



**UNIVERSITI TEKNOLOGI MARA**

**BCT533: Environmental Green Studies**

<b>Course Name (English)</b>	Environmental Green Studies <b>APPROVED</b>
<b>Course Code</b>	BCT533
<b>MQF Credit</b>	3
<b>Course Description</b>	The course introduces approaches and design to fulfill the requirements in achieving a sustainability development of green building in this green world by learning to use the building performance assessment tools such as green building index. It provides the student understanding and study of the interrelationship between environmental issues, policies, laws, regulations and ecological building envelope design.
<b>Transferable Skills</b>	Students are able to develop their scientific skill such as observation and handling of environmental equipment tools in conducting their assignments..
<b>Teaching Methodologies</b>	Lectures, Lab Work, Case Study, Tutorial
<b>CLO</b>	<p>CLO1 Discover the fundamental issues, policies, laws, regulations, and green building features in designing a sustainable built environment.</p> <p>CLO2 Report verbally and written on the environmental green issues and challenges in achieving a sustainable built environment.</p> <p>CLO3 Display computer skills in measuring a building performance in a tropical climate condition to create a sustainable built environment.</p>
<b>Pre-Requisite Courses</b>	No course recommendations
<b>Topics</b>	
<p><b>1. Environmental Policies, Laws and Regulations</b></p> <p>1.1) Environmental declarations and agreements</p> <p>1.2) DOE strategies</p> <p>1.3) Environmental quality act</p> <p>1.4) Aims of an EIA</p> <p>1.5) EIA procedures</p>	
<p><b>2. Greenhouse Effects and Urban Heat Island</b></p> <p>2.1) Effects of greenhouse effects and ozone depletion.</p> <p>2.2) Control of O3 depletion and green house effects.</p> <p>2.3) Urban heat island</p>	
<p><b>3. Building Performance Assessment Tools</b></p> <p>3.1) LEED system</p> <p>3.2) BREEAM assessment criteria</p> <p>3.3) Green Building Index</p>	
<p><b>4. Passive Design Strategy (ventilation, daylight, thermal, moisture)</b></p> <p>4.1) Building orientation</p> <p>4.2) Building configuration</p> <p>4.3) Floor depth</p> <p>4.4) Floor to floor height</p> <p>4.5) Location of cores</p> <p>4.6) Building façade selection</p> <p>4.7) Arrangement of spaces</p> <p>4.8) Landscaping</p>	

## **5. The Building Envelope - thermal measurement**

- 5.1) Concept of OTTV and RTTV
- 5.2) Fenestration at a given orientation
- 5.3) Shading coefficient
- 5.4) K-value and U-value
- 5.5) Calculation of OTTV based on MS1525: 2007

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Written assignment to calculate the OTTV and U-value of the building using a computer application.	10%	CLO3
	Assignment	Written assignment related to the fundamental issues, policies, laws, regulations, and green building features in designing a sustainable built environment.	40%	CLO1
	Presentation	Presentation of the report finding related to the green environmental issues and passive design strategies.	20%	CLO2
	Written Report	A Written report related to the green environmental issues and passive design strategies.	30%	CLO2

Reading List	Reference Book Resources
	<ul style="list-style-type: none"> <li>• John Glasson and Riki Therivel 2019, <i>Introduction To Environmental Impact Assessment (Natural and Built Environment Series)</i>, 5th Ed., Routledge London [ISBN: 978-113860075]</li> <li>• Department of Standards Malaysia 2017, <i>Malaysian Standard, Energy efficiency and use of renewable energy for residential buildings - Code of practice (MS 2680: 2017)</i>, Department of Standards Malaysia</li> <li>• Charles J. Kibert 2016, <i>Sustainable Construction: Green Building Design and Delivery</i>, 4th Ed., Wiley New Jersey [ISBN: 978-111905517]</li> <li>• Department of Standard Malaysia 2014, <i>Malaysia Standard, Code of Practice on Energy Efficiency and Use of Renewable Energy for Non-Residential Building MS 1525: 2014</i>, Department of Standards Malaysia</li> <li>• Rohinton Emmanuel 2012, <i>An Urban Approach To Climate Sensitive Design: Strategies for the Tropics An Urban Approach To Climate Sensitive Design: Strategies for the Tropics</i>, 1st Ed., Taylor &amp; Francis New York [ISBN: 978-041533410]</li> </ul>

<b>Article/Paper List</b>	This Course does not have any article/paper resources
<b>Other References</b>	This Course does not have any other resources