

### Sustainable Practices in Built Environment

<b>Course Title</b>	:	Sustainable Practices in Built Environment
<b>Course Code</b>	:	
<b>Credit Units</b>	:	2

L	T	P	SW	FW	Total Credits
2	0	0	0	0	2

<b>Course Objective</b>	:	This subject aims to provide an insight into important sustainability principles in the built environment. Specifically, students will gain a systematic understanding and critical awareness of sustainability concepts, policy actions, environmental assessment tools, building construction methods and key property sustainability debates and their relevance to a range of stakeholders in the built environment.
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<b>Pre-requisites</b>	:	NIL
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<b>Student Learning Outcomes (SLO)</b>	:	<ol style="list-style-type: none"> <li>1. Understand sustainability, the need for sustainability and the importance of the sustainability movement.</li> <li>2. Apply sustainability in the built environment through compliance with green legislation and certification.</li> <li>3. Create sustainable solutions in the design, development, maintenance and operation</li> <li>4. Analyze factors that are relevant to the stakeholder groups to promote sustainability in organizational decision making.</li> </ol>
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**Course Content / Syllabus:**

Modules	Weightage (%)
<b>Module I – Principles of Sustainability</b>	25%
Introduction to sustainability; Sustainability models, concepts and principles; Key international accords; Key institutions; Green building certification systems (LEED, GRIHA, IGBC, others); NBC 2016 chapter on sustainability; Sustainable consumption; Sustainability metrics to guide decision making; environmental laws.	

Modules	Weightage (%)
<b>Module II – Importance of sustainability in real estate</b>	<b>20%</b>
Insight into various mandatory and voluntary eco-labels for new and existing buildings in the built environment and their key characteristics. Critical understanding of significant drivers that facilitate the implementation of sustainability in the built environment and their importance	
<b>Module III – Sustainable materials and construction methods</b>	<b>30%</b>
Sustainability in the property industry throughout real estate life cycle, including how the concept is relevant and manifests itself at various life cycle stages, i.e. development, design, construction, operation, refurbishment and retrofitting. Techniques of water conservation in building; Effective plumbing methods; Landscape irrigation techniques; Green construction materials; C&D recycling; Use of local materials; Embodied energy; Sustainable material selection criteria: communication and management of documentation	
<b>Module IV – Sustainability in organizational decision making</b>	<b>25%</b>
Drivers and barriers for the adoption of sustainable practices in the property industry, which includes the business case for sustainability. Critical awareness of a range of views from key stakeholders on the importance of sustainability in real estate practices. Business strategy for sustainability; Inclusion in scope of work and specifications; Role of green building professionals in the built environment	

<b>Pedagogy for Course Delivery</b>	:	Theoretical concepts shall be imparted during lecture and tutorials. Cases, discussions and assignments shall be used for anchoring of concepts and to elaborate practical application.
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**Assessment / Examination Scheme:**

Theory Lecture / Tutorial (%)	Lab / Practical / Studio (%)
100%	0%

**Theory Assessment (Lecture & Tutorial):**

Continuous Assessment / Internal Assessment				End Term Examination
<b>Components</b>	<b>Project / Home Assignment/ Presentation</b>	<b>Class Test</b>	<b>Attendance</b>	<b>50%</b>
<b>Weightage (%)</b>	30%	15%	5%	

**Notional Hours:**

Lecture Contact	30
Tutorial Contact	
Self-Work	30
Field Work	0
Assessment	10
<b>Total Session</b>	<b>70</b>

**Text & References:****Text Book**

1. Modern Construction: Lean Project Delivery and Integrated Practices, Lincoln H. Forbes and Syed M. Ahmed
2. Reading material as provided during the lectures

**References**

1. Goldratt, Eliyahu M. and Jeff Cox "The Goal: A Process of Ongoing Improvement", Great Barrington, MA: North River Press. ISBN 0-88427-061-0
2. James Womack, Daniel Jones, and Daniel Roos, The Machine That Changed the World, MacMillan Publishing, New York, NY. 1990
3. Alarcon, L. (1997), Lean Construction, Taylor and Francis

**Any Other Study Material:**

1. PMBOK, IGLC Conference Papers, LCI White Papers