University of Bedfordshire

Course Information Form

This Course Information Form provides the definitive record of the designated course.

General Course Information

Course Title	Sustainable Construction
Qualification	FdSc
FHEQ Level	4 & 5
Intermediate Qualification(s)	N/A
Awarding Institution	University of Bedfordshire
Location of Delivery	Off Campus, Bedford College
Mode(s) of Study and Duration	Full-time (FT) over 2 years Part-time (PT) pathway typically over 3 years
Professional, Statutory or Regulatory Body (PSRB) accreditation or endorsement	N/A
UCAS Course Code	KD2K
External Benchmarking	QAA FHEQ level descriptor QAA Subject Benchmark Statement for Construction QAA Benchmarks for foundation degree qualifications
Entry Month(s)	October

Why study this course

This course prepares the students to contribute to design and management of construction with full consideration of the sustainability and environmental issues, which is in response to the European and UK Government's legislation and need for energy conservation, sustainability and environmental protection.

Educational Aims

The advent of the knowledge economy offers enormous opportunities to enrich people's lives and enhance the national prosperity. If these opportunities are to be seized, an increase in the number of highly skilled technologists in the workforce is required (this is supported by the local employers panel). People working at this level make an important contribution to the economy (the construction industry contributes approximately 10% to the GDP), and it is vital they receive the appropriate education and training. This course aims to provide you with the means to pursue an interesting and rewarding career.

This two year full-time & part-time Foundation Degree will provide you with the technical skills and knowledge to function within the important roles specialising in energy conservation, microgeneration, environment and sustainability. Technologists with this qualification already enjoy rewarding, progressive and worthwhile careers. For full-time students, the units of work-based learning open up opportunities and progression routes for careers and further study in construction areas which are considered to be in high demand and well-respected.

Course Structure

The Units which make up the course are:

Unit Code	Level	Credits	Unit Name	Core or option
CLD010-1	**4**	**30**	Building Physics and Energy Utilisation	Core
CLD009-1	**4**	**30**	Fundamental Mathematics and Personal Development	Core
CLD003-1	**4**	**15**	Introduction to Health Safety and Environment	Core
CLD005-1	**4**	**15**	Heating Cooling and Power	Core
CLD007-1	**4**	**15**	Waste Management	Core
CLD008-1	**4**	**15**	Work-Based Learning A – Applications of Principles	Core
CLD001-2	**5**	**15**	Building Science	Core
CLD011-2	**5**	**30**	Materials and Carbon Neutral Buildings	Core
CLD003-2	**5**	**15**	Fundamentals of Building Regulations	Core
CLD012-2	**5**	**30**	Land Utilisation and Building Design for the Future	Core
CLD007-2	**5**	**30**	Work-Based Learning B – Research Practice and Innovation in Sustainable Construction	Core

Course-Specific Regulations

Students need to attend the CSCS tests. These are booked specifically, and administered by, ‘Construction Skills’. In the unlikely event of failure, it would be the student’s responsibility to rebook the test as soon as possible.

Additional Course Costs

N/A

Entry requirements

Standard entry requirements

Graduate Impact Statements

The course has been designed to develop graduates who are able to:

- Apply detailed knowledge of relevant legislation, approaches and technologies, to design, develop and manage energy efficient and sustainable construction solutions.
- Work effectively as an individual but also as a key team member, and apply their understanding of the roles played across the different construction disciplines within a project team, particularly in the fields of sustainable design and construction.
- Learn and use new technologies as they appear to make the most of opportunities for improved energy efficiency of buildings and enhanced social, economic and environmental impact.

Course Learning Outcomes

The student is expected to have;

1. Developed a holistic view of construction and the ability to design, implement and communicate construction solutions for different building types and purposes.
2. Developed technical knowledge, understanding and skills in construction systems, within the context of challenges in delivering sustainable projects, and the issue of climate change.
3. Applied mathematical analysis and scientific knowledge, skills and understanding to support practical problem solving in the construction workplace.
4. Developed an understanding of the concepts required to produce ‘zero carbon’ buildings.
5. Interpreted and applied the principles required in designing and implementing Green/Eco/Code/Passivhaus buildings.

PSRB details

N/A

Learning and Teaching

Students will attend lectures and practical sessions. Work Based Learning remains at the core of this qualification and students will undertake two units focused on this. Some practical activities are also incorporated, such as working with microgeneration, surveying, measuring and calibration equipment.

Attending trade seminars is encouraged and external industry experts bring a wealth of experience to the environment through sharing the real practice. Special sessions are also arranged for students to attend the University for Development and Specialist Lectures to broaden their experience and knowledge

Assessment

Assessments take the form of professional reports in the main. In case of Health and Safety it is actual CSCS tests undertaken by students, both operative as well as management, which help in obtaining employment. Latter parts of sciences and environmental studies involve time-controlled activities, where students undertake investigative work in the morning and prepare the report of findings in the afternoon, which is very similar to the industry practice.

Work Based Learning assessment is monitored through a reflective diary and frequent meetings with the unit leader, allowing the students to develop their learning progressively. The unit leaders also provide the students with formative feedback. Some activities like technology are taught through use of Computer Aided Design (CAD) allowing students to practice what they have learned through application.

Every year the Course Manager and Link Tutor produce a Year Organiser. This not only lists the key dates for the students to follow, but also lists the due dates for the assignments, specialist activities such as trade shows and seminars, as well as industrial visits.

The first assessment is in unit Waste Management CLD007-1, this is in week 6 and consists of a report assessing system installation.

Assessment Map

Unit Code	C/O	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
CLD010-1	core																			x					x	
CLD009-1	core									X																x
CLD003-1	core			X							X															
CLD005-1	core																			X				X		
CLD007-1	core	X									x															
CLD008-1	core																								X	
CLD001-2	core			X							X															
CLD011-2	core													x												X
CLD003-2	core	X									X															
CLD012-2	core							x																	X	
CLD007-2	core																									X

Developing your employability

Through Work Based Learning, student employability is developed. Projects in the past have included 'Development of an Earthship', 'Retrofit for the Future with Technology Strategy Board', 'Refurbishment of a Village Hall', 'Sustainable House', etc. Case studies brought in by experts familiarise students with the expected requirements, while working on time controlled activities brings the reality of life to the educational environment. Visits to relevant industrial facilities and seeing how things are actually done in practice will help the student in understanding how theory is applied. Past students have gone into employment in the Microgeneration industry, mechanical and electrical facilities management, housing systems, refurbishment, and working for energy consultancies.

After Graduation

By the time the students are at the end of this course they are frequently employed in industry. Employers frequently sponsor students through to the BSc (Hons) Top-up, which allows students to progress even further in the industry.

Additional Information

Peer-assisted learning (PAL)
Group activities and discussions are encouraged and students participate in these on regular basis.

Initial Assessment
CLD007-1 Waste Management - First Assessment

Improving students' learning
Tutors always provide 2Q feedback to students and give guidance on their progress as the work proceeds. This is especially relevant to practical units, such as CAD and Surveying.

Academic Integrity
Besides the training that students receive at college on writing and preparing assignments (Fundamental Mathematics and Personal Development unit), the University also arranges PAD sessions that develop the student's skills in production of their work. This includes referencing, citations, paraphrasing and summarising skills. The submission of assignments is carried out electronically and through Turnitin which is a similarity-checking software.

HEAR implementation
By participating in activities shown on the organiser, as well as Work Based Learning, the students acquire skills and experiences that are in addition to the academic activities (enhancing their CVs).

Internationalisation
By attending seminars, students will be able to access information from variety of sources, many of which from the international scene. Guest speakers in the past have included large international companies.

Sustainability
The course is not only about Sustainability in construction, but the sustainability of student's progress throughout their career. This is why the College promotes external activities such as seminars and trade shows, where the students can acquire specialist knowledge in new materials and processes.

Student Support during the course

Bedford College provides individual academic and personal support for a relatively small cohort of Higher Education (university level) students. The benefits of being an HE student in a Further Education college include excellent staff/student ratios and a personal tutor scheme, with proven success in preventing students from dropping-out and maintaining consistently high achievement rates.

Students may be required, at the discretion of the Course Leader, to undergo diagnostic testing for academic English language abilities, and may be required to participate in academic English support workshops or classes laid-on by the University.

All students are supported by induction sessions at the start of each year, by personal and project tutors.

The college has a system of additional support for students requiring additional support in and out of the classroom:
- Specialist equipment
- Assessment and support for dyslexic students
- Special exam arrangements (part of a support package)

'Student Services' offer a wide range of support, advice, information and counselling to help students in the following ways:
- Career and educational guidance
- Child care
- Connexions Service
- Counselling
- Enrichment and tutorial programmes
- Finance, welfare, accommodation and transport advice.

Additional Course costs

N/A

Course Equality Impact Assessment

Question	Y/N	Anticipatory adjustments/actions
The promotion of the course is open and inclusive in terms of language, images and location.	Y	The course has been designed with inclusivity allowing all students to be able to achieve their aspirations.
Are there any aspects of the curriculum that might present difficulties for disabled students? For example, skills and practical tests, use of equipment, use of e-learning, placements, field trips etc.	Y	Some site visits may prove difficult for disabled students, however; we take great care to assess the areas so that all students can participate. These areas are usually close to the Campus and visits are timely
Are there any elements of the content of the course that might have an adverse impact on any of the other groups with protected characteristics[1]?	Y	The college has specific assistance for students with hidden disabilities and students are referred to this service should the need arise.
If the admission process involves interviews, performances or portfolios indicate how you demonstrate fairness and avoid practices that could lead to unlawful discrimination?		All students are supported by induction sessions at the start of each year, by personal and project tutors • The college has a system of additional support for students requiring: additional support in and out of the classroom • Specialist equipment • Assessment and support for dyslexic students

[1] Age, Gender reassignment, Marriage and civil partnership, Pregnancy and maternity, Race, Religion and belief, Sex, Sexual orientation.

		• Special exam arrangements (part of a support package).
Confirm that you have considered that the course learning outcomes and Graduate Impact Statements are framed in a non-discriminatory way.		All course outcomes have been designed to assist all students using a variety of assessments that share equality and diversity.
Confirm that the course handbook makes appropriate reference to the support of disabled students.		The course hand book gives guidance for disabled students, through contacts and organisations within Bedford College and the University of Bedfordshire

Administrative Information

Faculty	**Creative Arts Technology and Science (CATS**
Portfolio	**Foundation Degrees and Construction)**
Department/School	**Computer Science and Technology**
Course Coordinator	**Chris Churchill**
Trimester pattern of operation	**Y**
PSRB Renewal Date (where recognised)	**N/A**
Version Number	***2/2017***
Approved by (cf Quality Handbook ch.2)	***Periodic Review***
Date of approval (dd/mm/yyyy)	**15 May 2017**
Implementation start-date of this version (plus any identified end-date)	***2017***

Form completed by:

Name: Chris Churchill / David Jazani / James Bishop **Date: August 2017**

Authorisation on behalf of the Faculty Teaching Quality and Standards Committee (FTQSC)

Chair: …… Date: ……

Course Updates		
Date (dd/mm/yyyy)	**Nature of Update**	**FTQSC Minute Ref:**

Administrative Information – Academic Registry completion	
Route code (post approval)	
JACS / HECoS code (KIS)	
SLC code (post approval)	
Qualification aim (based on HESA coding framework)	

Annexes to the Course Information Form

*These annexes will be used as part of the approval and review process and **peer academics** are the target audience.*

General course information

Course Title	Sustainable Construction
Qualification	*FdSc*
Route Code (SITS)	*FDSUCFB (for FT); FDSUCFBP (for PT)*
Faculty	*CATS*
Department/School/Division	*School of Computer Science and Technology*
Version Number	*2/2017*

Annex A: Course mapping of unit learning outcomes to course learning outcomes

Unit code	CLD010-1	CLD009-1	CLD003-1	CLD005-1	CLD007-1	CLD008-1	CLD001-2	CLD011-2	CLD003-2	CLD012-2	CLD007-2
Level	4	4	4	4	4	5	5	5	5	5	5
Credits	30	30	15	15	15	15	15	30	15	30	30
Core or option	core	core	core	core	core	core	core	core	core	core	
Course Learning Outcome *(number)*		*Insert LO1 and/or LO2 for each unit into cell corresponding to the course learning outcome*									
LO1. Developed a holistic view of construction and the ability to design, implement and communicate construction solutions for different building types and purposes.	LO1 LO2	LO1	LO1 LO2	LO1	LO1 LO2	LO1 LO2	LO1 LO2	LO1 LO2	LO1 LO2	LO1 LO2	LO1 LO2
LO2. Developed technical knowledge, understanding and skills in construction systems, within the context of challenges in delivering sustainable projects, and the issue of climate change.	LO1 LO2		LO1		LO1	LO1 LO2	LO2	LO2	LO1 LO2	LO1 LO2	LO1
LO3. Applied mathematical analysis and scientific knowledge, skills and understanding to support practical problem solving in the construction workplace.	LO2	LO1 LO2		LO1 LO2	LO2		LO1 LO2				
LO4. Developed an understanding of the concepts required to produce ‘zero carbon’ buildings.	LO2		LO1		LO1	LO1		LO1 LO2	LO1 LO2	LO1 LO2	LO1
LO5. Interpreted and applied	LO1			LO1	LO1	LO1		LO1	LO1	LO1	LO1

the principles required in designing and implementing Green/Eco/Code/Passivhaus buildings	LO2							LO2	LO2	LO2	LO2

Annex B: Named exit or target intermediate qualifications

This annex should be used when Schools wish to offer intermediate qualifications which sit under the main course qualification as named exit or target awards, rather than unnamed exit/default awards.

Section 1: General course information

Intermediate Qualification(s) and titles	*Specify the intermediate qualifications which are named exit or target qualifications (award types) AND what the qualification titles will be, as stated in the course information section of the associated CIF* *It is not necessary for the intermediate qualifications to have the same titles as the overall award, but the title must reflect the units taken to achieve it.*
Mode(s) of Study and Duration	*Indicate whether each intermediate qualification will be offered full time, part time or both, and the standard amount of time a student will take to complete each target qualification.*
Type of Intermediate Qualification(s)	*State whether the intermediate qualifications are named exit and/or target awards.* *Students register for target awards at the commencement of their study. Named exit awards provide an opportunity to gain a named qualification when a student fails to complete the main qualification for which they were registered or because they do not achieve the requirements of their original main qualification.*
Route Code(s) (SITS) of Intermediate Qualification(s)	

Section 2: Qualification unit diet

One table to be used for each intermediate qualification

Confirmation of unit diet for:	*Insert intermediate qualification and title*	
The units to achieve the credits required may be taken from any on the overall diet for the main course qualification		☐
A combination of units from a restricted list must be taken to achieve the credits required (specify the list below)		☐
A specific set of units must be taken to achieve the credits required (specify units below)		☐

List of units (if applicable):-

Section 3: Course structure and learning outcomes

One table to be used for each intermediate qualification

Intermediate qualification and title															
The Units which make up this course are:					**Contributing towards the learning outcomes** *Insert LO1 and/or LO2 for each unit into cell corresponding to the course learning outcome*									
Unit Code	**Level**	**Credits**	**Unit Name**	**Core or option**	1	2	3	4	5	6	7	8	9	10

Annex C: Course mapping to FHEQ level descriptor, subject benchmark(s) and professional body or other external reference points

One set of mapping tables to be produced for the course and each named intermediate qualification

Course (or intermediate) qualification and title	FdSc Sustainable Construction

FHEQ Descriptor for a higher education qualification	*FHEQ level 5 (2014)*	**Course Learning Outcome(s)**								
		1	2	3	4	5				
Knowledge and critical understanding of the well-established principles of their area(s) of study, and of the way in which those principles have developed		X	X	X	X					
Ability to apply underlying concepts and principles outside the context in which they were first studied, including, where appropriate, the application of those principles in an employment context		X	X	X	X	X				
Knowledge of the main methods of enquiry in the subject(s) relevant to the named award, and ability to evaluate critically the appropriateness of different approaches to solving problems in the field of study		X	X	X	X					
An understanding of the limits of their knowledge, and how this influences analyses and interpretations based on that knowledge.			X							
Use a range of established techniques to initiate and undertake critical analysis of information, and to propose solutions to problems arising from that analysis		X		X	X	X				
Effectively communicate information, arguments and analysis in a variety of forms to specialist and non-specialist audiences, and deploy key techniques of the discipline effectively		X								
Ability to undertake further training, develop existing skills and acquire new competences that will enable them to assume significant responsibility within organisations.		X	X	X						
The qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and decision-making.		X	X	X	X	X				

Subject Benchmark Statement(s)	*(insert title(s) and year)*	**Evidence and/or Course Learning Outcome(s)** *How the course takes account of relevant subject benchmark statements*

Sustainability; including Global Issues, Legislation and Policy, New Build Design and Retrofit, Waste, Construction Site specific Issues and Clients.	All units
The Construction Environment; The Construction Industry, Social and Economic impact, Legal Environment, Economic Principles and Financial Management, Design and Construction Process.	All units
Construction Management; Process Management, Human Resource Management, Planning and Scheduling of Projects, Performance Management.	CLD003-1, CLD007-1, CLD008-1, CLD003-2, CLD012-2
Construction Technology; Building Performance and Technology, Site Investigation, Materials, Performance Management, Problems and Defects.	CLD010-1, CLD005-1, CLD007-1, CLD001-2, CLD012-2
Health, Safety and Welfare; Legislation and Practice, Personal Responsibility, Management, Enhancement.	CLD003-1, CLD008-1, CLD007-2
Ethics and Professionalism; CIOB Code of Conduct, Self-development and Reflection, Construction Team, Culture and Behaviour, Equality, Diversity, Age, Gender, Sexual Orientation, Belief, Ethnicity, Governance and Corporate Social Responsibility, Procurement and Tendering Practice, Definitions of Construction Management.	CLD003-1, CLD007-1, CLD008-1, CLD003-2, CLD007-2

The format of the following mapping tables may be adjusted.

Qualification Characteristic	*QAA FdSc Benchmark*	**Evidence** *How the course takes account of relevant qualification characteristics documents*
Knowledge and critical understanding of the well-established principles of their area(s) of study, and of the way in which those principles have developed		CLD010-1, CLD005-1, CLD001-2, CLD011-2, CLD003-2, CLD010-2
Ability to apply underlying concepts and principles outside the context in which they were first studied, including, where appropriate, the application of those principles in an employment context		CLD010-1, CLD003-1, CLD008-1, CLD011-2, CLD003-2, CLD007-2
Knowledge of the main methods of enquiry in the subject(s) relevant to the named award, and ability to evaluate critically the appropriateness of different approaches to solving problems in the field of study		CLD010-1, CLD005-1, CLD008-1, CLD003-2, CLD010-2
An understanding of the limits of their knowledge, and how this influences analyses and interpretations based on that knowledge.		CLD010-1, CLD005-1, CLD007-1, CLD008-1, CLD001-2, CLD011-2, CLD003-2, CLD007-2
Use a range of established techniques to initiate and undertake critical analysis of information, and to propose solutions to problems arising from that analysis		CLD009-1, CLD003-1, CLD005-1, CLD007-1, CLD008-1, CLD011-2, CLD003-2, CLD013-2, CLD007-2
Effectively communicate information, arguments and analysis in a variety of forms to specialist and non-specialist audiences, and deploy key techniques of the discipline effectively		CLD010-1, CLD003-1, CLD005-1, CLD008-1, CLD001-2, CLD011-2, CLD010-2
Ability to undertake further training, develop existing skills and acquire new competences that will enable them to assume significant responsibility within organisations.		CLD003-1, CLD005-1, CLD007-1, CLD008-1,

	CLD011-2, CLD007-2
The qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and decision-making.	CLD003-1, CLD007-1, CLD008-1, CLD011-2, CLD003-2, CLD007-2

Professional body or other external reference points	*(insert title and year)*	**Evidence** *How the course takes account of Professional body or other external reference points*