DEPARTMENT OF PARA-CLINICAL SCIENCES

POSTGRADUATE PROGRAMMES
The Department of Para-Clinical Sciences offers MPhil and PhD degrees in Pharmacology, Pathology (with specialisation in a specific sub-discipline), Microbiology and Community Health.

MPHIL AND PHD PHARMACOLOGY
Pharmacology is the study of drugs and how they affect the body from drug-induced molecular and cellular reactions to the clinical evaluation of therapeutic efficacy. It focuses on drug use for the improvement of health and quality of life, for treatment and prevention of disease and also as research tools for the further exploration of body functions. MPhil / PhD training in the Pharmacology Unit aims to provide candidates with the requisite expertise in the concepts, approaches, and techniques of basic and clinical research and facilitates the development of independent investigators. The programme provides students with a solid foundation through coursework, research, and opportunities to develop communication and presentation skills.

Current research areas within the department include:
1. Preclinical investigation of local medicinal plants.
3. Obstructive respiratory disease
4. Clinical pharmacology of antimicrobial use and abuse
5. Cytochrome P4502D6 allele and genotype frequency in patients with major depression
6. Alcoholism risks and protective factors in Trinidad and Tobago
7. Alcohol challenge in the two major ethnic groups of Trinidad and Tobago.

In addition to completing the Faculty course requirements (see above), candidates other than those holding a BSc Pharmacology or MB.BS are expected to complete a departmental course covering basic and systemic pharmacology, as well as basic sciences, including Biochemistry and Physiology, relevant to the understanding of pharmacological principles. As far as possible candidates will be provided with the opportunity to participate in at least two (2) laboratory rotations outside of their primary research; to include analytical techniques, animal experimentation, molecular biology or other relevant areas available within, but not restricted to, the Faculty of Medical Sciences. Candidates are encouraged to present or publish at least two (2) first-authored primary research papers in forums or peer-reviewed journals before submission of their thesis.

MPHIL AND PHD PATHOLOGY
MPhil and PhD degrees in Pathology are available in the various sub-disciplines of Haematology, Chemical Pathology, Immunology and Anatomical Pathology.

1. Anatomical Pathology is concerned with the diagnosis of disease based on the gross, microscopic, and molecular examination of organs, tissues, and whole bodies. Current research resides in the areas of breast, colon, prostate and cervical cancer, renal disease, wound healing and STI.
2. Chemical Pathology also known by the following names: Clinical Biochemistry and Clinical Chemistry is that branch of laboratory medicine in which chemical and biochemical methods are applied to the study of disease. The Chemical Pathology laboratory performs qualitative and quantitative analyses on body fluids such as blood, urine and spinal fluid among other materials. Chemical Pathology laboratory tests assist the physician in making a diagnosis. Current research areas include: research in diabetes, endocrinology and metabolism, risk factors and biomarkers in Alzheimer’s disease, biomarkers in cardiovascular disease and drug abuse and the neonate.
3. Haematology is concerned with disordered physiology of haemopoetic systems and overlaps with oncology. Research is presently being conducted in the area of Haemoglobinopathies.
4. Immunology deals with the physiological functioning of the immune system in health and disease, in particular malfunctions of the immune system in immunological disorders. Research is presently being conducted in the area of the impact of Sahara dust on health of the Caribbean peoples as well as immunophenotyping and cell cycle analysis by flow cytometry.

MPHIL AND PHD MICROBIOLOGY
Microbiology is a branch of laboratory medicine that has several specialties that includes bacteriology, virology, mycology and parasitology. It deals with nature, epidemiology, disease processes, clinical features, diagnosis, treatment and prevention of the infections caused by microorganisms. The MPhil and PhD programmes are geared towards producing clinical scientists or medical consultants who are capable of assisting physicians in the management of infections and who can assist and advise hospitals infection control programme. Current areas of research include:
1. molecular epidemiology and diagnostics,
2. antimicrobial resistance and nosocomial infections,
3. infection control and prevention.

In addition to the Faculty course requirements (see above) students may also be required to complete courses specific to their research areas. Students are expected to deliver seminars, be involved in journal clubs and grand rounds presentation and tutorials.

MPHIL/PHD COMMUNITY HEALTH
Further information on the above-mentioned programmes degrees can be obtained from the Department of Para-Clinical Sciences.