

Module code	AW-4317		
Module Title	Advanced Environmental Remote Sensing : Focus on Borneo		
Degree/Diploma	Bachelor of Arts (Geography, Environment and Development Studies)		
Type of Module	Major Option / Breath		
Modular Credits	4	Total student workload	8 hours/week
		Contact hours	4 hours/week
Prerequisite	None		
Anti-requisite	None		
Aims			
The module is designed to provide students with the advanced knowledge and skills to select and effectively use appropriate satellite and / or aerial images for a range of tasks performed by geoscientists and environmentalist. The module will also provide students with a solid basic foundation for in-depth studies of the advanced in Environmental Topics in Remote Sensing (RS) through using ArcGIS and ARDAS software.			
Learning Outcomes:			
<i>On successful completion of this module, a student will be expected to be able to:</i>			
Lower order :	30%	- Understand the basic principles of theories and descriptive approaches of Environmental Remote Sensing	
Middle order :	40%	- Apply and analyse the various examples on Remote Sensing Image analysis in environmental fields in a world context to local level and regional levels	
Higher order:	30%	- Apply ArcGIS, ARDAS and other software in specific environmental RS image analysis and demonstration	
Module Contents			
<ul style="list-style-type: none"> - Introduction to the focus on the natural environment on Borneo Island encompassing the geology, geography, climate, drainage, landforms and land cover - Examination of the human aspects of Borneo, including population and development, population distribution, migration and urbanization - Concepts and characteristics of passive remote sensing systems - Introduction to RS image enhancement and correction techniques, contrast stretch, histogram equalization, geo-rectification, etc. - ArcGIS integration of image classification - Change detection - Environmental issues related to Remote Sensing image analyses through ArcGIS and ARDAS - Specific Environmental RS images on Borneo will be analyzed including: deforestation, settlement pattern, river systems, basin management, population distribution, natural resources management, biodiversity, landuse and landcover changes, urbanization, manufacturing, industrial zoning, tourism, transport and communication networks, wetlands ecosystems and watershed patterns etc - Introduction to LiDAR 			
Assessment	Formative assessment	Class lecture feedback (Questions and Answers) Weekly tutorial/ MCQ test Online discussion/ Focus group discussion (FGD) Field excursion	
	Summative assessment	Examination: 50%	
		Course Work: 50% - 2 individual assignments (20 %) - Exercise in RS in GIS Lab (20 %) - Individual / Group project presentation (10%)	