Materials Engineering Higher Apprenticeship

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Overview

Higher Apprenticeships are a new industry driven and government sponsored approach to embedding cutting-edge engineering practice into the workplace. It gives employers access to the latest developments while ensuring their employees understand the core principles underpinning the industry.

Sheffield Hallam University has worked closely with the Institute of Materials, Minerals and Mining and industry partners, such as AESSEAL, British Steel, Forgemasters, JCB, Nestle, Network Rail, Pandrol, Penny Hydraulics, Rolls-Royce, Siemens and Tata Steel, to deliver an innovative package that combines formal education with work-based learning.

The programme addresses the escalating demand for engineers to develop new and improved materials, and the modification of existing ones, for manufacturing. Also giving employers direct influence over the educational development of apprentices, it is an opportunity to stretch and mould your employees while helping them realise their full potential within your organisation.

Sheffield Hallam University is constantly looking for apprenticeship standards which we can map our courses against. Sheffield Hallam University is also in discussions with the Sector Skills Council for Science, Engineering and Manufacturing Technologies (SEMTA) about the future degree apprenticeship standards and is seeking to provide full degree awards against these new standards in conjunction with employers.

Key drivers

• The Engineering UK 2016 report recommends that the number of graduates (both STEM and non-STEM) entering engineering occupations needs to double by 2022.
• The Royal Academy of Engineering estimates that 820,000 science, engineering and technology professionals will be required by 2020 to replace existing skills and meet new demands.
• Engineering companies are projected to demand 182,000 people with engineering skills each year to 2022.
• The introduction of the apprenticeship levy.

Benefits for employers

• Connect with a leading university committed to working with industry partners to produce tomorrow’s leaders in engineering.
• Attract and retain their best talent, whilst supporting the youth employment agenda.
• Establish a clear progression route for aspiring and established engineers.
• Generate a return on investment through accelerated development and increased commitment.
• The higher apprenticeships in engineering at Sheffield Hallam University foster the skills, creativity and loyalty employers need to drive their organisation to the next level.
• The principles, techniques and practical skills learned at university are further developed in the workplace, which develops employees’ confidence and professional competence.
• Projects are negotiated with employers to ensure they benefit all parties.
• Students meet the academic requirement for professional body membership.
• Assist the employer with candidates who can become part of the business’s succession plan.
• Receive government funding for staff development.

How we can help you

• Sheffield Hallam University’s engineering department has a strong history of collaboration with employers to deliver work-focused education and training, and are waiting to help you capitalise on higher and degree apprenticeships.
• You will have access to our cutting-edge facilities and benefit from the world-class expertise of our staff.
• We can help you to navigate the apprenticeship system, including using the new Digital Apprenticeship Service and claiming additional funding incentives where they apply.
• As experts in student recruitment, we can support you to attract new apprentices, developing your future talent pipeline, as well as increasing the capacity of your existing employees.
• We can provide assistance to help understand government funding.

Award

We have a range of courses which fulfil academic requirements of the higher apprenticeship. The Foundation Degree (FdEng) in Materials Engineering is a level 5 qualification that meets the needs of employers to develop their workforce. Designed to develop highly-skilled metallurgists and materials engineers, all parties benefit from a knowledge and skills exchange, with participants applying the academic building blocks of the course to live projects that can deliver outputs with real value.

NVQ awarded at level 4 in a relative engineering area through the successful completion the NVQ portfolio modules.
Materials Engineering Higher Apprenticeship

Locations of delivery
The course is run in partnership with North Lindsey College to provide a flexible course of study.
Apprentices can choose to attend North Lindsey College or Sheffield Hallam University according to their preferred location and delivery method.

Duration
The programme is usually delivered over three years, part-time.

Delivery method
North Lindsey College: block release over three years
Sheffield Hallam University: day release for a total of 24 weeks per year, over three years
There will also be a work-based module each year for which employers need to give the necessary time and support.

Course description
The foundation degree is designed for students who are already in full employment in a mechanical/materials engineering capacity with a UK firm.
Participants gain a sound knowledge of a wide range of metallic, ceramic, polymeric and composite materials, and learn how to develop new or improved materials using advanced processing methods.
They study the links between designing and creating new products, processes and structures as well as the responsibilities of engineers to society and the environment.
More detail on the course content, including module titles is provided overleaf.

Assessment
The foundation degree award will incorporate a mix of innovative and traditional assessment types to monitor and evaluate progress. Assessments will enable learners to integrate academic learning and on-the-job training.
As part of the higher apprenticeship your employee will also benefit from the structured training provided by a level 4 NVQ delivered by one of our partner colleges. This element of the apprenticeship is conducted at your organisation and involves support from the assessor to complete and review competencies, which meet the needs of the employee’s work-based specialism.

Professional recognition
The course is accredited by the Institute of Materials, Minerals and Mining (IOM3) on behalf of the Engineering Council, for the purposes of fully meeting the academic requirements for registration as an engineering technician and partially meeting the academic requirements for registration as an incorporated engineer. Successful completion of the top-up to Bachelor’s level (BEng) provides the additional requirements for Incorporated Engineer status.

Progression
Employees successfully completing this foundation degree are eligible to apply for two more years of part-time study to gain a BEng (Honours) Materials Engineering.
Steps are also being taken to provide candidates with an apprenticeship pathway to a full Bachelor’s degree (level 6 qualification). Subject to the development of a level 6 standard we would like to offer a higher apprentice version of the top-up. However, currently you can top-up through the standard part-time mode of study.

Options for larger employers
Where an organisation has 15 or more learners, Sheffield Hallam University can work with you to co-create tailored content to meet individual business needs.

Entry requirements
Candidates must possess qualifications from one of the following entry levels
• at least one GCE A Level pass in a relevant scientific/technology subject. Two AS Level passes are considered equivalent to one A Level pass
• an Advanced VCE award in an appropriate engineering/manufacturing/technology topic
• an EdExcel/BTEC/SCOTVEC National Certificate or Diploma in a science or technology-based subject
• a pass in the preparatory year of the Extended Degree Programme in Engineering and Mathematics or other suitable science/technology-based foundation or access course containing an appropriate level of mathematics, with an overall average mark of at least 40 per cent
• a qualification that is deemed to be equivalent to any of the above
Applicants for the higher apprenticeship must also be employed in a mechanical/materials engineering capacity within a UK firm.

Fees
Typically £9,000 per level, per learner, however tailored programmes may vary depending on requirements.
• Levy paying employers with wage bills above £3 million per annum can use their levy payments and a 10% government top-up to pay for apprenticeship course fees and any end-point assessment up to the funding cap.
• Non-levy paying employers (below the wage-bill threshold) can access government funding of 90% of the course fees (or 100% for learners above the age of 19 at the start of the course for small employers with less than 50 staff) up to the funding cap.
Apprenticeship funding is set by the government’s rules on the apprenticeship levy and operated through the Apprenticeship Service Digital Accounts.
More information on the apprenticeship funding arrangements, including how the levy works, can be found on the Department for Education website www.gov.uk/government/publications/apprenticeship-levy-how-it-will-work
As a leading provider of higher and degree apprenticeships, Sheffield Hallam University is working closely with government to maximise the benefits of our apprenticeship programmes for both individuals and businesses.
Please contact us to find out more and to get started.

Next steps
You can offer apprenticeships to upskill existing staff and recruit new talent.
Working with our partners, Sheffield Hallam University can offer a range of services to prepare and source candidates for apprenticeships. This will include advertising through the National Apprenticeship Service and other channels relevant to your sector.
We can also provide guidance to employers and apprentices on funding eligibility, and advise on whether a candidate meets the entry requirements of the course.
For more information about higher and degree apprenticeships contact apprenticeships@shu.ac.uk or 0114 225 3433.
We can also help school and college leavers to prepare for apprenticeships and support their recruitment process. The apprentice can apply directly by emailing admissions@shu.ac.uk identifying the course they wish to study.
Course structure for Foundation Degree Materials Engineering and BEng top-up

### Materials Engineering

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<td>LEVEL 5</td>
<td>Maths for Materials and Design</td>
<td>Engineering Ceramics and Polymers</td>
<td>Engineering Metallurgy</td>
<td>Chemical and Thermodynamic Properties of Materials</td>
<td>Professional Practice</td>
<td>Project</td>
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### Materials Engineering (top-up)


- Work-based learning undertaken in the workplace
- The availability of the course is subject to a minimum student number requirement.
- Course modules are subject to change.
Find out more

Whatever your query, our dedicated team are here to help.

Email: apprenticeships@shu.ac.uk
Phone: 0114 225 3433

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All information is correct at the time of print – March 2017.