

## **INSTITUT SUPERIEUR DE TECHNOLOGIES**

Sarl au capital de 10 000 000

IFU 00003441L CMMBF OUA 2002 B00316/CNSS n°3111OR

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Agréé par le FAFPA (ministère de l'emploi)

Diplômes reconnus par le CAMES

Vingt (20) ans au service de la formation des ressources humaines

[www.istburkina.com](http://www.istburkina.com); Email : [infos@isburkina.com](mailto:infos@isburkina.com)

### **Master of Biomedical Laboratory Sciences**

#### **TITLE OF PROGRAMME**

The programme shall be master of biomedical laboratory sciences **MEng. (BLS)**

## **2 PREAMBLE**

### **2.1 Background**

Work in industry-standard facilities, gaining an understanding of human disease from the biological mechanisms that underpin disease pathology to the diagnosis and treatment of patients. The course provides grounding in a range of scientific disciplines applicable to modern Biomedical Laboratory Science including cell biology, molecular biology, immunology and microbiology. You will develop an understanding of the pathogenesis of different diseases from a cellular to whole system level and discuss methods for the diagnosis and treatment of patients.

### **2.2 Justification**

The program is integrated to provide all the Biomedical laboratory science elements that medical laboratory scientist practitioner requires in the areas of communication skills and information technology, medical microbiology, immunology, and immune genetics, molecular diagnostics including Bioinformatics, hematology and transfusion medicine, and Clinical biochemistry. Course in biostatistics and research methodology and research ethics, will able the students to design the research protocols for testing their hypothesis through an investigatory and analytical thinking approach. The didactic courses of all elements of training will be concentrated in the first year of the program to optimize the use of faculty time and help the students to lay strong theoretical foundations of medical laboratory science. Quality management and systems based practices are important elements of the educational program during the laboratory rotations in the second year of the program. The last semester will be devoted to research work in any one subspecialty leading to submission.

### **2.3 Target Group**

The targeted group includes holders of:

- ❖ Applicants must have completed a UTS recognized bachelor's degree, or an equivalent or higher qualification, or submitted other evidence of general and professional qualifications that demonstrates potential to pursue graduate studies.
- ❖ B.S. or B.A. in one of the life sciences (or related field) from accredited college or university
- ❖ Minimum overall GPA of 3.0
- ❖ Undergraduate and graduate transcripts
- ❖ General biology or anatomy and physiology (8 credits), general chemistry (8 credits), organic chemistry or biochemistry (4 credits), general microbiology with lab (4 credits), college level math (3 credits)

### **3. Programme Objectives**

#### **3.1. General Objectives**

Potential candidates should note that there is a strong focus on assisting the individual to develop self-directed research skills. These postgraduate qualifications are not designed to provide practicing medical laboratory scientists with updates on their area of practice. curriculum tracks combine hands-on clinical experience with courses in advanced evidence-based practice, health care management and scientific research. Students have the option to work directly with faculty in their laboratories and perform research projects under their guidance.

#### **3.2. Specific Objectives**

**At the end of this programs students will be able to:**

- Gain an in-depth understanding of modern biomedical laboratory sciences.
- Develop applied research techniques using state-of-the-art laboratory facilities.
- Build confidence in presenting your work to academic and professional audiences.
- Enhance investigative skills including the design, execution and interpretation of practical work.

Biomedical science plays a pivotal role in healthcare. This course has been designed to respond to the increasing need for highly skilled biomedical researchers across a range of industries. The programme aims to explore normal and pathological cell processes and relate these to clinical features, diagnostic procedures and responses to therapy in a range of model diseases.

- **Duration of the Programme:**

This course is offered on a Two-year (Four semesters), full-time or online basis for students with a UTS-recognized bachelor's degree in Health sciences or the natural and physical sciences.

### Programme Structure

Courses codes	Courses Names	Credit Units
	<b>Year one</b>	
	<b>Semester one</b>	
RM M01	Advanced research methods	3
OB M03	Organization Behavior	3
CS M02	Communication Skills	3
ESD M04	Entrepreneurship and Development	3
MBEC 2632	Business Ethics and Corporate Governance	3
MSM 9450	Strategic Management	3
MAE 421	Academic Essay	3
MBLS110	Clinical Parasitology & Mycology	3
MBLS111	Clinical Hematology	3
	<b>Semester Two</b>	
MBLS120	Health Laboratory Management and Quality Assurance	3
MBLS121	Medical biochemistry	3
MBLS122	Immunohematology	3
MBLS123	Medical Microbiology and Parasitology	3
MBLS124	Urinalysis	3
MBLS125	Laboratory Operations	3
MBLS126	Clinical Microbiology	3
MBLS127	Molecular Biology and Applied Genetics	3
MBLS128	Medical Bacteriology	3
MBLS129	Clinical Biochemistry	3
		<b>60</b>
	<b>Year Two</b>	
	<b>Semester One</b>	
MBLS 416	Toxicology	7
MBLS 417	Medical Laboratory Technology	7
MBLS 418	Immunology and Serology	8
MBLS220	Clinical Laboratory Management	8
		60
	<b>Semester Two</b>	
MBLS 429	Internship	10
MBLS 430	Thesis	20
		<b>60</b>

GCU		<b>120</b>
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