

# Pearson Higher Nationals in Computing

## Qualification Guide

First Teaching from September 2017

First certification from 2018



Level

4

Level

5

# Introducing your new Pearson BTEC Higher Nationals in Computing

BTEC is the world's most successful and best-loved applied learning brand, engaging students in practical, interpersonal and thinking skills for more than thirty years.

Pearson BTECs are work-related qualifications for students taking their first steps into employment or those already in employment and seeking career development opportunities. Pearson BTECs provide progression into the workplace either directly or via study at university and are also designed to meet employer's needs. Pearson BTEC Higher National qualifications are therefore widely recognised by industry and higher education as the principal technical professional qualification at Levels 4 and 5.

The Pearson BTEC Higher National Certificate (HNC) is at level 4 (the same as the first year of a UK honours degree).

The Pearson BTEC Higher National Diploma (HND) is at level 4 and level 5 (the same as the first two years of a UK honours degree).

## A word from our subject expert

It's with great pleasure that I introduce the new Higher National in Computing programme. Teaching for over 13 years gave me the opportunity to see first hand the life changing opportunities education can provide, and we have worked very hard to ensure this new qualification offers the content and learning opportunities to offer students the opportunity to further their education and career goals.

The programme is more aligned to UKHE and new updated content will make it both a stimulating and exciting experience for students and teachers. Centres can deliver with confidence a programme that will prepare and equip students for the future world of Computing.

I am here to provide guidance, advice and support on every aspect of the programme and its implementation and will welcome your views and feedback. I will be posting news and updates on the HN Global forum so please get registered and join the online discussions.

I look forward to working with you!

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## Professional courses developed collaboratively with subject experts

With input from industry, employers, professional bodies, tutors, students, and higher education institutions, your new Pearson BTEC Higher Nationals have been designed to better meet the needs of a changing market. The result is a qualification suite designed and developed to meet professional standards, recognised by employers and universities, which develop not only academic skills and abilities, but work-readiness skills.

The objectives of the redevelopment of the BTEC Higher Nationals have been to ensure:

- employer engagement;
- work relatedness;
- opportunities for progression to further higher education;
- alignment with UK higher education expectations; and
- qualifications which are up to date with current professional practice and include professional accreditation and opportunities to gain vendor certification where possible.

## What's new?

For your new Pearson BTEC Higher National qualifications, we are building on what you've told us you value most:

- **Essential subject knowledge** needed by students to progress successfully into further study or to the world of work;
- **A simplified structure** to allow students to undertake a substantial core of learning at level 4 and to build on this at level 5, with optional units linked to their specialist area of study;
- **Six specialist pathways** at level 5, so there is something to suit each student's preference of study and future progression plans;
- **Refreshed content** that is closely aligned with professional bodies', employers' and higher education needs for a skilled future workforce;
- **Assessments that consider cognitive skills** (what students know) along with affective and psychomotor skills (what they can do and how they behave);
- **An assessment strategy** that supports progression to Level 6 studies and also allows centres to offer assessment relevant to the local economy, reflecting the strengths of different learning styles;
- **Learning outcomes** mapped against SFIA (Skills Framework for the Information Age) standards where appropriate;
- **Robust quality assurance measures** that serve to ensure that all stakeholders (e.g. professional bodies, universities, computinges, vendors, centres and students) can feel confident in the integrity and value of the qualification.

# Flexible choice of subject areas and progression opportunities

The new HNC and HND qualifications in Computing offer a choice of a general Computing strand at level 4 and six specialist pathways at level 5, with a range of general and specialist units, core and optional:

- Network Engineering
- Software Engineering
- Security
- Data Analytics
- Intelligent Systems
- Applications Development

Each unit has a clear purpose: to cater for the increasing need for high quality professional and technical education pathways at levels 4 and 5, providing students with a clear line of sight to employment or progression to a degree at level 6.

Each pathway consists of a total of 120 credits at level 5, delivered via core, specialist and optional units.

All pathways permit a degree of optionality.

Level 4 Higher National Certificate in Computing
1 Programming
2 Networking
3 Professional Practice
4 Database Design & Development
5 Security
6 Managing a successful Computing Project (Pearson-set)
7 Strategic Information Systems
8 Computer Systems Architecture
9 Software Development Lifecycles
10 Website Design & Development
11 Maths for Computing
12 Data Analytics

HND Level 5 Network Engineering pathway
*13 Computing Research Project (Pearson Set)
14 Computing Intelligence
15 Transport Network Design
16 Cloud Computing
17 Network Security
Plus one Optional level 5 unit (see below)
Plus one Optional level 5 unit (see below)

Level 5 National Diploma in Computing
*13 Computing Research Project (Pearson Set)
14 Computing Intelligence
Plus one Optional unit from any optional group (see below)
Plus one Optional unit from any optional group (see below)
Plus one Optional unit from any optional group (see below)
Plus one Optional unit from any optional group (see below)
Plus one Optional unit from any optional group or specialist pathway (see below)

HND Level 5 Software Engineering pathway
*13 Computing Research Project (Pearson Set)
14 Computing Intelligence
18 Discrete Maths
19 Data Structures & Algorithms
20 Advanced Programming
Plus one Optional level 5 unit (see below)
Plus one Optional level 5 unit (see below)

HND Level 5 Data Analytics pathway
*13 Computing Research Project (Pearson Set)
14 Computing Intelligence
18 Discrete Maths
21 Data Mining
22 Applied Analytical Models
Plus one Optional level 5 unit (see below)
Plus one Optional level 5 unit (see below)

HND Level 5 Security pathway
*13 Computing Research Project (Pearson Set)
14 Computing Intelligence
23 Cryptography
24 Forensics
25 Information Security Management
Plus one Optional level 5 unit (see below)
Plus one Optional level 5 unit (see below)

HND Level 5 Application Development pathway
*13 Computing Research Project (Pearson Set)
14 Computing Intelligence
28 Prototyping
29 Application Program Interfaces
30 Application Development
Plus one Optional level 5 unit (see below)
Plus one Optional level 5 unit (see below)

HND Level 5 Intelligent Systems pathway
*13 Computing Research Project (Pearson Set)
14 Computing Intelligence
19 Data Structures & Algorithms
26 Machine Learning
27 Artificial Intelligence
Plus one Optional level 5 unit (see below)
Plus one Optional level 5 unit (see below)

Optional Unit Bank
<b>Optional Level 5 Units:</b> Please note that centres can choose any of the optional units from the units listed in the optional unit bank. It is strongly advised to choose one unit from each optional group to deliver a comprehensive general Computing qualification.
31 Games Engine Scripting
32 Game Design Theory
33 Analytical Methods
34 Systems Analysis & Design
35 Network Management
36 Client/Server Computing Systems
37 Architecture
38 Database Management Systems
39 E-Commerce & Strategy
40 User Experience & Interface Design
41 Analytic Architecture Design
42 Risk Analysis & System Testing
43 Internet of Things
44 Robotics
45 Emerging Technologies
46 Virtual & Augmented Reality Development
47 Games Development
48 Systems Integration
49 Operating Systems

Core Units
Optional Units
Specialist Units

\* All units are valued at 15 credits and 150 TQT, except these which are 30 credits and 300 TQT.

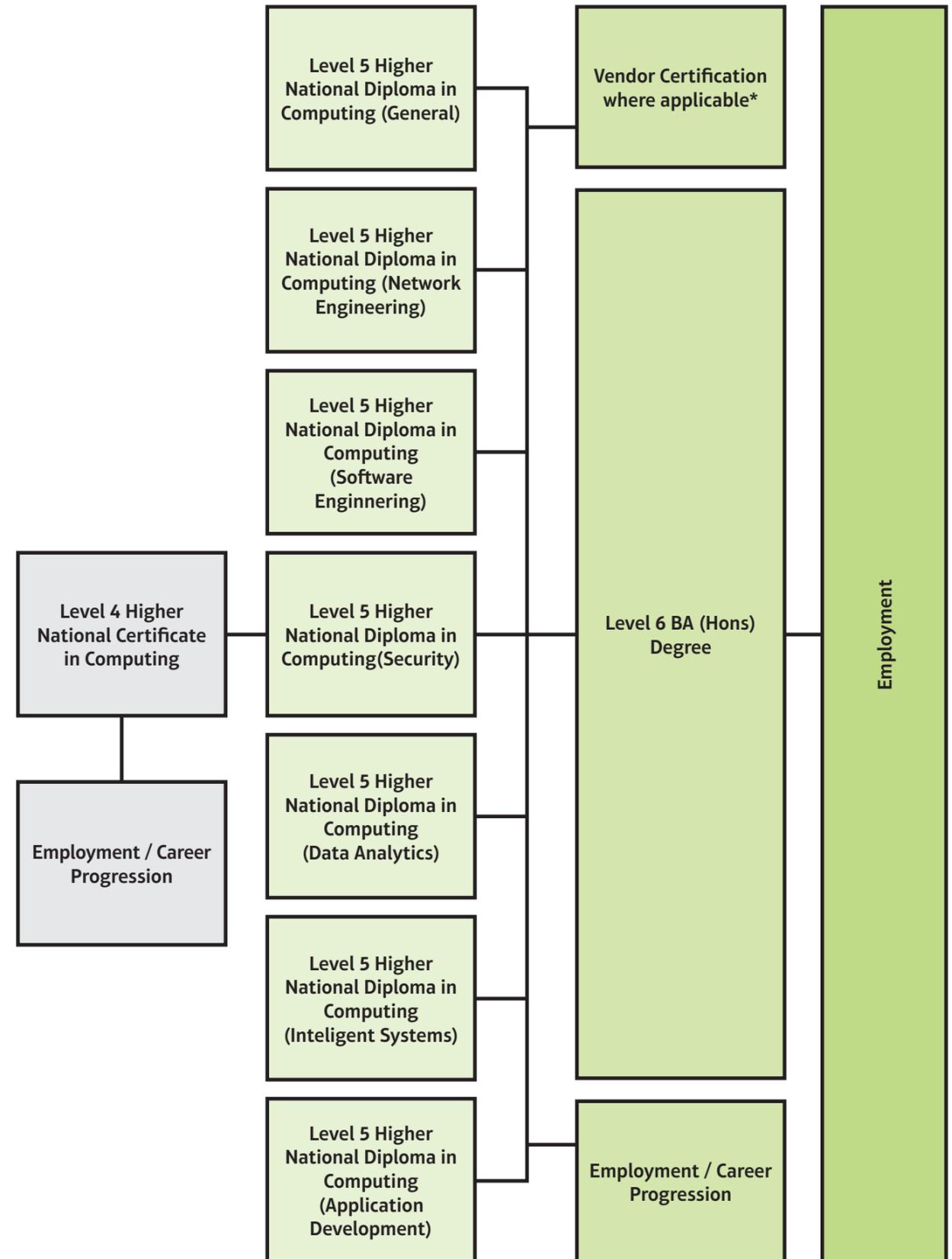
## Progression opportunities:

The purpose of Pearson BTEC Higher Nationals in Computing is to develop students as professional, self-reflecting individuals, able to meet the demands of employers in the computing sector and adapt to a constantly changing world. The qualifications aim to widen access to higher education and enhance the career prospects of those who undertake them.

On successful completion of the Level 5 Higher National Diploma, students can develop their careers in the computing sector through:

- Entering employment;
- Continuing existing employment;
- Gaining vendor certification;
- Committing to Continuing Professional Development (CPD); or
- Progressing to university.

The new qualifications also include the opportunity for students to put themselves forward to take vendor certification assessments. We have worked closely with the following vendor to offer these opportunities: CompTIA, CISCO, Microsoft, Oracle, AXELOS.



## Assessment Strategy

Pearson BTECs combine a student-centred approach with a flexible, unit-based structure. Students are required to apply their knowledge to a variety of assignments and activities, with a focus on the holistic development of practical, interpersonal and higher level thinking skills. Assessment reflects not only what the student knows but also what he or she can do to succeed in employment and higher education in an ethical manner.

Pearson BTEC Higher Nationals have always allowed for a variety of forms of assessment evidence to be used, provided they are suited to the type of learning outcomes being assessed. For many units, the practical demonstration of skills is necessary and, for others, students will need to carry out their own research and analysis, working independently or as part of a team.

## Resources

We are providing a wealth of support to ensure that tutors and students have the best possible experience during their course. We have worked with students and tutors worldwide to create an effective and interactive community for our qualifications, called *HN Global*, an exciting new online platform created by Pearson to engage with Higher National students and tutors around the world.

Pearson also offer Study Skills units to all learners – an online toolkit accessed on *HN Global* that supports the delivery, assessment and quality assurance of BTECs in centres.

[www.highernationals.com](http://www.highernationals.com)

### Do you need centre approval?

Providers wishing to deliver the new Pearson BTEC Higher National qualifications (Pearson BTEC Higher National Computing – first teaching September 2017) will be subject to a new qualification approval process, more aligned with that used in UK Higher Education. Email **hnqa@pearson.com** or visit [qualifications.pearson.com/higher-nationals](http://qualifications.pearson.com/higher-nationals) for more information about the process.

## FAQs

- 1. If a provider is already delivering the existing Higher National in Computing qualifications do they still need to obtain approval for delivering the new qualification?**

Yes, existing providers would still be required to gain approval for delivering the new Higher National qualification but the process will be simplified for centres that meet the auto approval criteria. Approval will then be provisionally granted subject to the return of a signed declaration and payment of the approval fee. More details can be found here [<insert link to approval guidance document>](#)

- 2. How long will the approval process take?**

This will depend on whether the provider is eligible for auto approval. Once an existing provider has been notified of eligibility for auto approval, the approval will remain provisional until the provider returns the signed declaration and approval. If an existing provider is ineligible and requires a desk based review, the review cannot begin until the provider confirms its intention to proceed and the approval fee is paid. New providers will go through the standard provider approval process which currently takes about 20 days.

- 3. Is it possible for students to change their pathway at the end of their first year on the course programme?**

Yes it is. Providers will need to advise Pearson registrations team and they will be able to transfer the student's registration to the appropriate pathway.

- 4. If Pearson are providing Sample Assessment Materials, do providers still have to devise their own assignments and complete internal verification of assignments?**

Yes they do. SAMs are for guidance and support only and can be customised and amended according to localised needs and requirements. All assignments must still be moderated as per the internal verification process.

- 5. How will providers know what the accreditation requirements are for Professional Bodies and what students would need to do to claim accreditation.**

In the programme specification, providers will find the Professional Body exemptions in the appendices. There will also be further details and guidance for providers available on the Pearson qualifications website on how students can claim their exemptions.

[highernationals@pearson.com](mailto:highernationals@pearson.com)

[qualifications.pearson.com/higher-nationals](http://qualifications.pearson.com/higher-nationals)