Pearson

Higher Nationals in Applied Sciences for England: Qualification Guide

A contemporary Applied Sciences qualification with clearly defined specialist pathways, relevant scientific content and a strong emphasis on practical, technical and transferable skills that support progression into higher education and scientific careers.

FIRST TEACHING FROM SEPTEMBER 2027



HTQ approval pending

About Pearson Higher Nationals and HTQs

- Higher Nationals are practical Level 4 **(Higher National Certificate/HNC)** and Level 5 **(Higher National Diploma/ HND)** qualifications regulated by Ofqual, designed to develop the skills employers need, and allow learners to go straight into work or further study.
- Higher Technical Qualifications **(HTQs)** are Level 4 and 5 qualifications that have been approved against employer-led occupational standards. This demonstrates that the qualification has been designed to develop the knowledge, skills and behaviours relevant to particular occupations.
- The new HN in Applied Sciences for England has been designed so that all six Level 5 HND pathways can achieve HTQ status, subject to Department for Education (DfE) approval. The Level 4 HNC routes provide the scientific foundations that support progression into these specialist pathways.

Why has the qualification been redeveloped?

Applied science is an evolving sector influenced by advances in laboratory technologies, biotechnology, biomedical science, analytical science, environmental monitoring, data analysis and artificial intelligence.

Feedback from employers, sector professionals, FE and HE providers, and students has informed the qualification content, pathway structure and the knowledge, skills and behaviours learners will develop.

The redevelopment also ensures that learners continue to develop broader scientific and professional capabilities alongside their technical knowledge. The common Level 4 core includes Mathematics and Statistics for the Applied Sciences, Applied Experimental Methodology and discipline-specific laboratory techniques.

Building on this foundation, the common Level 5 core includes Personal and Professional Development for Scientists and the Applied Sciences Research Project, ensuring a consistent curriculum that develops the research and professional skills required for scientific careers and further study.

Where can the qualification lead?

The qualification supports progression into employment, continuing professional development and degree-level study.

LEVEL 4 HNC

Build operational capability

- perform laboratory and technical support activities safely
- apply scientific principles and standard operating procedures
- collect, record and interpret scientific data

LEVEL 5 HND

Develop specialist responsibility

- apply specialist knowledge to complex technical problems
- plan and evaluate scientific investigations and projects
- coordinate laboratory operations and quality processes

NEXT STEPS

Progress with a clear destination

- enter or continue in employment
- link with an appropriate professional body
- undertake continuing professional development
- progress to relevant university study

Example destinations

- Laboratory Technician
- Science Technician
- Quality Support Technician
- Research Technician
- Technician Scientist
- Laboratory Analyst

What's new?

Four Level 4 routes leading to six Level 5 pathways

The new structure provides four Level 4 HNC foundation routes:

1. General Biology
2. Applied Biology
3. Forensic Science
4. Chemistry.

These routes lead into six Level 5 HND specialist pathways:

1. General Biology
2. Biotechnology
3. Biomedical Science
4. Forensic Science
5. Chemistry
6. Environmental Chemistry.

Applied Biology provides a foundation for progression to either Biotechnology or Biomedical Science. Chemistry provides a foundation for progression to either Chemistry or Environmental Chemistry. The selected pathway appears in brackets in the qualification title.

New and expanded specialist areas

The offer includes specialist pathways covering key areas of applied science:

- **General Biology**, providing a flexible route through biological science.
- **Biomedical Science**, covering medical microbiology, pathophysiology, applied diagnostics and biomedical diagnostic techniques.
- **Environmental Chemistry**, covering green chemistry, pollution, and environmental monitoring and analysis.

This structure allows centres to provide broad scientific learning at Level 4 while offering clearer specialisation at Level 5.

What's new?

Alignment with the Technician Scientist occupational standard

All six Level 5 HND pathways are aligned to the Technician Scientist occupational standard. The Level 4 routes provide the underpinning scientific knowledge and practical skills needed before learners progress to the aligned Level 5 pathway.

The alignment supports the development of relevant laboratory, analytical, research and professional skills across the qualification.

Contemporary scientific content and a broad optional unit bank

The redeveloped qualification introduces a broad range of contemporary scientific topics that reflect current and emerging developments across the sector. Learners can explore areas such as:

- artificial intelligence in applied sciences
- bioinformatics and cheminformatics
- genomics and proteomics
- stem cell biology
- infectious disease epidemiology and control
- green chemistry
- environmental monitoring and analysis
- conservation and biodiversity
- plant biotechnology.

Combined with opportunities for work-based learning, this expanded curriculum gives centres greater flexibility to tailor programmes to learner interests, staff expertise, progression opportunities and local or regional skills priorities, while complying with the qualification's rules of combination.

What's new?

Stronger scientific foundations

The Level 4 structure develops core practical and analytical skills through pathway-relevant laboratory units, including biological / forensic / chemical laboratory protocols and techniques, mathematics and statistics, and experimental methodology.

A dedicated research project at Level 5

All HND learners complete the 30-credit **Applied Sciences Research Project**. This enables learners to plan and undertake an investigation relevant to their programme and apply scientific research skills within an extended project.

Learners also complete **Personal and Professional Development for Scientists**, supporting the development of professional practice alongside technical and research skills.

A consistent qualification structure

The HNC comprises **120 credits**, eight 15-credit Level 4 units.

The HND comprises **240 credits**, including 120 credits at Level 5. At Level 5, learners complete six 15-credit units and one 30-credit project unit.

The structure combines:

- core mandatory learning
- specialist mandatory units
- optional units.

Units that are mandatory within one specialist pathway may also be available as optional units within another pathway. For the General Biology pathway, the selected combination must not reproduce the complete rules of combination for another named pathway.

First teach



The redeveloped HN in Applied Sciences for England is available for **first teaching from September 2027**.

HN in Applied Sciences for England
Qualification structure

Rules of combination

- All Level 4 and Level 5 units are 15 credits, apart from Unit 502, which is 30 credits.
- HNC: 120 credits (8 x 15–credit Level 4 units).
- HND: 240 credits, including 120 credits at Level 5 (6 x 15 credits and 1 x 30 credits).
- Specialist Mandatory units for one pathway may be selected as Optional units for other pathways.
- General Biology unit combinations must not replicate another pathway.

KEY

Cell colour identifies the type of each unit in the pathway.

Core Mandatory | Specialist Mandatory | Optional

Level 4 – Higher National Certificate (HNC)

Unit credits	GENERAL BIOLOGY		APPLIED BIOLOGY		FORENSIC SCIENCE		CHEMISTRY	
	Unit #	Unit title	Unit #	Unit title	Unit #	Unit title	Unit #	Unit title
15	401	Fundamentals of Biological Laboratory Protocols and Techniques	401	Fundamentals of Biological Laboratory Protocols and Techniques	402	Fundamentals of Forensic Laboratory Protocols and Techniques	403	Fundamentals of Chemical Laboratory Protocols and Techniques
15	404	Mathematics and Statistics for the Applied Sciences	404	Mathematics and Statistics for the Applied Sciences	404	Mathematics and Statistics for the Applied Sciences	404	Mathematics and Statistics for the Applied Sciences
15	405	Applied Experimental Methodology (Pearson-set)	405	Applied Experimental Methodology (Pearson-set)	405	Applied Experimental Methodology (Pearson-set)	405	Applied Experimental Methodology (Pearson-set)
15	Optional unit		406	Fundamentals of Cell and Molecular Biology	407	Fundamentals of Biochemistry	411	Inorganic Chemistry
15	Optional unit		407	Fundamentals of Biochemistry	409	Fundamentals of Forensic Science	412	Organic Chemistry
15	Optional unit		408	Human Anatomy and Physiology	410	Criminal Investigation	413	Physical Chemistry
15	Optional unit		Optional unit		Optional unit		Optional unit	
15	Optional unit		Optional unit		Optional unit		Optional unit	

Level 5 – Higher National Diploma (HND)

Unit credits	GENERAL BIOLOGY		BIOTECHNOLOGY		BIOMEDICAL SCIENCE		FORENSIC SCIENCE		CHEMISTRY		ENVIRONMENTAL CHEMISTRY	
	Aligned to occupational standard: Technician Scientist		Aligned to occupational standard: Technician Scientist		Aligned to occupational standard: Technician Scientist		Aligned to occupational standard: Technician Scientist		Aligned to occupational standard: Technician Scientist		Aligned to occupational standard: Technician Scientist	
	Unit #	Unit title	Unit #	Unit title	Unit #	Unit title	Unit #	Unit title	Unit #	Unit title	Unit #	Unit title
15	501	Personal and Professional Development for Scientists	501	Personal and Professional Development for Scientists	501	Personal and Professional Development for Scientists	501	Personal and Professional Development for Scientists	501	Personal and Professional Development for Scientists	501	Personal and Professional Development for Scientists
30	502	Applied Sciences Research Project (Pearson-set)	502	Applied Sciences Research Project (Pearson-set)	502	Applied Sciences Research Project (Pearson-set)	502	Applied Sciences Research Project (Pearson-set)	502	Applied Sciences Research Project (Pearson-set)	502	Applied Sciences Research Project (Pearson-set)
15	Optional unit		503	Applied Molecular Biology	506	Medical Microbiology	509	Forensic Evidence Collection at Crime Scenes	512	Solid State and Transition Metal Chemistry	515	Green Chemistry
15	Optional unit		504	Industrial Microbiology	507	Pathophysiology and Applied Diagnostics	510	Forensic Evidence Evaluation and Reporting	513	Aromatic and Carbonyl Compounds	516	Sources, Impact and Control of Pollution
15	Optional unit		505	Ethics and Biotechnology	508	Diagnostics for the Biomedical Sciences	511	Applied Forensic Science	514	Spectroscopy, Surface Chemistry and Equilibria	517	Environmental Monitoring and Analysis
15	Optional unit		Optional unit		Optional unit		Optional unit		Optional unit		Optional unit	
15	Optional unit		Optional unit		Optional unit		Optional unit		Optional unit		Optional unit	

L4 OPTIONAL UNITS

Unit #	Unit title	Unit #	Unit title	Unit #	Unit title
414	Introduction to Chemistry	418	Managing Environmental Resources	422	Forensic Anthropology and Pathology
415	Managing Scientific Projects	419	Bioinformatics	423	Analytical Chemistry
416	Work-based Learning	420	Cheminformatics	424	Artificial Intelligence in Applied Science
417	Principles of Ecology	421	Volume Crime Scene Science		

L5 OPTIONAL UNITS

Unit #	Unit title	Unit #	Unit title	Unit #	Unit title	Unit #	Unit title
518	Calculus for the Applied Sciences	522	Histology and Haematology	526	Further Analytical Chemistry	530	Plant Biotechnology
519	Science Laboratory Management	523	Principles of Pharmacology	527	Clinical Chemistry	531	Soil Science and Geochemical Processes
520	Stem Cell Biology	524	Immunology	528	Manage Forensic Investigations at Scenes		
521	Infectious Disease Epidemiology and Control	525	Genomics and Proteomics	529	Conservation and Biodiversity		

The HN in Applied Sciences for England is approved as a Higher Technical Qualification (HTQ) at Level 5 only.

Scan or select the QR code to visit the qualification page.

Lifelong Learning Entitlement

Launching in academic year 2026/27 for courses starting on or after 1 January 2027, the Lifelong Learning Entitlement will transform the student finance system.

Find out more

