

<b>Module code</b>	SB-4241		
<b>Module Title</b>	Advanced Biochemistry		
<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-2243 Introduction to Biochemistry		
<b>Anti-requisite</b>	SB-4306 Biochemistry		
<b>Aims</b>			
The module is designed to provide students with details of the metabolism of major classes of biomolecules. This will encourage an appreciation of the diversity and interconnection of metabolic pathways, and stimulate an understanding of the applicability of metabolism in a broad range of biological contexts.			
<b>Learning Outcomes</b>			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order :	40%	<ul style="list-style-type: none"> <li>- Explain the biosynthesis and catabolism of various metabolites in cells</li> <li>- Describe carbohydrate metabolism, particularly, gluconeogenesis and the pentose phosphate pathway</li> <li>- Describe lipid and nucleotide metabolism as well as biosynthesis and catabolism of amino acids</li> </ul>	
Middle order :	40%	<ul style="list-style-type: none"> <li>- Discuss metabolic interrelationships in cells and tissues under various conditions</li> <li>- Dissect biosynthetic and catabolic pathways of diverse metabolites and their products in cells</li> <li>- Conduct laboratory practicals, collect data, interpret and discuss results</li> </ul>	
Higher order:	20%	<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>- Carbohydrate metabolism</li> <li>- Gluconeogenesis and the pentose phosphate pathway</li> <li>- The role of enzymes and hormones in the control of metabolisms</li> <li>- Metabolic roles and importance in energy supply and provision of precursors</li> <li>- Lipid metabolism</li> <li>- Function, transport and storage of lipids and other esters</li> <li>- Biosynthesis, degradation and desaturation</li> <li>- Acetyl-CoA carboxylase and fatty acid synthesis</li> <li>- Purine and pyrimidine nucleotide metabolism</li> <li>- Nitrogen acquisition and amino acid metabolism</li> <li>- Biosynthesis and catabolism of amino acids and the regulation of pathways</li> <li>- Metabolic interrelationships</li> </ul>			
<b>Assessment</b>	Formative assessment	Tutorial assignments and feedback	
	Summative assessment	Examination: 60% Coursework: 40% <ul style="list-style-type: none"> <li>- 5 practical assignments (30%)</li> <li>- 2 class tests (10%)</li> </ul>	