

Department of Dental Laboratory Science

► General Introduction

The Department of Dental Lab. Science was established in 1981. Over the past 29 years, it has produced more than 2,000 graduates who have been educated under the spirit of truth, love and service. Now they contribute to the development of dental lab. science and public health as dental technicians, taking a major role in specialized areas like dental laboratories, dental clinics, dental material companies and research labs. Dental Lab. Science teaches clinical theories and practices required to understand the specialized knowledge of manufacturing technology for dental prostheses and equipments and their development, to produce highly qualified dental technical experts.

► Education Objectives

Our basic goal lies in training a dental technical expert with public and philanthropic spirit grounded on learning of dental technology and the study of the related fields leading a global dental standard.

► Course Descriptions

Category	Seme-ster	Year	Code	Courses	Credit	Hours		Note
						Lecture	practice	
Basic courses	1	Freshman	03091	Basic Dental Morphology	3	3		
Required courses	1	Freshman	03092	Dental Materials	3	3		
Basic courses	2	Freshman	02284	Materials Science and Engineering	3	3		
Required courses	2	Freshman	01372	Applied Dental Materials	3	3		
Elective courses	2	Freshman	03093	Dental Morphology & Practice	3	1	4	
Basic courses	1	sophomore	02582	General Biology	3	3		
			01229	General Chemistry	3	3		
			02257	General Physics	3	3		
			02325	Mathematics	3	3		
Required courses	1	sophomore	03094	Fixed Prosthodontics Technology I	3	3		
			01376	Complete Dentures Technology	3	3		
Elective courses	1	sophomore	01379	Molding Practice	2		4	
			03095	Oral Anatomy	3	3		
			01387	Practice of Dental Morphology	2		4	
			02290	Precision Casting	3	3		
Required courses	2	sophomore	01383	Dental Ceramics	3	3		
Elective courses	2	sophomore	01388	Practice of Complete Dentures Technology	2		4	
			03096	Fixed Prosthodontics Technology II	3	3		
			03189	Practice of Fixed Prosthodontics Technology I	2		4	
			01386	Occlusal Anatomy & Practice	3	1	4	

Elective courses	2	sophomore	01389	Applied Complete Dentures Technology	3	3		
			03102	Dental Instrumentation	3	3		
			03190	Study of Color & Practice	3	2	2	
Required Courses	1	junior	01390	Removable Partial Dentures	3	3		
			01399	Orthodontics Technology	3	3		
Elective courses	1	junior	01393	Practice of Applied Complete Dentures Technology	2		4	
			03191	Practice of Applied Fixed Prosthodontics Technology II	2		4	
			01394	Practice of Dental Ceramics	2		4	
			01400	Applied Dental Ceramics	3	3		
			02030	Removable Partial Denture Design	2		4	
			01377	Biomaterials & Practice	3	2	2	
01391	Occlusion	3	3					
Required Courses	2	junior	03097	Dental Implant Prosthodontics & Practice I	3	2	2	
Elective Courses	2	junior	01401	Removable Partial Dentures Technology	3	3		
			01402	Practice of Removable Partial Dentures Technology	2		4	
			02285	Oral Pathology	3	3		
			01409	Practice of Applied Dental Ceramics	2		4	
			03192	Attachment Technology & Practice	3	2	2	
			02847	Clinical Orthodontic Technology & Practice	3	2	2	
			03193	Practice of Aesthetic Carving I	2		4	
Elective Courses	1	senior	03098	Dental Implant Prosthodontics & Practice II	3	1	4	
			03195	Practice of Applied Removable Partial Dentures Technology	2		4	
			02286	Mechanical Engineering	3	3		
			02031	Materials Property Engineering	3	3		
			01395	Inlay Technology & Practice	3	2	2	
			03099	Practice Complementary to Dentistry I	2		4	
			01695	Field Practice	3		6	
			02849	Clinical Practice I	2		4	
			03194	Practice of Aesthetic Carving II	2		4	
Elective Courses	2	senior	03196	CAD · CAM in Dental Laboratory Technology & Practice	3	2	2	
			03101	Dental Hygiene	3	3		
			01460	Seminar	3	3		
			01869	Public Health Law	3	3		
			03100	Practice Complementary to Dentistry II	2		4	
			01695	Field Practice	3		6	
			02850	Clinical Practice II	2		4	

► Course Descriptions (Special Course for Bachelor Degree)

Category	Semester	Year	Code	Courses	Credit	Hours		Note
						Lecture	practice	
Cultural Core	1	junior	01992	Living English I	3	3		
Cultural Elective	1	junior	02247	Psychological Relationship and Adjustment	3	3		
			01841	Introduction to Information Science	3	3		
			02248	Introduction to First Aids	3	3		
Elective courses	1	junior	02290	Precision Castings	3	3		
			02303	Dental Technology English	3	3		
			02296	Biomaterials	3	3		
			02294	Dental Technology Research Release	3	3		
Cultural Core	2	junior	01836	Christian Thought	3	3		
Cultural Elective	2	junior	01839	Legal Medicine	3	3		
			01837	Introduction to Biomedical Engineering	3	3		
			01840	Basic Oriental Medicine	3	3		
Elective courses	2	junior	02292	Metallurgy	3	3		
			02285	Oral Pathology	3	3		
			02033	Attachment Technology	3	3		
			02863	Research on Articulator	3	3		
Elective courses	1	senior	02293	Telescopic Prosthodontics	3	3		
			02454	Study of Color	3	3		
			02295	Dental Technology Information Management	3	3		
			02297	Clinical Dental Laboratory Tech.	3	3		
			01457	Research Methodology	3	3		
			02896	CAD · CAM in Dental Laboratory Technology	3	3		
Elective courses	2	senior	02284	Materials Science and Engineering	3	3		
			02299	Dental Implant Prosthodontics	3	3		
			02031	Materials Property Engineering	3	3		
			01688	Small business management	3	3		
			02301	Maxillofacial Prosthodontics	3	3		
			01391	Occlusion	3	3		
			03103	Biofunctional Prosthetic System	3	3		

▶ **03091 Basic Dental Morphology**

This course provides the students with the basic knowledge and theory of dental morphology, functions, occlusion, phonetics and development of the tooth.

▶ **03092 Dental Materials**

This course provides the students with the basic knowledge and theory on physical, chemical, and biological properties of materials commonly used in dental practice, such as impression materials, cast materials, dental wax, dental investment, dental alloys, porcelain, denture resins, and dental abrasive materials.

▶ **02284 Material Science and Engineering**

This course provides the students with the basic knowledge of material science—theoretical and principle approach to material characteristics as regards electron, atom, molecule, metallic materials, ceramics, and polymer materials.

▶ **01372 Applied Dental Materials**

This course provides the students with the basic science on physical, chemical and biological properties of renewed materials such as organic and inorganic materials, metallic materials, composite resin, glass ceramic, and implant materials.

▶ **03093 Dental Morphology & Practice**

The students will learn the functions of erupted deciduous teeth and permanent teeth within mouth, the anatomical structure and morphological properties of crown and root. In addition, the students will practice sculpturing with paraffin wax or plaster block in order to study morphology.

▶ **02582 General Biology**

This course provides the students with the basic knowledges on the Biomolecule characteristics and the structure, function, metabolism, heredity and origination of cell.

▶ **01229 General Chemistry**

The students will understand fundamental chemical principles such as the mutual change among the materials and their composition and properties.

▶ **02257 General Physics**

This course provides the students with the basic knowledges the concepts of modern physics in order to understand quantum mechanics, atomic, molecular, crystalline structures.

▶ **02325 Mathematics**

The students will learn linear algebra and calculus which are minimum subjects necessary for understanding the engineering principles.

▶ **03094 Fixed Prosthodontics Technology I**

This course provides students with the fundamental knowledge of impression, working cast, waxing up, investing, burn out, casting, and polishing for the production of dental crown and bridges.

▶ **01376 Complete Dentures Technology**

The students will acquire as follows: (1) the basic knowledge with respect to complete dentures used to rehabilitate the functions of edentulous patients;(2) tray casting, model casting, template and splint casting in process of creating complete dentures;(3) the basic principles and means as regards arranging artificial teeth

▶ **01379 Molding Practice**

This course provides knowledge of the elements and principles to ideas of molding, the disciples will undergo fundamental course of morphology, form a wide variety of molding background and raise the capabilities abreast of theory and training.

▶ **03095 Oral Anatomy**

This course provides students with the basic knowledge and theory for prosthodontics and bio-medical engineering, understanding the anatomical structures and functions mainly concerning to teeth and their surrounding tissues in the mouth.

▶ **01387 Practice of Dental Morphology**

This course provides the students with the comprehensive knowledge of dental morphology and natural shape of teeth in various carving methods.

▶ **02290 Precision Casting**

This course enables the students to acquire theories about precision casting requiring accuracy and fundamentals and instructions of small equipment and instruments used in process of casting.

▶ **01383 Dental Ceramics**

This course provides students with the basic knowledge of dental ceramic prosthesis. This deal with all aspects of PFM restorations include porcelain fused metal crown and all ceramic crown.

▶ **01388 Practice of Complete Dentures Technology**

This course is a subject of dentistry that is concerned with study of manufacturing custom tray, base plate, occlusion rim, mounting the articulators, and 3)the method of artificial teeth arrangement with practical manufacturing of complete dentures.

▶ **03096 Fixed Prosthodontics Technology II**

This course provides students with the fundamental knowledge of dental crown and bridge. such as partial veneered crown, acrylic resin jacket crown, porcelain fused metal crown, composite resin veneered metal crown, and all ceramic crown.

▶ **03189 Practice of Fixed Prosthodontics Technology I**

This course provides the students with the knowledge of working model, wax patterning, investing, burn-out, casting, and polishing by repeated practices.

▶ **01386 Occlusal Anatomy & Practice**

The students will understand the fundamental concepts of necessary occlusion and study the theories of

forming functional occlusal surface. Hence, they will understand morphological characteristics by means to reconstruct the restorations with different colors when fabricating them.

▶ **01389 Applied Complete Dentures Technology**

The students will acquire the methods of resin processing and polishing, repairing complete dentures in course of fabricating complete dentures, and theories and fabrication of special dentures.

▶ **03102 Dental Instrumentation**

The students will learn how to maximize cost-saving effects by acquiring the knowledge of the structure, instructions and management of equipment used to fabricate the dental restorations and dental instruments.

▶ **03190 Study of Color & Practice**

The students will understand the concepts and essential research in relation to color. Moreover, they will understand the colors of teeth and raise the ability to perceive the colors.

▶ **01390 Removable Partial Dentures**

This course involves basic theories related to removable partial dentures like the structure and functions of removable denture, its shape and objective of fabrication, and means of classification.

▶ **01399 Orthodontics Technology**

This course is concerned with the corrective treatment of malocclusion, i.e. the students will study of the outline of orthodontics and the application, purpose, design, manufacturing, materials and appliances of various kinds of movable correctional equipments.

▶ **01393 Practice of Applied Complete Dentures Technology**

The students will acquire the skills of resin processing and polishing in course of fabricating complete dentures and by practices and method to repair and refitting complete dentures.

▶ **03191 Practice of Applied Fixed Prosthodontics Technology II**

This course provides the students with the knowledge of dental crown and bridge. such as partial veneered crown, acrylic resin jacket crown, porcelain fused metal crown, composite resin veneered metal crown, and all ceramic crown by repeated practices.

▶ **01394 Practice of Dental Ceramics**

With a standard model, the students will learn metal structures and procedures of construction and firing of ceramic by practicing, which are upper structure and infrastructure of fabrication of all ceramic crown casting respectively.

▶ **01400 Applied Dental Ceramics**

The students will learn collarless ceramo-metal crown, porcelain laminate crown and porcelain jacket crown in accordance with fabrication of dental ceramic restorations.

▶ **02030 Removable Partial Denture Design**

This course enables the students to acquire the theories and principle with respect to designing partial structures and fabricating anchoring crowns according to basic theories on removable partial denture.

▶ **01377 Biomaterials & Practice**

The students will learn the basic theory on the properties and functions of biomaterials used to fabricate some artificial organs. Also, they will do experiments with reference to physical properties of metallic materials, inorganic materials, and polymer materials.

▶ **01391 Occlusion**

This course covers the concept of occlusion necessary for tooth restorative treatment, orthodontic treatment, and restorative function treatment of oral structures, through the understanding of the functional relationship of structural elements and the study of the connective tissue in occlusion of upper and lower tooth structures.

▶ **03097 Dental Implant Prosthodontics & Practice I**

This course provides comprehensive knowledge of the Dental implant Prosthodontics and practices of dental implant Prosthodontics. This deal with introduction of dental implant, combination mechanism with alveolar bone, and fabrication process of dental restoration. They can experience-by practicing-fabrication of anterior, posterior, and full implant.

▶ **01401 Removable Partial Dentures Technology**

The students will know as follows: (1) The instructions of surveyor involved in fabricating course of removable partial dentures;(2) duplication, investing, firing, casting and effective impression of working model;(3) the ca when arranging artificial teeth;(4) resin process;(5) repairing when damaging removable partial dentures.

▶ **01402 Practice of Removable Partial Dentures Technology**

The students will practise constructing the major elements of removable partial dentures in the study model according to the classifications of sort and function.

▶ **02285 Oral Pathology**

This course involves the mechanism and morphological alteration of diseases. It provides the students to understand how morphological alteration cause functional alteration of patients.

▶ **01409 Practice of Applied Dental Ceramics**

The students will practice fabricating such dental ceramic restorations as collarless ceramometal crown, porcelain laminate crown and porcelain jacket crown.

▶ **03192 Attachment Technology & Practice**

This course provides students with the basic knowledge and theory of fabrication process of attachment prosthesis such as intracoronal attachment, extracoronal attachment, stud attachment, bar attachment, and auxiliary attachment.

▶ **02847 Clinical Orthodontic Technology & Practice**

The students will understand materials and instruments necessary for fabricating removable partial dentures used to treat malocclusion patients. and, they will get the basic skills of welding and bending orthodontic wire, in addition to the fabrication of orthodontic study model. Theory session study to the fabrication methods of various kinds of orthopedic appliances.

▶ **03193 Practice of Aesthetic Carving I**

This course provides the students with the comprehensive knowledge and practice of the NAT(Natural Anatomy Technique) and NFR(Natural Functional Restoration).

▶ **03098 Dental Implant Prosthodontics & Practice II**

This course provides comprehensive knowledge of the Dental implant Prosthodontics and practices of dental implant Prosthodontics. This deal with introduction of dental implant, combination mechanism with alveolar bone, and fabrication process of dental restoration. They can experience-by practicing-fabrication of anterior, posterior, and full implant.

▶ **03195 Practice of Applied Removable Partial Denture Technology**

The students will practice the process of fabricating removable partial denture in clinical model as follows:(1) application of surveying; (2) duplicating a model; (3) fabricating working model; (4) investing, burn-out, and casting; (5) efficient impression; (6) got-to-knows when arranging artificial teeth; (7) resin process; (8)repairing when removable partial denture is damaged.

▶ **02286 Mechanical Engineering**

This is an introductory course on mechanical engineering. We will study the basic concepts of Material mechanics, Fluid engineering, Thermodynamics, Kinematics, Machine dynamics, and Manufacturing.

▶ **02031 Materials Property Engineering**

This course provides comprehensive knowledge of the materials engineering. This deal with electrical, optical, and magnetic properties of inorganic materials and study what is indispensable for production, research and development of a variety of inorganic materials.

▶ **01395 Inlay Technology & Practice**

This course provides comprehensive knowledge inlay prosthesis and inlay prosthesis for manufacture. This deal with loss of hard tissue of teeth and its concerned theories and fabrication process in general, which are required in course of craft. In addition they will practice fabrication of working model for inlay production, wax patterning, investing, casting, and grinding.

▶ **03099 Practice Complementary to Dentistry I**

This course provides the students with the comprehensive knowledge clinical prosthesis. It includes the orientation of prosthetic clinic, impressions, and articulation of casts for fixed prosthodontics treatment, surveying and RPD design, along with a synopsis of complete dentures.

▶ **01695 Field Practice**

The students will learn a practice course ,which he/she is interested in, at a work site through clinical models. Therefore, field practice enables him/her to raise adaption ability in the field that he/she would like to work in after graduation.

▶ **02849 Clinical Practice I**

This course provides the students with the comprehensive knowledge of the prosthesis to clinical model. this deal with working method and adaptation ability to field practice.

▶ **03194 Practice of Aesthetic Carving II**

This course provides the students with the comprehensive knowledge, practice of the resin block carving and full mouth temporary crown.

▶ **03196 CAD · CAM in Dental Laboratory Technology & Practice**

The students will get to know how to process the patterned image through exclusive software and revive the image of the denture on the computer screen, and then they will understand fabrication system by cutting Ti blocks or ceramic blocks with this data.

▶ **03101 Dental Hygiene**

This course provides the students with the comprehensive knowledge of the dental diseases such as caries and troubles on periodontium and the dental hygiene as regards anti dental diseases.

▶ **01460 Seminar**

The students will put up a presentation about the knowledge and experiences attained through laboratory practices and field practices with reference to fabricating dental restorations and discuss them in order to deepen academic knowledge and practical capabilities

▶ **01869 Public Health Law**

The students are able to understand law in general. The course also helps them to properly understand regulations and laws concerning health care so that they can make a contribution to the enhancement of public health.

▶ **03100 Practice Complementary to DentistryII**

This course provides the students with the comprehensive knowledge clinical prosthesis. It includes the orientation of prosthetic clinic, impressions, and articulation of casts for fixed prosthodontics treatment, surveying and RPD design, along with a synopsis of complete dentures.

▶ **01695 Field Practice**

The students will learn a practice course ,which he/she is interested in, at a work site through clinical models. Therefore, field practice enables him/her to raise adaption ability in the field that he/she would like to work in after graduation.

▶ **02850 Clinical PracticeII**

This course provides the students with the comprehensive knowledge of the prosthesis to clinical model. this deal with working method and adaptation ability to field practice.

Special Course for Bachelor Degree

▶ **01992 Living English I**

This subject is designed to help students better understand cultures whose first language is English and raise skills of communication in the foreign language by making them memorizing English words, idioms and sentences.

▶ **02247 Psychological of Relationship and Adjustment**

An introductory course to the study of human behavior, scanning briefly the stage of human development and focusing on perception, learning, thinking, motivation, individuality and personality. It also touches at each stage in life ; differential effects of wholesome and inadequate development to personality adjustment.

▶ **01841 Introduction to Information Science**

In this rapidly changing society, a variety of computation devices are being used to effectively process and manage a great deal of information. Thus this subject is designed to make students raise skills of information processing using computers and other devices and learn programming languages and tools for making the processing more systematic and effective.

▶ **02248 Introduction to First Aids**

The goal of first aid is to save life, to prevent an injury or illness from worsening, or to help speed recovery. First aid for cardiac arrest, choking, bleeding, minor wounds, and minor soft tissue injuries are discussed in the lecture and practice.

▶ **02290 Precision Castings**

This course enables the students to acquire theories about precision casting requiring accuracy and fundamentals and instructions of small equipment and instruments used in process of casting.

▶ **02303 Dental Technology English**

This course provides knowledge of the dental technology English. this deal with learn vocabulary (terminology) in English so that it can nurse the capabilities of dental technicians.

▶ **02296 Biomaterials**

The students will learn theories on the sorts, properties and functions of biomaterials-metal, inorganic substances and high molecular substances-used to fabricate some artificial organs.

▶ **02294 Dental Technology Research Release**

This course provides knowledge of the dental research. and MS Power Point data necessary for dental technology research release (presentation) bringing them into practical use.

▶ **01836 Christian Thought**

This subject is designed to find the way to coexistence between human and God, clarify the true meaning of human existence and help understand major religions of the world. With the overview of key Christian factors, <Truth, Love, Service>, which are also ideas of this university's foundation, the study describes that such ideas could contribute to establishing better ways of thinking and values of the present generation who will lead the future world.

▶ **01839 Legal Medicine**

This subject is introduction to forensic science and forensic medicine.

▶ **01837 Introduction to Biomedical Engineering**

The aim is to educate intellection and scientific Biomedical engineering research by overall understanding Biomedical engineering conception and Biomedical engineering area.

▶ **01840 Basic Oriental Medicine**

The object of this course is to provide students with the foundations in Oriental medical treatment and the concept of oriental medical thought about the treatment of diseases fundamentally handled only by western medicine.

▶ **02292 Metallurgy**

This course probes into atomic arrangement of metals, observation methods, and unique properties as well as strengthening mechanisms of metals and metallic alloys.

▶ **02285 Oral Pathology**

This course involves the mechanism and morphological alteration of diseases. It provides the students to understand how morphological alteration cause functional alteration of patients.

▶ **02033 Attachment Technology**

This course provides students with the basic knowledge and theory of fabrication process of attachment such as intracoronal attachment, extracoronal attachment, stud attachment, bar attachment, and auxiliary attachment.

▶ **02863 Research on Articulator**

The students will understand elementary structures of various articulators and their mechanism and limitations in a bid to reconstitute movements of the patients' maxillary and mandibular bones and understand the principles of articulators essential for fabricating dentures.

▶ **02293 Telescopic Prosthodontics**

The students will understand the characteristics and principles of telescopic dentures and study precision cutting theories and techniques in this course.

▶ **02454 Study of Color**

The students will understand the concepts and essential research in relation to color. Moreover, they will understand the colors of teeth and raise the ability to perceive the colors.

▶ **02295 Dental Technology Information Management**

This course enables the students to raise the application of internet to come to grips with information society, In particular, they will study methods of internet service for effectively searching and applying terminology of dental technology.

▶ **02297 Clinical Dental Laboratory Tech.**

This course provides the students with the comprehensive knowledge experience of the staff in the field, the students share and study their professional experience.

▶ **01457 Research Methodology**

This course provides the students with the comprehensive knowledge research method this deal with the selection of a topic in papers and making an outline and research on literature about dental technology and collecting and analyzing data.

▶ **02896 CAD • CAM in Dental Laboratory Technology**

The students will get to know how to process the patterned image through exclusive software and revive the image of the denture on the computer screen, and then they will understand fabrication system by cutting Ti blocks or ceramic blocks with this data.

▶ **02284 Materials Science and Engineering**

This course provides the students with the basic knowledge of material science—theoretical and principle approach to material characteristics as regards electron, atom, molecule, metallic materials, ceramics, and polymer materials.

▶ **02299 Dental Implant Prosthodontics**

This course enables the students to understand indications in dental implant, combination mechanism with alveolar bone, and fabrication process of dental restoration. They can experience—by practicing—fabrication of anterior, posterior, and full implant.

▶ **02031 Materials Property Engineering**

The students will understand electrical, optical, and magnetic properties of inorganic materials and study what is indispensable for production, research and development of a variety of inorganic materials.

▶ **01688 Small Business Management**

The students will learn overall knowledge—on management of dental technician office—as regards business organizations, the leadership of entrepreneurs, and legal and cultural environment of business.

▶ **02301 Maxillofacial Prosthodontics**

The students will study the causes and symptoms with respect to trauma, inflamed troubles, surgical treatment before dental prosthesis, troubles in maxillary sinuses, cysts and tumors, temporo-mandibular diseases, salivary glands, and neural diseases and deformations in the maxillofacial areas including teeth and maxillary and mandibular bones.

▶ **01391 Occlusion**

This course covers the concept of occlusion necessary for tooth restorative treatment, orthodontic treatment, and restorative function treatment of oral structures, through the understanding of the functional relationship of structural elements and the study of the connective tissue in occlusion of upper and lower tooth structures.

▶ **03103 Biofunctional prosthetics system**

This course provides the students with the comprehensive knowledge of the biofunctional prosthetics. The process from impression to installation of complete dentures is systemized, and this enables students to study more physiological and functional prosthetics in fabrication of complete dentures in order to restore edentulous patients in aesthetic and functional terms.