Solihull College
& University Centre

Programme Specification

HNC Diploma

Construction & the Built Environment

Programme Specification

Solihull College

Title of Programme: HNC Diploma in Construction and the Built Environment.

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided.

1.	**Awarding Body**	Pearson BTEC
2.	**Teaching location**	Woodlands Campus, Solihull College
3.	**Accreditation details**	N/A
4.	**Final award**	Higher National Certificate
5.	**Name of award**	Pearson BTEC Level 4 HNC in Construction and the Built Environment
6.	**Codes**	
	a. UCAS code	N/A
	b. Solihull Qualification Code	QVC4BC01
	c. Edexcel Programme Code (& approval dates)	500/8276/0
7.	**QAA Subject Benchmark or other external reference**	Construction, Property and Surveying 2008 Subject Benchmark Statement
8.	**Date this specification applies from**	02/09/2014

Approved

9. Educational Aims of the Programme

- To provide an educational foundation for a range of technical careers in Construction and the Built Environment;
- To provide specialised studies directly relevant to individual vocations and professions
- To provide flexibility, knowledge, skills and motivation as a basis for career development and as a basis for progression to graduate studies
- To develop students' ability in Construction and the Built Environment through effective use and combination of the knowledge and skills gained in different parts of the programme;
- To develop a range of skills, techniques and personal attributes essential for successful performance in the working place.

10. Intended Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills, qualities and other attributes in the following areas:

Subject knowledge and critical understanding including:

A sound basic knowledge and understanding that includes:

- Mathematical methods relevant to Construction and the Built Environment
- Good practice within Construction and the Built Environment
- Scientific principles underpinning Construction and the Built Environment
- Use of Information and Communication Technology (ICT) relevant to Construction and the Built Environment
- General principles of and design techniques
- An overview of Management and Business practices

Higher level academic/ intellectual skills including:

The ability to:

- Understand and apply principles and concepts;
- Present reasoned arguments and apply judgement;
- Analyse and evaluate practical problems and provide logical solutions.
- Capacity to formulate solutions to engineering problems with a level of independence

Higher practical and professional skills including:

The ability to:

- Select and apply routine mathematical methods to the modelling and analysing of engineering problems
- Select and apply scientific principles and set up appropriate equipment for the analysis and solution of engineering problems
- Select and apply appropriate computer-based methods to solve engineering problems
- Produce a design for a system, component or process to meet a specified requirement
- Research and undertake tests for a design solution and report the results effectively
- Apply engineering techniques to take account of a range of commercial and industrial constraints
- Apply management principles and techniques to the solution of engineering problems

Higher Level transferable skills development includes:

The ability to:

- Manage and develop self;
- Work with and relate to others;
- Communicate ideas effectively both orally and in writing;
- Apply numeracy;
- Apply technology;
- Manage tasks and solve problems;
- Apply design techniques and show creativity/originality in work produced

Teaching and Learning Methods

- Acquisition of core knowledge is through a mixture of lecture/presentations/demonstration/laboratory experiment and directed study
- Analytic thinking skills are developed through discussion and self-assessment test questions.
- Practical skills are developed through laboratory experiments and the use of simulation software
- Common skills are developed through assignments and presentations, particularly in the project unit

Assessment methods

Assessment activities provide major opportunities for learning. Assessment criteria are linked to and stated in individual module outcomes.

Assessment methods include:

- Unseen mathematical tests
- Case studies or relevant workplace scenarios
- Practical Assessment
- Assignment Reports
- Oral presentations within the project unit
- Individual and paired practical work and group project work

11. Programme Structure

These are examples of units you may study

Students Commence HE study

Construction and the Built Environment

Year 1

Unit 1. Design Principle and Applications for Construction and the Built Environment

Unit 2. Science and Materials for Construction and the Built Environment

Unit 3. Applied Maths for Construction and the Built Environment

Unit 27. Site Surveying Procedures for Construction and the Built Environment

Construction and the Built Environment

Year 2

Unit 5. Group Project in the Construction Industry

Unit 4. Management Principles and Applications for Construction and the Built Environment.

Unit 6. Health, Safety and Welfare for Construction and the Built Environment

Unit 47. Energy Utilisation and Efficiency for Building Services Engineering

The Pearson BTEC Level 4 HNCs in Construction and the Built Environment are qualifications with a minimum of 120 credits of which 65 are mandatory core.

The Edexcel BTEC Level 4 HNC programmes must contain a minimum of 65 credits at level 4.

Higher National Certificate Achieved

Unit 1. Design Principles and Application for Construction and the Built Environment:
Planning, design and production phases of the construction process, the coordination and management of each phase; factors affecting the selection of materials, systems and equipment; environmental impact of energy and other constraints on the planning, design and construction processes; roles, responsibilities and obligations (including liability for health, safety and welfare) of all parties involved in construction projects; cost implications and how technology affects the design of construction projects and the design processes and procedures used for the production phase.

Unit 2. Science and Materials for Construction and the Built Environment:
Scientific principles and an understanding of the properties and use of materials needed to successfully complete the other core and specialist content; analyse, apply, investigate and evaluate properties and behaviour of materials and components used for structural designs and construction operations; determine comfort levels in the design and use of buildings; experimentation and modelling of scientific principles.

Unit 3. Applied Mathematics for Construction and the Built Environment:
Application of analytical techniques needed to successfully complete the core and specialist content, to include algebra, graphical techniques, laws of motion, matrices, trigonometry, calculus, statistics and probability, surveying and setting out procedures and construction/engineering problems.

Unit 4: Management Principles and Application for Construction and the Built Environment:
Principles of management, the work of pioneers and founders of management, their evolution and application to modern day practice; construction and the built environment markets and activities; the roles of the professions/disciplines in project teams and the management principles appropriate to organisations within the construction and built environment sector; application of management techniques to organisation, work planning, coordination, control of resources, cost control, quality, communication and client liaison involved in the design and construction processes; methods of procurement and contracting; partnering and supply chain management.

Unit 5: Group Project in the Construction Industry:
Evaluate and resolve realistic practical problems by working as part of a team for a major piece of work or project that reflects the type of performance expected of technologists in a construction discipline; this work should involve interpreting an agreed brief that contains an agreed timescale for the staged development of an overall 'plan of work' and be within given, defined constraints, with the teamworking towards an acceptable and viable solution; enabling learners to demonstrate the application of individual high-level skills in managing self, working as a member of a team and presenting technical solutions.

Unit 6. Health, Safety and Welfare for Construction and the Built Environment:
Main health, safety and welfare legislation and approved codes of practice applicable to the construction and built environment sector, including The Construction (Design and Management) Regulations 2007; the main requirements of an effective health and safety policy, procedures and the organisational arrangements necessary for its implementation; hazard and risk identification; risk assessment and review; control measures to prevent or mitigate ill health and injury; monitoring effectiveness of safety policies and procedures.

Unit 27. Site Surveying Procedures for Construction and the Built Environment:
Range of instruments used for surveying and setting-out processes; principles of surveying and setting-out; calculate the information required from raw data for cartographic detailing and setting-out of construction and civil engineering work; surveying controls; use of electronic and laser instruments; GPS systems; total station instruments and the application of computer software to calculate and produce surveying solutions.

Unit 47. Energy Utilisation and Efficiency for Building Services Engineering
Provide learners with an understanding of the environmental impact of energy utilisation in buildings and the implications of energy efficiency and sustainability. Learners will investigate how environmental and economic gains can be achieved by reducing waste and maximising energy efficiency. As concern over global environmental issues increases, the role of the building services engineer in the design and operation of buildings becomes even more important. This unit is recommended for learners seeking to explore the opportunities that exist for improving the energy efficiency of buildings.

Progression to Year 2

Progression onto the second year of the programme normally requires the completion of all 1st year units.

12. Support for Students and Their Learning

Student progression on course is supported both by subject tutors and central College services and includes:

- An induction programme introducing new students to the subject of study, higher level skills that need to be developed, and the college facilities (including the library, IT facilities, staff and other students).
- College and course/ module handbooks available in print and electronic format on Moodle.
- Personal and academic support is integrated in teaching provided by supportive and accessible tutors and identified 1:1 support sessions are also available.
- A modern well-equipped library and Up-to-date ICT equipment.
- Study skills sessions integrated in programme.
- Personal development planning sessions integrated into programme
- Up-to-date Computer laboratories with specialist facilities for computer networking and multimedia computing.
- Various workshops including wind tunnel and flight simulator
- Study skills sessions integrated in programme and organised on a regular basis;
- High specification computers with latest educational software.
- Planned visits and speakers
- Access to counsellors and support for students with special needs.
- Written assignment / assessment feedback (normally provided with 2 weeks of assessment submission).
- Access to regularly updated course section and college wide sections on the college's intranet Moodle

13. Criteria for Admission

Normally the course enrols students, who are in, or plan to enter, employment and who have reached the minimum age of 18. Students enter with at least one of the following qualifications:

Entry Requirements:

4 GCSEs grade C or above, plus

1 A Level, or 2AS Levels (40 points),

or BTEC National in a relevant construction/engineering qualification,

or an equivalent qualification

Mature students, over the age of 21, with a suitable background or experience may be accepted without formal qualifications. All such students are interviewed by the programmes Internal Quality Moderator (IQM) before an offer is made

14. Evaluating and Improving the standards of Teaching and Learning

Evaluation of the Standards of Teaching and Learning is undertaken using the results of the following documents;

- Student feedback questionnaires, both initial impressions and the spring survey
- Module review forms completed by students at the end of every module and summarised by the course leader.
- Student input to the Programme Quality Board held twice a year.
- Student representations made through the HE Student Council.
- Action areas fed by the above to the course based Annual Monitoring report.
- Findings of the teaching observation scheme and recommendations for improvement that are made
- Quality Audit of the programme undertaken by Director of HE and an external observer.
- External Verifiers report and audit of assessed work

The ways in which the quality of this programme is checked, both inside and outside the college, are:

- External Examiners, who produce an annual report
- Professional body accreditation/inspection visits
- Annual module review
- Periodic programme review
- Invitation to attend Programme Quality Boards

15. Regulation of Assessment

- The programme is the subject of an Annual Monitoring Report (AMR) the last section of which is a Quality Improvement Plan (QIP), written by the course leader with help and input from the teaching and tutoring team this is passed to the Head of School for audit and from them to the quality unit for further audit and acceptance as part of the College plan.
- Assessment rules and regulations and quality standards are those that are laid down in the Quality standards requirements of the College Academic Board.
- Assessment and assessment vehicles are regulated by the internal verification system for each programme which is itself Audited by the quality unit within the College and also by the External Verifier appointed by Edexcel.
- External verification of assessment and of the provision and standards of teaching are regulated by BTEC Edexcel and their quality unit, the programme has to seek approval for continuance every 5 years. Their requirements are monitored annually by the visit and report of their appointed external verifier.

- Also the programme is the subject of periodic review by QAA, ensuring that national benchmarks are met throughout the programme.

16. Enhancement

- An action plan is provided in each annual programme report and progress in achieving enhancements is regularly reviewed
- Good practice in teaching and learning is developed and disseminated through regular staff development workshops and through participation in internal verification of completed student work.
- Staff development activities are discussed at annual appraisal interviews and are actively encouraged to develop their professional practice and industrial experience.

Please note: This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes full advantage of the learning opportunities that are provided. More detailed information can be found in the programme handbook.

Document History

1. 13/07/2014 Document Created RW

Programme Leader	Rosa Wells
Web address	Rosa.Wells@solihull.ac.uk
Date checked against public information	13/07/14 *If revisions are to made to the web site, these must be noted here and the document amended when these have been done.*
Specification Author	Rosa Wells