

## PROGRAMME SPECIFICATION

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### Award titles

**Programme Title(s)**

Higher National Certificate in Civil Engineering

**Programme to be included in Graduation Ceremonies**

Yes

### Delivery period

Sept 2018-Sept 2022

### Intake points

September

### Regulatory details

<b>Regulatory details</b>
<b>Awarding body</b>
Glyndŵr University
<b>Programme delivered by</b>
Glyndŵr University
<b>Location of delivery</b>
Plas Coch Campus
<b>Faculty/Department</b>
Faculty of Arts, Science and Technology Built Environment Department
<b>Exit awards available</b>
None
<b>Professional, Statutory or Regulatory Body (PSRB) accreditation</b>
N/A
<b>Please add details of any conditions that may affect accreditation (e.g. is it dependent on choices made by a student?) e.g. <i>completion of placement</i>.</b>
N/A
<b>HECoS codes</b>
100148
<b>UCAS code</b>
N/A
<b>Relevant QAA subject benchmark statement/s</b>
Land, Construction, Real Estate and Surveying (October 2016) Architectural Technology (October 2014)
<b>Mode of study</b>
Part time
<b>Normal length of study for each mode of study</b>
Typically one year part-time, though extended synchronous and asynchronous delivery and attendance on site for bespoke requirements of practical sessions and tutorials
<b>Language of study</b>
English
<b>Transitional arrangements for re-validated provision if applicable</b>

<b>Regulatory details</b>
N/A
<b>The following University Award Regulations apply to this programme</b> ( <i>highlight the appropriate ones and delete the others</i> )
General Regulations and Definitions Regulations for BTEC Higher National Qualifications

<b>OFFICE USE ONLY</b>	
Date of validation event:	23 May 2018
Date of approval by Academic Board:	15 August 2018
Approved Validation Period:	5 years from Sept 2018
Transitional arrangements approved (if revalidation)	N/A
Date and type of revision:	01 November 2018 <i>HNC Civil Engineering only-Replace AURH463 with AURH447 with effect from Oct 2019</i> 17 Feb 2021 <i>HNC in Building Studies and HNC in Building Services were approved to be withdrawn</i> 13 Apr 2021 <i>Programme modification approved for HNC Civil Engineering: replacing AURH447 Maths with ENG495 Analytical Engineering Techniques, replacing AURH462 Science and Materials with AUR409 Science and Materials, updating AURH405 to AUR416 Site Surveying</i>

## 1.Criteria for admission to the programme

Requirements and admission procedures are in accordance with University policy and regulations for Higher National Certificate qualifications. Standard entry criteria to the proposed HNC programmes is conditional upon candidates having gained pre-requisite qualifications as follows:

- GCSEs in mathematics and English or Welsh at grade 'c' or above, and
- one grade E pass at 'A' Level, or
- a BTEC National Diploma or Certificate, or
- 80-120 UCAS tariff points, or
- membership of a professional body at a level deemed appropriate by the programme team.

Potential students from the European Union may be admitted to Higher National Certificate programmes having achieved:

the *International Baccalaureate* (IB) with a minimum of 28 points overall, with any required subjects studied at Higher Level, or

the *European Baccalaureate* (EB) with an overall mark of 75%, with a minimum of 7.5 in any required subjects.

International candidates will be admitted to the programme through demonstrable equivalence of the above criteria against the published advice and guidance of the *National Academic Recognition and Information Centre* (NARIC).

In addition to the academic entry requirements specified, all applicants whose first language is not English or Welsh must demonstrate proficiency in the use of English by evidencing successful completion of a *UKVI Approved Secure English Language Test* (SELT) achieving an overall score of 6, with no component below 5.5.

Where programme delivery is provided by a collaborative partner organisation, that organisation shall be responsible for admitting students to Higher National Certificate programmes in accordance with the criteria identified above.

## **2. Record of Prior (Experiential) learning**

Applicants may enter the programme at various levels with Recognition of Prior Learning (RPL) or Recognition of Prior Experiential learning (RPEL) in accordance with the University General Regulations. Any programme specific restrictions are outlined below.

## **3. DBS Requirements**

N/A

## **4. Suitability for Practice Procedure**

N/A

## **5. Aims of the programme**

The Higher National Certificate is established as the principal higher technical award within construction and civil engineering, and aims to provide technical staff with a qualification that demonstrates a recognised level of knowledge and understanding in disciplines associated with the development of buildings and civil engineering infrastructure. The programme is designed and implemented to facilitate progression to undergraduate degree programme in civil engineering, and is delivered in anticipation of candidates seeking membership of associated professional bodies through further study and appropriate work-related experience.

HNC Civil Engineering is an appropriate higher qualification and progression route for those engaged as technologists in the design, construction, management and maintenance of civil infrastructure including the provision of highways, engineered structures, groundworks, water supply, drainage and coastal protection.

## **6. Distinctive features of the programme**

Higher National Certificate programmes hold particular currency within construction and civil engineering, and constitute important routes towards both technical and professional membership of recognised associations within the sector. HNCs are recognised within public and private sectors alike, and collectively form an important part of the portfolio of programmes offered within the Built Environment subject area at the University.

Whilst HNC programmes are well established on a part-time day-release basis, this mode of delivery can be restrictive and inflexible to those industrial organisations that find it difficult to release employees for one day every week, whilst activities continue at construction sites where students bear daily responsibility.

With this in mind, the distinctive feature of this proposal is the HNC in Civil Engineering will be delivered via a Blended Learning approach, utilising the University's Active Learning Framework. Delivery will comprise of synchronous and asynchronous lectures, with pre-determined practical sessions and tutorials taking place on site at Wrexham or Employer's premises.

Such a bespoke and flexible modular approach is therefore expected to allow the University to additionally respond to the specific needs of all those potential organisations that find it difficult to release technical staff on a regular basis.

For employers and students engaged in this sector in particular therefore, a modular approach to delivery is expected to be an attractive proposition that will enable flexible management of staff development time between site operations that are often at some distance throughout the UK.

## 7. Credit Accumulation and exit awards

Successful completion of 120 credits at Level 4 entitles the student to HNC Civil Engineering. There is no exit award available for the intended award.

## 8. Programme Structure Diagram, including delivery schedule

The Higher National Certificate comprise six mandatory modules of 20 credits each, accruing 120 credits in total. This value equates to one year of full-time undergraduate study which therefore aligns HNC programmes with current degree provision, making progression, recognised prior learning and other such processes synchronised in terms of measuring the achievement and academic progression of candidates. Such uniformity will also facilitate efficiencies in delivery at the University, within collaborative partner organisations and in respect of employer-centred provision through the use of established module structures and commensurate credit values.

The mode of delivery for the HNC in Civil Engineering will consist of synchronous and asynchronous lectures and pre-determined attendance at the Plas coch site for the delivery of practical and tutorial sessions. In terms of delivery, it is anticipated that in accordance with University Regulations, the requirements of the Pearson Licence Agreement, Module Specifications and associated controlling documentation, the HNC programmes described may be facilitated by any of the following modes of delivery:

- blended learning over one year,
- on a 'modular' basis, where individual modules or combinations thereof are undertaken in short blocks of blended learning delivery in the workplace, at summer school or through other such bespoke arrangements.

All modules are Level 4 and there are no pre-requisites, and so whilst an attendance pattern that incorporates a blended learning component is likely to suggest a regular matrix of module delivery year-on-year, bespoke arrangements established for particular employer organisations may develop alternative arrangements in terms of module-delivery patterns and resourcing. All modes of delivery however, will accord with established Assessment Board cycles with respect to the reporting and confirmation of results.

Mod Code	ENG495	Mod title	Analytical Engineering Techniques	Credit value	20	Core	Sem 1&2
Mod Code	AUR409	Mod title	Science and Materials 1	Credit value	20	Core	Sem1&2
Mod Code	AUR458	Mod title	Civil Engineering Construction	Credit value	20	Core	Sem1
Mod Code	AUR457	Mod title	Structural Analysis and Design	Credit value	20	Core	Sem2
Mod Code	AUR456	Mod title	Geology and Soil Mechanics	Credit value	20	Core	Sem1
Mod Code	AUR416	Mod title	Site Surveying	Credit value	20	Core	Sem2

## 9. Intended learning outcomes of the programme

### Knowledge and Understanding

Upon completion of a <i>Higher National Certificate in Civil Engineering</i> , students will be able to demonstrate <b>knowledge and understanding</b> of:	
<b>A1</b>	the nature and extent of the UK Construction Industry by identifying the responsible institutional and professional bodies that exist within the Built Environment
<b>A2</b>	the way in which the Built Environment, in its constituent parts, relates to society generally, and the central role it has to play
<b>A3</b>	civil engineering construction, design, management and maintenance
<b>A4</b>	the legislative and organisational framework within which the civil engineering sector operates, and display an awareness of policy options
<b>A5</b>	the design, materials, and technological principles that underpin civil engineering technology

### Intellectual Skills

Upon completion of a <i>Higher National Certificate in Civil Engineering</i> , students will be able to demonstrate <b>intellectual skills</b> in:	
<b>B1</b>	the assessment and evaluation of information, theories, and concepts from various sources, and the production of reports and solutions formulated from independent ideas that challenge existing assumptions
<b>B2</b>	identifying the essential features of a problem and how that problem may be resolved by the creative application of technological, design, and managerial methods
<b>B3</b>	the application of strategic thinking beyond the immediate confines of a problem by critically evaluating current policies and practices
<b>B4</b>	actively seeking and using feedback as a basis for personal and professional development by taking responsibility for their learning, and increasing awareness of their own ability
<b>B5</b>	presenting and communicating effectively using a variety of techniques

### Subject Skills

Upon completion of a <i>Higher National Certificate in Civil Engineering</i> , students will be able to demonstrate <b>subject skills</b> in:	
<b>C1</b>	evaluating the characteristics of various materials and constructional techniques, and their effect on civil engineering design and project implementation
<b>C2</b>	the integration of various technology-related issues in the development of civil engineering infrastructure
<b>C3</b>	appreciating the collaborative interaction between design and construction professionals towards the realisation of civil engineering projects
<b>C4</b>	recognising current and future developments of overarching importance to the civil engineering technician, and within the wider civil engineering context
<b>C5</b>	demonstrating familiarity with IT systems that are exclusive to the civil engineering sector

## Practical, Professional and Employability Skills

Upon completion of a <i>Higher National Certificate in Civil Engineering</i> , students will be able to demonstrate <b>practical, professional and employability</b> skills in:	
<b>D1</b>	demonstrating the ability to communicate accurately and reliably with structured and coherent written reports and oral presentations to a range of audiences
<b>D2</b>	making effective use of IT resources to assemble and disseminate information in support of learning and professional practice
<b>D3</b>	effective time management in respect of time-specific responsibilities throughout the period of the programme
<b>D4</b>	the application of strategies towards personal and professional development by agreeing personal learning plans and recording progress
<b>D5</b>	working effectively as part of a team and in appreciating the group dynamic, by taking responsibility for their own actions
<b>D6</b>	the application of numeracy to calculating, checking, and presenting solutions to civil engineering problems

### 10. Learning and teaching strategy

The learning and teaching experience will benefit from a variety of approaches that ensure content is considered against a broad contextual background commensurate with the diverse nature of industrial practice. Candidates will develop academic skills and associated competencies in an environment that encourages original thought and personal development through the interpretation and analysis of technical content.

In exploiting opportunities to encourage the interest and engagement of students, delivery will be such that a variety of recognised methods will be employed, both instructive and exploratory, towards appropriate coverage and depth in the consideration of module content. Wherever possible, scenario-based opportunities will be utilised to explore both general principles and specific issues in context, and traditional didactic methods will be limited to those areas of the curriculum that necessitate such an instructive approach. HNC cohorts have historically brought a wealth of personal industrial experience to the classroom, and opportunities to engage and extract such input will be encouraged through participatory classroom management with an emphasis on peer opinion and group discussion. In this respect, delivery will be overtly student-centred, and all who participate should be given the opportunity to feel comfortable and confident in contributing to the learning process, within an environment of mutual respect and learning.

In terms of resourcing the programmes, cohorts will be provided with all that is necessary to ensure that knowledge and understanding is developed in the use of facilities and equipment that best-reflect current industrial practice. Such resources will include technological equipment, computational software and electronic databases that might be expected to be utilised in the design, construction and use of buildings and infrastructure in contemporary development processes.

In resourcing academic aspects of the provision, digital platforms such as Moodle, Digimap and the Construction Information Service will enable students to access programme documentation, lecture content and research material in order that students are fully served by such resources in the preparation and submission of assessments.

A range of assessment methods will be utilised to ensure that students are able to express themselves in a variety of different ways, in order to simulate the sorts of written, practical, visual and oral communication mediums that might be expected to take place within the industrial work environment.

Every opportunity will be taken to maximise industrial engagement within programmes through contributions from guest speakers, visits to live construction and civil engineering projects and through attendance at seminars, conferences and exhibitions that are often promoted within the sector. Travel abroad is also encouraged if at all practicable in pursuit of similar objectives.

In conclusion, the learning and teaching strategy should be inclusive of every opportunity to study beyond the classroom, and should ensure that delivery is contextualised within the contemporary industrial environment to its fullest extent.

### **11. The Wrexham Glyndŵr Graduate**

At Glyndŵr University we aim to help students develop and enhance key employability skills and capabilities during their study. There are three key areas with different attributes, attitudes and skillsets and the aim is to help students have the opportunity to enhance and develop skills such as resilience, adaptability, confidence, team working, emotional intelligence and communication, creativity and acting ethically and sustainably. Programmes are designed to enable students to develop and enhance these skills via module content, module learning outcomes and assessment opportunities. Each module will help provide different opportunities for developing and enhancing these capabilities.

The Careers team are available to provide information, advice and guidance and access to resources for potential students, current students and graduates. WGU Connect provides students with access to an online directory of vacancies.

The Careers team can support students with employability and interview skills such as use of the STAR (Situation, Task, Action, Result) technique that many recruiters use to gather relevant information about a specific capability that the job requires.

### **12. Work based/placement learning statement**

Though short-term industrial placements are not part of the defined HNC structures, such opportunities are to be encouraged on an extra-curricular basis, and it is hoped that closer working relationships between industry and educational providers will create such opportunities for students to extend their industrial experience.

### **13. Welsh medium provision**

Though short-term industrial placements are not part of the defined HNC structures, such opportunities are to be encouraged on an extra-curricular basis, and it is hoped that closer working relationships between industry and educational providers will create such opportunities for students to extend their industrial experience.

### **14. Assessment strategy**

The assessment strategy will encompass a range of techniques to ensure that students are provided with diverse opportunities to demonstrate their knowledge and understanding. Written submissions, the practical use of technological equipment, visual presentations, laboratory analyses and on-line tests are all important components in a systematic approach to providing students with opportunities to express themselves. Types of assessment have been selected to best-suit the nature of the technical content of each module, and collectively



constitute a balanced and coherent whole in pursuit of an inclusive and broad-based approach to the measurement of ability.

The following table sets-out the range of assessment methods in the context of the proposed modules.

Module code & title	Assessment type and weighting	Assessment loading	Indicative Submission Date
AUR409 <b>Science and Materials 1</b>	1. Coursework (100%)	4,000 words	Y1, S1 Y1, S2
AUR416 <b>Site Surveying</b>	1. Essay (25%) 2. Practical (75%)	1,000 words 3000 word eq.	Y1, S2 Y1, S2
AUR458 <b>Civil Engineering Construction</b>	1. In-class Test (Online) (50%) 2. Presentation (50%)	2 hrs 15 min.	Y1, S1 Y1, S1
AUR457 <b>Structural Analysis and Design</b>	1. Coursework (50%) 2. In-class Test (On-line) (50%)	2,000 words eq. 2 hrs	Y1, S2 Y1, S2
AUR456 <b>Geology and Soil Mechanics</b>	1. In-class Test (On-line) (40%) 2. Portfolio (60%)	2 hrs 2,000 words eq.	Y1, S1 Y1, S1
ENG495 <b>Analytical Engineering Techniques</b>	1. Exam (50%) 2. Coursework (50%)	2 hrs 2,500 words	Y1, S1 Y1, S2

## 15. Assessment and award regulations

### Derogations

N/A

### Non Credit Bearing assessment

N/A

### Borderline Classifications (Undergraduate programmes)

N/A

### Ordinary Degrees

N/A

### Restrictions for trailing modules (Taught Masters)

N/A

### Prerequisites for processing to MRes research component

N/A

## 16. Accreditation

N/A

## 17. Quality Management

All provision is expected to comply with the University processes for quality assurance, the QAA Quality Code and any specific PSRB requirements to ensure the quality of the learning

and teaching on the programme. The University uses the following mechanisms to help evaluate, enhance and review programmes delivery;

- Student Evaluation of Module forms
- Student Voice Forum
- Individual student feedback
- Student representatives
- Annual Monitoring reports
- Periodic review and re-validation process
- External Examiner reports
- PSRB requirements and accreditation activities
- National Student Survey (NSS)

External review of quality and standards within the programmes described in this submission is provided by the External Examiner appointed by Glyndŵr University, who is able to compare provision sanctioned by the University with that of other Universities and Colleges of Higher Education.

A Student Voice Forum (SVF) will be held twice each year, in November and March, which provide a plenum for students, via representatives, to contribute formal commentary as to how programmes and the learning environment within which they take place are managed; minutes and responses to SVFs are subsequently posted to the Virtual Learning Environment. Furthermore, the report of the External Examiner and associated team response is made available to students via Student Voice Fora. SVF minutes and responses subsequently inform the Annual Monitoring Report and where appropriate, the Academic Link Annual Report.

Students are also encouraged to approach Programme Leaders and module tutors individually, should they have any concerns in relation to their programme of study.

Formalised anonymous feedback is obtained from Student Evaluation of Module surveys which are utilised by programme teams towards informing future provision. Students are encouraged to complete Student Evaluation of Module surveys in respect of each module on-line via the 'Student Voice' Moodle folder, at mid- and end-points of module delivery

The University's quality assurance structure is superintended by the Learning and Teaching Quality Committee, Academic Board and the Academic Partnerships Committee, which oversee all matters in relation to quality. An Academic Registrar is responsible for the coordination of processes in relation to the maintenance of quality, whose managerial responsibilities include the facility to report any issues affecting quality to the Senior Management Team should they arise in the course of Academic Subject Team meetings.

In line with Glyndŵr University's quality assurance system an Annual Monitoring Report (AMR) is prepared in respect of each programme of study by Programme Leaders at the University or at collaborative partner organisations, depending upon where delivery takes place. AMRs are submitted in November of each academic year and are formally presented to School Board for consideration. AMRs collect performance data in module and programme contexts using indicators such as mean, standard deviation, retention data and feedback from students and staff. Actions recommended through this process are then implemented by programme teams.

## **18. Support for Students**

The University has a range of departments that offer support to students, including:

- Library & IT Resources
- The Assessment Centre
- DisAbility Support Team
- Irlen Centre
- Careers Centre and Job Shop
- Zone Enterprise hub
- Chaplaincy
- Counselling & Wellbeing
- Student Funding and Welfare
- International Welfare
- Student Programmes Centre
- Glyndŵr Students' Union

Students will be able to access support at their site of delivery through the Virtual Learning Environment (VLE), Library services (including on-line access), funding, welfare, disability, careers and study skills support, in addition to those resources and services available at Glyndŵr University Campuses. New students joining HNC programmes will be expected to participate in an induction programme at both collaborative partner organisations and at the University where practicable, to ensure that study is effectively supported in the contexts identified above.

All students are allocated a Personal Tutor whose main responsibility is to act as the first point of contact for their personal tutees and to provide pastoral and academic support throughout their studies. It is a vital role to support student engagement and retention, and to help every student to succeed to the best of their ability.

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Students are able to access support through the Virtual Learning Environment (VLE), Library services (including on-line access), funding, welfare, disability, careers and study skills support available at Glyndŵr University. New students joining the programme will be expected to participate in an induction programme at the University where practicable, to ensure that study is effectively supported in the contexts identified above.

All students at Wrexham Glyndŵr University are allocated a Personal Tutor whose main responsibility is to act as the first point of contact for their personal tutees and to provide pastoral and academic support throughout their studies at the University. It is a vital role to support student engagement and retention, and to help every student to succeed to the best of their ability.

## Faculty support for students

All students engaged in the programme will be provided with a Student Handbook that provides detailed guidance on all relevant aspects of the provision essential to the support of students in their programme of study.

Student attendance will be subject to regular monitoring through the collection of online class attendance registers as a means of identifying potential issues indicative of a need for student support. Upon enrolment, each student will be allocated a Personal Tutor; the Personal Tutor will be expected to remain available to students at all reasonable times should there be a need to discuss any potential problems that might negatively affect academic performance.

Potential issues of an academic nature should first be addressed to the appropriate Module Leader at their place of study towards an appropriate and timely resolution. Where issues are not satisfactorily resolved in the first instance the Programme Leader will be informed, whereby appropriate action will be taken to ensure a satisfactory outcome. Should issues not be resolved within collaborative partner organisations through these processes, the Programme Leader or Academic Link tutor at the University should be made aware of the situation, who will act towards achieving a fair and reasonable outcome in relation to the issue at hand.

## Programme specific support for students

HNC programmes benefit from industry-specific resources that replicate operational theory and practice within the construction and civil engineering sector. The use of specialist software in the design, construction and operation of buildings and infrastructure includes Computer Aided Design packages such as Revit 2018, AutoDesk Civil3D and MicroDrainage, together with packages that provide topographical information such as Edina Digimap. Familiarity with the purpose and capabilities of software packages in the virtual replication of topography, construction and infrastructure enables students engaged in HNC programmes to appreciate the significance of Building Information Modelling, and to understand the benefits that such virtual articulation brings to design, construction and operational processes.

As well as those software packages identified, the Construction Information Service, available through the University's Resource Finder facility, provides students with an industry-specific database of contemporary legal, technical and professional standards, guidance and legislation that ensures programme content, assessment preparation and contextual research is current and authoritative.

## 19. Equality and Diversity

Glyndŵr University is committed to providing access to all students and promotes equal opportunities in compliance with the Equality Act 2010 legislation. This programme complies fully with the University's Equality and Diversity Policy, ensuring that everyone who has the potential to achieve in higher education is given the chance to do so. Please click [here](#) for more information