

Module Code	SB-4330		
Module Title	Marine Pollution and Ecotoxicology		
Degree/Diploma	Bachelor of Science (Biology)		
Type of Module	Major Option		
Modular Credits	4	Total Student Workload	8 hours/week
		Contact Hours	6 hours/week
Prerequisites	SB-2203 Animal Form and Function; SB-2209 Principles in Animal Physiology		
Anti-requisite	None		
Aims			
<p>The aim of this module is to provide a broad overview of marine pollution and its consequences for marine organisms and ecological systems. The module considers organic and inorganic pollutants and their sources, the interaction between pollutants and organisms (bioavailability), uptake, accumulation, sequestration and excretion at the cellular and organismal levels, and the influences of behaviour, physiology and ecology on pollutant uptake and toxicity. Topics include biomonitoring, remediation, management and conservation are considered in the context of marine environmental contamination.</p>			
Learning Outcomes			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order :	10%	<ul style="list-style-type: none"> - Know the different categories of pollutants, and their sources, pathways, persistence and fate in the marine environment - Understand the interacting factors that influence bioavailability and uptake of pollutants; and the influences of behaviour, physiology and ecology on pollutant uptake and toxicity 	
Middle order :	10%	<ul style="list-style-type: none"> - Review approaches to monitoring pollution in marine environments, including approaches using biomonitoring organisms - Analyse organismal responses to pollutant exposure (avoidance, accumulation and sequestration) and interactive of contaminants (physiological responses and fitness, endocrine disruption) - Collect and analyse data on organismal responses to pollutant exposure; collect and analyse data on biomonitoring - 	
Higher order:	80%	<ul style="list-style-type: none"> - Evaluate impacts of pollutants on ecosystems, bioaccumulation and food web effects and toxic effects of secondary pollution - Communicate data and analyses orally and in writing for organismal responses to pollutant exposure and biomonitoring - Evaluate and synthesise information on plastic pollution 	
Module Contents			
<ul style="list-style-type: none"> - Consequences of marine pollution for organisms and ecological systems. - Interaction between pollutants, habitats and organisms; pollutant bioavailability - Factors influencing pollutant uptake and accumulation - Mechanisms for detoxification, including sequestration and excretion at cellular and organismal levels - Influence of behaviour, physiology and ecology on pollutant uptake and toxicity - Biomonitoring - Organismal growth and fitness - Remediation, management and conservation - Experiments on the effects of pollution exposure on metabolic rate 			
Assessment	Formative assessment	Presentation by students and discussion among the students will be used to test the students' understanding	
	Summative assessment	Examination: 0% Coursework: 100% <ul style="list-style-type: none"> - 3 individual written reports (45%) - 2 class tests (40%) - 1 oral group presentation (15%) 	