Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

MODULE DIRECTORY

LEVEL 4

ACADEMIC DISCIPLINE OF ARCHITECTURE, CONSTRUCTION AND THE ENVIRONMENT

WALES INSTITUTE OF SCIENCE & ART

2022-2023

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INTRODUCTION

This Module Directory includes all the modules for Level 4 within the Academic Discipline of Architecture, Construction and the Environment in the academic year 2022-2023.

This directory accompanies the Programme of Study Handbook, which will provide you with details of which modules you will be studying for your programme this year in the 'Programme of Study' section. This directory may include modules that are running on other programmes of study within your Academic Discipline/Institute. If you require assistance in identifying the modules for your programme of study, please contact the Programme Manager (whose name and contact details are provided in the accompanying Programme of Study Handbook), or the relevant Institute Office.

The University has made every effort to make the information as full and as accurate as possible, but you should note that minor changes in the organisation of modules between the planning stage and the actual teaching are inevitable. We shall try to keep any such changes to a minimum, and you will receive plenty of advance warning in the event of any alteration. We would also be grateful if you would let us know about any changes that you think might be helpful if introduced into future handbooks.

MODULES

Module Code	**ACAA4000**
Title	**Architecture Studio 1A (Design Skills)**
Date	**08/12/2021**
Level	**4**
Credits	**20**
Pre-Requisites	**None**

ARB/RIBA criteria addressed in this module	
Ability to create architectural designs that satisfy both aesthetic and technical requirements	**GC1**
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	1.3
Knowledge of the fine arts as an influence on the quality of architectural design.	**GC3**
the creative application of the fine arts and their relevance and impact on architecture;	3.2
the creative application of such work to studio design projects, in terms of their conceptualisation and representation.	3.3
RIBA THEMES AND VALUES AT PART ONE LEVEL	**T&V**
Design pedagogies and architectural expression: critically evaluating authentic aesthetic, compositional, and spatial principles to synthesise socially, ecologically, and environmentally sustainable integrated studio projects.	5
GRADUATE ATTRIBUTES AT PART ONE LEVEL	**GA**
ability to apply a range of communication methods and media to present design proposals clearly and effectively;	2

AIM(S)

- To introduce students to the basic skills of the architect – hand drawing, physical model making and the use of computers for drawing, modelling and image manipulation

- To provide students with a grounding in the conventions of architectural representation and the methods of gathering and recording information on existing building fabric and topography.

- To introduce student to the techniques of representation and interpretation used in the visual arts

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Execute clear and coherent manual and computer representations of three-dimensional space and form using the conventions of orthographic and perspective projection

- Apply representational skills in drawing and physical model making with accuracy and care to explain the technical aspects and formal and material qualities in the design of a small building and its constituent elements

- Accurately measure a simple existing three-dimensional structure and record its main structural and constructional elements

INDICATIVE CONTENT
This module will be taught in the first semester and prepares students to undertake ACAA4001 Architecture Studio 1B (Space and Form) and 1C (Structure and Materials) in the second semester. The assignments may include

- Design exercises aimed at developing the skills of freehand drawing and representing of objects and spaces using the conventions of architectural drawing
- Exercises requiring the construction of physical models
- Exercises requiring measuring and recording existing buildings and spaces
- exercises in the use of computer aided design and image manipulation

LEARNING AND TEACHING STRATEGY

In this module students take the first steps in the development of their core architectural design skills through a process of learning-by-doing. In a varied sequence of projects students apply a range of observational and analytical methods and begin to develop an understanding of the application of technical knowledge to design situations. Students respond (usually individually but sometimes in groups) to a brief or proposition. Ideas are developed using a variety of graphic and computer-based methods supported by discussion with tutors, fellow students and others. Proposals are presented using drawings, sketchbooks, physical models and digital images, often accompanied by explanatory text.

Scheduled learning: Regular studio sessions include: group project briefings, studio lectures, workshops, site visits, group tutorial sessions. Formative feedback is continuous in tutorial session and reviews in which students present their work to fellow students, tutors and sometimes visitors.

Independent learning. Between scheduled studio sessions students work independently both individually and collaboratively to develop their design ideas, carry out project related research and read relevant texts.

Study Time Allocation

The study time for the module is divided as follows:

Activity type	**Hours**	**Percentage**
Scheduled learning	48	24%
Structured Learning	12	6%
Independent learning	140	70%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Portfolio of design project work	2 – 3 components	100%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**ACAA4000**	
Module Title	**Architecture Studio 1A (Design Skills)**	
Classification	**Reading List entry**	**Electronic***
Essential	Ching, F. (2015) *Architectural Graphics.* Hoboken New Jersey: Wiley	☒
Essential	Hetreed, J, Ross, A & Baden-Powell, C. (2017) *The Architect's Pocket Book* 5th ed, Routledge.	☒
Essential	Littlefield, D (Ed) (2018) *Metric Handbook: Planning & Design Data* 6th Ed. London: Elsevier	☒
Further	Ballantyne, A. (2002) *Architecture: A Very Short Introduction*. Oxford: Oxford University Press	☐
Further	Bingham, N. (2012) *100 Years of Architectural Drawing* London: Laurence King	☐
Further	Edwards, B. (2013) *Drawing on the Right Side of the Brain* London: Harper Collins	☐
Further	Farrelly, L. (2008) *Representational Techniques* Lausanne, Ava	☐
Further	Weston, R. (2010) *Plans, Sections and Elevations: Key Buildings of the Twentieth Century* London: Laurence King	☐
Background	Hunt, T. (2003) *Tony Hunt's Structures Notebook.* 2nd Ed. London: Architectural Press	☐
Background	Jones, W. (2011) *Architects' Sketches* London: Thames & Hudson	☐

Journals	*The Architects' Journal*	☐
Journals	*Building Design*	☐
Journals	*Architecture Today*	☐
Websites	www.architecture.com	☒
Websites	www.architectsjournal.co.uk	☒
Websites	www.bdonline.co.uk	☒

Additional titles will be recommended relevant to individual design projects

Module Code	**ACAA4001**
Title	**Architecture Studio 1B (Space and Form)**
Date	**08/12/2021**
Level	**4**
Credits	**20**
Pre-Requisites	**None**

ARB/RIBA criteria addressed in this module	
Ability to create architectural designs that satisfy both aesthetic and technical requirements	**GC1**
prepare and present building design projects of diverse scale, complexity, and type in a variety of contexts, using a range of media, and in response to a brief;	1.1
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	1.3
Knowledge of the fine arts as an influence on the quality of architectural design.	**GC3**
how the theories, practices and technologies of the arts influence architectural design;	3.1
the creative application of the fine arts and their relevance and impact on architecture;	3.2
the creative application of such work to studio design projects, in terms of their conceptualisation and representation.	3.3
Understanding of the relationship between people and buildings, and between buildings and their environment, and the need to relate buildings and the spaces between them to human needs and scale.	**GC5**
the needs and aspirations of building users;	5.1
the impact of buildings on the environment, and the precepts of sustainable design;	5.2
the way in which buildings fit into their local context.	5.3
Understanding of the methods of investigation and preparation of the brief for a design project.	**GC7**
the need to critically review precedents relevant to the function, organisation and technological strategy of design proposals;	7.1
Understanding of the structural design, constructional and engineering problems associated with building design.	**GC8**
the investigation, critical appraisal and selection of alternative structural, constructional and material systems relevant to architectural design;	8.1
strategies for building construction, and ability to integrate knowledge of structural principles and construction techniques;	8.2
the physical properties and characteristics of building materials, components and systems, and the environmental impact of specification choices.	8.3
Adequate knowledge of physical problems and technologies and the function of buildings so as to provide them with internal conditions of comfort and protection against the climate.	**GC9**
principles associated with designing optimum visual, thermal and acoustic environments;	9.1
systems for environmental comfort realised within relevant precepts of sustainable design;	9.2
strategies for building services, and ability to integrate these in a design project.	9.3
RIBA THEMES AND VALUES AT PART ONE LEVEL	**T&V**

Design pedagogies and architectural expression: critically evaluating authentic aesthetic, compositional, and spatial principles to synthesise socially, ecologically, and environmentally sustainable integrated studio projects	5
GRADUATE ATTRIBUTES AT PART ONE LEVEL	**GA**
ability to identify individual learning needs and understand the personal responsibility required for further professional education.	6

AIM(S)

- To Introduce students to the core skill of the architect – the design of objects, buildings and spaces to meet the needs and aspirations of people – with an emphasis on form, space, order and experiential qualities of places and buildings.

- To develop the student's design ability through project work that emphasises spatial, formal, tactile and acoustic characteristics of buildings and places

- To develop the student's understanding the character and quality of buildings through the analysis of precedent

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Explain the organising concept for a design proposition verbally and in drawings and/or physical models.

- Analyse a design brief and its physical and social context differentiating between potentially conflicting requirements

- Design a small building that responds to the functional requirements of a clearly defined brief with a well-ordered architectural solution

INDICATIVE CONTENT
There will be an integrated sequence of design and design analysis projects submitted in a single studio portfolio with one third of the marks assigned to projects set in each of the three modules. The assignments associated with ACAA4001 Architecture Studio 1B (Space and Form) may include

- a series of design exercises exploring space, form, material, colour, texture and sound

- design of an interior space in response to a defined brief

- alteration or adaption of an existing space in response to a defined brief

- design of a dwelling for a specified individual or group or other domestic scale building in a real context developed in detail

LEARNING AND TEACHING STRATEGY

In this module students build on the basic design skills acquired in ACAA4000 Architecture Studio 1A (Design Skills). In a varied sequence of projects students apply observational and analytical methods to further develop an understanding of the nature of architectural space, form and place-making. Students respond (usually individually but sometimes in groups) to a brief or proposition. Ideas are developed using a variety of graphic and computer-based methods supported by discussion with tutors, fellow students and others. Proposals are

presented using drawings, sketchbooks, physical models and digital images, often accompanied by explanatory text.

Scheduled learning: Regular studio sessions include: group project briefings, studio lectures, workshops, site visits, group tutorial sessions. Formative feedback is continuous in tutorial session and reviews in which students present their work to fellow students, tutors and sometimes visitors.

Independent learning. Between scheduled studio sessions students work independently both individually and collaboratively to develop their design ideas, carry out project related research and read relevant texts.

Study Time Allocation

The allocation of teaching to deliver the module is:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Structured Learning	12	6%
Independent learning	140	70%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
Portfolio of design project work	2 – 3 components	100%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**ACAA4001**	
Module Title	**Architecture Studio 1B (Space and Form)**	
Classification	**Reading List entry**	**Electronic***
Essential	Ching, F. (2014) *Architecture: Form, Space, Order*. Hoboken New Jersey:j, Wiley	☐
Essential	Hetreed, J, Ross, A & Baden-Powell, C. (2017) *The Architect's Pocket Book* 5th ed, Routledge.	☒
Essential	Littlefield, D. (Ed) (2018) *Metric Handbook: Planning & Design Data.* 6th Ed. London: Elsevier	☒

Essential	Unwin, S. (2012) *Exercises in Architecture.* London: Routledge	☒
Further	Bachelard, G. (2014) *The Poetics of Space (with new Introduction and Foreword).* New York: Penguin	☐
Further	Hertzberger, H. (2016). *Lessons for Students in Architecture*. 5th Revised Ed. Rotterdam: 010	☐
Further	Moore, C., Allen, G. and Lyndon, D. (2001) *The Place of Houses*. London: University of California Press	☐
Further	Rasmussen, S. E. (1978) *Experiencing Architecture*. 2nd Ed. Cambridge MA: MIT Press	☐
Further	Unwin, S. (2014) *Analysing Architecture*. London: Routledge	☐
Further	Weston, R. (2008) *Materials, Form and Architecture*. London: Laurence King	☐
Further	Zumthor, P. (2010) *Thinking Architecture*. 3rd Ed. Basel: Birkhauser	☐
Background	Weston, R. (2004) *Plans, Sections and Elevations: Key Buildings of the 20th Century. London: Laurence King*	☐
Background	Zell, M. (2017) *The Architectural Drawing Course* London: Thames & Hudson	☐
Journals	*The Architects' Journal*	☐
Journals	*Building Design*	☐
Journals	*Architecture Today*	☐
Websites	www.architecture.com	☒
Websites	www.architectsjournal.co.uk	☒
Websites	www.bdonline.co.uk	☒

Module Code	**ACAA4002**
Title	**Architecture Studio 1C (Structure and Materials)**
Date	**08/12/2021**
Level	**4**
Credits	**20**
Pre-Requisites	**None**

ARB/RIBA criteria addressed in this module	
Ability to create architectural designs that satisfy both aesthetic and technical requirements	**GC1**
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	1.3
Understanding of the relationship between people and buildings, and between buildings and their environment, and the need to relate buildings and the spaces between them to human needs and scale.	**GC5**
the needs and aspirations of building users;	5.1
the impact of buildings on the environment, and the precepts of sustainable design;	5.2
Understanding of the methods of investigation and preparation of the brief for a design project.	**GC7**
the need to critically review precedents relevant to the function, organisation and technological strategy of design proposals;	7.1
Understanding of the structural design, constructional and engineering problems associated with building design.	**GC8**
the investigation, critical appraisal and selection of alternative structural, constructional and material systems relevant to architectural design;	8.1
strategies for building construction, and ability to integrate knowledge of structural principles and construction techniques;	8.2
the physical properties and characteristics of building materials, components and systems, and the environmental impact of specification choices.	8.3
Adequate knowledge of physical problems and technologies and the function of buildings so as to provide them with internal conditions of comfort and protection against the climate.	**GC9**
principles associated with designing optimum visual, thermal and acoustic environments;	9.1
systems for environmental comfort realised within relevant precepts of sustainable design;	9.2
strategies for building services, and ability to integrate these in a design project.	9.3
RIBA THEMES AND VALUES AT PART ONE LEVEL	**T&V**
Design pedagogies and architectural expression: critically evaluating authentic aesthetic, compositional, and spatial principles to synthesise socially, ecologically, and environmentally sustainable integrated studio projects.	5
GRADUATE ATTRIBUTES AT PART ONELEVEL	**GA**
understanding of the alternative materials, processes and techniques that apply to architectural design and building construction;	3

AIM(S)

- To introduce students to the core skill of the architect – the design of objects, buildings and spaces to meet the needs and aspirations of people – with an emphasis on the importance of material properties and construction methods as design generators.

- To develop the student's design ability through project work that emphasises the properties of materials and constraints imposed by the environmental context

- To develop the student's understanding the performance of buildings through the analysis of precedent

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Apply the fundamental principles of structure, material properties, environmental comfort and building physics to the design of a small building and explain how the technical and material choices inform the architectural intentions of the design

- Describe the concepts of sustainability and value in relation to building design

- Design a small building that responds to the functional requirements of a defined brief with a well-ordered technical solution and accurately describe the general arrangement of structure and building envelope in drawings

INDICATIVE CONTENT

This module will be taught in sequence with ACAA4001 Architecture Studio 1B (Space and Form). There will be an integrated sequence of design and design analysis projects submitted in a single portfolio with one third of the marks assigned to projects set in each of the three design modules. Case study of an existing building including analysis of structure, construction, environmental strategy and performance. Specific assignments may include:

- Detailed design of a staircase or other significant building element

- Design of a simple structure using a specified set of materials

- Detailed design submission

LEARNING AND TEACHING STRATEGY

In this module students build on the basic design skills acquired in ACAA4000 Architecture Studio 1A (Design Skills). It is taught in sequence with ACAA4001 Architecture Studio 1B (Space & Form) with a strong emphasis on the integration of knowledge of construction technology into design proposals.

In a varied sequence of projects students apply observational and analytical methods to further develop their design thinking. Students respond (usually individually but sometimes in groups) to a brief or proposition. Ideas are developed using a variety of graphic and computer-based methods supported by discussion with tutors, fellow students and others. Proposals are presented using drawings, sketchbooks, physical models and digital images, often accompanied by explanatory text.

Scheduled learning: Regular studio sessions include: group project briefings, studio lectures, workshops, site visits, group tutorial sessions. Formative feedback is continuous in tutorial session and reviews in which students present their work to fellow students, tutors and sometimes visitors.

Independent learning. Between scheduled studio sessions students work independently both individually and collaboratively to develop their design ideas, carry out project related research and read relevant texts.

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Structured Learning	12	6%
Independent learning	140	70%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
Portfolio of design project work	2 – 3 components	100%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**ACAA4002**	
Module Title	**Architecture Studio 1C (Structure and Materials)**	
Classification	**Reading List entry**	**Electronic***
Essential	Bryan, T. (2010) *Construction Technology: Analysis and Choice*. 2nd ed. Chichester: Wiley-Blackwell	☐
Essential	Ching, F. (2014) Building *Construction Illustrated*. New York, John Wiley	☒
Essential	Hetreed, J, Ross, A & Baden-Powell, C. (2017) *The Architect's Pocket Book* 5th ed, Routledge.	☒
Essential	Littlefield, D. (Ed) (2018) *Metric Handbook: Planning & Design Data.* 6th Ed. London: Elsevier	☒
Further	Ballard Bell, V. & Rand, P. (2006) *Materials for Architectural Design*. London: Laurence King	☐
Further	Deplazes, A. (Ed.) (2005) *Constructing Architecture: Materials, Processes, Structures: a Handbook.* Basel: Birkhäuser	☐
Further	Harris, C. & Borer, P. (2005) *The Whole House Book.* 2nd Ed. Machynlleth: Centre for Alternative Technology	☐
Background	Bingham, N. (2013) *100 Years of Architectural Drawing.* London: Laurence King	☐
Background	Brand, S. (1997) *How Buildings Learn: What Happens after they are Built.* London: Phoenix	☐

Background	Krasny, E. (2008). *The Force is in the Mind: The Making of Architecture*. Basel: Birkhäuser.	☐
Background	Moore, C., Allen, G. and Lyndon, D. (2000) *The Place of Houses*. London: University of California Press	☐
Background	Oliver, P. (2003) *Dwellings: The Vernacular House World Wide*. London: Phaidon	☐
Background	Rapoport, A. (1969) *House Form and Culture*. Englewood Cliffs New Jersey: Prentice Hall	☐
Background	Rudofsky, B. (1987) *Architecture Without Architects - A Short Introduction to Non-Pedigreed Architecture.* London: Academy Editions	☐
Background	Rybczynski, W. (1987) *Home: A Short History of an Idea.* New York: Penguin	☐
Background	Rybczynski, W. (1993) *Looking Around: A Journey Through* Architecture. New York: Penguin	☐
Background	Vale, R. and Vale, B. (2007) *The New Autonomous House*. London: Thames & Hudson	☐
Background	Zell, M. (2017) *The Architectural Drawing Course* London: Thames & Hudson	☐
Journals	*The Architects' Journal*	☐
Journals	*Building Design*	☐
Journals	*Architecture Today*	☐
Websites	www.architecture.com	☒
Websites	www.architectsjournal.co.uk	☒
Websites	www.bdonline.co.uk	☒
Websites	www.greatbuildings.com	☒
Websites	http://www.ajbuildingslibrary.co.uk	☒

Additional titles will be recommended relevant to individual design projects.

Module Code	**ACAA4003**
Title	**History and Theory 1**
Date	**08/12/2021**
Level	**4**
Credits	**20**
Pre-Requisites	**None**

ARB/RIBA criteria addressed in this module	
Adequate knowledge of the histories and theories of architecture and the related arts, technologies and human sciences.	**GC2**
the cultural, social and intellectual histories, theories and technologies that influence the design of buildings;	2.1
the influence of history and theory on the spatial, social, and technological aspects of architecture;	2.2
Knowledge of the fine arts as an influence on the quality of architectural design.	**GC3**
how the theories, practices and technologies of the arts influence architectural design;	3.1
the creative application of the fine arts and their relevance and impact on architecture;	3.2
Adequate knowledge of urban design, planning and the skills involved in the planning process.	**GC4**
theories of urban design and the planning of communities;	4.1
the influence of the design and development of cities, past and present on the contemporary built environment;	4.2
Understanding of the relationship between people and buildings, and between buildings and their environment, and the need to relate buildings and the spaces between them to human needs and scale.	**GC5**
the needs and aspirations of building users;	5.1
Understanding of the profession of architecture and the role of the architect in society, in particular in preparing briefs that take account of social factors.	**GC6**
the nature of professionalism and the duties and responsibilities of architects to clients, building users, constructors, co-professionals and the wider society;	6.1
the potential impact of building projects on existing and proposed communities.	6.3
RIBA THEMES AND VALUES AT PART ONE LEVEL	**T&V**
Histories, Theories, and Methodologies: critically analysing and researching narratives and cultural, environmental, and social values in architecture to understand and extend architectural pedagogy.	4
GRADUATE ATTRIBUTES AT PART ONE LEVEL	**GA**
ability to evaluate evidence, arguments and assumptions in order to make and present sound judgments within a structured discourse relating to architectural culture, theory and design;	4

AIMS

- To provide students with a basic knowledge of the history of European architecture and urban design set in the context of the development of arts and culture in the United Kingdom in general and Wales in particular and a basic knowledge of main global architectural traditions

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Describe in outline the main styles and movements in architecture and urban design in Europe from classical times to the present
- Give a clear account of the architectural character of Wales in the context of the UK as a whole.

INDICATIVE CONTENT

- Architecture of the ancient world
- Romanesque and Gothic architecture
- Art and architecture of the Renaissance and Baroque
- Neoclassicism
- Architecture in the industrial revolution
- Architecture of the 20th century – Modernism and other traditions
- Contemporary architecture and urban design
- Global perspectives

LEARNING AND TEACHING STRATEGY

Lectures, on-line teaching resources and guided reading cover the material in a chronological sequence. Seminars give students the opportunity to explore particular periods styles and/or exemplary buildings in detail and assist them in the critical evaluation of knowledge acquired.

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
Essay	2,000 words	50%

Assessment Component 2

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
In-class test / activity	2 hours	50%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**ACAA4003**	
Module Title	**History and Theory 1**	
Classification	**Reading List entry**	**Electronic***
Essential	Hilling, J. (2019) *The Historic Architecture of Wales*. Cardiff: University of Wales Press	☐
Essential	Kostof, S. (2009) *A History of Architecture*. 2nd ed Oxford: Oxford University Press	☐
Essential	Nuttgens, P. (1997) *The Story of Architecture.* London: Phaidon	☐
Further	Ballantyne, A. (2002) *What is Architecture?* London: Routledge	☒
Further	Ballantyne, A. (2012) *Key Buildings from Prehistory to the Present: Plans, Sections and Elevations.* London: Laurence King	☒
Further	Berger, J. (2008) *Ways of Seeing.* London: Pearson	☒
Further	Bowen, H. (2013) *Buildings and Places in Welsh History* Llandyssul, Gomer	☐
Further	Conway, H. & Roenisch, R. (2004) *Understanding Architecture*. 2nd ed. London: Routledge.	☐
Further	Curtis, W. (1996) *Modern Architecture since 1900* London: Phaidon	☐
Further	Frampton, K. (2007) *Modern Architecture - A Critical History*. London: Thames & Hudson	☐
Further	Gombrich, E. (2007) *The Story of Art*. London: Phaidon	☐
Further	Hilling, J. (1973) *Cardiff and the Valleys.* London: Lund Humphries	☐
Further	Hughes, R. (1991) *The Shock of the New.* London: Thames & Hudson	☐
Further	Jencks, C. & Kropf, K. (2005) *Theories and Manifestoes of Contemporary Architecture*. London: Academy Editions	☐
Further	Kenyon, J. (2010) *The Medieval Castles of Wales.* Cardiff: University of Wales Press	☐
Further	Le Corbusier, F. (2008) *Toward an Architecture.* London: Frances Lincoln (new translation by Goodman, J. of *Vers une Architecture,* 1928)	☐
Further	Lloyd, T. (1986) *The Lost Houses of Wales.* London: Save	☐

Further	Lynch, K. (1964) *The Image of the City.* London: MIT	☐
Further	Norberg-Schulz, C. (1971) *Existence, Space and Architecture*. London: Studio Vista	☐
Further	Radford, A*. et al (*2014) *Elements of Modern Architecture: Understanding Contemporary Buildings* London: Thames & Hudson	☐
Further	Rudofsky, B. (1987) *Architecture Without Architects - A Short Introduction to Non-Pedigreed Architecture.* London: Academy Editions	☐
Further	Rybczynski, W. (1987) *Home: A Short History of an Idea*. New York: Penguin	☐
Further	Smith, P. (1975) *Houses of the Welsh Countryside* London: HMSO	☐
Further	Summerson, J. (1980) *The Classical Language of Architecture*. 1980 London: Thames & Hudson	☐
Further	Venturi, R. (1984) *Complexity and Contradiction in Architecture.* 2nd ed. New York: Museum of Modern Art	☐
Further	Weston, R. (2011) *100 Ideas that Changed Architecture*. London: Laurence King	☐
Background	Alexander, C. (1980) *The Timeless Way of Building*. New York: Oxford University Press	☐
Background	Alexander, C., Ishikawa, S. and Silverstein, M. (1978) *A Pattern Language: Towns, Buildings, Construction*. New York: Oxford University Press	☐
Background	Bachelard, G. (2014) *The Poetics of Space (with new Introduction and Foreword).* New York: Penguin	☐
Background	Ballantyne, A. (2002) *Architecture: A Very Short Introduction*. Oxford: Oxford University Press	☐
Background	Cruickshank, D. (ed) (1996) *Sir Banister Fletcher's A History of Architecture.* 20th ed. Oxford: Architectural Press	☐
Background	Cumming, E. & Kaplan, W. (1991) *The Arts and Crafts Movement.* London: Thames & Hudson	☐
Background	Girouard, M. (2012) *Cities and People: A Social and Architectural History.* New Haven & London: Yale	☐
Background	Hollis, E. (2010) *The Secret Lives of Buildings*., London: Portobello	☐
Background	Kostof, S. (1999) *The City Shaped*. London: Thames & Hudson	☐
Background	Lampugnani, V. E. & Kaplan, W. (1988) *Encyclopedia of 20th Century Architecture.* London: Thames & Hudson	☐
Background	Nebois, T. (ed) (2003) *Architecture Theory from the Renaissance to the Present.* Köln: Taschen	☐
Background	Oliver, P. (ed). (1997) *Encyclopedia of Vernacular Architecture of the World.* Cambridge: Cambridge University Press	☐
Background	Rybczynski, W. (1993) *Looking Around: A Journey Through* Architecture. New York: Penguin	☐
Background	Rybczynski, W. (2001) *The Look of Architecture.* New York: Oxford University Press	☐

Background	Service, A. (1977) *Edwardian Architecture.* London: Thames & Hudson	☐
Background	Unwin, S. (2000) *Architecture Notebook.* London: Routledge	☐
Background	Watkin, D. (2011) A *History of Western Architecture.* 5th ed. London: Laurence King	☐
Websites	www.greatbuildings.com	☒
Websites	http://www.ajbuildingslibrary.co.uk	☒

Module Code	**ACAA4004**
Title	**Technology and Environment 1**
Date	**08/12/2021**
Level	**4**
Credits	**20**
Pre-Requisites	**None**

ARB/RIBA criteria addressed in this module	
Understanding of the relationship between people and buildings, and between buildings and their environment, and the need to relate buildings and the spaces between them to human needs and scale.	**GC5**
the impact of buildings on the environment, and the precepts of sustainable design;	5.2
Understanding of the methods of investigation and preparation of the brief for a design project.	**GC7**
the need to critically review precedents relevant to the function, organisation and technological strategy of design proposals;	7.1
Understanding of the structural design, constructional and engineering problems associated with building design.	**GC8**
the investigation, critical appraisal and selection of alternative structural, constructional and material systems relevant to architectural design;	8.1
strategies for building construction, and ability to integrate knowledge of structural principles and construction techniques;	8.2
the physical properties and characteristics of building materials, components and systems, and the environmental impact of specification choices.	8.3
Adequate knowledge of physical problems and technologies and the function of buildings so as to provide them with internal conditions of comfort and protection against the climate.	**GC9**
principles associated with designing optimum visual, thermal and acoustic environments;	9.1
systems for environmental comfort realised within relevant precepts of sustainable design;	9.2
strategies for building services, and ability to integrate these in a design project.	9.3
RIBA THEMES AND VALUES AT PART ONE LEVEL4	**T&V**
Structures, Construction, and Resources: demonstrating climate literacy, responsible specification, and ethical sourcing to enhance wellbeing, minimise embodied carbon, waste, and pollution, and reduce demands on energy and water.	3
Health and Life Safety: Demonstrating authoritative knowledge of statutory frameworks to safeguard the community and the end user.	1
GRADUATE ATTRIBUTES AT PART ONE LEVEL	**GA**
understanding of the alternative materials, processes and techniques that apply to architectural design and building construction;	3

AIMS

- To provide the student with a basic knowledge of the principles of building construction and structural design.
- To provide the student with a basic knowledge of the key concepts of building physics and low carbon building design

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Describe accurately appropriate methods of construction of small domestic buildings in the UK
- Describe accurately the principles that inform the selection of materials and structural strategies for buildings
- Explain the principles of energy consumption and conservation in the construction and use of buildings

INDICATIVE CONTENT

- Design principles for load-bearing structures, building frames, short and long span structures
- Domestic masonry and timber frame construction including innovative methods
- Properties of most common building materials – including timber, masonry, metals, concrete.
- Key environmental design concepts including comfort, efficiency and sustainability
- Heat transfer in buildings: conduction, convection and radiation including calculation of U values, embodied energy, energy inputs
- Low carbon building strategies and typologies

LEARNING AND TEACHING STRATEGY

Lectures, online teaching resources and guided reading will introduce the key concepts and principles. In-class workshops and seminars will introduce practical examples, which will be used to support the application, discussion, and critical evaluation of knowledge acquired. Case studies will also be used to develop understanding and application of the principles.

The teaching of technology and environment will align and run parallel with the design studio projects to provide a holistic pedagogy by integrating technology and performance criteria in to student design proposals.

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
Practical exercises completed outside class	2,000 words	50%

Assessment Component 2

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
Practical exercises completed outside class	2,000 words	50%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**ACAA4004**	
Module Title	**Technology and Environment 1**	
Classification	**Reading List entry**	**Electronic***
Essential	Bryan, T. (2010) *Construction Technology: Analysis and Choice*. 2nd ed. Chichester: Wiley-Blackwell	☐
Essential	Ching, F. (2020) *Building Construction Illustrated*. New York: John Wiley	☒
Essential	Chudley, R & Greeno, R. (2020) *Construction Technology.* 12th ed. London: Routledge	☒
Essential	Hetreed, J, Ross, A & Baden-Powell, C. 2017 *The Architect's Pocket Book* 5th ed, Routledge.	☒
Essential	McMullan, R. (2017) *Environmental Science in Building.* 8th ed. London: Palgrave Macmillan	☐
Essential	Silver, P. (2008) Introduction *to Architectural Technology*. London:, Laurence King	☒
Further	Allen, P. (2013) *Zero Carbon Britain.* Machynlleth:, Centre for Alternative Technology	☐
Further	Ballard Bell, V. & Rand, P. (2006) *Materials for Architectural Design*. London: Laurence King	☐

Further	Bennett, D. (2010) *Sustainable Concrete Architecture* London:, RIBA Publishing	☐
Further	Brown, G. Z. & DeKay, M. (2014) *Sun, Wind and Light: Architectural Design Strategies.* Hoboken New Jersey: Wiley	☒
Further	Clark, D. (2019) *What Colour is Your Building?* London:, RIBA Publishing	☐
Further	Dye, A. & McEvoy, M. (2008) *Environmental Construction Handbook.* London:, RIBA Publishing	☐
Further	Evans, H. (2015) *Guide to the Building Regulations 2011.* 3rd ed. London:, RIBA Publishing	☐
Further	Gething, B. (2013) *Design for Climate Change* London:, RIBA Publishing	☐
Further	Heywood, H. (2012) *101 Rules of Thumb for Low-Energy Architecture*. London: RIBA Publishing	☒
Further	Rudlin, D. & Falk, N. (2009) *Building the 21st Century Home.* 2nd ed. Oxford:, Architectural Press	☐
Further	Stacey, M. (2011) *Concrete: A Studio Design Guide* London: RIBA Publishing	☐
Further	Thompson, R. (2007) *Manufacturing Processes for Design Professionals*. London: Thames & Hudson	☐
Background	Edwards, B. (2014) *Rough Guide to Sustainability.* 4th ed. London: RIBA Publishing	☐
Background	Littlefield, D (ed) (2018) *Metric Handbook: Planning & Design Data.* 6th Ed. London: Elsevier	☒
Background	Pelsmakers, S. (2015) *Environmental Design Pocket Book.* 2nd ed. London: RIBA Publishing	☐
Journals	*The Architects' Journal*	☐
Journals	*Building Design*	☐
Journals	*Architecture Today*	☐
Journals	*Detail*	☐
Journals	*Building*	☐
Websites	www.architecture.com	☒
Websites	www.architectsjournal.co.uk	☒
Websites	www.bdonline.co.uk	☒
Websites	www.greatbuildings.com	☒
Websites	http://www.ajbuildingslibrary.co.uk	☒

Module Code	**ACAA4005**
Title	**The Modern World**
Date	**08/12/2021**
Level	**4**
Credits	**20**
Pre-Requisites	**None**

ARB/RIBA criteria addressed in this module	
Adequate knowledge of the histories and theories of architecture and the related arts, technologies and human sciences.	**GC2**
the cultural, social and intellectual histories, theories and technologies that influence the design of buildings;	2.1
the influence of history and theory on the spatial, social, and technological aspects of architecture;	2.2
Adequate knowledge of urban design, planning and the skills involved in the planning process.	**GC4**
theories of urban design and the planning of communities;	4.1
the influence of the design and development of cities, past and present on the contemporary built environment;	4.2
Understanding of the relationship between people and buildings, and between buildings and their environment, and the need to relate buildings and the spaces between them to human needs and scale.	**GC5**
the impact of buildings on the environment, and the precepts of sustainable design;	5.2
Understanding of the profession of architecture and the role of the architect in society, in particular in preparing briefs that take account of social factors.	**GC6**
the nature of professionalism and the duties and responsibilities of architects to clients, building users, constructors, co-professionals and the wider society;	6.1
RIBA THEMES AND VALUES AT PART ONE LEVEL	**T&V**
Histories, Theories, and Methodologies: critically analysing and researching narratives and cultural, environmental, and social values in architecture to understand and extend architectural pedagogy.	4
GRADUATE ATTRIBUTES AT PART ONE LEVEL	**GA**
ability to evaluate evidence, arguments and assumptions in order to make and present sound judgments within a structured discourse relating to architectural culture, theory and design;	4
knowledge of the context of the architect and the construction industry, and the professional qualities needed for decision making in complex and unpredictable circumstances; and	5

AIMS

- To provide students with a broad appreciation of the key concepts that have shaped the modern world and the main strands of thinking that influence the conception, design and construction of places and buildings.
- To develop knowledge and understanding of current issues in the built environment
- To develop academic and professional research and writing skills

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Engage in an informed discussion of the key ideas that influence the form and character of settlements and buildings
- Explain what is meant by the 'built environment' and outline current issues influencing the way the industry functions.
- Investigate and report on a concept or issue in an academically rigorous manner.
- Structure a professional standard of report

INDICATIVE CONTENT

- The idea of progress
- Science and its methods
- What is philosophy?
- What is cultural theory?
- Key economic concepts
- Environmentalism
- The built environment and its industries.
- Academic and professional writing and research methods: essays, dissertations, papers, reports minutes, letters, email.
- Defining an issue, evidence, sources of information, references and bibliographies, time management, structuring an assignment, critical thinking, plagiarism, examination technique.

LEARNING AND TEACHING STRATEGY

The teaching and learning strategy for this module aims to provide students with theoretical knowledge and practical skills. Lectures and focused reading introduce concepts and principles. Seminars offer students the opportunity to present, discuss and critically evaluate ideas in a collaborative and supportive atmosphere, and case studies are used to illuminate the ideas introduced in lectures and literature

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
Essay	2,000 words	50%

Assessment Component 2

☐ Written exam ☐ Coursework ☒ Practical

Mode of assessment	Volume	Weighting
Group Report and presentation	1,000 words / 5 minutes for each group member	50%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	50%
Practical	50%
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**ACAA4005**	
Module Title	**The Modern World**	
Classification	**Reading List entry**	**Electronic***
Essential	Cotterell, S. (2017) *Critical Thinking Skills - Developing Effective Analysis and Argument.* Basingstoke: Palgrave Macmillan	☐
Essential	Grayling, A. C. (2008) *Britannica Guide to the Ideas that Made the Modern World*. London: Robinson	☐
Further	Hall, J. & Trentmann, F. (2005) *Civil Society: A Reader in History, Theory and Global Politics.* Basingstoke: Palgrave	☐
Further	Hobsbawm, E. (1994) *Age of Extremes: The Short 20th Century*.1994 London: Michael Joseph	☐
Further	Watson, P. (2000) *A Terrible Beauty: A Cultural History of the 20th Century*. London: Weidenfeld & Nicholson	☐
Further	Watson, P. (2005) *Ideas: A History from Fire to Freud* London: Weidenfeld & Nicholson	☐
Background	Blaxter, L., Hughes, C. and, Tight, M. (2010) *How to Research*. Buckingham: Open University Press	☐
Background	Bowden, J. (2011) *Writing a Report: How to Prepare, Write and Present Really Effective Reports.* Oxford: How To Books	☐
Background	Cotterell, S. (2014) *Dissertations and Project Reports: A Step by Step Guide.* Basingstoke: Palgrave Macmillan	☐
Background	Greetham, B. (2008) *How To Write Better Essays* Basingstoke: Palgrave Macmillan	☐
Websites	www.ted.com	☒

MODULE CODE: **ACBA4000**
TITLE: **Estimating & Measurement of Work within a Construction Environment**
DATED: **16/08/2018**

LEVEL: **4**
CREDITS: **20**

JACS CODE: **K240**

AIM

- To provide students with an understanding of the quantity surveying techniques of measurement and the estimation of rates for inclusion in tendering documents using the RICS New rules of measurement.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Define standard measurement techniques used for taking off quantities for estimating purposes.
- Define the data necessary for inclusion into a tender document for competitive pricing.
- Interpret the principles and techniques of estimating in compiling a contract sum.

INDICATIVE CONTENT

- The RICS New Rules of Measurement and applications when taking off residential and smaller commercial buildings.
- Introduction to other Methods of measurement in common use.
- Estimating price books and software – use and limitations
- Building up Unit Rates for key components and elements.
- Use of approximate quantities
- Techniques for quantifying budgets
- The preparation of tender documents
- The tendering process
- Adjudication
- Post Tender and Post Construction Review.
- Use of estimating data in the Construction stage.
- Linkages with BIM models and whole-life facilities management.

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning	0	0%
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Essay	Equivalent to 2000 words	50%

Assessment Component 2
(Tick one)

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Essay	Equivalent to 2000 words	50%

Assessment Summary

Activity type	Percentage
Written exam	0
Coursework	100
Practical	0
TOTAL	**100%**

READING LIST

Module Code	**ACBA4000**	
Module Title	**Estimating & Measurement of Work within a Construction Environment**	
Classification	**Reading List entry**	**Electronic***
Essential	Brook, M. (2017) *Estimating and Tendering for Construction Work.* Abingdon, Oxon: Routledge	☐
Essential	Cartlidge, D. (2013) *Estimators Pocket Book.* Abingdon, Oxon: Routledge	☐
Essential	Ostrowski, S. (2013) *Guide to Measurement Using the New Rules of Measurement.* Oxford: Blackwell	☐

MODULE CODE: **ACBA4001**
TITLE: **Fundamentals of Construction Technology**
DATED: **16/08/2018**

LEVEL: **4**
CREDITS: **20**

JACS CODE: **K200**

AIM

- To cultivate the fundamental principles, materials and techniques commonly utilised in the construction of low rise residential and commercial buildings, and their related repair requirements following defect diagnosis

.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Describe appropriate site evaluation, site and soil investigation techniques.
- Identify the different types of substructure available for a range of low-rise building systems and techniques used in their production.
- Define and produce annotated sketches that illustrate a broad range of common constructional forms, demonstrating understanding of their potential defect and repair needs.

INDICATIVE CONTENT

- The *function and performance* criteria that need to be addressed in buildings, their elements, components and materials.
- Building Materials: Building terminology and definitions. The initial focus will be on smaller domestic and commercial building types in order to reinforce principles.
- Statutory Standards applicable to construction.
- Groundwork and Foundations, Site evaluation and site investigation. Functional requirements of foundations, and appreciation of the relationship with ground conditions and underlying geology. Methods of constructing.
- Introduction to the functions of foundations causes of ground movement, subsoil bearing capacity and types of foundations for low-rise, short-span buildings, small framed buildings and portals less than ten metres span. Damp Proof Membranes (dpm) trays, thermal bridging etc;
- Health and Safety measures that are applicable to the construction production and maintenance of low-rise building forms.
- Supported and suspended ground and inter-mediate floors;
- Functional requirements of external walls: thermal insulation; Solid, layered and Cavity loadbearing Masonry construction; Heavy and lightweight forms, Thermal performance; timber and cold rolled steel framed construction: damp proof courses (dpc's); Modular methods.
- Openings in Cavity Walls – avoidance of rainwater penetration, condensation and thermal bridging.
- Roofs - Functional requirements of timber roof structures: cut roofs and trussed rafter roofs.

- Pitched roof coverings: double-lap, single-lap and interlocking slates and tiles, lightweight sheet metal roof-coverings. Eaves; verges; valleys; ridges and abutments.
- Windows, doors and external joinery - functional requirements of differing types of frames; glazing and sill/reveal details with increasing emphasis upon their thermal performance, methods of securing, durability etc.
- Staircases and ramps - Functional requirements for simple stairs to comply with Building Regulations Approved Documents: A, B, K and M.
- Access for all. Inclusive design.
- Floor; Wall; Ceiling Finishes; Skirting and Architraves; Rendering:
- Identification of typical defects and remedial techniques. Non-traditional housing, prefabrication and industrial systems - the legacy and their repair needs.
- Modern Methods of Construction. Innovative low technology building methods such as ground-sheltered structures, passive solar design, low carbon buildings. Building assessment standards such as Passivhaus, Living Buildings; Modular construction. Prefabrication both past and Present. Learning from the past to inform future practices.

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	**Hours**	**Percentage**
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning	0	0%
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)
☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	**Volume**	**Weighting**
Essay	2,000 words	50%

Assessment Component 2
(Tick one
☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	**Volume**	**Weighting**
Essay	2,000 words	50%

Assessment Summary

Activity type	**Percentage**
Written exam	0
Coursework	100%
Practical	0
TOTAL	**100%**

READING LIST

Module Code	**ACBA4001**	
Module Title	**Fundamentals of Construction Technology**	
Classification	**Reading List entry**	**Electronic***
Essential	Riley, M. and Cotgrave, A. (2013) *Construction Technology 1: House Construction.* 3rd Ed. Basingstoke: Palgrave Macmillan	☐
Essential	Riley M and Cotgrave A (2013) *Construction Technology Part. 2: Industrial and Commercial Building.* 3rd Ed. Basingstoke: Palgrave Macmillan	☐
Essential	Chudley, R. and Greeno, R. (2017) *The Building Construction Handbook.* London: Pearson	☒
Essential	Emmitt,Stephen (2012) Architectural Technology 2nd Edition.Wiley-Blackwell	
Further	Building magazine (Paper copies are held in the Swansea SA1 Library).	☒
Further	Architects Journal (Paper copies are held in the Swansea SA1 Library	☒
Further	In addition, students will be expected to read widely. The CIAT Website.The Barry and Mitchell series are equally valid.	☐

MODULE CODE: **ACBA4002**
TITLE: **Digital Surveying**
DATED: **16/08/2018**

LEVEL: **4**
CREDITS: **20**

JACS CODE: **K200**

AIM

- To provide learners with the skills in linear surveys, levelling surveys, measured building surveys and construction projects

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Demonstrate knowledge of the underlying concepts and basic principles of Surveying
- Present, and interpret data obtained through linear and levelling surveys to produce drawings and vertical differentiation
- Conduct and evaluate measured building surveys

INDICATIVE CONTENT

- Introduction to practical Surveying:
    - basic survey methods; land surveying; accuracy and precision; reconnaissance and creating frameworks; control; errors.

- Introduction to equipment types and measurement:
    - flying levels; using equipment including automatic levels; tilting levels; rotating lasers; barcode levels, GPS, aerial equipment;
    - Measurements - references; working from whole to the part; linear measurement on horizontal and sloping ground using tapes; chain surveys; errors in chaining; running measurements; offsets and ties; drawings in CAD; plotting drawings to scale

- Terminology and recording data:
    - datum; references; Ordnance Survey Bench Mark; Temporary Bench Mark; height of collimation and rise and fall; spot heights on plans; sections; areas and volumes; levels for buildings; drawing in CAD; plotting drawings to scale

- Drawings and computational plotting:
    - freehand sketching of plans, elevations and sections; recording information; measuring features; measuring historic buildings;
    - point clouds; editing; 2D & 3D; drawing in CAD; plotting drawings to scale
    - software for capturing data in the field; dedicated software for setting out; built-in capabilities of total station instruments; commercial software and programmed spreadsheets to facilitate repetitive surveying calculations; Geographical Information Systems (GIS)

- Cartographic detailing of construction works:
    - Raw data and translation for cartographic detail/setting out:
    - levelling; plotting contours by graphic interpolation;
    - plotting of cross-sections from contoured plans;
    - area measurement (manual, mechanical, electronic methods);
    - computation of volumes from spot heights; ground sections and contours;
    - Calculations of volumes of cut and fill (straight road with transverse sloping ground).
    - Angular measurement: correction to measured angles, distances, bearings and coordinates for a closed traverse, manual and electronic plotting of traverse surveys, survey symbols.
    - Setting out: computation of deflection angles; distances for coordinated setting out.

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning	0	0%
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

☐ **Written exam** ☐ **Coursework** ☒ **Practical**

Mode of assessment	Volume	Weighting
Practical	2,000 word equivalent	50%

Assessment Component 2
(Tick one

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Essay	2,000 word equivalent	50%

Assessment Summary

Activity type	Percentage
Written exam	0
Coursework	50%
Practical	50%
TOTAL	**100%**

READING LIST

Module Code	**ACBA4002**	
Module Title	**Digital Surveying**	
Classification	**Reading List entry**	**Electronic***
Essential	Swallow, P. et al. (2016). *Measurement and Recording of Historic Buildings* Abingdon, Oxon: Routledge	☐
Essential	Royal Institution of Chartered Surveyors (2014) *Measured Surveys of Land, Buildings and Utilities.* 3rd Ed. London: RICS,	☒
Essential	Clancy, J. (2011) *Site Surveying and Levelling.* 3rd Ed. Abingdon, Oxon: Routledge	☐
Essential	Bannister, A. (1999) *Solving Problems in Surveying.* 2nd Ed. Harlow: Pearson Education Ltd.	☐
Further	'Professional Surveyor' magazine	☒

MODULE CODE: **ACBA4003**
TITLE: **Managing Health, Safety, Welfare and Risk in Construction**
DATED: **16/08/2018**

LEVEL: **4**
CREDITS: **20**

JACS CODE: **K200**

AIM

- To develop awareness of the health and safety challenges and risks that working within the construction and built environment sector poses.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Interpret the application of Construction Design and Management (CDM) regulations and the wider Health and Safety legislation whilst working with clients, contractors and other professionals.
- Determine how Health, Safety and Welfare legislation influences working practices in the construction industry, how it is managed on site and the potential impacts that this might have.

INDICATIVE CONTENT

- Outlining general and specific hazards and risks in the construction industries. Hazard statistics.
- The Health and Safety etc. Act and other principal pieces of legislation and regulations.
- Obligations of all parties involved in works under current legislation.
- Knowledge and skills required to assist clients and other professionals to meet their obligations.
- Site Organisational and communication systems to ensure compliance with Health, Safety and Welfare legislation.
- Assess resources to deliver a construction project in compliance with current legislation.
- Statutory obligations for employees' welfare when undertaking projects and consultancy work.
- Preparation of Risk Assessments.
- Evaluation of Working Methods to comply with Health, Safety and Welfare for case study based projects.
- Planning to ensure compliance with Health, Safety and Welfare for specified projects.
- Evaluation of the roles of Principal Designer and Principal Contractor.
- Production of Management Plans for projects.
- Processes to mitigate and deal with breaches of Health and Safety requirements.

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning	0	0%
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Case study based Assignment	2,000 word report	50%

Assessment Component 2
(Tick one

☒ **Written exam** ☐ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Exam	2 hours.	50%

Assessment Summary

Activity type	Percentage
Written exam	50%
Coursework	50%
Practical	
TOTAL	**100%**

READING LIST

Module Code	**ACBA4003**	
Module Title	**Managing Health, Safety and Welfare and Risk in Construction**	
Classification	**Reading List entry**	**Electronic***
Essential	Hughes, F. and Ferret, E. (2015) *Introduction to Health and Safety in Construction.* 6th Ed. London: Routledge, Taylor and Francis Group.	☒
Essential	The Health and Safety Executive. HSG Guidance Notes – Accessed at: www.hse.gov.uk/pubns/books. PDF versions are freely available, down-loadable and regularly updated)	☒
Essential	Fire Protection Association (2014). *Fire Safety and Risk Management: for the NEBOSH National Certificate in Fire Safety and Risk Management*. London. Routledge, Taylor and Francis Group.	
Essential	IHS Database – Construction Information Service Accessed at the University Library – Electronic Databases (IHS).	☒

Further	CITB Construction Site Safety (GE 700/18)	☒
Further	CITB. (2018). *Site Supervision Simplified* (GE 706/18). Norfolk: CITB	☒
Further	CITB (2018). *Construction Site Safety – Environment* (GE700Es/18). Norfolk: CITB	☒
Further	CITB (2018). *Delegate Workbook – Site Management Safety Training Scheme* (XA6/18). Norfolk: CITB Note: All CITB publications are available at: https://shop.citb.co.uk/XA618.aspx.	☒
Further	Designing Buildings Wiki. Accessed at: https://www.designingbuildings.co.uk/wiki/Home	☒

MODULE CODE: **ACBA4004**
TITLE: **Soft Skills, Contract and Legal Responsibilities within the Built Environment**
DATED: **16/08/2018**
LEVEL: **4**
CREDITS: **20**

JACS CODE: **K200**

AIM

- To fully develop learners' professional and academic skills, along with the introduction of all relevant areas of law for the built environment.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Explain the professional structure of the built environment and current issues influencing the way the industry functions; and investigate and report on an issue in an academic manner.
- Understand and apply relevant legislative and compliance frameworks associated with the construction industry.

INDICATIVE CONTENT

Soft Skills:

- The current professional structure of the built environment and critical issues influencing its functions, including professions, government control, the housing market, climate change imperatives.
- The purposes of a professional report including preparation and planning, writing style, collection of information and review.
- Setting learning and employment goals using SMART targets, the KOLB cycle, Personal Development Plans and their review, CPD and lifelong learning.

Contract and legal responsibilities:

- Administration of the law, including background of development.
- Legal requirements of tendering.
- The influence and impact of planning and building regulations on construction activities
- The legal principles of construction contracts; including differing types of contracts, contractual responsibilities of parties, monitoring to ensure compliance and claims
- Methods for dispute resolution
- Tort Law and its applicability to construction projects, including insurances
- Land law including history & development of land ownership, landlord & tenant law and issues relating to boundary / party walls
- Planning & Environmental regulations and Policies
- Health and Safety policies

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning	0	0%
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
CPD development exercise	2,000 words	50%

Assessment Component 2

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Essay	2,000 words	50%

Assessment Summary

Activity type	Percentage
Written exam	0
Coursework	100%
Practical	0
TOTAL	**100%**

READING LIST

Module Code	**ACBA4004**	
Module Title	**Soft Skills, Contract and Legal Responsibilities within the Built Environment**	
Classification	**Reading List entry**	**Electronic***
Essential	Bolton, G. (2014) *Reflective Practice: Writing and Professional Development.* London: Sage Publications Ltd.	☐
Essential	Megginson D, Whitaker V and Chartered Institute of Personnel and Development (2007). *Continuing Professional Development*. London: Chartered Institute of Personnel and Development.	☐
Essential	Tarrant, P. (2013) *Reflective Practice and Professional Development*. London: Sage publications Ltd.	☐
Essential	Uff, J. (2013) *Construction Law.* 11th Ed. London: Sweet & Maxwell	☐
Essential	Clough, R.H., Sears, G.A., Sears, K.S., Segner, R.O. and Rounds, J.L. (2015) *Construction Contracting: A practical*	☐

	guide to company management. 8th Ed. Hoboken: John Wiley & Sons	
Further	Forster, G. (2014) *Building Organisations and Procedures.* Abingdon, Oxon*:* Taylor and Francis	☐
Further	Building Regulations documents	☒
Further	Planning regulations and associated documents	☒
Further	Case law relating to differing law topics	☒

MODULE CODE: **ACBA4005**
TITLE: **Working with Digital Technologies & BIM**
DATED: **16/08/2018**

LEVEL: **4**
CREDITS: **20**

JACS CODE: **K200**

AIM

- To provide learners with the skills needed to produce two and three-dimensional drawings using industry-standard computer-aided design (CAD) software and to provide learners with an understanding of the information delivery cycle in Building Information Modelling (BIM).

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Interpret data and produce 2D drawings using industry-standard CAD software applications
- Produce 3D models using industry-standard CAD software applications
- Evaluate different sources of information so as to prepare Building Information Models using industry standard software

INDICATIVE CONTENT

- Fundamentals of BIM
- Producing a data model:
    - 2 Dimensional (2D) plans
    - 3 Dimensional (3D) models
- Developing digital data for built structures
- Extracting BIM data from a prepared model

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning	0	0
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)
☐ **Written exam** ☐ **Coursework** ☒ **Practical**

Mode of assessment	Volume	Weighting
Practical	2,000 word equivalent (with drawings)	50%

Assessment Component 2
(Tick one
☐ **Written exam** ☐ **Coursework** ☒ **Practical**

Mode of assessment	Volume	Weighting
Practical	2,000 word equivalent (with drawings)	50%

Assessment Summary

Activity type	Percentage
Written exam	0
Coursework	0%
Practical	100
TOTAL	**100%**

READING LIST

Module Code	**ACBA4005**	
Module Title	**Working with Digital Technologies & BIM**	
Classification	**Reading List entry**	**Electronic***
Essential	Eastman C, Teicholz P, Sacks R and Liston K (2011) *BIM Handbook: A Guide to BIM for Owners, Managers, Designers, Engineers & Contractors.* Hoboken: John Wiley & Sons Inc.	☐
Essential	Mordue S Swaddle P and Philp D (2015). *Building Information Modelling for Dummies*. Chichester: John Wiley & Sons Ltd.	☐
Essential	*BIM & Construction Management*. ISBN10 - 1118942760	☐
Further	NBS National BIM Library	☐
Further	The BIM HUB: BIM Journal	☒
Essential	*Sketchup Workflow for Architecture*: Brightman ISBN 1119383633	☐
Essential	*Sketchup and Layout for Architecture*: Donley & Sonder ISBN 0996539328	☐
Further	*3D Photorealistic Rendering: Interiors and Exteriors with VRay and 3Dmax*: Cardoso: ISBN 1138780723	☐

MODULE CODE: **ACBA4006**
TITLE: **Material Science and Building Services**
DATED: **16/08/2018**

LEVEL: **4**
CREDITS: **20**

JACS CODE: **K230**

AIM(S)

- To provide students with a fundamental understanding of the properties, use and application of construction materials, and comprehend the complexity of issues related to the maintenance of building services

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Understand the underlying physical and mechanical properties of building materials
- Apply scientific principles to evaluate material choice for performance, sustainability and environmental considerations.
- Understand the principles that underpin the design of space heating, plumbing, and waste, ventilation and distribution systems for domestic dwellings and evaluate the issues associated with the maintenance of building services.

INDICATIVE CONTENT

- ***Materials*:** Metals and alloys e.g. iron, steel, zinc, copper, brass, aluminium, lead; timber and timber products; clay products e.g. bricks, tiles; cements and concretes; plastics and other artificial materials; glass; coatings and finishes e.g. paints, clear finishes, wood treatments.
- ***Material Choice*:** As appropriate to field of study e.g. strength, elasticity, plasticity, ductility, porosity and water absorption, thermal and moisture movement, durability, workability, density, specific heat capacity, energy efficiency, environmental issues and use of renewable and non-renewable resources in design and construction. Recycling.
- **Building Services:** Electrical Supply and Installation; Water Quality, Hot and cold water systems, direct and indirect system types, pressurised systems, safety requirements, materials and components, gas Space heating**:-** System types, storage, choice of fuel, energy sources and control, types of boiler, noise, loading, heat gain.
- **Waste:** Sanitary appliances, selection and waste drainage pipework, foul water, surface water.
- **Ventilation:** Contaminants, the need for ventilation, air conditioning systems, air quality, natural and mechanical ventilation.
- **Integration at design and installation stages:** Consideration of space requirements; sequencing of installation procedures; access to installations; commissioning and testing; processes of coordinating and commissioning building services; construction of ducts, holes and voids (for purposes of access, safety and fire resistance).

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning	0	0
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1 - Material Science

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Analytical evaluation with design	2,000 words	50%

Exemplar:
Students will analyse structural frameworks for physical and mechanical suitability in use.

Assessment Component 2 – Building Services

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Analytical evaluation with calculation	2,000 words	50%

Exemplar:
Students will analyse specific design requirements for domestic installations and calculate energy requirement, distribution possibilities and efficiency of the system.

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	**100%**

READING LIST

Module Code	**ACBA4006**	
Module Title	**Material Science and Building Services**	
Classification	**Reading List entry**	**Electronic***
Essential	Hall, F. & Greeno, R (2017) *Building Services Handbook.* 9th Ed. Abingdon, Oxon: Routledge	☐
Essential	Chadderton, D. (2013) *Building Services Engineering*. 6th Ed. Abingdon, Oxon: Routledge.	☐

Essential	Lyons, A. (2014) *Materials for Architects and Builders*. 5th Ed. Abingdon: Routledge.	☐
Essential	Mc Mullan, R. (2012) *Environmental Science in Buildings.* 7th Ed. Basingstoke: Palgrave MacMillan	☐
Further	Katib, J. M. (2009) *Sustainability of Construction Materials*. Abingdon: Woodhead Publishing Ltd.	☐
Further	Domone, P. and Ilston, J. (2010) *Construction Materials: Their nature and behaviour.* 4th Ed. Florida: CRC Press, Taylor & Francis Group	
Further	Building Services Journal - CIBSE	☒
Further	Modern Building Services Journal – Portico Publishing Ltd.	☒
Further	CIBSE (2015) *CIBSE Guide A: Environmental Design.* 8th Ed. London: CIBSE.	☒
Further	CIBSE (2005) *CIBSE Guide B: Heating, Ventilating, Air Conditioning and Refrigeration.* London: CIBSE.	☒
Further	Part L1 & L2 Building Regulation Approved Documents (Conservation of fuel and power). Accessed at : https://gov.wales/topics/planning/buildingregs/approved-documents/part-l-energy/?lang=en	☒
Further	www.trada.co.uk	☒
Further	www.bpf.co.uk	☒
Further	www.concretecentre.com	☒
Further	www.steelconstruction.info	☒

MODULE CODE: **ACBA4007**
TITLE: **Engineering Mathematics and Structures**
DATED: **16/08/2018**

LEVEL: **4**
CREDITS: **20**

JACS CODE: **K200**

AIM

- To provide the students with the requisite knowledge and understanding of mathematics to assess the properties of structural components and their behaviour, while developing an understanding of structural mechanics so as to undertake the design of simple structural elements.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to;

- Demonstrate an understanding and be able to calculate bending moments and shear forces for simply supported beams and cantilevers and determine forces in pin-jointed framework.
- Assess and apply the design requirements of columns under axial loading and simply supported beams in steel, reinforced concrete and timber.
- Explore the structural behaviour of gravity retaining walls.

INDICATIVE CONTENT

- Determine areas under a curve, volume of revolution, centroids, second moment of area and moment of inertia using integration techniques.
- Calculation of bending moments and shear forces in simply supported and cantilever beams with point and distributed loading and draw the bending moment and shear force diagrams.
- Calculation of forces in pin jointed frames using resolution of forces.
- Design a steel beam and a column
- Design a reinforced concrete beam and a column.
- Design a timber beam and a column.
- Design a soil and water retaining wall to satisfy sliding and ground-bearing capacity requirements.

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning	0	0%
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Report	2000 words	50%

Assessment Component 2
(Tick one

☒ **Written exam** ☐ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Written Exam (open book)	2 hours	50%

Assessment Summary

Activity type	Percentage
Written exam	50
Coursework	50
Practical	0
TOTAL	**100%**

READING LIST

Module Code	ACBA4007	
Module Title	**Engineering Mathematics and Structures**	
Classification	**Reading List entry**	**Electronic***
Essential	Arya, C., (2009), *Design of Structural Elements*. 3rd Ed. Florida: CRC Press, Taylor & Francis Group	☐
Essential	Stroud, K. A. and Booth, D. J. (2013) *Engineering Mathematics*. 7th Ed. Basingstoke: Palgrave Macmillan	☐
Further	Gere J. and Timoshenko S. P., (2002) *Mechanics of Materials*. 5th Ed. Cheltenham: Nelson Thornes	☐
Further	McKenzie, W., (2006) *Examples in Structural Analysis*. Abingdon, Oxon: Taylor & Francis	☐
Further	Seward, D., (2009) *Understanding Structures: Analysis Materials and Design.* 4th Ed. Basingstoke: Palgrave, Macmillan	☐

Module Code	**ACBA4010**
Title	**Construction Technology - Past and Present**
Date	**24/02/2021**
Level	**4**
Credits	**10**
Pre-Requisites	**None**

AIM(S)

- To provide knowledge of the underlying concepts, practices and failures of low-rise domestic buildings including common forms of construction that meet these prevailing legislation.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Explain the various types, methods and performances of traditional domestic construction from heritage to present day.

- Describe commonly available modern methods of domestic construction and off-site manufacturing techniques

INDICATIVE CONTENT

- Functions and performance for domestic housing:
  - Elements, components and materials;
  - Modern methods and offsite manufacture of domestic construction.

- Groundwork and Foundations:
  - Site evaluation and ground investigations;
  - Types and function of foundations;
  - Common failures.

- Supported and suspended ground and inter-mediate floors:
  - Ground floors;
  - Intermediate floors;
  - Prefabricated floors.

- Functional requirements of external walls/panels:
  - Load, thermal and fire;
  - Solid, layered, cavity, frame and offsite panels;
  - Openings;
  - Common failures.

- Function and types of Roofs:
  - Main types including flat and pitched;
  - Prefabricated roof elements;
  - Roof coverings and finishes;
  - Common failures

- Windows & doors
  - Functional and performance requirements;

- Types of windows and doors;
- Modern and innovative window and door solutions;
- Installation methods;
- Window and door defects and remedies.

- Internal finishes:
  - Wall and floor finishes;
  - Ceiling finishes.

- Low energy solutions
  - Low and zero carbon solutions.

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	24	24%
Independent learning	76	76%
Placement learning	0	0%
TOTAL	**100**	**100%**

ASSESSMENT

Assessment Component 1

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Written report and drawings	2000 words equivalent	100%

Assessment Summary

Activity type	Percentage
Written exam	0
Coursework	100%
Practical	0
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**ACBA4010**	
Module Title	**Construction Technology - Past and Present**	
Classification	**Reading List entry**	**Electronic***
Essential	Riley, M. and Cotgrave, A. (2013) *Construction Technology 1: House Construction.* 3rd Ed. Basingstoke: Palgrave Macmillan	☒
Essential	Riley M and Cotgrave A (2013) *Construction Technology Part. 2: Industrial and Commercial Building.* 3rd Ed. Basingstoke: Palgrave Macmillan	☒
Essential	Chudley, R. and Greeno, R. (2017) *The Building Construction Handbook.* London: Pearson	☒
Essential	Emmitt,Stephen (2012) Architectural Technology 2nd Edition.Wiley-Blackwell	
Further	Building magazine (Paper copies are held in the Swansea SA1 Library).	☒
Further	Architects Journal (Paper copies are held in the Swansea SA1 Library	☒

Module Code	**ACBA4011**
Title	**Digital Estimating and Measurement in Construction**
Date	**24/02/2021**
Level	**4**
Credits	**10**
Pre-Requisites	**None**

AIM(S)

- To provide students with an understanding of the quantity surveying techniques of measurement and the estimation of rates for inclusion in tendering documents using the RICS New rules of measurement.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Define standard methods of measurement used for taking off quantities for tendering and estimating purposes using digital tools and techniques.
- Define Procurement strategy and the data necessary for inclusion into a tender document for competitive pricing.

INDICATIVE CONTENT

- The RICS New Rules of Measurement and applications.
- Digital Estimating – use and limitations.
- Building up Unit Rates digitally for key components and elements.
- Use of approximate quantities.
- Techniques for quantifying budgets digitally.
- The preparation of tender documents.
- The tendering process.
- Adjudication.
- Use of estimating digital data in the Construction stage.
- Linkages with BIM models and whole-life facilities management.

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	24	24%
Independent learning	76	76%
Placement learning	0	0%
TOTAL	**100**	**100%**

ASSESSMENT

Assessment Component 1

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Practical exercise with technical report	2000 words equivalent	100%

Assessment Summary

Activity type	Percentage
Written exam	0%
Coursework	100%
Practical	0%
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**ACBA4011**	
Module Title	**Digital Estimating and Measurement in Construction**	
Classification	**Reading List entry**	**Electronic***
Essential	Brook, M. (2017) *Estimating and Tendering for Construction Work.* Abingdon, Oxon: Routledge	☒
Essential	Cartlidge, D. (2013) *Estimators Pocket Book.* Abingdon, Oxon: Routledge	☒
Essential	Ostrowski, S. (2013) *Guide to Measurement Using the New Rules of Measurement.* Oxford: Blackwell	☒

Module Code	ACBA4012
Title	Project Management for Construction
Date	24/02/2021
Level	4
Credits	10
Pre-Requisites	None

AIM(S)

- To develop knowledge and skills in the discipline of project management, its influences and application within the construction and built environment sector.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Explain the principles of project management and the role of an effective project manager within the construction and built environment sector.
- Apply project management skills related to scheduling and resource planning.
- Explain the principles of risk management, stakeholder engagement and effective co-ordination and delivery of project information within the construction and built environment sector

INDICATIVE CONTENT

- Definitions and the development of project management within the construction and built environment sector.
  - Key definitions – project, project management
  - Construction project characteristics
  - Key events within the construction sector

- Key principles and the project manager role
  - Constraints triangle
  - Roles of the project manager with regard to construction projects
  - Skills, knowledge and leadership

- Professional bodies
  - Chartered Institute of Building (CIOB)
  - Royal Institution of Chartered Surveyors (RICS)
  - Project Management Institute (PMI)
  - Association for Project Management (APM)

- Scheduling techniques
  - Gantt charts
  - Critical path analysis (CPA)
  - Network diagrams

- Resource allocation and planning

- Risk management techniques

- Project stakeholders and stakeholder engagement processes

- Building Information Modelling (BIM) – processes and technology
- BIM standards and implementation
- Information co-ordination and interaction of party members

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	24	24%
Independent learning	76	76%
Placement learning	0	0%
TOTAL	**100**	**100%**

ASSESSMENT

Assessment Component 1

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Written report and Gantt chart	2000 words equivalent	100%

Assessment Summary

Activity type	Percentage
Written exam	0
Coursework	100%
Practical	0
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**ACBA4012**	
Module Title	**Project Management for Construction**	
Classification	**Reading List entry**	**Electronic***
Essential	Chartered Institute of Building. (2014) Code of Practice for Project Management for Construction and Development. 5th ed. Wiley Blackwell	☒
Essential	PMI. (2017) A Guide to the Project Management Body of Knowledge PMBOK Guide. 6th Edition. PMI	☐
Essential	Walker, A. (2015) Project Management in Construction. 6th Edition. Oxford: Wiley Blackwell	☒
Further	Lock, D. (2013) Project Management 10th Edition. Hampshire: Gower	☐
Further	McCaffer, R and Harris, F. (2013) Modern Construction Management. 7th Edition. Oxford: Blackwell	☐

Further	Hardin, B and McCool, D. (2015) BIM and Construction Management Proven Tools, Methods and Workflows. 2nd Edition. Indiana: Wiley	☐
Further	Barnes, P. (2019) BIM in Principle and in Practice. 3rd Edition. London: ICE	☐

Module Code	**ACNA4002**
Title	**Biodiversity and Ecosystem Services**
Date	**05/05/2021**
Level	**4**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

- To explore the concept of biodiversity and ecosystem services, along with both the practical and ethical considerations of ascribing value to facets of the natural world.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Demonstrate a fundamental knowledge of the earth's biodiversity and the earth's ecosystems, including human distribution, population, and the effects on the natural environment.
- Convey and determine the variety and classification of organisms.
- Understand and appreciate what is meant by ecosystem services and the applicability of the concept to conservation biology.

INDICATIVE CONTENT

- Introduction to biology, classification and taxonomy
- Environmental processes such as nutrient cycling and the ecology and evolution of organisms
- Biomes, habitats and ecosystems, including keystone species and how organisms respond to stressed environments
- Biogeochemical cycles, energy pyramids and food webs
- Ecosystem interactions, including predator-prey cycles, mutualism and competition
- Animal behaviour including communication, reproductive strategies and migration
- Invasive species
- Conservation biology

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Scientific Report	Based upon data gathered in the lab, students will produce a scientific report of their findings (2000 words)	50%

Assessment Component 2
(Tick one)

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Scientific Report	Based upon a practical fieldtrip, students will produce a scientific report of their findings (2000 words)	50%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**ACNA4002**	
Module Title	**Biodiversity and Ecosystem Services**	
Classification	**Reading List entry**	**Electronic***
Essential	Casetta, E., Marques da Silva, J. & Vecchi, D., (2019). *From Assessing to Conserving Biodiversity: Conceptual and practical challenges*, Cham, Switzerland: Springer.	☒
Essential	Sofo, A. (ed), (2011). *Biodiversity.* Rijeka, Croatia; InTech.	☒
Essential	Peter FM and Wilson EO., (1986). *Biodiversity*, Washington, D.C.: National Academy Press.	☐
Further	Journal: Ecosystem Services	☒
Further	Mace G, Schreckenberg K and Poudyal M, (2018). *Ecosystem Services and Poverty Alleviation* 1st ed., Abingdon, Oxon; Routledge.	☒

Further	International journal of Biodiversity science, ecosystem services and management	☒

Module Code	**ACNA4003**
Title	**Climate Change and Visual Activism**
Date	**05/05/2021**
Level	**4**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

- To inform an awareness and appreciation of the complexities surrounding earth science and climate change and the need for a combined approach for active and persuasive communication.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Identify how earth's evolution influences the environment
- Apply an understanding of climate science to environmental and social change.
- Implement contemporary strategies and creative methods for communicating and persuading the need for behavioural change.

INDICATIVE CONTENT

- Earth Systems
- Climatology and meteorology
- Impacts upon biological processes
- Mitigation and adaptation
- Social change and migration
- Resource scarcity and growing the green economy
- Managing the disconnect with nature
- Environmental and climate change activism
- Environmental photography and documentaries
- Contemporary strategies and community action

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Group Environmental vlog/Documentary	2-4 minutes contribution from each individual per group	50%

Assessment Component 2
(Tick one)

☐ **Written exam** ☐ **Coursework** ☒ **Practical**

Mode of assessment	Volume	Weighting
Group Campaign Presentation with supporting material	Each individual in the group to contribute 2 minutes to the campaign presentation. Each individual to contribute 500 words to the supporting materials (max 5 in a group)	50%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	50%
Practical	50%
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**ACNA4003**	
Module Title	**Climate Change and Visual Activism**	
Classification	**Reading List entry**	**Electronic ***
Essential	Melières, M, and Marechal, C. (2015) *Climate Change: Past, Present, and Future*. London: Wiley-Blackwell	☐
Essential	Tarbuck, E. J., Lutgens, F.K. and Tasa D G (2015). *Earth Science (Global Edition)*. Cambridge: Pearson	☐
Essential	Allan, J. (2021) *The New Climate Activism*: *NGO Authority and Participation in Climate Change Governance*. Toronto Buffalo London: University of Toronto	☐
Essential	Well-being of Future Generations (Wales) Act 2015 (Online). Available at	☒

	http://www.legislation.gov.uk/anaw/2015/2/contents/enacted	
Further	Sartore, J. (2017) *The Photo Ark: One Man's Quest to Document the World's Animals*. Washington: National Geographic (illustrated edition)	☐
Further	Bogre, M. (2011). *Photography as Activism : Images for Social Change* (1st Edition) London: Focal Press, Routledge	☐

Module Code	**ACNA4004**
Title	**Contemporary Challenges: Making a Difference**
Date	**25/06/2020**
Level	**4**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

- To develop student's awareness and appreciation of contemporary challenges relevant to the discipline facing individuals, organisations, communities and society, from a local, national and global perspective.

- To develop creative problem-solvers through the application of knowledge to real-world problems.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Identify and evaluate historical and contemporary issues and their impact on today's global society.

- Apply appropriate collaborative working practices to manage conflict and support effective decision making.

- Implement Design Thinking techniques to investigate problems in order to generate and evaluate solutions.

INDICATIVE CONTENT

- Visions of the Future including digital transformation 4.0.

- How history, legislation and policy shape the world we live.

- Contemporary global issues, e.g. responsible stewardship, diversity, inclusion, ethics, culture and intercultural awareness.

- 'Wicked problems': the challenge of difficult or impossible problems where the affecting variables are not known or quantifiable.

- Design Thinking to investigate, define, propose and evaluate problem solutions.

- Recognising and overcoming cognitive bias.

- Decision making frameworks and techniques.

- Recognising individual differences and the role of emotional intelligence in the management of conflict.

- The role of diplomacy, persuasion and negotiation in effective collaboration.

- The significance of interdisciplinary thinking in finding effective solutions to problems.
- The role of ethics in identifying solutions.
- Collective decision-making.
- The power of raising awareness

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
E-Portfolio	Equivalent to 2,000 words	50%

Assessment Component 2
(Tick one)
☐ **Written exam** ☐ **Coursework** ☒ **Practical**

Mode of assessment	Volume	Weighting
Group Presentation with supporting material	Each individual in the group to contribute 2 minutes to the presentation and each individual to contribute 1000 words to the supporting materials (max 6 in a group)	50%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	50%
Practical	50%
TOTAL	**100%**

INDICATIVE READING LIST
This will be guided by the student's subject area.

Module Code	**ACNA4004**	
Module Title	**Contemporary Challenges: Making a Difference**	
Classification	**Reading List entry**	**Electronic ***

Essential	Siebel, T.M. (2019) *Digital transformation: survive and thrive in an era of mass extinction*. New York: RosettaBooks.	☐
Essential	Stickdorn, M. & Schneider, J. (2011) *This is service design thinking: basics, tools, cases.* The Netherlands: BIS Publishers	☐
Essential	Echavarria, M., (2015). *Enabling Collaboration*. New York: LID Editorial.	☐
Essential	Well-being of Future Generations (Wales) Act 2015 (Online). Available at http://www.legislation.gov.uk/anaw/2015/2/contents/enacted	☒
Further	Fisher, R., Ury, W.L. and Patton, B. (2011) *Getting to yes: Negotiating agreement without giving in.* 3rd edn. New York: Penguin.	☐
Further	Harari, Y. N. (2018) *21 Lessons for the 21st Century.* London: Jonathan Cape	☐

Module Code	**ACNA4005**
Title	**Field and Laboratory Skills**
Date	**05/05/2021**
Level	**4**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

- To familiarise students with the underpinning practical field and laboratory skills such as species ID, surveying techniques and mapping.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Demonstrate a fundamental knowledge of lab safety and hygiene practices, including how to preserve specimens and eliminate cross-contamination.
- Understand how to perform a variety of practical conservation skills in the field.
- Understand better how to design practical experimental design.
- Have a fuller understanding and appreciation of their other learnings thanks to hands-on experience.

INDICATIVE CONTENT

- Learning the Scientific Method
- Introduction to lab safety and hygiene. Carrying out risk assessments
- Lab work including soil sampling, water quality monitoring, beach litter, etc.
- Basic introduction to GIS, Excel and Descriptive Stats
- Surveying e.g. using quadrats, transects etc.
- ID work – tree species, birds, grasses, lepidoptera etc.
- Field trips with local conservation organisations to carry out practical tasks and to network within the industry
- Use of computer models, both to learn practical skills (e.g. mark-recapture surveying, capture-with-removal, etc.) and using predictive models (e.g. climate trajectories)

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Fieldwork Notebook	Students are required to complete a working Fieldwork Notebook, which will include their methodologies and observations from their practical work (4000 words).	100%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**ACNA4005**	
Module Title	**Field and Laboratory Skills**	
Classification	**Reading List entry**	**Electronic***
Essential	Chalmers et al., (1989). *Fieldwork and statistics for ecological projects: the OU project guide* 2nd ed., Shrewsbury: Field Studies Council.	☐
Essential	Jones, A., Duck, R., Reed, R., and Weyers, J. (1999) *Practical Skills in Environmental Science.* London: Pearson Education	☐
Essential	Sutherland, W.J., (2000). *The conservation handbook: techniques in research, management and policy.* Oxford: Blackwell Science.	☐
Further	Bosco, F. J. and Moreno, C. M. (2009). Fieldwork. In: R Kitchin and N Thrift, eds. 2009. *International Encyclopedia of Human Geography*. 1st ed. Netherlands: Elsevier	☐

Module Code	**ACNA4006**
Title	**Learning in the Digital Era**
Date	**25/06/2020**
Level	**4**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

- To develop student's skills for independent study and life-long learning, which will form the foundations for successful completion of their degree programme and support future employment opportunities.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Demonstrate the foundational skills required to be a resilient and healthy independent learner.
- Practise the principles of learning agility
- Use suitable technology to support and enhance their learning experience within the discipline area

INDICATIVE CONTENT

- Time management, reading, writing, referencing and plagiarism, searching for and evaluating sources of information, working online.
- Critical thinking: issues concerning knowledge, belief, and doubt.
- Critical writing: synthesis, paraphrasing and creating an informed argument, avoiding plagiarism.
- Reflection and self-reflection.
- Identity and sense of place; including values, culture and intercultural awareness, heritage, diversity and inclusion and, multilingualism.
- Skills for a range of assessment modes, including blogs, vlogs, video, presentations, performances, posters, exams and written coursework.
- Skills and attitudes which underpin resilience, health, wellbeing and learning agility; the role of spirit, mind, emotions and body.
- Physical literacy: Consideration of the role of physical activity to the support of physical, mental health, well-being and resilience.
- Digital literacy: using appropriate technology; staying safe online, cyber security, digital identity.
- Team working.

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
E-portfolio	Equivalent to 2,000 words	50%

Assessment Component 2
(Tick one)

☐ **Written exam** ☐ **Coursework** ☒ **Practical**

Mode of assessment	Volume	Weighting
Video and Supporting Materials	Individual 3 minute video which incorporates supporting materials	50%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	50%
Practical	50%
TOTAL	**100%**

INDICATIVE READING LIST
This will be guided by the student's subject area.

Module Code	**ACNA4006**	
Module Title	**Learning in the Digital Era**	
Classification	**Reading List entry**	**Electronic***
Essential	Cottrell, S (2019) *The Study Skills Handbook.* 5th edn. London: Macmillan International Higher Education.	☒
Essential	Pears, R. and Shields, G.J. (2019) *Cite Them Right: the essential referencing guide.* 11th edn. London: Macmillan International Higher Education.	☒
Essential	Library Info Skills Sessions	☒
Further	Hopkins, D. and Reid, T., (2018). *The Academic Skills Handbook: Your Guide to Success in Writing, Thinking and Communicating at University*. London: Sage	☐
Further	Osmond, A., (2016). *Academic Writing and Grammar for Students* 2nd edn. London: SAGE.	☐

Module Code	**ACNA4007**
Title	**Physical Landscape and the Geosphere**
Date	**05/05/2021**
Level	**4**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

- To introduce students to how the Earth's lithosphere, hydrosphere, cryosphere, atmosphere and biosphere are dependent upon each other, interacting across a wide range of temporal and spatial scales. It will be stressed that the environment is dynamic and that the world is changing in accordance with known physical principles.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Express an understanding of Earth systems and their influence on the environment.
- Establish an understanding of the physical processes that influence the environment
- Complete practical fieldwork on a selected physical landscape.

INDICATIVE CONTENT

- Global Meteorology and circulatory systems
- Hydrological cycles and atmospheric moisture
- Geological environmental change
- Plate tectonics
- Lithospheric systems
- The fundamentals of weathering & erosion
- Slope processes and management
- Fluvio-glacial, glacial and periglacial processes and landforms
- Coastal geomorphology and Oceanography
- The formation and classification of soils
- Physical landscape fieldwork
- The physical landscape and human influences

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	48	24%
Independent learning	152	76%
Placement learning		
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

☐ **Written exam** ☒ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Field Report	2000 words	50%

Assessment Component 2
(Tick one)

☒ **Written exam** ☐ **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Examination	2 hours	50%

Assessment Summary

Activity type	Percentage
Written exam	50%
Coursework	50%
Practical	
TOTAL	**100%**

INDICATIVE READING LIST

Module Code	**ACNA4007**	
Module Title	**Physical Landscape and the Geosphere**	
Classification	**Reading List entry**	**Electronic***
Essential	Gervais, B. (2019) *Living Physical Geograph*. Blackwell's	☒
Essential	Holden, J. (Ed.) (2017) *An Introduction to Physical Geography and the Environment*. Pearson, London	☒
Essential	Knoll, A. H. (2015) *Life on a Young Planet: The First Three Billion Years of Evolution on Earth.* Princeton University Press, USA	☒
Further	Huggett, R. (2009) *Physical Geography: The Key Concepts*. Routledge, Abingdon, Oxon	☒
Further	Goudie, A. (2018) (8th Edition) *The Human Impact on the Natural Environment*. Wiley-Blackwell, Chichester	☒
Further	Melières, M, and Marechal, C. *(2015) Climate Change: Past, Present, and Future.* Wiley-Blackwell, London	☒
Further	Petersen, J., Sack, D., Gabler, R. (2021) *Physical Geography*. Blackwell's	☐

Further	Pierzynski, G. M. and Sims, T. (2004) (3rd Edition) *Soils and Environmental Quality*. Taylor and Francis, London	☐
Further	Strahler, A. (2013)(6th Edition) *Introducing Physical Geography*. Wiley, Oxon	☐
Further	Tarbuck, E. J., Lutgens, F.K. and Tasa D G (2015). *Earth Science (Global Edition)*. Pearson, Cambridge	☐
Further	www.bgs.ac.uk (British Geological Survey)	☐
Further	www.nerc-bas.ac.uk (British Antarctica Survey)	☐