



KALINGA INSTITUTE OF DENTAL SCIENCES

Serving through Exemplary Oral Health Care, Education & Research



**MASTER OF DENTAL SURGERY (MDS)
ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS**

PROGRAM OUTCOMES:

This includes the list of objectives a post graduate student in Orthodontics is expected to know at the end of three years of training,:

- PO 1. Effect of biologic processes and mechanical forces on the stomatognathic system throughout orthodontic treatment.
- PO 2. Gain an understanding of the etiology, pathophysiology, diagnosis and treatment planning of various common Malocclusion.
- PO 3. Become competent in Orthodontics prevention, interception and correction modalities.
- PO 4. Orthodontics relevant basic science knowledge gathering.
- PO 5. Become proficient about the interaction of social, cultural, economic, genetic and environmental factors related to management of oro-facial deformities.
- PO 6. Elements influencing the long-range stability of orthodontic correction and their management.
- PO 7. In depth understanding of personal hygiene, infection control, prevention of cross infection and safe disposal of hospital waste.

PAPER - 1

COURSE OUTCOME:

Part – 1

CO1. Applied Anatomy: Under anatomy they would have learnt about Prenatal and post natal growth of head, bone growth, assessment of growth and development, muscles of mastication, Development of dentition and occlusion.

CO2. Applied Physiology: Under Physiology they would have learnt about Endocrinology and its disorders, Calcium and its metabolism, Nutrition-metabolism and their disorders, Muscle physiology, craniofacial biology, bleeding disorders.

CO3. Dental Materials: Under Dental Materials they would have learnt about Gypsum products, impression materials, acrylics, composites, banding and bonding cements, wrought metal alloys, orthodontic arch wires, elastics, applied physics, specification and tests methods, survey of all contemporary and recent advances of above.

CO4. Genetics: Under Genetics they would have learnt about Cell structure, DNA, RNA, protein synthesis, cell division, Chromosomal abnormalities, Principles of orofacial genetics, Genetics in malocclusion, Molecular basis of genetics, Studies related to malocclusion, Recent advances in genetics related to malocclusion, Genetic counselling, Bioethics and relationship to Orthodontic management of patients

CO5. Physical Anthropology: Under Physical Anthropology they would have learnt about Evolutionary development of dentition, Evolutionary development of jaws

CO6. Pathology: Under Pathology they would have learnt about inflammation, and necrosis

CO7. Biostatistics: Under Biostatistics they would have learnt about Statistical principles Sampling and Sampling technique, Experimental models, design and interpretation, Development of skills for preparing clear concise and cogent scientific abstracts and Publication.

CO 8. Applied research methodology in Orthodontics: Under Applied research methodology in Orthodontics they would have learnt about Experimental design, Animal experimental protocol, Principles in the development, execution and interpretation of methodologies in Orthodontics, Critical Scientific appraisal of literature.

Mapping of COs to POs

Program: MDS in ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS

Course: Part I - Applied Basic Sciences

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	✓	✓	✓	✓		✓	
CO2		✓		✓	✓		
CO3	✓		✓	✓		✓	
CO4	✓	✓	✓	✓	✓	✓	✓
CO5	✓	✓		✓		✓	
CO6			✓	✓	✓	✓	✓
CO7	✓	✓	✓	✓			✓
CO8	✓	✓		✓	✓	✓	✓

PO = Program Outcome

CO = Course Outcome

Name of the Course	Employability	Entrepreneurship	Skill development
Part I – Applied Basic Sciences	Y		Y

COURSE OUTCOME:

Part – 2

CO1. Orthodontic history: Under Orthodontic History they would have learnt about Historical perspective, Evolution of orthodontic appliances, Pencil sketch history of Orthodontic peers, History of Orthodontics in India.

CO2. Concepts of occlusion and esthetics: Under this, the students would learn about Structure and function of all anatomic components of occlusion, Mechanics of articulation, Recording of masticatory function, Diagnosis of Occlusal dysfunction, Relationship of TMJ anatomy and pathology and related neuromuscular physiology.

CO3. Etiology and Classification of malocclusion: Under this, the students would learn about, a comprehensive review of the local and systemic factors in the causation of Malocclusion and Various classifications of malocclusion.

CO4. Dentofacial Anomalies: Under this, the students would learn about, anatomical, physiological and pathological characteristics of major groups of developmental defects of the orofacial structures.

CO5. Child and Adult Psychology: Under this, the students would learn about Stages of child development, Theories of psychological development, Management of child in orthodontic treatment, Management of handicapped

child, Motivation and Psychological problems related to malocclusion / orthodontics, Adolescent psychology, Behavioral psychology and communication.

CO6. Diagnostic procedures and treatment planning in orthodontics: Under this, the students would learn about Stages of child development, Theories of psychological development, Management of child in orthodontic treatment, Management of handicapped child, Motivation and Psychological problems related to malocclusion / orthodontics, Adolescent psychology, Behavioral psychology and communication.

CO7. Cephalometrics: Under this the student would learn about, Instrumentation, Image processing, Tracing and analysis of errors and applications, Radiation hygiene, Advanced Cephalometrics techniques, Comprehensive review of literature, Video imaging principles and application.

CO8. Practice management in Orthodontics: Under this the student would learn about, Economics and dynamics of solo and group practices, Personal management, Materials management, Public relations, Professional relationship, Dental ethics and jurisprudence, Office sterilization procedures, Community based Orthodontics

Mapping of COs to POs

Program: MDS in ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS

Course: Part II

Paper-I: Basic Orthodontics

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	✓	✓	✓	✓		✓	✓
CO2		✓	✓		✓	✓	
CO3	✓	✓	✓	✓		✓	✓
CO4	✓	✓		✓	✓		
CO5	✓		✓	✓	✓	✓	✓
CO6	✓	✓		✓	✓	✓	
CO7		✓	✓	✓	✓	✓	✓
CO8	✓	✓	✓	✓			✓

PO = Program Outcome

CO = Course Outcome

Name of the Course	Employability	Entrepreneurship	Skill development
Part II Part I – Basic Orthodontics	Y		Y

PAPER - 2

COURSE OUTCOME:

Part – 2

CO1. Myofunctional Appliances: The students will be capable of diagnosing and interpreting the knowledge obtained to treat developing malocclusion at a younger age.

CO2. Dentofacial Orthopaedics: The students will develop acumen to identify and deliver treatment regimes using orthopaedic appliances to the appropriate cases.

CO3. Cleft Lip & Palate Rehabilitation: The students will be trained to treat the CLCP cases with empathy starting with Naso alveolar moulding at the infant stage and then systematically treat the malocclusion using removable / fixed orthodontics during the mixed & permanent dentition by harmonizing the treatment plan with the other members of the multidisciplinary cleft team.

CO4. Biology of tooth movement: Basic understanding of the applied anatomy & physiology regarding to tooth & its surrounding structures will be inculcated into the student, so that the results of application of orthodontic forces can be understood and clinically used.

CO5. Orthodontics/ Orthognathic Surgery: Students will be thoroughly trained in conjoint diagnosis & treatment planning of cases requiring surgical intervention.

CO6. Ortho/ Perio/ Prosth inter relationship: Students will be trained in treating complicated cases requiring a multi-disciplinary approach in patient management.

CO7. Basic Principles of mechanotherapy: Students will be trained in designing , construction , fabrication & management of cases using both removable & fixed orthodontics .

CO8. Applied preventive aspects in Orthodontics: A comprehensive view of diagnosing & preventing caries, periodontal diseases to maintain proper inter arch relationship.

CO9. Interceptive orthodontics: Students will be trained in growth guidance, diagnosing & treatment planning of early malocclusion both at mixed/ permanent dentition.

CO10. Retention & relapse: Inculcating the acumen to analyze post treatment stability to prevent any relapse.

Mapping of COs to POs

Program: MDS in ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS

Course: Part II

Paper-II: Clinical Orthodontics

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	✓		✓			✓	✓
CO2	✓	✓			✓		
CO3	✓		✓	✓	✓	✓	✓
CO4	✓	✓	✓		✓	✓	✓
CO5	✓	✓		✓	✓		
CO6		✓	✓	✓		✓	
CO7	✓			✓	✓		✓
CO8	✓	✓	✓	✓	✓	✓	
CO9	✓						✓
CO10		✓	✓	✓	✓	✓	

PO = Program Outcome

CO = Course Outcome

Name of the Course	Employability	Entrepreneurship	Skill development
Part II Part II – Clinical Orthodontics	Y	Y	Y

PAPER - 3

COURSE OUTCOME:

Part – 2

CO1. Recent Advances: The Students would be trained in above mentioned topics in detail, so that the student would know the recent updates along with the previous literature available.

Mapping of COs to POs

Program: MDS in ORTHODONTICS & DENTOFACIAL ORTHOPAEDICS

Course: Part II

Paper-III: Essays (descriptive and analyzing type questions)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	✓	✓	✓	✓	✓	✓	✓

PO = Program Outcome

CO = Course Outcome

Name of the Course	Employability	Entrepreneurship	Skill development
Part II Part III – Essays (descriptive and analyzing type questions)	Y	Y	Y