

Ph.D. in Medical Sciences**Pillars & Topics****Pillar I: Neuroscience**

- Stress biology & associated neurologic disorders
- Molecular/Cellular Neuroscience
- Senescence and ageing
- Neuro-imaging
- Cell and molecular biology of CNS myelination
- Management of Gliomas

Pillar II: Cancer Biology & Clinical Oncology

- Cell death – Apoptotic & Autophagic pathways
- Signal transduction pathways
- Phytochemical as anticancer therapeutic agents
- Molecular profiling
- Therapeutic targets in Cancer
- Tumors of the GI system
- Tumors of the thyroid
- GI Surgical Oncology

Pillar III: Cardiovascular Systems

- Cardio-oncology (cardiovascular disease in cancer patients)
- Heart Failure
- Resuscitation
- Acute cardiac care
- Hypertension
- Hyperlipidemia

Pillar IV: Infectious Diseases, Immunology & Microbiology

- Epidemiology of infectious diseases
- Prevention and control of healthcare-associated infections
- Antimicrobial stewardship
- Epidemiology prevention and control of multidrug resistance
- Detection and management of community-acquired infections
- Vaccination and comparative effectiveness of innovative vaccine platforms
- Infectious diseases outbreak risk management- Crisis Emergency planning
- Microbiome and Human disease

Pillar V: Medical Education

- Integrated learning systems
- SMART tools framework

- E-portfolios
- Curriculum design
- Serious games
- Assessment

Pillar VI: Surgery

- Surgical anatomy
- Enhanced post-operative recovery protocols
- Digestive Surgery techniques and outcomes
- Hernias & abdominal wall reconstruction
- MIS (minimally invasive surgery)
- Image-guided surgery

Pillar VII: Miscellany

- Pathophysiology of Chronic Diseases
- Diabetes Mellitus
- Thyroid disorders
- Emergency medicine
- Clinical Pharmacology
- Clinical Toxicology