



# PROGRAMME INFORMATION MANUAL

DENTAL TECHNOLOGY PROGRAMME

COLLEGE OF APPLIED MEDICAL SCIENCES

KING KHALID UNIVERSITY

## Message by Department Head

*From the desk of Dr Vishwanath Gurumurthy*

The Program of Dental Technology has recorded consistent improvement in its academic, research and placement performance. It offers a innovatively designed program whose curricula is constantly updated to meet the changing requirement of the industry and to meet the needs of major stakeholders.

We believe that our students have been well accepted in their job profiles and have consistently exceeded expectations of the Governmental and corporate world of Dentistry.

During study at the department, the students are encouraged to get hands-on experience in the Dental Hospital environment through internship program in reputed Dental centres. In their curriculum, they are encouraged to take up mini projects to supplement theoretical knowledge with practical experience.

These projects enable them to understand the relevance of working in a group and also help them to realize the finer aspects and importance of teamwork. We also encourage students participate in events organized by college of Applied Medical Sciences and also get involved in activities of social relevance.

With all these inputs one finds our students hardworking, practical-oriented, and effective in any Hospital environment. We have designed our syllabus to strike a balance between professional knowledge and personal skills. We are confident that our current curriculum has enabled the overall development of budding Dental Technologists to come up with the expectations of the present labour market.

The curriculum is taught by a distinguished faculty combining academic excellence and real-world experience with dedication and commitment.

We are encouraged to see many Head of Dental laboratories coming back to our department, which reinforces our belief in the effectiveness of our curriculum and its suitability to meet the dynamic and competitive world of Dental Technology.

With this brief introduction, I welcome you to be a part of our journey towards being a centre of excellence in education, training, and research in the field of Dental Technology.

Dr Vishwanath Gurumurthy  
MDS - Maxillofacial Prosthodontics  
Associate Professor  
Head - Department of Dental Technology

# DENTAL LABORATORY TECHNOLOGY PROGRAM

## MISSION STATEMENT

To produce qualified dental technicians by imparting high quality education, research and innovation in the field of dental technology, creating awareness in the society by disseminating knowledge and promoting optimum health in the region through community service.

The mission of the Dental Laboratory Technology Program in offering its Certificate of Achievement is to provide a high-quality, academically and technically rigorous curriculum, a state-of-the-art laboratory facility, learning activities and laboratory projects carefully designed to prepare students for successful attainment of a Certificate of Achievement in Dental Laboratory Technology and employment in a dental laboratory after the completion of a four-year curriculum.

The Dental Laboratory Technology Program is committed to creating a stimulating educational environment that will develop Dental Technologists who are capable of critical thinking, problem solving, and decision-making. The Program is dedicated to cultivating and demonstrating multicultural and special needs sensitivity towards its students. The Program will prepare graduates eligible to become Certified Dental Technologists by taking the Saudi Licencing written and practical examinations for Allied speciality's.

**PROGRAM GOALS:**

The Dental Technology Program serves its students by:

1. Establish and maintain an environment that ensures a high-quality bachelor level education in the field of dental technology.
2. The students will practice dental technology and practice in outreach and service to uphold the environment of excellence in education, research, engage with all stakeholders to employ, synthesize, preserve, apply and disseminate knowledge that reflect best practice.
3. Build and strengthen strategic partnership with business communities, professional organizations and other constituencies at the local and international level. Evaluate, apply and integrate information related to dental technology practice from the institution to the society level with the best of character and conduct.

## **PROGRAM STUDENT LEARNING OUTCOMES**

The Dental Technology program will prepare students who, upon completing the program, will be assessed on theory ability to:

1. Demonstrate understanding of the fundamental concepts, principles and theories of modern dental technology.
2. Illustrate a sound knowledge of the major areas of modern dental technology.
3. Illustrate knowledge, in a few areas of specialization of the current developments in dental technology.
4. Demonstrate a level of knowledge and understanding sufficient to secure employment or enter and benefit from further instruction in dental technology, through formal higher degree or vocational programs.
5. Promote health improvement and disease prevention through strict infection control protocol during laboratory procedures.
6. Analyze and solve dental technology-based problems.
7. Extend fundamental theory in dental technology to laboratory practice.
8. Work independently and as a team and acquire leadership responsibility.
9. Promote health improvement and disease prevention through strict infection control protocol during laboratory procedures.
10. Develop eminent skills to participate & conduct professional research & community services..
11. Demonstrate the ability to present ideas, plans and data in appropriate written format to sufficiently and effectively communicate with various audiences
12. Effectively use computer software to enhance the smooth performance of dental technology
13. Ability to perform proper treatment under stressful circumstances
14. Coordinate between manual dexterity and knowledge about proper prosthodontics fabrication.

## DENTAL LABORATORY TECHNOLOGY

**BASIC COMPETENCES ACHIVED BY STUDENTS** According to Saudi Commission on Applied Dental speciality's the following are measurable competencies that assess the student's ability to function competently in their role as a dental technologist. Thus, prior to graduation from the Program the student will be able to demonstrate competence in:

### **GENERAL LABORATORY TECHNIQUES**

- *Evaluating impressions*
- *Preparing and evaluating casts*
- *Fabricating custom impression trays*
- *Articulating casts, using non-adjustable and semi-adjustable articulators*
- *Developing functional occlusion on articulated casts*
- *Recognizing variables that affect materials*
- *Various manufacturing methods*

### **COMPLETE DENTURES**

- *Identifying various fabricating methods*
- *Constructing base plates and occlusion rims*
- *Arranging a balanced set-up using anatomical teeth*
- *Contouring denture wax-ups prior to try-in and processing*
- *Flasking, processing and recovery*
- *Remounting procedures*
- *Equilibrating occlusal discrepancies*
- *Finishing and polishing*
- *Using a semi-adjustable articulator during fabrication*
- *Relining and denture repairs*
- *Fabricating surgical templates*

**REMOVABLE PARTIAL DENTURES**

- *Identifying the components of a removable partial denture, including various clasp designs*
- *Applying the principles of survey and design*
- *Performing blockout procedures*
- *Duplicating master casts*
- *Transferring the design*
- *Fabricating wax pattern*
- *Spruing and investing patterns*
- *Burnout and casting RPD frameworks utilizing recognized alloys*
- *Finishing and polishing frameworks*
- *Evaluating the fit of the RPD framework to the master cast*
- *Arranging teeth on the frameworks*
- *Waxing, processing, recovering and finishing removable partial denture bases*
- *Various repair procedures*

**CROWN AND BRIDGE**

- *Preparing and evaluating casts with removable dies*
- *Trimming dies and marking margins utilizing magnification*
- *Identifying various margin and preparation designs and their applications*
- *Developing wax patterns*
- *Spruing and investing patterns.*
- *Burnout and casting restorations*
- *Adjusting occlusal and interproximal contacts*
- *Finishing and polishing restorations*
- *Fabricating multi-unit restorations*
- *Developing functional occlusion on full-arch articulated casts*
- *Soldering as a fabrication/repair procedure*

**DENTAL CERAMICS**

- *Preparing and evaluating casts with removable dies*
- *Recognizing variables that affect materials.*
- *Identifying various fabricating methods*
- *Trimming dies and marking margins utilizing magnification*
- *Identifying various margin and preparation designs and their application*
- *Designing and developing substructure patterns*
- *Processing patterns*
- *Seating ceramic restoration utilizing magnification.*
- *Preparing substructure to receive porcelain.*
- *Applying and firing porcelain to substructure*
- *Contouring fired porcelain*
- *Performing optical external characterization*
- *Designing and fabricating porcelain margins*
- *Demonstrating safe handling of all equipment associated with ceramic restorations.*

**ORTHODONTICS**

- *Recognizing variables that affect materials.*
- *Preparing and evaluating study casts*
- *Identifying the components of orthodontic appliances*
- *Identifying and categorizing types of appliances*
- *Fabricating retainers, space maintainers and tooth moving appliances*
- *Contouring various types of arch wires, clasps and springs*
- *Fabricating, finishing and polishing auto polymerizing resin appliances*
- *Soldering and band placement*
- *Repairing orthodontic appliances*

## **ELIGIBILITY FOR ENTRANCE INTO THE CERTIFICATE OF ACHIEVEMENT IN THE DENTAL LABORATORY TECHNOLOGY PROGRAM**

1. Graduation from a Saudi Arabia accredited high school, with minimum a 2.25 grade point average.
2. Students are graded and allotted university program according to the GPA achieved in school of higher education.

### **PREREQUISITES FOR ENTRY IN THE PROGRAM**

1. Completion of basic medical sciences subjects
2. Should complete basic English language skills
3. Should achieve good GPA scores in basic medical sciences subjects.

### *INFECTON CONTROL GUIDELINES, HEALTH AND SAFETY PROGRAM AND REGULATORY COMPLIANCE*

The prevention of cross contamination and transmission of infection to all persons, including: Patients, Dental Health Care Professionals (DHCP), faculty, students, and non-clinical staff are the professional responsibility of all dental personnel. College of Applied Medical Sciences, King Khalid University and Dental Technology Programs have adopted policies and procedures that represent a comprehensive and practical infection control program, based upon Ministry of Higher Education guidelines (Center for Disease Control), has a comprehensive Health and Safety Program, abides by Occupational Health and Safety Administration regulations, and follows infection control guidelines as set forth by the Ministry Of Health (MOH).

A fundamental principle of an effective infection control program is to exercise care, precautions and effective control techniques that can keep infectious microbes within manageable limits of the body's normal resistance to disease. Individuals at high risk

of infectious diseases (HBV, HCV and HIV) among DHCP are those who perform tasks that might involve contact with blood, blood-contaminated body substances, other body fluids, or sharps should be vaccinated. Vaccination can protect both DHCP and patients from infectious diseases and whenever possible should be completed when DHCP are in training and before they have contact with blood. Compliance with these policies and procedures are an ethical obligation and responsibility of all participants in the delivery of dental care at PCC.

The Dental Laboratory Technology Program is established by King Khalid University, approved by Ministry of Higher Education, Saudi Arabia.

### **Student supporting system.**

- Each student is allotted one staff member as a advisory to guide and solve students enquiry's and problems
- Students can contact department chairman and college dean for any enquiry and problems.
- Student council will happy to guide the students

### **Carrier development and guidance system**

- Carrier council is available to guide the students after completion of program.
- Regular monitoring the student's grade and cancelling is done to improve the grades.
- Suggesting and recommend the students list with good GPA to university committee for post-graduation studies.

### **FINACIAL AID**

King Khalid university will provide required essentials like uniform, textbooks, instrument kit and health care insurances to each students.

King Khalid University have student funds which can issue student stiffen for personal expensive.

University have special student scholarship programs and international tours for eligible students.

## DENTAL LABORATYOY TECHOLOGY

### COURSE SEQUENCES

Level	Course Code	Course Title	Credit Hours	Type of requirements (Institution, College or Department)
Level 1	111 ICI-2	The entrance to the Islamic culture	2	Islamic department
	201-ARAB-2	Arabic language skill	6	Arabic department
	019-ENG-6	Intensive English program (health sciences)	2	English department
	110-CHEM-2	GENERAL CHEMISTRY (HEALTH SCIENCES)	2	Faculty of sciences
Level 2	111 CHEM-3	Organic chemistry (health sciences)	3	Faculty of sciences
	102- PHYS -4	General physics (health sciences)	4	Faculty of medicine
	105 ZOO – 4	Zoology (health sciences)	4	Faculty of sciences
	141- COMM-1	Basics biostatistics	1	Faculty of sciences
Level 3	ICI-2112	Islamic culture 2	2	Islamic department
	ARAB 202	Arabic language skills	2	Dental technology
	DLT 211	Oral anatomy	3	Dental technology
	DLT 212	Dental morphology 1	3	Dental technology
	DLT 213	Introduction to dental technology	4	Dental technology
	DLT 214	Dental materials 1	2	Dental technology
	ICI 3113	Islamic culture – 3	2	Dental technology
	DLT 221	Dental morphology 2	2	Dental technology

<b>Level 4</b>	DLT 224	Infection control	2	Dental technology
	COMP 103	Computer application	3	Dental technology
	DLT 222	Dental materials 2	2	Dental technology
	DLT 223	Complete denture 1	5	Dental technology
<b>Level 5</b>	ICI 4114	ISLAMIC CULTURE 4	2	Dental technology
	DLT 311	Crown bridge 1	5	Dental technology
	DLT 312	Complete denture 2	5	Dental technology
	DLT 313	Partial denture 1	5	Dental technology
<b>Level 6</b>	DLT 321	Crown & bridge 2	4	Dental technology
	DLT 322	Complete denture 3	4	Dental technology
	DLT 323	Partial denture 2	4	Dental technology
	DLT 324	Orthodontics	4	Dental technology
<b>Level 7</b>	DLT 411	Partial denture 3	4	Dental technology
	DLT 412	Dental porcelain 1	4	Dental technology
	DLT 413	Maxillofacial prosthesis	4	Dental technology
	DLT 414	Clinical studies 1	4	Dental technology
<b>Level 8</b>	DLT 421	Dental porcelain 2	4	Dental technology
	DLT 422	Clinical studies 2	4	Dental technology
	DLT 423	New in dental technology	3	Dental technology
	DLT 424	Dental implants	3	Dental technology
	PUH 435	Quality management	2	Dental technology

**Department follows two breaks systems.**

1. After completion of level 2 and level 8.
2. Students can enter to level 3 only after completion of all the courses at level 1 and level 2.
3. Students can enter internship only after completion of all the courses at level 8.
4. Students are eligible to take equal to up to 18 credit hours courses.
5. In level 8 students are allowed to take up to 24 credit hours.

**A CAREER PROFILE**

- Dental Technologists follow dentists' written instructions and make dental prostheses (replacements) for natural teeth that enable patients who have lost some or all of their teeth to eat, chew, talk and smile in a manner that is similar to the way they did before losing their teeth.
- Skill in using small hand instruments, accuracy, artistic ability, and attention to minute detail are the hallmarks of the qualified Dental Technologist.
- The majority of Dental Technologists work in commercial dental laboratories, which on average employ between 3-5 technicians. There are also larger laboratories employing more than 10 technicians and some with more than 100 technicians. Additionally, some dentists employ Dental Technologists in their private dental offices.
- Employment opportunities may also be available in dental schools, hospitals, maxillofacial laboratories, and companies that manufacture dental prosthetic materials. Dental Technology education programs also offer teaching positions for qualified technologists.

- Since most dentists utilize laboratory services, employment opportunities in this field are excellent.
- The American Dental Association has stated, “Dental technicians can earn salaries **equal to personnel in other health care occupations** with similar training and experience” . “Technicians can realize **significant satisfaction** and rewards in commercial laboratories or may **choose to be self- employed** by opening independent laboratories”.
- According to O-Net Online, Dental Laboratory Technicians are listed in the top 10 Hot Technologies involving Computer-Aided-Manufacturing software

## DENTAL TECHNOLOGIST SALARIES

- The salary of a Dental Technologist/Technician varies, depending upon the responsibilities associated with the specific position and the geographic location of employment.
- There is evidence that Dental Technologists/Technicians who have completed a formal training program will advance more rapidly in the field, resulting in higher lifetime earnings.
- Many Dental Technologists/Technicians receive benefit packages from their employers, which may include health and disability insurance coverage, reimbursement for continuing education programs, paid vacations, and holidays.
- Dental Technologists/Technicians also have the option to own a private dental laboratory offering unlimited earnings potential.

**ACADEMIC INTEGRITY POLICY**

In learning environment such as King Khalid University, it is vital that we create an atmosphere of mutual trust. Cheating, plagiarism, falsifying information and related behaviours destroy the very essence of learning and will not be tolerated. Any such action will adversely affect a student's grade and will lead to disciplinary action by the college. By enrolling in dental technology program, you agree to comply with the student conduct and academic honesty policy violations of conduct in class or on campus are subjected to disciplinary review.

# PICTURE GALLERY

## COLLEGE CAMPUS



# HI TECH DENTAL LABS



## PRACTICAL SESSIONS IN DENTAL LABS



## ADMINISTRATIVE OFFICE



## **ADDITIONAL INFORMATION**

KING KHALID UNIVERSITY WEBSITE



STUDENTS ADMINISTRATION GUIDE



KING KHALID UNIVERSITY ADMISSION GUIDE



KING KHALID UNIVERSITY CODE OF ETHICS



INFORMATION ABOUT DENTAL TECHNOLOGY PROGRAMME



INFORMATION ABOUT COURSE DESCRIPTION



***THANK YOU FOR YOUR INTEREST IN STUDYING DEPARTMENT OF DENTAL  
TECHNOLOGY***

***WE LOOK FORWARD TO SEE YOU IN THE DEPARTMENT OF DENTAL TECHNOLOGY,  
COLLEGE OF APPLIED MEDICAL SCIENCES KING KHALID UNIVERSITY***