

# BENG HONOURS NUCLEAR SCIENCE, OPERATIONS AND TECHNOLOGY (TOP-UP)

## Institute of Engineering, Computing and Advanced Manufacturing

<b>Academic Level:</b>	6	<b>Credits:</b>	120
<b>UCAS Code:</b>	N/A		
<b>Awarding Body:</b>	University of Cumbria		
<b>Delivered by:</b>	Lakes College West Cumbria		
<b>Delivery Site:</b>	Lakes College West Cumbria		
<b>Programme Length:</b>	PT (2 years)		
<b>Mode of Delivery:</b>	Face-to-face and work-integrated		
<b>Pattern of Delivery:</b>	Part-Time		
	Total weeks of study:	60 weeks	
	Delivery pattern:	4 x 15-week semesters	
	Standard semester dates:	No	
<b>PSRB:</b>	Institute of Civil Engineers (IET), Society of Operations Engineers (SOE) Upon completion of the degree, you will have met the academic requirements for partial IEng status.		
	Date of accreditation: TBC	Accreditation period: TBC	
<b>Programme Webpage:</b>	TBC		

### Entry Criteria

Government funding rules require that an apprentice must have the right to live and work in the UK, must be in employment, paid at least the legal minimum wage and have a written and signed agreement for the apprenticeship with your employer. The minimum duration periods for an apprenticeship set in each Apprenticeship Standard is based on an apprentice working a minimum of 30 hours per week. Where the apprentice works fewer than 30 hours, the minimum duration of the apprenticeship must be increased on a pro-rata basis.

Funding for the apprenticeship is provided through the Employment and Skills Funding Agency (ESFA) and is paid in the following way:

- Levy paying employers with sufficient funds in your digital account – 100% funding
- Non Levy payers -90% ESFA funding, 10% Employer co-funding. Non-levy paying companies will be asked to pay your 10% of the full cost of the apprenticeship at the start of the programme.

All Degree Apprentices must be interviewed, assessed and offered a position by an employer before being admitted to the degree. Although the College may receive direct applications and filter these applications before passing them to prospective employers, some apprentices may apply directly to an employer. Either way, after acceptance by an employer, the College will require a formal application, which it will assess according to the programme entry criteria:

### Selection criteria

The entry requirements are aligned to the University of Cumbria's admissions criteria. For APL, please refer to the University website. Each candidate for APL will be advised how that may affect ESFA funding (for further information, see the University website).

All students will be interviewed to assess your suitability for the course. Entry requires as a minimum 240 credits which must include 120 credits at level 5. Direct entrance can be achieved with a Foundation Degree Mechanical Engineering, a Foundation Degree in Plant Engineering (Mechanical pathway) or a HND Mechanical Engineering. Entry to the course can be via a Foundation Degree without a mapped profile if a course of bridging studies over a period of 1 semester is undertaken.

An ideal entry will be a Foundation Degree at Merit level with level 5 content including Engineering (Mechanical modules) and Mathematics

### Exit from employment

If an apprentice is made redundant during your apprenticeship through no fault of your own, then the employer and College have a legal duty to help the apprentice try to find alternative employment.

If the redundancy is within six months of the planned completion date of the apprenticeship, then ESFA will fund 100% of the remaining agreed cost, even if the apprentice cannot find another employer.

If the redundancy is over six months from the planned end date, the ESFA will fund the remaining agreed cost for 12 weeks to allow the apprentice to find alternative employment. Where a new employer cannot be found the apprentice will be recorded as having left the programme

For APL, please refer to the University website.

## PROGRAMME AIMS AND OUTCOMES

### Programme Aims

By the end of this programme you will be able to:

1. Assimilate a coherent body of knowledge appropriate to operations and application of technology within the nuclear industry and assessment management using a range of learning strategies
2. Work in a professional and ethical manner as described with the Engineering Council's Accreditation of Higher Education Programmes (AHEP4), in line with the UK Standard for Professional Engineering Competence (UK-SPEC).
3. Encourages innovation and the development of original concepts to the solution of complex problems that can be found within nuclear plant and processes
4. Encourage and develop observation, reasoning, reflection and analytical thinking powers to enable the embedding of professional nuclear work ready behaviours as identified by the Nuclear Institutes Nuclear Delta.
5. Apply complex nuclear processes, procedures and technology to solve real work scenarios
6. Utilise nuclear plant based technical systems, management techniques and innovative design solutions within nuclear power generation, nuclear clean up or nuclear plant operations
7. Apply and review technical knowledge and skills that will prepare you to be work ready and practice as a professional nuclear engineer
8. Work and/or lead a nuclear based team effectively during nuclear operations and the application of nuclear technology

### Programme Outcomes – Knowledge and Understanding

The programme provides opportunities for you to develop and demonstrate the following:

- K1. Knowledge of complex nuclear scientific principles underpinning relevant technologies used within a nuclear plant, and your ability to apply such knowledge to evolve as a nuclear operations technologist
- K2. Ability to analyse and apply a range of mathematical methods to solve nuclear engineering problems
- K3. Knowledge to enable the application and design of innovative solutions within the nuclear industry such as clean up, reactor/plant operations and process technology, relating to real nuclear scenario scenarios
- K5. Ability to analyse, review and model nuclear technology systems in order to bring about continuous improvement to plant and system performance
- K6. Ability to adapt and develop computer software applications to solve nuclear problems
- K7. Ability to apply and develop a systems approach to solving nuclear engineering problems through know-how of the application of the relevant technologies

K8. Analytical thinking skills to undertake a design process when determining solutions according to customer and user needs

K9. Ability to develop unique design solutions to meet given nuclear plant operations specifications whilst following a nuclear design lifecycle standard

K10. Ability to analyse, critically appraise and apply the results of research and information gathering to evaluate and to propose solutions to nuclear based problems

K11. Interact, support and manage relationships with relevant stakeholders whilst applying commercial and business acumen, business improvement, project management techniques relevant to the nuclear industry

### **Programme Outcomes – Skills and other Attributes**

The programme provides opportunities for you to develop and demonstrate the following:

S1. Ability to review, appraise, select and use relevant equipment, tools, processes, or products relating to nuclear plant-based operations

S2. Analytical practice and development within a radiological laboratory and nuclear work-based environment

S3. Ability to analyse and review information from technical literature and other sources to support project and professional activities

S4. Ability to demonstrate professional behaviours and codes of conduct and utilise industry standards relevant to nuclear operations as described within the Engineering Council UK SPEC and Nuclear Institute Delta

S5. Ability to analyse, record and draw conclusions from data and experimental evidence and manage the presentation of findings.

S6. An ability to analyse and apply complex theoretical concepts of science and technology to nuclear plant-based scenarios

S7. Creativity and innovation within nuclear engineering to solve unique and complex problems using practical and theoretical approaches

S8. Ability to manage the successful outcome of industrial nuclear projects.

S9. A logical approach to implementing methods of determining the root cause of problems and demonstrating knowledge of learning from experience (LFE) processes.

S10. Manage quality processes and procedures to ensure continuous improvement

S11. A professional approach to developing and writing technical reports that meet business requirements including the optimisation and continuous improvement of processes and services.

S12. Ability to analyse and apply the results of research and information gathering to evaluate and to propose solutions to a particular application.

## PROGRAMME FEATURES

### Programme Overview

Degree Apprenticeships combine academic study and workplace learning to enable apprentices to gain a full bachelor's degree. This provision of an academic undergraduate degree is integrated with experience, practice and further learning in the workplace. The minimum duration of an apprenticeship is set in each Apprenticeship Standard and is based on a minimum 30 hour week. Where an apprentice works fewer than 30 hours, the apprenticeship minimum duration must be increased on a pro-rata basis. It is a legal requirement that the apprentice does not pay any training costs or you fees. Degree Apprenticeships are co-designed by employers ensuring that apprentices are equipped with the skills employers need and for your own future career (Source: The Future Growth of Degree Apprenticeships, Universities UK, March 2016)

The Standard and Assessment Plan for the Degree Apprenticeship in Nuclear Scientist and Nuclear Engineer have been designed by employers in the sector.

A Degree Apprenticeship programme integrates the provision of undergraduate degree level academic knowledge, understanding and skills with the opportunity to contextualise this provision in the workplace and thus to develop occupation competency at a professional level in specific job roles.

The programme has been designed to meet the employer-led national Standard and to follow the associated Assessment Plan, as well as being referenced to the QAA Subject Benchmarking Statement for Engineering (2019) and other academic standards. Apprentices, who are in permanent full-time professional employment, are also learning in the workplace in a structured delivery pattern, supported by both the College and the employer. In addition, the programme has been developed with the assistance of a range of local employers to ensure it meets the needs of the region.

This programme is part of a suite of degrees which have been developed to meet the need for Nuclear Engineers and Scientists as identified within the Governments Nuclear skills Strategy Document and sanctioned by the National Curriculum and Qualification Advisory Group for Nuclear (CQAG). The need for Nuclear Engineers and Scientists is now an urgent requirement particular within the new nuclear infrastructure projects across the country which include new build nuclear power, decommissioning and waste management and the development of small scale modular reactors.

The programme has been designed to provide a progression pathway from a Foundation Degree in with a heavy nuclear content that has a significant amount of level 5 content associated with Nuclear Science, Nuclear Plant, Thermodynamics, engineering science (Electrical and Mechanical) and mathematics. The programme also provides a unique learning experience and delivery will occur within both the National College for Nuclear – Northern Hub building and the Energus facility. The course delivery model will make significant use of experiential learning and delivery methods which can be defined as 'learning from doing'. Considerable use will be made of the project/technology centre supported by a virtual reality suite which will provide your with a real time immersed experience of nuclear environments. These systems include industrial radiological

equipment, pumps and turbines, materials testing machines and simulated radiological environments.

The course will be delivered on a day release basis which will provide an opportunity to undertake enhanced practical activities supporting technical theoretical delivery methods and embedding theoretical knowledge through experience, observation and reflection.

The course also consists of a professional development module and an industrial-based dissertation. These modules provide an opportunity to further embed experiential learning within an industrial environment but also to provide a synergetic approach to an integrated degree apprenticeship. For PT students this work will take place within the normal place of work and for PT students project work will be selected to provide opportunities to experience a number of industrial case studies.

The Honours Degree in Nuclear Science, Operations and Technology has been designed to provide opportunities to enter work as a Nuclear Engineer and Nuclear Scientist who has the attributes to make decisions to design and improve nuclear facility performance and in addition, covers the knowledge-based requirement of the level 6 Degree Apprenticeship Nuclear Scientist and Nuclear Engineer Standard.

## Learning and Teaching

The ethos of this programme is to prepare and enhance your ability to work within the industry in terms of knowledge, skills and behaviours. The course has therefore been designed to fit with this strategy and has been structured to provide a natural means of embedding 'Experiential Learning' where appropriate into the curriculum in terms of content, delivery, and assessment.

The programme of teaching and learning is designed to enable you to demonstrate the attainment of the stated learning outcomes of the programme and assessment strategies are as such matched to these outcomes. The you will be supported in a progressive acquisition of subject knowledge and skills, gradually advancing towards more independent learning whilst developing a reflective approach to personal progress.

Elements of experiential learning will support you in applying your knowledge and conceptual understanding to real-world problems or situations where the lecturer directs and facilitates learning. Classroom, laboratory and virtual reality facilities will serve as a setting for embedding activities such as case and problem-based studies, guided inquiry, simulations, experiments and projects.

The your will be given opportunities to learn in authentic situations which will make learning becomes more powerful.

By engaging in formal, guided, authentic, real-world experiences the programme will enable you to:

- deepen your knowledge through acting and then reflecting on this action
- develop skills through practical application and reflection
- support the construction of new understandings when placed in novel situations
- extend your learning as they bring your learning back to the academic classroom environment

You will be provided with opportunities for practice and feedback, this process of practice and feedback provides a link to 'learn from experience' which is an important behavioural requirement of the nuclear industry. The programme will provide an integration of:

- Knowledge – the concepts, facts, and information acquired through formal learning and past experience
- Activities – the application of knowledge to “real work” scenarios where appropriate and the synergetic integration of work-based activities with academic studies
- Reflection—the analysis and synthesis of knowledge and activity to create new knowledge  
Content and assessment will provide you with experiences that are carefully chosen for your learning potential (i.e. whether they provide opportunities for you to practice and deepen emergent skills, encounter novel and unpredictable situations that support new learning, or learn from natural consequences, mistakes, and successes).

Throughout the programme, you will be actively engaged in posing questions, investigating, experimenting, being curious, solving problems, assuming responsibility, being creative, and constructing meaning, and is challenged to take initiative, make decisions and be accountable for results.

The programme will provide opportunities for reflection on learning during and after experiences and this will be an integral component of the learning outcomes. This approach will lead you to be able to analyse, apply critical thinking, and synthesise.

The programme will engage the your intellectually, emotionally and/or physically, which produces a perception that the learning taking place is authentic.

The programme will promote real work-type relationships and will promote communications between your and peers, management and other stakeholders.

The programme will have an embedded culture of safety.

The Lakes Colleges West Cumbria Teaching, Learning and Assessment Strategy has been developed in line with the University's Learning, Teaching and Assessment Strategy 2024-27.

College-based learning is the predominant experience with attendance at all scheduled sessions seen as imperative to your progression. This is further enhanced using 'virtual learning environments' (VLE) for example Moodle where each module studied has a designated Canvas site providing not only standard lecture and practical material but supplementary reading, virtual exercises and the capacity for online forums. The utilisation of VLE allows for flexibility in learning whereby materials may be accessed at an individual's convenience on-site or via remote access.

In addition to the experiential experience previously discussed, a variety of other learning and teaching methods will be used to both reflect the variety of learning styles that inevitably exist within a group and ensure the acquisition and development of appropriate concepts, knowledge and skills. This will enable your to experience teaching methods best suited to your own preferred learning style. As previously identified, work readiness is key to this programme and enhancing employability is a core theme throughout the programme. Therefore the learning and teaching methods are designed to support the move to autonomy and independent learning. You are expected and encouraged to be reflective in your learning and as such the strategies adopted focus on deep and experiential learning and typically include:

## Lectures

laboratory classes and virtual reality experiences

individual and group tutorials

the utilisation of case studies

seminars and workshops

directed and independent study involving electronic resources (VLE), textbooks and other self-study materials

problem-based learning

training and practice in the use of IT and software packages

project work, both individually and in teams

reading and interpreting research publications

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## **Independent Learning**

When not attending scheduled learning activities you will be expected to continue learning independently through self-study.

## **Teaching Staff**

At present, the expertise within the Lakes College West Cumbria Higher Engineering, Science and Nuclear can be found within:

- Control Engineering, Instrumentation and Electrical Power Systems
- Robotics
- Radiological Science and Nuclear Decommissioning
- Electrical Design and Embedded Systems
- Nuclear Plant and Operations
- Mechanical Engineering and Design
- Nuclear Physics
- 3D Modelling and CAD
- Civil Engineering Structures and Modelling
- Building Asset Management

The Team has many years of industrial experience, particularly in the nuclear industry. The delivery team will also be supported by keynote lectures from existing industrial experts providing further vocational context.

The delivery team are also regularly involved in scholarly activity relating to nuclear project developments, which are supported by regular development meetings with industrial practitioners. These meetings enable essential industrial development knowledge and case studies to be presented during the delivery of the courses.



Some members of the team have been actively involved with the nuclear industry in terms of consultation and implementation projects. These include:

- Commissioning of a Nuclear Plant (industrial project)
- Decommissioning of building and Processes
- Commissioning an IPES and reverse engineering of control software (implementation)
- Petrochemical Plant Control Systems (Consultation)
- Designing a centralised DCS control room within a petrochemical plant (consultation)
- Maximising efficiency of a Food Manufacturing Plant Control System (Consultation)
- Managing the Inventory of spent fuel (advisory)
- Commissioning electrical drive systems within a nuclear plant (advisory)

## Assessment

### Assessment Strategy

The assessment strategy has been developed to be in line with the University's Learning, Teaching and Assessment Strategy 2024-27.

The main drivers of this strategy are to:

- provide innovative, challenging and stimulating assessment which will enable you to develop the knowledge and professional skills required for employment.
- be you-centred, flexible and modern in both content and approach.
- be fully supported by, and integrated with technological approaches such as the Canvas virtual learning environment (VLE).
- impart academic rigour to the teaching and learning processes.
- support the development of independence, autonomy and self-reflection.
- support your' needs at different stages of development.

Within a balanced scheme, assessment methods will include:

- unseen examinations
- laboratory work and reports
- Dissertation
- Demonstration of Continuous Professional Development (Portfolio)
- computer-based assessments
- problem solving exercises (both of a practical and written format)
- analyse case studies to demonstrate knowledge and understanding
- oral, audio-visual and poster presentations
- group work

Formative assessment is also used extensively throughout the programme. Whilst elements of assessment will test knowledge and ability, the emphasis is on a more developmental approach to building the knowledge and skills utilised within employment. Formative assessment will involve the you being actively engaged in the assessment to encourage them to think about the learning

process, to develop an ability to learn independently and to develop employability skills. It will also be used to evaluate teaching.

Personal development and reflective practice will take place throughout the programme and will be implemented through the wide range of activities (both formative and summative) as well as via the interaction with the Apprenticeship Training and Development Coach.

An important aspect of this higher education programme is the development of the you's independence and ability to learn from experience (LFE), which is a key behavioural requirement of the nuclear industry. These skills will be developed through research/dissertation, investigative practical work and portfolio building with reflective analysis. This reflective analysis and associated experiences will also develop critical thinking thought processes with some assessments requiring your to summarise your work with a critical review of your experience

Overview of the methods of assessment used on the programme within each year of study.

#### Year 1

Unseen examinations

Radiological experiments, Industrial Plant Laboratory

Team exercises

#### Year 2

Poster and Presentation

Dissertation Report

VIVA and Presentation

#### **Feedback**

Verbal and/or written feedback will be provided to your within 20 working days of the assessment hand in deadline. This feedback will be designed to provide opportunities for you reflection and improvement. All assessments will be in line with the University of Cumbria Academic guidelines.

#### **End Point Assessment**

- As per the Assessment Plan for the Level 6 Nuclear Engineer/Scientist Apprenticeship (**ST0289/AP02**), the End Point Assessment (EPA) will be in three stages:
- Stage 1
- A Portfolio of evidence is produced by the Apprentice (over the course of the two years), which demonstrates the Apprentice's ability to meet the requirements of the broad range of knowledge, skills and behaviours set out in the Apprenticeship standard. The Apprentice will submit the Portfolio prior to a presentation and structured interview.
- Stage 2
- Industrial Based Dissertation – Dissertation and Viva
- The Apprentice will have completed a major industrial based dissertation and will have compiled an extensive Technical Report (Dissertation). This will be handed in to the Delivery team to be assessed as part of the Industrial Based Dissertation Module. A copy will also be sent to the Independent Assessor, who will be assessing the Apprentices

against the Level 6 Apprenticeship standards. This gives the Independent Assessor a chance to read the project report prior to the Viva.

- The Viva will be a presentation delivered by the Apprentice to the degree delivery team as part of the Industrial Project – Dissertation Module. The Independent Assessor will also attend the Viva and will be given the opportunity to ask some pertinent questions. By attending the Viva, it gives the Apprentice and the Independent Assessor a chance to meet prior to the interview (stage 3) and gives the Independent Assessor a chance to hear first-hand how the Project was delivered.
- Stage 3
- An interview, consisting of a structured discussion supported by the Portfolio of evidence, the Dissertation and notes from the Viva. The result of the interview will be a Pass or Fail. This means that the Apprentice has either fully met the requirements of the Level 6 standards or they have not met the requirements to an acceptable standard. If the Apprentice fails the interview, they will need to re-submit their Portfolio of evidence as per the advice from the University of Cumbria.
- **Portfolio of Evidence**
- The Portfolio is a key component of the EPA and therefore is essential in enabling the Apprentice to demonstrate the achievement of the competencies identified in Competency tables 4 and 5. A guidance document based on a clearly defined structure of the Portfolio will be given to the Apprentices as an advice document by the University of Cumbria.
- The Portfolio will be a series of ordered and critical accounts of the achievement of the technical competencies identified in tables 4 and 5.
- The Portfolio must demonstrate the Apprentice's knowledge and experience and how this achieves the requirements of the Level 6 standards.
- It is envisaged that the Apprentices will write a technical report for each of the competencies and the 27 reports will then form their Portfolio as well as their Dissertation.
- **Dissertation + Viva**
- The Dissertation will be compiled by the Apprentice as per the Module Descriptor. This will be handed in as per the assessment hand in dates supplied by the degree delivery team. The Learning Outcomes of the Industrial Project – Dissertation Module have been written to incorporate the Level 6 standards. This means that whilst completing this module, they are also generating evidence for their Portfolio. The Independent Assessor will receive a copy when the Apprentices hand in their completed Dissertation to the Degree delivery team. This will give them time to read through the Dissertation and prepare themselves for the Viva.
- The Viva will be pre-organised between the Apprentices and the Degree delivery team. The Viva will be no longer than 20 minutes, followed by a question and answer session with the attendees. The Viva provides the Apprentice with an opportunity to elaborate on key points but also provides the Apprentice the opportunity to demonstrate further knowledge and skills for clearly defined competencies.
- The presentation will form part of the overall mark allocated to the Module. The Apprentices will be informed prior to the presentation that questions from the presentation may be taken forward to the interview by the Independent Assessor for clarification.
- **Interview**
- The interview panel will consist of the designated independent end point assessor and an independent technical expert provided by the employer. A guidance document will be given to the Apprentice detailing the purpose and structure of the interview by the University of Cumbria. The interview will provide the Apprentice with an opportunity to demonstrate evidence of competence against the competencies identified within the Competency tables 4 and 5.

- The purpose of the interview is to confirm that the Apprentice has demonstrated the requirements of all of the Competencies as identified in tables 4 and 5 and thus will be identified as being competent.
- The panel will use elements of the Portfolio, Dissertation and the Viva as an agenda for the interview and will encourage the Apprentice to talk about their experience, drawing out evidence of competence during the discussion.
- The outcome of the interview will either be a Pass or a Fail. The outcome will be deemed a fail if the interview panel do not think the Apprentice has provided enough evidence to prove their competence. If the outcome is a fail, then the panel will give the Apprentice detailed feedback with regards to the Competencies that they feel needs more/improved evidence. The Apprentice will then have a set period of time (time will be dependent on the number of omissions) to collate extra evidence and make changes to the relevant areas of their Portfolio. These amendments will then be resubmitted to the Independent Assessor and the Apprentice will be invited to another Interview to clarify the change

## Graduate Prospects

The programme addresses the immediate demand for Engineers in key skill shortage areas as identified within the Government Nuclear Skills Strategy paper. Technical skills at levels 4 to 6 are in short supply with a particular emphasis within the paper identifying a requirement for:

Nuclear Operations Engineers and Technicians

Decommissioning and Waste Management Specialists

Nuclear Energy Generation Engineers and Technicians

Nuclear Clean-up Specialists with a variety of discipline backgrounds

The programme also addresses some of the technical skill requirements for current nuclear projects within the commissioning of new plants and technology to enable new and advanced decommissioning and infrastructure activities to take place whilst also dealing with legacy and future waste considerations. All of these projects require infrastructure development and operational research including general mechanical design work. Sellafield Sites Limited operates a very large facility within West Cumbria which includes a number of legacy facilities which require asset managed to ensure compliance to the NNI.

Decommissioning and waste management and Infrastructure development is key within the current strategy of the NDA and underpinning these areas are innovative scientific solutions at all levels. An additional theme is the need for safe working environments and sustainability through the continuous monitoring and evaluation of hazardous environments and safety cases. This programme supports the sustainability of recruitment within the nuclear industry, particularly managing the requirement for staff who will have relevant Level 6 qualifications.

Therefore, there are upskilling opportunities for employers and the scope for graduates to register with the Engineering Council and enhance your career opportunities both within your existing employment or for full time your to gain sustainable and well paid employment.

This course of academic and work based elements has been designed to provide individuals who require higher education qualifications with an opportunity to study locally and also gain credit for real work activities.



## MODULES

Year 1			
Code	Title	Credits	Status
NUCL6000	Professional Development	20	Core
NUCL6018	Nuclear Fuels and Irradiated Materials	20	Option
NUCL6025	Quality Management	20	Option
NUCL6026	Radiological Measurement and Safety Case Development	20	Option
NUCL6001	Radioactive Waste Storage and Environmental Impact	20	Compulsory
NUCL6021	Nuclear Plant Operations and Technology	20	Compulsory

Year 2			
Code	Title	Credits	Status
NUCL6013	Industrial Based Dissertation	40	Core
<b>Students exiting at this point with 120 credits would receive a BEng Nuclear Science, Operations and Technology</b>			

Key to Module Statuses	
Core modules	Must be taken and must be successfully passed.
Compulsory modules	Must be taken although it may possible to compensate as a marginal fail (within the limits set out in the Academic Regulations and provided that all core or pass/fail elements of module assessment have been passed). For professional registration purposes, a maximum of 30 credits of compensation across all levels is allowed but with a maximum of 10 credits at level 6.
Optional modules	Are a set of modules from which you will be required to choose a set number to study. Once

	chosen, it may possible to compensate as a marginal fail (within the limits set out in the Academic Regulations and provided that all core or pass/fail elements of module assessment have been passed).
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## Timetables

Two-year programme based on four semesters. Each year will be timetabled with eight block weeks, starting in January.

Each year block delivery will include:

February – Block 1

March – Block 2

April – Block 3

May – Block 4

Sept – Block 5

October – Block 6

November – Block 7

December – Block 8

## ADDITIONAL INFORMATION

### Student Support

#### Learning Resource Centre (LRC) and Student Services

Library and You Services (LRC) offer a wide range of support, including access to library learning resources, academic skills, careers and employability, financial help, counselling, health and wellbeing and support for disabled students and those with specific learning requirements. We know that you want to get the most out of your programme, make the best use of your time and find or continue in the career you always dreamed of.

Module leaders will collaborate with LRC advisers to ensure that your reading lists are current, and items are available via the library collections. To maximise access, availability and usefulness, eBooks and electronic journal titles will, in most cases, be prioritised. Where appropriate, module reading lists will be made available to you electronically using the College's Moodle pages.

#### Course Representatives

Course representatives are invited to attend Staff/You Liaison Meetings and other similar meetings to discuss any issues of concern in order to improve the quality of the teaching and to enhance your learning experience. One course representative from all the HE courses can be elected as a you governor on the governing body of the College.

#### Employability

Lakes College aims to deliver accessible, flexible and quality-assured programmes that provide academic inspiration and challenge, and support excellence. The courses are designed with a strong vocational focus and emphasis is given to the development of core professional and transferable skills to enhance employability.

As such, a wide range of transferable skills are covered. These include:

Communication

Group work

Problem-solving

Use of information technology

#### If studying as a degree apprentice (Apprentice Training & Development Coach)

You will be allocated an Apprentice Training & Development Coach (ATDC) who will provide pastoral guidance both directly or and in liaison with subject tutors, the course leader or through study support. The Coach will also supply you with additional documents that will include:

- Apprenticeship Handbook
- Tables of Apprenticeship Competences

The ATDC will arrange interviews/tutorials at certain times through the year to discuss your progress on the programme or concerns about the course in general. The aim of the session is to



identify any underlying reasons for the concerns, discuss possible solutions and agree how progress can be facilitated. It is intended to be a positive and structured forum for any concerns to be discussed and resolutions identified.

At your workplace, you will be supported by your employer. Exact arrangements and terminology are the responsibility of the employer, but typically, you will be supported as follows, where the roles may be combined in one person.

A Mentor designated by the employer to provide vocational and pastoral support for an individual student, who may or may not be your line manager. Support will be provided for work-based learning assignments, portfolios and the final year project.

An Employer Apprenticeship Liaison Manager who manages the relationship between the programme (via the College Liaison Tutor) and the employer

The College and the employer are bound by contract to work together to support you as an apprentice. This will include quarterly meetings between the College, you, and the employer.

The Level 6 standard has been designed to take up to a maximum of 60 months to complete (5 years). There are three possible methodologies of delivering these two standards:

The first is registering the Apprentices on to the Level 6 Degree Apprenticeship in Year 1. This means that the Apprentices will have to complete the full 5 years and will not be able to stop at the end of the Foundation Degree.

The second is the 3+2 method. This method requires the Apprentices to be registered onto the Level 5 Apprenticeship when they start your Foundation Degree. Once they have passed the Foundation Degree and have passed the Level 5 Apprenticeship (3 years), they will then, if they wish, progress on to the Level 6 Apprenticeship and the Bachelor's Degree (2 years). This enables the Apprentices to make the choice at the end of your Foundation Degree, whether or not they would like to continue with the Bachelor's Degree.

The third is method is for Apprentices that have met the entry requirements to access the Bachelor's Degree directly. They will be registered on to the Level 6 Apprenticeship and will have 2 years to complete their Apprenticeship.

The methods that we will be employing at Lakes College are the second and third methodologies. The assessment methodology for both of these standards is laid out below.

#### Additional Support for Your Transferring from an Academic Programme to the Degree Apprenticeship

A gap analysis will be undertaken for your transferring directly from an academic programme in to the degree apprenticeship level 6 standard. This analysis will determine the contents of a development plan to ensure that you are given the work-based or work-simulated opportunities to generate evidence mapped to the identified competence gaps. The Academic Lead for Level 5 and 6 Apprenticeships will meet with you and your new employer on a monthly basis (as an addition to the normal review process) to update the development plan and make adjustments as and if required.

#### You Support Between Block Release

Between delivery, you will have access to a range of additional support mechanisms which will include:

Access to a virtual learning environment (CANVAS) with supporting learning materials for each module which will include; case study materials, practice examples, interactive tests, discussion board and direct access to the module tutor via an online share point.

Access to the lakes College Learning Resource Centre which is open till 9.30 pm (Monday to Thursday) and the specialist HE Section for quiet study within the LRC.

Drop in seminar sessions within the National College for Nuclear facility

Drop in support sessions

An employer mentoring system will be supported where appropriate

Each you will have direct access on a daily basis to the Academic Lead for level 5 and 6 apprenticeships

## Course Costs

### Tuition Fees

Course fees can be found *insert link*

The following course-related costs are included in the fees:

- Include any course-related costs that are included in the fees i.e. visits to museums, use of equipment etc...

### Additional Costs

The following course-related costs are not included in the fees:

- Include any course-related costs that are not included in the fees i.e. optional field trips, required equipment etc... and your approximate cost

## Exceptions to the Academic Regulations

This programme operates in accordance with the University's Academic Regulations and Academic Procedures and Processes with the following permitted exceptions due to the requirements of the Engineering Council. The dissertation pass mark will be 50% and for engineering registration a maximum of 20 credits will be allowed for compensation across all levels of 4, 5 and 6 (inclusive of a level 5 entry qualification) but with a maximum of 10 credits at level 6..

## External and Internal Benchmarks

QAA Benchmark statements for Engineering (March 2023): Link Subject Benchmark Statement: Engineering (qaa.ac.uk)

Engineering Council's Accreditation of Higher Education Programmes (AHEP4) in engineering, in line with the UK Standard for Professional Engineering Competence (UK-SPEC) – Competence Matrix for IEng – link Engineering Council ([engc.org.uk](http://engc.org.uk))

Institution of Civil Engineers (Compulsory Themes for Accreditation)

National College for Nuclear – Course Structure Guidance

Nuclear Institute and Nuclear Delta: Link Nuclear Delta ([nuclearinst.com](http://nuclearinst.com))

### **Disclaimer**

This programme has been approved (validated) by the University of Cumbria as suitable for a range of delivery modes, delivery patterns, and delivery sites. This level of potential flexibility does not reflect a commitment on behalf of the University or Lakes College to offer the programme by all modes/patterns and at all locations in every academic cycle. The details of the programme offered for a particular intake year will be as detailed on the programme webpage.