



The
University
Of
Sheffield.

Department
Of
Materials Science &
Engineering.

Materials Science & Engineering.

Your Master's Degree at Sheffield.



Materials change the world



Take a look around you. Materials are everywhere. Used for different applications, for different reasons. Without materials scientists and engineers, aeroplanes wouldn't fly, buildings wouldn't stand up, mobile phones wouldn't work, healthcare wouldn't be the same.



Materials Science and Engineering is a subject that is integral to all other engineering disciplines. It brings together physics, chemistry, engineering, maths, and in some cases, biology, and puts these subjects into real-life situations.



When you study Materials Science and Engineering, you will learn the underpinning physics and chemistry of materials and how these give rise to certain properties, like toughness or durability. You learn how different processing techniques, such as additive layer manufacturing, influence these properties and how that affects the functions of materials in engineering applications. You understand materials from the atomic scale upwards and recognise how small changes in their composition and/or structures can have big effects on their properties. With this knowledge, you will be able to help design and manufacture the next generation of new sustainable materials for applications such as renewable energy generation.



We'll challenge you to think about engineering issues from a global perspective. So wherever your future lies, you'll be in demand.





iForge is a student-led makerspace located in The Diamond. It is an area facilitating collaboration, innovation and the creation or prototyping of anything students wish to make. The iForge is run by students for students and is a 24/7 facility. Housing a wide range of equipment, from traditional hand tools and a sewing machine to state-of-the-art laser cutters and 3D printers, the possibilities for what can be made in the iForge are limitless. So far hundreds of students have produced a diverse array of products, including battle robots, 3D printed Christmas decorations, parts for tribology research and a fully moving Thomas the Tank Engine cake.



Why study a Materials Master's course at Sheffield?

World-class facilities

Alongside our facilities in the Sir Robert Hadfield building, you will work and study in The Diamond, the University's dedicated engineering teaching facility. Here, you'll find lecture theatres, seminar rooms, open plan learning spaces, library services and a number of specialist engineering laboratories. Not only do you get to use the materials lab, packed full of research grade equipment, but because Materials Science and Engineering is integrated into all other types of engineering, our students get to experience working in multiple laboratories in the Diamond, such as the electronics lab and the clean room. There are also social spaces and a cafe where you can take a well-earned break from studying.

Teaching excellence

Our world-class staff will help you to develop as a Master's level scientist and engineer. Our academics are leading experts in their fields with international reputations, and their research shapes and inspires what you are taught. Over many years, we have developed a variety of highly productive relationships with businesses across a broad range of industries. A direct consequence of this is that our Master's teaching is highly relevant to the materials industrial sector. We frequently use examples and case studies based on our own industrial research to help put the theories we teach you into context. Combining this knowledge with industrial understanding means that what we teach you is relevant today and in the future.

Learn by doing

We are proud of our 'learn by doing' approach to our Master's courses. In Sheffield it's not just about sitting in lectures and classes taking notes. You will have the opportunity to spend time in our state-of-the-art labs or workshops putting the theory into practice. You'll learn practical or computational skills during your course and then build on those during your individual research project. You'll have the chance to develop specific industry relevant skills on the same equipment found in industry so that when you start your career you are prepared for almost anything.

What to expect?

Starting a new Master's degree course can be a daunting prospect. Throughout the year, you'll experience a variety of teaching approaches including lectures and problem classes, lab work, case studies and both design and group projects. Alongside this, there is a strong emphasis on self-study, which requires determination and self-discipline. Lectures are recorded and shared on your online learning environment so you can refer to them any time to consolidate your learning. However, there is no substitute for attending the lectures in person.

Support

Your welfare and development is a priority for us. You will be allocated a personal tutor who you can talk to about any issues you have or support you may need, or you can talk to any member of staff and they will endeavour to help you. Similarly, if you have concerns about any other student or staff member, these will be handled discreetly and in confidence.

Community

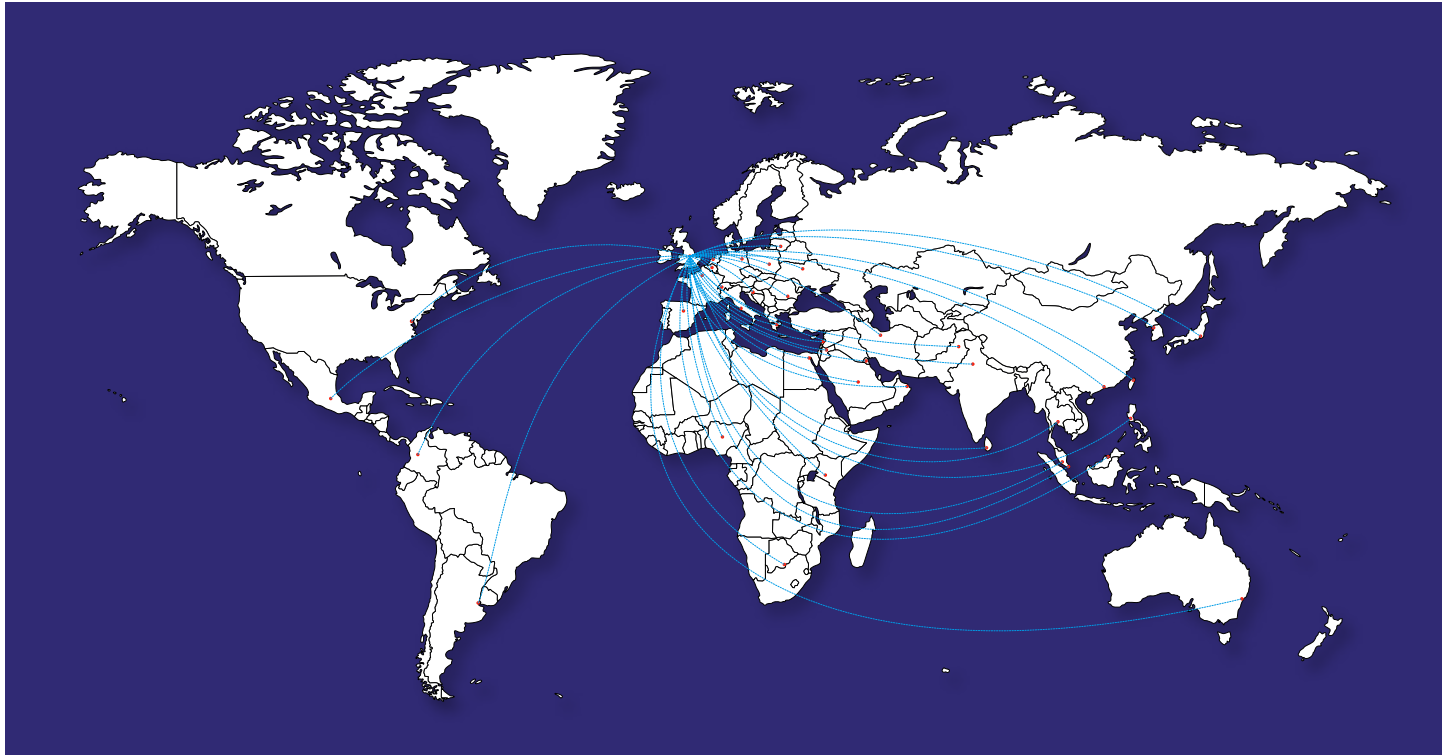
We welcome students from all over the world, so you will be studying with people from other countries and cultures. You will also be taught by world-leading academics from around the globe.

We encourage a sense of community between our courses, year groups, staff and students, with our annual ball being a highlight of the year.

"The access to the world class manufacturing and testing facilities was thoroughly enjoyable. This allowed me to have a unique insight into additive layer manufacturing (ALM) which is at the cutting edge of current research."

Emily Tyrwhitt-Jones

MSc Materials Science and Engineering



Your life in Sheffield

Accommodation

All postgraduate students are guaranteed accommodation in University owned or partnership accommodation, provided:

- You are a full-time student coming to Sheffield alone for the full academic year.
- You accept an offer of study at the University of Sheffield by 31 July.
- You applied for accommodation by 31 August and have met the conditions of your course and used your CAS number (if applicable) no later than 31 August.

All postgraduates are guaranteed accommodation in subsequent years if attending a further full academic year.

Our University accommodation has been repeatedly voted top five in the UK in the Times Higher Education Student Experience Survey, and the majority of our accommodation is in one of the UK's most affluent districts.

You can choose between the vibrant city centre residences or the student village located in the green and leafy suburbs of the city.

"I specifically chose this course due to my interest in the materials aspect of medical engineering; something that would hugely supplement a surgical career. Likewise, the study of human biology as a material engineer has provided further development of my clinical biology."

Byron Haywood-Alexander

Studied MSc Biomaterials and Regenerative Medicine as an intercalated year between his 4th and 5th year of Medical School

Affordable living

Sheffield regularly ranks among the top 10 most affordable UK university cities according to the Student Living Index, with an average cost of living 10% less than the national average. Because of the large student population, shops and services are queuing up to offer discounts. And since the student accommodation is located close to the University, transport costs can be a lot less than in other cities.

#WeAreInternational

In the Department of Materials Science and Engineering, we are proud of our diversity. Staff, students and alumni come from all walks of life, and we consider ourselves to be fully inclusive.

We attract students and staff from all over the world. Currently you can find people from over 40 countries and 6 continents working together in the department, and we actively encourage interaction between groups.

MatSoc

Run by students for students, the Materials Science and Engineering Society (MatSoc) is fun, friendly and ideal for meeting students from other years as well as joining socials, trips and sporting events.

Events can range from visits to the Peak District to bowling to bar socials – there is something for everyone.

Plus if you're into competitive sport, the Society has two 6-a-side football teams and two netball matches a week, with plenty of other sporting opportunities available throughout the year.

Twitter: @mat_soc

Facebook: matsocuoos



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#IAmAMaterialsScientist

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Where next?

A degree in Materials Science and Engineering opens the doors to a vast array of career options. All manufacturing industry sectors need materials scientists and engineers to help them find the right materials for their applications, and develop new ones where they currently don't meet their demands.

You could find yourself in production, design, manufacturing, research and development, patent law or quality control. You might find a non-technical role is more for you, such as sales, procurement or marketing. Or perhaps an academic career is where your future lies: take on a PhD, become a teacher or lecturer and extend your research to become a world-leading expert in your chosen field.

We'll help you open the door; it's up to you to choose which path you take.

"I was selected for a once in a lifetime opportunity to intern for three months as a nuclear engineer with Hitachi-GE Nuclear Energy. At Hitachi I am in the Plant Layout and Design group and have worked on both domestic Japanese projects and the new UK Wylfa plant in Wales. At Sheffield my research is focused on producing cements that can encapsulate the radioactive waste from the Fukushima disaster so even my studies at the University have been Japan focused. I'm getting to contribute to real projects and real nuclear power plants and am very grateful for the experience."

Hadiza Mohammed

MSc Nuclear Science and Technology

Our graduates have been employed by companies large and small, across a range of industry sectors and all around the world. The following are just some of the companies where our students have started their working lives.

NuclearPowerInstituteofChina
ShanghaiElectricCableResearchInstitute
GlaxoSmithCline
AkzoNobel
Pirelli
TataSteel
AMEC
McLaren
CBMM
EDFEnergy
Mercedes-AMG
WeiChaiPower
JaguarLandRover
Rolls-Royce
BAESystems
Philips
Airbus
Atkins
Boots
BritishSteel
Schlumberger
CITICMetalCompanyLimited
BeijingHyundaiMobisMotorCompany



I chose Sheffield because it is a world-renowned, beautiful, university. I find polymers and materials science really interesting and the course provides me with a lot of professional knowledge and experience for research.

Li Liu

MSc Polymers and Polymer Composite Science and Engineering



Kelham Island Museum image: ©Mick Knapton

Our city

Known the world over as “The Steel City”, Sheffield was famed for its industry in the heyday of the 1900s and remains a city of innovation to this day. This development has been mirrored by the development of the Department, the origins of which can be traced back to the 1882 opening of the Department of Metallurgy and Engineering - one of the founding schools of the University College Sheffield.

The smoking chimneys of the early 20th century have been replaced by lush greenery, with Sheffield boasting around 4.5m trees and more than 250 parks, woodlands and gardens and one third of the city within the bounds of the Peak District National Park. With a total tree cover of more than 18%, Sheffield is one of the most wooded cities in the UK, if not Europe. All of this makes Sheffield the ideal location for those that enjoy outdoor pursuits.

For night owls, you're not going to find yourself at a loose end. Sheffield's night life is famous and the music scene is legendary.

We have the largest regional theatre complex in the UK, the largest independent cinema outside London and the UK's largest Cineworld complex, with 20 screens under one roof.

Our Students' Union has been voted number one for the tenth consecutive year (Times Higher Education Student Experience Survey 2018). The Union has live music, club nights, a 400-seat cinema, shops, an advice centre, travel agent, banks and much more. There are over 150 different clubs and societies to get involved in, so you'll never be short of something to do or someone to do it with.

Like the city, the Department has evolved, bringing in new materials and processes, expanding to meet demand and remaining at the forefront of technology.

But we're proud of our heritage and realise that we wouldn't be where we are today without the hard work and dedication of our predecessors. Much like the city of Sheffield.

Sheffield





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Mr Andy Keating - Postgraduate Taught Administrator

Email: a.keating@sheffield.ac.uk

Tel: +44 (0) 114 222 5941

www.sheffield.ac.uk/materials

The content of our courses is reviewed annually to make sure it is up-to-date and relevant. This is in response to discoveries through our world-leading research; funding changes; professional accreditation requirements; student or employer feedback; outcomes of reviews; and variations in staff or student numbers.

While every effort has been made to ensure the accuracy of the information in this publication, for the reasons detailed above, changes may need to be made to modules, courses, entry requirements and fees between the date of this publication and the start of your course.

This publication is correct at the time of print, but please see www.sheffield.ac.uk/materials for the most up-to-date information about our courses. If there is any inconsistency between this publication and www.sheffield.ac.uk/materials, the information on the website should be taken as correct.

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