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

MODULE DIRECTORY

LEVEL 6

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 6 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	**ACAA6000**
Title	**Architecture Studio 3A**
Date	**08/12/2021**
Level	**6**
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
understand the constructional and structural systems, the environmental strategies and the regulatory requirements that apply to the design and construction of a comprehensive design project	1.2
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
Adequate knowledge of the histories and theories of architecture and the related arts, technologies and human sciences.	**GC2**
the application of appropriate theoretical concepts to studio design projects, demonstrating a reflective and critical approach.	2.3
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
Adequate knowledge of urban design, planning and the skills involved in the planning process.	**GC4**
current planning policy and development control legislation, including social, environmental and economic aspects, and the relevance of these to design development.	4.3
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 profession of architecture and the role of the architect in society, in particular in preparing briefs that take account of social factors.	**GC6**
the potential impact of building projects on existing and proposed communities.	6.3
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
the need to appraise and prepare building briefs of diverse scales and types, to define client and user requirements and their appropriateness to site and context;	7.2
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
The necessary design skills to meet building users' requirements within the constraints imposed by cost factors and building regulations.	**GC10**
prepare designs that will meet building users' requirements and comply with UK legislation, appropriate performance standards and health and safety requirements.	10.3
RIBA THEMES AND VALUES AT PART ONE LEVEL	**T&V**
Health and Life Safety: Demonstrating authoritative knowledge of statutory frameworks to safeguard the community and the end user.	1
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
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 generate design proposals using understanding of a body of knowledge, some at the current boundaries of professional practice and the academic discipline of architecture;	1
ability to apply a range of communication methods and media to present design proposals clearly and effectively;	2
understanding of the alternative materials, processes and techniques that apply to architectural design and building construction;	3
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
ability to identify individual learning needs and understand the personal responsibility required for further professional education.	6

AIM(S)

- To develop, building on the foundations laid in the first and second year design modules, the student's architectural design and representation skills through one or more building design projects in defined contexts.

- To consider broader issues of urban design and building in response to context and prepare a brief for the design of the final integrative design project that in ACAA6001 Architecture Studio 3B in the second semester.

LEARNING OUTCOMES

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

- Carry out an urban design analysis of a town, village or neighbourhood to assess the potential for development – including consideration of topography, micro-climate, historical development, building quality.
- Create a masterplan for the development of a town, village or neighbourhood
- Create well-ordered outline design for a moderately complex non-domestic building or group of buildings in response to a defined brief that satisfy user needs and take account of the physical and cultural context including the fine arts.
- Write the brief for a moderately complex non-domestic building or group of buildings
- Communicate architectural and urban design ideas using a range of media including: writing, visual images, physical and digital models and verbal presentations

INDICATIVE CONTENT

- Analytical study of an urban neighbourhood or rural district identifying the constraints and opportunities for development
- Precedent study of a building - appraising organisation, architectural strategy, and structure
- Outline design of a non-domestic building or group of buildings
- Preparation of a detailed brief for a moderately complex non domestic building.

LEARNING AND TEACHING STRATEGY

In this third year first semester module students build on the design skills acquired in the first and second year architecture studio modules. The focus is on urban design in a real setting and may involve the adaption of existing structures and culminates in the outline design of a building or group of buildings and the preparation of a detailed design brief. 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	3 – 6 components	100%

Assessment Summary

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

INDICATIVE READING LIST

Module Code	**ACAA6000**	
Module Title	**Architecture Studio 3A**	
Classification	**Reading List entry**	**Electronic***
Essential	Barton, H., Grant, M. & Guise, R. (2010) *Shaping Neighbourhoods*. London: Routledge	☐
Essential	Kostof, S. (1999) *The City Assembled.* London: Thames & Hudson	☐
Further	Gehl, J. (2001) *New City Spaces* Copenhagen: Danish Architectural Press	☐
Further	Jacobs, J. (1961) *The Death and Life of Great American Cities*. London: Penguin	☐
Further	Kostof, S. (1999) *The City Shaped*. London: Thames & Hudson	☐
Further	Minton, A. (2012) *Ground Control: Fear and Happiness in the Twenty First Century City*. London: Penguin	☐
Further	Rossi, A. (1982) *The Architecture of the City.* Cambridge MA: MIT Press	☐
Further	Rowe, C. & Koetter, F. (1978) *Collage City.* Cambridge MA: MIT Press	☐
Background	Bentley, I., McGlynn, S. and Smith, G. (1985) *Responsive Environments.* Oxford: Architectural Press	☐
Background	Brand, S. (1997) *How Buildings Learn: What Happens After They Are Built*. London: Phoenix.	☐

Background	Brown, G. Z. & DeKay, M. (2014) *Sun, Wind and Light: Architectural Design Strategies.* Hoboken New Jersey: Wiley	☐
Background	Edwards, B. (2014) *Rough Guide to Sustainability.* 4th ed. London: RIBA Publishing	☐
Background	English Partnerships (2000) *Urban Design Compendium* London: English Partnerships	☐
Background	Hetreed, J, Ross, A & Baden-Powell, C. 2017 *The Architect's Pocket Book* 5th ed, Routledge.	☒
Background	Heywood, H. (2012) *101 Rules of Thumb for Low- Energy Architecture*. London,: RIBA Publishing	☒
Background	Hunt, T. (2003) *Tony Hunt's Structures Notebook.* 2nd Ed. London: Architectural Press	☐
Background	Kwok, A. & Grondzik, W. (2007) *The Green Studio Handbook*. Oxford: Architectural Press	☐
Background	Latham, I & Swenarton, M. (Eds) (2007) *Fielden Clegg Bradley: The Environmental Handbook* London: Rightangle 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	☐
Background	Unwin, S. (2012) *Exercises in Architecture.* London: Routledge	☒
Background	Unwin, S. (2014) *Analysing Architecture*. London: Routledge	☐
Background	Wilson, F. (1971) *Structure: The Essence of Architecture*. London: Studio Vista	☐
Journals	*The Architects' Journal*	☐
Journals	*Building Design*	☐
Journals	*Architecture Today*	☐
Journals	*Detail*	☐
Journals	*El Croquis*	☐
Websites	www.architecture.com	☒
Websites	www.architectsjournal.co.uk	☒
Websites	www.bdonline.co.uk	☒
Websites	www.greatbuildings.com	☒
Websites	www.ajbuildingslibrary.co.uk	☒

Module Code	**ACAA6001**
Title	**Architecture Studio 3B**
Date	**08/12/2021**
Level	**6**
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
understand the constructional and structural systems, the environmental strategies and the regulatory requirements that apply to the design and construction of a comprehensive design project	1.2
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
Adequate knowledge of the histories and theories of architecture and the related arts, technologies and human sciences.	**GC2**
the application of appropriate theoretical concepts to studio design projects, demonstrating a reflective and critical approach.	2.3
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
Adequate knowledge of urban design, planning and the skills involved in the planning process.	**GC4**
current planning policy and development control legislation, including social, environmental and economic aspects, and the relevance of these to design development.	4.3
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 profession of architecture and the role of the architect in society, in particular in preparing briefs that take account of social factors.	**GC6**
the potential impact of building projects on existing and proposed communities.	6.3
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
the need to appraise and prepare building briefs of diverse scales and types, to define client and user requirements and their appropriateness to site and context;	7.2
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
The necessary design skills to meet building users' requirements within the constraints imposed by cost factors and building regulations.	**GC10**
prepare designs that will meet building users' requirements and comply with UK legislation, appropriate performance standards and health and safety requirements.	10.3
RIBA THEMES AND VALUES AT PART ONE LEVEL	**T&V**
Health and Life Safety: Demonstrating authoritative knowledge of statutory frameworks to safeguard the community and the end user.	1
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
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 generate design proposals using understanding of a body of knowledge, some at the current boundaries of professional practice and the academic discipline of architecture;	1
ability to apply a range of communication methods and media to present design proposals clearly and effectively;	2
understanding of the alternative materials, processes and techniques that apply to architectural design and building construction;	3
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
ability to identify individual learning needs and understand the personal responsibility required for further professional education	6

AIM(S)

- To develop, building on the foundations laid in the first and second year design modules and ACAA6000 Architecture Studio 3A, the student's architectural design and representation skills through one or more building design projects in defined contexts.

- To offer the student the opportunity to design a complex multi-use building in a clearly defined context in sufficient detail to demonstrate his/her ability to successfully integrate structural, constructional and environmental requirements into a well-resolved coherent architectural composition to meet the needs of building users and respond creatively to context.

LEARNING OUTCOMES

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

- Create a well-ordered design for a moderately complex non-domestic building in response to a defined brief that satisfy user needs and relates well to physical and cultural context including the fine arts

- Explain the characteristics of contemporary frame construction and detailing in the context of the design of a general arrangement for the structure, fabric and services of a moderately complex non-domestic building

- Explain of principles low carbon design to create comfortable internal conditions effectively and efficiently

- Communicate architectural, technical and urban design ideas using a range of media including: writing, verbal presentations and visual images, physical and digital models and visual images informed by the techniques of the fine arts.

INDICATIVE CONTENT

- Design of a non-domestic building (for example museum, theatre, cultural centre, research facility etc) in response to a detailed brief.

- Design report explaining the how the building meets client aspirations and user needs and relates to its setting

- Technical report covering structure, construction, environmental strategy, legislative compliance and procurement processes

LEARNING AND TEACHING STRATEGY

This is the first of two third-year second semester modules (ACAA6001 Architecture Studio 3B and 3C) that together offer an integrated sequence of design tasks and share the same learning outcomes. Students build on the design skills acquired in the first and second year architecture studio modules and ACAA6000 Architecture Studio 3A which runs in the first semester bringing those skills to bear on an integrated building design in a clearly defined context that meets the requirements of a brief and responds creatively to its physical and cultural context. The focus is on architectural design and technical resolution. In a single integrated design project that is spread over the two modules students apply observational and analytical methods to demonstrate their design and communication abilities. Students respond individually to a detailed design brief. 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	3 – 4 components	100%

Assessment Summary

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

INDICATIVE READING LIST

Module Code	**ACAA6001**	
Module Title	**Architecture Studio 3B**	
Classification	**Reading List entry**	**Electronic***
Essential	Brown, G. Z. & DeKay, M. (2014) *Sun, Wind and Light: Architectural Design Strategies.* Hoboken New Jersey: Wiley	☐
Essential	Goldsmith, S. (2000) *Universal Design.* Oxford: Architectural Press	☒
Background	Alread, J, & Thomas, L. (2007) *Design-Tech: Building Science for Architects.* Oxford: Architectural Press	☐
Background	Brand, S. (1997) *How Buildings Learn: What Happens After They Are Built*. London: Phoenix.	☐
Background	Bryan, T. (2010) *Construction Technology: Analysis and Choice*. 2nd ed. Chichester: Wiley-Blackwell	☐
Background	Deplazes, A. (Ed.) (2005) *Constructing Architecture: Materials, Processes, Structures: A Handbook.* Basel: Birkhäuser	☐
Background	Dye, A. & McEvoy, M. (2008) *Environmental Construction Handbook.* London: RIBA Publishing	☐
Background	Edwards, B. (2014) *Rough Guide to Sustainability.* 4th ed. London: RIBA Publishing	☐
Background	Ellingham, I. & Fawcett, W. (2013) *Whole Life Sustainability.* London: RIBA Publishing	☐
Background	Hetreed, J, Ross, A & Baden-Powell, C. 2017 *The*	☒

	Architect's Pocket Book 5th ed, Routledge.	
Background	Heywood, H. (2012) *101 Rules of Thumb for Low-Energy Architecture*. London: RIBA Publishing	☒
Background	Hunt, T. (2003) *Tony Hunt's Structures Notebook.* 2nd Ed. London: Architectural Press	☐
Background	Kwok, A. & Grondzik, W. (2007) *The Green Studio Handbook*. Oxford: Architectural Press	☐
Background	Latham, I & Swenarton, M. (Eds) (2007) *Fielden Clegg Bradley: The Environmental Handbook* London: Rightangle 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	☐
Background	Radford, A. *et al (*2014) *Elements of Modern Architecture: Understanding Contemporary Buildings* London: Thames & Hudson	☐
Background	Thompson, R. (2007) *Manufacturing Processes for Design Professionals*. London: Thames & Hudson	☐
Background	Unwin, S. (2012) *Exercises in Architecture.* London: Routledge	☒
Background	Unwin, S. (2014) *Analysing Architecture*. London: Routledge	☐
Background	Wilson, F. (1971) *Structure: The Essence of Architecture*. London: Studio Vista	☐
Journals	*The Architects' Journal*	☐
Journals	*Building Design*	☐
Journals	*Architecture Today*	☐
Journals	*Detail*	☐
Websites	www.architecture.com	☒
Websites	www.architectsjournal.co.uk	☒
Websites	www.bdonline.co.uk	☒
Websites	www.greatbuildings.com	☒
Websites	http://www.ajbuildingslibrary.co.uk	☒

Specific titles will be recommended relevant to individual design projects

Module Code	**ACAA6002**
Title	**Architecture Studio 3C**
Date	**08/12/2021**
Level	**6**
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
understand the constructional and structural systems, the environmental strategies and the regulatory requirements that apply to the design and construction of a comprehensive design project	1.2
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
Adequate knowledge of the histories and theories of architecture and the related arts, technologies and human sciences.	**GC2**
the application of appropriate theoretical concepts to studio design projects, demonstrating a reflective and critical approach.	2.3
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
Adequate knowledge of urban design, planning and the skills involved in the planning process.	**GC4**
current planning policy and development control legislation, including social, environmental and economic aspects, and the relevance of these to design development.	4.3
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 profession of architecture and the role of the architect in society, in particular in preparing briefs that take account of social factors.	**GC6**
the potential impact of building projects on existing and proposed communities.	6.3
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
the need to appraise and prepare building briefs of diverse scales and types, to define client and user requirements and their appropriateness to site and context;	7.2
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
The necessary design skills to meet building users' requirements within the constraints imposed by cost factors and building regulations.	**GC10**
prepare designs that will meet building users' requirements and comply with UK legislation, appropriate performance standards and health and safety requirements.	10.3
RIBA THEMES AND VALUES AT PART ONE LEVEL	**T&V**
Health and Life Safety: Demonstrating authoritative knowledge of statutory frameworks to safeguard the community and the end user.	1
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
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 generate design proposals using understanding of a body of knowledge, some at the current boundaries of professional practice and the academic discipline of architecture;	1
ability to apply a range of communication methods and media to present design proposals clearly and effectively;	2
understanding of the alternative materials, processes and techniques that apply to architectural design and building construction;	3
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
ability to identify individual learning needs and understand the personal responsibility required for further professional education	6

AIM(S)

- To develop, building on the foundations laid in the first and second year design modules and ACAA6000 Architecture Studio 3A, the student's architectural design and representation skills through one or more building design projects in defined contexts.

- To offer the student the opportunity to design a complex multi-use building in a clearly defined context in sufficient detail to demonstrate the his/her ability to successfully integrate structural, constructional and environmental requirements into a well-resolved coherent architectural composition to meet the needs of building users and respond creatively to context.

LEARNING OUTCOMES

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

- Create a well-ordered design for a moderately complex non-domestic building in response to a defined brief that satisfy user needs and relates well to physical and cultural context including the fine arts.

- Explain the characteristics of contemporary frame construction and detailing in the context of the design of a general arrangement for the structure, fabric and services of a moderately complex non-domestic building

- Explain principles of low carbon design to create comfortable internal conditions effectively and efficiently

- Communicate architectural, technical and urban design ideas using a range of media including: writing, verbal presentations, physical and digital models and visual images informed by the techniques of the fine arts.

INDICATIVE CONTENT

- Design of a non-domestic building (for example museum, theatre, cultural centre, research facility etc) in response to a detailed brief.

- Design report explaining the how the building meets client aspirations and user needs and relates to its setting

- Technical report covering structure, construction, environmental strategy, legislative compliance and procurement processes

LEARNING AND TEACHING STRATEGY

This is the second of two third-year second semester modules (Architect Studio 3B and 3C) that together offer an integrated sequence of design tasks and share the same learning outcomes. Students build on the design skills acquired in the first and second year architecture studio modules and ACAA6000 Architecture Studio 3A which runs in the first semester bringing those skills to bear on an integrated building design in a clearly defined context that meets the requirements of a brief and responds creatively to its physical and cultural context. The focus is on architectural design and technical resolution.

In a single integrated design project that is spread over the two modules students apply observational and analytical methods to demonstrate their design and communication abilities. Students respond individually to a detailed design brief. 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.

In this module, the final stage of the UG design project sequence students develop their personal design project, started in ACAA6001 Architecture Studio 3B, in significant detail, prepare final presentation drawings, models etc and submit a detailed technical report.

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	1 – 2 components	50%

Assessment Component 2

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
Design report	2,000 – 3,000 words	50%

Assessment Summary

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

INDICATIVE READING LIST

Module Code	**ACAA6002**	
Module Title	**Architecture Studio 3C**	
Classification	**Reading List entry**	**Electronic***
Essential	Brown, G. Z. & DeKay, M. (2014) *Sun, Wind and Light: Architectural Design Strategies.* Hoboken New Jersey: Wiley	☒
Essential	Goldsmith, S. (2000) *Universal Design.* Oxford: Architectural Press	☒
Background	Alread, J, & Thomas, L. (2007) *Design-Tech: Building Science for Architects.* Oxford: Architectural Press	☐
Background	Brand, S. (1997) *How Buildings Learn: What Happens After They Are Built*. London: Phoenix.	☐
Background	Bryan, T. (2010) *Construction Technology: Analysis*	☒

	and Choice. 2nd ed. Chichester: Wiley-Blackwell.	
Background	Deplazes, A. (Ed.) (2005) *Constructing Architecture: Materials, Processes, Structures: A Handbook.* Basel: Birkhäuser	☐
Background	Dye, A. & McEvoy, M. (2008) *Environmental Construction Handbook.* London: RIBA Publishing	☐
Background	Edwards, B. (2014) *Rough Guide to Sustainability.* 4th ed. London: RIBA Publishing	☐
Background	Ellingham, I. & Fawcett, W. (2013) *Whole Life Sustainability.* London: RIBA Publishing	☐
Background	Heywood, H. (2012) *101 Rules of Thumb for Low-Energy Architecture*. London: RIBA Publishing	☒
Background	Hunt, T. (2003) *Tony Hunt's Structures Notebook.* 2nd Ed. London: Architectural Press	☐
Background	Kwok, A. & Grondzik, W. (2007) *The Green Studio Handbook*. Oxford: Architectural Press	☐
Background	Latham, I & Swenarton, M. (Eds) (2007) *Fielden Clegg Bradley: The Environmental Handbook* London: Rightangle 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	☐
Background	Radford, A. *et al (*2014) *Elements of Modern Architecture: Understanding Contemporary Buildings* London: Thames & Hudson	☐
Background	Thompson, R. (2007) *Manufacturing Processes for Design Professionals*. London: Thames & Hudson	☐
Background	Unwin, S. (2012) *Exercises in Architecture.* London: Routledge	☒
Background	Unwin, S. (2014) *Analysing Architecture*. London: Routledge	☐
Background	Wilson, F. (1971) *Structure: The Essence of Architecture*. London: Studio Vista	☐
Journals	*The Architects' Journal*	☐
Journals	*Building Design*	☐
Journals	*Architecture Today*	☐
Journals	*Detail*	☐
Websites	www.architecture.com	☒
Websites	www.architectsjournal.co.uk	☒
Websites	www.bdonline.co.uk	☒
Websites	www.greatbuildings.com	☒
Websites	http://www.ajbuildingslibrary.co.uk	☒

Specific titles will be recommended relevant to individual design projects

Module Code	**ACAA6003**
Title	**Architecture Dissertation**
Date	**08/12/2021**
Level	**6**
Credits	**40**
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
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
ability to identify individual learning needs and understand the personal responsibility required for further professional education.	6

AIM(S)

- To give the student the opportunity to demonstrate the ability to present an extended, structured argument based on evidence on a subject related to the design, construction, use or evaluation of buildings or settlements

LEARNING OUTCOMES

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

- Define and justify a research question or hypothesis and undertake a substantial research investigation directly related to an aspect of architecture and planning with a clearly articulated methodology

- Demonstrate a grounding in existing work related to the area of research and an understanding of how this informs the research strategy, analysis and findings

INDICATIVE CONTENT

- Research and writing of dissertation based on the proposal submitted at the end of year two in the module ACAA5003 History and Theory 2

LEARNING AND TEACHING STRATEGY

The individual student shapes learning by developing a research question, gathering and analysing evidence and writing up the dissertation. Students will be guided through the development of their dissertation through individual tutorials and group seminars in which they present their developing ideas to staff and fellow students.

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	96	24%
Independent learning	304	76%
Placement learning		
TOTAL	**400**	**100%**

ASSESSMENT

Assessment Component 1

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
Dissertation	10,000 words, excluding appendices	100%

Assessment Summary

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

INDICATIVE READING LIST

Module Code	**ACAA6003**	
Module Title	**Architecture Dissertation**	
Classification	**Reading List entry**	**Electronic***
Essential	Blaxter, L., Hughes, C. and Tight, M. (2010) *How to Research*. Buckingham: Open University Press	☒
Essential	Borden, I & Rüedi, E. (2000) *The Dissertation: An Architecture Student's Handbook*. Oxford: Architectural Press	☒
Background	Cotterell, S. (2014) *Dissertations and Project Reports: A Step by Step Guide.* Basingstoke: Palgrave Macmillan	☐
Background	Cotterell, S. (2017) *Critical Thinking Skills - Developing Effective Analysis and Argument.* Basingstoke: Palgrave Macmillan	☐
Background	Forty, A. (2004) *Words And Buildings* London: Thames Hudson	☐
Background	Nebois, T. (ed) (2003) *Architecture Theory from the Renaissance to the Present.* Köln: Taschen	☐
Background	Nesbitt, K. et al (2000) *Theorizing a New Agenda for Architecture* New York Princeton Architectural Press	☐
Background	Swetnam, R. And Swetnam, D. (2000) *Writing Your Dissertation: The Bestselling Guide to Planning, Preparing and Presenting First-Class Work* (The How To Series) 3rd Ed. London: Cromwell Press Group	☐

Specific titles will be recommended relevant to the student's research question

Module Code	**ACAA6004**
Title	**Profession and Business 2**
Date	**08/12/2021**
Level	**6**
Credits	**20**
Pre-Requisites	**None**

ARB/RIBA criteria addressed in this module	
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
current planning policy and development control legislation, including social, environmental and economic aspects, and the relevance of these to design development.	4.3
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 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 role of the architect within the design team and construction industry, recognising the importance of current methods and trends in the construction of the built environment;	6.2
the potential impact of building projects on existing and proposed communities.	6.3
Understanding of the methods of investigation and preparation of the brief for a design project.	**GC7**
the need to appraise and prepare building briefs of diverse scales and types, to define client and user requirements and their appropriateness to site and context;	7.2
the contributions of architects and co-professionals to the formulation of the brief, and the methods of investigation used in its preparation.	7.3
The necessary design skills to meet building users' requirements within the constraints imposed by cost factors and building regulations.	**GC10**
critically examine the financial factors implied in varying building types, constructional systems, and specification choices, and the impact of these on architectural design;	10.1
understand the cost control mechanisms which operate during the development of a project;	10.2
Adequate knowledge of the industries, organisations, regulations and procedures involved in translating design concepts into buildings and integrating plans into overall planning.	**GC11**
the fundamental legal, professional and statutory responsibilities of the architect, and the organisations, regulations and procedures involved in the negotiation and approval of architectural designs, including land law, development control, building regulations and health and safety legislation;	11.1
the professional inter-relationships of individuals and organisations involved in procuring and delivering architectural projects, and how these are defined through contractual and organisational structures;	11.2

the basic management theories and business principles related to running both an architect's practice and architectural projects, recognising current and emerging trends in the construction industry.	11.3
RIBA THEMES AND VALUES AT PART ONE LEVEL	**T&V**
Ethical and Professional Practice: acquiring professional and communication skills to ensure projects are delivered with integrity and accountability within global, national, and professional climate targets.	2
Business Skills: developing capability in business skills relevant to working in practice and practice management.	6
GRADUATE ATTRIBUTES AT PART ONE LEVEL	**GA**
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

AIM(S)

- To provide students with knowledge the application of the principles of spatial planning by national and local government through planning policy, development plans and development management in the UK in general and Wales in particular
- To provide students with an understanding of cost and value in the built environment and the legal framework within which buildings are procured.
- To provide students with knowledge of the development process and principles of project management
- To provide students with knowledge of the types of architectural practice and the key considerations in running a profitable business.

LEARNING OUTCOMES

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

- Describe the purpose and operation of the UK planning system and other built environment legislation
- Explain the methods used to control the capital cost and lifecycle cost of construction
- Evaluate the various processes involved in creating a building from the initial idea to completion and occupation
- Outline the operation of an architectural practice as a business identifying opportunities and risks

INDICATIVE CONTENT

- Spatial planning in Wales
- Principles of project management
- Principles of construction law
- The business of architecture

LEARNING AND TEACHING STRATEGY

Lectures, on-line 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. Lectures and seminars provide students with guidance on the writing a CV and personal portfolio.

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
RIBA Stage 3 Report	4,000 words	80%

Assessment Component 2

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
CV and portfolio template	1000 words or equivalent	20%

Assessment Summary

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

INDICATIVE READING LIST

Module Code	**ACAA6004**	
Module Title	**Profession and Business 2**	
Classification	**Reading List entry**	**Electronic***
Essential	Clamp, H. (2012) *Which Contract?* London: RIBA Publishing	☐
Essential	Morton, R. (2008) *Construction UK: An Introduction to the Industry*. Oxford: Blackwell	☐
Further	Brookhouse, S. (2013) *Professional Studies In Architecture: A Primer* London: RIBA Publishing	☒

Further	Eastman, C. et al (2011) *BIM Handbook: A Guide to Building Information Modelling*. Hoboken, NJ: Wiley	☒
Further	Egan, J. (2004) *The Egan Review: Skills for Sustainable Communities*. London: ODPM	☐
Further	Foxell, S. et al (2006) *Good Practice Guide: Starting a Practice* London: RIBA Publishing	☐
Further	Goldsmith, S. (2000) *Universal Design.* Oxford: Architectural Press	☒
Further	Hetreed, J, Ross, A & Baden-Powell, C. 2017 *The Architect's Pocket Book* 5th ed, Routledge.	☒
Background	Bowden, J. (2011) *Writing a Report: How to Prepare, Write and Present Really Effective Reports.* Oxford: How To Books	☐
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	☒

MODULE CODE: **ACBA6000**
TITLE: **Construction Management**
DATED: **16/08/2018**

LEVEL: **6**
CREDITS: **20**

JACS CODE: **K220**

AIM

- To improve management skills and technique analysis for construction managers working in all stages of the project life cycle.

LEARNING OUTCOMES

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

- Consolidate and extend the use of techniques for programming, monitoring and control of construction projects, being able to choose the most suitable ones for different complex scenarios.
- Evaluate occurring problems during the construction stage; identify appropriate solutions and the implementation of them in construction projects.

INDICATIVE CONTENT

- Further programming techniques for construction projects.
- Resource balancing and accelerating construction programmes.
- Statistical analysis applied to construction management. P.E.R.T. (Planned Evaluation Review Technique).
- Application of software for construction management.
- Site layouts for complex construction projects.
- Monitoring testing and commissioning.
- Risk management and analysis of construction projects.
- Productivity measurement methods
- Analysis of incentive schemes used in construction
- Non-compliance with contract. Managing claims. Delay analysis.

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	~~60~~48	~~30~~24%
Independent learning	~~140~~152	~~70~~76%
Placement learning	0	0%
TOTAL	**200**	**100%**

ASSESSMENT

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

Mode of assessment	Volume	Weighting
Report & Calculations	3,000 words	50%

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

Mode of assessment	Volume	Weighting
Exam	2 hours	50%

Assessment Summary

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

READING LIST

Module Code	**ACBA6000**	
Module Title	**Construction Management**	
Classification	**Reading List entry**	**Electronic***
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	☐
Essential	AECOM (2017) *SPON's Architects and Builders Price Book*. 142nd Ed. Abingdon, Oxon: CRC Press	X
Essential	Chartered Institute of Building (2014) *Code of Practice for Project Management for Construction and Development*. 5th Ed. London: Wiley-Blackwell	☐
Essential	March C. (2017) *Construction Management: Theory and Practice*. Oxon: Routledge	☐
Further	Coles D, Bailey G and Calvert R E (2012) *Introduction to Building Management*. London: Routledge	☐
Further	Cooke B and Williams P (2009) *Construction planning, programming and control*. Wiley-Blackwell	☐
Further	Dainty, A and Loosemore M (2012) *Human Resource Management in Construction: Critical Perspectives.* 2nd Ed. London: Routledge.	☐
Further	Harris F and McCaffer R (2013) *Modern Construction Management*. 7th Ed. Chichester: John Wiley & Sons Ltd.	☐

MODULE CODE: **ACBA6003**
TITLE: **Integrated Group Project**
DATED: **16/08/2018**

LEVEL: **6**
CREDITS: **20**

JACS CODE: **K200**

AIM

- To synthesise material from advanced modules and other sources throughout level six of the programme. By working in groups, the module aims to replicate the working environment, by developing communication skills, teamwork and leadership skills. Introducing students to an awareness of the overall process within which developments are conceived, assessed, designed and built.

LEARNING OUTCOMES

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

- Critically evaluate development and use of land and buildings.
- Evaluate alternative contractual arrangements, such as open/selective tendering, serial and term contracts, and apply reasoned argument for selecting a contract
- Appraise the options available and challenges in which Integrated Group Project management may be achieved.

INDICATIVE CONTENT

- *Project Appraisal*
    - The development and use of land and buildings; social, legislative, planning and environmental constraints.
    - Feasibility studies - Land and building valuation
- *Pre-Construction Processes*
    - Client's initial selection of development method; choice and relative method of alternative contractual arrangements; choice of designers, selection and basis of appointment.
- Assessment of client needs
- *Pre-construction monitoring and control systems*.
    - Reporting mechanisms
- *Project Management*
    - the definition and role of project management; appointment and selection process;
- *Problem Solving* - real or simulated development problems, as vehicles for stimulation of a logical and analytical approach to problem solving.
- Presentation – skills for delivery of project brief – different methods

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** X **Practical**

Mode of assessment	Volume	Weighting
Oral Presentation	5 mins	10%

Assessment Component 2
(Tick one)

☐ **Written exam** x **Coursework** ☐ **Practical**

Mode of assessment	Volume	Weighting
Written Report	4,000 words	65%

Assessment Component 3
(Tick one)

☐ **Written exam** ☐ **Coursework** X **Practical**

Mode of assessment	Volume	Weighting
Oral Presentation	15 mins	25%

Assessment Summary

Activity type	Percentage
Written exam	0
Coursework	70
Practical	30
TOTAL	**100%**

READING LIST

Module Code	**ACBA6003**	
Module Title	**Integrated Group Project**	
Classification	**Reading List entry**	**Electronic***
Essential	Emden, J. and Becker, L. (2016) Palgrave Study Skills: *Presentation Skills for Students*. Basingstoke: Palgrave MacMillan	☐

MODULE CODE: **ACBA6001**
TITLE: **Design Economics**
DATED: **16/08/2018**

LEVEL: **6**
CREDITS: **20**

JACS CODE: **K240**

AIM

- To develop the ability to understand the process and techniques for cost modelling in accordance with professional codes of practice and the RICS core competencies.

LEARNING OUTCOMES

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

- Assess the applicability of sources of cost data. Consider the design and its cost implications at cost planning stage.
- Critically evaluate processes to develop cost plans or cost models.
- Apply value-engineering techniques at Cost planning stage.

INDICATIVE CONTENT

- Assess the applicability of sources of cost data.
- The use of investment theory and its use in preparing the feasibility study.
- The construction of a cost model for use in Industry
- The application of Cost data from the BCIS and it's use in cost modeling
- Life Cycle costing
- Circular economy
- Value Engineering

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	**Hours**	**Percentage**
Scheduled learning	~~60~~48	~~30~~24%
Independent learning	~~140~~152	~~70~~76%
Placement learning	0	0
TOTAL	**200**	**100%**

ASSESSMENT

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

Mode of assessment	Volume	Weighting
Exam	2 hours	50%

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

Mode of assessment	Volume	Weighting
Open book exam	Up to 7 hours	50%

Assessment Summary

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

READING LIST

Module Code	**ACBA6001**	
Module Title	**Design Economics**	
Classification	**Reading List entry**	**Electronic***
Essential	Kirkham, R. (2014). *Ferry and Brandons Cost Planning of Buildings*. 9th Ed. Oxford: Blackwell	☐
Essential	Smith, J. (2016). *Building Cost Planning for the Design Team.* 3rd Ed. Abingdon, Oxon: Routledge	☐
Further	Scott, J. (2015). *Cost Planning of Construction Projects*. Hoboken: John Wiley and Sons Inc.	☐x
Further	Robinson, H, and Symonds, B. (2015) *Design Economics for the Built Environment: Impact of Sustainability on Project Evaluation.* 1st Ed. Hoboken: John Wiley & Sons Inc.	☐

MODULE CODE: **ACBA6004**
TITLE: **Advanced Construction and Civil Engineering Technology**
DATED: **16/08/2018**

LEVEL: **6**
CREDITS: **20**

JACS CODE: **K200**

AIM

- To critically appraise interface boundaries between construction management and design technology processes for large and/or complex sustainable building typologies, estates, facilities and civil engineering infrastructure projects.

LEARNING OUTCOMES

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

- Critique the application of the processes and procedures involved in the design and production of complex construction projects.
- Appraise relevant environmental functional and economic factors applicable to the construction and performance in use of technologically advanced building and civil engineering projects (whether high or low tech.).
- Evaluate solutions that afford sustainable and environmentally friendly buildings and infrastructure.
- Examine whole-life performance of buildings and civil engineering infrastructure, their care and management

INDICATIVE CONTENT

- Establishing appropriate site infrastructure to construct, repair and demolish complex
  structures effectively.
- Advanced foundation engineered substructures and basements.
- Tunnelling in major cities.
- Innovations in the design, production and environmental performance of complex super-structural elements: (structural frames, roofs, cladding etc.).
- The sustainability challenge: new material developments and techniques, potential applications and risks associated with deleterious performance.
- The overlap with advanced building services measures; whether active or passive control.
- Health & Safety and Fire Safety Engineering approaches to complex buildings with especial emphasis on those resulting from impacts emanating from the Grenfell Court fire and public inquiry.
- Intelligent buildings (consideration of both active and passive measures) and robotics.
- 5D BIM and implications for design and construction processes.
- Facilities and Asset Management challenges.
- Legislative frameworks to apply locally, nationally and internationally.
- Repair and refurbishment contradictions: traditional and listed buildings.

- Building defect issues applicable to buildings that are more complex: repair requirements and methods of defect diagnosis.

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	~~60~~48	~~30~~24%
Independent learning	~~140~~152	~~70~~76%
Placement learning	0	0%
TOTAL	**200**	**100%**

ASSESSMENT

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

Mode of assessment	Volume	Weighting
Report	3,000 words,	50%

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

Mode of assessment	Volume	Weighting
Written Exam	2 hours	50%

Assessment Summary

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

READING LIST

Module Code	**ACBA6004**	
Module Title	**Advanced Construction and Civil Engineering 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	Riley, M. and Cotgrave, A. (2013) *Construction Technology 3: The Technology of Refurbishment and Maintenance*. Basingstoke: Palgrave Macmillan	☐
Essential	Glasson, J., Therivel, R. and Chadwick, A. (2012) *Introduction to Environmental Impact Assessment.* Abingdon, Oxon: Routledge	☒

Essential	Rao, P. (2000) *Sustainable Development, Economics and Policy.* Oxford: Blackwell Publishers Ltd.	☐
Essential	Illingworth, J. R. (2000) *Construction Methods and Planning*. 2nd Ed. London: E & FN Spon	☐
Further	Holmes, R. (1995) *Introduction to Civil Engineering Construction.* 3rd Ed. Reading: College of Estate Management	☐
Further	Building magazine.	☐
Further	Architects Journal.	☐
Further	The Barry and Mitchell series of Technology books accessible within the Library.	☐
Further	Emmitt, S. and Yeomans, D.T. (2008) – *Specifying Buildings: A Design Management Perspective* 2nd Ed. Oxford: Butterworth-Heinemann,	☐
Further	Littlefield, D. (2007) – Metric Handbook – *Planning and Design Data* 3rd Ed. London: Architectural Press	☐
Further	McEvoy, M. and Dye, A. (2008) *Environmental Construction Handbook.* London: RIBA Publishing	☐
Further	**Journals/Websites** www.icevirtuallibrary.com www.bre.co.uk www.ice.org.uk www.asce.org Students should have access to a wide range of library resources, including, software, textbooks, and government and industry wide publications. **Considerable use will be required of the IHS and RICS 'I Surv.' databases**	☒

MODULE CODE: **ACBA6005**
TITLE: **Advanced Building Services and Environmental Design**
DATED: **16/08/2018**

LEVEL: **6**
CREDITS: **20**

JACS CODE: **K230**

AIM

- To comprehend a broad application of technologies and design techniques used to satisfy the building service requirements within large commercial or complex/multi-zone buildings, and to evaluate the design requirements of these systems with consideration to sustainable design strategies.

LEARNING OUTCOMES

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

- Synthesise the different HVAC requirements and installation and understand the technologies that serve large commercial or complex/multi-zone buildings.
- Critically evaluate energy provision and the principles and installation of Lighting and Power systems.
- Critically appraise system and equipment choice, design and installation practice in the context of sustainable futures, energy and cost savings.

INDICATIVE CONTENT

- Interpretation of HVAC requirements
- Available technologies to large buildings/complexes
- Heating systems - Central and localised systems, System sizing
- Ventilation and air conditioning systems - characteristics and available choices
- Energy provision and systems for Lighting and Power
- System and equipment choice, design and installation practice in the context of sustainable futures, energy and cost savings.
- SMART building
- Lifecycle assessment

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	**Hours**	**Percentage**
Scheduled learning	~~60~~48	~~30~~24%
Independent learning	~~140~~152	~~70~~76%
Tutorial learning	0	0%
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

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

Mode of assessment	Volume	Weighting
Case Study Design	5000 words + design drawings	100%

Assessment Summary

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

READING LIST

Module Code	**ACBA6005**	
Module Title	**Advanced Building Services and Environmental Design**	
Classification	**Reading List entry**	**Electronic***
Essential	Chadderton, D. (2012) *Building Services Engineering*. 6th Ed. Abingdon, Oxon: Routledge	☐
Essential	Hall, F and Greeno, R (2015) *Building Services Handbook*. 8th Ed. Abingdon, Oxon: Routledge.	☐
Essential	Mc Mullan, R. (2012) *Environmental Science in Buildings.* Basingstoke: Palgrave McMillan	☐
Further	Gekorkian, P. (2010) *Alternative Energy Systems in Building Design*. New York: McGraw-Hill Education.	☐
Further	CIBSE (2005). *CIBSE Guide B: Heating, Ventilating, Air Conditioning and Refrigeration.* London: CIBSE.	☐
Further	CIBSE (2016). *CIBSE Guide B2: Ventilation and Ductwork.* London: CIBSE	☐
Further	CIBSE (2004) *CIBSE Guide K: Electricity in Buildings* London: CIBSE.	☐

MODULE CODE: **ACBA6007**
TITLE: **Structural Design**
DATED: **16/08/2018**

LEVEL: **6**
CREDITS: **20**

JACS CODE: **K200**

AIM

- To provide students with the requisite analysis tools to appreciate the behaviour of different types of structures, the processes involved with structural safety and the relevant structural design standards.

LEARNING OUTCOMES

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

- Develop existing skills in the appreciation of different types of loads that could be applied on different types of structures due to persistent and transient design situations.
- Critically appraise beam theory, flexibility and moment distribution methods, and solve truss systems to determine the stresses applied on structural systems and their components due to the applied loading.
- Apply the standards and code provisions competently to determine required cross sections and sizes of structural components to carry the resulting stresses due to the applied loads.

INDICATIVE CONTENT

- Introduction to BS EN 1990 – European Standard for “Basis of Structural Design” and the UK National Annex.
- Introduction to BS EN 1991- European Standard for “Actions”.
- Introduction to wind loads.
- Introduction to snow loads.
- Introduction to the beam theory.
- Simply supported and cantilevered beams.
- Flexibility and Moment methods to solve statically indeterminate structures.
- Method of sections, “BOW” notation and Resolution of forces techniques to determine member forces in trusses and frameworks.
- Reinforced concrete design through sub-frames and load cases.
- Introduction to BS EN 1992, its parts, and the UK National Annex for designing concrete structures.
- Steel design through the use of published charts.
- Introduction to BS EN 1993, its parts, and the UK National Annex for designing steel structures.
- Timber design – the strength classes and the classification of timbers.
- Introduction to BS EN 1995, its parts, and the UK National Annex for designing timber structures.
- Introduction to BS EN 1996 and its UK National Annex for designing masonry structures.

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	~~60~~48	~~30~~24%
Independent learning	~~140~~152	~~70~~76%
Placement learning	0	0%
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

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

Mode of assessment	Volume	Weighting
Report	3000 words	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	0
TOTAL	**100%**

READING LIST

Module Code	**ACBA6007**	
Module Title	**Structural Design**	
Classification	**Reading List entry**	**Electronic***
Essential	Arya, C., (2009), *Design of Structural Elements*. 3rd Ed. Florida: CRC Press, Taylor & Francis Group	☒
Essential	Mosley W H, Bungey J H and Hulse R (2007) *Reinforced Concrete Design to EC2*. Basingstoke: Palgrave Macmillan	☐
Essential	Ghali A, Neville A M and Brown T G (2009) *Structural Analysis*: *A unified classical and matrix approach*. 6th Ed. Florida: CRC Press, Taylor & Francis Group	☒
Essential	Gardener L and Nethercot D (2011) *Designers' Guide to Eurocode 3*. London: ICE Publishing	☐
Essential	Porteous J and Kermani A (2013) *Structural Timber Design to Eurocode 5*. Chichester: Wiley-Blackwell	☐
Further	McKenzie W M C (2008), *Design of Structural Steelwork to BS5950 and EC3*. 2nd Ed. Basingstoke: Palgrave Macmillan	☒

Further	McKenzie W M C and Zhang Binsheng (2007) *Design of Structural Timber to EC5.* 2nd Ed. Basingstoke: Palgrave Macmillan	☐

MODULE CODE: **ACBA6006**
TITLE: **Building Conservation, Asset and Facilities Management**
DATED: **16/08/2018**

LEVEL: **6**
CREDITS: **20**

JACS CODE: **K230**

AIM

- To develop an understanding of the importance of adopting effective asset management principles and procedures. The module will address operational tactical and strategic criteria and gain skills and knowledge of benchmarking, condition based and lean asset management strategies. The focus will be placed on 'hard' FM services with a lesser emphasis on 'soft' provisions.

LEARNING OUTCOMES

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

- Deploy accurately, philosophies and processes involved in managing the care (conservation where appropriate) and retrofitting of both traditional and late twentieth century buildings.
- Critically compare and evaluate different asset management approaches; formulating sustainable strategies to prevent deterioration of asset condition for differing situations and building types;
- Identify and apply appropriate and effective targets to asset management that ensure that the risks emanating from obsolescence in its many facets are minimised or managed.

INDICATIVE CONTENT

- Asset Management – Definitions. Standards. Concept of total building care.
- Conservation Charters, philosophical approaches,
- Principles; Statements of Significance, Heritage Impact Statements and Conservation Management Plans.
- Listed building legislation and processes.
- Practical case studies. (The Palace of Westminster and Buckingham Palace as key resources) but with more local examples aiding students development and affording applications for assignments.
- The sector and specific challenges posed (focussing primarily on the UK's climatic challenges; stock profile; generic building typologies, socio-economic factors and demographics.
- Forms of Maintenance e.g. Reactive, Emergency, Planned, Planned Preventative, Condition based, Day to day, Revenue, Capitalised; Lean and Six Sigma processes.
- Service level agreements, procurement options, and suitability and cost/value arguments.
- Condition, element, component and performance-based approaches to asset management;

- Ownership costs, whole-life expenditure.
- Investment and Risk strategies
- Health and Safety (as specifically applied to this sector for: operatives, management and professionals
- Risk strategies.
- Potential efficiency gains
- Asset management principles and survey techniques
- Statutory compliance
- Sustainability
- Methods of enhancing building or occupier satisfaction
- Building performance, adverse impact potential, e.g. on structure, building fabric and environmental performance
- Historic and traditional buildings, heritage impact assessments and building performance
- Physical stock condition survey: condition or status criteria, e.g. new, sound, operable, inoperable, unsafe; use of asset condition survey data; relationship of asset management plan to building plan; relationship to capital investment strategy; relationship to corporate building maintenance strategy
- Sustainable remedial solutions opportunities and threats, e.g. carbon footprint reduction, new and improved technologies, energy use and efficiency, alternative energy resources, materials recycling; 'Green' specification
- Inventories
- Continuous system performance assessment technologies
- Asset registers, asset register software, e.g. Computerised Maintenance/Asset Management Software (CMMS). Computer aided Facilities Management (CAFM) and Building Information Modelling (BIM 4) Conservation.
- Benchmarking Facilities and Estates - Key Performance Indicators (KPI's).

LEARNING AND TEACHING STRATEGY

Students will be taught through lectures (including guest lectures by practising professionals) case study seminars, tutorials and site visits that will be used to demonstrate vocational practice and different approaches taken.

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	~~60~~48	~~30~~24%
Independent learning	~~140~~152	~~70~~76%
Placement learning	0	0
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

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

Mode of assessment	Volume	Weighting
Report	6,000 words or equivalent case study based evaluation of a substantial asset.	100%

Assessment Summary

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

READING LIST

Module Code	**ACBA6006**	
Module Title	**Building Conservation, Asset and Facilities Management**	
Classification	**Reading List entry**	**Electronic***
Essential	English Heritage (2015). *Practical Building Conservation*, 10-volume set. Library Resource	☒
Essential	Building Conservation Directory – Web Portal Accessed at: www.buildingconservation.com/	☒
Essential	Hollis, M. (2005) *Surveying Buildings*. London: Surveyors Publications	☐
Further	University of the West of England, Bristol (2004) *Maintaining Value module 1: Best Practice Maintenance Management for Listed Buildings*. Bristol: UWE	☒ .
Further	Wood, B. (2003) *Building Care.* Oxford: Blackwell Publishing.	☒
Further	British Standards Institute (2013) *BS 7913: Guide to the Conservation of Historic Buildings*. London: British Standards Institute	☐
Further	BS Guides to Facilities Management	☒
Further	SPAB – Cornerstone Publication and Technical Guides	☐
Further	Cadw, Historic Scotland, Historic England; various web-based guidance.	☒
Further	BSRIA (2012) *Asset Management and Maintenance Audits (BG24/2012).* Bracknell: BSRIA	☐
Further	RICS 'I Surv' Electronic Database. Subscription via School.	☒
Further	IHBC. Context Journal	☒

Module Code	ACBA6008
Title	Independent Project
Date	25/06/2020
Level	6
Credits	40
Pre-Requisites	None

AIM(S)

- To develop the ability of students to engage critically and innovatively with theory and/or practice relevant to their studied subject areas in order to produce a discipline specific in-depth project.

LEARNING OUTCOMES

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

- Demonstrate intellectual skills in the identification of an appropriate topic, problem or challenge for investigation pertinent to their field of study and formulate a suitable plan for further research utilising relevant investigative methods in order to produce a response.

- Evidence in-depth knowledge and critical understanding of principles necessary to underpin their education within their chosen field of study and problem solving techniques applicable to this.

- Evidence independence of thought and critical evaluation in the production of an independent piece of work, demonstrating transferable skills through exercising initiative and personal responsibility in planning own learning and self-management.

- Organise their knowledge and learning through use of a range of media, and present their work appropriately in a manner that can be understood by specialist and non-specialist audiences.

INDICATIVE CONTENT

- Research paradigms, methods, and techniques of research and enquiry.

- Conducting and writing literature reviews.

- Ethical concerns and the research process.

- Resource, project, and skills management processes and techniques.

- Presenting and illustrating data and information.

- Communication of general, specialist, technical ideas and results.

- Problem solving, creative, entrepreneurial thinking and approaches.

- Collaboration, adaptability and reflection.

Study Time Allocation

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	36	9%
Independent learning	364	91%
Placement learning		
TOTAL	**400**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

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

Mode of assessment	Volume	Weighting
Portfolio	Minimum of 3 elements (equivalent to 10,000 words)	100%

Assessment Summary

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

INDICATIVE READING LIST
This will be guided by the student's individual project.

Module Code	**ACBA6008**	
Module Title	**Independent Project**	
Classification	**Reading List entry**	**Electronic***
Essential	Cottrell S, (2015) *Skills for Success Personal Development and Employability, 3rd edition*, Palgrave. London.	☒
Essential	ASET, 2013 *Good Practice Guide for Workbased Learning and Placement Learning in Higher Education*	☒
Essential	Gray, D.E. (2018) *Doing Real World Research,* London: SAGE.	☐
Further	Gallagher K, (2016) *Essential Study and Employment Skills For Business and Management Students*, Oxford	☐
Further	Gottschall, Jonathan (2013), *The Storytelling Animal: How Stories Make Us Human,* Houghton Mifflin	☐
Further	Storr, Will (2020), *The Science of Storytelling,* William Collins	☐
Further	Cohen, L. Manion, L. and Morrison, K. (2017) *Research Methods in Education, 8th edition* London: Routledge.	☒
Further	Flick, U. (2014) *An Introduction to Qualitative Research*, London: SAGE.	☐
Further	Aubrey, K. & Riley, A. (2017) *Understanding and Using Challenging Education Theories*, London: SAGE.	☒
Further	Brinkmann, S. and Kvale, S. (2018) *Doing Interviews (Qualitative Research Kit)*. Sage	☐

Further	Gibbs, G. (2018) *Analysing Qualitative Data (Qualitative Research Kit).* Sage	☒
Further	Creswell, J. W. (2012*). Qualitative inquiry and research design: Choosing among five approaches*. Sage	☐
Further	Obschonka, M., Hakkarainen, K., Lonka, K. *et al.* Entrepreneurship as a twenty-first century skill: entrepreneurial alertness and intention in the transition to adulthood. *Small Bus Econ* **48,** 487–501 (2017). https://doi.org/10.1007/s11187-016-9798-6	☒
Further	https://ec.europa.eu/jrc/en/entrecomp	☒

Module Code	**ACNA6002**
Title	**Environmental Assessment, Management and Auditing**
Date	**05/05/2021**
Level	**6**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

- To enable students to examine how the environment is assessed so that evidence-based policy decisions can be formulated, as well as evaluating the environmental management approach and benefits of auditing. In particular, students will critically appraise the application of Impact Assessments and Ecological Footprints.

LEARNING OUTCOMES

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

- Understand and critically assess an Environmental Impact Assessment.
- Understand and apply Environmental Management tools, techniques, systems and practices, and the auditing process within a practical scenario.

INDICATIVE CONTENT

- Environmental Impact assessment: Impact scoping, prediction and mitigation utilising qualitative and quantitative technique
- Environmental Assessment document examination and critique
- Environmental Management tools, techniques, systems and practices, their advantages and disadvantages
- Carbon footprinting, theory and application
- Lifecycle thinking, its benefits and challenges and its application in decision-making processes
- The roles and responsibilities of key stakeholders in delivering sustainable outcomes, and their interactions
- Auditing practices as a method of assessing compliance / non-compliance in delivering sustainability improvements
- The role of verification and assurance in delivering sustainability improvements

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
Report on an Environmental Impact Assessment	2500 words	50%

Assessment Component 2
(Tick one)

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

Mode of assessment	Volume	Weighting
Report on a practical application of environmental management	2500 words	50%

Assessment Summary

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

INDICATIVE READING LIST

Module Code	**ACNA6002**	
Module Title	**Environmental Assessment, Management and Auditing**	
Classification	**Reading List entry**	**Electronic***
Essential	Glasson, J., Therival, R. and Chadwick, A. (2012) (4th Edition) *Introduction to Environmental Impact Assessment*. London: Routledge	☐
Essential	Muthu, S.S. (Ed.) (2020) *Carbon Footprints: Case Studies from the Building, Household, and Agricultural Sectors*. Singapore: Springer	☒
Essential	BSi (2015) *BS EN ISO14001: Environmental Management Systems – Requirements with guidance for use*, London: British Standards Institution	☐
Essential	Wackernagel, M. & Beyers, B. (2019) *Ecological Footprint: Managing our Biocapacity Budget*. Canada: New Society Publishers	

Further	Environmental Management journal	☒
Further	Journal of Cleaner Production	☒
Further	BSi (2019) *BS EN ISO14005: Environmental Management Systems – Guidelines for a flexible approach to phased implementation*, London: British Standards Institution	☐
Further	Corporate Social Responsibility and Environmental Management journal	☒
Further	Berners-Lee, M. (2020) *How Bad Are Bananas?: The carbon footprint of everything*. London: Profile Books	☒
Further	Muthu, S.S. (Ed.) (2018) *Environmental Carbon Footprints Industrial Case Studies.* Oxford: Butterworth-Heinemann	☐
Further	International Journal of Environmental Studies	☒
Further	Global Footprint Network (2020) *Strategies for one-planet prosperity How to build lasting success on our finite planet*. Global Footprint Network	☒
Further	Collins, A. & Flynn, A. (2015) *The Ecological Footprint: New Developments in Policy and Practice*. Cheltenham, Gloucester: Edward Elgar Publishing	☒

Module Code	**ACNA6004**
Title	**Habitat Management and Building Resilience**
Date	**05/05/2021**
Level	**6**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

- To critically appraise the management of habitats and evaluate climate change impacts and mitigation strategies.

LEARNING OUTCOMES

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

- Comprehend the principles underpinning habitat evaluation, monitoring and protective edicts, as well as understanding the complexities of habitat management.

- Synthesise strategies for strengthening ecological resilience

INDICATIVE CONTENT

- Monitoring, maintenance and managements of different habitats

- Habitat creation

- Surveying and interpreting animal behaviour as a mechanism for consequential habitat protection

- Cultural variations in landscape aesthetics and its influence on environmental management

- Methods for landscape assessment e.g. Leopold Rewilding, Species and Landscape Approach

- Land-use planning: Development control and planning tools

- Analysis of risk, environmental change and decision making

- Mitigation and compensation

- Rewilding and interventions: complementary philosophies

- Strategies for strengthening climate change resilience

- Ecological resilience and ecosystem services

- Design for flooding: riparian management

- Climate smart productive landscapes

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	Construction of a management plan and academic poster/critique (3500 words and 15 min defence of ideas)	70%

Assessment Component 2
(Tick one)

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

Mode of assessment	Volume	Weighting
Academic Poster	Academic poster/critique (1500 word equivalent)	30%

Assessment Summary

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

INDICATIVE READING LIST

Module Code	**ACNA6004**	
Module Title	**Habitat Management and Building Resilience**	
Classification	**Reading List entry**	**Electronic ***
Essential	Ausden, M. (2007) *Habitat Management for Conservation: A Handbook of Techniques (Techniques in Ecology & Conservation)*. Oxford: Oxford University Press,	☐
Essential	Milner-Gulland, E. J. and Rowcliffe, J. M. (2008) *Conservation and Sustainable Use: A Handbook of Techniques (Techniques in Ecology & Conservation).* Oxford: Oxford University Press	☐
Essential	Hill, A. and Martinez-Diaz, L. (2019) *Building a Resilient Tomorrow: How to Prepare for the coming Climate Disruption*, New York: Oxford University Press	☐

Essential	Morrison, M.L. and Mathewson, H.A. (2015) *Wildlife, Habitat Conservation: Concepts, Challenges and Solutions (Wildlife Management and Conservation)* Baltimore: John Hopkins University Press	☐
Further	Leopold, A. (1968). *A Sand County Almanac and Sketches Here and There*. New York: Oxford University Press	☐

Module Code	**ACNA6003**
Title	**Geographical Information Systems and Remote Sensing Technologies**
Date	**05/05/2021**
Level	**6**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

- To introduce the student to the application and management of geographical information. The student should develop a comprehensive understanding of the underlying technologies and practical applications of modern remote sensing technologies. Theoretical concepts of GIS will be developed and through real world examples the students gain practical experience using appropriate remote sensing technology to gather and analyse spatial data.

LEARNING OUTCOMES

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

- Review the relative merits of GIS software to analyse a range of data to model events and inform decision making in an environmental context.
- Evaluate and critically appraise a variety of application areas, which could benefit from remotely sensed data acquisition.
- Accurately identify spatial databases and understand the concepts of manipulating and representing spatial data solutions.

INDICATIVE CONTENT

- Fundamental theories of GIS, spatial databases and spatial analysis.
- Geovisualisation, exploring the origins of GIS and cartographic representation.
- Identifying types of data involved in Geo-information systems including DIGIMAP.
- Identifying data sources and data collection issues when using remote sensing technologies.
- Understanding data types, working with raster and vector data.
- Deploying remote sensing technologies and using appropriate GIS software for data analysis.
- Development of GIS applications.

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	0	0%
TOTAL	**200**	**100%**

ASSESSMENT

Assessment Component 1
(Tick one)

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

Mode of assessment	Volume	Weighting
Portfolio	4000 words equivalent 3-4 elements	100%

Assessment Summary

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

INDICATIVE READING LIST

Module Code	**ACNA6003**	
Module Title	**Geographical Information Systems and Remote Sensing Technologies**	
Classification	**Reading List entry**	**Electronic***
Essential	Longley, P, Goodchild, M, Maguire, D, Rhind, D (2015) *Geographical Information Systems and Science*, Hoboken, NJ: Wiley	☒
Essential	Jensen, J. (2013) Remote Sensing of the Environment: An Earth Resource Perspective (2nd Ed). Prentice Hall Series	☒
Further	Heywood, I., Cornelius, S. and Carver, S. (2011) *An Introduction to Geographical Information Systems*, 4th ed. Essex: Pearson Education	☐
Further	ISPRS Journal of Photogrammetry and Remote Sensing	☐
Further	Journal: Remote Sensing of the Environment	☐
Further	http://www.mapinfo.co.uk	☒
Further	https://www.qgis.org	☒
Further	http://www.agi.org.uk/	☒
Further	http://www.ordnancesurvey.co.uk/oswebsite/	☒
Further	http://ukdataservice.ac.uk/	☒
Further	http://digimap.edina.ac.uk/digimap/home	☒

Module Code	**ACNA6005**
Title	**Sustainable Urban Communities**
Date	**05/05/2021**
Level	**6**
Credits	**20**
Pre-Requisites	**None**

AIM(S)

- To foster earlier work incorporating sustainable development and strengthen the case for mainstreaming resilience, building cities that are inclusive, low carbon, productive and more equal.

LEARNING OUTCOMES

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

- Critically evaluate key factors influencing urban development strategies and compliance with the Sustainable Development Goal (SDG) 11 and Wellbeing of Future Generations Act 2015.

- Compare and contrast principal issues and needs applicable to both rural and urban sustainable development locally, regionally and globally.

- Synthesise strategies applicable to sustainable development, which apply urban planning, risk management and geospatial infrastructure.

INDICATIVE CONTENT

- Sustainable development – concept, principles, and its conception

- Cities and urban environments

- Transport – importance and accessibility for all

- Urban poverty and inclusion: affordable housing and land

- Urban management, finance and governance

- Community engagement

- Strategic policies designed to deal with: energy usage, transportation, waste production, population expansion, pollution, water scarcity and agriculture

- Construction, use and maintenance of the built environment

- Methods of improvement

- Analysis of different scales via case studies (local, national, European and the developing world).

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
Report and seminar presentation	Construction of an academic report (2000 words and 10-minute defence of ideas)	50%

Assessment Component 2
(Tick one)

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

Mode of assessment	Volume	Weighting
Written Examination	2 hour exam unseen paper	50%

Assessment Summary

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

INDICATIVE READING LIST

Module Code	**ACNA6005**	
Module Title	**Sustainable Urban Communities**	
Classification	**Reading List entry**	**Electronic ***
Essential	Sanchez de Madariaga, I. (2020) *Engendering Cities: Designing Sustainable Urban Spaces*. New York: Routledge	☐
Essential	Chatterton, P. (2018) *Unlocking Sustainable Cities: A Manifesto for Real Change*, London: Pluto Press	☐
Essential	Mclaren, D., Agyeman, J. and Gottlieb, R. (2017). *Sharing Cities: A Case for Truly Smart and Sustainable Cities*. Cambridge, MA: MIT Press	☐
Essential	Blewitt, J. (2014) *Understanding Sustainable Development*. Abingdon, Oxon : Routledge	☐

Further	Schumacher, E. F. (1993) *Small is beautiful*. London: Vintage Press	☒
Further	Giradet, H (2006) *Creating Sustainable Cities Schumacher Briefings*. Totnes, Devon: Green Books	☐
Further	Sustainable Development Goals	☒
Further	Building and Environment journal	☒
Further	Current opinion in Environmental Sustainability	☒
Further	Wellbeing of Future Generations Act 2015	☒