of cell extract derived from dedifferentiated fat cells -part 2-	Preparations will be informed in the previous class.	Kishimoto
9	6/12	Isolation of adipose-derived stem cells	Preparations will be informed in the previous class.	Kishimoto
10	6/19	Preparation of cell extract derived from adipose-derived stem cells	Preparations will be informed in the previous class.	Kishimoto
11	6/26	Analysis of characteristics of cell extract derived from adipose-derived stem cells -part 1-	Preparations will be informed in the previous class.	Kishimoto
12	7/3	Analysis of characteristics of cell extract derived from adipose-derived stem cells -part 2-	Preparations will be informed in the previous class.	Kishimoto
13	7/10	Analysis of the effect of cell extract on Schwann cells	Preparations will be informed in the previous class.	Kishimoto
14	7/17	Analysis of the effect of cell extract on neurons	Preparations will be informed in the previous class.	Kishimoto
15	7/24	Review of the course and Examination	Preparations will be informed in the previous class.	Kishimoto
<p>【Evaluation】 Oral exam 50%, Report 40%, Learning manner 10%</p>				

【Media】

References will be provided if needed.

【Reference book】

Mature adipocyte-derived dedifferentiated fat cells exhibit multilineage potential. J Cell Physiol. 2008;215(1):210-22.

B**【Course outline】**

Seminar on peripheral nerve regeneration is to prepare cell extract from two types of stem cells derived from adipose tissue and to evaluate the effect on neural cells

【Course aim】

Students will learn the basic techniques of cell culture and understand the characteristics of stem cell derived cell extract and its effect on neural cells.

【Attainment target】

Students will explain the basic operation for cell culture.

Students will explain how to isolate stem cells.

Students will explain how to prepare cell extract.

【Study method・attention】

Preparations for the next class will be informed in the previous class.

Students can take either A or B courses.

【Plan】

No.	Date	Contents	Out-of-Class Study	Instructor
1	10/2	Guidance	Preparations will be informed in the previous class.	Kishimoto
2	10/9	Handling of cell culture instruments	Preparations will be informed in the previous class.	Kishimoto
3	10/16	Basic techniques for cell culture -part 1-	Preparations will be informed in the previous class.	Kishimoto
4	10/23	Basic techniques for cell culture -part 2-	Preparations will be informed in the previous class.	Kishimoto
5	10/30	Isolation of dedifferentiated fat cells	Preparations will be informed in the previous class.	Kishimoto
6	11/13	Preparation of cell extract derived from dedifferentiated fat cells	Preparations will be informed in the previous class.	Kishimoto

7	11/20	Analysis of characteristics of cell extract derived from dedifferentiated fat cells -part 1-	Preparations will be informed in the previous class.	Kishimoto
8	11/27	Analysis of characteristics of cell extract derived from dedifferentiated fat cells -part 2-	Preparations will be informed in the previous class.	Kishimoto
9	12/4	Isolation of adipose-derived stem cells	Preparations will be informed in the previous class.	Kishimoto
10	12/11	Preparation of cell extract derived from adipose-derived stem cells	Preparations will be informed in the previous class.	Kishimoto
11	12/18	Analysis of characteristics of cell extract derived from adipose-derived stem cells -part 1-	Preparations will be informed in the previous class.	Kishimoto
12	12/25	Analysis of characteristics of cell extract derived from adipose-derived stem cells -part 2-	Preparations will be informed in the previous class.	Kishimoto
13	1/8	Analysis of the effect of cell extract on Schwann cells	Preparations will be informed in the previous class.	Kishimoto
14	1/15	Analysis of the effect of cell extract on neurons	Preparations will be informed in the previous class.	Kishimoto
15	1/29	Review of the course and Examination	Preparations will be informed in the previous class.	Kishimoto

【Evaluation】

Oral exam 50%, Report 40%, Learning manner 10%

【Media】

References will be provided if needed.

【Reference book】

Mature adipocyte-derived dedifferentiated fat cells exhibit multilineage potential. J Cell Physiol. 2008;215(1):210-22.

Course No.	Semester	Date	Credit	Academic Field and Standard	Type of class
260W5935	1	Tue/3・A	2	9114	Seminar
260W7935		Tue/4・A			
260W5936	2	Tue/3・B	2	9115	Seminar
260W7936		Tue/4・B			
Course	Dental psychosomatic medicine A, B				
Instructor	Lecturer Yutaka Tanaka				
Place	Department of Dental Anesthesiology, Niigata University Medical and Dental Hospital				
A					
<p>【Course outline】 Psychosomatic dentistry of orofacial pain (basic course)</p> <p>【Course aim】 In this course, the students are requested</p> <ol style="list-style-type: none"> 1. to understand about the psychosomatic state of patients with orofacial pain. 2. to learn of the psychosomatic factors contributing to the orofacial pain. <p>【Attainment target】 After this course, the students should be able to</p> <ul style="list-style-type: none"> ・ understand the psychosomatic examination and analyze the results ・ evaluate psychosomatic factors in the patients with orofacial pain ・ speculate relationship between psychosomatic factors and results of the examinations <p>【Study method・attention】 Preparations for the next class will be informed in the previous class.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.</p>					
【Plan】					
No.	Date	Contents	Out-of-Class Study	Instructor	
1	4/14	Guidance	Preparations will be informed in the previous class.	Yutaka Tanaka	
2-15	4/21 4/28 5/08 (Fri) 5/12 5/19 5/26 6/02	Case observation	Preparations will be informed in the previous class.	Yutaka Tanaka	

	6/09 6/16 6/23 6/30 7/07 7/14 7/21			
16	7/28	Summary and oral examination		Yutaka Tanaka
<p>【Evaluation】 Attendance attitude (20%)、Reports (30%), and oral examination (50%)</p> <p>【Media】 References will be provided if needed.</p> <p>【Reference book】 References will be provided if needed.</p>				
B				
<p>【Course outline】 Psychosomatic dentistry of orofacial pain (advanced course)</p> <p>【Course aim】 In this course, the students are requested</p> <ol style="list-style-type: none"> 1. to analyze the psychosomatic state of patients with orofacial pain 2. to Evaluation of the psychosomatic factor contributing to the orofacial pain <p>【Attainment target】 After this course, the students are expected to be able to</p> <ul style="list-style-type: none"> • use the psychosomatic examination and analyze the results • speculate relationship between psychosomatic factors and results of the examinations • evaluate psychosomatic factors in the patients with orofacial pain. • determine the diagnosis of orofacial pain and dental psychosomatic diagnosis. <p>【Study method・attention】</p> <ol style="list-style-type: none"> 1. Preparations for the next class will be informed in the previous class. <p>It is desirable for students to have taken A course.</p> <p>【Regarding the Use of Generative AI】 In this course, the use of generative AI is strictly prohibited for the creation of reports, exams, and other assignments. Furthermore, it is prohibited to use generative AI for any materials distributed in class. All deliverables must be created based on the student's own knowledge and thinking. Any use of generative AI will be considered cheating and will be dealt with strictly in accordance with school regulations.</p>				
【Plan】				
No.	Date	Contents	Out-of-Class Study	Instructor
1	10/06	Guidance	Preparations will be informed in the previous class.	Yutaka Tanaka

2-11	10/20 10/27 11/06 (Fri) 11/10 11/17 11/24 12/01 12/08 12/15 12/22	Psychosomatic analysis and evaluation	Preparations will be informed in the previous class.	Yutaka Tanaka
12-15	01/12 01/19 01/26 02/02	Evaluation of the psychosomatic factor contribution to the orofacial pain	Preparations will be informed in the previous class.	Yutaka Tanaka
16	02/09	Summary and oral examination		Yutaka Tanaka
<p>【Evaluation】 Attendance attitude (20%)、Reports (30%), and oral examination (50%)</p> <p>【Media】 References will be provided if needed.</p> <p>【Reference book】 References will be provided if needed.</p>				

List of faculty members

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