COURSE DESCRIPTION

ACADEMIC CENTER **ROBERTO ALCANTARA GOMES BIOLOGY INSTITUTE**	DEPARTMENT **DEPARTMENT OF ANATOMY**		
COURSE NAME **PRINCIPLES AND APPLICATIONS OF EXPERIMENTAL METHODS IN BIOMEDICAL SCIENCES III**	( ) CORE COURSE (**X**) OPTIONAL COURSE	HOURS 30	CREDITS 2

PROGRAM / PROJECT NAME	DISTRIBUTION OF HOURS		
PHYSIOPATHOLOGY AND SURGICAL SCIENCES Key Focus Area: Urogenital System	TYPE OF CLASS	HOURS	N. OF CREDITS
	THEORETICAL	30	2
	PRACTICAL		
	TOTAL	30	2

PREREQUISITES **PRINCIPLES AND APPLICATIONS OF EXPERIMENTAL METHODS IN BIOMEDICAL SCIENCES II**	( ) Master's program course (x) Doctorate's program course

COURSE DESCRIPTION

PRINCIPLES AND APPLICATIONS OF EXPERIMENTAL METHODS IN BIOMEDICAL SCIENCES III. Molecular Biology.

This course briefly presents the fundamentals and applications of the main methods of structural biology, biochemistry and molecular biology used in biomedical science research. This knowledge will allow graduate students, especially those who do not work specifically with one or more of the aforementioned methods, to: (1) understand, in general terms, how results of morphology, biochemistry and molecular biology described in original papers are obtained; (2) thus have a better understanding of the experimental plan used to answer the questions raised in a scientific work; and (3) to know that certain aspects of their own projects can be better clarified through methods of structural biology, biochemistry or molecular biology. The following topics will be covered in the course: DNA and RNA preparation, Plasmid DNA preparation, DNA analysis by restriction enzymes, Southern blotting and Northern blotting, DNA analysis by PCR and RT-PCR, Analysis of DNA-protein interactions by the gel shift assay, Gene transfection.

BASIC BIBLIOGRAPHY

1. Bishop ML, Duben-Engelkirk JL, Fody EP: Clinical Chemistry. Principles, Procedures, Correlations. 3rd ed. Philadelphia, Lippincott, pp. 773, 1996.
2. Davis LG, Kuehl WM, Battey JF: Basic Methods in Molecular Biology. 2nd ed. New York, McGraw-Hill, pp. 777, 1994.
3. Henry JB: Clinical Diagnosis and Management by Laboratory Methods. 19th ed. Philadelphia, Saunders, pp.1556, 1996.
4. Lewin R: Genes VII. Oxford, Oxford Unviversity Press, pp. 990, 2000.

PROGRAM / PROJECT COORDINATOR	
DATE	SIGNATURE