TEERTHANKER MAHAVEER UNIVERSITY

(Established under Govt. of U. P. Act No. 30, 2008)

Delhi Road, Moradabad (U.P.)

PhD PROGRAMME

SYLLABUS FOR DISCIPLINE-SPECIFIC COURSE
ORAL MEDICINE AND RADIOLOGY

Course Code: **PDS240119**	**ORAL MEDICINE AND RADIOLOGY**	**L**	**T**	**P**	**C**
		0	**0**	**0**	**4**
Objective:	To develop advanced expertise in Oral Medicine and Radiology, with a focus on integrating research, clinical proficiency, and innovative diagnostic methodologies, particularly in the application of artificial intelligence for oral healthcare. Knowledge: Theoretical, Clinical, and practical knowledge of all oral mucosal lesions, skeletal involvement of maxillofacial region, diagnostic procedures pertaining to them, and latest information of imaging modules. Skills: Three important skills need to be imparted in maxillofacial diseases 1. Diagnostic skill in recognition of oral diseases with radiographic diagnosis and their management 2. Research skills in handling scientific problems pertaining to oral treatment 3. Clinical and Didactic skills in encouraging younger doctors to attain learning objectives Attitudes: The positive mental attitude and the persistence of continued learning need to be inculcated.				
Course Outcomes:					
CO 1:	Demonstrate comprehensive knowledge of oral and maxillofacial diseases, including the ability to correlate clinical, radiographic, and histopathological findings for accurate diagnosis and management.				
CO 2:	Develop advanced skills in utilizing conventional and advanced imaging modalities for precise diagnostic interpretation of complex oral and maxillofacial conditions.				

CO 3:	Apply evidence-based approaches to the management of orofacial pain, temporomandibular disorders, and potentially malignant disorders, with a focus on improving patient outcomes.
CO 4:	Engage in cutting-edge research by integrating artificial intelligence, radiomics, and machine learning to innovate diagnostic and therapeutic approaches in Oral Medicine and Radiology.
CO 5:	Develop leadership, teaching, and mentorship skills to contribute to the academic, clinical, and research advancements in the field of Oral Medicine and Radiology.
Course Content:	
Unit 1:	**Oral and Maxillofacial Radiology:** History of radiology, structure of x-ray tube, production of x-ray, property of x-rays, Biological effects of radiation, Films and recording media, Processing of images in radiology, Design of x–ray department, dark room, and use of automatic processing units, Localization by radiographic techniques, Faults of dental radiographs and concept of ideal radiograph, Quality assurance and audit in dental radiology, Extra – oral-imaging techniques, OPG and other radiologic techniques, Advanced imaging techniques like CBCT**,** CT Scan, MRI, Ultrasound, Basic Anatomy of sectional imaging with case interpretations of CT / CBCT / MRI, Radio nucleotide techniques, Contrast radiography in the salivary gland, TMJ, and other radiolucent pathologies, Radiation protection and ICRP guidelines, Art of radiographic report, writing, and descriptors preferred in reports, Radiograph differential diagnosis of radiolucent, radio-opaque and mixed lesions, Digital radiology and its various types of advantages.
Unit 2:	**Oral Medicine, therapeutics, and laboratory investigations:** Methods of clinical diagnosis of oral and systemic diseases, as applicable to oral tissues including modern diagnostic techniques, Laboratory investigations including special investigations of oral and oro – facial diseases, Teeth in local and systemic diseases, congenital, and hereditary disorders, Oral manifestations of systemic diseases, Oro – facial pain, Psychosomatic aspects of oral diseases,

	Management of medically compromised patients including medical emergencies in the dental chair, Congenital and Hereditary disorders involving tissues of oro facial region, Systemic diseases due to oral foci of infection, Hematological, Dermatological, Metabolic, Nutritional, & Endocrinal conditions with oral manifestations, Neuromuscular diseases affecting oro –facial region, Salivary gland disorders, Tongue in oral and systemic diseases, TMJ dysfunction and diseases, Concept of immunity as related to oro–facial lesions, including AIDS, Cysts, Neoplasms, Odontomes, and fibro-osseous lesions, Oral changes in Osteo – dystrophies and chondro-dystrophies, Pre-malignant and malignant lesions of oro-facial region, Allergy and other miscellaneous conditions, Therapeutics in oral medicine –clinical pharmacology, Forensic odontology, Computers in oral diagnosis and imaging, Evidence-based oral care in treatment planning, Molecular Biology.
Textbooks:	1. "Burket's Oral Medicine" Authors: Michael Glick, Martin S. Greenberg 2. "Oral Radiology" Authors: White & Goaz – Mosby year Book 3. "Atlas of Oral and Maxillofacial Radiology" Author: Bernard Koong 4. ."Principles of Oral Diagnosis " Authors: Coleman 5. "Oral and Maxillofacial Medicine: The Basis of Diagnosis and Treatment" Author: Crispian Scully
Reference Books:	1. "Diagnostic Imaging: Oral and Maxillofacial" Authors: Lisa J. Koenig, Kurt W. Molen 2. **"**Cysts of the Oral and Maxillofacial Regions" Authors: Mervyn Shear, Paul Speight 3. "Interpretation Basics of Cone Beam Computed Tomography" Author: Shawneen M. Gonzalez 4. "Maxillofacial Imaging" Author: William C. Scarfe 5. "Cawson's Essentials of Oral Pathology and Oral Medicine" Authors: Roderick A. Cawson, Edward W. Odell