3D Printing in Education





Universities face multiple challenges in today's rapidly changing educational landscape.

From the need to stay competitive in an environment of rising student expectations, to the demand for new technology able to enhance research capacity to levels not seen before, peparing your students for the future and keeping up with trends across all industries, means you need to be at the cutting edge of academic expertise.

3D printing can be one of the most promising solutions to meet these challenges head on.

By providing universities with the tools they need to drive innovation and the capability to develop materials in-house, they can utilise equipment widely adopted by the largest UK organisations to drive in-house research beyond what was previously thought possible. 3D printing can help create a bright future for the next generation of students and researchers.

Go beyond traditional design and engineering applications such as manufacturing, and aerospace. With ultra-realistic resins to simulate tissues and bone, you can enhance your medical research and arm the next generation of healthcare professionals with the experience they need.

Develop new and exciting products with full-colour and simulated finishes, print straight onto fabric to inspire the next generation of fashion designers, and develop the latest materials that will influence the future of transportation. The opportunity for 3D printing inside education is endless.

Read on to discover more about the future of education.

Departments utilising 3D printing:

- Architecture
- Arts & Design
- Fashion
- Product Design
- Civil Engineering
- Chemical Engineering
- Medicine
- Bioscience
- Engineering
- Manufacturing
- Physics
- Material Design

Transforming the classroom, and beyond.

Integrating 3D printing into the curriculum can have far-reaching benefits for students, but can also go beyond typical expectations to positively impact financials and launch research to new levels.

Teaching.

Educating the next generation.

3D printing is leading the way, from engineering to healthcare. By providing your students with the technology widely adopted in industry, you equip them with the skills to succeed.

Alongside this, by incorporating 3D printing into the curriculum, a university can differentiate itself from competing institutions and attract students looking for a cutting-edge education.

Industry.

Supporting global business.

Reinforce the success of your university by working alongside businesses to produce prototypes, end-use parts and more, providing you real-world value from day one.

Fostering a stronger relationship with the local community, 3D printing/ additive can unlock additional channels of funding and resource, whilst strengthening your university's reputation as a centre of industry excellence.



Best in class equipment that you can push to do what you need it to do.

Research.

Unlocking your creative mind.

Facilitate potentially ground-breaking research projects with the best-in-class technology, across a wide variety of sectors you didn't think possible before.

Enable and innovate across hundreds of fields such as medicine, arts and engineering. Plus you can take 3D printing even further with open materials, giving you the opportunity to push the envelope of the technology to the unknown.

Developed with innovation in mind.

- Go beyond with open material licences across multiple technologies. Develop your own materials, discover the applications of the future.
- Specifically designed printer research packages deliver infinite flexibility when printing prototypes and extend the capacity of existing machines.
- Move faster than ever before with materials simulating the look and feel of rubber, glass, wood and more, rapidly increasing your concept to production cycle.



PolyJet

Innovate at the intersection of design and research.



Utilising droplets of photocurable material, PolyJet sits at the forefront of the 3D printing revolution with innovation at its core. With over 500,000 unique colours, realistic texture simulation and flexible and transparent materials, PolyJet delivers unbeatable realism and consistent results for your university.

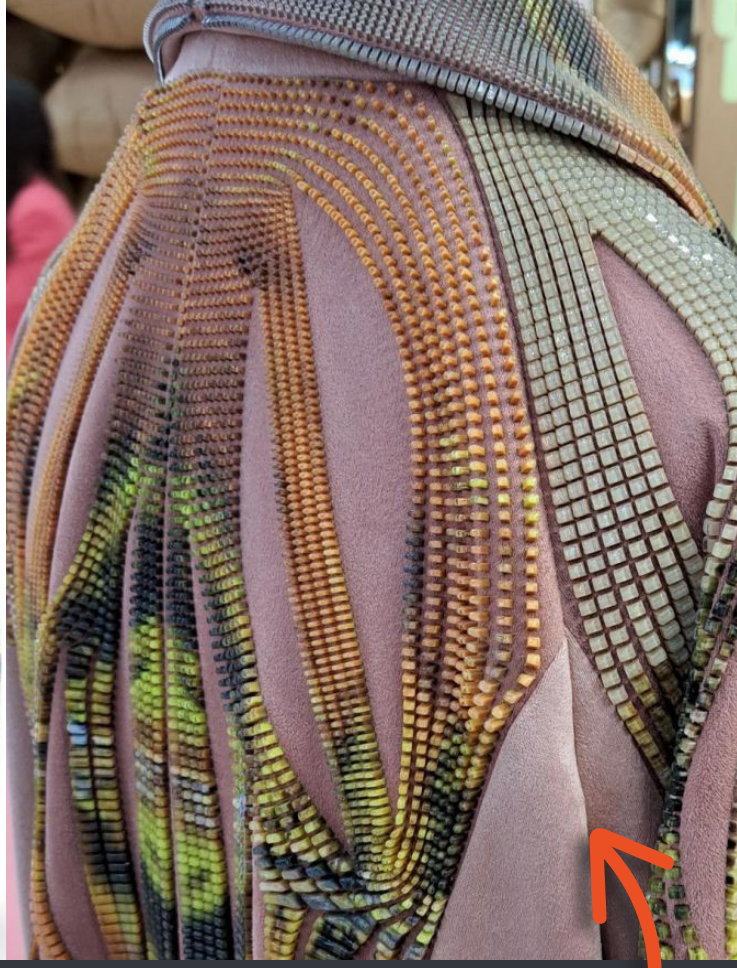
Benefits of PolyJet for education

- Full colour, multi-material models to rapidly innovate new designs
- Print direct onto fabric and substrates with ease
- Print liquid materials for soft parts, hydraulics or fluidic models
- Pause mid-print to embed electronics or mechanical parts
- Inject materials such as liquid and air directly into the part interior
- Hyper-realistic anatomical models enhance your medical courses and research to new levels

> The J55 has given us the confidence to meet tight time-scales and deliver quality time and time again, whilst supporting the whole department and adding value to our teaching and research, benefiting product design, art, interior design, and fashion.

Clive Wright
Northumbria University





Go even further with 3D Printing on fabric and flexible substrates

Stratasys FabriX Innovation Kit

- Create innovative textures and patterns directly on fabric for a variety of industries such as automotive.
- Bring unique, custom styles to the fashion industry without the wait.
- Explore the future of sustainability for 3D printing on fabric.
- Limitless colour palette in various matte and glossy finishes.



FDM

Powerful education with powerhouse 3D printing.



Durable, fast and low cost. Enhance engineering departments with functional prototyping or final part production. Eliminate the wait for expensive machined or injection-moulded parts and rapidly innovate new applications for any extreme environment thanks to materials such as carbon fibre infused Nylon.

Benefits of FDM for education

- Cost-effective and high-quality prototyping
- Produce customised parts to meet specific research needs
- Durable and functional parts with high-performance thermoplastics
- Accessible to all - user-friendly and easy to use
- Promote collaborative opportunities across your university with interdisciplinary applications
- Already utilised by industry - develop new materials and teach adopted applications already in use



Work with industry, discover the next generation of materials.

Stratasys Open Material Licence

- Develop novel materials for use in construction, engineering and scientific purposes.
- Create unique attributes and discover the potential for new applications.
- Be at the forefront of 3D printing to address sustainability, cost competitiveness and agility.
- All on the most trusted and reliable additive manufacturing platform.



P3

Material development, simplified.

Providing complete control over all critical printing parameters, P3 technology enables accelerated material development and formulation. Combined with the high-resolution, smooth surface quality and strength of the final parts, P3 remains a perfectly aligned solution to material development research.

Benefits of P3 for education

- High-resolution, smooth surface quality. Ideal for developing end-use parts.
- Wide range of materials and open material licence. Develop your own materials in-house.
- Created with limited moving parts allowing for more varied uses and applications.
- High-strength materials to cost-effectively replace traditional methods.
- Aligned to research and adopted by industry to discover the future of 3D printing.



SAF

Educate through production-scale capability

As a leading technology for industry 4.0 you can allow your students and researchers to explore the future of designing for additive. Made with manufacturing in mind, institutions can unlock serial production capability for complex parts without the restraints of traditional methods.



Benefits of SAF for education

- Leading technology for industry 4.0
- Design for additive (DfAM)
- Unlock serial production capability
- Complex parts without the restraints of traditional manufacturing
- Supporting research - explore the future of manufacturing
- Opportunities to explore mass customisation of parts
- Prepare students for true industrial additive manufacturing



"The Stratasys F370 has transformed our 3D printing capability. It has provided us with the ability to use a range of materials to produce novel and accurate products that have improved both our research and student related work"

Gary Barter
University of Bath

Join in the 3D printing revolution for education

University of Cambridge University Library
University of Oxford
University of York
University of Derby
Manchester 1824 The University of Manchester
UCL
The University of Warwick
University of Glasgow
University of Birmingham
University of Bath
University of Leeds
University of Surrey

"Our suite of Stratasys Printers have been completely reliable across a range of engineering grade filaments for internal projects, collaborations with other researchers and, most importantly for us, our collaborative partners in the wider engineering community.

The F370 is our "Go-to" machine, its ease of use in all aspects make it a fantastic daily printer while the Fortus 450 is used for its greater range of materials with improved mechanical properties and the open materials license will only improve things further.

Our J55 has enabled rapid printing of complex geometries with a fantastic resolution, in full colour and has been able to reduce design iteration time for our industrial partners on a number of occasions.

The choice to partner with SYS-UK was easy and we have received support, training and guidance that has been exemplary, not just for the printers we have on site but also for events and seminars to showcase the technologies.

In industry, you need partners you can rely on, and SYS-UK bring that same approach in to the academic sector too.

Dominic Mitchell, Facility Manager

Productivity East
University of East Anglia

Request your sample part.

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