Module Code:	AUR406/AURH406

Module Title:	Construction Technology 1

Level:	4	**Credit Value:**	20

Cost Centre(s):	GABE	JACS3 **code**: HECoS code:	K190 (ADT) K220 (CM) 100122 (ADT) 100149 (CM)

Faculty	FAST	**Module Leader:**	Dr Gareth Carr

Scheduled learning and teaching hours	36 hrs
Guided independent study	164 hrs
Placement	0 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered (not including exit awards)	Core	Option
BSc (Hons) Architectural Design Technology	✓	☐
BSc (Hons) Construction Management	✓	☐
HNC Architectural Design Technology	✓	☐
HNC Construction Technology	✓	☐

Pre-requisites
None

Office use only

Initial approval: 29/08/2019 Version no: 1

With effect from: 01/09/2019

Date and details of revision: 02/04/20 APSC approved HNC awards Version no:3

25/11/20 HNC title change to HNC Construction Technology with effect from Sep 21

18/06/2021 Administrative change to module code

Module Aims

The module will provide students with an appreciation of materials and technologies that are available in the design, construction and use of domestic buildings and associated infrastructure.

Students will develop an informed understanding of construction processes and the importance of appropriate specification towards satisfying the performance requirements of buildings.

A significant aim of the module is to ensure that students are informed as to legislative and regulatory requirements in respect of health, safety and welfare, and environmental protection and sustainability during the design, construction, use and refurbishment of domestic buildings and associated infrastructure.

Intended Learning Outcomes

Key skills for employability

KS1	Written, oral and media communication skills
KS2	Leadership, team working and networking skills
KS3	Opportunity, creativity and problem solving skills
KS4	Information technology skills and digital literacy
KS5	Information management skills
KS6	Research skills
KS7	Intercultural and sustainability skills
KS8	Career management skills
KS9	Learning to learn (managing personal and professional development, self-management)
KS10	Numeracy

At the end of this module, students will be able to		Key Skills	
1	Describe and illustrate the functional and performance requirements of simple domestic residential buildings and the contemporary technologies that combine to satisfy such requirements.	KS1	KS3
		KS5	KS6
2	Demonstrate knowledge of common defects and refurbishment technologies to restore a domestic residential building for contemporary use.	KS1	KS6
		KS3	KS5
3	Undertake simple land surveying and setting-out processes associated with the development of new domestic residential buildings.	KS2	KS5
		KS10	
4	Explain the performance requirements of building services in the design and construction of domestic residential buildings to ensure human comfort and convenience.	KS1	KS6

Transferable skills and other attributes

- Students will understand the importance of self-motivation with regard to study and the communication of their ideas in suitable work;
- Students will develop research and analytical skills, including the importance of listening to taught and peer discussion information;
- Students will appreciate time management and prioritisation in their studies.

Derogations

None

Assessment:

Indicative Assessment Tasks:

Assessment will be undertaken in the form of an in-class test and a series of short coursework exercises, both of 50% weighting. The test will measure understanding of those technologies and processes associated with contemporary house construction and the refurbishment of existing dwellings, and coursework will consider aspects of building services provision and setting-out.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration or Word count (or equivalent if appropriate)
1	1 & 2	In-class test	50%	2 hours
2	3 & 4	Coursework	50%	2,000 eq.

Learning and Teaching Strategies:

The learning and teaching strategy will provide students with opportunities to develop an understanding of the evolution of low-rise domestic house construction through analyses of traditional masonry, timber-framed and contemporary sustainable techniques.

Delivery will be structured such that formal lectures describe the materials and technologies incorporated, and the sequence in which domestic residential buildings are constructed. Particular emphasis will be given to the use of images, cross-section drawings, material samples, practical exercises and site-visits in communicating construction processes and associated technical detail.

Syllabus outline:

The evolution of low-rise house-construction from the vernacular to the use of contemporary mass-produced, industrialised materials and components to include:

- Vernacular stone, cob/clom, brick and timber-framed construction,
- Mass-produced '9 inch' brick construction,
- Defects and refurbishment of existing housing stock,
- Contemporary 'modified-traditional' masonry cavity wall construction,
- Contemporary timber-framed construction,
- Alternative sustainable technologies including straw-bale and rammed-earth construction

The processes of house-construction and the equipment, infrastructure and temporary works necessary to complete low-rise domestic residential buildings through the following stages:

- Site investigation
- Brownfield land
- Contaminated land
- Land surveying
- Setting-out

- Excavation,
- Drainage and infrastructure
- Foundations, footings and ground-floor construction
- Enclosure and openings,
- First-floor construction,
- Roof construction
- First-fix services and fittings
- Finishes
- Second-fix services and fittings
- Decoration,
- External works

Indicative Bibliography:

Essential reading

Foster, J. S.,Greeno, R., (2006), *Structure & Fabric: Part 1.* 7th ed. Abingon: Taylor and Francis Inc.

Greeno R., Chudley, R. (2016), *Building Construction Handbook. 11th ed.* Abingdon: Taylor and Francis Inc.

Other indicative reading

Hall, F. & Greeno, R., (2017), *Building Services Handbook.* 9th ed. Abingdon: Routledge.

Irvine, W. and MaClennan, F. (2005) *Surveying for Construction*. 5th Ed. London: McGraw-Hill.

Marshall, D., Worthing, D, Dann, N. & Heath, R., (2013), *The Construction of Houses.* 5th ed. Abingdon: Estates Gazette.

Marshall, D., Worthing, D. & Heath, R., (2014), *Understanding Housing Defects.* 4th ed. Abingdon: Estates Gazette.

Building Research Establishment Digests HMSO, London

The Building Regulations HMSO, London

Building Design www.bdonline.co.uk

Chartered Institute of Architectural Technologists www.ciat.org.uk

Chartered Institute of Building www.ciob.org.uk

Designing Buildings Wiki www.designingbuildings.co.uk

Students will be guided to online resources during the length of the course and through the VLE.

Other sources:

IHS Database www.ihsti.com