1. **Title of the module**

ARCH8300 (AR830) – Sustainable Design Project

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

Kent School of Architecture.

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)**

Spring

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

None

1. **The programmes 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. An ability to analyse the macro and microclimate relevant to a site and produce an appropriate sustainable environment response.
   2. A systematic understanding of the impact of building orientation, form, massing and vegetation and water features on the internal environment and energy use.
   3. A good understanding of the differing environmental control requirements for buildings depending on building type and the climate and region in which they are located.
   4. An ability to use theoretical knowledge and prediction methodologies to create appropriate sustainable design strategies.
   5. An ability to understand, analyse and reflect upon their design with respect to the internal and external environmental conditions created in a particular climate and location.
   6. An ability to work in design teams which take into account the approaches and the needs of different professional disciplines.
2. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**
   1. Students shall demonstrate an understanding of advanced research principles, the ability to analyse source materials, and form original hypotheses.
   2. Students shall demonstrate the ability to produce sophisticated and imaginative solutions to demanding problems.
   3. Students shall demonstrate the ability to conduct project work independently or within a team of research collaborators.
3. **A synopsis of the curriculum**

In the context of climate change, the significance of sustainable design is of many fold. Ideally, to achieve sustainable design one should be able to trace the environmental impact from geography to individual space and vice versa. However, to make a meaningful and workable sustainable design, the designer should at least address the environmental changes that take place at human scale (≈1m) to city block scale (≈1km). This primarily involves knowledge in disciplines such as urban climatology, urban design/planning, architecture and engineering in order to address environmental issues related to layout, form, structure/construction and environmental performance. In this module, students will acquire basic knowledge related to above-mentioned disciplines and develop a sustainable design proposal incorporating suitable passive/low carbon technologies that are applicable to the context.

Advanced techniques and methodologies for analysis of local climatic conditions, site, and building proposals lead to the development of environmentally sustainable design proposals with a focus on achieving low energy buildings.

The influence of materials, form and construction on environmental performance and waste management will be examined with reference to sustainable design principles, benchmarks and precedents.

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

Emmanuel, M. R. (ed.) (2016) *Urban climate challenges in the tropics: rethinking planning and design opportunities*. London: Imperial College Press.

Guzowski, M. (2010) *Towards zero-energy architecture: new solar design*. London: L. King. Hindrichs, Dirk U and Daniels, Klaus (eds). (2007) *Plus minus 20°/40° latitude: subtropical building design in tropical and sub tropical regions*. Basel: Birkhauser.

Hyde, R. (2000). *Climate responsive design: a study of buildings in moderate and hot humid climates*. Taylor & Francis.

Keeler, M. and Vaidya, P. (2016) *Fundamentals of integrated design for sustainable building*. Second edition. Hoboken, New Jersey: Wiley

Kwok, A and Grondzik, PE. (2011) (2nd ed). *The green studio handbook: environmental strategies for schematic design*. Oxford: Architectural Press.

Latham, I. and Swenarton, M (eds). (2007) *Feilden Clegg Bradley: the environmental handbook*. The Right Angle.

Lechner, N. (2008) (3rd Ed). *Heating cooling and lighting – sustainable design methods for architects*. Wiley.

O’Cofaigh, Eoin. (1996) (Energy Research Group, University College Dublin.) The climatic dwelling: an introduction to climate responsive residential architecture. James and James.

Rassia, S.T. and Pardalos, P.M (eds). (2012) *Sustainable Environmental Design in Architecture: Impacts on Health*. New York: Springer New York

Scott, A. (1998) *Dimensions of sustainability: architecture form, technology, environment, culture*. Abingdon: E & FN Spon

1. **Learning and teaching methods**

Total contact hours: 53 hours

Private study hours: 247 hours

Total study hours: 300 hours

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

Design Proposal and Report (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* | *9.3* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |
| **Private Study** |  |  | **X** |  |  |  | **X** | **X** | **X** |
| Lecturers and workshops | **X** | **X** | **X** | **X** | **X** |  |  |  |  |
| Seminars and tutorials | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |  |
| Presentation / crit | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |
| Design Proposal and Report | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |

1. **Inclusive module design**

The School 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.

**FACULTIES SUPPORT OFFICE 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) |
| 03/01/20 | Minor | Sep 2020 | 8, 10, 12, 13, 14 |  |
|  |  |  |  |  |