

**SUBJECT BENCHMARK STATEMENT**  
**IN**  
**DENTISTRY**

**Quality Assurance Council**  
**University Grants Commission**  
**Sri Lanka**

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## FOREWORD

Subject Benchmark Statements describe the nature of study and academic standards expected of graduates in specific subject areas. The work in connection with the development of Subject Benchmark Statements commenced in August 2003 as a part of the overall quality assurance framework that supports academic standards and the furtherance and dissemination of good practice in Universities in Sri Lanka. Subject Benchmark Statements will support and promote quality and standards by:

- providing universities with a common and explicit reference point for internal and external program approval and review;
- guiding and promoting curriculum development, especially in new departments and new universities, and in other institutions of higher education;
- evolving over time to take account of changes and innovations that reflect subject development and new expectations;
- providing an authoritative and widely recognized statement of what is expected of a graduate in a specific (or designated) subject area in a form readily accessible to students, employers and others with a stake in higher education;
- providing a clear and transparent reference point for external examiners;
- assisting international comparison and competitiveness for higher education awards and student achievement.

# **SUBJECT BENCHMARK STATEMENT IN DENTISTRY**

## **1. INTRODUCTION**

### **1.1 About Subject Benchmark Statement in Dentistry:**

The Subject Benchmark statement in Dentistry describes the characteristics of a program of study required for the training of a dental graduate for acquisition of minimum acceptable attributes and capabilities.

### **1.2 Defining Principles**

Dentistry is a professional healthcare discipline related to the provision of oral healthcare. It deals with the diagnosis, prevention and treatment of oral disease/conditions and maintenance of oral health in individuals and the society, thereby contributing towards maintenance of general health and well-being of the people.

The discipline entails knowledge of the normal structure and function of the human body and their development, causation of oral disease/conditions, their diagnosis, treatment and prevention. The psychological effects of oral disease/conditions also come within its purview.

Dental education at the undergraduate level imparts knowledge, subject specific professional skills and attitudes required for the diagnosis, prevention and treatment of common oral disease/conditions and maintenance of oral health at individual and population levels. In order to practice dentistry at an optimum standard, effective communication skills, ability to work effectively as a team member, leadership qualities, creativity and problem solving abilities, managerial skills and entrepreneurship, information usage and management, networking and social skills, adaptability and flexibility and professionalism are also necessary.

In order to practice dentistry in Sri Lanka a dental graduate should obtain registration from the Sri Lanka Medical Council (SLMC). A dental graduate should complete one year of internship in a recognized institute to be entitled for registration. However, dental graduates are entitled for provisional SLMC registration prior to internship, which would allow them to complete the internship. The SLMC sets out standards of practice and ethical guidance binding a dental surgeon.

## **2. DEGREE PROGRAMMES COVERED BY THIS STATEMENT**

Bachelor of Dental Surgery

### **3. NATURE AND THE EXTENT OF THE SUBJECT**

- Dentistry is based on the principles of medical and surgical science and technology.
- Health and disease of the dental and oral structures in particular and the associated structures of the head and neck region and also their impact on the general health and well-being of the individual and society come under the purview of dentistry.
- Foundation of the discipline of dentistry is based on the knowledge of the normal structure and function of the human body including molecular biology and extending to the relevant systems of the body.
- Knowledge of how the normal structure and function changes due to the disease process at gross structural, cellular and molecular level leading to the development of clinical features and abnormalities in biochemical indices and other relevant investigations is required.
- Scope of disease/conditions in dentistry includes common diseases of the teeth and their supporting structures, soft and hard tissues of the oral cavity and jaws caused by infections, malformations, benign and malignant lesions, trauma or as oral manifestations of general medical conditions. A sound knowledge of diseases of the related structures in the head and neck is essential for the purpose of differential diagnosis and participation in their management.
- Diagnosis of oral disease/conditions is based on their history, signs and symptoms, and relevant investigations.
- Prevention of oral disease/conditions at individual and community level and the necessary knowledge and skills in the collection and use of epidemiological data are emphasized.
- Dental graduate should demonstrate a high level of competency in clinical and technical aspects to practice either in a general dental practice or in a hospital setting.
- Dental graduate should be able to communicate effectively for establishing rapport with patients, families and colleagues and to access knowledge sources.
- Dental graduate should adhere to moral and ethical principles involved in the provision of care to patients and also show empathy with patients.
- Thorough knowledge of medical emergencies and occupational hazards in dentistry and their prevention and management is essential.
- Dental graduate should keep abreast with the new advances in dentistry and apply evidence-based approaches to the practice of dentistry.
- Knowledge of the basic principles of scientific research is required.

- Dental graduate should understand the importance of clinical governance including clinical audit.
- Dental graduate should have knowledge and skills in practice management and information technology, develop leadership qualities and be an effective member of the team in caring for patients.

#### **4. AIMS AND OBJECTIVES OF THE SUBJECT**

The main objective of the Bachelor of Dental Surgery degree program is to produce a graduate who have the competence to diagnose, treat and prevent oral disease/conditions and thereby contribute towards maintaining quality of life in individuals and the community.

#### **5. SUBJECT-SPECIFIC LEARNING OUTCOMES IN CORE AREAS**

##### ***5.1 Subject / Theoretical Knowledge***

The dental graduate is required to have cognitive knowledge of the following;

- Normal structure and function of the human body with detailed knowledge of the head and neck region.
- Structure and function of the human body at cellular and molecular level.
- Basic knowledge of the human reproduction, embryological development of the body, genetic inheritance, and detailed knowledge of the development of the head and neck region.
- Basic knowledge of causation and progression of human disease/conditions, with special reference to those originating from infection, inflammation, neoplasia, trauma, heredity, malformation and endocrine disorders.
- Changes that take place due to disease processes at gross structural, tissue, cellular and molecular levels.
- Causation of oral disease/conditions in detail and how they elicit clinical features.
- Indications and understanding of different treatment options for patients with oro-facial defects.
- Systemic diseases, their clinical features and complications relevant to dentistry and oral manifestations of systemic diseases.
- Pharmacology relevant to the practice of dentistry and its relevance to the treatment of general medical conditions.
- Methods of treatment of systemic diseases relevant to dentistry and their influence on diagnosis and treatment of oral diseases/conditions.
- Scientific basis of investigative procedures used in the management of oral disease/conditions such as histopathological, biochemical, hematological, imaging and with their interpretation.

- Methods of treatment of oral disease/conditions in detail.
- Infection control practices in the dental clinic and ward.
- Medical emergencies in the dental clinic and their prevention and management.
- Occupational hazards in the practice of dentistry.
- Scientific basis of prevention of oral disease/conditions.
- Importance of oral health in the maintenance of general health, overall well-being, and mental health of an individual.
- Epidemiology of common oral disease/conditions.
- The principles and importance of health promotion, health education and prevention of oral disease/conditions at individual and community level.
- Professional ethics relevant to dental practice.
- Medico-legal aspects relevant to dental practice.
- Principles of practice management and entrepreneurship pertaining to a dental practice.
- Importance of quality in the practice of dentistry.
- Health care delivery systems and their administration.

## ***5.2 Skills***

### **5.2.1 Subject Specific Professional Skills**

The dental graduate should possess integrated subject specific professional skills related to clinical dental practice.

Therefore, the dental graduate should be able to:

- apply knowledge and understanding of biomedical sciences, oral biology and biomolecular sciences in the management of patients with oral disease/conditions.
- elicit information through history and examination and relevant investigations in the diagnosis of oral disease/conditions.
- carryout or request relevant investigations and interpret the findings.
- plan a comprehensive treatment protocol for the diagnosed oral disease/conditions considering any coexisting medical conditions and, with the objective of total rehabilitation of structure and function of the oral cavity to promote general well-being of the patient.
- refer patients when indicated to appropriate dental or medical specialists considering one's own limitations and availability of facilities.
- carry out treatment procedures in patients with special health care needs and those with disabilities.
- carry out duties of a house officer in a specialised unit.

- detect and manage medical emergencies.
- detect and manage occupational hazards in the dental clinic.
- carryout treatment procedures related to different specialties of dentistry as follows;

Dental graduate should be able to:

### **Restorative Dentistry**

#### **Conservative Dentistry**

- ◆ restore lost tooth structure due to caries, trauma, tooth wear, discoloration and developmental anomalies.
- ◆ carryout vital pulp therapy.
- ◆ treat non-vital teeth with endodontic treatment.
- ◆ manage tooth/teeth with a compromised coronal structure with indirect restorations.
- ◆ replace teeth with fixed prosthesis.

#### **Prosthetic Dentistry**

- ◆ replace lost teeth with removable and fixed prostheses with or without dental implants to rehabilitate masticatory function, speech and appearance.

#### **Periodontology**

- ◆ diagnose, treat and prevent common periodontal diseases by following plaque control methods and non-surgical approaches such as scaling and root debridement.
- ◆ treat advanced periodontitis by carrying out simple periodontal surgical procedures.
- ◆ identify local and systemic risk factors that could predispose to and affect the severity of periodontal disease and make necessary interventions.

### **Oral Surgery**

- ◆ administer local anesthetics to anesthetize teeth and supporting structures.
- ◆ carryout exodontia using forceps and dental elevators.
- ◆ excise benign mucosal lesions.
- ◆ carryout minor oral surgical procedures including biopsies.

### **Oral Medicine and Radiology**

- ◆ manage oral potentially malignant disorders.
- ◆ manage oral and facial pain.
- ◆ manage oral manifestations of general medical diseases.
- ◆ carryout intra-oral radiography.
- ◆ interpret maxillofacial radiographs.

### **Oral Pathology**

- ◆ identify macroscopic and microscopic features of common oral disease/conditions.



- ♦ relate microscopic features to disease processes and clinical features of common oral disease/conditions.

### **Paedodontics**

- ♦ establish rapport with child dental patients and communicate effectively with parents.
- ♦ apply behavior management strategies for child dental patients.
- ♦ carryout treatment procedures aimed at preserving the dentition in children.
- ♦ replace lost primary teeth with appropriate space maintainers.
- ♦ carryout interventional procedures to prevent malocclusion.
- ♦ manage dentoalveolar trauma and developmental dental anomalies in children.

### **Orthodontics**

- ♦ diagnose common types of malocclusion and treat them with removable appliances or simple fixed appliances where possible and refer patients to specialists if necessary.
- ♦ recognise malformation in the head and neck region and their effects on jaw relationship/occlusion and refer patients to appropriate specialists.

### **Population Oral Health**

- ♦ plan and carry out oral epidemiological studies.
- ♦ carry out preventive procedures and give instructions to patients.
- ♦ plan and implement health promotion programs.

## **5.2.2 Transferable Skills**

In addition to the subject specific professional skills, the undergraduate program in dentistry encourages the development of following key transferable skills.

Dental graduate therefore should;

### **5.2.2.1 Communication**

- ♦ acquire sufficient command in the languages used in Sri Lanka to be able to communicate effectively with patients, relatives of patients, colleagues and other health professionals. In addition, an adequate command in English is required for relevant communications.
- ♦ be able to share knowledge with colleagues and participate in discussions for updating knowledge.

### **5.2.2.2 Teamwork and Leadership**

- ♦ be able to work effectively as a member in a team and take leadership when necessary.
- ♦ adopt inter-disciplinary approaches in dealing with complex health problems where the ability to work in a health team that extends across disciplines is required.

#### 5.2.2.3 Creativity and Problem Solving

- ♦ possess creativity and problem solving ability when working under constraints in less than ideal conditions.

#### 5.2.2.4 Managerial and Entrepreneurship

- ♦ have basic skills in the management of a dental clinic including management of auxiliary staff, procurement of material and equipment.
- ♦ be able to relate effectively with specialists, administrators and subordinates.
- ♦ have basic knowledge of how to raise necessary funds, registration of practice, employment of staff under labor laws, relevant government tax policy and management of finances if intends to enter into private/general dental practice.
- ♦ have an understanding about needs and demands for oral health care in a particular society.

#### 5.2.2.5 Information Usage and Management

- ♦ have basic skills required to use current methods in information technology for accessing data bases for acquisition of knowledge.
- ♦ have the ability to use methods in information technology to share knowledge with colleagues, specialists and subordinates and for record keeping.
- ♦ be able to carry out a clinical audit and engage in research to assess the standard of the work and gain insight into the needs of individual patients and community.

#### 5.2.2.6 Networking and Social Skills

- ♦ demonstrate appropriate demeanor and rapport with team members and professional colleagues when planning, setting up targets and allocating work.
- ♦ acquire sound social skills for professional development.

#### 5.2.2.7 Adaptability and Flexibility

- ♦ be able to adapt to changing environments and challenging situations.
- ♦ be able to respect opinions, recognize deficiencies and take corrective measures.

### **5.3 Attitudes**

The academic program should inculcate high levels of professionalism and lifelong learning in graduates.

Dental graduate therefore, should be able to:

#### **5.3.1 Attitudes, Values and Professionalism**

- ♦ strictly follow the guidelines issued by the Sri Lanka Medical Council for dental practitioners.
- ♦ abide by the relevant state regulations when working in the public sector.
- ♦ respect individuals irrespective of social, cultural, ethnic or religious differences, and be sensitive towards health care needs of patients.
- ♦ show empathy with patients while being receptive to health care needs of the less-privileged and those with disabilities.
- ♦ respect the patient's right and freedom to accept/reject the treatment plan.
- ♦ appreciate the importance of obtaining informed consent/assent from patients/guardians.
- ♦ consider the importance of patient's welfare in all aspects of care.
- ♦ act with a sense of social, ethical, moral and professional responsibility and accountability.
- ♦ treat all information about patients as confidential.
- ♦ respect patient's right for information.
- ♦ provide and accept constructive criticism.

#### **5.3.2 Vision for Life**

- ♦ develop clear long term goals and interests in the profession and work towards in achieving them.
- ♦ update knowledge and skills in the relevant subspecialties in dentistry and develop new competencies.
- ♦ undertake responsibilities in keeping with one's interests with confidence.

#### **5.3.3 Updating Self / Lifelong Learning**

- ♦ consider learning as a life-long process.
- ♦ actively engage in self development by being interested in new advances in the field.

## **6. TEACHING, LEARNING, ASSESSMENT PROCESS AND QUALITY ASSURANCE**

### **Teaching and Learning**

Teaching and learning shall be outcome based and should include a variety of approaches and settings such as;

- ♦ Lectures
- ♦ Group learning tutorials/seminars/workshops

- ◆ Practical and laboratory classes and clinical skills laboratories
- ◆ Dental clinical settings
- ◆ Ward and surgical operation theatre
- ◆ Observation and direct “hands- on” treatment of patients
- ◆ Computer and web-based learning
- ◆ Problem-based learning
- ◆ Research Projects
- ◆ Directed self-study
- ◆ Out-reach programs
- ◆ Field visits

Teaching and learning activity shall be a two way process with participation of both teacher and the student. Feedback would be of value for both the student and the teacher to make improvements for optimum learning.

- Lectures shall give an overview of the subject with an opportunity for the student to listen, comprehend, and take notes which would also help the student to improve language and communication skills.
- Group learning is meant for more intensive cognitive learning which would help in better retention of knowledge. Students would also receive more opportunities to improve their communication skills through discussions during group learning activities.
- Students shall practice procedures on simulated models in the skills laboratory before they start treating patients. This gives the student time and opportunity to correct errors and master skills prior to attending on patients.
- Following training in the skills laboratory and prior to treating patients, students shall observe clinical demonstrations carried out by teachers. Direct treatment of patients by students shall only be allowed only under strict supervision.
- Computer and web based learning and self-study projects shall be designed to help students in developing self learning and be motivated for life-long learning.
- Research projects shall aimed at recognizing the value of scientific research for evidence-based practice, learning research methods, conducting research and scientific reporting/writing.
- Outreach programs and field visits shall provide the students an academic foundation and help them develop self-confidence, leadership qualities, career development, and accomplish their responsibilities toward the community.

### **Assessment Process**

- Assessments shall be carried out as In Course Assessments and End of Semester Examinations.
- Assessments shall be carried out with transparency with the involvement of external examiners.
- Assessment tools shall have satisfactory levels of validity and reliability.
- Assessments shall ensure that learning outcomes are achieved and standards are maintained.

### **Quality Assurance**

- Study program shall have a mechanism for evaluation including teacher and process evaluation with the participation of all stakeholders and shall be carried out as a regular process.
- Study program shall undergo internal and external reviews periodically to ensure that acceptable standards are maintained.
- Academic programs and curricula shall be dynamic to accommodate any growing changes in the student profile, disease and demographic patterns, and innovations in the educational and information technology fields. A mechanism shall be in place for periodic review of the curricula, and to carry out revisions as necessary.

## **7. PERFORMANCE STANDARDS**

Upon successful completion of the undergraduate study program, dental graduates shall undergo one-year compulsory internship in a recognized institute. After successful completion of internship, they shall be eligible to apply for registration with the Sri Lanka Medical Council to practice dentistry independently.

- In practicing dentistry, dental graduates shall be required to conduct themselves with professional integrity (sections 5.2.1, 5.2.2, 5.3.1). Dental graduates shall act independently when planning activities, implementing tasks and solving problems in professional capacity (sections 5.2.2.3, 5.2.2.7).
- They shall be dedicated to the principle of lifelong learning and continuous professional development (sections 5.3.2, 5.3.3).
- Dental graduates shall demonstrate systematic understanding of subject knowledge (section 5.1), comprehensive understanding of the basis of professional practice (sections 5.2, 5.3), practical approach for evidence based clinical practice and the ability to evaluate new information in a scientific manner before accepting or rejecting concepts from new information.
- Dental graduates shall possess key transferable skills including information appraisal and technology (section 5.2.2).

- They shall have the ability to make decisions based on ethical, moral and scientific principles (section 5.3).
- Dental graduates shall have the ability to evaluate the health care system in which they work and undertake responsibility for oral health promotion of individual patients and groups (section 5.2.2.6).
- In practicing dentistry, they shall be required to deal with complex issues in the management of patients, make appropriate judgments by using available information, and communicate decisions arising out of judgments to patients and professional colleagues where necessary (sections 5.2.2.1, 5.2.2.2, 5.2.2.3).

## 8. ANNEXURES

### *ANNEXURE 1 - Members of the SBS Committee on Dentistry*

Prof .H.R.D. Peiris (Convener) – Faculty of Dental Sciences, University of Peradeniya

Dr. Vajira Jayasinghe – Dean, Faculty of Dental Sciences, University of Peradeniya

Prof. Lilani Ekanayake -Faculty of Dental Sciences, University of Peradeniya

Prof. W.M. Tilakaratne - Faculty of Dental Sciences, University of Peradeniya

Prof. Aruni Tilakaratne - Faculty of Dental Sciences, University of Peradeniya

Prof. Niroshini Soysa - Faculty of Dental Sciences, University of Peradeniya

Prof. Ruwan Jayasinghe - Faculty of Dental Sciences, University of Peradeniya

Prof. A.K.S. Arambawatta - Faculty of Dental Sciences, University of Peradeniya

Prof. J. A. M. S. Jayatilake - Faculty of Dental Sciences, University of Peradeniya

Prof. R.W. Pallegama - Faculty of Dental Sciences, University of Peradeniya

Prof. Chandra Herath - Faculty of Dental Sciences, University of Peradeniya

Prof. Manjula Attygalla - Faculty of Dental Sciences, University of Peradeniya

Dr. N. Vithanarachchi - Faculty of Dental Sciences, University of Peradeniya

Dr. Manil Fonseka - Faculty of Dental Sciences, University of Peradeniya

Dr. Manori Jayasinghe - Faculty of Dental Sciences, University of Peradeniya

Prof. Udaya Ralapanawa - Faculty of Medicine, University of Peradeniya

Dr. Manjula Peiris - Faculty of Medicine, University of Peradeniya

Prof. N.A. De S. Amaratunga - Faculty of Dental Sciences, University of Peradeniya

Dr. Dileep de Silva–Consultant in Community Dentistry, Ministry of Health and Indigenous  
Medicine

Dr. Priyake Palipana – Consultant in Restorative Dentistry, Ministry of Health and Indigenous  
Medicine