For entrants in FY 2019

Appended Form 1

Specifications for Major Program

Name of School (Program) [School of Dentistry, Program of Oral Health Sciences]

Program name	(Japanese)	口腔工学プログラム
	(English)	Program for Oral Engineering

1. Degree to be obtained: Bachelor of Oral Health Sciences

2. Overview

The Program for Oral Health Science provides two courses (Course of Oral Science and Course of Oral Engineering) to educate students to become researchers, educators, or highly advanced medical staff in the area of oral health sciences while liaising with other areas such as medicine, engineering, and nursing in a manner based on scientific evidence. The Course of Oral Engineering aims to enable students to acquire knowledge, skills, and attitudes regarding medicine, dentistry, and engineering, from the basics to the cutting-edge, in order to be able to contribute to the fields of dental medicine and medical care with advanced techniques, knowledge, and rich humanity in line with changes in society and future development in the sciences. The educational program provided in this course educates medical staff in fields of highly advanced oral engineering, researchers in areas of oral health science, dental technicians, and educators.

- 3. Diploma policy (policy for awarding degrees and goal of the program)
- Course of Oral Engineering educates students to be able to integrate knowledge and skills regarding dentistry, medicine, and engineering to work in the positions in oral engineering listed below:
- Dental medical staff, with the mindset of researchers, and business people, researchers, and educators with a clinical mindset;
- · Oral engineers who can work in international fields;
- Educators and researchers who can pioneer fields of oral engineering and establish, systematize, and develop them to a highly specialized level; or
- Medical staff, educators, and researchers with a deep devotion to humanity, ethics, a deep human spirit, and a decisive sense of responsibility.
- Based on the aims above, this program will award the degree of bachelor of oral health sciences to students who have acquired the capabilities described below and earned the required credits for the educational course.
- (1) The ability to integrate and exercise knowledge and skills regarding liberal arts subjects,

dental technology, basic dental medicine, clinical dental medicine, adjacent medicine, and related areas of engineering;

- (2) The normative awareness and manner, together with the knowledge, skills, and communication abilities required for medical staff, and a capability for establishing good relationships with patients and staff, and contributing to patient-oriented team dental medicine; and
- (3) The ability to take a leading role in research, education, and clinical fields related to oral engineering, based on state-of-the-art knowledge, advanced skills, information gathering skills, problem solving abilities, an inquiring scientific mind, research capabilities, logical thinking skills, and an ability for lifelong study.
- 4. Curriculum policy (policy for arranging and implementing the curriculum)

To enable students to achieve the targets that are defined for Course of Oral Engineering, the educational courses are organized and implemented according to the following policies:

- (1) In the first year, students study liberal arts subjects, together with students in other schools, in order to acquire a wide-ranging intelligence and establish the intellectual foundation required for dental medical staff. In addition to this, through PBL (Problem Based Learning) in the liberal arts seminars, students also acquire the basic attitude, skills, and knowledge required for self-disciplined study. Furthermore, they acquire fundamental knowledge regarding specialized areas in order to establish the foundation for enhancing professional knowledge and skills.
- (2) From the second to the fourth year, students study specialized subjects to acquire expertise and specialized skills. The specialized subjects include not only those related to dental technicians but also those regarding basic sciences such as life science, dentistry, and adjacent medicine.
- (3) In the third and fourth terms of the third year and in the fourth year, students take the subject "Clinical Practice in Oral Health Engineering" that is provided at the university hospital in order to practice the knowledge and skills that they have acquired up to this time. Students are expected, through this practice, to learn skills and knowledge regarding the tasks of an oral engineer, specialized dental medicine, general dental medicine, and team medicine at a university hospital, and to acquire communication abilities, the normative awareness and manner required for medical staff, social skills, a cooperative mindset, and sound judgment.
- (4) In the third and fourth terms of the third year and in the fourth year, students take the subject "Special Study for Graduation" to acquire information gathering skills, problem solving abilities, research capabilities, logical thinking skills, and presentation skills, and to foster an inquiring scientific mind, enthusiasm, flexibility, creativity, and patience.
- (5) This course provides a bio-dental education program that aims to educate students to foster their scientific, inquiring mind and acquire advanced scholarship and medical techniques that

make them capable of cooperating with experts in various professions.

Academic achievement is evaluated based on the grade scores for the subjects and the achievement level against the target defined for each educational program.

5. Start time and acceptance conditions

In the first year (when the student enters the university)

In the Program for Oral Health Science, the entrance examination is held for each course. This course is organized only for students who enter the Course of Oral Engineering in the Program for Oral Health Science in the School of Dentistry.

6. Obtainable qualifications

Qualification for the national examination for dental technicians (awarded when the student graduates.)

Students who have earned the credit specified separately are eligible to be awarded the degree in cell culture engineering certified by the Japanese Tissue Culture Association; and to obtain the Basic Grade 2 Certificate for Rehabilitation Make-up from Reiko Kazki Co., Ltd.

7. Class subjects and their contents

- * For the class subjects, refer to the subject table in Attached Sheet 1.
- * For the details of the class subjects, refer to the syllabus that is published for each academic year.

8. Academic achievement

The evaluation criteria are specified for each evaluation item for academic achievement, and the achievement level against the criteria is designated at the end of each semester.

The evaluation score for each evaluation item is converted to a numerical value (S = 4, A = 3, B = 2, and C = 1) and the evaluation standard for academic achievement, from when the student entered the university to the end of the last semester, is determined using these values while applying weightings. The evaluation standards consist of three levels, i.e. Excellent, Very Good, and Good.

Achievement evaluation	Numerical conversion
S (Excellent: 90 or more points)	4
A (Very good: 80 - 89 points)	3
B (Good: 70 - 79 points)	2
C (Passed: 60 - 69 points)	1

Academic	Evaluation
achievement	standard
Excellent	3.00 - 4.00
Very Good	2.00 - 2.99
Good	1.00 - 1.99

- * Refer to the relationship between evaluation items and evaluation criteria described in Attached Sheet 2.
- * Refer to the relationship between evaluation items and class subjects described in Attached Sheet 3.
- * Refer to the curriculum map in Attached Sheet 4.

Study achievement in the course (specific knowledge, skills, and attitude that students can obtain)

- O Knowledge & understanding
- 1. Knowledge and understanding related to liberal arts such as human and natural sciences
- 2. Knowledge and understanding related to foreign languages and culture
- 3. Knowledge and understanding related to the principles of medicine
- 4. Knowledge and understanding related to the basic attitude required for dental medical staff (dental technicians)
- 5. Knowledge and understanding related to social dentistry
- 6. Knowledge and understanding related to life science
- 7. Knowledge and understanding related to dental materials and biomaterials
- 8. Knowledge and understanding related to the prevention, medical examination, testing, diagnosis, and treatment of disease in areas of dentistry, and adjacent medicine
- 9. Knowledge and understanding related to the specialized fields of dental technicians (dental technology)
- 10. Knowledge and understanding regarding related engineering (information processing, CAD/CAM, ME (medical engineering), system engineering, and management science)

O Abilities and skills

- 1. Communication skills required for dental medical staff (dental technician)
- 2. Abilities and skills related to life science, material science, and social dentistry
- 3. Abilities, skills, and attitudes related to prevention, medical examination, testing, diagnosis, and treatment of disease in the regions of the mouth, jaw, and face
- 4. Abilities, skills, and attitude required to practically apply techniques in the specialized fields of

dental technicians (dental technology) as a member of a dental medical team

5. Abilities and skills required for applying related engineering (information processing, CAD/CAM, ME (medical engineering), system engineering, and management science)

O Comprehensive capability

- 1. Comprehensive capability and attitude for autonomously and positively studying for the whole of one's life as a member of dental medical staff (dental technician)
- 2. Comprehensive capability and attitude related to testing, diagnosis, treatment, and prevention of disease in the regions of the mouth, jaw, and face
- 3. Comprehensive capability and attitude required to practically apply techniques in the specialized fields of dental technicians (dental technology)
- 4. Comprehensive capability for gathering, selecting, logically organizing, and presenting information
- 5. Comprehensive capability required for problem identification, research planning and promotion, results analysis, and presentation of results in a field related to oral engineering
- 9. Graduation thesis (graduation research) (meaning, student allocation, timing, etc.)
 Students are required to prepare their graduation theses.

1 Purpose

To enable students to establish a foundation of knowledge and techniques required for research, to allow them to make a smooth start in their research at a higher level when they enter the graduate school.

2 Overview

Students are allocated to one of the departments, i.e. Anatomy and Functional Restorations, Medical System Engineering, and Oral Biology and Engineering. The contents of research vary depending on the department. The details of each department are introduced in the class subject "Overview of Basic Dental Sciences." Students join cutting-edge research activities in which the faculty is engaged, or identify a problem regarding oral health sciences by themselves and conduct the research to solve it. They are expected to acquire information gathering skills, problem solving abilities, research capabilities, and logical thinking skills through this process.

3 Student allocation timing and method

Students are allocated to the laboratory in the second semester of the third year. Although the

allocation method is separately defined, a great deal of importance is attached to the wishes of the student.

10. Responsibility

The dental department headquarters council and the faculty council of the School of Dentistry are engaged in the planning and execution of this course. For the processes of evaluation and action for improvement, the dean of the School of Dentistry consults with the dental department headquarters council and the faculty council of the School of Dentistry, and carries out the required actions while taking the results of consultations into consideration.

<Program of Oral Health Sciences, Course of Oral Engineering>

Туре			Subject ty	pe	Required No. of credits	Class Subject	No. of credits	Type of course registration	Term in which the subject is taken (※1)
		Pea	ce Science	Courses	2		2	Elective/requ ired	2nd grade 2 term
	ourses ersity ation	Int	roduction to Educa	o University tion	2	Introduction to University Education	2	Required	1 term
	Basic Courses in University Education	In	troductory: First-Year	Seminar for	2	Introductory Seminar for First-Year Students	2	Required	1 term
					4	More than 2 subjects and 4 credit from Courses in Arts and Humanities/Social Sciences	1or2	Elective/requ ired	1, 3 term
			Area Co	ourses	2	General Health and Oral Sciences I	2	Required	2 term
					2	General Health and Oral Sciences II	2	Required	4 term
				Basic English	2	Basic English Usage I	1	Required	Intensive lecture
				Usage	2	Basic English Usage II	1	Nequired	Intensive lecture
	Common Subjects	anguages	English	Communicatio	2	Communication IA	1	Do avvivo d	1, 2 term
	Sub	angn	(※2)	n I	2	Communication IB	1	Required	i, z term
	nom	ign L		Communicatio	0	Communication IIA	1	Demissed	2 4 +
	Con	Foreign		n II	2	Communication IIB	1	Required	3, 4 term
cts		Non-English Foreign Languages			4	Foreign Languages: Basic Studies I, II	1	Elective/requ	1, 2 term
Subjects			Languages (Choose 1 language from German, French, Chinese)		4	Foreign Languages: Basic Studies III, IV	1	ired	3, 4 term
			Information	Carrea	2	Elements of Information Literacy	2	Elective/requ	1 term
Education			Information	Courses	2	Exercise in Information Literacy	2	ired (※3)	3 term
		Hea	alth and Spo	orts Courses	2		1又は2	Elective/requ ired	1~4 term
ral Arts					2	Psychology for Medical Care Workers	2	Required (※4)	4 term
Libera					2	Development of International Collaboration in Medical Science	2	Required	1 term
_						Foundation biology for life science(%6)	2		1 term
						Cell Science	2	Elective/requ ired	3 term
						Anatomy for Understanding Human Being I	1	(※ 5)	3 term
					4	Anatomy for Understanding Human Being II	1		4 term
		Foundat		ourses	·	General Chemistry	2	Elective/required (※5)	2 term
					Foundation physics for life science(%6)	2	Elective/requ	2 term	
					Fundamental Physics I	2	ired (※5)	3 term	
				2	Basic Calculus or Foundation Mathematics for Life science (※6)	2	Required	1or2 term	
					2	Basic Linear Algebra	2	Required	4 term
					0	Statistics	2	Elective/requ	4 term
					2	Other Foundation Courses subject	1or2	ired (※7)	
			Total		42				

- ※1: If there is no annual statement in the table, you should take it in the first year. If they have failed to earn the credit in the term, it is allowed to take the subject after the term. It is required to confirm the semester in which the subject is provided in the class schedule for liberal arts education subjects that is published every academic year, because some subjects might be provided in a term other than that which is shown in this document.
- ※2: The credit for "Field Research in the English-speaking World" that is earned through such activities as a short-term study abroad, and that for "Online English Seminar I•II•III" that is earned through a program of self-study, are accepted as the credit for English required for graduation (8 credits). Achievement in a foreign language skill test and language training might be accepted as a credit. For the details, refer to the description regarding English subjects in liberal arts education and the item "Credit based on Achievement in Foreign Language Skill Test" in the Students Handbook.
- *3: It is required to take the subject "Elements of Information Literacy" that is provided in the first semester of the first year. Only when failing to earn the credit for "Elements of Information Literacy" is it allowed to take the subject "Exercise in Information Literacy" that is provided in the second semester.
- *4: Only when failing to earn the credit for "Psychology for Medical Care Workers" is the credit for the subject "Psychology A" or "Psychology B" accepted as that for the information subjects required for graduation (2 credits).
- 3: It is required to choose two groups from the subject groups of biology, chemistry, and physics and to earn credit for one subject for each chosen group.
- X6: The subjects for which credit is required to be earned are specified in the School of Dentistry. The credit for any subject that is not specified is not accepted as the credit required for graduation.
- ※7: It is required to take the subject "Statistics." Only when failing to earn the credit for "Statistics" is it allowed to substitute the credit for another disciplinary subject for it.

⟨Program of Oral Health Sciences Course of Oral Engineering⟩

			Minimum No.	No. of	credits	in eac	h acade	emic y	ear /	semes	sters	
Subj		Class Subject	of credits	1st (grade	2nd	grade	3rd	grade	4th	grade	Remarks
typ	Je		required	1	2	3	4	5	6	7	8	
			2	2								
		◎ Oral Anatomy	2			2						
		○ Histology and Oral Histology	1			1						
		○ Practice on Oral AnatomyI	1			1						
		○ Practice on Oral AnatomyII	1				1					
	es		2			2						
	Courses	Practice on Stmatognathic System and Function	1			1						
	ŭ	Overview of Basic Dental Sciences	2	2								
	ize	○ Physiology and Oral Physiology	2		2							
	ial	Pharmacology and Dental Pharmacology	2			2						
	Specialized	◎ Microbiology and Oral Microbiology	2			2						
			2			2						
	Basic	Immunology	1			1						
	Щ	Oral Health	2			2						
		⊙ Social Dentistry	1				1					
		Clinical Medicine	2					2				
		Medical ethics	1			1	<u> </u>	Ť	<u> </u>			
		Basic Biochemistry	2			2	<u> </u>					
		Oral Surgery and Anesthesiology	1			١		1				
		Oral Surgery and Anesthesiology	1					1				
		© Endodontorogy	1				1					
		© Periodontology	1				1					
		© Team Care for Oral Health	1					1				
Ø		Dentistry for Persons with Disabilities	2					2				
ect		© Lifestyle-related Dentistry /Geriatric Dentistr						2				
iub j		Laws and Regulations for Dental technicians	1					2		1		
on S		Oral Health Management B	1					1		1		
atio		Medical Informatics	2				2	<u> </u>		1		
duca		Curriculum design of dental hygienists and denta						1	1	1		
Specialized Education Subjects		Health Science on Sports Dentistry and Temporom.						1				
ize		Dental Material	1			1		1				
ial		© Biomaterials	1			1						
pec		© Practice on Biomaterial	1			1						
S		© Practice on Applied Biomaterial	1			1					1	
	es		2			2			<u> </u>		1	
	Courses	© Practice on Precision Casting Science	1				1		<u> </u>			
	S	© CAD/CAM System Engineering	1		1		Ţ		<u> </u>			
	zed	Medical System Engineering	1		1			1				
	ali	Practice of Information System Engineering	1			1		1				
	Specialized	© Practical Training on Digital Dentistry	1			1			1			
	Sr	© Overview of Oral Engineering	2					2	1			
		Medical Equipment A	1				1					
		© Pediatric Dentistry	1				1	1				
		© Practice of Pediatric Dentistry	1					1	1			
		© Orthodontics	2					2	1			
		© Practice of Orthodontics						2	1			
		© Practice of Orthodontics	1				<u> </u>		1 1			
		© Crown Restoration and Health Engineering	1		1				1			
		© Crown Restoration and Health Engineering	2		1	2	<u> </u>					
							1					
		© Crown Restoration and Health Engineering	1			1	1	1		1		
		© Practice in Crown Restoration and Health Engine	1	}		1	-1	-		-		
		© Practice in Crown Restoration and Health Engine		}		1	1	-		-		
		© Practice in Crown Restoration and Health Engine	1	}		1	1	-1		-		
		© Practice in Crown Restoration and Health Engine	1	}	<u> </u>	1	<u> </u>	1		-		
		© Practice in Crown Restoration and Health Engine		}		1		1		-		
		Practice in Crown Restoration and Health Engineering	n 1	<u> </u>	<u> </u>	<u> </u>	<u> </u>	1	<u> </u>	<u> </u>		

			Minimum No.	No. of	credits	in eacl	n acade	mic y	ear /	semes	sters	
Sub	ject ne	Class Subject	of credits	1st g	grade	2nd	grade	3rd g	grade	4th	grade	Remarks
cy	pc		required	1	2	3	4	5	6	7	8	
		O Practice in Crown Restoration and Health Engineerin	1					1				
		O Practice in Crown Restoration and Health Enginee	1								1	
		○ Removable Denture and Health Engineering	2		2							
		○ Removable Denture and Health Engineering	2			2						
		O Practice of removable denture and health	2				2					
		O Practice of removable denture and health	2				2					
ts		O Practice of removable denture and health	1					1				
Subjects		◎ Practice of removable denture and health	1					1				
	Courses	◎ Practice of removable denture and health	1						1			
Education	our	◎ Practice of removable denture and health	1								1	
cat		◎ Esthetic Dentistry	1				1					
Edu	Specialized	O Practice on Medical Design and Engineering	1								1	
peg	cia	O Practice of Oral Process Engineering	1								1	
Specialized	Spe	◎ Clinical Practice in Oral Health Engineering	13						1	6	6	
ecia		◎ Medical Design Engineering	1						1			
Spe		◎ Medical Design Engineering	1						1			
		O Disaster Dentistry and Forensic Odontology	1						1			
		O Dysphagia Rehabilitation	1					1				
		◎ Special Study for Graduation	9						6	2	1	
		Special Course in Rehabilitation Make Up	1					1				
		◎ Research Start-Up	1				1					
		O Practice of Biodental English	2					2				
		Total	113	4	6	27	17	23	15	9	12	excluding elective subjects

Subjects marked with @ indicates required subjects

Necessary credits for graduation: 155 credits

Liberal Arts Education Subjects		Specialized Education Subjects	
Peace Science Courses	2credits	Basic Specialized Courses	24credits
Basic Courses in University Educat	4credits	Specialized Courses	89credits
Common subjects			
Area Courses	8credits		
Foreign Languages			
English	6credits		
Non-English Foreign Languages	4credits		
Information Courses	2credits		
Health and Sports Courses	2credits		
Foundation Courses	14credits		

Liberal Arts Education Subjects 42credits Specialized Education Subjects 113credits

Academic achievements of Course of Oral Engineering

Relationships between the evaluation items and evaluation criteria

		Academic achievements		Evaluation criteria	
		Evaluation items	Excellent	Very Good	Good
	(1)	Knowledge and understanding of liberal arts such as humanities and natural science	Being able to correctly explain all contents of each subject, and develop them deepening the learning.		Being able to explain almost all contents of each subject.
	(2)	The knowledge and understanding on foreign languages and culture	Being able to correctly explain all contents of each subject, and develop them deepening the learning.		Being able to explain almost all contents of each subject.
		Knowledge and understanding on principles of medicine	Being able to correctly explain all contents of each subject, and develop them deepening the learning.	contents of each subject.	Being able to explain almost all contents of each subject.
Understanding	(4)	Knowledge and understanding of basic behavior as a dental professional (a dental technician)	Being able to correctly explain all contents of each subject, and develop them deepening the learning.	Being able to correctly explain all contents of each subject.	Being able to explain almost all contents of each subject.
nderst		Knowledge and understanding of social dentistry	Being able to correctly explain all contents of each subject, and develop them deepening the learning.	Being able to correctly explain all contents of each subject.	Being able to explain almost all contents of each subject.
and U	(6)	Knowledge and understanding of life science		contents of each subject.	Being able to explain almost all contents of each subject.
	(7)	Knowledge and understanding of dental materials and biomaterials		contents of each subject.	Being able to explain almost all contents of each subject.
Knowledge	(8)	Knowledge and understanding of diseae prevention, treatment, diagnosis, and medical check-up concerning dentistry and other related studies	Being able to correctly explain all contents of each subject, and develop them deepening the learning.	Being able to correctly explain all contents of each subject.	Being able to explain almost all contents of each subject.
	(9)	Understanding and knowledge of dental technician (dental techonology) The knowledge and understanding on related engineering (information processing, CAD/CAM, ME(medical engineering), system engineering, management)	Being able to correctly explain all contents of each subject, and develop them deepening the learning. Being able to correctly explain all contents of each subject, and develop them deepening the learning.	contents of each subject.	Being able to explain almost all contents of each subject. Being able to explain almost all contents of each subject.
	(1)	Communication skills as a dental professional (a dental technician)	In addition, with regard to reports, to be able to	To attend hands-on training with good attitudes. Also, to further develop what students learn in the training based on principles. In addition, to be able to consider phenomena subjectively in reports.	To be able to develop what studen learn in hands-on training. Also, to attend these activities with good attitudes. Also, to be able to describe phenomena subjectively.
		Abilities and skills concerning life science, materials technology, and social dentistry	time. Also, participate proactively in these activities, intending to further develop studies. In addition, with regard to reports, to be able to	students learn in the training based on principles. In addition, to be able to	To be able to develop what studen learn in hands-on training. Also, to attend these activities with good attitudes. Also, to be able to describe phenomena subjectively.
Abilities and Skills		The ability skills and attitude related to prevention examination diagnosis treatment of diseases in oral maxillofacial region	In addition, with regard to reports, to be able to	To attend hands-on training with good attitudes. Also, to further develop what students learn in the training based on principles. In addition, to be able to consider phenomena subjectively in reports.	To be able to develop what studen learn in hands-on training. Also, to attend these activities with good attitudes. Also, to be able to describe phenomena subjectively.
		The capacity and attitude necessary for practicing specialized fields of dental technicians (dental technique) as a dental team	In addition, with regard to reports, to be able to	principles. In addition, to be able to	To be able to develop what studen learn in hands—on training. Also, to attend these activities with good attitudes. Also, to be able to describe phenomena subjectively.
	(5)	The ability and skills to apply related engineering (information processing, CAD/CAM, ME(medical engineering), system engineering, management, biotechnology)	time. Also, participate proactively in these activities, intending to further develop studies. In addition, with regard to reports, to be able to	To attend hands-on training with good attitudes. Also, to further develop what students learn in the training based on principles. In addition, to be able to consider phenomena subjectively in reports.	To be able to develop what studen learn in hands-on training. Also, to attend these activities with good attitudes. Also, to be able to describe phenomena subjectively.
		Comprehensive learning ability and behavior as a dentist, which is to voluntarily learn over a course of life	As a dental technician, to be able to learn independently, proactively, and continuously.		As a dental technician, to be able t learn independently.
Abilities		The general ability and attitude in related to investigation, diagnosis, treatment and prevention in oral maxillofacial region	investigation, diagnosis, treatment and prevention in oral•maxillofacial region and make an appropriate action and judgement.	related to investigation, diagnosis, treatment and prevention in oral•	Being able to generalize knowledge in related to investigation, diagnosi treatment and prevention in oral maxillofacial region.
Comprehensive /	(3)	necessary for practicing specialized fields of dental technicians (dental technique) as a dental team	Being able to conduct dental techniques thinking of necessary needs and encouraging appropriately based on understanding each professional roles.	Being able to conduct dental techniques encouraging appropriately based on understanding each professional roles.	Being able to conduct dental techniques acknowledging being a member of a team
Compr	(4)	Comprehensive ability to separate necessary and unnecessary information, summarize and output it	analyze required data. After that process, to be able to extract problems, consider solutions and present them.	After collecting, logically summarizing and analyzing information, to be able to output it with speculation.	To be able to output information which are collected and summarize
	(5)	The general ability necessary to discover the issues on oral engineering and conduct research planning promotion result analysis result presentation	plan •promote the research, as well as analyze	Being able to discover oral engineering issues and plan •promote the research, as well as present the results.	Being able to plan present the research on oral engineering issues

Students are expected to form the academic foundation required for specialized education, study wide range of subjects regarding human and social sciences and foreign languages, acquire knowledge, and foster an intellectual curiosity and the ability to take action. In addition, they are expected to acquire

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Subject type	Class Subject	credits	registration	semester	dvalues of	Weighte dvalues	dvalues of	Weighte dvalues	dvalues of	Weighte d	dvalues of	Weighte dvalues	dvalues World dv	eighte dvalues values of	Weighte dvalues	dvalues of	Weighte dvalues	dvalues of	Weighte dvalues	dvalues of	Weighte dvalues	dvalues of	Weighte d	dvalues World	leighte dv	lvalues of	Weighte dvalues	dvalues Weig of dvalu	nte dvalues es of	Weighte dvalues	Weighte dvalues Weig of dvalu	hte dvalue ues of	Weighte dvalues	dvalues of	Weighte dvalues	dvalues of	Weighte dvalues	dvalues of	Weighte dvalues	values Weig of dval	thte leva	iluati
						s evaluati	evaluati i on item	s evaluati	evaluati i on items	evaluati o	n items	evaluati	evaluati of on items ev	evaluati on item	s evaluati	evaluati on items	evaluati	evaluati on items	evaluati	on items	evaluati	evaluati on items	evaluati o	on items ev	valuati or	valuati n items	evaluati	evaluati of on items evalu	evaluati ati on item	s evaluati	evaluati of on items evalu	evalua uati on itei	ns evaluati	evaluati on items	evaluati	evaluati on items	evaluati	evaluat i on item	s evaluati	evaluati of on items evalu	luati I	ms in
					in the subject		s in the subject	on items	s in the subject	on items ir	n the subject	on items	subject	items in the subject	on items	s in the subject	on items	subject	on items	in the subject	on items	subject	on items ir	n the or subject	n items in	ubject	on items	in the on its	subject	on item	s in the on it subject	ems in the subjec	on items	s in the subject	on items	s in the subject	on item	subject	on items i	n the on its	sub	bject
	Peace Science Courses Basic Courses in University	2	Required	3	100																																					100
	Education		Required		100	1																				-					+											100
Liberal Arts	Foreign Languages	1	Required				100	1																																		100
Education Subjects	Information Courses	2	Required	1,2	100																	100	1	_							+											100
	Area Courses	8	Required	1,2	100																			\rightarrow		-					\vdash					-						100
	Health and Sports Courses	2	Required	1,2	100																			_		-																100
	Foundation Courses	14	Required	1,2	100	1								100										_		-																100
	Anatomy	2	Required	1										100												-																100
	Oral Anatomy Histology and Oral	2	Required	3										100		-								-		-																100
	Histology	1	Required	3										100	1									_		-			100													100
	Practice on Oral AnatomyI	1	Required	3																				_		-			100													100
	Practice on Oral AnatomyII Stmatognathic System and	1	Required	4																100	1								100	1						-						100
	Function Practice on Stmatognathic	2	Required	3																100	1					-			100							-						100
	System and Function Overview of Basic Dental	1	Required	3							100	-				-										-			100	1												100
	Sciences Physiology and Oral	2	Required	1							100	1		100										_		-																100
	Physiology Pharmacology and Dental	2	Required	2			+							100	1	-		100	_																							100
	Pharmacology Microbiology and Oral	2	Required	3												-		100	1																	-						100
	Microbiology Pathology and Oral	2	Required	3			+							100	1	-																				-						100
	Pathology Pathology	2	Required Free	3			_									-		100	1																	-						100
	Immunology	1	elective Free	3										100	1																					-						100
	Oral Health	2	elective	4														100	1																	-						100
	Social Dentistry	1	Required	5									100	1												-										-						100
	Clinical Medicine	2	Free elective	5														100	1					_		-																100
	Medical ethics	1	Required	3					100	1						_																										100
	Basic Biochemistry	2	Required	3			_							100	1																											100
	Oral Surgery and Anesthesiology	1	Required	5														100	1																							100
Specialized	Oral Surgery and Anesthesiology	1	Required	5														100	1																	_						100
Education Subjects	Endodontorogy	1	Required	4														100	1																							100
	Periodontology	1	Required	4														100	1																							100
	Team Care for Oral Health	1	Required	5							100	1																														100
	Dentistry for Persons with Disabilities	2	Required	5														100	1																							100
	Lifestyle-related Dentistry /Geriatric Dentistry	2	Required	5														100	1																							100
	Laws and Regulations for Dental technicians	1	Required	7							100	1																								1						100
	Oral Health Management B	1	Required	5																								100 1														100
	Medical Informatics	2	Required	4																		100	1																			100
	hygienists and dental	1	Free elective	6																				100	1																	100
	Health Science on Sports Dentistry and Temporomandibular	1	Required	5																									100	1											Ī	100
	Dental Material	1	Required	3												100	1																									100
	Biomaterials		Required													100	1																									100
	Practice on Biomaterial		Required	3																						100	1															100
	Practice on Applied	1	Required	8																									100	1												100
	Biomaterial Precision Casting Science	2	Required	3												100	1																									100
	Practice on Precision	1	Required	4																						100	1															100
	Casting Science CAD/CAM System	1	Required	2																		100	1																			100
	Engineering Medical System Engineering	1	Required	5																		100	1			-+																100
	Practice of Information	1	Required	3																						$\overline{}$					100											100
	System Engineering Practical Training on	1		C																																						
	Digital Dentistry	1	Required	ь																											100	L										100

Eng Me Ped Pra Den Ort	Class Subject Verview of Oral agineering edical Equipment diatric Dentistry actice of Pediatric ntistry	No. of credits	Type of course registration	Weighte dvalues of evaluati	(1) Weighte dvalues of	Weighte dvalues of			3)	(4)		(5)		erstand (6)	ling (7)		(8)		(0)		4		/4\	T ((2) Ab	ilities a	and Ski	(4)	<u> </u>	(5)	(1)	(2		(3)		(4)		(5)	wei;
Ove Eng Me Ped Pra Den Ort	verview of Oral agineering edical Equipment diatric Dentistry actice of Pediatric	No. of credits	course registratio n	Weighte dvalues of evaluati on item	Weighte dvalues								. \						(9)	ı	(10)	l	(1)		, ,		., .	· -	, -		. \	• /					ヘコノ		(a)	ام در
Ove Eng Me Ped Pra Den Ort	verview of Oral agineering edical Equipment diatric Dentistry actice of Pediatric	2		on item	dvalues of	of	VVAIGNTA		M	Voigited IA.	Weight	te	Weighte	W				We			ghte					Weighte	V	Weighte V	Weigh	te			Weighte	W · I · W	eighte	Weig		Weight	e	of eva
Eng Me Ped Pra Den Ort	edical Equipment diatric Dentistry actice of Pediatric		Required 5	subject	on items	on items	dvalues of evaluati on items	on items	evaluati o on items in	n items eva	aluati on iter items in the subjec	ns evaluat on item	e dvalues of evaluati in on items in the subject	on items	on items ev	valuati on n items in t	items eval	uati on tems in	items ev	ralues of evaluati on it items in the subject of th	tems evalu ne on ite	ues of evaluati on item in the subject	ns evaluat on item	ti on items	on items	on items	on items in	on items e	valuati n items in the subject	ms evaluati on items	on items	dvalues of evaluati on items	on items	evaluati or on items in	items ev	alues of evaluati on it items in the subject of the	ems evalue e on ite	es of evaluat ati on iten	ns evaluati on items	ti l+ha
Pra Pra Ort Pra	diatric Dentistry	1																	100	1																				1
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Pra		1	Required 6																									100	1											1
	thodontics	2	Required 5																100	1																				1
D.	actice of Orthodontics	1	Required 6																									100	1]
Pra	actice of Orthodontics	1	Required 6																									100	1											1
Cr	rown Restoration and ealth Engineering	1	Required 2																100	1								\neg]
Cro	rown Restoration and ealth Engineering		Required 3																100	1]
Cro	rown Restoration and ealth Engineering		Required 4																100	1																				1
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Pra Res	gineering actice in Crown storation and Health	1	Required 4												Н				1									100	1											1
Pra Res	actice in Crown estoration and Health	1	Required 4																									100	1											
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Pra Res	actice in Crown estoration and Health	1	Required 5																									100	1											T
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Pra Res	actice in Crown estoration and Health	1	Required 5																									100	1											
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ication Rer	emovable Denture and ealth Engineering	2	Required 2																100	1																				
Rer	emovable Denture and ealth Engineering	2	Required 3																100	1																				t
Pra	actice of removable nture and health	2	Required 4																									100	1											
	actice of removable nture and health	2	Required 4																									100	1											
	actice of removable nture and health	1	Required 5																									100	1											Ī
Pra de	actice of removable nture and health	1	Required 5																									100	1											
	actice of removable nture and health	1	Required 6																									100	1											
Pra de:	actice of removable nture and health	1	Required 8																									100	1											
	thetic Dentistry	1	Required 4														100	1																						
and	actice on Medical Design d Engineering	1	Required 8																														50	1	50	1				
Eng	actice of Oral Process	1	Required 8																														50	1	50	1				1
Неа	inical Practice in Oral ealth Engineering	13	Required 6-8																									30	1				35	1	35	1				4
	edical Design Engineering		Required 6																												50	1				5				
	edical Design Engineering saster Dentistry and		Required 6																												50	1				5	0 1			
For	rensic Odontology	1	Required 6								100	1																												
Dy	sphagia Rehabilitation	1	Required 5														100	1																						
	ecial Study for Graduation	9	Required 6-8																												40	1				3	0 1	30	1	
Rel	ecial Course in Phabilitation Make Up	1	Free elective 5																							100	1													
Res	search Start-Up	1	Required 4																							100	1													1

Sheet 4

Curriculum Map of Course of Oral Engineering

Academi o	c achi evements	1st	grade	2nd	grade	3r d	grade	4th g	grade
Eval ι	uation items	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester
		Basic Courses in University	Area Courses(O)	Peace Science Courses(©)					
Knowledge		Area Courses(O)	Health and Sports Courses(O)						
liberal arts	such as humanities and	Health and Sports Courses(O)	Foundation Courses(©)						
natural scie	ence	Foundation Courses(©)							
		Foreign Languages(⊚)	Foreign Languages(©)			Practice of Biodental English			
	edge and understanding on guages and culture								
Tor Cigit lang	guages and culture								
K l l	anddanatan din n			Medical ethics(◎)					
principles of	and understanding on of medicine								
p									
	and understanding of	Overview of Basic Dental				Team Care for Oral Health(©)		Laws and Regulations for Dental technicians(예)	
	vior as a dental								
protessiona	al (a dental technician)						Disaster Dentistry and Forensic		
Knowledge	and understanding of				Social Dentistry ()		Odontology (O)		
coolal donti									
guin				Microbiology and Oral					
standing		Anatomy(◎)	Physiology and Oral Physiology	Microbiology (©)					
က် Knowledge	and understanding of life		(@)	$Immunology(\Delta)$					
Knowledge science	and anderotanding of me			Basic Biochemistry(◎)					
⊋				Oral Anatomy(③) Histology and Oral Histology					
and				(<u>@</u>)					
Knowledge	and understanding of			Dental Material (②)					
dental mate	erials and biomaterials			Biomaterials (©)					
dental mate				Precision Casting Science(©) Pharmacology and Dental	5 H H 5 H H (8)				
\(\overline{2}\)				Pharmacology (©) Pathology and Oral Pathology	Esthetic Dentistry(©)	Clinical Medicine (Δ) Dentistry for Persons with			
	les and understanding of			(<u>(</u> (<u>(</u>))	Oral Health(△)	Disabilities (⊚) Lifestyle−related Dentistry			
	lge and understanding of prevention, treatment,				Endodontorogy(©)	/Geriatric Dentistry(⊚)			
	s, and medical check-up				Periodontology(©)	Pediatric Dentistry(©)			
	ning dentistry and other					Oral Surgery and Anesthesiology			
	related studies					(の) Oral Surgery and Anesthesiology (^)	1		
						Dysphagia Rehabilitation(©)			
l —			O D : : III III	0, , , , , , , ,		Dyspriagia Noriabilitation (@/			
Understa	anding and knowledge of		Crown Restoration and Health Engineering(©)	Stmatognathic System and Function(③)	Crown Restoration and Health Engineering(⊚)	Orthodontics(©)			
	al technician (dental		Removable Denture and Health Engineering(⊚)	Crown Restoration and Health Engineering(⊚)		Overview of Oral Engineering (③)			
	techonology)			Removable Denture and Health Engineering()					
The knowle	edge and understanding on gineering (information	Information Courses(O)	Information Courses(O)		Medical Equipment A(⊚)	Medical System Engineering(©)			
	, CAD/CAM, ME(medical		CAD/CAMシステム工学(◎)		Medical Informatics(⊚)				
	g), system engineering,								
managemen							Curriculum design of dental		
	ation skills as a dental					Practice of Biodental English	hvøienists and dental		
	al (a dental technician)					(©)			
	nd skills concerning life			Practice on Biomaterial(⊚)	Practice on Precision Casting				
science, ma social denti	aterials technology, and								1
Isocial denti	istry		<u> </u>	<u> </u>	<u> </u>	1	1		

Sheet 4

Curriculum Map of Course of Oral Engineering

	Academic achievements	1st a	grade	2nd	grade	3r d	grade	4th	grade
	Evaluation items	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester	Spring semester	Fall semester
	The ability•skills and attitude related				Research Start-Up (©)	Oral Health Management B(©)			
	to prevention examination					Special Course in Rehabilitation Make Up (Δ)			
	diagnosis treatment of diseases in oral maxillofacial region								
S				Practice on Oral AnatomyI(@)	Practice on Oral AnatomyII(©)	Practice in Crown Restoration and Health Engineering(©)	Practice of Pediatric Dentistry	Clinical Practice in Oral Health Engineering(◎)	Practice on Applied Biomaterial
d Skills				Practice on Stmatognathic System and Function(◎)	Practice in Crown Restoration and Health Engineering(クラウン)!(の)	Practice in Crown Restoration and Health Engineering(⊚)	Practice of removable denture and health(⊚)		Clinical Practice in Oral Health Engineering(©)
es and	The capacity and attitude necessary			Practice in Crown Restoration and Health Engineering(⊚)	Practice in Crown Restoration and Health Engineering(クラウ ン)II(◎)	Practice in Crown Restoration and Health Engineering(⊚)	Clinical Practice in Oral Health Engineering(©)		Practice in Crown Restoration and Health Engineering(⊚)
Abiliti	for practicing specialized fields of dental technicians (dental technique)				Practice of removable denture and health(⊚)	Practice in Crown Restoration and Health Engineering(⊚)	Practice of Orthodontics(©)		Practice of removable denture an health (③)
` 	as a dental team				Practice of removable denture and health(◎)	Practice in Crown Restoration and Health Engineering(⊚)			
ļ						Practice in Crown Restoration and Health Engineering(⊚)			
						Health Science on Sports Dentistry and Temporomandibular ()	Practice of Orthodontics(⊚)		
	The ability and skills to apply related engineering (information processing,			Practice of Information System Engineering(③)			Practical Training on Digital Dentistry(⊚)		
	CAD/CAM, ME(medical engineering),								
	system engineering, management, biotechnology)								
	Comprehensive learning ability and						Medical Design Engineering(⊚)	Special Study for Graduation(©)	Special Study for Graduation (③)
	behavior as a dentist, which is to						Medical Design Engineering(◎)		
	voluntarily learn over a course of life						Special Study for Graduation (⊚)		
es es	The general ability and attitude in related to investigation, diagnosis,						Clinical Practice in Oral Health Engineering(⊚)	Clinical Practice in Oral Health Engineering(©)	Clinical Practice in Oral Health Engineering ()
ilit	treatment and prevention in oral maxillofacial region								Practice on Medical Design and Engineering ((a)) Practice of Oral Process
e R	The comprehensive capacity and attitude necessary for practicing						Clinical Practice in Oral Health Engineering(©)	Clinical Practice in Oral Health Engineering(③)	Fingineering (()) Clinical Practice in Oral Health Engineering (())
ehensi √	Itaahniaiana (dantal taahniawa) aa a								Practice on Medical Design and Engineering ((a)) Practice of Oral Process Engineering ((a))
ıre	Comprehensive ability to separate						Medical Design Engineering(⊚)	Special Study for Graduation(©)	Special Study for Graduation (③)
Juc	necessary and unnecessary						Medical Design Engineering(⊚)		
රි	information, summarize and output it						Special Study for Graduation		
	The general ability necessary to discover the issues on oral						Special Study for Graduation (((a))	Special Study for Graduation(©)	Special Study for Graduation (②)
	engineering and conduct research								
	planning promotion result analysis		Liberal Arts Education Subjects	Basic Specialized	Specialized Courses	Special Study for Graduation	(⊚) Required	(O) Elective/required	(Δ) Free elective

Teacher list (Course of Oral Engineering)

Name	Position	Departments	TEL	E-mail
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Hisako Sasahara	Associate Professor or Lecturer	Oral Biology & Engineering	3120	his-his-kes@hiroshima-u.ac.jp