PROGRAMME QUALITY HANDBOOK 2023-24

FdSc/ HNC Construction

Welcome and Introduction

Welcome to FdSc/HNC Construction at City College Plymouth. These courses are primarily aimed at students who wish to qualify as professionals in the Construction industries. The programmes provide a broad based education in construction and built environment with modules covering a range of sector related teaching, learning and assessment practices which are relevant to prospective employers across the sector.

Students studying either programme will be provided with the knowledge and skills in management processes, health, safety and other legislation as applicable to the built environment. Students choosing to complete the FdSc will expand and apply this knowledge through employer-led projects ensuring currency of topics and approach, preparing them for employment within the Construction industry. The programme's focus on a strong 'work based learning' ethos provides a deeper understanding of technical, environmental sustainability and other skills required for management within the building industry.

An HNC is an industry recognised qualification, supporting students in entering or continuing in employment with a recognised higher level qualification. In addition, the course has been designed specifically to provide the opportunity to continue to develop further higher level knowledge and skills through direct progression to stage 2 of the Foundation Degree in Construction delivered at City College Plymouth.

The Foundation Degree curriculum has been designed to enable part time students to incorporate work based projects set by their employers, and full time students to have the opportunity to gain work place experience as well as undertake industry set work based projects. The graduates of the programme have progressed into diverse areas within the construction industry such as construction managers, building surveyors, quantity surveyors and architectural technicians.

This programme has been designed to equip you with the skills and knowledge base required to work in your chosen specialism or other graduate opportunities. It is also a platform from which you can undertake additional vocational and academic qualifications.

This Programme Quality handbook contains important information including:

- The approved programme specification
- Module records

Note: the information in this handbook should be read in conjunction with the current edition of the College Student handbook available at (http://hemoodle.cityplym.ac.uk/course/view.php?id=3305) which contains student support based information on issues such as finance and studying at HE along with the University's Student Handbook https://www.plymouth.ac.uk/your-university/governance/student-handbook and your Teaching, Learning and Assessment Handbook available on your programme virtual learning environment.

Programme Specification

Awarding Institution: University of Plymouth **Teaching Institution:** City College Plymouth **Accrediting Body:** University of Plymouth **Language of Study:** English **Mode of Study:** Full Time/Part Time **Final Award:** Foundation Degree (FdSc) **Intermediate Award:** Cert HE **Programme Title:** FdSc Construction **UCAS Code:** K221 **JACS Code:** K200 **Date of Programme Approval:** August 2017	**Awarding Institution:** University of Plymouth **Teaching Institution:** City College Plymouth **Accrediting Body:** University of Plymouth **Language of Study:** English **Mode of Study:** Full Time/Part Time **Final Award:** Higher National Certificate (HNC) **Programme Title:** HNC Construction **UCAS Code:** Q93N **JACS Code:** K200 **Date of Programme Approval:** August 2017

Distinctive Features of the HNC Programme and the Student Experience

The programme provides a broad based education in construction and built environment. The graduates of the programme have progressed into diverse areas within the construction industry such as construction managers, building surveyors, quantity surveyors and architectural technicians.

This programme provides students with knowledge and skills in management processes, health, safety and other legislation as applicable to the built environment.
In addition to these managerial skills the course has been designed to provide hands-on experience of the design aspect of the construction industry, using industry standard software with the underpinning knowledge of properties of materials and methods of construction.

An HNC is an industry recognised qualification, supporting students in entering or continuing in employment with a recognised higher level qualification. In addition the course has been designed specifically to provide the opportunity to continue to develop further higher level knowledge and skills through direct progression to stage 2 of the Foundation Degree in Construction delivered at City College Plymouth.

The programme has been designed to provide high levels of flexibility for both full and part time students. The design model allows full time students to manage part time employment around their studies, and provides part time students with a day-release model of delivery.

Distinctive Features of the FdSc Programme and the Student Experience

Employability is a distinctive feature of the FdSc Construction programme. All the modules use a range of sector related teaching, learning and assessment practices which are relevant to prospective employers across the Construction sector, with employer-led projects ensuring currency of topics and approach.

The programme has been designed to facilitate a close working relationship with a network of employers to support the student engagement in the wider community of Construction professionals. Therefore the FdSc Construction has been designed to enable students to progress towards professional accreditation by bodies such as CABE and CIOB.

As well as providing the essential knowledge base requirement for employment with the Construction industry, the programme's focus on a strong 'work based learning' ethos provides a deeper understanding of technical, environmental sustainability and other skills required for management within the building industry.

The programme uses an industry standard ICT and modelling software suite within a brand new Science Technology Engineering and Maths (STEM) Centre of Excellence building with access to the latest technological developments.

Alongside new technologies, students will have the opportunity for field visit to actual construction sites to gain first-hand experience and knowledge, enabling student to appreciate and evaluate current construction practices.

Programme Aims:

This programme aims to:

1. Establish broad foundation knowledge of the functional and performance requirements of framed and complex buildings.
2. Provide the opportunity to understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex buildings.
3. Demonstrate the ability to use a range of planning tools, and apply them to construction processes, including procurement methodology.
4. Provide the opportunity to understand and appreciate the social, political and legal issues which impact on planning, design and development of the built environment.
5. Provide the opportunity to understand the importance of effects on the Environment and the sustainability of the built environment.
6. Develop an understanding of the Ethics and Professionalism expected by the Construction Industry.

Programme Intended Learning Outcomes (ILO)

HNC Programme Intended Learning Outcomes - On successful completion graduates should have developed:

Knowledge and understanding
1) An awareness of the application of technology in framed and complex buildings.
2) An evidence-based approach to understanding and appreciating the function and design of building services for framed and complex buildings to ensure human comfort.
3) A knowledge of legislation linked to the built environment

Cognitive and intellectual skills
1) The ability to identify and select techniques, procedures and methods to undertake tasks within the construction industry.
2) The ability to apply the CIOB Code of Conduct to their own practice.

Key and transferable skills
1) Communicate ideas and information; through verbal and written forms using appropriate terminology and presentation of data.
2) Work independently or as a member of a team within a design project.

Employment related skills
1) Good student centred learning skills which will promote lifelong learning and a commitment to continuing professional development to achieve flexibility within the work environment.

Practical skills
1) The ability to apply knowledge of the construction process to project management within in the construction industry.

FdSc Programme Intended Learning Outcomes - On successful completion graduates should have developed:

Knowledge and understanding
1) A sound theoretical approach to the application of technology in framed and complex buildings.
2) Appropriate theory and practical skills to apply principles of site investigation to assess the suitability of sites for construction projects.
3) A sound evidence-based approach understanding and appreciating the function and design of building services for framed and complex buildings to ensure human comfort.
4) A sound knowledge of legislation linked to the built environment

Cognitive and intellectual skills
1) The ability to identify, review and select techniques, procedures and methods to undertake tasks within the construction industry.
2) The ability to apply the CIOB Code of Conduct to their own practice.
3) The ability to Implement design solutions and contribute to their evaluation.

Key and transferable skills
1) Communicate ideas and information; through verbal and written forms using appropriate terminology and presentation of data.
2) Work independently and as a member of a team within the design project and research project.

Employment related skills
1) Good student centred learning skills which will promote lifelong learning and a commitment to continuing professional development to achieve flexibility within the work environment.
2) The communication, planning and management skills to successfully complete and present a relevant work based project, through liaison with industrial links

Practical skills
1) The ability to apply knowledge of the construction process to the examination and selection of procurement methodology.
2) The ability to monitor, analyse and evaluate the performance of project management within the construction industry

Student Numbers:
Approximate minimum per stage = 6
Target per stage = 15
Approximate maximum per stage = 30

Progression Route(s)
HNC - Upon successful completion of this award, the guaranteed automatic progression route is the FdSc Construction at City College Plymouth at Level 5.
FdSc - Upon successful completion of this programme, you may chose to progress to the BSc (Hons) Construction Project Management Level 5 (Stage 2) at the University of Plymouth.
The School will consider individual students on a case by case basis for level 6 entry based on achievement of the FdSc Construction and other relevant professional experience and qualifications.

Admissions Criteria:

Qualification(s) Required for Entry to this Programme:	Details:
A-level/AS-level	Normal minimum entry requirements are 48 on new UCAS Tariff at A-level
T-Level	Overall pass
BTEC National Diploma/QCF Extended Diploma	Candidates are interviewed before an offer is made. But an equivalent of 48 UCAS points in an Construction related subject
Access to Higher Education at level 3	Candidates are interviewed before an offer is made. Pass an Access to HE Diploma in Science with an equivalent of 48 UCAS points
Welsh Baccalaureate	Normal minimum entry requirements are an equivalent of 48 on new UCAS Tariff
Scottish Qualifications Authority	Normal minimum entry requirements are an equivalent of 48 on new UCAS Tariff
Irish Leaving Certificate	Normal minimum entry requirements are an equivalent of 48 on new UCAS Tariff
International Baccalaureate	Normal minimum entry requirements are an equivalent of 48 on new UCAS Tariff
Non Standard Qualifications with experience	All non-standard applicants are interviewed by the tutor and screened centrally to ensure impartial oversight.

Academic Standards and Quality Enhancement:

The programme will follow University of Plymouth's current annual monitoring process for partnership programmes to complete evaluation of and planning for maintaining and improving quality and standards.

Subject External Examiner(s):

All modules are parented by this programme and are therefore covered by this programme's external examiner.

Programme Structure

HNC FT – 1 Year

Stage 1			
Module Code	**Module Title**	**No. of Credits**	**Core / Optional**
CITY1083	Domestic Construction	20	**Core**
CITY1084	Environmental Building Science	20	**Core**
CITY1085	Materials	20	**Core**
CITY1086	ICT and Design	20	**Core**
CITY1087	Construction Contractual Procedures	20	**Core**
CITY1088	Construction and Civil Engineering Management	20	**Core**

HNC Part Time – 2 Years

Stage 1			
Module Code	**Module Title**	**No. of Credits**	**Core / Optional**
CITY1083	Domestic Construction	20	**Core**
CITY1084	Environmental Building Science	20	**Core**
CITY1085	Materials	20	**Core**
CITY1087	Construction Contractual Procedures	20	**Core**
Stage 2			
CITY1086	ICT and Design	20	**Core**
CITY1088	Construction and Civil Engineering Management	20	**Core**

FdSc FT – 2 Years

Stage 1			
Module Code	**Module Title**	**No. of Credits**	**Core / Optional**
CITY1083	Domestic Construction	20	**Core**
CITY1084	Environmental Building Science	20	**Core**
CITY1085	Materials	20	**Core**
CITY1086	ICT & Design	20	**Core**
CITY1087	Construction Contractual Procedures	20	**Core**
CITY1088	Construction & Civil Engineering Management	20	**Core**
Stage 2			
CITY2082	Lean Construction	20	**Core**
CITY2083	Site Surveying	20	**Core**
CITY2135	Structures for Construction and Earth Architecture	20	**Core**
CITY2085	Building Pathology and Construction Refurbishment Practice	20	**Core**
CITY2086	Energy Use in Buildings	20	**Core**
CITY2087	Project	20	**Core**

FdSc PT – 3 Years

Stage 1			
Module Code	**Module Title**	**No. of Credits**	**Core / Optional**
CITY1083	Domestic Construction	20	**Core**
CITY1084	Environmental Building Science	20	**Core**
CITY1085	Materials	20	**Core**
CITY1086	ICT & Design	20	**Core**
Stage 2			
CITY1086	ICT and Design	20	**Core**
CITY1088	Construction and Civil Engineering Management	20	**Core**
CITY2083	Site Surveying	20	**Core**
CITY2135	Structures for Construction and Earth Architecture	20	**Core**
Stage 3			
CITY2082	Lean Construction	20	**Core**
CITY2085	Building Pathology and Construction Refurbishment Practice	20	**Core**
CITY2086	Energy Use in Buildings	20	**Core**
CITY2087	Project	20	**Core**

Mapping of Learning Outcomes

Level: 4				
FHEQ Descriptors	**Subject Benchmark(s)**	**Prog Aims**	**Prog Outcomes**	**Related Core Modules**
Students will have demonstrated: Knowledge of the underlying concepts and principles associated with their areas of study	Demonstrate an understanding of the key concepts, theories and principles used in construction and the management of construction Recognise the various construction technologies and specialisms relevant to the construction of assets for lifetime performance Appreciate the importance of sustainability within the context of the built environment, including the quality of life theme Demonstrate an understanding of the principles and processes that deliver an inclusive environment recognising the diversity of user needs by putting people (of all ages and abilities) at the heart of the construction management process	- Establish broad foundation knowledge of the functional and performance requirements of framed and complex buildings. - Provide the opportunity to understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex buildings. - Provide the opportunity to understand and appreciate the social, political and legal issues which impact on planning, design and development of the built environment. - Provide the opportunity to understand the importance of effects on the Environment and the sustainability of the built environment.	8.1.1) A sound theoretical approach to the application of technology in framed and complex buildings. 8.1.2) Appropriate theory and practical skills to apply principles of site investigation to assess the suitability of sites for construction projects. 8.1.3) A sound evidence-based approach understanding and appreciating the function and design of building services for framed and complex buildings to ensure human comfort. 8.1.4) A sound knowledge of legislation linked to the built environment	CITY1083; ALO1, ALO2 CITY1084; ALO1, ALO2, ALO3, ALO4 CITY1085; ALO2 CITY1086; ALO4 CITY1087; ALO4
Ability to evaluate and interpret these within the context of that area of study;	Describe the context in which the process of construction operates, including the legal, business, social, economic, health and safety, cultural, equality and inclusion, technological, physical, environmental and global influences including the relationship to digital technologies Appreciate the importance of sustainability within the context of the built environment, including the quality of life theme Recognise the importance of professional ethics, their impact on the operation of the profession and their influence on society, conflict avoidance/dispute	Establish broad foundation knowledge of the functional and performance requirements of framed and complex buildings. Provide the opportunity to understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex buildings. Provide the opportunity to understand and appreciate the social, political and legal issues which impact on planning,	8.2.1) The ability to Identify, review and select techniques, procedures and methods to undertake tasks within the construction industry. 8.2.3) The ability to Implement design solutions and contribute to their evaluation. 8.5.2) The ability to monitor, analyse and evaluate the	CITY1083; ALO1, ALO2, ALO3, ALO4 CITY1084; ALO2, ALO4 CITY1085; ALO3 CITY1086; ALO3, ALO4 CITY1087; ALO4 CITY1088; ALO4

	resolution, communities and the stakeholders with whom they have contact	design and development of the built environment. 5Provide the opportunity to understand the importance of effects on the Environment and the sustainability of the built environment. Develop an understanding of the Ethics and Professionalism expected by the Construction Industry.	performance of project management within the construction industry	
Ability to present, evaluate and interpret qualitative and quantitative data;	Appreciate the importance of sustainability within the context of the built environment, including the quality of life theme Recognise the importance of professional ethics, their impact on the operation of the profession and their influence on society, conflict avoidance/dispute resolution, communities and the stakeholders with whom they have contact	Provide the opportunity to understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex buildings.	8.2.3) The ability to Implement design solutions and contribute to their evaluation. 8.3.1) Communicate ideas and information; through verbal and written forms using appropriate terminology and presentation of data. 8.5.2) The ability to monitor, analyse and evaluate the performance of project management within the construction industry	CITY1085; ALO4, ALO5 CITY1086; ALO3, ALO4
Students will be able to: Evaluate the appropriateness of different approaches to solving problems related to their area of study;	Demonstrate an understanding of the key concepts, theories and principles used in construction and the management of construction Describe the context in which the process of construction operates, including the legal, business, social, economic, health and safety, cultural, equality and inclusion, technological, physical, environmental and global influences including the relationship to digital technologies	Provide the opportunity to understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex buildings. Demonstrate the ability to use a range of planning tools, and apply them to construction processes, including procurement methodology	8.1.3) A sound evidence-based approach understanding and appreciating the function and design of building services for framed and complex buildings to ensure human comfort. 8.2.1) The ability to Identify, review and select techniques, procedures and methods to undertake tasks within the construction industry. 8.4.2) The communication, planning and management skills to successfully complete and present a relevant work based project, through liaison with industrial links	CITY1083; ALO3, ALO4 CITY1084; ALO3 CITY1085; ALO2, ALO3 CITY1086; ALO3, ALO4 CITY1087; ALO1, ALO2 CITY1088; ALO4

Communicate the results of their study accurately and reliably and with structured and coherent argument	communicate to a variety of audiences in appropriate written, graphical, electronic and verbal forms	Provide the opportunity to understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex buildings.	8.3.1) Communicate ideas and information; through verbal and written forms using appropriate terminology and presentation of data. 8.4.2)The communication, planning and management skills to successfully complete and present a relevant work based project, through liaison with industrial links	CITY1083; ALO3, ALO4 CITY1084 ALO1 CITY1085 ALO4, ALO5 CITY1086, ALO3, ALO4 CITY1088; ALO3
Undertake further training and develop new skills within a structured and managed environment	Appreciate the need for professional codes of conduct Accept responsibility for their own learning Identify targets for personal, career and academic development Be adaptable and have a flexible approach to study and work Develop skills necessary for self-managed, independent and lifelong learning Recognise personal strengths and weaknesses.	Develop an understanding of the Ethics and Professionalism expected by the Construction Industry	8.4.1) Good student centred learning skills which will promote lifelong learning and a commitment to continuing professional development to achieve flexibility within the work environment. 8.4.2) The communication, planning and management skills to successfully complete and present a relevant work based project, through liaison with industrial links	All level 4 modules base the assessments on this Intended learning outcome
Students will also have: The qualities and transferable skills necessary for employment requiring the exercise of some personal responsibility	Be adaptable and have a flexible approach to study and work Develop skills necessary for self-managed, independent and lifelong learning	Establish broad foundation knowledge of the functional and performance requirements of framed and complex buildings. Provide the opportunity to understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex buildings. Demonstrate the ability to use a range of planning tools, and apply them to construction processes, including procurement methodology. Provide the opportunity to understand and appreciate the social, political and	8.3.1) Communicate ideas and information; through verbal and written forms using appropriate terminology and presentation of data. 8.4.1) Good student centred learning skills which will promote lifelong learning and a commitment to continuing professional development to achieve flexibility within the work environment. 8.4.2) The communication, planning and management skills to successfully complete and present a relevant work	CITY1083; ALO3 CITY1084; ALO2 CITY1085; ALO4, ALO5 CITY1086; ALO4 CITY1087, CITY1088; ALO3

		legal issues which impact on planning, design and development of the built environment. Provide the opportunity to understand the importance of effects on the Environment and the sustainability of the built environment. Develop an understanding of the Ethics and Professionalism expected by the Construction Industry	based project, through liaison with industrial links	
Level: 5				
FHEQ Descriptors	**Subject Benchmark(s)**	**Prog Aims**	**Prog Outcomes**	**Related Core Modules**
Students will have demonstrated: Knowledge and critical understanding of the well-established principles of their area of study and the way in which those principles have developed;	Demonstrate an understanding of the key concepts, theories and principles used in construction and the management of construction Recognise the various construction technologies and specialisms relevant to the construction of assets for lifetime performance Appreciate the importance of sustainability within the context of the built environment, including the quality of life theme Demonstrate an understanding of the principles and processes that deliver an inclusive environment Recognising the diversity of user needs by putting people (of all ages and abilities) at the heart of the construction management process. Understand and appreciate the social and political issues which impact on Planning, design and development of the built environment	Establish broad foundation knowledge of the functional and performance requirements of framed and complex buildings. Provide the opportunity to understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex buildings. Develop an understanding of the Ethics and Professionalism expected by the Construction Industry.	8.1.1) A sound theoretical approach to the application of technology in framed and complex buildings. 8.1.2) Appropriate theory and practical skills to apply principles of site investigation to assess the suitability of sites for construction projects. 8.1.3) A sound evidence-based approach understanding and appreciating the function and design of building services for framed and complex buildings to ensure human comfort. 8.1.4) A sound knowledge of legislation linked to the built environment	CITY2082; ALO1, ALO2, ALO3 CITY2083; ALO1, ALO2, ALO3 CITY2135; ALO1, ALO3 CITY2085; ALO3, ALO4 CITY2086;ALO1, ALO2, ALO3
Ability to apply underlying concepts and principles outside the context in which they were first studied,	Describe and characterise the legal obligations and procedures associated with: contracts, letting, employment, equality, design, and development Describe and illustrate the functional and performance requirements of framed and complex buildings.	Provide the opportunity to understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex buildings.	8.2.1) The ability to Identify, review and select techniques, procedures and methods to undertake tasks within the construction industry.	CITY2082; ALO3 CITY2083; ALO1, ALO3 CITY2135; ALO3 CITY2085; ALO3 CITY2086; ALO2, ALO3 CITY2087;

including where appropriate, the application of those principles in an employment context;	Understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex building including those with basements. Undertake design option appraisal to ensure adherence to current building legislation including the conservation of energy, carbon emissions and structural performance control. Apply principles of site investigation to assess the suitability of sites for construction projects. Analyse the performance of materials in use, based upon their scientific properties and the environment and conditions in which they are used. Understand and appreciate the function and design of building services for framed and complex buildings to ensure human comfort	Demonstrate the ability to use a range of planning tools, and apply them to construction processes, including procurement methodology. Provide the opportunity to understand and appreciate the social, political and legal issues which impact on planning, design and development of the built environment. Provide the opportunity to understand the importance of effects on the Environment and the sustainability of the built environment.	8.2.2) The ability to apply the CIOB Code of Conduct to their own practice. 8.2.3) The ability to Implement design solutions and contribute to their evaluation. 8.3.2) Work independently and as a member of a team within the design project and research project. 8.4.2) The communication, planning and management skills to successfully complete and present a relevant work based project, through liaison with industrial links	ALO1, ALO2, ALO3 ALO4
Knowledge of the main methods of enquiry in the subject relevant to the named award, and ability to evaluate critically the appropriateness of different approaches to solving problems in the field of study;	Appreciate the need for professional codes of conduct Accept responsibility for their own learning iv identify targets for personal, career and academic development Be adaptable and have a flexible approach to study and work Develop skills necessary for self-managed, independent and lifelong learning Recognise personal strengths and weaknesses	Provide the opportunity to understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex buildings. Demonstrate the ability to use a range of planning tools, and apply them to construction processes, including procurement methodology.	8.1.2) Appropriate theory and practical skills to apply principles of site investigation to assess the suitability of sites for construction projects. 8.2.1) The ability to Identify, review and select techniques, procedures and methods to undertake tasks within the construction industry. 8.4.2)The communication, planning and management skills to successfully complete and present a relevant work based project, through liaison with industrial links	CITY2082; ALO1, ALO3 CITY2083; ALO1. ALO2 CITY2135; ALO1, ALO2, ALO3 CITY2085; ALO3, ALO4 CITY2086; ALO1 CITY2087; ALO1, ALO2, ALO3, ALO4
An understanding of the limits of the knowledge, and how this influences	Appreciate the need for professional codes of conduct Accept responsibility for their own learning iv identify targets for personal, career and academic development	Develop an understanding of the Ethics and Professionalism expected by the Construction Industry	8.4.1) Good student centred learning skills which will promote lifelong learning and a commitment to continuing professional development to	CITY2087; ALO1, ALO2, ALO3, ALO4

analyses and interpretations based on that knowledge	Be adaptable and have a flexible approach to study and work Develop skills necessary for self-managed, independent and lifelong learning Recognise personal strengths and weaknesses		achieve flexibility within the work environment.	
Students will be able to: Use a range of established techniques to initiate and undertake critical analysis of information, and to propose solutions to problems arising from that analysis;	Recognise when information is incomplete Appreciate risk Process and interpret data and information Critically appraise spatial data Solve basic numerical problems using appropriate techniques Undertake simple statistical analysis Select and apply appropriate methods of collecting, analysing, and synthesising data appreciate the importance of intellectual property and its role within the innovation process.	Provide the opportunity to understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex buildings. Provide the opportunity to understand and appreciate the social, political and legal issues which impact on planning, design and development of the built environment.	8.1.2) Appropriate theory and practical skills to apply principles of site investigation to assess the suitability of sites for construction projects. 8.1.3) A sound evidence-based approach understanding and appreciating the function and design of building services for framed and complex buildings to ensure human comfort. 8.2.1) The ability to Identify, review and select techniques, procedures and methods to undertake tasks within the construction industry. 8.4.2) The communication, planning and management skills to successfully complete and present a relevant work based project, through liaison with industrial links	CITY2135; ALO1, ALO2, ALO3 CITY2087; ALO1, ALO2, ALO3, ALO4
Effectively communicate information, arguments and analysis in a variety of forms to specialist and non-specialist audiences, and deploy key	Communicate to a variety of audiences in appropriate written, graphical, electronic and verbal forms	Provide the opportunity to understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex buildings.	8.3.1) Communicate ideas and information; through verbal and written forms using appropriate terminology and presentation of data.	CITY2082; ALO1, ALO2 CITY2135; ALO3 CITY2085; ALO3, ALO4 CITY2086; ALO3 CITY2087; ALO1, ALO2, ALO3, ALO4

techniques of the discipline effectively;				
Undertake further training, develop existing skills and acquire new competences that will enable them to assume significant responsibility within organisations.	Recognise and be able to comment on the moral and ethical issues associated with the subject Appreciate the need for professional codes of conduct Accept responsibility for their own learning iv identify targets for personal, career and academic development		8.4.1) Good student centred learning skills which will promote lifelong learning and a commitment to continuing professional development to achieve flexibility within the work environment. 8.4.2) The communication, planning and management skills to successfully complete and present a relevant work based project, through liaison with industrial links	All level 5 modules base the assessments on this Intended learning outcome
Students will also have; The qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and decision-making	Identify targets for personal, career and academic development Be adaptable and have a flexible approach to study and work Develop skills necessary for self-managed, independent and lifelong learning Recognise personal strengths and weaknesses.	Provide the opportunity to understand, describe, select and illustrate alternative options available for the construction of primary and secondary building elements of framed and complex buildings. Demonstrate the ability to use a range of planning tools, and apply them to construction processes, including procurement methodology. Provide the opportunity to understand and appreciate the social, political and legal issues which impact on planning, design and development of the built environment. Provide the opportunity to understand the importance of effects on the Environment and the sustainability of the built environment. Develop an understanding of the Ethics and Professionalism expected by the Construction Industry.	8.4.1) Good student centred learning skills which will promote lifelong learning and a commitment to continuing professional development to achieve flexibility within the work environment. 8.5.1) The ability to apply knowledge of the construction process to the examination and selection of procurement methodology. 8.5.2) The ability to monitor, analyse and evaluate the performance of project management within the construction industry	CITY2082; ALO1, ALO2, ALO3, ALO4 CITY2083; ALO3 CITY2085; ALO4 CITY2086; ALO1, ALO2, ALO3 CITY2087; ALO1, ALO2, ALO3. ALO4

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf
- Subject benchmark statements http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx
- SEEC level descriptors http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010 (scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx

Module Records

SECTION A: DEFINITIVE MODULE RECORD. Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.

MODULE CODE: CITY1083	**MODULE TITLE** Domestic Construction

CREDITS: 20	**FHEQ LEVEL: 4**	**JACS CODE: K200**

PRE-REQUISITES: None	**CO-REQUISITES: None**	**COMPENSATABLE: Yes**

SHORT MODULE DESCRIPTOR:
This module reviews and explores some of the traditional methods used to construct domestic properties. These methods are then critically analysed by examining modern sustainable construction methods. The whole module is undertaken considering the impacts of Health & Safety on domestic construction.

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ELEMENTS OF ASSESSMENT ***[Use HESA KIS definitions}***					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)		**C1**	100%	**P1**	
E2 (OSCE)		**C2**		**P3**	
T1 (in-class test)		**A1**			

SUBJECT ASSESSMENT PANEL Group to which module should be linked:TMR

Professional body minimum pass mark requirement: n/a

MODULE AIMS:
- To investigate traditional methods of constructing domestic dwellings.
- To develop an understanding of factors influencing current design criteria, particularly those embodied within the Building Regulations.
- To investigate sustainable modern construction techniques.
- Develop usable industry standard method statement on safe systems of work.

ASSESSED LEARNING OUTCOMES: (additional guidance below)
At the end of the module the learner will be expected to be able to:
LO1 Identify the design and specification of domestic construction methods in line with current building regulations.
LO2 Evaluate modern construction techniques which satisfy current and future needs.
LO3 Evaluate modern construction techniques with regards to sustainability.
LO4 Create a method statement relating to safe construction systems.

DATE OF APPROVAL: April 2017	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: Sept 2017	**PARTNER: City College Plymouth**

DATE(S) OF APPROVED CHANGE:	TERM:

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT
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ACADEMIC YEAR: 2023/24	**NATIONAL COST CENTRE: 123**

MODULE LEADER: Dan Burnard	**OTHER MODULE STAFF:**

Summary of Module Content

- Functional requirements of building elements
- Site investigation, ground investigation
- Primary elements – substructure, foundations, problems/ground floor construction methods/intermediate construction methods/roof structure construction /roof finishes construction methods
- Secondary elements – openings, stairs, chimneys, partitions/junctions, forming openings, rainwater goods
- Finishes – wall, floor, ceiling, joinery
- External works – paving, fencing, boundaries, retaining walls

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions}		
Scheduled Activities	**Hours**	**Comments/Additional Information**
Lecture	44	22 x 2hr lectures
Fieldwork	2	1 x 2hr field trip to site
Case study seminars	4	2 x 2hr case study seminar
Self-Study	125	Self-guided study and recommended reading
Academic Support	15	A mix of group and individual tutorials
Workshop time	10	5 x 2hr workshop sessions
Total	**200**	

Category	**Component Name**	**Element**	**Component weighting**	**Comments Include links to learning objectives**
Coursework	Drawing Report	C1	50% 50%	LO1 + LO4 LO2 + LO4

Recommended Texts and Sources:

Emmitt, Stephen & Gorse, Christopher (2010) *Barry's introduction to construction of buildings,* 2nd ed., Oxford, Blackwell.

Harris F., McCaffer R. & Francis E. (2006) *Modern Construction Management*, 6th ed., Blackwell Publishing, Oxford.

Harrison, H. W & Trotman, P. M (2000) *BRE building elements: Building services - performance, diagnosis, maintenance, repair & the avoidance of defects,* Watford, Building Research Establishment.

Harrison, H. W & Trotman, P.M. (2002) *Foundations, basements & external works - performance, diagnosis, maintenance, repair & the avoidance of defects,* Watford, Building Research Establishment.

Harrison, Harry et al (2004) *Non-traditional houses: identifying non-traditional houses in the UK 1918-75.* Watford, Building Research Establishment.

Harrison, H. W. (1996) *Roofs & roofing,* Watford, Building Research Establishment – New edition available: Harrison, H. W. (2009) *Roofs & roofing,* 3rd ed., Watford, Building Research Establishment.
Illingworth J. R. (2000) *Construction Methods & Planning,* 2nd ed., Chapman Hill: London

Updated by: Dr Gursewak Aulakh **Date:** July 2023	**Approved and Signed off by:** Dan Burnard **Date:** July 2023

SECTION A: DEFINITIVE MODULE RECORD. Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.

MODULE CODE: CITY1084	**MODULE TITLE** Environmental Building Science

CREDITS: 20	**FHEQ LEVEL: 4**	**JACS CODE:** K290

PRE-REQUISITES: None	**CO-REQUISITES: None**	**COMPENSATABLE: Yes**

SHORT MODULE DESCRIPTOR:
To develop an understanding of factors that influence human comfort within the built environment. The module will look at aspects of sustainable design and how built environment can reduce its impact on the broader environment.

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ELEMENTS OF ASSESSMENT ***[Use HESA KIS definitions}***					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)		**C1**	100%	**P1**	
E2 (OSCE)		**C2**		**P3**	
T1 (in-class test)		**A1**			

SUBJECT ASSESSMENT PANEL Group to which module should be linked: TMR

Professional body minimum pass mark requirement: n/a

MODULE AIMS:
- Explore current theories relating to our perceived environmental problems and the issue of sustainability in construction
- Develop an understanding of the factors that influence human comfort.
- Evaluate the services provision within a variety of buildings

ASSESSED LEARNING OUTCOMES: (additional guidance below)
At the end of the module the learner will be expected to be able to:
LO 1. Rank current theories relating to our perceived environmental problems.
LO 2. Identify issues of sustainability in construction
LO 3. Assess the factors that influence human comfort.
LO 4. Evaluate the services provision within a variety of buildings

DATE OF APPROVAL: April 2017	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: Sept 2017	**PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE:	**TERM:**

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ACADEMIC YEAR: 2023/24	**NATIONAL COST CENTRE: 123**

MODULE LEADER: Dan Burnard	**OTHER MODULE STAFF:**

Summary of Module Content
Global environmental issues - sustainable construction, bio-diversity, global warming, deforestation, depletion of the ozone layer, acid rain, the finite availability of fossil fuels
Environmental impact of a construction project - location, extraction, transportation and refinement of raw materials. Noise from construction sites, dust, dirt and disturbance from construction sites and health risks they present. Increased pressure upon existing services, increased pressure upon existing infrastructure. Increased consumption of energy, increased production of greenhouse gases.
Principles and factors affecting comfort levels - thermal properties of materials, heat losses and heat gains, heating and ventilating, illumination (natural and artificial, sound transmission, refrigeration and air conditioning, fluid flow (hydrostatics and fluid dynamics)
Provision of services - water supply and distribution, gas supply and distribution, electrical supply and distribution, chemicals, fluids and oil distribution, safe and effective disposal of waste products, environmental issues relating to all of the above. Provision for smart technologies.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions}		
Scheduled Activities	**Hours**	**Comments/Additional Information**
Lectures	40	20x2hr lectures
Guest Lectures	4	2x2hr guest lectures
Seminars	8	4x2hr seminars
Field trip	8	1x8hr field trip
Academic Support	15	A mix of group and individual tutorials
Independent Study	125	Guided reading and directed self-study
Total	**200**	

Category	**Component Name**	**Element**	**Component weighting**	**Comments Include links to learning objectives**
Coursework	Report Portfolio	C1	70% 30%	LO1 LO2, LO3, LO4

Recommended Texts and Sources:

Alread, J., Leslie, T. and Whitehead, R. (2014) Design-Tech: Building science for Architects, 2nd edition, Oxon: Routledge.
Aksamija, A. (2013) Sustainable Facades: Design Methods for High-Performance Building Envelopes, New Jersey: John Wiley & Sons.
Braungart, M. and McDonough, W. (2009) Cradle to Cradle: Remaking the Way We Make Things, London: Vintage.
Educate Portal (2018) 'Environmental design in university curricula and architectural training in Europe', [Online], Available: https://www.educate-sustainability.eu/kb/ [18 Jan 2018].
Hootman, T. (2012) Net zero energy design: A guide for commercial architecture, New Jersey: John Wiley & Sons.
Young, R.A. (2012) Stewardship of the Built Environment: Sustainability, Preservation and Reuse, Washington: Island Press
Bowazi, K. (2013) 'Basic factors that affect human comfort in the internal environment', [Online], Available: http://www.slideshare.net/kenbowazi1969/basic-factors-that-affect-human-comfort-27125325 [18 Jan 2018].
Health and Safety Executive (2018) 'Temperature and thermal comfort: The six basic factors', [Online], Available: http://www.hse.gov.uk/temperature/thermal/factors.htm [18 Jan 2018].
National Institute of Building Sciences (2018) 'Provide comfortable environments', [Online], Available: https://www.wbdg.org/design-objectives/productive/provide-comfortable-environments [18 Jan 2018].

Nicol, F., Humphreys, M. and Roaf, S. (2012) Adaptive Thermal Comfort: Principles and Practice, Oxon: Routledge.
Pohl, J. (2011) Building Science: Concepts and Application, West Sussex: Blackwell.
Walter T. Grondzik, W.T., Kwok A. G., Stein, B. and Reynolds J.S. (2009) Mechanical and Electrical Equipment for Buildings, 11th Edition, New Jersey: Wiley.

Updated by: Dr Gursewak Aulakh **Date:** July 2023	**Approved and Signed off by:** Dan Burnard **Date:** July 2023

SECTION A: DEFINITIVE MODULE RECORD. Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.

MODULE CODE: CITY1085	**MODULE TITLE** Materials

CREDITS: 20	**FHEQ LEVEL: 4**	**JACS CODE: K200**

PRE-REQUISITES: None	**CO-REQUISITES: None**	**COMPENSATABLE: Yes**

SHORT MODULE DESCRIPTOR:
This module explores the principles and properties of a range of construction materials. Learners are to select and promote materials for a specific construction related task, considering manufacturing, performance, appearance, sustainability and health & safety.

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ELEMENTS OF ASSESSMENT ***[Use HESA KIS definitions}***					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)		**C1**	50%	**P1**	50%
E2 (OSCE)		**C2**		**P3**	
T1 (in-class test)		**A1**			

SUBJECT ASSESSMENT PANEL Group to which module should be linked: TMR

Professional body minimum pass mark requirement: n/a

MODULE AIMS:
● To introduce the learner to a range of materials used in the construction industry.
● To investigate the major factors affecting the performance of construction materials with particular regard to strength, thermal and acoustic resistance, aesthetics and sustainability.
● to enable competence in producing COSHH and Risk assessments in line with current Health and Safety regulations.

ASSESSED LEARNING OUTCOMES: (additional guidance below)
At the end of the module the learner will be expected to be able to:

- Compare the methods of manufacture and physical properties of a range of materials used in construction and civil engineering.
- Rank appropriate materials for a range of construction applications.
- Select sustainable concepts relating to material usage considering product lifecycle.
- Compile a COSHH assessment reviewing the safe use of specific construction materials
- Devise a risk assessment and identify the requirements of monitoring and reviewing.

DATE OF APPROVAL: April 2017	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: Sept 2017	**PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE:	**TERM:**

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ACADEMIC YEAR 2023/24	**NATIONAL COST CENTRE: 108**

MODULE LEADER: Dan Burnard	**OTHER MODULE STAFF:**

Summary of Module Content
Introduction - range of materials, codes of practice and health and safety materials
Cements - manufacture, types, chemical composition properties and performance
Aggregates - lightweight, normal, heavy, natural and artificial types, sources, properties, production, testing and impurities.
Timber - types, structure, stress grading, structural properties, attacks by fungi, insects and marine borers, prevention and treatment.
Bitumens - origin, blown and cutback bitumens. Classification, penetration, softening point, uses, asphalts, failures.
Metals - ferrous and non-ferrous, steel properties and uses
Masonry - manufacture of bricks and blocks, strengths and serviceability properties, uses.
Concrete - properties of concrete, production, transporting, placing, compacting, curing, formwork.
Health and Safety - Production of COSHH assessment

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions}		
Scheduled Activities	**Hours**	**Comments/Additional Information**
Lectures	50	25x2hr lectures
Workshops	6	3x2hr workshop sessions
Fieldwork	4	1x4hr on site feasibility study
Academic Support	15	A mix of group and individual tutorials
Independent Study	125	
Total	**200**	

Category	**Component Name**	**Element**	**Component weighting**	**Comments Include links to learning objectives**
Coursework	Report	C1	100%	LO1, LO3, LO5
Practice	Presentation	P1	100%	LO2, LO4

Recommended Texts and Sources:
Domone, P. (2010) Construction Materials, Their nature and behaviour, 4th ed. Spons Press.
McMullan, R. (2007) Environmental Science in Building, 6th ed., Basingstoke, Palgrave Macmillan.
Taylor, G.D (2000) Materials in construction: an introduction, 3rd ed., Harlow, Pearson Education.
Chudley, R., Greeno, R., Hurst, M. and Topliss, S. (2012). Advanced Construction Technology. Oxford: Pearson.
Lancashire, R. and Taylor, L. (2012). Timber Frame Construction. High Wycombe: Timber research and development association (TRADA).

Roaf, Sue et al. (2007) Ecohouse: a design guide, 3rd ed., Oxford, Architectural Press.
Emmitt, Stephen & Gorse, Christopher (2010) Barry's advanced construction of buildings, 2nd ed., Oxford, Blackwell.

Updated by: Dr Gursewak Aulakh **Date:** July 2023	**Approved and Signed off by:** Dan Burnard **Date:** July 2023

SECTION A: DEFINITIVE MODULE RECORD. Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.

MODULE CODE: CITY1086	**MODULE TITLE** ICT and Design

CREDITS: 20	**FHEQ LEVEL: 4**	**JACS CODE: H200**

PRE-REQUISITES: None	**CO-REQUISITES: None**	**COMPENSATABLE: Yes**

SHORT MODULE DESCRIPTOR:
The module is based around a project where BIM, LUSAS, Autodesk products or similar software and ICT skills relevant to construction and civil engineering are brought together through formulating and implementing a design project.

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ELEMENTS OF ASSESSMENT ***[Use HESA KIS definitions}***					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)		**C1**	100%	**P1**	
E2 (OSCE)		**C2**		**P3**	
T1 (in-class test)		**A1**			

SUBJECT ASSESSMENT PANEL Group to which module should be linked: TMR

Professional body minimum pass mark requirement: n/a

MODULE AIMS:
- Introduce student to BIM and other industry standard ICT
- To introduce students to the latest software and technology used within the construction industry, on a focussed project.
- To introduce formal draughting as part of the design process.
- Practice skills necessary to produce 2D drawings to British Standards
- Practice skills of transferring and moving drawing files between various drawing, presentation and office packages.

ASSESSED LEARNING OUTCOMES: (additional guidance below)
At the end of the module the learner will be expected to be able to:
LO1. Generate detailed 2 dimensional drawings to British Standards.
LO2. Analyse the effectiveness of transferring 2D files to a 3D package and integrating ICT and other modelling software within the design project.
LO3 Work as a member of a team to Formulate a design project
LO4. Implement, evaluate and present a design project

DATE OF APPROVAL: April 2017	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: Sept 2017	**PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE:	**TERM:**

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ACADEMIC YEAR 2023/24	**NATIONAL COST CENTRE: 115**

MODULE LEADER: Ian Jenkin	**OTHER MODULE STAFF:**

Summary of Module Content

- Use and integrate ICT within a focused project – BIM and other industry standard modelling software and technologies
- CAD & Drawings in the design process
- Drawing standards and formats
- The use of 2D CAD drawing and editing commands
- Transfer & Simple 3D manipulation of learner generated 2D CAD files
- Transfer and manipulation of learner generated 2D CAD files in industry standard business software
- Investigate the theories and principles of design.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions}		
Scheduled Activities	**Hours**	**Comments/Additional Information**
Lectures	20	10x2hr lectures
Practice sessions	40	Application of techniques and methods learnt
Academic Support	15	A mixture of group and personal tutorials
Independent Study	125	Working on own projects and directed self-study
Total	**200**	

Category	**Component Name**	**Element**	**Component weighting**	**Comments Include links to learning objectives**
Coursework	Portfolio of Work Report	C1	50% 50%	LO1, LO2 LO3, LO4

Recommended Texts and Sources:

Omura George, Benton, Brian C, (2016) *Mastering Autocad 2018 and Autocad LT 2018*, Wiley
Aouad, Ghassan (2012), *Computer aided design guide for architecture, engineering and construction*, Spon, London
BRE (2016) *BREEAM International New Construction Technical Manual*, BRE Global Ltd
HMGov (2015) *Digital Built Britain, Level 3 Building Information Modelling Strategic Plan,* HMSO
Klaschka, R. (2014) ed. *BIM in Small Practices, Illustrated Case Studies*, RIBA Publishing
Shepherd, D. (2016) *BIM Management Handbook*, RIBA Publishing

Updated by: Dr Gursewak Aulakh **Date:** July 2023	**Approved and Signed off by:** Dan Burnard **Date:** July 2023

SECTION A: DEFINITIVE MODULE RECORD. Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.

MODULE CODE: CITY1087	**MODULE TITLE** Construction Contractual Procedures

CREDITS: 20	**FHEQ LEVEL: 4**	**JACS CODE: K220**

PRE-REQUISITES: None	**CO-REQUISITES: None**	**COMPENSATABLE: Yes**

SHORT MODULE DESCRIPTOR:
This module introduces the procedures for administering contracts and to provide and an understanding of some of the methods of resolving disputes and also developing an understanding of health and safety aspects of contractual obligations.

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ELEMENTS OF ASSESSMENT ***[Use HESA KIS definitions}***					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)		**C1**	50%	**P1**	50%
E2 (OSCE)		**C2**		**P3**	
T1 (in-class test)		**A1**			

SUBJECT ASSESSMENT PANEL Group to which module should be linked: TMR

Professional body minimum pass mark requirement: n/a

MODULE AIMS:
● To allow the learner to understand the importance of the information that is necessary for the successful completion of a contract.
● To provide an introduction to the responsibilities of the parties to a contract and the processes of administering a contract.
● Research into claims and explore some of the methods used in dispute resolution

ASSESSED LEARNING OUTCOMES: (additional guidance below)
At the end of the module the learner will be expected to be able to:
LO1. Identify and analyse a variety of documents that need to be prepared to ensure the successful completion of a contract.
LO2. Distinguish the processes involved in administering a contract and evaluate the responsibilities of parties involved.
LO3. Identify causes of disputes between the parties to a contract and evaluate a range of methods for resolution
LO4. Explore and compare health and safety obligations within a contract concerning building construction.

DATE OF APPROVAL: April 2017	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: Sept 2017	**PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE:	**TERM:**

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ACADEMIC YEAR 2023/24	**NATIONAL COST CENTRE: 123**

MODULE LEADER:	**OTHER MODULE STAFF:**
Dan Burnard	

Summary of Module Content

- Co-ordinated Project Information.
- Contract Administration: - Conditions of contracts, Legal Duties of Team, Possession & Completion, Payments, Assignment and Sub-contracting, Insurances, Extension of Time
- Contractual Claims
- Construction Act, Litigation, Arbitration, Adjudication and Alternative Dispute Resolution
- Alternative Contract Forms.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions}		
Scheduled Activities	**Hours**	**Comments/Additional Information**
Lectures	60	30 x 2hr lectures
Academic Support	15	A mix of individual and group tutorials
Independent Study	125	Independent studies looking into case laws and other related case studies
Total	**200**	

Category	**Component Name**	**Element**	**Component weighting**	**Comments Include links to learning objectives**
Coursework	Report	C1	100%	LO1, LO2
Practice	Practical	P1	100%	LO3, LO4

Recommended Texts and Sources:

Ashworth, A (2011) *Contractual Procedures in the Construction Industry, 6th ed*., Harlow, Pearson Prentice Hall
Chappell, D. (2012). *Understanding JCT Standard Building Contracts 8th Edition*. London: Taylor & Francis. 9th edition
Chudley, R. and Greeno, R. (2012) *Building Construction Handbook, Butterworth-Heinemann, 9th edition.*
Egan J. (1998) *Rethinking Construction* – The Egan Report
Emmitt, S. and Gorse, C. (2010) *Barry's Introduction to construction of Buildings*, Wiley-Blackwell, 2nd Edition.
Hughes, Kelvin (2012) *Understanding the NEC ECC Contract* . Routlege

Murdoch, J and Hughes, Will (2007) *Construction Contracts: Law and Management*, Routeledge, 4th edition.

Updated by: Dr Gursewak Aulakh **Date:** July 2023	**Approved and Signed off by:** Dan Burnard **Date:** July 2023

SECTION A: DEFINITIVE MODULE RECORD. Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.

MODULE CODE: CITY1088	**MODULE TITLE** Construction and Civil Engineering Management

CREDITS: 20	**FHEQ LEVEL: 4**	**JACS CODE: K220**

PRE-REQUISITES: None	**CO-REQUISITES: None**	**COMPENSATABLE: Yes**

SHORT MODULE DESCRIPTOR:
This module investigates the processes of management, the methods of procuring construction works and introduces the learners to the management processes used in the construction industry.

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ELEMENTS OF ASSESSMENT ***[Use HESA KIS definitions}***					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)		**C1**	60%	**P1**	40%
E2 (OSCE)		**C2**		**P3**	
T1 (in-class test)		**A1**			

SUBJECT ASSESSMENT PANEL Group to which module should be linked: TMR

Professional body minimum pass mark requirement: n/a

MODULE AIMS:
- To develop an understanding of the principles and processes of management
- To develop an understanding of the methods of procuring construction and civil engineering works
- Investigate some of the techniques used in the management of construction and civil engineering projects
- Research the organisation and structure of the construction and civil engineering industry.
- Understand the implications of regulations and legislation within management.

ASSESSED LEARNING OUTCOMES: (additional guidance below)
At the end of the module the learner will be expected to be able to:

1. Distinguish current trends and opportunities within the construction or civil engineering industry
2. Compare a range of principles and processes of management within the construction or civil engineering industry, reviewing legislative constraints and their management.
3. Identify the main methods used to procure construction or civil engineering works.
4. Analyse the methods used to plan the sequence of activities and control of the costs of construction or civil engineering projects.

DATE OF APPROVAL: April 2017	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: Sept 2017	**PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE:	**TERM:**

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT
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ACADEMIC YEAR 2023/24	**NATIONAL COST CENTRE: 118/123**

MODULE LEADER: Dr Gursewak Aulakh	**OTHER MODULE STAFF:**

Summary of Module Content
Principles and processes of management - management concepts, Organisations, Communications, Planning, Programming, Teamwork, Leadership and Motivation.
Planning Techniques – Programming and bar charts.
Methods of procurement - strategies, Conditions of Contract; contract documents, contractor selection, partnering, Government Initiatives.
Construction costs - Estimates, Cost Control, Value Engineering, Measurement
Markets and activities - Business environment, organisation and structure of the construction industry

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions}		
Scheduled Activities	**Hours**	**Comments/Additional Information**
Lectures	58	29 x 2hr lectures
Fieldwork	2	A trip to site to investigate project management techniques
Academic Support	15	A mix of group and individual tutorials
Independent Study	125	
Total	**200**	

Category	**Component Name**	**Element**	**Component weighting**	**Comments Include links to learning objectives**
Coursework	Essay	C1	100%	LO3, LO4
Practice	Presentation	P1	100%	LO1, LO2

Recommended Texts and Sources:
Ashworth, Allan and Hogg, Keith (2000) Added value in design and construction, Harlow, Pearson Education
Lester, Albert (2007) Project planning and control, 5th ed., Oxford, Elsevier
Lock, Dennis (2004) Project management in construction, Aldershot, Gower
Robbins, Stephen P. and Coulter, Mary (2007) Management, 9th ed., Upper Saddle River NJ, Prentice Hall
Radosavljevic, M. and Bennett, J (2012) Construction Management Strategies, Wiley-Blackwell
Thomas, Gill and Thomas, Mike (2005) Construction partnering and integrated teamworking, Oxford, Blackwell

Journals such as:
Construction Management and Economics, Journal of Construction Engineering and Management, International Journal of Project Management, Lean Construction Journal, Procurement and Law

Updated by: Dr Gursewak Aulakh **Date:** July 2023	**Approved and Signed off by:** Dan Burnard **Date:** July 2023

SECTION A: DEFINITIVE MODULE RECORD. Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.

MODULE CODE: CITY2082	**MODULE TITLE** Lean Construction

CREDITS: 20	**FHEQ LEVEL: 4**	**JACS CODE: K200**

PRE-REQUISITES: None	**CO-REQUISITES: None**	**COMPENSATABLE: Yes**

SHORT MODULE DESCRIPTOR:
In this module you will look at the principles, applications and management of lean construction. From design through to implementation. The module also explores sustainable use of resources in the built environment.

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ELEMENTS OF ASSESSMENT ***[Use HESA KIS definitions}***					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)		**C1**	50%	**P1**	50%
E2 (OSCE)		**C2**		**P3**	
T1 (in-class test)		**A1**			

SUBJECT ASSESSMENT PANEL Group to which module should be linked: TMR

Professional body minimum pass mark requirement: n/a

MODULE AIMS:
- Demonstrate how proven manufacturing methodologies can be applied to projects within the built environment
- Introduce Productivity and Performance Measurement in Construction
- Lean Construction: Impact on Productivity
- Explore Potential for Productivity Improvement
- Introduce Just in Time (JIT) concepts developed within the Manufacturing industry and how they transfer into the construction industry
- Apply systems approach to building projects

ASSESSED LEARNING OUTCOMES: (additional guidance below)
At the end of the module the learner will be expected to be able to:
LO1 Demonstrate a critical understanding of the necessity of Just In Time methodology in relationship to projects within the built environment.
LO2 Evaluate the government legislation and policies relating to lean construction and sustainability.
LO3 Evaluate Lean Process measurements through case studies of build projects.
LO4 Assess the barriers within industry to applying proven manufacturing methods to construction industry.

DATE OF APPROVAL: April 2017	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: Sept 2017	**PARTNER: City College Plymouth**

DATE(S) OF APPROVED CHANGE:	TERM:

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT
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ACADEMIC YEAR 2023/24	NATIONAL COST CENTRE: 108

MODULE LEADER: Dr Gursewak Aulakh	OTHER MODULE STAFF:

Summary of Module Content
Systems thinking: Systems thinking and practice as applied to construction industry. Different aspects of industry and their interrelationships and their impact on allocation of scarce resources:
Rethinking Construction – the need for change in the industry including the importance committed leadership and improved relationships with customers. Green supply chain and impact on sustainable use of resources and minimization of wastage.
Structure of Construction Industry in the UK – Legislation and Policy as applicable to the modern construction industry. Trends within the modern construction that large UK companies are adapting.
Management and Implementation of Lean processes- Investigate through Case Studies the implementation and evaluation of Build projects within the modern built environment.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions}		
Scheduled Activities	**Hours**	**Comments/Additional Information**
Lectures	30	15 x 2hr lectures
Case Study Seminars	30	15 x 2hr Seminars
Academic Support	15	Tutorials to support student project work
Independent Study	125	Directed self-study prior to seminars and independent suggested reading.
Total	**200**	

Category	Component Name	Element	Component weighting	Comments Include links to learning objectives
Coursework	Report	C1	100%	LO1, LO2
Practice	Assessed Seminars	P1	100%	LO3,LO4

Recommended Texts and Sources:

Ashworth, A. (2000) Added Value in Design and Construction, Longman
Balasubramaniam, S. (2012) A Hierarchical Framework of Barriers to Supply Chain Management. CCSNET.net
BRE (2018) Responsible sources of Construction Projects, BRE International Ltd.
Brow, M. (2016) FutuREstorator: Working Towards a new Sustainability, RIBA Publishing
Cain, C. T. (2004) Profitable Partnering for Lean Construction, Blackwell Publishing
Sharman, J. (2018) The Lean Philosophy: adopting lean Construction, CIS Briefing, March 2018

Websites

http://www.leanconstruction.org/
http://www.bre.co.uk/page.jsp?id=355 construction Lean Improvement Program.
Evans, H.M.A. (2016) How Buildings Work, RIBA Publishing

Updated by: Dr Gursewak Aulakh **Date:** July 2023	**Approved and Signed off by:** Dan Burnard **Date:** July 2023

SECTION A: DEFINITIVE MODULE RECORD. Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.

MODULE CODE: CITY2083	**MODULE TITLE: Site Surveying**

CREDITS: 20	**FHEQ LEVEL: 5**	**JACS CODE: H240**

PRE-REQUISITES: None	**CO-REQUISITES: None**	**COMPENSATABLE: Yes**

SHORT MODULE DESCRIPTOR:

This module provides a basic introduction to surveying techniques and methods used to set out and control construction works. The module will introduce you to various methods of documenting features on a site for new works or documenting existing site characteristics. Part of the module will be based upon real work based environment in collaboration with a site surveying company..

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ELEMENTS OF ASSESSMENT ***[Use HESA KIS definitions}***					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)		**C1**	40%	**P1**	60%
E2 (OSCE)		**C2**		**P3**	
T1 (in-class test)		**A1**			

SUBJECT ASSESSMENT PANEL Group to which module should be linked: TMR

Professional body minimum pass mark requirement: n/a

MODULE AIMS:

- To develop the ability to use a range of surveying instruments.
- To develop a detailed understanding of basic site surveying and setting out procedures.
- To develop an ability to carry out relevant survey calculations.
- Ability to carry out setting out exercises.
- To develop an understanding of the types and depth of surveys required.

ASSESSED LEARNING OUTCOMES: (additional guidance below)

At the end of the module the learner will be expected to be able to:
LO1 Demonstrate an ability to select and use appropriate surveying instruments and survey a given area for a range of tasks.

LO2 Assess a variety of methods to set out and control a range of construction activities. LO3 Work in a team to produce a contour plan of an area and carrying out earthwork calculations.

DATE OF APPROVAL: April 2017	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: Sept 2017	**PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE:	**TERM:**

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT
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ACADEMIC YEAR 2023/24	**NATIONAL COST CENTRE: 118/123**

MODULE LEADER: Dr Gursewak Aulakh	**OTHER MODULE STAFF:**

Summary of Module Content
Surveying Principles and Conventions - -Commensurate accuracy, co-ordinate systems, National Grid and OS datum, errors - classifications and detection.
Surveying Instruments – Linear measurement, Levels (automatic level, laser), Angular measurement (theodolites, Total Station), Vertical alignment. Method of construction, adjustment and calibration of instruments. Surveying errors.
Levelling - Definition of level datums, standard field and booking procedures.
Traversing - Open and closed traversing; reduction and adjustment of traverse data.
Detail Survey - Type and reasons for surveying: Trilateration, Triangulation, Total Station, GPS & GIS.
Setting out of line and level for building and construction works - Profiles and batter rails; radial positioning/rectangular co-ordinates; accuracy of setting out and the specification. Setting out horizontal circular curves, drainage and roads.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions}		
Scheduled Activities	**Hours**	**Comments/Additional Information**
Lecture	30	15x2 hour lectures / workshops
Practical sessions	32	8x4 hour practical sessions
Academic Support	15	A mix of individual and group tutorials
Independent Study	123	Coursework and individual reading/project work
Total	**200**	

Category	**Component Name**	**Element**	**Component weighting**	**Comments Include links to learning objectives**
Coursework	Portfolio	C1	100%	LO1
Practice	Practical Assessment 1	P1	50% 50%	LO3, LO2

	Practical Assessment 2			

Recommended Texts and Sources:

Clancy, J. (191) Site Surveying and Levelling, Edward Arnold, 2nd ed.
Irvine, W. and MacLennan, Finlay (2005) Surveying for Construction, 5th ed. Oxford, McGraw Hill
Muskett, J. (1995) Site Surveying, 2nd ed., Blackwell, Oxford
Uren, J. and Price, W.J, (2010) Surveying for Engineers, 5th ed., Palgrave Macmillan
Schofield, W. and Breach, M, (2006) Engineering Surveying, 6th ed Oxford, Butterworth-Heinemann

Updated by: Dr Gursewak Aulakh **Date:** July 2023	**Approved and Signed off by:** Dan Burnard **Date:** July 2023

SECTION A: DEFINITIVE MODULE RECORD. Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.

MODULE CODE: CITY2135	**MODULE TITLE: Structures for Construction and Earth Architecture**

CREDITS: 20	**FHEQ LEVEL: 5**	**JACS CODE: K200**

PRE-REQUISITES: None	**CO-REQUISITES: None**	**COMPENSATABLE: Yes**

SHORT MODULE DESCRIPTOR:
The purpose of this module is to enable learners to help understand building structures – why things don't fall down. Another part of this module will introduce learners to earth structures, its history, materials and techniques of building with earth.

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ELEMENTS OF ASSESSMENT ***[Use HESA KIS definitions}***					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	30%	**C1**	70%	**P1**	
E2 (OSCE)		**C2**		**P3**	
T1 (in-class test)		**A1**			

SUBJECT ASSESSMENT PANEL Group to which module should be linked: TMR

Professional body minimum pass mark requirement: n/a

MODULE AIMS:

- To understand the philosophy of design of structures. Introduce learners to different types of structures and apply this knowledge to analyse building structures. To research a variety of methods relating to determining loadings on structural elements of buildings. To apply appropriate concepts of equilibrium and compatibility and rationalise their use in relation to statically determinate beams and frameworks.
- To introduce students to the history of Earth Buildings in the world and the UK.
- To introduce students to building materials and construction with earth.
- To explore site and design issues related to earth buildings.
- To consider Earth structures and their place in modern day building context.

ASSESSED LEARNING OUTCOMES: (additional guidance below)
1. Demonstrate an understanding of action and reaction, support conditions and concept of equilibrium within structures
2.Develop an understanding of forces in members of statically determinate structures
3. Develop an understanding of history of earthen architecture
4. Demonstrate an understanding of how earth buildings are built and maintained.

DATE OF APPROVAL: April 2017	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: Sept 2017	**PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE:	**TERM:**

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT
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ACADEMIC YEAR 2023/24	**NATIONAL COST CENTRE: 108**

MODULE LEADER: Dr Gursewak Aulakh	**OTHER MODULE STAFF:**

Summary of Module Content
- Philosophy of design of structures and how do buildings stand up?
- Structural behaviour – elements, structure, equilibrium, compatibility, determinacy and indeterminacy, loads, restraints and reactive forces
- Dead and imposed loads and considerations within design
- Foundations, slabs, beams, columns
- Simple elements in plain masonry and timber structures
- Earth Architecture – earth buildings around the world
- Site and design issues for earthen structures
- Identifying and testing soils,
- Making cob and building with cob. Other techniques and methods for building with earth.
- Restoration
- Cob buildings and the future of earthen structures

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions}		
Scheduled Activities	**Hours**	**Comments/Additional Information**
Lab Sessions	6	3x2hr Lab Sessions
Practical Sessions	8	4x2hr practical workshops
Case Study Seminars	8	4x2hr Seminars
Lectures	38	19x2hr lectures
Academic Support	15	A mix of group and individual tutorials
Independent Study	125	Guided self-study and suggested reading
Total	**200**	

Category	**Component Name**	**Element**	**Component weighting**	**Comments Include links to**

				learning objectives
Coursework	Written Report	C1	100%	LO2, LO3, LO4
Written Exam	Equilibrium within Structures	E1	100%	LO1

Recommended Texts and Sources:

Updated by: Dr Gursewak Aulakh **Date:** July 2023	**Approved and Signed off by:** Dan Burnard **Date:** July 2023

SECTION A: DEFINITIVE MODULE RECORD. Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.

MODULE CODE: CITY2085	**MODULE TITLE** Building Pathology and Construction Refurbishment Practice

CREDITS: 20	**FHEQ LEVEL: 5**	**JACS CODE: K200**

PRE-REQUISITES: None	**CO-REQUISITES: None**	**COMPENSATABLE: Yes**

SHORT MODULE DESCRIPTOR:
The students will evaluate various aspects of building pathology, defects and remediation. The other part of this module is evaluating different refurbishment techniques and developing a detailed understanding of the issues involved in the reuse of existing buildings.

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ELEMENTS OF ASSESSMENT ***[Use HESA KIS definitions}***					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)		**C1**	100%	**P1**	
E2 (OSCE)		**C2**		**P3**	
T1 (in-class test)		**A1**			

SUBJECT ASSESSMENT PANEL Group to which module should be linked: TMR

Professional body minimum pass mark requirement: n/a

MODULE AIMS:

- To equip students to analyse conditions of buildings, and apply remedial measures
- To evaluate and analyse the construction of large/complex buildings
- To integrate and critique established knowledge of a range of principles and construction
- techniques for building re-use situations
- The module also aims to develop post construction evaluation for new build and refurbishment projects

ASSESSED LEARNING OUTCOMES: (additional guidance below)
At the end of the module the learner will be expected to be able to:

LO1. Diagnose and evaluate a range of building defects within the given context of a building
LO2. Compose and offer a critique of a professionally styled building survey report.
LO3. Compare, contrast and critically evaluate a range of construction methods and techniques for buildings and reuse schemes.
LO4. Evaluate a range of practical exercises associated with the alteration, refurbishment and demolition of existing buildings.

Additional notes (for office use only):

DATE OF APPROVAL: April 2014	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: Sept 2014	**PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE:	**TERM:**

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT
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ACADEMIC YEAR 2023/24	**NATIONAL COST CENTRE: 123**

MODULE LEADER: Dr Gursewak Aulakh	**OTHER MODULE STAFF:**

Summary of Module Content
Causes of building deterioration – dampness, timber decay, movement
Building Conditions survey
Specifications for remedial works – principles, new and refurbishment of old buildings
Primary elements of large buildings - structural form (frames), sub-structure, building envelope
Internal and external finishes
Services - integration into fabric/reuse schemes, cabling, new technologies
Innovative buildings - materials, techniques, Eco buildings
Analysis of redundant/obsolete buildings - relevant factors and feasibility studies
Statutory and technical requirements of reuse schemes - structure, fire, thermal upgrading
Safety in reuse schemes - demolition, materials

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions}		
Scheduled Activities	**Hours**	**Comments/Additional Information**
Lectures	30	15 x 2hr Lectures
External Visits	20	10 x 2hr visits active renovation sites
Fieldwork	10	5 x 2hr visits of old buildings
Academic Support	15	Supporting building conditions survey
Independent Study	125	Own projects and reading and developing skills
Total	**200**	

Category	**Component Name**	**Element**	**Component weighting**	**Comments Include links to learning objectives**
Coursework	Report Assignment	C1	50% 50%	LO1, LO2 LO3, LO4

Recommended Texts and Sources:
Constable, Adam and Lamont, C (2006) *Building Defects*, Coventry, RICS

Chudley, Roy & Greeno, Rodger (2006), *Advanced Construction technology*, 4th ed., Harlow,Pearson Education
Douglas, James (2006) *Building adaptation*, 2nd ed., Oxford, Butterworth-Heinemann (print copy & e-book)
Hall, Fred & Greeno, Roger (2010) *Building services handbook,* 5th ed., Oxford, Butterworth-Heinemann (print copy & e-book)
Hunt, Geoffrey (2009) *Residential Building Defects*, Coventry, RICS Books
Highfield, David. (2009) *Refurbishment & upgrading of buildings*, 2nd ed., London, Spon Press
Billington, M. J et al (2007) *The building regulations: explained & illustrated*, 13th ed., Oxford, Blackwell
Kiruthiga Balson, Gavin Summerson and Andrew Thorne (2014), Sustainable Refurbishment of Heritage Buildings – How BREEAM helps to deliver. Briefing Paper, BRE
Perret, Mike: *Building Pathology* (DVD's)
Watt, D, S (2007) *Building Pathology: Introduction and Practice,* 2nd ed., Oxford, Blackwell Science
Journal of Building Appraisal, Journal of Architectural Conservation & Building
Construction Information Service (CIS) - e-resource available through PU Portal

Updated by: Dr Gursewak Aulakh **Date:** July 2023	**Approved and Signed off by:** Dan Burnard **Date:** July 2023

SECTION A: DEFINITIVE MODULE RECORD. Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.

MODULE CODE: CITY2086	**MODULE TITLE:** Energy Use in Buildings

CREDITS: 20	**FHEQ LEVEL: 5**	**JACS CODE:H221**

PRE-REQUISITES: None	**CO-REQUISITES: None**	**COMPENSATABLE: Yes**

SHORT MODULE DESCRIPTOR:
This module examines the use of energy and the services requirement in public and Commercial buildings. The students will employ a range of techniques to investigate energy use within public buildings.

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ELEMENTS OF ASSESSMENT *[Use HESA KIS definitions}*					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)		**C1**	70%	**P1**	30%
E2 (OSCE)		**C2**		**P3**	
T1 (in-class test)		**A1**			

SUBJECT ASSESSMENT PANEL Group to which module should be linked: TMR

Professional body minimum pass mark requirement: n/a

MODULE AIMS:
To develop a critical understanding of the factors that influence energy use in buildings and the provision of building services systems. Investigate techniques to enhance efficient use of energy and carbon footprint reduction.

ASSESSED LEARNING OUTCOMES: (additional guidance below)
At the end of the module the learner will be expected to be able to:
LO1 Critically analyse descriptions of building services systems in large buildings.
LO2 Analyse a range of different systems involved for the energy use in buildings.
LO3 Evaluate new experimental techniques in relation to building services systems and the current building regulations and statutory requirements.

Additional notes (for office use only):

DATE OF APPROVAL: April 2017	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: Sept 2017	**PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE:	**TERM:**

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT
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ACADEMIC YEAR 2023/24	**NATIONAL COST CENTRE: 123**

MODULE LEADER: Dr Gursewak Aulakh	**OTHER MODULE STAFF:**

Summary of Module Content
Siting considerations for acoustical, optical and thermal aspects of the environment
Building Services - Hot water systems. Choice of heating systems, boilers and emitters. Types of fuel. Use of heat pumps. Combined heat and power systems. Group and District heating systems. Mechanical ventilation and air conditioning. Use of psychometric chart in air conditioning design. Space for services, refuse disposal, roof drainage, foul water drainage.
Energy Efficiency - Practical aspects of energy efficiency in domestic and non-domestic buildings: design, detailing, auditing, and regulation. The thermal, lighting, and ventilation aspects of energy use in buildings.
Refurbishment – Alterations and improvements to existing services.
Passive energy use principles

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions}		
Scheduled Activities	**Hours**	**Comments/Additional Information**
Lectures	60	Lectures, workshops, field trips
Academic Support	15	Group and Individual Tutorials
Independent Study	125	
Total	**200**	

Category	**Component Name**	**Element**	**Component weighting**	**Comments Include links to learning objectives**
Coursework	Report	C1	100%	LO1, LO2
Practical	Presentation	P1	100%	LO3

Recommended Texts and Sources:
www.eceee.org/conference_proceedings/eceee/2009 - See more at:
http://www.ukerc.ac.uk/programmes/energy-demand/energy-use-in-buildings.html#sthash.HQMFuQbu.dpuf

BRE, 2013. Secondary Heat. [Online] Available at: www.bre.co.uk/filelibrary/events/.../Developing%20heat%20networks/peter_north.pdf [Accessed 7 February 2018].
Carbon Trust, 2016. Heat Recovery. [Online] Available at: https://www.carbontrust.com/resources/guides/energy-efficiency/heat-recovery/ [Accessed 13 December 2016].
Centre for Sustainable Energy, 2013. Mechanical ventilation with heat recovery. [Online] Available at: https://www.cse.org.uk/advice/advice-and-support/mechanical-ventilation-with-heat-recovery [Accessed 4 December 2016].
Committee on Climate Change, 2018. Infographic: The future of heating in UK buildings. [Online] Available at: https://www.theccc.org.uk/2016/10/13/infographic-the-future-of-heating-in-uk-buildings/ [Accessed 4 January 2018]
Green Building Store, 2016. Erneley Close EnerPHit. [Online] Available at: http://www.greenbuildingstore.co.uk/erneley-close-enerphit-mvhr-triple-glazed-timber-windows/ [Accessed 30 November 2016].
Green Building Store, 2016. MVHR DESIGN SERVICE. [Online] Available at: http://www.greenbuildingstore.co.uk/services/mvhr-heat-recovery-ventilation-passivhaus/ [Accessed 30 November 2016]

Updated by: Dr Gursewak Aulakh **Date:** July 2023	**Approved and Signed off by:** Dan Burnard **Date:** July 2023

SECTION A: DEFINITIVE MODULE RECORD. Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.

MODULE CODE: CITY2087	**MODULE TITLE:** Project

CREDITS: 20	**FHEQ LEVEL: 5**	**JACS CODE: H200**

PRE-REQUISITES: None	**CO-REQUISITES: None**	**COMPENSATABLE: Yes**

SHORT MODULE DESCRIPTOR:
To develop research skills into the design, construction and analysis of construction or civil engineering activities and the presentation of an account of work in written and oral form. The project topic will be 'work based learning' orientated and it will either be set by an enterprise or the students could bring a project from an enterprise.

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ELEMENTS OF ASSESSMENT ***[Use HESA KIS definitions}***					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)		**C1**	80%	**P1**	20%
E2 (OSCE)		**C2**		**P3**	
T1 (in-class test)		**A1**			

SUBJECT ASSESSMENT PANEL Group to which module should be linked: TMR

Professional body minimum pass mark requirement: n/a

MODULE AIMS:
The aim of this module is to enable students to design, develop, test and / or evaluate a research project in a construction or civil engineering discipline

ASSESSED LEARNING OUTCOMES: (additional guidance below)
At the end of the module the learner will be expected to be able to:
LO1 Design and develop an appropriate work based project proposal related to the construction or civil engineering industries with direct liaison from an employer.
LO2 Demonstrate and evaluate the factors which impact on the design, development and evaluation of an employer set project in an area relating to construction or civil engineering.

LO3 Analyse and reflect on the process of project research, design, development and / or product evaluation. LO4. Reflect on the success of the project and the feedback from the employer

DATE OF APPROVAL: April 2017	**FACULTY/OFFICE: Academic Partnerships**
DATE OF IMPLEMENTATION: Sept 2017	**PARTNER: City College Plymouth**
DATE(S) OF APPROVED CHANGE:	**TERM:**

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT
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ACADEMIC YEAR 2023/24	**NATIONAL COST CENTRE: 118/123**

MODULE LEADER: Dr Gursewak Aulakh	**OTHER MODULE STAFF:**

Summary of Module Content
- Project research techniques, research cycle and managing a literature review
- Project management techniques
- Managing information and data collection, analysis techniques, validity and ethics
- Evaluating potential barriers and possible restrictions in design, development and project construction
- Preparing a research project proposal
- Integrating the use of software into project design, development and evaluation
- Research project design and / or build and testing
- Evaluation of process

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions}		
Scheduled Activities	**Hours**	**Comments/Additional Information**
Lectures	12	6 x 2hrs Lectures, methods of research
Research workshops	20	10 x 2hrs workshops on research
Presentations	8	4 x 2hrs of proposal presentations
Academic Support	15	Support develop research proposal
Independent Study	145	Working on research project, collection analysis of data, writing report
Total	**200**	

Category	**Component Name**	**Element**	**Component weighting**	**Comments Include links to learning objectives**
Coursework	Project (Full Report)	C1	100%	LO2, LO3, LO4
Practical	Presentation	P1	100%	LO1

Recommended Texts and Sources:

Alvesson, M. & Sandberg, J. (2013) Constructing Research Questions. London: Sage Publications Limited.
Clough, P. & Nutbrown, C. (2012) A student's guide to Methodology. 3rd edn. London: Sage Publications Limited.
Creswell, J. W. (2013) Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. 4th edn. London: Sage Publications Limited.
Easterby-Smith, M. (2012) Management Research. 4th edn. London: Sage Publications Limited.
Field, A. (2013) Discovering Statistics Using IBM SPSS Statistics. 4th edn. London: Sage Publications Limited.
Gray, D, E. (2013) Doing Research in the Real World. 3rd edn. London: Sage Publications Limited.
Jesson, J., Matheson, L. & Lacey, F. M. (2011) Doing Your Literature Review. London: Sage Publications Limited.
Kumar, R. (2013) Research Methodology. 4th edn. London: Sage Publications Limited.
Layder, D. (2012) Doing Excellent Small-Scale Research. London: Sage Publications Limited.
O'Leary, Z. (2013) The Essential Guide To Doing Your Research Project. 2nd edn. London: Sage Publications Limited.
Pallant, J. (2013) SPSS survival manual. 5th edn. Maidenhead: open university Press.
Punch, K. F. (2014) Introduction to social research: quantitative and qualitative approaches 3rd edn. London: Sage Publications Limited.
Ridley, D. (2013) The literature review. 2nd edn. London: Sage Publications Limited.

Updated by: Dr Gursewak Aulakh **Date:** July 2023	**Approved and Signed off by:** Dan Burnard **Date:** July 2023