



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

# 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

#### MEDICAL ANATOMY

Course code: PDS240120	BASICS IN HUMAN ANATOMY	L	T	P	C
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<b>Objectives</b>	To familiarize the research scholar with the fundamental concepts of human anatomy				
<b>Course outcomes:</b>	On completion of the course, students will:				
<b>CO1</b>	Be able to demonstrate a detailed understanding of human anatomical structures, their functional correlations, and clinical significance.				
<b>CO2</b>	Be able to effectively teach and communicate anatomical concepts to medical students and healthcare professionals.				
<b>CO3</b>	Be able to conduct advanced research in medical anatomy under established ethical guidelines.				
<b>CO4</b>	Develop advanced skills in research methodology, statistics, and information technology, essential for conducting research work.				
<b>CO5</b>	Develop expertise in dissection techniques, embalming, tissue preparation, staining, and preparing anatomical specimens for museum display.				
<b>UNIT 1:</b>	<p>General Anatomy:</p> <p>Basic concepts and terminology used in anatomy, including planes of the body, axes, and movements. Identification and description of structures such as bones, joints, muscles, nerves, and vessels in a human tissue specimen. Basic organization of the human body, including the skeletal, muscular, cardiovascular, and nervous systems. Basics of surface anatomy to relate external landmarks with the underlying structures. Microscopic structure of epithelial, connective, muscular, and nervous tissues. Fundamental processes of human development, including fertilization, implantation, gastrulation, and early organogenesis.</p>				
<b>UNIT 2:</b>	<p>Systemic anatomy including neuroanatomy:</p> <p>Detailed understanding of the structure of the human body. Identification of key anatomical structures through dissection. Correlating anatomy knowledge with clinical conditions and its importance in surgical interventions. Comprehensive understanding of the human nervous system, including the brain, spinal cord, motor &amp; sensory pathways, and neurological disorders.</p>				
<b>UNIT 3:</b>	<p>Embryology, histology &amp; genetics:</p> <p>Basic understanding of prenatal diagnostics and therapeutic interventions. Detailed understanding of organogenesis and congenital anomalies. Application of developmental anatomy to interpret clinical scenarios involving structural and functional abnormalities. Comprehensive knowledge of histological features of each organ system with emphasis on systemic histology for functional integration. Basic principles of human genetics, including the molecular basis of inheritance, gene expression, genetic testing &amp; counselling.</p>				

<b>UNIT 4:</b>	<p>Research &amp; Statistics:</p> <p>Basic concepts of research methodologies and statistical techniques essential for conducting research in the medical field. Ability to design and execute research studies, apply appropriate statistical methods, and use software tools to interpret research data.</p>
<b>UNIT 5:</b>	<p>Embalming &amp; museology:</p> <p>Comprehensive knowledge of embalming and the preparation of anatomical specimens, ensuring proper preservation of human specimens for teaching and museum display. Learning the fundamental principles of museology, including the handling and documentation of anatomical specimens.</p>
<b>Text books</b>	<p>1. Richard L Drake, A Wayne Vogl, Adam W.M. Mitchell, Raveendranath Veeramani. Gray's Anatomy for Students, 3<sup>rd</sup> South Asia Edition. 2023.</p> <p>2. Victor P. Eroschenko, Prasanna LC, Rima Dada, Sneha G. Kalthur. diFiore's Atlas of Histology with Functional Correlations, 1<sup>st</sup> South Asian edition. 2022.</p> <p>T. W. Sadler, Sabita Mishra. Langman's Medical Embryology, 2<sup>nd</sup> South Asian ed. 2023.</p>
<b>Reference books</b>	<p>1. Susan Standring. Gray's Anatomy, International Edition, 42<sup>nd</sup> edition. 2020.</p> <p>2. Wojciech Pawlina. Histology: A Text and Atlas with Correlated Cell and Molecular Biology, 9<sup>th</sup> edition. 2023.</p> <p>Sharon L Gee-Macarrello. Embalming history, theory &amp; practice, 6<sup>th</sup> edition. 2022.</p>
<b>Additional Electronic Reference Material:</b>	<p><a href="https://pubmed.ncbi.nlm.nih.gov/">https://pubmed.ncbi.nlm.nih.gov/</a></p> <p><a href="https://www.researchgate.net/">https://www.researchgate.net/</a></p> <p><a href="https://www.academia.edu/">https://www.academia.edu/</a></p>