

EV7110 Module Specification

Module Title: Sustainable Materials in the Built Environment	Module Code: EV7110 Level: 7 Credit:15 ECTS credit: 7.5	Module Leader: Louise Halestrap
Pre-requisite: none	Pre-cursor: none	
Co-requisite: none	Excluded combinations: none	Suitable for incoming study abroad? N
Location of delivery: CAT and online – blended delivery		
Summary of module for applicants:		
<p>In this module students will:</p> <p>Systematically evaluate the environmental impacts, wider social and health implications, in use performance and usability of materials.</p> <p>Apply well informed and sound judgement to the choice and use of materials in practice when applying adaptation and sustainability principles within the built environment.</p> <p>Obtain a thorough appreciation of how environmentally sustainable materials offer creative opportunities for the use and development of high quality, healthy, ecosystem enhancing, effective, and long lasting products.</p> <p>Critically discern how to utilise the advantages and overcome or minimise the disadvantages associated with the use of environmentally sustainable materials under an adaptation and sustainability ethos.</p> <p>Critically discern the key economic, socio-cultural, practical and technical considerations of building materials with respect to their sustainability and their use in the built environment.</p>		
<p>Main topics of study:</p> <ul style="list-style-type: none"> • Materials use for transformational adaptation planning • Resource limitations to materials • Natural and synthetic fibre insulations • Moisture handling and materials in renovation • Straw bale construction • Cementitious materials (limes and cements) • Hemp and binder construction and use in renovation • Composite materials and boards • Modular pre-fabricated building components • Timber and wood-based materials • Earth and clay building (e.g. rammed earth, light earth) • Environmental assessment methods for materials (e.g. life cycle assessment, embodied energy, embodied carbon) • Modern methods of sustainable construction • Environmental Impacts of materials (CO₂, biodiversity, pollution) • Health impacts and safety issues of materials • Material's testing 		
<p>This module will be able to demonstrate at least one of the following examples/ exposures</p> <p><i>Live, applied project</i> <input type="checkbox"/></p> <p><i>Company/engagement visits</i> <input checked="" type="checkbox"/></p>		

Company/industry sector endorsement/badging/sponsorship/award □

Learning Outcomes for the module

Where a LO meets one of the UEL core competencies, please put a code next to the LO that links to the competence.

- *Digital Proficiency - Code = (DP)*
- *Industry Connections - Code = (IC)*
- *Social & Emotional Intelligence - Code = (SEI)*
- *Physical Intelligence - Code = (PI)*
- *Cultural Intelligence - Code = (CI)*
- *Community Connections & UEL Give Back - Code = (CC)*
- *Cognitive Intelligence – Code = (COI)*
- *Enterprise and Entrepreneurship (EE)*

Learning Outcomes for the module

At the end of this module, students will be able to:

Knowledge

1. Demonstrate a deep and critical awareness of environmental assessment and potential use of materials as regards to their environmental impact, social and health implications and sustainability under an adaptation transformation ethos; (COI)
2. Develop comprehensive understanding of the interdependency of all the aspects of sustainable building materials related to sustainability and adaptation planning as applicable to the use of materials and resources; (COI)

Thinking skills

3. Critically evaluate and assess theories and designs related to environmentally responsive materials under a transformational adaptation ethos, and use information sourced from multiple resources to review the properties and attitudes towards environmentally sustainable materials; (COI)

Subject-based practical skills

4. Effectively communicate complex information about methods to assess sustainable materials to a broader, non-specialist, audience. (DP) (SEI)

Skills for life and work (general skills)

5. Effectively communicate to a wider audience; (DP) (SEI)
6. Critically evaluate a range of relevant literature. (COI)

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes: For students studying onsite and by distance learning:

The factual content of the module is taught through lectures, seminars, practical workshops, presentations, demonstrations and tutorials, and throughout this process an active exchange of views and opinions is encouraged. Students have access to MS Teams where they can access recorded and written support material, meet with their peers and a tutor to discuss any academic issue. Both theoretical and practical aspects are covered both onsite and through interactive sessions on Teams.

There is a formative learning element to the module to allow the students to receive critical feedback on their work without the pressure of marked assessment.

For distance learning (DL) students, learning will be supported through streamed and recorded Internet-based lectures (of the onsite lectures), situation related practical exercises, seminars and tutorials.

Lectures onsite and through MS Teams highlight key concepts, models and frameworks, and integrate additional resources (such as journal articles). They encourage deep learning through the use of self-assessment questions which encourage students to engage with the topic, to help students understand new topics and skills.

<p>Assessment methods which enable students to demonstrate the learning outcomes for the module:On-site and DL:</p> <ol style="list-style-type: none"> 1. Essay (2,400 words max.) 2. Individual visual presentation (600 words or equivalent) 	<p>Weighting:</p> <p>80%</p> <p>20%</p>	<p>Learning Outcomes demonstrated:</p> <p>1,2,3,4,5,6</p> <p>4,5</p>
<p>Reading and resources for the module: These must be up to date and presented in correct Harvard format unless a Professional Body specifically requires a different format</p> <p>Core:</p> <p>Allwood, J. M., Cullen, J. M. and Carruth, M. A. (2012) <i>Sustainable Materials with Both Eyes Open</i>. UIT Cambridge Limited.</p> <p>Berge, B. (2009). <i>The ecology of building materials</i>. Oxford: Architectural Press.</p> <p>Recommended:</p> <p>Bevan, R. and Woolley, T. (2008). Hemp lime construction: A guide to building with hemp lime composites. Bracknell, IHS BRE Press.</p> <p>Galindo, M. (2012). <i>Wood: Architecture and design</i>. Salenstein, Switzerland: Braun.</p> <p>Holmes, S. and Wingate, M. (2002). <i>Building with lime: A practical introduction</i>, 2nd revised edition. London, ITDG Publishing.</p> <p>Minke, G. and Mahlke, F. (2005). Building with straw: Design and technology of a sustainable architecture. Basel: Birkhauser.</p> <p>Minke, G. (2006). Building with earth: Design and technology of a sustainable architecture. Basel: Birkhäuser.</p> <p>Pelsmakers, S. (2012). <i>The environmental design pocketbook</i>. London: RIBA.</p> <p>Ryan, C. (2011). <i>Traditional construction for a sustainable future</i>. Abingdon, Oxon: Spon Press.</p> <p>Walker, P. et al. (2005). <i>Rammed earth: Design and construction guidelines</i>: BRE Press.</p> <p>Further relevant journals, websites and other relevant resources will be provided within reading materials that are made available for the module.</p> <p>(*) Available as an e-book</p>		
<p>Provide evidence of how this module will be able to demonstrate at least one of the following examples/ exposures</p> <p>Live, applied project N/A</p> <p>Company/engagement visits</p> <p>On this module we routinely have external lecturers who are practitioners. Recently these have included Rowland Keeble from Rammed Earth Consulting, and John Butler from Sustainable Building Consultancy</p> <p>Company/industry sector endorsement/badging/sponsorship/award N/A</p>		
<p>Indicative learning and teaching time (10 hrs per credit):</p>	<p>Activity</p>	
<p>1. Student/ tutor interaction:</p>	<p>Lectures, seminar, tutorial, presentation, practical / demonstration 30 hours</p>	
<p>2. Student learning time:</p>	<p>Seminar reading and preparation, Assignment preparation, Background reading, On-line research activities. 120 hours</p>	
<p>Total hours (1 and 2):</p>	<p>150 hrs</p>	

For office use only. (Not required for Programme Handbook)

Assessment Pattern for Unistats KIS (Key Information Sets)	Weighting:
Coursework (<i>written assignment, dissertation, portfolio, project output</i>)	
Practical Exam (<i>oral assessment, presentation, practical skills assessment</i>)	
Written Exam	

HECoS Code:	
UEL Department:	

