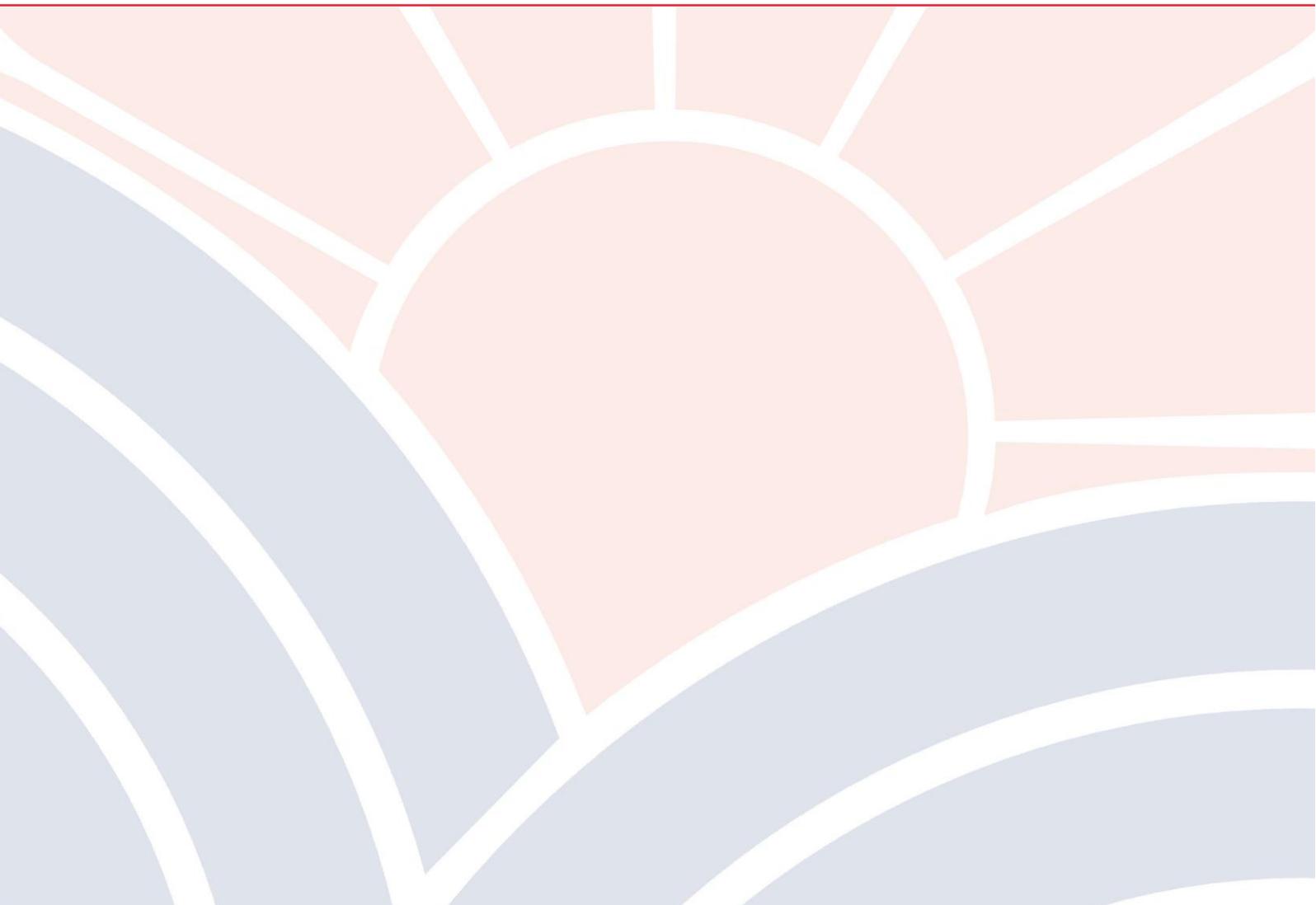


# Programme Specification

For HNC Civil Engineering for England



# Programme Specification

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## Title of Programme: Higher National Certificate (HNC) in Civil Engineering

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.

<b>1. Awarding Body</b>	Pearson Education
<b>2. Teaching location</b>	Solihull College and University Centre, Blossomfield Campus, Solihull B91 1SB
<b>3. Accreditation details</b>	N/A
<b>4. Final award</b>	Higher National Certificate
<b>5. Name of award</b>	HNC [Civil Engineering]
<b>6. Codes</b>	
a. UCAS code	a. S26
b. Solihull Qualification Code	b. BUHBP052BCP1/BUHTV052OCAP
c. Pearson Programme Code (& approval dates)	c. <b>610/0924/6</b>
<b>7. QAA Subject Benchmark or other external reference such as published by Pearson if the course is a Higher National</b>	Published by Pearson
<b>8. Date this specification applies from</b>	01/09/2026
<b>Prepared By</b>	Course Leader Balachchandran Gangatheepan
<b>Approved BY</b>	Head of HE, Claudine Barnes

### RECORD OF UPDATES

Date amended*	Nature of amendment**	Reason for amendment**

# 1. Educational Aims of the Programme

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## Level 4 Higher National Certificate

The Higher National Certificate (HNC) in Civil Engineering aims to provide students with a broad introduction to the principles and practices of civil engineering within the construction and infrastructure sector. The programme is designed to develop students as professional, self-reflecting individuals capable of meeting the demands of employers in the civil engineering industry and adapting to a constantly changing technical environment.

The programme aims to:

- Provide students with a strong foundation in civil engineering principles, including structural design, construction technology, surveying, materials science and engineering mathematics.
- Develop the technical knowledge and practical skills required to analyse, design and evaluate civil engineering systems and infrastructure projects.
- Enable students to apply scientific, mathematical and engineering principles to solve real-world civil engineering problems.
- Develop professional, transferable and employability skills such as communication, teamwork, problem-solving, critical thinking and project management.
- Provide opportunities for students to engage in industry-relevant projects and problem-based learning, reflecting current civil engineering practice.
- Encourage students to become independent learners capable of conducting research, analysing information and making informed engineering decisions.
- Prepare students for technical and supervisory roles in the civil engineering and construction sectors.
- Provide a clear progression route to Level 5 Higher National Diploma (HND) or further study in civil engineering and related disciplines.

The Level 4 units lay the foundation of learning by providing a broad introduction to **civil engineering principles and practices**. Students will develop core knowledge linked to practical skills obtained through research, independent study, directed learning and real-world engineering scenarios.

By the end of Level 4 study, students will have sound knowledge of the fundamental concepts of civil engineering and will be competent in applying engineering principles to solve practical construction and infrastructure problems.

## 2. Programme structure

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The Higher National Certificate (HNC) is a Level 4 qualification made up of 120 credits. It is usually studied full time over one year, or part time over two years.

Pearson BTEC Higher Nationals consist of core units, specialist units and optional units.

- Core and specialist units are mandatory.
- Specialist units provide a specific occupational focus to the qualification in line with professional body standards.

### Guided learning hours:

The Higher National Certificate (HNC) in Civil Engineering is a Level 4 qualification consisting of 120 credits. Each unit normally carries 15 credits and has a Total Qualification Time (TQT) of 150 hours. The Guided Learning Hours (GLH) for each unit are typically 60 hours, which include structured learning activities delivered by tutors. These may include:

- Lectures and seminars
- Tutorials and workshops
- Practical laboratory sessions
- Computer-based learning (e.g., CAD or engineering software)
- Group discussions and supervised project work

The remaining 90 hours per unit are expected to be completed as independent learning, which may include:

- Research and reading
- Assignment preparation
- Project development
- Revision and self-directed study
- For the full programme:

**Total Credits: 120**

**Total Qualification Time (TQT): 1200 hours**

**Total Guided Learning Hours (GLH): approximately 480 hours**

Students normally attend scheduled teaching sessions across the academic year, supported by independent study and assignment work.

The units are:

Unit number	Module Title	Credits	Level
4001CE	Construction Design Project Civil Engineering (Pearson-set)	15	4
Unit 3	Science & Materials	15	4
Unit 4	The Construction Environment	15	4
Unit 7	Surveying, Measuring & Setting-out	15	4
Unit 8:	Mathematics for Construction	15	4
Unit 17	Civil Engineering Technology	15	4
Unit 19	Principles of Structural Design	15	4
Unit 26	Digital Applications for Building Information Modelling	15	4

### Calculating the overall qualification grade

To achieve a Pearson BTEC Level 4 Higher National Certificate qualification, a student must have:

- Completed units equivalent to 120 credits at Level 4, and
- Achieved at least a Pass in 105 credits at Level 4.

Learners will be awarded a pass, merit or distinction qualification grade by the aggregation of points gained through the successful achievement of individual units. Students must have attempted all units in a valid combination for each qualification. The conditions of award and compensation arrangements will apply as explained above (ie. If one 15-credit unit has been attempted but not achieved, a HNC can still be awarded). If a student has been granted compensation for a unit attempted but not achieved, that unit will appear as unclassified (a 'U' grade) on the notification of performance provided with their certificate

Units that have been attempted but not achieved, and subsequently granted compensation, will appear as 'Unclassified'; i.e. a 'U' grade, on the student's Notification of Performance, that is issued with the student certificate.

### Points per credit at specified unit grades

Grade	Points
Pass	4
Merit	6
Distinction	8

### Point Boundaries

Grade	Point Boundaries
Pass	420–599

Merit	600–839
Distinction	840+

### 3. Intended Learning Outcomes of the Level 4 Programme

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The units studied are:

#### 1. Knowledge and Understanding

- Students will be able to:
- Demonstrate knowledge of core civil engineering principles, including construction technology, structural design, surveying, engineering mathematics, and materials science.
- Explain the scientific and mathematical principles that underpin civil engineering practice.
- Understand the design, construction and maintenance of civil engineering infrastructure, including buildings, transport systems and structural elements.
- Recognise the role of digital technologies and information management in modern construction and civil engineering projects.

#### 2. Cognitive (Intellectual) Skills

Students will be able to:

- Analyse civil engineering problems and identify appropriate engineering solutions.
- Evaluate engineering data, technical information and design requirements.
- Apply analytical and problem-solving techniques to engineering calculations and design tasks.
- Critically review construction processes and engineering methods used in infrastructure projects.

#### 3. Practical and Professional Skills

Students will be able to:

- Apply engineering mathematics and scientific principles to solve practical civil engineering problems.
- Produce and interpret technical drawings, plans and engineering documentation.
- Use surveying techniques, measuring equipment and setting-out procedures in civil engineering contexts.
- Apply appropriate digital tools and software used in construction information management.
- Develop solutions for structural and construction design tasks using appropriate engineering standards.

#### 4. Transferable (Key) Skills

Students will be able to:

- Communicate technical information effectively through reports, presentations and drawings.
- Work effectively as part of a team in engineering and construction projects.
- Demonstrate independent learning and research skills.
- Apply time management and project planning skills to complete engineering assignments and projects.
- Develop awareness of professional, ethical and sustainability considerations in civil engineering practice

Intended Learning Outcomes	Construction Design Project	Construction Technology	Science & Materials	Mathematics for Construction	Surveying, Measuring & Setting-out	Principles of Structural Design	Digital Applications for Construction Information	Construction Practice & Management
Knowledge & Understanding	✓	✓	✓	✓	✓	✓	✓	✓
Apply civil engineering principles and construction technology	✓	✓	✓	✓	✓	✓	✓	✓
Analyse engineering problems and evaluate solutions	✓	✓	✓	✓	✓	✓	✓	✓
Apply engineering mathematics and scientific principles			✓	✓	✓	✓		
Use surveying methods and construction measurement techniques					✓		✓	
Produce and interpret engineering drawings and digital information	✓	✓			✓	✓	✓	
Develop professional and transferable skills	✓	✓	✓	✓	✓	✓	✓	✓
Communication, teamwork and project management skills	✓				✓		✓	

#### 4. Teaching and Assessment

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##### Teaching, Learning and Assessment Strategy

The programme adopts a range of teaching and learning approaches designed to support the development of both theoretical knowledge and practical skills required in civil engineering practice. The strategy aims to promote active learning, independent study and the

development of professional competencies relevant to the construction and infrastructure sectors.

Learning is delivered through a combination of:

- Lectures and seminars to introduce key theoretical concepts and engineering principles.
- Tutorials and workshops that allow students to develop problem-solving skills and apply engineering calculations.
- Practical activities and laboratory sessions to explore the properties of engineering materials and structural behaviour.
- Computer-based learning, including the use of digital applications for construction information and technical drawing software.
- Case studies and real-world engineering scenarios to link theoretical knowledge with industry practice.
- Project-based learning, particularly through the Construction Design Project, which encourages students to integrate knowledge from different subject areas.
- Independent learning and research, enabling students to develop critical thinking, analytical skills and professional judgement.
- Students are encouraged to take responsibility for their own learning through guided study, research activities and reflective practice.

## **5. Support for Students and Their Learning**

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Solihull College and University Centre operate a proactive approach to personal tutoring. It recognises that students need to make various adjustments as they move into higher education, whether from school or employment.

Firstly, an induction process is conducted where initial course expectations, rules, and regulations (via handbooks), enrolment and team building activities are undertaken in the week prior to commencing the course. This helps students gain an understanding of what the course involves and allows them to interact with their peers. Late enrollers have a shorter but none the less comprehensive induction.

Secondly, Tutors monitor student progress regularly in 1:1 tutorial to check that they are maximising their potential. Students have access to an academic skills tutor, where they can join group sessions or book one-to-one support with aspects of HE study, such as Harvard referencing or critical thinking. Close links between specific learning difficulty co-ordinators and tutors is used on a regular basis for tracking students with additional learning needs. If students are faced with challenges that affect their ability to study, such as illness, bereavement, depression, financial difficulties, or accommodation issues, we will collaborate with them in finding a way forward.

Thirdly, careers advice (academic and employment) is available through-out the course and within the programme which enables inclusivity as well as employability skills (Curriculum Vitae building, application forms, interview techniques)

There are also support services both that the students will have access to, including learning and personal support services. These range from programme liaison managers, advisers, support co-ordinators, mental health team to specialist subject librarians, career advisers and other learning support staff all designed to ensure that students get the best out of their studies.

Also, students receive formative feedback during teaching sessions and tutorials to support their development before submitting summative assessments. Feedback on assessed work is provided to help students improve their academic and professional skills.

Academic support is also provided through:

- Tutorial guidance
- Access to learning resources and digital learning platforms
- Individual academic advice where required.

## **6. Assessment Methods**

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Assessment within the programme is designed to measure the achievement of learning outcomes while supporting the development of practical, analytical and professional skills required by the civil engineering industry.

Assessment methods include:

- Written reports and technical assignments
- Engineering calculations and analytical exercises
- Design projects and technical drawings
- Presentations and project reports
- Case study evaluations
- Portfolio-based assessments

Assessment tasks are structured to encourage students to apply knowledge to realistic engineering scenarios and to demonstrate the integration of theory with practice.

In accordance with the Pearson Higher National framework:

- All units are assessed through coursework assignments rather than formal examinations.
- Each unit is assessed against defined learning outcomes and assessment criteria.
- Assignments are designed to reflect vocational and industry-relevant contexts.

## **7. Admission to the Programme**

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Admission to the Higher National Certificate (HNC) in Civil Engineering is based on applicants demonstrating the potential to successfully complete the programme and benefit from the learning experience.

Typical entry requirements include:

- T-Level or A Level 3 qualification in Engineering, Construction or a related discipline, such as a BTEC Level 3 Extended Diploma or equivalent.
- GCE Advanced Level qualifications, normally including subjects relevant to engineering such as Mathematics, Physics or Design Technology.
- An Access to Higher Education Diploma in Engineering or a related field.
- 40 UCAS Tarriff entry points in a relevant discipline

Applicants are expected to demonstrate suitable numeracy, literacy and IT skills, which are essential for undertaking engineering calculations, technical reporting and digital applications used in the programme.

Applicants with relevant work experience in the construction or civil engineering sector may also be considered for entry, particularly mature learners who may not meet the standard academic requirements but can demonstrate appropriate knowledge and skills.

All applicants may be subject to the centre's admissions procedures, which may include an interview or assessment to determine their suitability for the programme.

## 8. Programme Resources

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The successful delivery of the Higher National Certificate (HNC) in Civil Engineering requires access to appropriate physical, digital and academic resources to support student learning and practical skills development.

### Teaching and Learning Facilities

Students have access to suitable teaching and learning environments including:

- Modern classrooms and lecture rooms equipped with presentation and audio-visual facilities.
- Computer laboratories with access to engineering and construction-related software such as CAD and digital construction information tools.
- Engineering laboratories and practical workshop facilities where students can explore materials, structural behaviour and other practical engineering concepts where appropriate.
- Access to surveying equipment and measurement tools used in civil engineering practice.

### Learning Resources

Students are supported through a range of learning resources including:

- A library and digital learning resources providing access to textbooks, academic journals and industry publications related to civil engineering and construction.
- Access to online learning platforms and virtual learning environments (VLE) to support independent learning, assignment submission and communication with tutors.
- Industry guidance documents, standards and case studies relevant to construction and civil engineering practice.

### Academic and Student Support

Students are supported throughout their studies through:

- Academic tutors who provide guidance on learning, assessment and project work.
- Personal academic support and tutorials.
- Access to learning support services for students requiring additional academic assistance.
- Career guidance and progression advice.

## **Industry and Professional Links**

Where possible, the programme benefits from links with the civil engineering and construction industry, providing opportunities for:

- Guest lectures from industry professionals
- Industry case studies and project-based learning
- Opportunities to relate academic study to real-world engineering practice.

## **9. Preparation for Employment**

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Students need both relevant qualifications and employability skills to enhance their career prospects and contribute to their personal development. A range of employability skills are embedded throughout the programme in preparation for employment:

This qualification has been developed by Pearson in conjunction with several stakeholders. Pearson has worked with employers, students, professional bodies, education providers and other experts to design qualifications with the future workforce in mind. Higher National qualifications blend employability skills with academic, business and technical knowledge. They support trainees and apprentices in their Higher Apprenticeships and other technical education programmes, as well as students working towards a degree. Pearson programmes are regularly updated to maintain their high quality and meet the changing needs of the workforce.

Employers contribute to develop of Pearson Higher Nationals in several ways:

- They are involved in every stage of designing the qualifications, from developing the structure and pathways to selecting subjects, developing content and Authorised Assignment Briefs (AABs) and approving qualifications
- They help with delivery of qualifications, for example through vendor accreditation, letters of support and co-badging. Pearson qualifications actively encourage training providers to work with employers. Work placements and work through learning are key features of BTEC Higher Nationals
- They help us review and update our qualifications to meet Occupational Standards and provide supporting material such as case studies to reflect the world of work.

### **The Solihull College and University Centre commitment to student employability**

This programme is part of Solihull College's commitment to meeting the needs of local, national, and international employers by delivering a diverse range of educational models including parttime and work-based study for learners drawn from non-traditional backgrounds in addition to internal progressions from FE vocational programmes.

#### **As part of this commitment, Solihull College and University Centre will:**

- Support students by providing professional, impartial advice and guidance to enable students to make considered career decisions before and during their studies to enable them to be prepared for their future employment and development by:
  - Identifying the skills needed for progression into employment,
  - enhancing their existing employment prospects.

- Provide subject-related resources and information on local, national, and international labour markets.
- Be responsive to the needs of employers to maximise students' employability and career progression prospects.
- Include study skills which will improve students' academic writing and research capabilities to enable further study and facilitate career progression.
- Support equality and diversity, and minimise barriers to learning, as described in the college's Equality Policy which can be found on the website under Mission and Policies.
- Ensure that employers play a key part in module content, course design and assessment criteria by formally seeking their views through employer forums, staff liaison visits, work experience coordinators, meetings with industry groups, and the use of a specialist employer service researcher to help to ensure that the course content meets industry expectations and requirements.

## **10.Evaluation of Teaching & Learning**

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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 peer teaching observation scheme and recommendations for improvement that are made.
- External Verifiers report and audit of assessed work.
- Students can submit module evaluation questionnaires which are shared in team meetings and relevant actions raised are included in the Annual Monitoring Review.
- Student Representatives volunteer from each group to bring forward the views of their colleagues informally and within bi-annual programme quality boards (PQB).
- Annual module review in the form of student evaluations which are discussed in a team meeting.
- Periodic programmes review to identify best practice and invite employers to contribute to the design of the programmes.
- Invitation to attend Programme Quality Boards to all students and create a transparent discussion to share ideas, best practice, and areas for improvement.

## **11.Regulation of Assessment**

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- The programme is the subject of an Annual Monitoring Review (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 by the External Verifier appointed by Pearson.
- External verification of assessment and of the provision and standards of teaching are regulated by Pearson and their quality unit, the programme must seek approval for continuance every 5 years. Their requirements are monitored annually by the visit and report of their appointed external verifier (Standards Verifier)
- Also, the programme must comply with the conditions of registration (notably the B conditions surrounding the quality) as set out by the Office for Students (OfS).

Pearson appoints Standards Verifiers (External Examiners).

The role of Standards Verifier is that of moderator. To do this they check and review:

- Action points from previous reports
- Centre assessment policy and boards effectiveness of assignments and internal verification maintenance and audit of assessment records student registration and certification claims
- student support and review
- areas of good practice

Note:

For further details on regulation of assessments, grading criteria, submissions, and resubmissions of assignments, please refer to the BTEC Higher Nationals Centre Guide to Enhanced Quality Assurance and Assessment by [clicking online](#).

## 12. Progression Opportunities

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Successful completion of the Higher National Certificate (HNC) in Civil Engineering provides students with opportunities for both academic progression and employment within the civil engineering and construction sectors.

### **Academic Progression**

Students who successfully complete the programme may progress to:

- Higher National Diploma (HND) in Civil Engineering or Construction and the Built Environment (Level 5).
- Undergraduate degree programmes such as BEng Civil Engineering, BSc Civil Engineering, or related construction and infrastructure courses at universities.
- Further professional development and higher-level engineering qualifications.

Entry requirements for advanced entry to undergraduate programmes vary between higher education providers – learners are advised that advanced entry is not automatic and should consult with the provider.

The HNC provides the foundation knowledge and skills required for further study at Level 5 and Level 6, supporting progression within higher education.

### **Career Opportunities**

Graduates of the programme may seek employment in a variety of roles within the civil engineering and construction industry, including:

- Civil Engineering Technician
- Site Engineer or Assistant Site Engineer
- Construction Technician
- CAD Technician
- Structural Engineering Assistant
- Surveying Technician
- Infrastructure Project Assistant

The programme equips students with technical knowledge, analytical skills and practical competencies that are valued by employers in the construction, infrastructure and engineering sectors.

### **Professional Development**

The qualification also supports progression towards professional recognition within the engineering sector, providing a foundation for further professional development and potential progression towards membership of relevant professional engineering institutions.