



***SHAHEED ZULFIQAR ALI BHUTTO
MEDICAL UNIVERSITY
ISLAMABAD***

INTEGRATED CURRICULUM

***for
Bachelor of Dental Surgery
(Second Year BDS)***



Dedication

Dedicated to all faculty Members of Curriculum Committee whose persistent efforts in the field of medical education will always be reminisced.

Preface

The Shaheed Zulfiqar Ali Bhutto Medical University (SZABMU), a public sector federal University, was established in the premises of postgraduate medical institute, Pakistan Institute of Medical Sciences, Islamabad by an ordinance of national assembly on 21 March, 2013.

Four medical colleges 1- School of Dentistry is constituent college others affiliated are 2- Rawal Institute of Health Sciences 3- Islamabad Medical & Dental College and 4- HBS Medical & Dental College are attached with the university.

Since its inception the university has made an impact in the field of healthcare, undergraduate, postgraduate medical education and research pertaining to grave health problems faced by our country.

In order to meet the standards of the World Federation of Medical Education a paradigm shift has ensued in the field of medical education. The standards provide a template for medical schools. This led to developing the curriculum as per WFME standards in congruence with the cultural, regional and demographic facets of the country.

Department of medical education of SZABMU started functioning in 2014. DME is 'headed by Dean and has various co- opted members including Dr. Fouzia Sultana and Dr. Zainab Abdullah who worked diligently and integrated the undergraduate curriculum in 2017. It was also made possible by the conscientious efforts of different curriculum committees who clipped it according to the requirement of the medical Colleges. The final draft of the curriculum is an attribute to all those who remained involved in the planning, development and evaluation of the curriculum.

Special appreciations for Prof. M Luqman for his infinite efforts in making this a reality.

I am very thankful to DME who spent their precious hours in typing, editing, reviewing, correcting and giving final shape to the draft which is available now in it's best possible construct. I wish success and prosperity to all everyone associated with this prestigious institution in the years to come.

Prof . Tanwir Khaliq

Vice Chancellor SZABMU



ACKNOWLEDGEMENTS

We would like to express our gratitude and appreciation to all those who gave us the opportunity to complete the curriculum.

Department of Medical Education is very grateful to the Worthy Vice Chancellor Prof. Tanwir Khaliq for his vision in initiating the integrated curriculum under the umbrella of Shaheed Zulfiqar Ali Bhutto Medical University in all affiliated Dental colleges. Our special gratitude to the entire curriculum committee for their support and hard work.

We would also like to thank Prof Anser Maxood, Prof Haroon Qazi, Brig Manzoor and Prof Arshad Malik for his endless support and effort in guiding the team to achieve the goal .

Assistant Professor DME SZABMU

Dr. Zainab Abdullah

Dr. Fouzia Sultana

Curriculum Committee

Curriculum Committee for the development of modular system at the undergraduate level of all medical and dental colleges affiliated with Shaheed Zulfiqar Ali Bhutto Medical University consists of following members:

- Prof. Anser Maqsood Chairman Shaheed Zulfiqar Ali Bhutto Medical University
- Prof. Zahoor Rana Vice Chairman Shaheed Zulfiqar Ali Bhutto Medical University
- Prof. Haroon Shahid Qazi Secretary Islamabad Medical & Dental College
- Brig. (R) Manzoor Ahmad Member Rawal Institute of Health Sciences
- Dr. Zainab Abdullah Member Shaheed Zulfiqar Ali Bhutto Medical University
- Dr. Fouzia Sultana Member Shaheed Zulfiqar Ali Bhutto Medical University
- Prof. Arshad Malik Member HBS dental College
- Prof Saad Asad Member Rawal Institute of Health Sciences
- Prof. Rehmah Sarfraz Member Islamabad Medical & Dental College
- Dr.Saman Waqar Member Federal Medical and Dental College
- Prof. Moosa Khan Member Federal Medical and Dental College

Modular Curriculum Development Committee

The integrated modules for 2nd Year BDS Class have been developed by the following faculty members:

Department of Pathology

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|----------------------|---------------------|------------------------------------|
| 1. Dr. Naheed Naghmi | Professor | Islamabad Medical & Dental College |
| 2. Dr. Shamim Mumtaz | Professor | Islamabad Medical & Dental College |
| 3. Dr. Khawaja Usman | Professor/HOD | Rawal Institute of Health Sciences |
| 4. Dr. Ashok Kumar | Professor/HOD | HBS Medical & Dental College |
| 5. Dr. Saman Waqar | Assistant Professor | Federal Medical and Dental College |

Department of Pharmacology

- | | | |
|-------------------|---------------|------------------------------------|
| 1. Dr. Shah Murad | Professor/HOD | Islamabad Medical & Dental College |
| 2. Dr. Azam Zia | Professor/HOD | Rawal Institute of Health Sciences |
| 3. Dr. Randhawa | Professor/HOD | HBS Medical & Dental College |
| 4. Dr. Moosa Khan | Professor/HOD | Federal Medical and Dental College |

Department of Science of Dental Materials

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|-----------------------|---------------------|--|
| 1. Dr. Shahab Ud Din | Assistant Professor | Shaheed Zulfiqar Ali Bhutto Medical University |
| 2. Dr. Muhammad Sajid | Associate Prof/HOD | Islamabad Medical & Dental College |
| 3. Dr. Sadaf Hamayoun | Assistant Prof | Rawal Institute of Health Sciences |
| 4. Dr. Abdul Qadir | Assistant Professor | HBS Dental College |

Department of Community Dentistry

- | | | |
|----------------------|---------------------|------------------------------------|
| 1. Dr. Rubina Mumtaz | Professor/HOD | Rawal Institute of Health Sciences |
| 2. Dr. Sheze Haroon | Assistant Prof/HOD | Islamabad Medical & Dental College |
| 3. Dr. Qurut ul Ain | Assistant Professor | HBS Dental College |

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CURRICULUM FRAMEWORK: BDS 2nd YEAR

2nd Year BDS	BLOCK-IV		Exam Block IV	Block-V		Exam Block V	Block-VI		Exam Block VI
	12 weeks			12 weeks			12 weeks		
	Module 7	Module 8		Module 9	Module 10		Module 11	Module 12	
	Basics of paraclinical Dental Sciences	Disease and Epidemiology		Prevention and restoration in Dentistry	Disease and Therapeutics		Behavioral Sciences	Neoplasia, Indirect Restorations	
	6 weeks	6 weeks		6 weeks	6 weeks		6 weeks	6 weeks	



Block-IV

12 Weeks

Main Topics and Table of Specifications

Pathology		
Module 7		
Topic	MCQs	OSPE
Cellular adaptation/cell injury/cell death	10	1
General Bacteriology	8	2
Module 8		
Inflammation and Repair	10	1
General Bacteriology (Cont.)	7	1
Pharmacology		
Module 7		
Topic	MCQs	OSPE
General Pharmacology	8	2
Autonomic Nervous System	12	1
Module 8		
Antimicrobials	15	2
Science of Dental Materials		
Module 7		
Topic	MCQs	OSPE
Introduction & Classification of Dental Biomaterials	1	-
Properties of Dental Materials and their Biocompatibility	9	-
Impression Materials	7	2
Module 8		
Structure & Properties of Metals & Alloys	3	-
Wrought Alloys	5	-
Gypsum Products	7	1
Community Dentistry		
Module 7		
Topic	MCQs	OSPE
Science, philosophy and ethics of dental public health	5	1
Concepts of health, illness, disease and preventive approaches	5	
Global health organizations and their role in global public health	3	
Module 8		

Science and application of dental caries and oral hygiene indices	8	1
Science and application of Periodontal and fluorosis indices; WHO assessment tools	8	1
Pakistan's healthcare system and the dental workforce	3	-
Pre-clinical Dentistry		
Module 7		
Topic	MCQs	OSPE
Manipulation of wrought wires (stainless steel)	3	1
Kennedy's Classification of partially dentate arches		-
GV Black's classification Principles of tooth preparation		-
Class I cavity preparation on plaster models		1
Module 8		
Manipulation of impression materials	3	2
Manipulation of gypsum materials		
Class I compound cavity preparation		
Class I cavity preparation on typodont		

Examination Block-IV

Block-V

12 Weeks

Main Topics and Table of Specifications

Pathology		
Module 9		
Topic	MCQs	OSPE
Immunity	5	-
Oral Infections	3	1
Gastrointestinal Infections	7	1
Module 10		
Hemodynamics	6	-
Hematology	6	1
Blood Born Infections	5	1
Cardiovascular System	3	1
Pharmacology		
Module 9		
Topic	MCQs	OSPE
Gastrointestinal Tract	5	1
Endocrinology	6	1
Autacoids	1	-
Antihistamines	1	-
Module 10		
Cardiovascular System	10	1
Diuretics	2	-
Blood	8	1
Antimalarial Drugs	2	1
Science of Dental Materials		
Module 9		
Topic	MCQs	OSPE
Dental Amalgam	7	1
Structure and Properties of Dental Polymers Prosthetic Polymers and Resins	8	1
Dental Waxes	2	-
Module 10		
Adhesion and Bonding	6	-
Enamel & Dentin Bonding Agents	7	1
Resin Based Composites	2	-

Community Dentistry

Module 9		
Topic	MCQs	OSPE
General principles of epidemiology and measures of morbidity and mortality	8	1
Research Study Designs	8	1
Sampling and Bias	3	-
Module 10		
Variable types, data presentation and descriptive statistics	4	1
Hypothesis testing, confidence levels and intervals, p-value	4	
Tests of significance	3	
Sensitivity and specificity	2	
Pre-Clinical Dentistry		
Module 9		
Topic	MCQs	OSPE
Manipulation of auto-polymerizing resins	3	2
Demonstration on composite restoration		
Manipulation of amalgam		
Atraumatic Restorative Treatment (ART)		
Instrumentation for scaling (Handgrip and strokes)		
Pit and fissure sealing		
Fluoride application		
Module 10		
Maxillary & Mandibular Landmarks	3	1
Manipulation of modeling wax		
Class II cavity preparation		

Block-V Examination

Block-VI

12 Weeks

Main Topics and Table of Specifications

Pathology		
Module 11		
Topic	MCQs	OSPE
Neoplasia	12	1
Infections of Respiratory System	5	1
Module 12		
Genetic Diseases	5	-
Skin & Soft Tissue Infections	5	1
Infections of Central Nervous System	3	1
Infections of Genitourinary system	5	1
Pharmacology		
Module 11		
Topic	MCQs	OSPE
Anticancer Drugs	3	1
Respiration	4	
Antituberculous Drugs	5	
Module 12		
Central Nervous System	17	3
Urinary Antiseptics	1	1
Drug-Drug Interactions	5	-
Science of Dental Materials		
Module 11		
Topic	MCQs	OSPE
Dental Cements	8	2
Dental Implant Materials	1	-
Casting Process	7	-
Endodontic Materials	1	-
Module 12		
Dental Casting Alloys	6	-
Investment Materials	2	1
Dental Ceramics	7	-

Community Dentistry

Module 11		
Topic	MCQs	OSPE
Basic concepts and strategies for preventing and controlling major oral diseases	7	2
Methods of health promotion and health education	6	
occupational hazards in dentistry to human health and the environment	6	
Module 12		
Sociology, psychology and anthropology as applied to dentistry; Child psychology and dentist-patient relationship and dental anxiety	6	1
Principles and applications of the theories of behavior change	5	
The role of social determinants of health and their impact on health behavior	2	
Pre-Clinical Dentistry		
Module 11		
Topic	MCQs	OSPE
Tooth arrangement	3	2
Class V cavity preparation		
Infiltration technique on phantom head		
Chair positioning for different procedures		
Module 12		
Manipulation of heat-polymerizing resins	3	2
Class III cavity preparation		
Mandibular nerve block technique on phantom head		

Block-VI Examination

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BDS 2ND PROFESSIONAL EXAMINATION

Assessment Grid for Class of 2019

70% Component from Prof Annual Exam: Theory and Practical: 140 + 140
30% Component from Internal Assessment: Theory and Practical: 60 + 60 Marks
Theory: 600 Marks Practical: 600 Total Marks 1200

Module/Block		Block-IV		Block-V		Block-VI	
		Module 7	Module 8	Module 9	Module 10	Module 11	Module 12
		Basics of paraclinical	Disease and Epidemiology	Prevention and restoration in Dentistry	Dis Dental Sciences ease and Therapeutics	Behavioral Sciences	Neoplasia, Indirect Restorations
Professional Examination	Theory Marks	100	100	100	100	100	100
	Practical Marks (OSPE)	200		200		200	
	Internal Assessment (IA) (30%)	Theory: 60 Practical: 60		Theory: 60 Practical: 60		Theory: 60 Practical: 60	
Subject Wise Distribution	Subjects	MCQs #	OSPE #	MCQs #	OSPE #	MCQs #	OSPE #
	Pathology	35	5	35	5	35	5
	Pharmacology	35	5	35	5	35	5
	Science of Dental Materials	32	3	32	3	32	3
	Community Dentistry	32	3	32	3	32	3
	Pre-Clinical Dentistry	6	4	6	4	6	4
Total	140	20 (7 Marks each)	140	20 (7 Marks each)	140	20 (7 Marks each)	
Theory Marks (70%)	140		140		140		
Practical Marks (OSPE) (70%)	20 X 7 = 140		20 X 7 = 140		20 X 7 = 140		
Theory	140	60 (IA)	200	140	60 (IA)	200	
OSPE	140	60 (IA)	200	140	60 (IA)	200	
Grand Total	400		400		400		

BDS 2nd Professional Examination

Internal Assessment Grid for Modular Program

30% Component of Internal Assessment (IA): Theory and Practical 60 + 60

Marks Theory each Block: 60 Marks Practical (OSPE) each Block: 60 Total Marks: 120

THEORY

Internal Assessment	BLOCK-IV				BLOCK-V				BLOCK-VI			
	End of Module 7 (EOM) Exam	End of Module 8 (EOM) Exam	SGDs	End of Block-IV (EOB) Exam	End of Module 9 (EOM) Exam	End of Module 10 (EOM) Exam	SGDs	End of Block-V (EOB) Exam	End of Module 11 (EOM) Exam	End of Module 12 (EOM) Exam	SGDs	End of Block-VI (EOB) Exam
	10	10	10	30	10	10	10	30	10	10	10	30
	20		10	30	20		10	30	20		10	30
Total	20 + 10 + 30 = 60				20 + 10 + 30 = 60				20 + 10 + 30 = 60			

PRACTICAL (OSPE)

Internal Assessment	BLOCK-IV		BLOCK-V		BLOCK-VI	
	Module 7	Module 8	Module 9	Module 10	Module 11	Module 12
	End of Block-IV (EOB) Exam		End of Block-V (EOB) Exam		End of Block-VI (EOB) Exam	
	40		40		40	
Practical (Log books)	20		20		20	
Total	40	+ 20 =	60	40	+ 20 =	60

2nd Professional – BDS Examination

Assessment BDS 2nd Year

Students enrolled in 2nd Year BDS will be assessed during the year and at the end of the year. Assessment during the year will be counted as “internal assessment” and end of the year as “University assessment”. Distribution of weightage is 30% internal assessment and 70% University assessment.

Internal Assessment

- Internal assessment will be carried out by the respective college having 30 % weightage.
- Internal assessment will be calculated and added in the University assessment for each block (theory and practical/viva independent) for the final result of 2nd year BDS.

Distribution of internal assessment

Internal assessment will be calculated for theory and practical separately for each block examination. Distribution of marks for internal assessment during the year examination will be as follows;

Theory (Each Block)

This includes two Modules and one Block theory examination

Each Module Examination	10 X 2	= 20 Marks
Small Group Discussion		= 10 Marks
Block Examination	30 X 1	= 30 Marks
Total Marks		= 60 Marks

Practical/Viva Voce

It includes Block OSPE Examination, Practical Log books, Attitude, discipline and conduct.

Block OSPE Examination	= 40 Marks (10 for each subject)
Practical Log books	= 20 Marks
Total Marks	= 60 Marks

Mandatory Criteria

- All those students securing less than 50 % marks and those who want to appear for improvement in their block examination will appear in the Resit block examination.
- Time for the Resit examination will be at the end of the academic session.

University Assessment

At the end of 2nd Year, University will conduct the annual examination for University assessment. This University professional examination carries 70% weightage in final assessment.

University examination will consist of Theory and Practical/Viva Voce components.

Theory Component

As there are three blocks in 2nd year, there will three block theory papers.

- a. Theory paper 1 for Block IV 140 Marks
- b. Theory Paper 2 for Block V 140 Marks
- c. Theory Paper 3 for Block VI 140 Marks

Pattern of Theory Paper

Each end-of-block theory paper will have the following pattern;

- a) Each integrated theory paper will have components of following subjects;
 - i. Four horizontally integrated subjects i.e. Pathology, Pharmacology, Science of Dental Materials and Community Dentistry.
- b) The pattern of integrated each block theory paper will be as following;
 - i. 140 MCQs 35 MCQs per subject 1 Mark each MCQ (most of the MCQs will be one best type, scenario based)

Summary of Marks for each block theory examination

Total 400 marks

Theory Paper

- MCQs = 140 Marks
- Internal Assessment = 60 marks
- Total: 140 + 60 = 200 marks

Practical/Viva Voce Component

This includes OSPE and Viva Voce examination for each block.

Block-IV	20 OSPE Station (5 each subject)	140 Marks
Block-V	20 OSPE Station (5 each subject)	140 Marks
Block-IV	20 OSPE Station (5 each subject)	140 Marks

Pattern of Practical/Viva Voce

The pattern of practical/Viva voce examination per block will be as follows;

- i. 20 OSPE Stations 05 per subject 7 Marks per station
 - There will be 2 interactive/Viva stations (one internal and one external) and 3 non-interactive stations for each subject.
 - For University professional examination, one external examiner for each subject will be called for conduction of OSPE in each block. This makes four external examiners for each block.
 - Rest stations during OSPE will be over and above those twenty stations. Five or more (according to need) rest stations can be included.

Summary of marks for each block Practical/Viva voce examination

Total 200 marks

Practical/Viva Voce

- 20 stations per block
- 7 marks per station
- 4 minutes per station
- $20 \times 7 = 140$ marks
- Internal Assessment = 60 marks
- Total = $140 + 60 = 200$

Summary of distribution of marks for the 2nd Professional University Examination

Theory			
Paper	University Examination	Internal Assessment	Total
Block IV	140 Marks	60 Marks	200 Marks
Block V	140 Marks	60 Marks	200 Marks
Block VI	140 Marks	60 Marks	200 Marks
Total Marks			600 Marks

Practical/Viva Voce			
Paper	University Examination	Internal Assessment	Total
Block IV	140 Marks	60 Marks	200 Marks
Block V	140 Marks	60 Marks	200 Marks
Block VI	140 Marks	60 Marks	200 Marks
Total Marks			600 Marks

Grand Total			
Paper	University Examination	Internal Assessment	Total
Block IV	200 Marks	200 Marks	400 Marks
Block V	200 Marks	200 Marks	400 Marks
Block VI	200 Marks	200 Marks	400 Marks
Grand Total Marks for 2nd Year BDS			1200 Marks