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**Nottingham**

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# Engineering Outreach @ Nottingham

2012 newsletter for teachers



[www.nottingham.ac.uk/engineering/outreach](http://www.nottingham.ac.uk/engineering/outreach)

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#### Latest news

Record number of pupil visits in 2011

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#### Changing lives in Malawi

Civil engineering student launches a volunteer project

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#### Events calendar 2012

Book early through our website to avoid disappointment



# Latest news

Welcome to the 2012 edition of Engineering Outreach newsletter. Last year was incredibly busy with 750 school children attending engineering outreach events here at The University of Nottingham. We hope these students will now have a better understanding of engineering and university life and we really look forward to welcoming some of them back here as undergraduates in the future.

On page four we have included our 2012 programme of outreach events aimed at years 8 to 12, particularly those with an interest in mathematics and science. Events book up quickly so please do contact me as soon as you think you might be interested.

Our outreach events are designed to give young people a taste of university life. Wherever possible we provide a tour of our facilities and information on life as a student. Of course what we really hope to achieve is an enthusiasm for engineering by offering the opportunity to get 'hands-on' with an engineering challenge. The

challenges we set have relevance to everyday life or to world-wide problems and are often run with the help of our own engineering undergraduates who are always keen to chat with students about university life and engineering.

2011 saw the introduction of our electrical and electronic engineering taster day which attracted 30 pupils from four schools across Nottingham and Derbyshire. Their challenge was to build and race an electronic car, assembling the mechanical components and soldering circuit boards. They also had the opportunity to discuss the future of electric cars with our leading academics. We are holding another event on 25 April this year but places are limited.

This year we will be running a taster day for our mechanical, materials and manufacturing courses with a special focus on biomedical material science - a rapidly growing area developing new products for the healthcare industry requiring a mix of both biology and engineering skill sets.



Students from The Kings' School, Peterborough during the STEM day, July 2011

Bookings should be made through the online booking form on our website but please contact me if you require something specific for a group of your students. We are always happy to tailor our events when possible and to welcome particularly keen students on to our award-winning campus.

Looking forward to seeing you soon.

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## Christmas lecture 2011

The topic of the Christmas Lecture 2011 was 'Across the Spectrum' and was accompanied by interactive displays in our new Engineering and Science Learning Centre. Pupils were able to see the blood flowing through their hands using laser technology that has been developed at The University of Nottingham for the initial assessment of severe burn injuries. They were also shown how engineers have been given access to the Highways Agency cameras to evaluate the change of the seasons by measuring the colours in the images across the year.

The lecture included demonstrations of lightbulbs in microwaves, fibre-optics communications and vibrating bridges. The winner of the quiz demonstrated indoor GPS positioning technology used by firefighters by pacing out a Christmas tree on the lecture floor that was downloaded in real-time onto the presentation screen.

The Engineering Christmas lecture series is set to continue in 2012 following the theme of 'Solids, Liquids and Gases' on Wednesday 19 December. Bookings can be made online.





## Changing lives in Malawi

Amy Wright, a 4th year civil engineering student, is currently assembling a group of volunteers to improve life in a rural village in Malawi.

She is leading a team of multi-disciplined engineers from The University of Nottingham who are planning to design and install a pico hydropower generator in the remote village of Ruarwe in Malawi. The generator will provide power for 21 lightbulbs, eight laptops, a projector, fridge and a sterilising unit. The power is generated using the force of falling water from a local stream.

The electricity generated will greatly improve the lives of the local people. Sunset is around 5pm but generating light in the primary school will mean the facilities will be accessible to older children to enable them to complete their education. The local hospital will also benefit from having a refrigerator to store vaccinations and medicines.

The generator has been designed to be sustainable, all the materials will be produced locally and training will be provided to the local community for maintenance purposes. A website has been produced to keep track of the project which contains interesting information and a short video clip of how hydroelectric generation works. <http://www.nustream.org>

Amy recently presented to visiting students at the civil engineering taster day.



## May Fest 2012



May Fest is the University's open day for the community where there are a wide range of fun, educational and informative activities for all the family.

Last year thousands of visitors experienced the latest research and how work undertaken at the University affects everyday lives.

May Fest 2012 will take place on Saturday 19th May.

A full programme of events will be on the website nearer the time.

<http://bit.ly/nottinghammayfest>



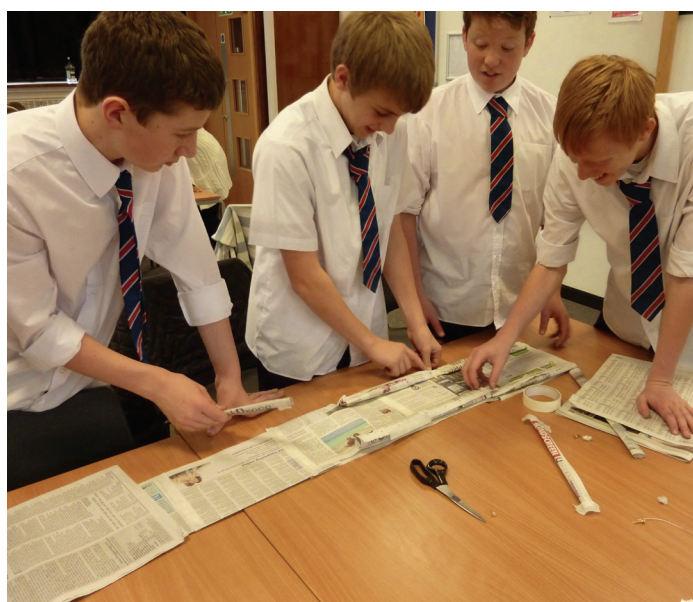
## Civil engineering taster day

Our first civil engineering taster day was held in November and was hugely oversubscribed with requests for over 90 places.

The programme (which ran from 9.30am to 2.30pm) included an introduction to what engineering is and the different disciplines. This was followed by a film of the Tacoma Narrows bridge collapse and a look at structures through a bridge building workshop. All the bridges were tested to destruction and prizes were awarded for both strength and design. The teachers team also produced a very impressive model.

There were short presentations from two of our current students, talking about student life as well as life as a civil engineer. The day was completed with a tour of the Engineering and Science George Green library to show the facilities available to students. Many of the pupils were very surprised at the differences to their school libraries and were very impressed that you could eat, drink and use your mobile phone in certain areas.

We hope to repeat this event early in 2013.







Students from The Kings' School, Peterborough in a maths strategy workshop - learning that gambling doesn't pay.

# Events calendar 2012

Our events range from hands-on taster days to departmental tours and course admissions information sessions. Register online at [www.nottingham.ac.uk/engineering/outreach](http://www.nottingham.ac.uk/engineering/outreach). We also attend careers fairs in schools and are interested in hearing your ideas about ways in which we can help to enhance your curriculum delivery. Many of these events are held on an annual basis so please contact us for future events if you find they are fully booked this year.

## February

Wed 8 - Architectural environment engineering taster day  
(Year 11 and 12) FULL

## March

Wed 14 - Merchant Taylors' School HE convention

Fri 16 - National Science and Engineering Week in-school workshop from our engineering doctorate students

## April

Wed 4 - Arkwright Scholars engineering experience day

Wed 25 - Electrical and electronic engineering taster day for gifted and talented Year 9 students, building and racing electric vehicles

## May

Sat 19 - Community open day - University-wide, activities and fun for all the family

## June

Thur 28 - Big Bang Fair - East Midlands Conference Centre  
Fri/Sat 29 & 30 - University undergraduate open days

## July

Mon 9 - STEM Day for The Kings' School, Peterborough

## September

Fri/Sat 14 & 15 - University undergraduate open days

## October

Wed 17 - Chemical and environmental engineering taster day

## November

Wed 14 - Mechanical, materials and manufacturing engineering taster day, with a particular focus on an upcoming area: Biomedical materials science

## December

Wed 19 - Engineering Christmas lecture

For further information please contact  
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