



Engineering The Future

## Higher National Course Structure

### Higher National Certificate:

The Higher National Certificate (HNC) is a Level 4 qualification made up of 120 credits with an option to study a further 2 level 5 units in year 2. It is studied part-time over two years (40 weeks per year). Pearson BTEC Higher Nationals consist of core units, specialist units and optional level 5 units:

- Core units are mandatory
- Specialist units are designed to provide a specific occupational focus to the qualification and are aligned to Professional Body standards
- Optional level 5 units will count towards the HND if the student wishes to progress further

All units are usually 15 credits in value, or a multiple thereof. These units have been designed from a learning time perspective and are expressed in terms of Total Qualification Time (TQT).

TQT is an estimate of the total amount of time (blended learning) that could reasonably be expected for a student to demonstrate the achievement of the level of attainment necessary for the award of a qualification. TQT includes undertaking each of the activities of Guided Learning, Directed Learning and Invigilated Assessment. Each 15-credit unit approximates to a TQT of 150 hours with 60 hours of Guided Learning. Total Qualification Time (TQT) for the Higher National Certificate (HNC) = 1,200 hours.

Examples of activities which can contribute to TQT include:

- Guided Learning
- Independent and unsupervised research/learning
- Unsupervised compilation
- Unsupervised e-assessment
- Unsupervised coursework
- Watching a pre-recorded podcast or webinar
- Unsupervised work-based learning.

Guided Learning (GL) is defined as the time when a tutor is present to give specific guidance towards the learning aim being studied on a program. This definition includes lectures, tutorials and supervised study in, for example, open learning centers and learning workshops. Guided Learning includes any supervised assessment activity; this includes invigilated examination and observed assessment and observed work-based practice. Total Guided Learning (GL) Higher National Certificate (HNC) = 480 (or 600 optional) hours.

Year 1:

HNC Year 1					
Unit	Title	Credits	Level	Electrical	Mechanical
1	Engineering Design	15	4	X	X
2	Engineering Maths	15	4	X	X
3	Engineering Science	15	4	X	X
8	Mechanical Principles	15	4		X
12	Engineering Management	15	4		X
16	Instrumentation & Control	15	4	X	
19	Electrical & Electronic Principles	15	4	X	

Higher National Certificate Year 2:

HNC Year 2					
Unit	Title	Credits	Level	Electrical	Mechanical
4	Engineering Project	15	4	X	X
5	Renewables	15	4		X
13	Fundamentals of Thermodynamics & Heat Engines	15	4		X
31	Electrical Systems and Fault Finding	15	4	X	
22	Electronic Circuits and Devices	15	4	X	
Optional Additional Units for HND (Deliver in HNC Year 2)					
36	Advanced Mechanical Principles	15	5		X
49	Lean Manufacturing	15	5		X
52	Further Electrical Electronic & Digital Principles	15	5	X	
54	Further Control Systems	15	5	X	

## Higher National Diploma:

The Higher National Diploma (HND) is a Level 5 qualification made up of a further 120 credits on top of the HNC (or 90 credits if the optional level 5 subjects have been studied alongside the HNC).

It is studied part-time over one years (40 weeks per year) or two years if the optional units have not been studied. Pearson BTEC Higher Nationals consist of core units, specialist units:

- Core units are mandatory
- Specialist units are designed to provide a specific occupational focus to the qualification and are aligned to Professional Body standards

All units are usually 15 credits in value, or a multiple thereof. These units have been designed from a learning time perspective and are expressed in terms of Total Qualification Time (TQT).

TQT is an estimate of the total amount of time (blended learning) that could reasonably be expected for a student to demonstrate the achievement of the level of attainment necessary for the award of the qualification. TQT includes undertaking each of the activities of Guided Learning, Directed/blended Learning and Invigilated Assessment. Each 15-credit unit approximates to a TQT of 150 hours with 60 hours of Guided Learning. Total Qualification Time (TQT) for the Higher National Diploma (HND) = 2,400 hours (1200 hours further study on top of the HNC).

HND					
Unit	Title	Credits	Level	Electrical	Mechanical
34	Research Project	30	5	X	X
35	Professional Engineering Management	15	5	X	X
37	Virtual Engineering	15	5		X
39	Further Mathematics	15	5	X	X
44	Industrial Power, Electronics and Storage	15	5	X	
45	Industrial Systems	15	5	X	
64	Thermofluids	15	5		X

## General Engineering

General Engineering option does not include any level 5 units and can be studied either in house at HETA Hull on a part time day release basis or as part of a blended learning program. For the Blended Learning option students would be expected to study at HETA Hull for 30% of the course with the remainder of the study being independent supported by HETA resources & tutors on line.

Both are studied over 2 years (40 weeks per year).

As the general engineering option does not include any L5 units it is not possible for students to complete the HND in 1 further year, however, the units selected will allow progression onto either a 2 year HND in Electrical & Electronic or Mechanical Engineering.

Unit	Title	Year of Study
1	Engineering Design	1
2	Engineering Maths	1
3	Engineering Science	1
4	Managing a Professional Engineering Project	2
8	Mechanical Principles	2
13	Fundamentals of Thermodynamics & Heat Engines	2
16	Instrumentation & Control Systems	1
19	Electrical & Electronic Principles	2