

Course Code:

PARE102

Session:

2017/2018

1. Course Title:

Environmental Design and Analysis in Architecture

2. Version

1.1

Date of Production/Revision

2017/2018

Date of Approval

20 April 2016

3. Level:

SCQF11

4. Credits:

15

5. Lead School/Board of Studies:

Mackintosh School of Architecture

6. Course Contact:

Dr Filbert Musau and Rosalie Menon

7. Course Aims:

1. Explore the application of knowledge on theory of environmental architecture (gained in Course 1) in a given design context within the micro and macro environment;
2. To develop an awareness of the latest environmental design simulation tools;
3. To develop knowledge on the use of a selected design tool to test and analyse the environmental and energy performance of design options, including operational and whole life cycle impacts;
4. To develop an understanding of potential occupant health impacts related to design decisions and materials selection;
5. To develop effective communication skills of design proposals and analysis results.

8. Intended Learning Outcomes of Course:**By the end of this course students will be able to:**

1. Research and integrate environmental design theory and principles in a design project;

2. Use a selected environmental simulation software package to effectively analyse design options and/or iterations, and to select and develop design strategies to reduce environmental and energy impact;
3. Critically appraise materials, processes and techniques, and demonstrate application of these in an architectural design context;
4. To manage time and to work effectively both individually and in a group;
5. Effectively communicate design proposals and analysis.

9. Indicative Content:

The course will be taught through seminars, group workshops, studio and individual tutorials. The students will undertake an individual environmental design project meeting a specific design brief as indicated by the tutor. The design proposal will be developed, tested and analysed by the student using simulation tools, materials appraisals and impact assessment on local and wider environments. Simulation workshops will be used to demonstrate the use of a selected tool to students.

10. Description of Summative Assessment:

No.	Assessment Method	Description of Assessment Method	Weight %	Submission week (assignments) or length (exam)
1	Interim review	Presentation of design proposals and results of computer simulation of options to review panel	10%	Semester 1 Week 8
2	Submission of design project	Drawings and simulation model(s) which demonstrate environmental design strategies and resolution, including process and iterations and selected final design.	40%	Semester 1 Week 13
3	Submission of design analysis report	A 1500 words (+ or -10%) written design report summarising the design intent, outcomes and analysis of environmental and energy performance objectives.	50%	Semester 1 Week 13

10.1 Please describe the Summative Assessment arrangements:

The report and design submission need to reflect a clear process of thought between the application of environmental design theory and the analysis of this.

11. Formative Assessment:

Interim review

11.1 Please describe the Formative Assessment arrangements:

Written feedback of the interim review will be provided. Students will be asked to make a presentation of their design proposals and analysis to receive feedback from peers and tutors. The final submissions will be blind second marked and students given feedback for their marks.

12. Collaborative:Yes No **12.1 Teaching Institutions:**

5T

13. Requirements of Entry:

Knowledge of undergraduate level architectural design and undergraduate environmental design in architecture or building services/mechanical systems.

14. Co-requisites:

1. Theory of Environmental Architecture
2. Building Performance Evaluation
3. GSA elective in Core Research skills

15. Associated Programmes:

MSc in Environmental Architecture

16. When Taught:

Stage 1

17. Timetable:

2 hours weekly for 10 weeks.

18. Available to Visiting Students:Yes No **19. Distance Learning:**Yes No **20. Placement:**Yes No

21. Learning and Teaching Methods:		
Method	Formal Contact Hours	Notional Learning Hours (Including formal contact hours)
Lecture	N/A	N/A
Studio	7	50
Seminar/Presentation	2	4
Tutorial	2	5
Workshop	2	10
Computer Simulation Sessions	4	20
Project work	2 (for feedback on a complete draft of assessment design and report, and review)	50
Professional Practice	N/A	N/A
E-Learning / Distance Learning	N/A – may be applicable from third cohort onward	N/A
Placement	N/A	N/A
Examination	1	1
Essay	N/A	N/A
Private Study	N/A	10
Other (please specify below)	N/A	N/A
TOTAL	20	150

22. Description of “Other” Teaching and Learning Methods:

23. Additional Relevant Information:
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24. Indicative Bibliography:
<p><i>Reference should also be made to Theory of Environmental Architecture reading list</i></p> <p>Halliday, Sandy (2008), <i>Sustainable construction</i>, Oxford: Butterworth-Heinemann,</p> <p>Berge, Bjørn (2001), <i>The ecology of building materials</i>, Oxford: Architectural Press,</p> <p>CIBSE guide F (1998), <i>Energy efficiency in building</i>, London: Chartered Institution of Building Services Engineers</p> <p>Lloyd Jones, David (1998), <i>Architecture and the environment: bioclimatic building design</i>, London: Laurence King.</p> <p>CIBSE, (2015). <i>AM11 Building Performance Modelling - Applications Manual</i>, London: Chartered institution of building services engineers</p> <p>EDSL, (2016), <i>User Manuals (3D Modeller Manual, Building Simulator Manual, Results Viewer Manual, Theory Manual)</i> Milton Keynes: Environmental Design Solutions Ltd. (http://edsl.myzen.co.uk/manuals/Results%20Viewer/)</p> <p>IES, (2016), <i>User Manuals (Introduction Tutorials, lighting, Model Builder, Model Builder Tutorials, Report Generator, Solar, Thermal)</i>, Glasgow: Integrated Environmental Solutions limited.</p>