



Accredited with NAAC **A** Grade
12-B Status from UGC

TEERTHANKERMAHAVEERUNIVERSITY
(Established under Govt. of U.P. Act No.30,2008)
Delhi Road, Moradabad (U.P.)

PhD PROGRAMME

**SYLLABUS FOR DISCIPLINE-SPECIFIC COURSE
ORTHODONTICS & DENTOFACIAL ORTHOPEDICS**

Course Code: PDS240121	ORTHODONTICS & DENTOFACIAL ORTHOPEDICS	L	T	P	C
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Objective:	The training program in Orthodontics is to structure and achieve the following four objectives: Knowledge, Skills, Attitude, Communicative skills & ability to Research				
Course Outcomes:					
CO 1:	To obtain proper clinical history, methodical examination of the patient, perform essential diagnostic procedures, interpret them, and arrive at a reasonable diagnosis about the Dento-facial deformities				
CO 2:	To be competent to fabricate and manage the most appropriate appliance – intra or extra oral, removable or fixed, mechanical or functional, and active or passive – for the treatment of any orthodontic problem to be treated singly or as a part of multidisciplinary treatment of oro-facial deformities.				
CO 3:	To Develop an attitude to adopt ethical principles in all aspects of Orthodontic practice.				
CO 4:	Willingness to adopt, after a critical assessment, new methods and techniques of orthodontic management developed from time to time based on scientific research, which is in the best interest of the patient.				
CO 5:	To Develop adequate communication skills particularly with the patients giving them the various options available to manage a particular Dento-facial problem and to obtain true informed consent from them for the most appropriate treatment available now.				
Course Content:					
Unit 1:	<p>Orthodontic History: Historical perspective, Evolution of orthodontic appliances, Pencil sketch history of Orthodontic peers, History of Orthodontics in India.</p> <p>Concepts of Occlusion and Esthetics: Structure and function of all anatomic components of occlusion, Mechanics of articulation, Recording masticatory function, Diagnosis of Occlusal dysfunction,</p>				

	<p>Relationship of TMJ anatomy and pathology and related neuromuscular physiology.</p> <p>Etiology and Classification of Malocclusion: A comprehensive review of the local and systemic factors in the causation of malocclusion, Various classifications of malocclusion.</p> <p>Dentofacial Anomalies: Anatomical, physiological, and pathological characteristics of major groups of developmental, defects of the orofacial structures.</p> <p>Diagnostic Procedures and Treatment Planning in Orthodontics: Emphasis on the process of data gathering, synthesis and translating it into a treatment plan, Problem cases – analysis of cases and its management, adult cases, handicapped and mentally retarded cases and their special problems, Critique of treated cases.</p>
Unit 2:	<p>Cephalometric: Instrumentation, Image processing, Tracing and analysis of errors and applications, Radiation hazards, Advanced Cephalometric techniques including digital cephalometric, A comprehensive review of the literature, Video imaging principles and application.</p>
Unit 3:	<p>Practice Management in Orthodontics: Economics and dynamics of solo and group practices, Personal management, Materials management, Public Relations 104 104, Professional relationship Dental ethics and jurisprudence, Office sterilization procedures, Community-based Orthodontics.</p> <p>Myofunctional Orthodontics: Basic principles Contemporary appliances –design, manipulation, and management, Case selection and evaluation of the treatment results d. Review of the current literature.</p>

	<p>Dentofacial Orthopedics: Principles, Biomechanics, Appliance design and manipulation, Review of contemporary literature.</p>
<p>Unit 4:</p>	<p>Cleft lip and palate rehabilitation: Diagnosis and treatment planning, Mechanotherapy, Special growth problems of cleft cases, Speech physiology, pathology, and elements of therapy as applied to orthodontics, Team rehabilitative procedures.</p> <p>Biology of tooth movement: Principles of tooth movement-review,, Review of contemporary literature Applied histophysiology of bone, periodontal ligament, Molecular and ultra cellular Considerations in Tooth Movement.</p> <p>Orthodontic / Orthognathic surgery: Orthodontist’s role in conjoint diagnosis and treatment planning, Pre and post-surgical Orthodontics.</p> <p>Ortho / Perio / Prosth/Endo interrelationship: Principles of interdisciplinary patient treatment, Common problems and their management.</p> <p>Basic principles of mechanotherapy include removable appliances and fixed appliances: Design, Construction, Fabrication, Management, Review of current literature on treatment methods and results.</p> <p>Applied preventive aspects in Orthodontics: Caries and periodontal disease prevention,, Oral hygiene measures, Clinical procedures.</p> <p>16. Interceptive Orthodontics: Principles, Growth guidance, Diagnosis and treatment planning, Therapy emphasis on: • Dento-facial problems</p>

	<ul style="list-style-type: none"> • Tooth material discrepancies • Minor surgery for Orthodontics
Unit 5:	<p>17. Evidence Based Orthodontics</p> <p>18. Different types of fixed Mechanotherapy</p> <p>19. Orthodontic Management of TMJ problems, sleep-apnoea, etc.</p> <p>20. Retention and relapse:</p> <p>a. Mechanotherapy – special reference to stability of results with various procedures,</p> <p>b. Post retention analysis,</p> <p>c. Review of contemporary literature.</p> <p>21. Recent Advances:</p> <p>Use of implants, Lasers, Application of F.E.M., Distraction Osteogenesis, Invisible Orthodontics, 3D imaging Digital Orthodontics, Virtual Treatment Planning, CAD-CAM bracket Customization, Robotic Wire Bending, Accelerated Orthodontics:</p> <ul style="list-style-type: none"> • Surgical • Device assisted or mechanical stimulation • Biochemical Mediators <p>Lingual Orthodontics</p>
Textbooks:	<ol style="list-style-type: none"> 1. Contemporary Orthodontics 2. Dentofacial Orthopedics with Functional Appliance 3. Lingual & Esthetic Orthodontics 4. Radiographic cephalometry 5. MBT 6. Temporary anchorage devices in clinical orthodontics 7. Biomechanical foundation of clinical orthodontics
Reference Books:	<ol style="list-style-type: none"> 1. Twin block. functional therapy 2. Begg's orthodontic theory and technique 3. Principles and biomechanics of aligner treatment 4. Essential of facial growth 5. Orthodontics current principles and techniques