1. **Title of the module**

ARCH8270 (AR827) – Principles of Environmental Design

1. **Division or partner institution which will be responsible for management of the module**

Arts and Humanities (Kent School of Architecture and Planning)

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 7

1. **The number of credits and the ECTS value which the module represents**

30 credits (15 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Autumn

1. **Prerequisite and co-requisite modules**

None

1. **The course(s) of study to which the module contributes**

MSc Architecture and the Sustainable Environment

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to demonstrate:**
   1. A comprehensive understanding of the driving forces for internal and external conditions and how they can be modified including: ventilation, lighting, heating, cooling, sound attenuation, indoor air quality, comfort.
   2. A critical awareness of the design approaches used, and their success or otherwise, in a range of good and bad exemplar buildings.
   3. A thorough ability to analyse and assess buildings and possible design solutions on a life cycle basis so that decisions can be made based on long term sustainability.
   4. A detailed understanding of the practical constraints on sustainable design in terms of context, and refurbishment and legislation.
   5. A comprehensive knowledge and understanding of the techniques, tools and advanced materials available for sustainable design.
   6. A detailed understanding of the need and approaches required to design for future weather and climate.
2. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to demonstrate:**
   1. A comprehensive ability to design a building that fulfils its function with minimal resource requirements and for those to be met through sustainable means as far as possible.
   2. An ability to assess environmental claims for products/designs critically.
3. **A synopsis of the curriculum**

The module consists of lectures that describe the important energy and material flows in a building and how these are driven and can be regulated. This includes methods for calculating the flow, storage and release of heat in a range of media including phase change materials, determining daylight provision, and calculations for providing sufficient passive ventilation.

Built exemplar buildings are explored and their success assessed. Building fabric and services are explained and how resource requirements for maintenance can be reduced, whilst maintaining the function of the building. Advanced materials and techniques are introduced. Life Cycle Analysis is used to provide a decision tool to assess the sustainability of design. Climate change presents a new challenge to design buildings to be sustainable in the context of projected, but uncertain weather conditions. Future scenarios are investigated to reveal the implications for changing design parameters.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

Baker, N.V., Fanchiotti, A., Steemers, K. A. (1993). *Daylighting in Architecture*. James & James  
Givoni, B. (1998). *Climate considerations in building and urban design*. Van Nostrand Reinhold  
Goedkoop, M., Spriensma, R. (2001). *The Eco-indicator 99: A damage oriented method for life cycle impact assessment: Methodology report*. PRé,   
Liddament, M.W. (1996). *A guide to energy efficient ventilation*. Air Infiltration and Ventilation Centre,   
Santamouris, M. (2003). *Solar thermal technologies for buildings*. James & James.  
Thomas, R. (2002). *Sustainable urban design: an environmental approach*. Taylor & Francis

1. **Learning and teaching methods**

Total contact hours: 36 hours

Private study hours: 264 hours

Total study hours: 300 hours

1. **Assessment methods**
   1. Main assessment methods

Case Study (5,000 words) (100%)

13.2 Reassessment methods

Like for like

1. ***Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)***

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 8.6 | 9.1 | 9.2 |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |
| **Private Study** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| Lectures / workshops | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| Tutorials | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| Presentations (crits) | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| **Assessment method** |  |  |  |  |  |  |  |  |
| Case Study | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |

1. **Inclusive module design**

The Division recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

1. **Internationalisation**

Lectures, seminar teaching and tutorials will continue to draw on international source materials for historical and contemporary examples and theories of sustainability and design.

**DIVISIONAL USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of the delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
| 26/02/2021 | Minor | 2021/22 | 13-14 | No |
|  |  |  |  |  |

Revised FSO Jan 2018