

Program Structure Template

**School of Dental Sciences
MDS
(Orthodontics and Dentofacial
Orthopedics)**

**SDS0106
2021-2024**

1.1 Vision, Mission and Core Values of the University

Vision of the University

To serve the society by being a global University of higher learning in pursuit of academic excellence, innovation and nurturing entrepreneurship.

Mission of the University

Transformative educational experience
Enrichment by educational initiatives that encourage global outlook
Develop research, support disruptive innovations and accelerate entrepreneurship
Seeking beyond boundaries

Core Values

Integrity
Leadership
Diversity
Community

1.2 Vision, Mission and Core Values of the School

Vision of the School

To serve the society by being a global center in pursuit of academic and professional excellence in the field of dentistry.

Mission of the School

Creating a stimulating and flexible learning environment amongst the faculty and students

Strongly promoting research, innovation, clinical excellence

Promote and inculcate ethical values and continued betterment in the dental profession and in all facets of life.

Core Values

Integrity

Leadership

Diversity

Community

1.3 Program Educational Objectives (PEO)

Program educational objectives are broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve.

- PEO1- Be able to diagnose orthodontic problems and understand patients' needs in order to formulate optimum treatment plans.
- PEO2-- Be competent to manage different types of malocclusion with various treatment modalities maintaining high standards of professional ethics.
- PEO3- Be able to educate and motivate the patients in regard to various treatment modalities.
- PEO4-Be able to conduct research and contribute to the existing knowledge through scientific presentations and publications
- PEO5- Maintaining high standards of professional ethics and applying these in all aspects of professional practice

1.3.3 Program Outcomes (PO's)

PO1: Problem analysis & Communication: Apply the knowledge of various aspects of craniofacial complex and various treatment modalities to formulate the treatment plan using all required investigations for diagnostic and prognostic evaluation and communicating efficiently to the patient

PO2: Life-long learning and Upgradation of Patient health care: Keep updated with the latest advances and upgrade the clinical care only after critical assessment based on sound scientific principles and also conduct research while applying ethical principles.

PO3: Infection control and environmental safety: Apply the principles of infection control and environmental safety to patient care and clinical operations.

PSO1: Obtain proper clinical history, conduct clinical examination of the patient; perform essential diagnostic procedures, analyze and interpret them to arrive at a reasonable diagnosis about the dentofacial deformities.

PSO2: Manage all types of orthodontic problems using different orthodontic appliances efficiently and also complex problems needing multidisciplinary approach as a member of the team while adopting ethical principles in orthodontic practice.

PSO3: Knowledge of the interaction of social, cultural, economic, genetic and environmental factors and their relevance to management of oro – facial deformities.

PSO4: Formulate individualized treatment plan and obtain a true informed consent from the patients for the most appropriate treatment available at that point of time after communicating various treatment options available based on the ethical principle

**Program Structure Template
 School of Dental Sciences
 Master of Dental Surgery (MDS)
 Batch: 2021-2024**

S. No.	Paper ID	Subject Code	Subjects	Teaching Load			Type of Course ¹ : 1. CC 2. AECC 3. SEC 4. DSE
				L	T	P	
THEORY SUBJECTS							
1.	MDS305	MDS305	Orthodontics & Dentofacial Ort	134	-	-	CC
Practical/Viva-Voce/Jury							
2.	MDS305	MDS305	Orthodontics & Dentofacial Ort	-	-	4187	CC
TOTAL CREDITS							NA

¹ CC: Core Course, AECC: Ability Enhancement Compulsory Courses, SEC: Skill Enhancement Courses, DSE: Discipline Specific Courses

2.1 Template A1: Syllabus for Theory Subjects

CO	SCHOOL OF DENTAL SCIENCES Batch: 2021-2024	
Program:	MASTER OF DENTAL SURGERY- ORTHODONTICS AND DENTOFACIAL ORTHOPEDICS	
1	Course Code	MDS305
3	Credits	NA
4	Contact Hours (L-T-P)	134-0-4187
	Course Type	Compulsory (Core)
5	Course Objective	<ol style="list-style-type: none"> 1. The dynamic interaction of biologic processes and mechanical forces acting on the stomatognathic system during orthodontic treatment. The etiology, pathophysiology, diagnosis and treatment planning of various common orthodontic problems. 2. Various treatment modalities in orthodontics: preventive interceptive and corrective. Basic sciences relevant to the practice of orthodontics. Interaction of social, cultural, economic, genetic and environmental factors and their relevance to management of oro-facial deformities. 3. Factors affecting the long-range stability of orthodontic correction and their management. 4. Personal hygiene and infection control, prevention of cross infection and safe disposal of hospital waste, keeping in view the high prevalence of Hepatitis and HIV and other highly contagious diseases.
6	Course Outcomes	<p>CO 305.1.1: Basic sciences: The students should have a basic knowledge of growth and development of craniofacial structures and their applied anatomy, physiology, pathology, genetics, physical anthropology and dental materials used in orthodontics.</p> <p>CO305.1.2: Research methodology and biostatistics: The students will know about the study designs, hypothesis testing, sample size estimation, methods of data collection, analysis and interpretation and critical scientific appraisal of scientific literature</p> <p>CO305.2.1: Concepts of occlusion and esthetics, etiology, and classification of malocclusion: Students will gain a</p>

		<p>knowledge of structure and function of all anatomic components of occlusion; anatomy, neuromuscular physiology and pathology related to TMJ and diagnosis of occlusal dysfunction. A comprehensive review of the local and systemic factors in the causation of malocclusion and various classifications of malocclusion.</p> <p>CO305.2.2 Diagnosis & treatment planning in orthodontics. The students will gain an acumen regarding the process of data gathering, synthesis and translating it into a treatment plan for various orthodontic problems. Students will be gaining knowledge of various imaging techniques, radiation hygiene, applications of cephalometrics, use of software and applications of CBCT and other imaging modalities for diagnosis and treatment planning.</p> <p>CO305.3.1 Basic principles of mechanotherapy; Preventive and interceptive orthodontics and Contemporary Orthodontic appliances: Students will gain knowledge regarding principles, design and manipulation, case selection and evaluation of all the appliances and application of fundamentals of biomechanics towards efficient treatment mechanotherapy.</p> <p>CO305.3.2 Multidisciplinary orthodontics: Students will learn about the principles of interdisciplinary patient treatment, common problems and their management; biomechanics and principles of treating adult patients in order to facilitate the dental procedures necessary to control disease, restore function and/or enhance appearance of the patient.</p> <p>CO305.4.1 Recent Advances & Professional ethics and responsibilities: Students will gain theoretical and practical knowledge regarding use of temporary anchorage devices , lasers , application of FEM, digital advancements, Distraction Osteogenesis, Lingual Orthodontics and Clear aligners and an understanding of ethical issues and an awareness of the ethical obligations inherent in the provision of health care and developing an attitude to adopt ethical principles in all aspects of Orthodontics.</p> <p>CO305.4.2 Infection control, Practice management and Ergonomics: Students will be encouraged to follow personal</p>
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		hygiene and infection control and learn about ergonomics and dynamics of solo and group practices, personal management, materials management, public relations, professional relationship, office sterilization procedures, community-based orthodontics.
7	Course Description	The program outlined, addresses both the knowledge needed in Orthodontics and allied Medical specialties in its scope. A minimum of three years of formal training through a graded system of education as specifies, will equip the trainee with skill and knowledge at its completion to be able to practice basic Orthodontics and have the ability to intelligently pursue further apprenticeship towards advanced Orthodontics
8	Outline syllabus	
	Unit A	Applied basic sciences
	Topic 1	Applied anatomy, genetics
	Topic 2	Pathology, physiology, applied pharmacology, physical anthropology, dental materials
	Topic 3	Biostatistics, applied research methodology
	Unit B	Growth and development, child psychology and behaviour management
	Topic 1	Growth and development of prenatal and postnatal development of craniofacial structures.
	Topic 2	Stages of child development, Theories of psychological development, Management of child in orthodontic treatment, Management of handicapped child.
	Topic 3	Motivation and Psychological problems related to malocclusion / orthodontic, Adolescent psychology, Behavioral psychology and communication.
	Unit C	Etiology and classification of malocclusion, orthodontic history, Diagnostic procedures and treatment planning in orthodontics.
	Topic 1	History of orthodontics.
	Topic 2	A comprehensive review of the local and systemic factors in the causation of malocclusion, various classifications of malocclusion.
	Topic 3	Emphasis on the process of data gathering, synthesis and translating it into a treatment plan, problem cases - analysis of cases and its management, cephalometrics, instrumentation, image processing, radiation hygiene, advanced cephalometrics techniques, video imaging principles and application.
	Unit D	Practice management in Orthodontics
	Topic 1	Economics and dynamics of solo and group practices, personal management, materials management

	Topic 2	Public relations, Professional relationship, Dental ethics and jurisprudence.		
	Topic 3	Office sterilization procedures, community-based orthodontics.		
	Unit E	Clinical Orthodontics & Recent Advances		
	Topic 1	Myofunctional orthodontics, dentofacial orthopedics		
	Topic 2	Cleft lip and palate rehabilitation, biology of tooth movement, Orthognathic surgery, interdisciplinary orthodontics, interceptive orthodontics, retention & relapse, biology of tooth movement.		
	Topic 3	Recent advances like implants, Lasers, FEM application, distraction osteogenesis.		
	Mode of examination	Theory/Jury/Practical/Viva		
	Weightage Distribution	1 st MDS	100	
		3 rd MDS	600	
	Text book/s*	TITLE		AUTHOR
	1.	BIOMECHANICS AND ESTHETIC STRATEGIES IN CLINICAL ORTHODONTICS		NANDA, RAVINDRA
	2.	A DENTAL TREASURE CHEST		BUCKING, WOLFRAM
	3.	CLINICAL PROBLEM SOLVING IN ORTHODONTICS & PEDIATRIC DENTISTRY		MILLETT, D.
	4.	CONTEMPORARY ORTHODONTICS		PROFFIT, W. R.
	5.	GRABER'S TEXTBOOK OF ORTHODONTICS BASIC PRINCIPLES AND PRACTICE		PREMKUMAR, S.
	6.	TEXT BOOK OF ORTHODONTICS		SAMIR E. BISHARA
	7.	MCQS IN ORTHODONTICS		CHANDRA, S ATISH
	8.	ORTHODONTICS 3 RD EDI.		BHALAJHI, S. I.
	9.	ORTHODONTICS 4 TH EDI.		GRABER, TM
	10.	AN ATLAS ON CEPHALOMETRIC LANDMARKS 1 ST EDI		BASAVARAJ SUBHASCHANDRA
	11.	REMOVABLE ORTHODONTIC APPLIANCES		ISAACSON, K.G.
	12.	REVIEWS IN ORTHODONTICS		JENA, ASHOK KUMAR
	13.	SYNOPSIS OF ORTHODONTIC TREATMENT		PURVA KUMAR

	14.	THE DESIGN CONSTRUCTION AND USE OF REMOVABLE ORTHODONTIC APPLIANCES	ADAMS, C.P.
	15.	TIP-EDGE ORTHODONTICS	TIP-EDGE ORTHODONTICS
	16.	W&H ORTHODONTIC NOTES	JONES, MALCOLM L.
	17.	CONTEMPORARY TREATMENT OF DENTOFACIAL DEFORMITY	PROFFIT, W. R.
	18.	DENTOFACIAL ORTHOPEDICS WITH FUNCTIONAL APPLIANCES	GRABER, TM
	19.	THE ALEXANDER DISCIPLINE	ALEXANDER, R.G. WICK
	20.	REMOVABLE ORTHODONTIC APPLIANCE	GRABER, T. M.
	21.	RAPID MAXILLARY EXPANSION	TIMMS, DONALD J
	22.	TWIN BLOCK FUNCTIONAL THERAPY	WILLIAM J CLARK
	23.	DIAGNOSIS AND TREATMENT PLANNING IN CRANIOFACIAL GROWTH	LINDEN, F.P. G.M VANDER
	24.	MANAGEMENT OF TM DISORDERS & OCCLUSION	JEJREY P.OKESON
	25.	BIOMECHANICS IN ORTHODONTICS PRINCIPLES & PRACTICE	RAM S. NANDA
	26.	FIXED ORTHODONTIC APPLIANCE	WILLIAM, J. K.
	27.	ORTHODONTICS TREATMENT OF IMPACTED TEETH	ADRIAN BECKER
	28.	ORTHODONTICS RX WITH REMOVABLE APPLIANCE	W.J.B HOUSTON
	29.	ORTHODONTICS FOR DENTAL STUDENTS	DR. T.C. WHITE
	30.	MODERN BEGG: A COMBINATION OF BEGG & STRAIGHT WIRE APPLICATION & TECHNIQUES	THOMPSON, WILLIAM J
	31.	RADIOGRAPHIC CEPHALOMETRY	JACOB, ALEXANDER
	32.	TEXTBOOK OF ORTHODONTICS	GOURI SHANKER
	33.	CLINICAL ORTHODONTICS- CURRENT CONCEPT GOALS & MECHANICS	ASHOK KARAD
	34.	ORTHODONTICS- PRINCIPLE & PRACTICE	PHULARI
	35.	ORTHODONTICS- SHORT NOTES & MCQ	SANJAY KR.
	36.	ORTHODONTICS- PRINCIPLE & PRACTICE (FREE BOOKLET OF MCQ)	PHULARI

	37.	ORTHODONTICS CEPHALOMETRY	A.E. ATHANASIO U
	38.	LINGUAL ORTHODONTICS	SCUZZO & TAKE MOTO
	39.	REFINED BEGG FOR MODERN TIMES	VIJAY P. JAYADE
	40.	ORTHODONTICS MATERIALS	ORTHODON TICS MATERIALS
	41.	MASTERING BDS IIND YEAR	MASTERING BDS IIND YEAR
	42.	REMOVABLE ORTHODONTICS APPLIANCES	GRABER, NEUMANN