**BBS 3219 Advanced molecular biology and biotechnology**

**Course description**

This course covers advanced molecular biology and principles of biotechnology. This is largely a practical course with most of the time spent in the laboratory.

**Course Objectives**

* To describe some advanced concepts in molecular biology
* To describe the principles of biotechnology.

**Learning outcomes:**

Apply advanced molecular biology techniques to disease diagnosis and research investigations..

**Content outline**

* Biotechnology
	+ Vectors
	+ Enzymes for nuclear research, hybridization, DNA-synthesis
	+ PCR
	+ Synthesis of primers, ligation, transfection, reverse transcription
* Uses in genetics
	+ Gene libraries, construction and their uses
	+ Restriction frgment length polymophisms analysis
* Genetic engneering
	+ Recombinant DNA technology
	+ Cell culture techniques
	+ Mutagenesis,
	+ Hybridisation
	+ Plasmids protoplasta and cell fusion
	+ Monoclonal antibodies
	+ Cloned genes
* Gene transfer
	+ Inborn genetic defects and disease

**Requirements:**

4 Weeks, 60 CH

**Mode of assessment**

Practical examination 40%

Final summative examination 60%