Module Title: Integrated design Project 1 (IDP 1)	**Module Code: AR7400** **Level: 7** **Credit:** 30 **ECTS credit: 15**	**Module Leader:** Trish Andrews **Additional Tutors:** John Carter, Pat Borer, David Lea, Zoe Quick, Gwyn Stacey and visiting tutors and lecturers from the professions
Pre-requisite: None		Pre-cursor: None
Co-requisite: None		Excluded combinations: None
Is this module part of the Skills Curriculum? No		University-wide option: No
Location of delivery: Centre for Alternative Technology		

Main aim(s) of the module:
The aim of the module is for students to develop and demonstrate their process of design and their design skills by developing a detailed brief from a set outline requirements, testing design solutions in response to their own brief objectives, investigating appropriate technological solutions and developing an imaginative, sustainable and resolved architectural proposal. The module also aims to provide students with an opportunity to begin to develop their own critical position towards architectural design and the role of the architect within the context of society and the environmental debate.

Main topics of study:

- Methods of development of a brief including research into the relevant building typology and building content as well as a critical evaluation of historic and current architectural precedents and relevant technological solutions
- Design development processes, including formulating design concepts, analysing the development site and context, testing initial ideas, developing a refined, aesthetic and workable building design through an iterative design process and presenting ideas in a mature, clear and professional manner
- Building technology solutions, including construction and environmental design

Learning Outcomes for the module - at the end of this module, students will be able to demonstrate:
(note reference numbers e.g. GC3.1, relate to ARB criteria of accreditation)

Knowledge of

1. the creative application of the fine arts and their relevance and impact on architecture (GC3.2) and how the theories, practices and technologies of the arts influence architectural design (GC3.1)
2. principles associated with designing optimum visual, thermal and acoustic environments (GC9.1) and systems for environmental comfort realised within relevant precepts of sustainable design (GC9.2)
3. strategies for building services and ability to integrate these in a design project (GC9.3)
4. statutory responsibilities of the architect in relation to building regulations and health and safety legislation (GC11.1)

Understanding of

5. the needs and aspirations of users (GC5.1)
6. the impact of buildings on the environment , and the precepts of sustainable design (GC5.2)
7. the need to critically review precedents relevant to the function, organisation, and technological strategy of design projects (GC7.1)
8. the need to appraise and prepare building briefs of diverse scales and types to define client and user requirements, and their appropriateness to site and context (GC7.2)

Ability to

9. prepare and present a building design project of medium scale and complexity, using a range of media, and in response to a brief (GC1.1)
10. understand the constructional and structural systems, the environmental strategies and the regulatory requirements that apply to the design and construction of a design project (GC1.2)

11. develop a conceptual and critical approach to architectural design that integrates and satisfies the aesthetic aspects of a building and the technical requirements of its construction and the needs of the user (GC1.3)
12. test and evaluate design proposals through a comprehensive range of visual media and generate a design proposal informed by architectural issues that are analysed and responded to with originality and where relevant used to test hypotheses and speculations

Transferable skills to

13. present their design proposals clearly and concisely orally and prepare clearly written, concise and professional reports

Teaching/ learning methods/strategies used to enable the achievement of learning outcomes:

- The module will introduce key topics through lectures and workshops. These will form a basis for the development of the project brief and the design.
- Design workshops and charrettes will provide targeted group and independent learning opportunities to address specific aspects of the design and technology development.
- Individual and group tutorials will support and guide the student learning.
- Independent student work structured around the assignments will enable students to develop their knowledge, understanding and ability to apply it in a project and learn by doing.
- Oral presentations will provide opportunities for students to organise and present ideas.
- Formative and summative feedback will support and guide the learning process.

Reading and resources for the module:

Core

Anderson, J. (2010). Basics Architecture 03: *Architectural Design*. AVA Academic, Lausanne.

Baker, N.;Steemers, K. (2002) *Daylight design of buildings*. London: James & James

Colinvaux P. (1978). *Why Big Fierce Animals Are Rare. An Ecologists Perspective*. Princeton University Press, Princeton

Harris, C. and Borer, P. (2005) *The whole house book: Ecological building design & materials*. 2nd ed. Machynlleth: Centre Alternative Technology.

Hertzberger, H. (1998). *Lessons for Students of Architecture*. Uitgeverij 010: Rotterdam.

Hillman, M. (2004) *How we can save the planet*. London: Penguin

Gregory, R. (2008). *Key contemporary buildings: plans, sections and elevations*. W.W. Norton.

McMullan, R., (2012) *Environmental Science in Building* 7thEdition Palgrave Macmillan, London

Zumthor, P. (2010). *Thinking architecture*. Birkhauser

Design

Alexander, C. (1979) *The timeless way of building*. New York: Oxford University Press.

Alexander, C., Ishikawa, S. and Silverstein, M. (1977) *A pattern language: Towns, buildings, construction*. New York: Oxford University Press.

Association for Environment Conscious Building. (2008) *The green building bible: Volumes 1 and 2*. Forth edition. Green Building Press.

Bauman, I. (2008) *How to be a happy architect: Bauman Lyons architects*. London: Black Dog.

Blundell-Jones, P. (2002) *Modern Architecture through case studies*. Oxford: Architectural.

Brand, Stewart (1995) *How buildings learn: what happens after they're built*. New York; London: Penguin

Day, C. (2004) *Places of the soul: Architecture and environmental design as a healing art* (2nd ed. edn.). Oxford: Elsevier Architectural Press.

Hill, J. (1999). *Occupying Architecture: Between Architecture and the User*. Routledge.

Holdsworth, B. and Sealey, A. (1992) *Healthy Building : A design primer for a living environment*. Harlow: Longman.

Macmillan, S. (2004) *Designing better buildings : Quality and value in the built environment*. London: Spon.

Moore, S. A. (2010) *Pragmatic sustainability: Theoretical and practical tools*. London: Routledge.

Porter, T. (2000). *Architectural Supermodels*. Architectural Press

Schmitz-Günther, T. (1999) *Living spaces : Sustainable building and design*. Cologne: Könemann.

Richardson, P., Dietrich, L. (eds) (2001). *XS: Big Ideas, Small Buildings*. Thames and Hudson.

Unwin, S. (2014). *Analysing Architecture*. Routledge: London.
Woolley, T. (1997) *Green building handbook : A guide to building products and their impact on the environment.* London: E & FN Spon.

Technology
Allwood J.M., and Cullen J.M., (2010) *Sustainable Materials With Eyes Wide Open*.UiT Cambridge.
Baird, G (2010) *Sustainable buildings in practice: what the users think*, Routledge
Ballard Bell, V. & Rand, P. (2014). *Materials for Architectural Design 2*. Laurence King
Bokalders, Varis and Block, Maria (2010), *The whole building handbook: how to design healthy, efficient and sustainable buildings*. London, Earthscan, RIBA
Clements-Croombe D. (editor) (1997). *Naturally Ventilated Buildings: Buildings for the Senses, Economy and Society*. Spon Press, Abingdon.
Deplazes, A. et al. (2005). *Constructing Architecture: Materials, Processes, Structures: a Handbook.* Princeton Architectural Press; Birkhäuser.
Elizabeth L. and Adams C. Eds. (2000) *Alternative construction: contemporary natural building methods*. New York: Wiley
Givoni B. (1981). *Man, Climate and Architecture*. 2nd Edition. Van Nostrand Reinhold.
Harvey, L. D. D. (2010). *Energy Efficiency and the Demand for Energy Services*. Energy and the New Reality 1. Earthscan, London.
Hegger, Manfred (2008) *Energy manual: sustainable architecture*. Basel : Birkhäuser
Hegger, M. (2006) *Construction materials manual.* Basel: Birkhäuser.
Herzog, T et al (2004). *Timber Construction Manual*. Birkhäuser.
Herzog, T. (2004). *Facade Construction Manual*. Birkhäuser.
Institut für Internationale Architektur-Dokumentation (2008) *Insulating materials: principles, materials, applications.* Basel: Birkhäuser.
Kwok, A. and Grondzik, W. (2011). *The Green Studio Handbook environmental strategies for schematic design*. Architectural Press; Oxford
Littlefair, P. J. (1991) *Site layout planning for daylight and sunlight: A guide to good practice*. Watford: Building Research Establishment.
Santamouris M. (2001). *Energy and Climate in the Urban Built Environment*. James and James (Science Publishers) Ltd. 2011 edition, Routledge, Abingdon.
Smith, P. (2007) *Sustainability at the cutting edge: emerging technologies for low energy buildings*. 2nd ed. Oxford: Routledge
Szokolay, S. (2014). *Introduction to architectural science: the basis of sustainable design*. 4th ed. Oxford: Routledge
Thomas, R. ed. (2006). *Environmental Design: an introduction for architects and engineers*. Abingdon: Taylor and Francis.

Also refer to reading lists from other modules

Assessment methods which enable students to demonstrate the learning outcomes for the module:	**Weighting:**	**Learning Outcomes demonstrated**
Design and technology portfolio (equivalent to 6000 words)	100%	1 - 13

Indicative learning and teaching time (10 hrs per credit):	**Activity**
1. Student/tutor interaction, some of which may be online: hours 100	Design tutorials, Workshops, Lectures, Seminars, Studio work, Reviews
2. Student learning time: hours 200	Background reading and preparation, Assignment preparation, Design Portfolio, Diary, Studio work
Total hours 300	