

National Curriculum of Pakistan
2022-23

TECHNICAL EDUCATION

MEDICAL TECHNOLOGY

Dental Hygiene
Grades 11-12



NATIONAL CURRICULUM COUNCIL SECRETARIAT
MINISTRY OF FEDERAL EDUCATION AND
PROFESSIONAL TRAINING, ISLAMABAD
GOVERNMENT OF PAKISTAN

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

National Curriculum of Pakistan
2022-23

TECHNICAL EDUCATION

MEDICAL TECHNOLOGY

Dental Hygiene
Grades 11-12



NATIONAL CURRICULUM COUNCIL SECRETARIAT
MINISTRY OF FEDERAL EDUCATION AND
PROFESSIONAL TRAINING, ISLAMABAD
GOVERNMENT OF PAKISTAN



It is with great pride that we, at the National Curriculum Council Secretariat, present the first core curriculum in Pakistan's 75-year history. Consistent with the right to education guaranteed by Article 25-A of our Constitution, the National Curriculum of Pakistan (2022-23) aspires to equip every child with the necessary tools required to thrive in and adapt to an ever-evolving globalized world.

The National Curriculum is in line with international benchmarks, yet sensitive to the economic, religious, and social needs of young scholars across Pakistan. As such, the National Curriculum aims to shift classroom instruction from rote learning to concept-based learning.

Concept-based learning permeates all aspects of the National Curriculum, aligning textbooks, teaching, classroom practice, and assessments to ensure compliance with contemplated student learning outcomes. Drawing on a rich tapestry of critical thinking exercises, students will acquire the confidence to embark on a journey of lifelong learning. They will further be able to acknowledge their weaknesses and develop an eagerness to build upon their strengths.

The National Curriculum was developed through a nationwide consultative process involving a wide range of stakeholders, including curriculum experts from the public, private, and non-governmental sectors. Representatives from provincial education departments, textbook boards, assessment departments, teacher training departments, *deeni madaris*, public and private publishers, private schools, and private school associations all contributed their expertise to ensure that the National Curriculum could meet the needs of all Pakistani students.

The experiences and collective wisdom of these diverse stakeholders enrich the National Curriculum, fostering the core, nation-building values of inclusion, harmony, and peace, making the National Curriculum truly representative of our nation's educational aspirations and diversity.

I take this opportunity to thank all stakeholders, including students, teachers, and parents who contributed to developing the National Curriculum of Pakistan (2022-23)

Dr. Mariam Chughtai

Director

National Curriculum Council Secretariat

Ministry of Federal Education and Professional Training

Medical Technology

Dental Hygiene

Grades 11-12

Progression Grid

Domain A: Introduction to Dental Hygiene

Standard: Illustrate Understand the growth of the skull and mandible, tooth eruption sequences, dentition changes, arch formation, muscle influences, malocclusion classifications, etiological factors, consequences of premature tooth loss, treatment modalities with removable and fixed appliances, and the constraints of preventive measures in orthodontics.

Grade 11	Grade 12
<p>Benchmark I: Students will be able to:</p> <ul style="list-style-type: none">● Explain the basic anatomical terms● Identify the oral structures, explain the tooth morphology● Use instruments and equipment used in dental surgery.	<p>Benchmark I: Students will be able to:</p> <ul style="list-style-type: none">● Define dental caries,● Describe their role in promoting oral health,● Define principles of local anesthesia,● Explain plaque calculus formation,
Student Learning Outcomes	

<p>Students should be able to:</p> <p>[SLO:DH-11-A-01]:</p> <p>Explain the basic anatomical terms/structures related to the oral cavity.</p> <p>[SLO:DH-11-A-02]:</p> <p>Describe dental anatomy and histology delving into the structural and microscopic features of teeth and surrounding tissues.</p>	<p>Students will be able to:</p> <p>[SLO:DH-12-A-01]:</p> <p>Describe dental caries, including its definition as the decay of tooth tissues due to bacterial acid</p> <p>[SLO:DH-12-A-02]:</p> <p>Define the meaning of health, positive health, dental health, and dental education.</p> <p>[SLO:DH-12-A-03]:</p> <p>Illustrate the uses of local anesthesia, including its definition and its mechanism of action.</p> <p>[SLO:DH-12-A-04]:</p> <p>Describe various types of X-rays and their indications in dentistry</p> <p>[SLO:DH-12-A-05]:</p> <p>Illustrate the growth of the skull and mandible, tooth eruption sequences, dentition changes, arch formation, muscle influences, malocclusion classifications, etiological factors, consequences of premature tooth loss, treatment modalities with removable and fixed appliances, and the constraints of preventive measures in orthodontics.</p>
<p>[SLO:DH-11-A-03]:</p> <p>Explain pathology and microbiology by engaging in in-depth study sessions, participating in practical laboratory work.</p>	<p>[SLO:DH-12-A-06]:</p> <p>Illustrate plaque formation, calculus composition, types and significance, distinguishing between extrinsic and intrinsic stains</p>

Benchmark II: Students will be able to:

- Enlist the responsibilities of the dental hygienist in an emergency by learning proper protocols and techniques in dental clinics and hospitals.
- Explain and define sterilization and disinfection by studying the principles and techniques involved in eliminating or reducing microorganisms.

Student Learning Outcomes

[SLO:DH-11-A-04]:

Describe the process of sterilization and disinfection by studying the principles and techniques involved in eliminating or reducing microorganisms.

[SLO:DH-12-A-07]:

Classify gingival and periodontal conditions, including chronic periodontal disease

[SLO:DH-11-A-05]:

Enlist responsibilities of the dental hygienist in an emergency by learning proper protocols and techniques in dental clinics and hospitals


[SLO:DH-12-A-08]:

Discuss various oral conditions, their characteristics, diagnosis, and treatment protocols to provide comprehensive oral care.

<p>[SLO:DH-11-A-06]:</p> <p>Explain the characteristics and classifications of microorganisms related to dentistry, along with their roles in the disease process.</p> <p>[SLO:DH-11-A-07]:</p> <p>Explain the development of the tooth & its supporting structures including the mechanism of tooth eruption, through a comprehensive study of dental anatomy and developmental process.</p>	<p>[SLO:DH-12-A-09]:</p> <p>Explain attrition, abrasion, erosion, and developmental abnormalities to understand the diverse aspects of tooth wear</p> <p>[SLO:DH-12-A-10]:</p> <p>Enlist methods for restoring teeth using different methods such as fillings, inlays, crowns, and bridges.</p> <p>[SLO:DH-12-A-11]:</p> <p>Describe various aspects related to minor oral surgery including extraction of teeth, surgical removal of teeth, Pre and post operative care and instruction.</p>
---	---

Domain B: Dental Anatomy

Standard: Students will understand the basic anatomical terms/structures related to the oral cavity, salivary glands and their ducts ,temp the temporomandibular joint, the facial skeleton and mandible in connection to recognizing components of the surface.



Grade 11	Grade 12
Benchmark I: Students will be able to: Apply neurological principles adequate for recognizing the principles involved in regional anesthesia.	Students will be able to: explore the impact of dietary choices on oral health, examine diverse toothpaste formulations and their specific benefits, and investigate natural oral hygiene practices as part of a holistic approach to maintaining dental wellness
Student Learning Outcomes	



Students should be able to:	Students will be able to:
<p>[SLO:DH-11-B-01]:</p> <p>Define anatomical terms and structures related to the oral cavity.</p>	<p>[SLO:DH-12-B-01]:</p> <p>Learn about dental caries, including its definition.</p>
<p>[SLO:DH-11-B-02]:</p> <p>Describe lymphatic drainage of the head and neck through comprehensive study and practical application.</p>	<p>[SLO:DH-12-B-02]:</p> <p>Delve into the epidemiological aspects of dental caries.</p>
<p>[SLO:DH-11-B-03]:</p> <p>Identify salivary glands, the muscles of facial expression and mastication together with the temporomandibular joint, the facial skeleton and mandible in connection to recognizing components of the surface.</p>	<p>[SLO:DH-12-B-03]:</p> <p>Define the meaning of Health, positive health, dental health, and dental education.</p>
<p>[SLO:DH-11-B-04]:</p> <p>Describe exam materials demonstrating the respiratory, cardiovascular, and digestive systems gaining a comprehensive understanding of the physiological processes and structures essential for healthcare professionals.</p>	<p>[SLO:DH-12-B-04]:</p> <p>Describe various types of local anesthesia, including block and infiltration methods.</p>
<p>[SLO:DH-11-B-05]:</p> <p>Apply neurological principles adequate for recognizing the principles involved in regional anesthesia.</p>	<p>[SLO:DH-12-B-05]:</p> <p>learn about the site and location of injection, various techniques employed, contra-indications for using both local and general anesthetics</p>

Domain C: Dental Histology

Standard: Illustrate various aspects of dental histology.

Grade 11	Grade 12
<p>Benchmark I:</p> <p>Students will be able to: Illustrate histology of enamel dentine, pulp, cementum, periodontal, membranes and gingivae, acquiring a detailed comprehension of the microscopic features that constitute the essential components of dental anatomy.</p>	<p>Students will be able to·</p> <ul style="list-style-type: none"> ● Define orthodontics. ● Illustrate growth of the skull and mandible, tooth eruption sequences, dentition changes, arch formation, muscle influences, malocclusion classifications, etiological factors, consequences of premature tooth loss, treatment modalities with removable and fixed appliances, and the constraints of preventive measures in orthodontics. ● Describe plaque formation, calculus composition, types and significance, distinguishing between extrinsic and intrinsic stains, ● Explain oral hygiene indices like the plaque index for comprehensive oral health assessment.
<p>Student Learning Outcomes</p>	



<p>Students should be able to:</p> <p>[SLO:DH-1-C-01]:</p> <p>Define dental anatomy and histology delving into the structural and microscopic features of teeth and surrounding tissues.</p> <p>[SLO:DH-11-C-02]:</p> <p>Mark deciduous and permanent teeth together with their dates of eruption, formation of crown and roots, common variations and position in the jaws through a comprehensive study of dental anatomy.</p> <p>[SLO:DH-11-C-03]:</p> <p>Describe histology of enamel dentine, pulp, cementum, periodontal, membranes and gingivae, acquiring a detailed comprehension of the microscopic features that constitute the essential components of dental anatomy.</p>	<p>Students will be able to:</p> <p>[SLO:DH-12-C-01]:</p> <p>Classify gingival and periodontal conditions, including chronic periodontal disease</p> <p>[SLO:DH-12-C-02]:</p> <p>Explain the epidemiology of periodontal disease</p> <p>[SLO:DH-12-C-03]:</p> <p>List preventive measures for chronic desquamative gingivitis</p> <p>[SLO:DH-12-C-04]:</p> <p>Explain these conditions, their prevalence, and effective preventative strategies.</p>
---	---

Domain D: Pathology and Microbiology

Standard: Discuss various aspects of dental pathology and microbiology.



Grade 11	Grade 12
<p>Benchmark I:</p> <p>Students will be able to:</p> <ul style="list-style-type: none"> ● Explain acute inflammation and suppuration, immunity, pyrexia, shock, syncope, repair, granulation, organization, hypertrophy, hyperplasia, degeneration, and necrosis 	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● Describe various oral conditions including acute ulcerative gingivitis, cancrum oris, acute herpetic gingivostomatitis, acute nonspecific gingivitis, periodontal abscesses, stomatitis, aphthous ulceration, candidiasis, cold sores, oral leukoplakia, oral tumors ● Explain their characteristics, diagnosis, and treatment protocols to provide comprehensive oral care
<p>Student Learning Outcomes</p>	

Students should be able to:

[SLO:DH-11-D-01]:

Define pathology and microbiology by engaging in in-depth study sessions, participating in practical laboratory work.

[SLO:DH-11-D-02]:

Illustrate mechanism of inflammation, particularly as it occurs in the soft and hard dental tissues, enhancing their understanding of the body's response to various stimuli.

[SLO:DH-11-D-03]:

Explain common oral pathological conditions, enabling them to recognize and understand the various disorders affecting the oral cavity.

[SLO:DH-11-D-04]:

Classify characteristics and categories of microorganisms related to dentistry, along with their roles in the disease process.

[SLO:DH-11-D-05]:

List infections occurring in and around the oral cavity, along with common pathological conditions.

[SLO:DH-11-D-06]:

Describe pathology, bacteriology, and parasitology, encompassing topics such as the reaction to injury, the nature of injurious agents, signs and symptoms.

[SLO:DH-11-D-07]:

Students will be able to:

[SLO:DH-12-D-01]:

Recall attrition, abrasion, erosion, and developmental abnormalities to understand the diverse aspects of tooth wear, structural changes, and irregularities in dental formation.

[SLO:DH-12-D-02]:

Explain creation, care, and function of partial and full dentures, alongside an overview of the role dental technicians play in their fabrication, maintenance, and overall dental care.

Explain acute inflammation and suppuration, immunity, pyrexia, shock, syncope, repair, granulation, organization, hypertrophy, hyperplasia, degeneration, and necrosis.

Domain E: Sterilization

Standard: Illustrate various modes of sterilization.

Grade 11	Grade 12
<p>Benchmark I:</p> <ul style="list-style-type: none"> • Illustrate modes of transmission of pathogens, adopting proper hygiene practices, using personal protective equipment (PPE), maintaining aseptic conditions, and following established protocols for sterilization and disinfection. 	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Explain the uses of apparatus used in minor and major oral surgeries.
<p>Student Learning Outcomes</p>	

Students should be able to:

[SLO:DH-11-E-01]:

Define sterilization and disinfection by studying the principles and techniques involved in eliminating or reducing microorganisms.

[SLO:DH-11-E-02]:

Illustrate the principle of disinfection and sterilization that is crucial for ensuring the effective elimination of microorganisms and the maintenance of optimal hygiene standards in various healthcare environments.

[SLO:DH-11-E-03]:

Describe methods for sterilization and disinfection applicable to various instruments and materials used in dentistry by studying the specific protocols and guidelines established for dental settings, ensuring a safe and hygienic environment for dental procedures.

[SLO:DH-11-E-04]:

Describe principles of preventing cross-infection by studying and implementing comprehensive infection control measures.

[SLO:DH-11-E-05]:

Illustrate modes of transmission of pathogens, adopting proper hygiene practices, using personal protective equipment (PPE), maintaining aseptic conditions, and following established protocols for sterilization and disinfection.

Students will be able to:

[SLO:DH-12-E-01]:

List diverse applications of instruments across various surgical procedures in oral and maxillofacial surgery.

[SLO:DH-12-E-02]:

Explain the uses of apparatus used in minor and major oral surgeries.

Domain F: Nutrition

Standard: Identify and address nutritional deficiencies and explore the impact of diet on dental health

Grade 11	Grade 12
<p>Benchmark I:</p> <p>Students will be able to:</p> <ul style="list-style-type: none"> Address nutritional deficiencies and explore the impact of diet on dental health 	<p>Students will be able to</p> <ul style="list-style-type: none"> Describe series of surgical steps necessary for the mentioned procedures, fostering a comprehensive comprehension of their implementation.
Student Learning Outcomes	
<p>Students should be able to:</p> <p>[SLO:DH-11-F-01]:</p> <p>Discuss nutrition through a comprehensive study that covers the principles of food science, dietary guidelines, and the impact of nutrients on human health.</p> <p>[SLO:DH-11-F-02]:</p> <p>Describe the constituents of a diet, encompassing protein, fat, carbohydrates, minerals, and vitamins.</p> <p>[SLO:DH-11-F-03]:</p> <p>Address nutritional deficiencies and explore the impact of diet on dental health.</p>	<p>Students will be able to:</p> <p>[SLO:DH-12-F-01]:</p> <p>Describe creation, care, and function of partial and full dentures, alongside an overview of the role dental technicians play in their fabrication, maintenance, and overall dental care.</p>

Domain G: Patient Care

Standard: Apply key principles of patient care

Grade 11	Grade 12
<p>Benchmark I:</p> <p>Students will be able to:</p> <p>Apply key principles of patient care</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> • Explain diverse aspects of tooth wear, structural changes, and irregularities in dental formation.
Student Learning Outcomes	
<p>Students should be able to:</p> <p>[SLO:DH-11-G-01]:</p> <p>Demonstrate effective communication techniques to establish rapport with patients, understand their concerns, and provide clear and empathetic explanations of medical conditions and treatment plans.</p> <p>[SLO:DH-11-G-02]:</p> <p>Demonstrate skills to provide care for patients in need of special attention through a comprehensive and empathetic approach. including:</p> <ul style="list-style-type: none"> Oral surgery cases. Orthodontic patients. Cleft palate patients. The handicapped. Scaling and polishing. 	<p>Students will be able to:</p> <p>[SLO:DH-12-G-01]:</p> <p>Describe the principles and procedures of root canal therapy.</p>

Domain I: Oral Medicine and Pharmacology

Standard: Apply various aspects of oral medicine and Pharmacology.

Grade 11	Grade 12
Benchmark I: Students will be able to: Discuss various aspects of oral medicine and Pharmacology.	Students will be able to: Explain the treatment for addressing infected tooth pulp and persistent root issues.
Student Learning Outcomes	

Students should be able to:

[SLO:DH-11-I-01]:

Define oral medicine and pharmacology by applying the principles of oral medicine and pharmacology specifically tailored to the dental field, contributing to effective and patient-centered dental care.

[SLO:DH-11-I-02]:

Record medical history by using standardized medical history forms or electronic health record systems to guide the collection of patient information understanding the importance of documenting details such as current medications, past medical conditions, allergies, and family medical history.

Including:

- ✓ Conditions that may alter the dental hygienist's treatment plan.
- ✓ Pregnancy.
- ✓ Hepatitis.
- ✓ Bleeding disorders.
- ✓ Drugs used in dental procedures.
- ✓ Pain-relieving drugs.
- ✓ Antimicrobial drugs.
- ✓ Agents used to control bleeding.

Students will be able to:

[SLO:DH-12-I-01]:

Explain epidemiology of periodontal disease, and learn preventive measures for chronic gingivitis.

Domain J: Emergencies and Identification of Care Instruments

Standard: Illustrate various care exercises and requisite steps to manage emergencies.

Grade 11	Grade 12
<p>Benchmark I:</p> <p>Students will be able to: Illustrate various care exercises and requisite steps to manage emergencies.</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> Describe various aspects of hazards of high speed instruments in dental surgery and their precautions.
<p>Student Learning Outcomes</p>	

<p>Students should be able to:</p> <p>[SLO:DH-11-J-01]:</p> <p>List responsibilities of the dental hygienist in an emergency by learning proper protocols and techniques in dental clinics and hospitals.</p> <p>[SLO:DH-11-J-02]:</p> <p>Illustrate procedures to manage unconscious patients by employing their expertise in emergency procedures, effectively utilizing specialized dental tools, and executing accurate assessment and care techniques ensuring their safety and well-being until further medical assistance is available.</p> <p>[SLO:DH-11-J-03]:</p> <p>Explain proper care of hand pieces by understanding the maintenance, sterilization, and safe handling and proper grasping techniques.</p> <p>[SLO:DH-11-J-04]:</p> <p>Illustrate maintenance and care of dental equipment, including the dental chair, unit, evacuator, air compressor, ultrasonic scalar, sterilizer, and endodontic kit.</p>	<p>Students will be able to:</p> <p>[SLO:DH-12-J-01]:</p> <p>Describe various aspects related to minor oral surgery including: Extraction of teeth, Surgical removal of teeth, Pre and post operative care and instruction.</p>
--	--



NATIONAL CURRICULUM COUNCIL SECRETARIAT
MINISTRY OF FEDERAL EDUCATION AND
PROFESSIONAL TRAINING, ISLAMABAD
GOVERNMENT OF PAKISTAN