FACULTY OF ENGINEERING, SCIENCE AND THE BUILT ENVIRONMENT

Unit title:	Construction Technology 1
Unit number:	BUG/1/101
Unit Level:	1
Unit value:	1.0
Unit co-ordinator:	M Dunkeld
Contact time:	45 hours
Private study time:	105 hours
Total study time:	150 hours
Unit pre-requisites:	None

SHORT DESCRIPTION

This unit introduces students to construction technology by using low-rise domestic buildings as a model of learning

AIMS

The aim of this unit is to introduce students to the performance approach to analysing buildings. This methodological approach considers buildings and their constituent parts in terms of what performance-in use they should achieve over time.

It further assumes that students learn construction best by starting with small/simple buildings (i.e. low-rise domestic dwellings) and then proceeding to more complex buildings.

An introduction is given to the building process since it is not possible to understand building technology without some knowledge of the industrial setting within which decisions about technological matters are made.

LEARNING OUTCOMES

By the end of this unit students should be able to:

- Describe the nature and extent of the UK construction industry
- Understand the basics of structural behaviour
- Understand the technical aspects of site investigation
- Understand the technical aspects of ground and foundation engineering
- Understand the basic design, construction and servicing principles of small/simple buildings (foul and surface water, above/below drainage, hot and cold water supply, domestic central heating, flues and gas supply, domestic ventilation & electrical supply)
- Be able to assess the technological merits of various building components
- Understand the principles of Health and Safety in the construction industry
- Be aware of recent innovations in building technology such as steel frame housing, prefabrication and other non-traditional forms of construction

INDICATIVE CONTENT

Sources of information for construction technology

Organisation of the UK construction industry

Loads and loading in buildings

Site investigation

Soil mechanics and foundation design

Remedial underpinning

Design of the structure and fabric of simple buildings

Services provision for small/simple buildings

Health and safety at work

Non-traditional forms of building

Estate roads and landscaping

ASSESSMENT METHOD

(1)	Individual Construction Analysis Project	50%
(2)	1 ¹ / ₂ hour Multiple Choice Assessment Test	50%

Each element contributes 50% of the unit mark. The Construction Analysis Project will be the equivalent of a 2500 word essay. To successfully complete the course, a student should achieve a minimum of 35% for each element and an overall average mark of 40%.

ESSENTIAL READING

Burberry, P., Mitchell's Environment and Services, 2000

CIRIA, Wall Technology, Vols. A and B, 1991

Foster, J., Structure and Fabric Part One, 2000

Harrison, H.W., Roofs and Roofing, 1996

Seward, D., Understanding Structures, 1994

Tomlinson, M.J., Foundation Design and Construction, 2001

BACKGROUND READING

Building Regulations - latest update

Chudley, R., Building Construction Handbook, Vol. 2, 1999

Hall, R., Building Services & Equipment, Vol. 2, 1994

Salvadori, D., Why Buildings Stand Up: the Strength of Architecture, 1990