

<b>Module code</b>	SB-2244		
<b>Module Title</b>	Molecular Biology		
<b>Degree/Diploma</b>	Bachelor of Science (Biology)		
<b>Type of Module</b>	Major Core		
<b>Modular Credits</b>	4	<b>Total student Workload</b>	8 hours/week
		<b>Contact hours</b>	6 hours/week
<b>Prerequisite</b>	SB-2211 Genetics		
<b>Anti-requisite</b>	SB-4309 Molecular Genetics		
<b>Aims</b>			
<p>The module is designed to enhance students' understanding of the molecular mechanisms that are critical for the maintenance, stability and expression of prokaryotic and eukaryotic genomes. It is also to provide fundamental understanding of gene technology and engineering. In addition, the module will also introduce students to the basic laboratory techniques routinely employed in molecular biology research.</p>			
<b>Learning Outcomes</b>			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order :	30%	<ul style="list-style-type: none"> <li>- Describe the genome structure and organisation</li> <li>- Describe expression and regulation of the genome</li> <li>- Explain DNA repair mechanism and homologous recombination</li> <li>- Identify viruses and mobile elements</li> <li>- Define bioinformatics</li> </ul>	
Middle order :	60%	<ul style="list-style-type: none"> <li>- Analyse and differentiate the molecular mechanisms for prokaryotic and eukaryotic cells</li> <li>- Evaluate the different stages of gene expression and replication</li> <li>- Analyse the various the genome regulations</li> <li>- Review the basic laboratory techniques routinely employed in molecular biology research</li> <li>- Assess the use of recombinant DNA in genetic engineering</li> <li>- Conduct laboratory practicals, collect data, interpret and discuss results</li> </ul>	
Higher order :	10%	<ul style="list-style-type: none"> <li>- Work effectively in groups during laboratory practicals and independently in reporting experimental results</li> </ul>	
<b>Module Contents</b>			
<ul style="list-style-type: none"> <li>- The Genome structure, organisation and replication</li> <li>- Expression and regulation of the genome</li> <li>- DNA repair and homologous recombination</li> <li>- Viruses and mobile elements</li> <li>- Recombinant DNA technology and molecular cloning</li> <li>- The Genome editing</li> <li>- Basic laboratory techniques in molecular biology research</li> <li>- Introductory bioinformatics</li> </ul>			
<b>Assessment</b>	Formative assessment	Tutorial assignments and feedback	
	Summative assessment	Examination: 60% Coursework: 40% <ul style="list-style-type: none"> <li>- 4 practical assignments (20%)</li> <li>- 1 written assignment (10%)</li> <li>- 2 class tests (10%)</li> </ul>	