



THE UNIVERSITY OF
AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

ENGINEER YOUR CAREER

ISSUE 117

Information from Industry for Student Engineers



“We are looking for smart graduates with a passion for technology, regardless of their field of study.”

Fergus Bassett

BE Hons (Engineering Science)

OneNet Data Scientist

OneNet is a leading New Zealand Cloud Computing Service Provider experiencing rapid growth in Australasia. Our clients range from start-ups through to multinational corporates.

Graduate Opportunities

OneNet is hiring **Cloud Computing Engineers**. We are looking for outstanding aptitude, talent, motivation and problem-solving skills.

You will be trained in various aspects of cloud computing, within OneNet's own computing cloud, spread across Australasia, as well as Microsoft's Azure cloud and Amazon's AWS cloud.

You will be exposed to the full range of cloud computing technology elements, including networking, application deployment, infrastructure, security, server virtualisation, systems integration and client support.

OneNet provides an exceptional personalised career plan, with leadership development and an opportunity for technical specialisation.

How to Apply

Please contact OneNet's Chief Technology Officer, **Tony Weston** BE (E&E) Hons via email tony.weston@onenet.co.nz or phone 021 665 019 or visit our careers page www.onenet.co.nz/careers

How Did You Start Working at OneNet?

I started as an intern in early 2013 after going through the standard application-interview process, and came back as a full-time employee at the end of the year after finishing my degree. The work was challenging, and I had to quickly up my skills in areas such as software development and management in order to keep up, but it didn't take long until I felt competent in these skills – even though I hadn't specifically focused on them at Uni.

What Do You Do?

Since I started I've been involved in a range of internal analytics projects. These include automating accounting tasks such as invoicing, generating automated health reports for our infrastructure, and financial and profitability analysis. My role also involves answering questions that come up day-to-day using analytics. We're now splitting off into a new company focused on financial analytics, where I will be involved in managing and developing our products.

What Can You Expect as a New Employee at OneNet?

OneNet is a tight-knit community of people who know what they're doing. If you're the kind of person who wants to be challenged and rewarded accordingly, this is the place for you. At the same time, don't be put off if you don't perfectly match the profile. OneNet is a great environment to learn, and we're all constantly adapting to the newest technology – which also means your skills will remain at the cutting edge of the industry. Other benefits include a friendly small-company culture, a great location in Herne Bay, and a truly incredible Christmas party experience.



www.OneNet.co.nz



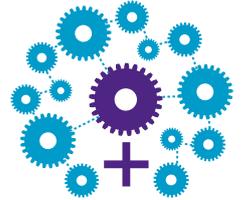


ENGINEERING



Clubs and Societies are an integral part of the Faculty of Engineering.

With active clubs in our Faculty, we are lucky to have a huge range of student activities, interests and support groups represented.



Clubs offer students the chance to develop professional skills and networks in their chosen fields of Engineering whilst others allow their members to occasionally blow off steam and relax in the middle of

a demanding and time-consuming degree programme. Importantly, all our clubs are student led and student driven – this means that they provide activities for their members that

their members really want (rather than activities and events Faculty staff think students want!) and offer students the chance to develop leadership capabilities. As club executive members, students are required to seek funding from internal and external sources, manage a (sometimes significant) budget, and come up with annual plans, all whilst pleasing a demanding membership body.

We are very proud of our Engineering Clubs and Societies, and the high level of service, support and entertainment they deliver to our students.



SESA



RAINBOW ENGINEERING





Kelera Wainiqolo

Graduate Transportation Engineer

Becoming an engineer was something I always endeavoured towards – I've always been fascinated by the construction of major projects especially pavements, bridges, and buildings, curious about how all the pieces fitted together to produce the end result.

My journey towards my degree saw me take many pit stops along the way, including a few years of travel. Despite taking my time to complete the degree, it was a rewarding adventure, one I do not regret, nor would I change.

I graduated with a BSc majoring in Civil Engineering from San Francisco State University. During my two summer breaks I worked at Auckland International Airport as a summer intern, gaining valuable insights into the profession I was striving

to be a part of. After returning home from studying abroad, I joined GHD as a graduate transportation engineer in the Aviation Service Line.

Since joining GHD, I have been given the opportunity to further my skills and room to grow through the wide range of tasks that I was given various projects I was involved in. So far, I have written technical specifications for jobs such as Northern Winter Remote Stands at Auckland International Airport, performed pavement designs for state highways, written pavement detail design reports, carried out design drafting, site supervision and much more.

The work culture at GHD is one that makes me excited to come to work every day. I feel really supported and the team is always willing to help whenever I need it. The graduate programme, buddy system and the young professionals group have

all assisted in my growth as a graduate engineer. I have been given opportunities to get involved in projects that I wouldn't have if I had joined another, larger organisation and I relish the challenges this presents me on a daily basis.

GHD is a great work environment to grow and develop your knowledge in engineering, enjoy a great culture, work in a diverse team, and most importantly maintain a great work/life balance.



Matt James

Graduate Environmental Scientist

My journey to becoming part of the GHD environment team in 2015 was unconventional and highlights GHD's dedication to creating a multi-disciplinary engineering consultancy. My pathway through university involved constant adjustment to my studies as I discovered what aspects of the engineering world I was passionate about. My decision to focus on the environmental issues around dairy farming's effect upon shallow groundwater for my Masters in Engineering Geology

allowed me to pursue my passion for the environment as a career.

From day one at GHD I have been constantly challenged and exposed to an enormous range of different projects. As an environmental consultant I am incredibly lucky to be involved in projects at different stages of completion and across every engineering discipline, from transport and infrastructure, to geotechnical and structural. I have been part of international projects in Australia and the Pacific Islands, have worked on the two largest current Ministry for the Environment contaminated land remediation projects in New Zealand, and am involved in two of the largest transport infrastructure projects undertaken in New Zealand. The opportunity to work on such a diverse range of projects is due to GHD's global network of experts which allow us to provide expert services across a large range of disciplines on complex projects nationally and internationally.

At GHD I am also able to work with the

geotechnical team to put my engineering geology background to use on geotechnical investigations. Being able to work as part of two teams within GHD provides me with even greater diversity of work and ensures that I am always doing something new and learning new skills for the future.

GHD encourages graduates to push the boundaries of their abilities and rewards you for taking opportunities both within New Zealand and internationally. As a graduate, GHD's global network of experienced and approachable colleagues gives you so many opportunities to learn from leaders within our industry, and provides the support needed to launch into your engineering career.



+ Victor Su Water Resources Engineer



How did you get the job at T+T?

Having been recommended by friends and classmates who had very positive experiences working at T+T, I was convinced to apply for a graduate position through the online process. In my final year of civil engineering studies, my interests toward the water resources industry grew which led me to apply for a graduate role in the Water group. After meeting the employees and having great discussions with the managers, I believed that T+T's Water group would be a fitting and enjoyable environment to work. The role seemed to provide the depth, variety and flexibility I was looking for. After thankfully being made an offer before leaving for a six month overseas exchange, I accepted the position right away.

What do you actually do?

In the short but busy five months since starting, I've been able to engage in a range of work tailored toward my career goals. This includes coastal and stormwater engineering work and business oriented tasks. Some examples include flooding vulnerability assessments for EQC in Christchurch, stormwater modelling for Auckland Council as well as offshore land developers in Fiji and Vanuatu, preliminary stormwater design/analysis for Transpower and Solid Energy NZ Ltd, coastal hazard assessments for district councils, strategic market analysis for T+T and economic analysis for Watercare. I've even had the chance to take up a junior health and safety representative role! Every week is never the same, which is the dynamic lifestyle you want as a consultant. There is often a good mixture of in-office and onsite work. For the first couple of months at T+T, I was involved in a field assessment of culvert and stream conditions throughout Auckland. It was a great practical learning experience where I got to explore beaches, parks, suburbs, talk to home owners and our clients!

How has T+T supported your career?

T+T's work culture helps to provide a supportive environment where graduates are comfortable to pursue their career interests. Managers care a great deal about staff wellbeing and make the effort to ensure you enjoy your work. Whether it's giving you the freedom to manage your own time, helping you seek out work of interest or simply finding ways to ease stress. Not only are staff incredibly knowledgeable but they are approachable and great to work with. It's a very collaborative atmosphere where everyone is willing to give graduates guidance and opportunities.

What's the best thing about working for T+T?

The best thing about working at T+T is the trust and respect exhibited by everyone. No matter what your level of experience is, everyone values each other's input and are open minded to new ideas. Graduates will feel that they are a real value to the firm. The diversity of individuals amongst T+T contributes to this attitude and as a 100% employee owned company, everyone works with the best intentions. Having also recently won the Australasian Beaton client choice awards for best New Zealand firm in our category, it further verifies this aspect of T+T with our clients.

What advice do you have for current students?

Never fear, yearn to learn and work hard play hard. Having the right attitude gets you a long way in the workplace and being proactive will give you the right opportunities. Be an optimist even with the most mundane tasks. Always look at the bigger picture and find ways to appreciate what you do. This applies to university as well!



Exceptional thinking together
www.careers.tonkin.co.nz



Sjouke Wieringa

Transportation Engineer, BSc, MSc

“Engineering for People” covers my intrinsic motivation for becoming a professional engineer. Where people live, there is transportation, where there is transportation there is movement, and to be able to move (more) efficiently and pleasantly with greater numbers of people we need smart engineers. That’s why I chose 4 years ago to study for my Master of Science in Transportation, Infrastructure & Logistics at the Delft University of Technology in The Netherlands after I obtained a Bachelor

of Science in Systems Engineering, Policy Analysis & Management. I enjoyed exchange projects to study abroad at the Royal Institute of Technology in Stockholm and contributed to extensive research in city evacuation at the Pontifical University of Santiago in Chile. I graduated a year ago with a planning approach for safer pedestrian mass events in the public urban space. As student I was involved in several student-organised-and-owned events of which one required me to stop studying for one year and dedicate all my time to produce the opera Carmen for our universities’ 170 years celebration. After my graduation and travelling through Asia and Europe, my partner and I felt it was time for our great adventure overseas: New Zealand!

I took the opportunity to approach TDG as they are the leading transportation engineering and consultancy firm in New Zealand. The personal conversations during my application period at TDG provided me with the confidence to make the move and start in Auckland as a transportation engineer. I do not regret one moment in doing so, since TDG provided me with the experienced mentors to start my professional career smoothly and supported me to continue research in my top interests

in transportation: city evacuation and (sustainable) active mode transportation & planning. During the first 4 months with TDG I have already joined several seminars on sustainable transportation, Auckland’s civil defence programme and the 2Walk&Cycle Conference.

TDG provided me with an extra family, lots of fun activities, sport challenges and flexible working hours to let me work efficiently and effectively while being able to continue playing the violin, cycle, and run and do Pilates during the week.

Auckland is really becoming my second home. My strong Dutch academic background and TDG’s personal and professional support, encourages me in excelling as an engineer to solve a variety of transport issues on micro, meso and macro level from – planning, design to operations – all for the greater good and the wellbeing of people. Luckily for me, I’ve still enough free time to spare exploring and enjoying New Zealand!



DOWNER YOUR FUTURE

Downer
Relationships creating success

We offer a comprehensive graduate programme, hands-on summer work experience and a selection of scholarships that will help you get the experience you need to succeed.

To find out more about our Young Professionals programme, visit www.downercareers.co.nz



Aimee is a Graduate Engineer in our Utilities team.

After doing a fantastic job with some of our water contracts, Aimee was offered the chance to go to **Vanuatu to work with Oxfam.**

AIMEE

Graduate, University of Auckland

The Downer Graduate Programme has been all hands on deck from day one. You get to see a complete picture of what contracting is like. It's been really rewarding and I've learnt so much from the experience.

Sam was a Scholar and is now a Graduate Engineer in our Infrastructure Services team.

SAM

Graduate, University of Auckland
Since joining the Downer Graduate Programme, I've already been given the opportunity to take the lead on the City Rail Link works. Everyone's passionate about their work at Downer, and they've been very supportive of me as a new grad.

Sam's got his hands full working on one of the country's biggest projects -

City Rail Link



OWN YOUR CAREER

With Downer, you can expect:

- Rotations through the business
- A dedicated mentor programme
- Annual Young Professionals conference
- Exclusive partnership with Volunteer Services Abroad (VSA)

Every part of what you touch in New Zealand today has been influenced by Downer. At Downer, you will meet some great people, get exposure to some fantastic projects, and have some fun - so go ahead and own your future by applying to our Young Professionals Programme.

Craig West, Downer New Zealand
Young Executive of the Year,
Deloitte Top 200



**CRAIG
WEST**

AT JACOBS, WE HELP PREPARE PEOPLE FOR NEW OPPORTUNITIES AND CHALLENGES.

With positions at every level, openings in multiple disciplines, expertise in a range of markets and offices around the globe, we create an environment where you can learn, grow, and thrive.

If you share our commitment to doing what's best for clients, enjoy working in teams and hold yourself to the highest ethical standards, you'll fit right in.



BILLY STRACHAN

I joined Jacobs as part of the First Look Scholarship programme which provides work experience and financial assistance to 2nd, 3rd and 4th year undergraduates; it has been a fantastic experience; I could not ask for a more supportive company. I have been given opportunities to grow during the last 18 months, given responsibility and ownership to design two storey steel frame structures which I am about to see commence construction. These challenging designs have been a huge learning curve for me as it was far from a hand holding exercise.

Along with technical experience I have been given project management responsibilities for several projects which involve assessments of critical infrastructure, structural remediation to existing buildings and a review of the loads that can be applied to the roof trusses at Forsyth Barr stadium which Jacobs designed.

I have now gained the understanding of project management, which has been a steep learning curve. I find my new found project management skills to be just as important as my technical skills as it allows me to understand what happens beyond finding the most efficient beam size and appreciate all the different drivers involved in a project.

As Jacobs is a global company, I have the opportunity to travel and work with people from all over the world. The 'Jacobs Go' programme which is a new initiative allows graduates to apply for 6 month secondments to Jacobs offices in all parts of the world from Asia to Europe.



RACHEL ARTHUR

I started at Jacobs as a First Look Student. I studied electrical and electronic engineering at the University of Auckland and after two summers at Jacobs I was able to choose my fourth year electives to feed into control systems and LV engineering, which was what interested me most. In the two years I've been working full time, I've worked on wastewater treatment plants (many of them!); pump stations, geothermal power plants, and lots more. To the great amusement of my friends, I've become interested in the wastewater side of things, because I love learning how the infrastructure of cities is put together.

One of my most challenging and rewarding projects was three months in Invercargill in the dead of winter, helping to supervise the expansion of a wastewater treatment plant for a dairy factory. My first day on the job, I was shown the treatment ponds. I was learning lots every day and I had the chance to develop relationships with the treatment plant operators, who explained to me how it all worked and gave me insights on engineering for the end user. I also learnt the value of accurate as built drawings, since we found at least five mysterious pipelines and cables in the course of the work!

I would like to move into sustainable engineering and urban infrastructure as my main focus, so I am leaving Jacobs temporarily to do a Masters in that subject. One of the benefits of working for Jacobs is that we have offices in every part of the world and experts in every engineering discipline to learn from.



ABEL LEENDERS

I've been a Jacobs's graduate for 6 months, having been offered a job at the end of the 'First Look' program. I started in the Industrial team where I was involved in work for pump stations and Fonterra projects. However, during the industry downturn, I moved into the building services team. The team is small, giving me the opportunity to get really involved in all disciplines of building services, and I have thoroughly enjoyed gaining a working knowledge of a wide range of subjects. I work with a range of extremely capable engineers, which is invaluable in terms of my personal development as an engineer.

The learning curve is a steep one, yet I've had the chance to work on both a 24/7 health clinic refurbishment and also a new hospital, which is about as complex and awesome as building services gets. My own development has also been accelerated through many opportunities in the graduate program and frequent involvement with overseas colleagues. In summary, for me Jacobs has been a great next step after Uni!



FERGUS LAURENSEN

I've been working in Jacobs bridge design team since January in what has been a dream start to my new career as a structural engineer. It's been a steep learning curve transitioning from Uni to a design office, a challenge that I've immensely enjoyed. There has been plenty of support from experienced professional engineers and other graduates alike. After an initial period of reading and learning about the New Zealand standards, alongside an analysis on some noise walls, I am now analysing the seismic response of a bridge. There is a buzz of activity between the various engineering disciplines involved in the project and I feel at liberty to go and pester the Geotech engineers to help me out with anything to do with the foundations.

There's a great office culture with a diverse range of people who are part of a diverse range of jobs. I wanted to do structural engineering throughout Uni, and Jacobs have accommodated me with that wish. There are so many opportunities to work the way you want to work as an individual too. For me personally, what has been really beneficial is the ability to work flexi-hours – starting and finishing early. This allows me to pick up my daughter from day-care and spend more time with my family in the late afternoon, which is important to me. However the opportunities to travel, or to change disciplines and take on entirely different roles are other ways by which Jacobs looks after its employees.



TONY FU

I joined Jacobs as an undergraduate through the 'First Look' scholarship programme. As an undergraduate working through my university holidays, I had the opportunity to travel around the country, monitoring seismic upgrade construction in Wellington. I enjoyed my summers at Jacobs so much that it was only natural that I chose them to begin my graduate career.

Over the past 18 months, I have been immersed in a range of exciting and technical challenging projects. We have carried out the full design of two local road overbridges; it has been interesting dealing with all the other aspects required to make such a large multi-disciplinary project run. This includes working closely with our design partner, Opus as well as our constructor clients, Fulton Hogan and HEB Construction. In addition I have interacted intimately with our external peer-reviewers and the end client, NZTA. It is very important that every party is aligned and share the same vision in order to build a satisfactory product that can be enjoyed for years to come. Recently, I have taken on the role of the design team's structural site representative. This role brings a whole new set of challenges as I am the first point of contact for site queries and often have to make decisions within tight timeframes.

Overall I feel that I have been given opportunities and responsibilities far greater than where I would be at another company. The skills and experience gained over the past 18 months has positioned me well for my future career aspirations. In the future I plan on taking advantage of the international nature of Jacobs's business in order to travel and work overseas. Through strong mentoring offered by our senior staff, the available pathways for me are clear, whether that be as a technical expert or in a managerial role.

OUR COMPANY AT A GLANCE

Headquartered in Pasadena, California

1947
Founded by
Joseph J. Jacobs

230+
Offices

30+
Countries

60,000
Employees

\$12.1
Billion 2015
Revenues

\$9.6
Billion 2015
Client Savings



Stephen Currie

Graduate Civil Engineer
Bachelor of Engineering (Hons) & Master of Engineering (Civil) at University of Auckland

What projects have you worked on?

Immediately after joining CLC I was given the opportunity to work on numerous large and challenging Auckland Council projects. Working with the Auckland Council, I have provided civil engineering design for playgrounds, both artificial and natural turf sports fields, coastal walkways, stormwater infrastructure upgrades, pedestrian bridges and much more. One of the key reasons I wanted pursue a career in civil engineering was to be able to give back to the community and helping build various park assets that will be used by the general public. This has been immensely rewarding and has provided me with a great sense of accomplishment.

CLC also specialises in subdivisions and land development work. When working with these kinds of projects I help facilitate the construction of various civil engineering aspects of a residential site such as driveways, drainage and earthworks. I find land development very enjoyable as there is a lot of problem solving involved with working around various site constraints and coming up innovative solutions that are both practical and cost effective for our clients.

The day to day work varies, which is great as most days I come across a new problem or situation to resolve. This has helped me develop a wide knowledge base in various aspects of civil engineering and ensures that each day is exciting with something new to look forward to. The extent of my involvement in these projects extends beyond design work and I have also had the opportunity to be involved with the tendering and construction monitoring phases. This aspects of a project is very



rewarding as I am able to see a site that I have designed being constructed.

How has CLC helped your career?

All of the staff at CLC are wonderful and always have time to tutor or discuss a project in detail. Working in a friendly, team orientated environment has allowed me to quickly develop my knowledge in various aspects of civil engineering and also enjoy myself while learning.

CLC have also been very supportive of my goal of obtaining chartered engineering accreditation, I have been assigned a mentor to monitor my development and tutor me. As well as helping my professional development in the office CLC has been happy to upskill me by sending me to various training courses and events to learn and network with my peers. So far I have had the opportunity to learn how to effectively use the CAD programs 12D and AutoCAD and have also gone to conferences, and other seminars, which has provided me a great way to learn more about the engineering industry and network with other professionals in a variety of fields.



More about CLC Consulting Group

CLC Consulting Group provides Civil & Environmental Engineering, Structural Engineering, Land Surveying, & Planning services throughout Auckland and the Pacific Islands since 1970. We are a mid-size multi-disciplinary consultancy employing about 30 people in our Auckland office.

Check out our website to find out more about CLC and apply on-line.

www.clcgroup.co.nz

Engineering for the Future: Career Development Opportunities at Milmeq

INTRODUCING MILMEQ

Milmeq specialises in delivering capital plant equipment for food processing operations around the world.

Our areas of expertise include primary food processing, chilling and freezing and materials handling. We provide performance-enhancing solutions to clients across the meat, poultry, dairy, seafood and horticulture industries.

Having already established ourselves as leaders in New Zealand, we are now recognised globally for offering world class technologies and support systems.

MEET OUR RECENT INTERNS AND NEW GRADUATES



Catherine Clark

Intern, BE (Chemical and Bioprocessing)

"I was an intern at Milmeq during the summer of 2015/16.

During my 12 weeks, I was able to work on a range of different projects, and was exposed to a variety of aspects of the business. This gave me a solid overview of the industry, and a good idea of where I could be in 10-20 years' time.

In particular, it was great to work alongside top engineers to help develop new systems for different types of refrigeration, as well as investigate plate freezer efficiencies to optimise freezing times.

I was also able to look into animal welfare, making sure Milmeq's products met and complied with the world-wide standards.

It was great seeing the theoretical aspects of my degree put into practical application at Milmeq."

DEVELOPMENT OF ENGINEERING TALENT

We recognise that bringing young engineering talent into the business provides fresh ideas and approaches, which are essential ingredients for long term growth and sustainability.

Milmeq supports the development of New Zealand engineers through a variety of initiatives including:

- > Auckland University Scholarship programme
- > Summer Internship
- > Graduate Recruitment



Thomas Craig

Graduate, BE (Mechanical)

"I joined Milmeq as a Graduate in November 2015, after interning here the previous summer.

In my role I've had the opportunity to work on a wide variety of projects and put a lot of the theory I learnt in my degree into practical application.

One of these projects is a research and innovation project looking at how stun boxes can be improved to ensure animal welfare standards are consistently met. This has involved reviewing existing research studies, liaising with consultants and visiting meat processing plants in Australia to view the setup of their stun boxes and identify their operational needs. The next stage will be designing a solution and developing a prototype.

It's fantastic getting to work alongside highly experienced engineers – I find myself learning something new every day."

Milmeq Internship – Apply Now



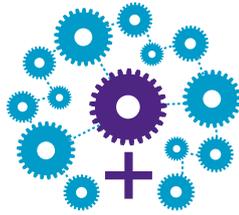
Milmeq's summer internship offers recipients 400 hours of experience, working on cutting edge innovation projects with a direct application to our chilling, freezing, processing and materials handling products.

To apply for an internship, 3rd year BE students studying mechatronics, mechanical, electrical or chemical process/chemical and materials can send their CV, cover letter and unofficial academic transcript to recruitment@milmeq.com.

Applications close 15 September 2016.

Milmeq
engineering for the future

www.milmeq.com



Bringing together Graduates, Postgraduates, Staff, and Industry

Creating an inclusive environment for all engineers and a space to network made the perfect formula to hold the Faculty of Engineering Pub Quiz. Held earlier on this year, the Women in Engineering Network (WEN) at the University of Auckland put on a night filled with laughter and knowledge, and everyone was invited!

With the aim of creating a fun, stress-free networking environment, many students saw this as a valuable opportunity to engage with engineering professionals. Involving almost 100 current engineering university students and a combination of 70 postgraduates, university staff and industry, much was to be discussed over difficult quiz questions.

Based on the success of the night and the vast number of newly founded friendships made, WEN looks to bring more events such these to the University.



Coming to you soon!

Pink ribbon Fundraiser – Bale sale
Friday 14 October



Enginuity Day

Enginuity Day provides high school students with the opportunity to be exposed to first year engineering. Earlier this semester, students from all parts of Auckland and beyond attended this event and the outcome was one to remember.

Students heard from guest speakers; Janet Van, Jasleen Kaur and Keri Moyle. Over morning tea laughs, smiles and chatter filled the corridors throughout the faculty building.

Attendees were then exposed to the various engineering specialisations offered at the university, through interactive activities which allowed them to try on their engineering thinking caps. The day concluded with a student panel who were asked questions about their experience as a first year engineering student and their transition from high school to university.

All in all, Enginuity Day 2016 was a great success, with an increasing number of students seeming interestingly keen to join the faculty in the coming years!



Like us
on Facebook
to find out
more about our
upcoming events:
Women in Engineering – WEN