

<b>Module code</b>	AW-4313		
<b>Module Title</b>	Biomimicry		
<b>Degree/Diploma</b>	Bachelor of Arts (Geography, Environment and Development Studies)		
<b>Type of Module</b>	Major Option / Breath		
<b>Modular Credits</b>	4	<b>Total student workload</b>	8 hours/week
		<b>Contact hours</b>	4 hours/week
<b>Prerequisite</b>	None		
<b>Anti-requisite</b>	None		
<b>Aims</b>			
To introduce students to the biomimicry approach to sustainable development.			
<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>- Recognise salient differences between the current development paradigm and natural designs and processes, and relate them to sustainability issues</li> <li>- Identify and describe the fundamental design principles of biomimicry</li> </ul>	
Middle order :	30%	<ul style="list-style-type: none"> <li>- Search and draw from the literature biomimicry research for applicable solutions to sustainable development issues</li> <li>- Design biomimicry solutions to specific sustainable development issue/ case;</li> </ul>	
Higher order:	30%	<ul style="list-style-type: none"> <li>- Work in a team to produce a biomimetic design solution to a specific sustainable development issue and to justify its design features;</li> <li>- Present designs using 3D digital design software, e.g. SketchUp, and mapping software, e.g. Qgis and Google Earth.</li> </ul>	
<b>Module Contents</b>			
<ul style="list-style-type: none"> <li>- Industrial revolution &amp; the beat-heat-treat mantra (root cause of current environmental problems)</li> <li>- Embedded wisdom through 4 billion years of evolution</li> <li>- The egg shell: natural vs. industrial paradigms</li> <li>- Harnessing energy and producing food &amp; materials like ecosystems</li> <li>- Growing cities like rainforests (arcology)</li> <li>- Watering hole – model for sustainable economy</li> <li>- Natural survival and growth strategies</li> <li>- Biomimicry approach to urban design</li> <li>- Barriers and challenges.</li> </ul>			
<b>Assessment</b>	Formative assessment	6-7 tasks assigned and discussed on-line and in class before lectures over the semester	
	Summative assessment	Examination: 50%	
		Coursework: 50% <ul style="list-style-type: none"> <li>- Written argument and critical analysis (20%)</li> <li>- Group project – Biomimicry design solution (20%)</li> <li>- Group presentation (10%)</li> </ul>	