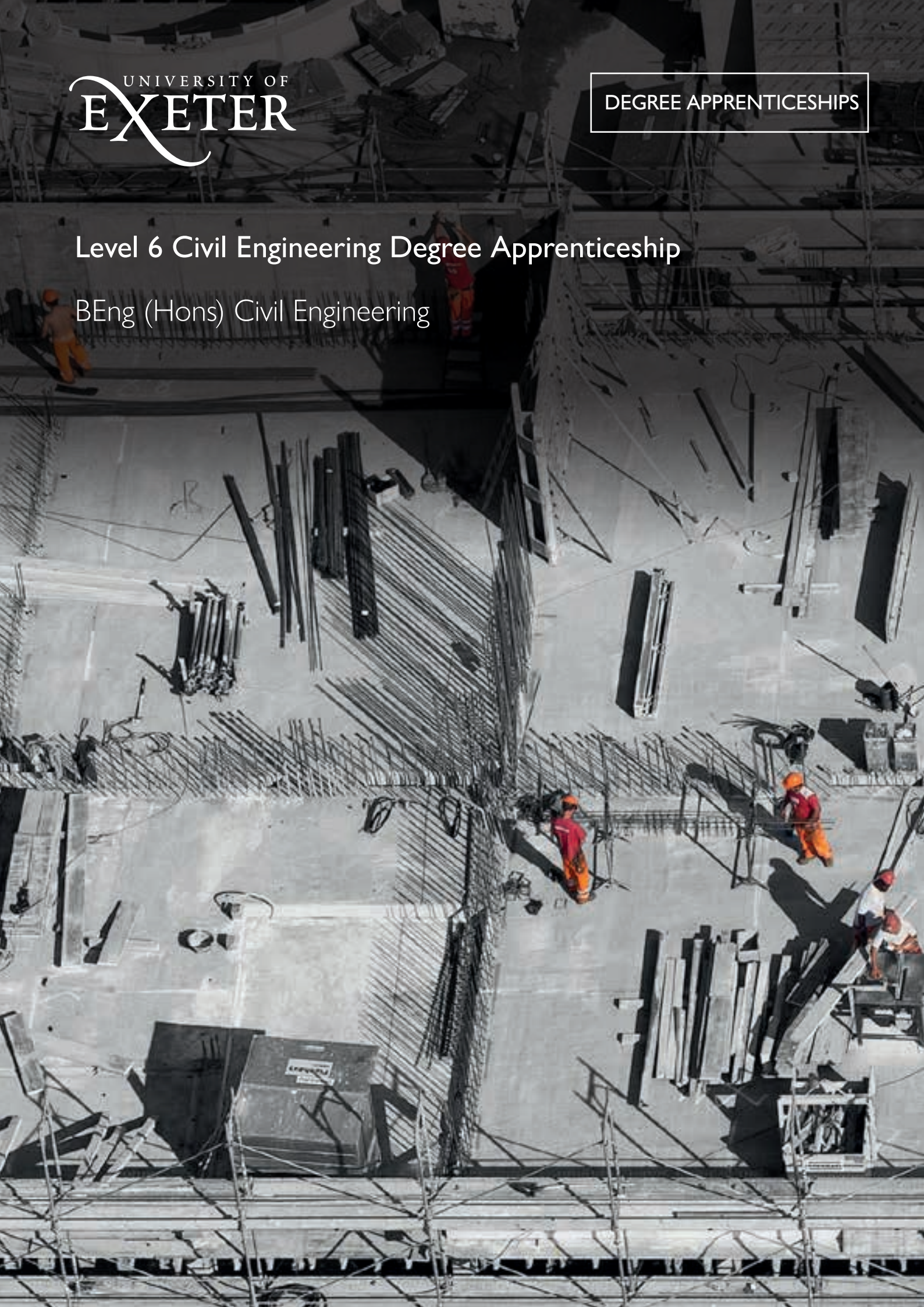

UNIVERSITY OF EXETER

DEGREE APPRENTICESHIPS

Level 6 Civil Engineering Degree Apprenticeship

BEng (Hons) Civil Engineering

CIVIL ENGINEERING AT THE UNIVERSITY OF EXETER

Contact

For more information about this programme, contact:
Paul Laver,
Partnership Development
p.laver@exeter.ac.uk
01392 727055

Catering for both the Civil Engineering Site Management (degree) standard and the Civil Engineer (degree) standard.

The Civil Engineering Degree Apprenticeship programme at the University of Exeter is unique in that it caters for both the Civil Engineering Site Management (degree) standard and the Civil Engineer (degree) standard.

The Site Management pathway was developed in collaboration with our engineering partner consortium and aims to develop the skills required of a site-based civil engineer.

The Consultancy pathway focuses on engineers intending to work primarily in the consultancy environment.

Civil Engineering has traditionally stratified along these lines into contracting and consultancy. By educating both cohorts side-by-side, our apprentices have an excellent opportunity to gain insight into each other's industry settings. This provides University of Exeter Degree Apprenticeship graduates with a valuable appreciation of the Civil Engineering industry as a whole.

The programme is designed to deliver all of the required learning outcomes for a University of Exeter Bachelors Degree, as well as for a Higher Level Degree Apprenticeship, contributing towards graduates becoming professionally qualified engineers in the UK with international recognition.

Building steadily over five years, students complete a common first three years with variation of specialist modules in years four and five.

Our Contracting pathway aligns to the skills, knowledge and behaviours set out in the Apprenticeship Standards for the Level 4 Construction Site Engineering Technician and the Level 6 Civil Engineering Site Management (degree). Our Consultancy pathway aligns to the Level 6 Civil Engineer (degree) Apprenticeship Standard.

Teaching Excellence Framework assessment 2017

5 star rated from QS

A member of the Russell Group of universities

PROGRAMME MODULES

Please note that availability of all modules is subject to timetabling constraints and that not all modules may be available every year. For-up-to-date details of all our programmes and modules, please check the degree apprenticeships section of our website at **exeter.ac.uk/undergraduate/degrees/engineering/civil-engineering**

Core Modules

Site management and consultancy pathways

Core engineering

Provides the fundamental knowledge of materials, structures and mechanics to give the foundation for further study and consolidating a knowledge base in these areas.

Foundation mathematics for engineers, and advanced mathematics for engineers

The topics covered are fundamental to engineers in their professional careers, with a clear focus on the direct application of mathematics to engineering problems. The advanced module also develops the application used for the analysis and solution of engineering problems.

Professional studies and skills development

Independently develop a range of transferable professional and personal skills that will enhance the study experience at university and at work. These include written communication, oral presentation skills, teamwork ability as well as the practical design skills essential to all engineers.

Basic mechanics, and mechanics

Study covers the fundamental and extended concepts of solid mechanics and fluid mechanics including stress/strain relationships, axial members, rods and beams, fluid properties, continuity and energy equations, momentum, and engineering concepts like buoyancy and hydrostatics.

Materials

Develop knowledge of the principals of engineering materials, their fabrication and technical, economic and environmental considerations, as well as explaining how to manufacture any single component.

Structural materials

Explore the design process using common structural materials and improve knowledge of the manufacture and properties of manmade civil engineering materials, particularly for their use and suitability in construction.

Structures

Address a range of topics essential to the understanding and solution of civil engineering problems, including loads, strain, bending, deflection and rotation, and flexibility.

Geotechnics 1 and 2

Designed as an introduction to the basic concepts of engineering geology, soil classification, rock characterisation, site investigation procedures, laboratory testing of soils and rocks and the principles of geotechnical engineering. Further study introduces techniques of geotechnical practices and design, analysis and limitations, as well as the practical applications in civil engineering projects.

Project management

An introduction to both quantitative and qualitative project management techniques and an overview of methodologies that minimise the risk of project failure.

Safety and sustainable development

Provides the knowledge and skills necessary to undertake health and safety related activities, with an understanding of the socioenvironmental impacts and future responsibilities to society.

Structural engineering

Consolidate and extend methods of analysis for both linear elastic and plastic modes of behaviour, and gain an understanding of how these methods apply to real structures.

Accounting and company finance

Gain a basic understanding of financial project appraisal and investor priorities. Introduces the skills needed to make simple financial appraisals of projects and how to operate in the commercial environment.

Civil engineering design studies

Integrate the knowledge obtained through the programme with new experience of construction management and composite design. Explore the conceptual design, materials, structural systems and problem-solving involved in design and construction.

Construction site management

Introduction to new skills, such as surveying, with an opportunity to expand knowledge through design exercises and fieldwork.

Individual project

The project applies the knowledge and skills obtained from taught modules to devise a real engineering solution at a professional level.

Site management only

BIM and temporary works

Develop the skills required of a civil engineer working in today's construction industry. Gain insight into the subjects of temporary works and BIM and develop the knowledge and skillsto apply learning in the work environment.

Consultancy only

Project procurement and BIM

Understand the relationship between consultants, contractors and other industry professionals and how BIM can be used to facilitate successful project procurement.

Fluid mechanics

Become familiar with hydraulics topics essential for a civil engineering graduate specialising in the design of hydraulic structures, and develop a good analytical understanding.

Optional modules

Both pathways

Sustainable engineering

Gain an appreciation of the complexities which arise from considering sustainability across the built environment, including climate change, conventional power generation, renewable energy and sustainable buildings.

Conceptual design of buildings

Introduction of the fundamentals of conceptual design of buildings and their implementation in engineering practice, including form and functionality, actions on buildings, sustainability of buildings, construction and operation and resilience and maintainability.

Site management pathway

Fluid mechanics

Become familiar with hydraulics topics essential for a civil engineering graduate specialising in the design of hydraulic structures, and develop a good analytical understanding.

Temporary works design

Carry out designs for a variety of schemes including double sided wall formwork, falsework and scaffold. Learn the sound structural knowledge to assist in making engineering judgements when assessing schemes.

Consultancy pathway

Computer aided analysis and design

Develop the skills to analyse and design structures using common software packages and explore the potential pitfalls of naive over-reliance on computer software.

PROGRAMME STRUCTURE

Civil Engineering Site Management Degree Apprentices study 19 core modules and two optional modules over a five year programme. In their final year they also develop an individual workplace project. Approximately 20% of the apprentices working time is spent training.

Civil Engineer Degree Apprentices study 20 core modules and one optional module over a five year programme. In their final year they also develop an individual workplace project. Approximately 20% of the apprentices working time is spent training.

YEAR 1

Core Engineering
Foundation Mathematics for Engineers
Professional Studies and Skills Development A

YEAR 2

Basic Mechanics
Materials
Advanced Mathematics for Engineers
Professional Studies and Skills Development B

YEAR 3

Mechanics
Structural Materials
Structures
Geotechnics 1

Constuction Site Management

YEAR 4

SITE MANAGEMENT

BIM and Temporary Works

Project Management
Safety and Sustainable Development
Structural Engineering
Geotechnics 2

CONSULTANCY

Project Procurement and BIM

YEAR 5

Individual Project
Accounting and Company Finance
Civil Engineering Design Studies

2 optional modules
Sustainable Engineering
Conceptual Design of Buildings
Fluid Mechanics
Temporary Works Design

Individual Project
Accounting and Company Finance
Civil Engineering Design Studies
Fluid Mechanics

1 optional module
Sustainable Engineering
Conceptual Design of Buildings
Computer Aided Analysis and Design

All apprentices must take an independent End-Point Assessment (EPA) at the end of their training to confirm that they have achieved occupational competence.

Entry requirements

- **A level:** AAA-ABB;
- **IB:** 36-32;
- **BTEC:** DDD-DDM

We strongly encourage applicants with non-standard qualifications.
Please contact us to discuss their eligibility.

DEGREE APPRENTICESHIPS

UNIVERSITY OF EXETER DEGREE APPRENTICESHIPS

Contact:

For more information about this programme. contact Paul Laver, Partnership Development, 01392 727055 or email **p.laver@exeter.ac.uk**

Diagnostic Radiographer

Supported by the same educational excellence as our traditional Medical Imaging programme, this degree apprenticeship embeds learning within the workplace in partnership with employers.

exeter.ac.uk/degreeapprenticeships/employers/diagnostic-radiographer

Data Science

This MSc programme provides commercial and public sector organisations with an opportunity to develop, reward and retain talented data scientists, bringing cutting-edge knowledge and expertise into an organisation.

exeter.ac.uk/degreeapprenticeships/employers/research-scientist/

Digital and Technology Solutions

This full University of Exeter degree, develops high caliber IT staff with the opportunity to focus specialist skills in an area relevant to your business.

exeter.ac.uk/degreeapprenticeships/employers/digitalbsc/

Financial Services Professional

This programme supports new entrants to the financial sector, allowing them to develop their career while building towards professional qualifications from CISI or CFA alongside achieving a BSc Hons degree in Applied Finance.

exeter.ac.uk/degreeapprenticeships/employers/financial-services/

Senior Leader

Our Masters level degree apprenticeship is accredited by the Chartered Manager Institute (CMI) and represents an exciting opportunity to gain a prestigious MBA.

exeter.ac.uk/degreeapprenticeships/employers/senior-leader/

UNIVERSITY OF EXETER

@UofE_Solutions

uniofexeter

2020BS019