

<b>Module code</b>	SB-4312		
<b>Module Title</b>	Developmental Biology		
<b>Degree/Diploma</b>	Bachelor of Science (Biology)		
<b>Type of Module</b>	Major Option		
<b>Modular Credits</b>	4	<b>Total student Workload</b>	8 hours/week
		<b>Contact hours</b>	6 hours/week
<b>Prerequisite</b>	None		
<b>Anti-requisite</b>	None		
<b>Aims</b>			
This module is designed to provide students with an understanding of how organisms (both plants and animals) develop into fully functional complex entities from simple structures. Furthermore, students will learn to evaluate and analyse examples from animal and plant kingdoms in relations to organogenesis to understand complexities involved in formation and development of the organs.			
<b>Learning Outcomes</b>			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order :	40%	- Describe the basic principles involved with the development of multicellular organisms	
Middle order :	40%	- Analyse the complexity of developmental processes and mechanisms which give rise to the development of a functional individual (organogenesis)	
Higher order:	20%	- Interpret the integrative role of developmental biology in the functional biological systems and in disease context	
<b>Module Contents</b>			
<ul style="list-style-type: none"> <li>-Origin of Developmental Biology– Experimental Embryology</li> <li>-Life Cycles and Evolution of Developmental Patterns</li> <li>-Genes and Development, and differential Gene Expression</li> <li>-Cell-Cell Communication in Development</li> <li>-Fertilization</li> <li>-Early Development of Selected Invertebrates and vertebrates</li> <li>-Patterning the Vertebrate Body Plan – Axes and Germ Layers</li> <li>-Development of the Nervous System</li> <li>-Neural Crest Cells and Axonal Specificity</li> <li>-Somite Formation and Their Derivatives</li> <li>-Endoderm– Development of Tetrapod Limb</li> <li>-Sex Determination</li> <li>-Metamorphosis, Regeneration and Aging</li> <li>-Development of the plant body</li> <li>-Formation of embryo, the mature embryo and seed</li> <li>-Requirements for seed germination, hormone</li> <li>-Phytochrome and light control of plant formation</li> </ul>			
<b>Assessment</b>	Formative assessment	Tutorial assignments and feedback	
	Summative assessment	Examination: 60%	
		Coursework: 40%	
		<ul style="list-style-type: none"> <li>- 2 class tests (10%)</li> <li>- 2 practical assignments (20%)</li> <li>- 1 student presentation (10%)</li> </ul>	