

ENGINEERUS

Circulation: 42,000

School of Engineering Newsletter | Issue 45 | January 2015

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EDUCATION Spotlight

The education system in Singapore has evolved over the last 50 years, and today, we have one of the best education systems in the world. How have our students been performing academically? In this issue, **ENGINEERRUS** takes a look at some statistics and makes sense of the numbers.

Performance of Primary 1 Cohort

The percentage of each Primary 1 cohort admitted to post-secondary education institutions has improved steadily over the last 10 years, from 89.5% in 2004 to 95% in 2013. Also heartening is the fact that this improvement applies to all racial groups in Singapore. This means today's population has received more formal education compared to their forefathers.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Year started Primary 1	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Malay	79.0	81.7	82.9	84.1	85.2	86.5	87.3	88.3	89.4	90.1
Chinese	92.9	93.6	93.6	94.3	94.8	95.0	95.6	95.8	96.2	96.7
Indian	85.1	84.7	86.6	87.6	88.6	89.0	90.4	90.6	91.1	91.7
Overall	89.5	90.9	90.8	91.8	92.3	92.8	93.5	93.9	94.4	95.0

Percentage of each Primary 1 cohort which made it to post-secondary education



GCE 'O' Level

At the GCE 'O' level, the overall percentages of school candidates with at least 3 and 5 GCE 'O' level passes have remained consistently high over the years, hovering at about 95% and 80% respectively. In the most recent 2014 'O' level exams, students' performance improved to a 10-year record high. Out of the 30,964 school candidates who sat for the exams in 2014, 95.9% obtained at least 3 'O' level passes, while 83.3% achieved at least 5 passes.

GCE 'A' Level

At the GCE 'A' level, the overall percentage of students with at least 3 'A' level passes and a pass in the General Paper or Knowledge & Inquiry, has improved over the last 10 years, from 89% in 2004 to 91% in 2013.

Polytechnic Education

Among the options for post secondary education, polytechnics have become more popular. Whereas a polytechnic education used to be seen as a "last resort" for students who could not get a place in a junior college (JC), they are now very

much the tertiary education of choice for many. Interestingly, about 40% of those who chose to study in a polytechnic in 2013 had also qualified for a JC.

A polytechnic education is becoming more popular because employers today realise that poly diploma holders are able to add value to their organisations. The strong industry-focus of a poly curriculum, internship opportunities in companies or institutions where students are exposed to real-world issues and challenges, as well as the applied learning focus and work-relevant training in a polytechnic, have resulted in greater demand for poly diploma holders and hence higher starting salaries.

ASPIRE

The government is also focusing on the practical value of a polytechnic diploma and has set up the Applied Study in Polytechnics and ITE Review (ASPIRE) committee to look into improving career and academic progression prospects for polytechnic and ITE graduates. Poly diploma holders are encouraged to look beyond paper qualifications and to first acquire relevant job experience by joining the workforce upon graduation.

For those who do wish to obtain a degree, the poly route is now a viable option, as more places at local government-funded universities have become available for poly diploma holders.

Sources:

- 1) "10-year Trend of Educational Performance", MOE, 10 Nov 2014.
- 2) Education Statistics Digest 2014, MOE, Aug 2014.
- 3) Results of the 2014 S'pore-Cambridge GCE 'O' level Examination, MOE, 12 Jan 2015.

TP RAWKS 2014

About 800 students from various secondary schools congregated at Temasek Polytechnic (TP) for the annual year-end “Zouk-Out” event, code named “TP RAWKS”, held from 17 – 19 Nov '14.

Besides getting a gist of the diploma courses and life in a polytechnic through workshops, games, quizzes and tours, participants also got a taste of Temasek Poly’s unique waterfront lifestyle.

Padding through the serene waters of Bedok Reservoir in dragon boats, they soaked in the scenic environment and took in the greenery of the surrounding parks.

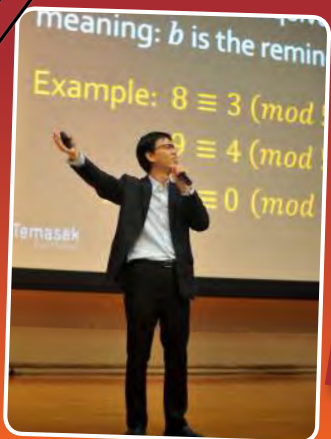
The event culminated with a Jam & Hop on the final evening, when participants let their hair down and hit the dance floor to chillax after the stressful ‘O’ level exams and look forward to a fresh new year.



WERE YOU HERE?...

Hundreds of secondary school students visited TP's School of Engineering where they toured the facilities, attended workshops to pick up Engineering-related skill-sets, and had fun learning. Were you one of them?

Mathematic Seminar
(14 Aug 2014)



TP Sneak Preview
(15 – 16 Oct 2014)



Buddy Programme
(3 – 7 Nov 2014)



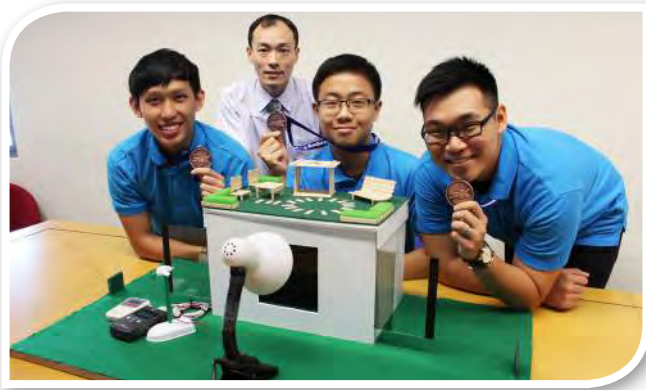
TP Open House
(8 – 10 Jan 2015)





SCIENCE AT WORK

Showcasing their ability to apply what they have learnt, our Engineering students built two prototypes to demonstrate scientific theories at work, winning two Bronze medals at the Amazing Science-X Challenge held on 19 Sep '14.



Bernoulli Principle

A second team, comprising students from the Diploma in Biomedical Engineering and Diploma in Clean Energy, showed how ping pong balls in a pipe would move in the opposite direction when a strong gust of air is blown at the opening of the pipe, proving the Bernoulli Principle.

Environmentally Sustainable Design (ESD)

The team from the Diploma in Green Building & Sustainability built a sophisticated model of a building based on the ESD concept. A lamp was used to represent the sun (source of solar radiation and heat) while a temperature and light sensor placed inside the building displayed the interior air temperature and amount of light. A solar panel in the building converted light energy from the lamp into electricity, powering a miniature standing fan in the room.



GAMING FOR SUCCESS

Two students from the Diploma in Media & Communication Technology developed interactive 3D mobile games to teach youngsters basic safety as well as raise their awareness of the consequences of committing vandalism, winning a Silver and a Merit award in the annual SAFE (Security Awareness for Everyone) competition held on 23 Oct '14.

In "Max Saves the Day", a children's game developed for the Singapore Civil Defence Force, the protagonist Max encounters various scenarios (such as a fire in a hair salon) and has to choose a solution from three options: a pair of scissors, a fire extinguisher, or a hair dryer.



In their second game, "Vic the Vandal", which was developed for the Police, the protagonist Vic enters a house and vandalises the walls with a can of spray paint. Consequently, a ghost emerges to punish him, and Vic can only escape from the ghost by cleaning off the paint he had sprayed, thereby conveying the message that crime does not pay.

The competition was organised by the Ministry of Home Affairs.



OUR BUDDING GREEN ARCHITECTS



The award winning team

If an architectural design by three students from the Diploma in Green Building & Sustainability is indeed implemented, then Tampines residents can look forward to an exciting new facility, fully equipped with “green” features, located at the junction of Tampines Ave 4 & 5.

Using Building Information Modelling (BIM) concepts, the GBS students designed a mixed-development complex comprising sports and recreation facilities and a commercial block for the site. Their proposed facility includes green features such as a void stack for ventilation, a rooftop swimming pool to insulate heat, glass windows to diffuse daylight, and heat reflectors, while taking into consideration the position of the sun, human traffic, and natural airflow in the area.

Their design won the Bronze medal in the annual BIM competition organised by the Building & Construction Authority (BCA), held from 1 – 4 Sep '14.

GBS student Edison took home the Silver in the Mechanical, Electrical & Plumbing (MEP) category, while another student, Lim Jia Hui from the Diploma in Integrated Facility Management, took home an individual Gold award for her architectural drawing of a residential unit.



The drawing by Lim Jia Hui which won a Gold award

LET US SHOW YOU HOW

The challenge: steal the sweets inside the pocket of a dummy and then hug the dummy. Sounds easy enough?

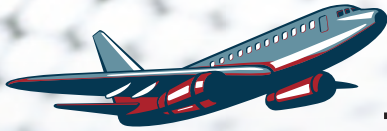
Well, it was no piece of cake, as visitors to the booth run by two students from the Diploma in Biomedical Engineering found out.

An ultrasonic sensor and an infra-red sensor were positioned near the dummy's pocket and shoulders respectively. Visitors who tried to steal the sweets inside the dummy's pocket, or to hug the dummy, activated the respective sensors when their hands got near, triggering a blaring alarm and a flashing red LED light.

This simple but effective and interactive way of showing how sensors work, using this project called “Sensory Wonders”, won the two students the Silver award at the Science Buskers’ Festival competition held on 3 Aug '14.



Organised by the Singapore Science Centre, the competition aims to inspire an interest in science and technology using interactive exhibits.



AN AVIATION LEARNING JOURNEY

Based on a working paper she had written, Yeo Xing Jie, a final year student from the Diploma in Aviation Management & Services (AMS), was selected by the Civil Aviation Authority of Singapore to represent our nation at the International Civil Aviation Organisation (ICAO) Next Generation of Aviation Professionals (NGAP) Model Council session held in Montreal, Canada, on 3 & 4 Dec '14. She reports on her experience.



Xing Jie representing Singapore at the Model Council session

By Yeo Xing Jie (AMS)

The Model Council session, organised for NGAPs like us to share our viewpoints, debate, negotiate, and draft resolutions, just like a real ICAO Council session, gave us an insight into each country's role in the decision-making process. We discussed the issue of how the aviation industry can attract and retain talented professionals.

We were also given a tour of Ecole Nationale d'Aerotechnique, the largest college-level aeronautical institute in North America, where we saw more than 300 aircraft used for training students to become Licensed Aircraft Engineers. Some students had even built a passenger plane which they could actually fly!

Of course, it wasn't all work and no play. We had the opportunity to enjoy Montreal's sights such as the Notre Dame Basilica, Old Town and Mont Royal, and of course — no trip to Canada would be complete without this — try their maple syrup!



Indeed, the things which I have learnt in my diploma course actually came to life before my eyes in Montreal!

OUR BUSINESS SAVVY STUDENTS

Taking part for the first time, students from the Diploma in Business Process & Systems Engineering and Diploma in Electronics (Business option) applied the business knowledge they had acquired from their course, to clinch the Gold medal in the LES Asia-Pacific Student Business Plan Competition (Singapore), held on 15 Sep '14.

Their innovative business plan revolves around their flagship product, the "Smart Walker", which is essentially a walking stick that can be expanded into two sticks for better stability, and then collapsed again for easy storage. They have set up a company, called Sozo Innovations, specialising in designing rehabilitative products for the elderly, thereby tapping into a growing niche silver market.

As the top team from Singapore, they then represented the Republic at the International finals during the LES Asia-Pacific Regional Conference held in Korea from

5–6 Nov '14. Competing against top teams from universities in Japan, Korea, Hong Kong and India, they took home the Bronze award.



The Smart Walker

ENERGY-SMART DISPLAY



Clean Energy students, teaming up with their peers from the Diploma in Infocomm & Network Engineering, showcased two projects at the prestigious Youth Energy Showcase, an exhibition held from 27– 30 Oct '14 in conjunction with the Singapore International Energy Week at Marina Bay Sands.

Their projects, entitled the “Energy Saving Kits for Energy Smart Lab” and “Photovoltaic Pre-feasibility Technical Analysis Template”, effectively presented 5 energy-saving ideas which could be implemented in school laboratories.

The features of their new-age lab included, among others, the use of LED lighting which consumes less electricity than conventional lighting, smart energy meters and a mobile app to track energy consumption of appliances, and an Internet of Things (IoT) dashboard for remote energy monitoring, control and status notification.

EARTH, WIND AND FIRE

On a scorching-hot windy afternoon on 24 Oct '14, a jarring alarm bell reverberated throughout the School of Engineering, as about 1,000 staff, students, cleaning workers and even canteen vendors scrambled to the gathering area at Tembusu grove, fronting Bedok Reservoir.

They were taking part in the School's annual Fire Evacuation Drill, complete with a dose of the sun, the sand, and the reservoir.

Chief fire operations officer, Mr Dexter Phang emphasised: “Ignorance is bliss, but bliss can be costly. So we have to be prepared at all times.”





FUN FOR A CAUSE

Enjoy a refreshing ice cream as you pose to have your caricature drawn, sip bubble tea while you get your hands decorated with henna art, or have your photo taken with a group of friends as you wave the balloon sculpture you had bought.

All these, and more, were offered along the School's concourse during the annual Campus Care Network (CCN) carnival held on 14 Nov '14.

The half-day event netted a total of \$37,884 for the CCN fund which helps financially challenged students in the polytechnic.



A SAUCE OF SATISFACTION

A dozen lecturers from the Diplomas in Integrated Facility Management (IFM) and Green Building & Sustainability (GBS) embarked on a culinary learning journey on 21 Aug '14, whipping up stir fried kailan with mushrooms, *mee goreng*, and lemon chicken. If that's not enough to whet your appetite, read on...

By Wiliana Sulistio (IFM)

One day, we came up with this crazy idea of enrolling in a cooking class. The objective was to enhance our cooperation, communication and teamwork, by transferring these cultivated attributes from the kitchen into our office.

If we could debunk, in the process, the gender stereotype that males can't cook, all the better. But alas, our male colleagues failed to rise to the occasion (oh no!). Most of them had not done it (or attempted to do it) in years!



The writer (3rd from right) in action

Everyone tried very hard, from peeling and chopping garlic and de-skinning a chicken, to fishing kailan pieces from a boiling pot.

Communication is definitely one key ingredient for success – which we found out the hard way. One of us jumped the gun and added salt into the *mee goreng* sauce. Following the cooking instructions, the person at the wok then added a second dose of salt while stir frying it. The result? A very stimulating *mee goreng* indeed!

So whoever said that Engineers can't cook?

IT'S BELLY BELIEVABLE

Dr Tony Halim, 38, used to tip the scales at 94kg (BMI of 32). But in just 5 months, his pot belly had disappeared and his weight dropped to a healthy 68kg. Find out how he did it.



Tony (left) with Engineering School colleagues at the Standard Chartered Marathon

By Tony Halim (ENG)

With Singapore being such a gastronomic haven, my weight had over the years ballooned to an unbelievable 94kg!

One hefty evening, as I slumped on my living room couch, browsing an old photo album, I was shocked to realise how fat I had become! It was demoralising. I tried to tell myself that weight is directly proportional to age, and becoming fat is a natural progression of life. But hey, who was I kidding?

From that day, I resolved to start taking charge of my life, and I signed up for the Standard Chartered Marathon 10km run, so that I had a target. With 5 months to whip the lard in my body into muscles, I trained hard everyday, either running 6km around Bedok Reservoir or swimming 30 laps in the campus pool.

Using an app called "Fitnesspal", I capped my food intake at 1,000 calories per day. Based on my research, even without exercise, that should make me lose 120g each day.

Now that I've achieved my target BMI of 23, the greater challenge is to maintain it, and perhaps aim for the next milestone, just as in life.

I hope my story will be an inspiration to all those hoping to lose weight and lead a healthy lifestyle.



Then you saw it, now you don't

FAST AND FURIOUS

Meet our king of speed, **Ananth Shanmugam**, the Lewis Hamilton of Temasek Polytechnic.

When he's not in school, the first year student from the Diploma in Aerospace Engineering is burning rubber on the track, striving to clock even faster times in his Formula BMW.

"My Formula BMW looks similar to an F1 car, except that the former is smaller and less powerful," explains the 17-year-old driver, whose interest in racing was first piqued when his parents took him to a go-karting ring in 2009. "The Formula BMW was also a stepping stone for F1 drivers like Daniel Ricciardo and Sebastian Vettel," he adds, with a wink.



Ananth (in red) popping the champagne after a race

But isn't motor racing dangerous? "It's true, it's a risky sport," admits Ananth. "But as racing drivers, we accept the risks each time we step into the car, and thankfully, modern technology has helped to reduce the possibility of serious injury," he says.

Does studying Aerospace Engineering help? "The Engineering knowledge from my diploma course allows me to understand the design and components of a racing machine, thereby helping me to maximise its performance," explains the avid racer, who emerged 2nd runner-up in the JK Tyre Racing Championship 2014 held in India.

"Just as in motor racing, the only person capable of making your dream come true is yourself," advises Ananth, whose ambition is to win the 24-hour Le Mans Endurance race.

FIGURE IT OUT... And win McDonald's vouchers!

According to the Number Theory (a branch of mathematics), the number 6 can be partitioned into 11 ways, as follows:

6	=	6										
6	=	5	+	1								
6	=	4	+	2								
6	=	3	+	3								
6	=	3	+	2	+	1						
6	=	4	+	1	+	1						
6	=	2	+	2	+	2						
6	=	3	+	1	+	1	+	1				
6	=	2	+	2	+	1	+	1				
6	=	2	+	1	+	1	+	1	+	1		
6	=	1	+	1	+	1	+	1	+	1	+	1



Study the table carefully as an example. In how many ways can you partition the number 10?

This contest is open to secondary school and ITE students only. Email your answer, with full name, school, and HP number, to: cheeseng@tp.edu.sg with the subject title, "**Engineerrus Maths Puzzle 9**".

The first 10 correct entries drawn after the closing date (**30 June 2015**) will each win a booklet of McDonald's vouchers worth \$12.

ANSWER TO QUIZ #7
You would be able to add another 2 upright bottles into the crate if you repacked it, making a total of 50 bottles. Alternatively, you could add 35 more bottles if you slotted them upside down into the spaces between 4 adjacent bottles, bringing the total to 83 bottles. Both answers are acceptable.

Winners:
Alicia Goh (Bedok Green), Yin Jinghong (Hua Yi), Sheela Wan (Shuqun), Jodel Chua (Kent Ridge), Leong Wen Qi (Anderson), Matthew (Dunman Sec), Bryan Chong (Yusof Ishak), Karlyn Koh (Bedok South), Jordan Sia (Jurong West), Ong Jian Yong (Bendemeer).

MAGICAL INTERNSHIP

Toong Hui Qin, from the Diploma in Integrated Facility Management (IFM), was attached to Disney World, USA, for her internship from 26 May to 29 Aug 2014. She shares her magical experience.

By Toong Hui Qin (IFM)

I was ecstatic to have been given this opportunity to do my internship at Disney World in Orlando, USA. Being able to learn outside the classroom in a real life context is already fantastic, but I mean... Disney World!

I was attached to the resort's Blizzard Beach as a lifeguard (yes, lifeguard!). What was I supposed to do there? Why, save lives, of course!

First, we were put through intensive training. We learnt how to identify someone in distress and the different techniques of dragging a victim out of the water. If the victim is facing us, we'll use the Front Drive, and if the victim is facing away, it'll be a Rear Hug. We were also taught basic first aid.

And guess what? Just as you have "mystery shoppers" visiting retail outlets, we had some in the water too — our supervisors, disguised as guests, regularly fake drowning to test our responsiveness and literally keep us on our toes.

Just one week into the job, I had to save a drowning kid at the "Run-Off Rapids". This 7-year-old boy couldn't swim well, so when he came down the rapid, the current naturally pushed him back towards the slides. I panicked at first, and blew hard on my whistle to call for reinforcement. After pressing the emergency "Stop" button, I dived in. When I got him out, the poor boy, named Jay, immediately engulfed me in a hug, crying frantically. Honestly, I was a bit shaken by this episode, but I am glad that I had saved a life.

Hui Qin, with fellow lifeguards at Blizzard Beach

Besides the job experience, my internship has really widened my horizons as I worked with colleagues from around the world and learnt about their culture. Very importantly, I've learnt — first hand — how a resort facility is managed and what makes it tick.

But above all, I am proud to have been part of the team which makes the "magic" of Disney World happen for both young and old!



With fellow IFM students Cassandra, Yueting and Lok Tin, who also did their internship at Walt Disney World

GUARD YOUR CASH-CARD!

As a car owner, you are probably aware that thieves may smash your glass window to steal the cash-card in your in-vehicle unit (IU).

A new device, called the “Shepherd Guard”, will deter would-be thieves. Developed by students from the Diploma in Business Process & Systems Engineering, the device activates an alarm if the cash-card in the IU is pulled out while the engine is switched off.

A blinking LED lamp and sticker label on the IU warn potential thieves that the IU has been armed, thereby making it effective as a deterrent.

Furthermore, as cash-card theft usually happens to several cars parked together, thieves who do steal the cash-card from one car would have triggered the alarm, so they are unlikely to proceed to steal from the next car.



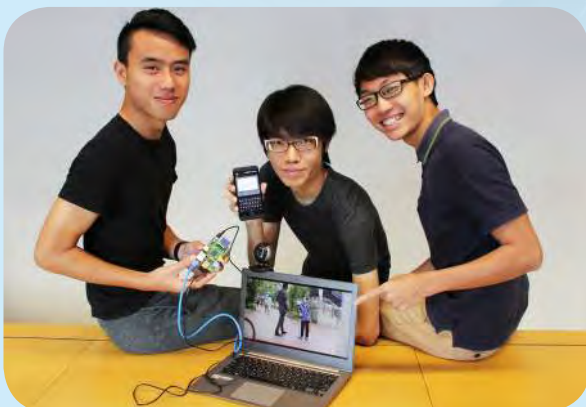
How does it work?

The system taps on a vehicle's existing door-lock alarm, so there is no need for a separate alarm. When the car engine is switched off, a small amount of current still flows within the alarm's circuit. Pulling out the cash-card from the IU causes a sudden surge in this current (of about 60mA), triggering the alarm.

HELP ME, I'M LOST!

It is not uncommon for the elderly to find themselves lost outdoors because of their poor memory or dementia.

Now, they only need to wear a QR code on their clothes and passers-by who find these lost souls, would be able to notify their next-of-kin using a unique Android App, developed by students from the Diploma in Computer Engineering (CEN).



The message received by the next-of-kin

When the passer-by scans the QR code using his mobile device, he would be prompted to key in his location. The location is then automatically sent to the mobile phone of the elderly's next-of-kin, who can rush to the scene to “retrieve” his old folk.

If the passer-by does not have the App installed in his mobile device, he can, alternatively, go to a website, key in the elderly's tag number (printed next to the QR code) as well as his current location, click “send”, and a message will similarly be sent to the next-of-kin.

Found: innovative student inventors from CEN



Outer Space IS THE LIMIT



Grace Parn Jiahui, who graduated with a Diploma in Electronics (Aerospace option) in 2007, is now a Senior Mechanical Engineer at ST Electronics (Satellite Systems) Pte Ltd. The 28-year-old former Katong Convent student has put her diploma training to good use, helping Singapore to develop its first commercial earth observation satellite, TeLEOS-1, slated to be launched into orbit later this year. **ENGINEERRUS** catches up with her.

Tell us about yourself since graduating from TP in 2007.

I obtained an Aerospace Engineering degree from RMIT in Melbourne, Australia, before joining ST Electronics.

Did your diploma training help you at university?

Oh, it earned me an exemption from 6 university modules, and it also helped me to understand topics related to the various aircraft avionics systems.

So what do you do at ST Electronics?

I am a part of a team that designs, analyses, integrates and tests the structural sub-system of a satellite. We are currently working on a project to develop the first made-in-Singapore earth observation satellite.

Awesome. What is your role in this prestigious project?

My main role is to design the mechanical housing for electronic boards, and to ensure that the housing meets specific thermal and structural requirements. I am also involved in preparing the mechanical ground support equipment used to hold the satellite during integration. And lastly, I also help to oversee the designing and building of the satellite's transportation container, which has to be

air-tight and able to protect the satellite from external shocks such as physical impact, rain, heat and cold.

Does your TP diploma help you in your present job?

Definitely. My Diploma in Electronics has given me a strong basic understanding of electronic components and circuitry concepts, which comes in handy when I'm dealing with satellite sub-systems.

What would you say is the secret of your success?

Hey, it's no secret! Always be humble and open to advice and be thankful for any help or advice given to you. ☺



Working on a satellite sub-system with a fellow Engineer, Stanley

DREAMS COME TRUE

Once upon a time, two young ladies sat down and made a wish. But no, they were not wishing for a frog in a pond to turn into a prince charming.

Tiffany Chia Wen Fang and **Serene Tan Ser Lin** were dreaming about being able to set up their own events management company.

A Major Project and four months of internship later, their wish came true.

Tiffany and Serene, who both graduated with a Diploma in Integrated Facility Management (IFM) in 2013, had worked out their plans as part of their Major Project entitled “Oh My Event” and honed their skills during their internship at an events management company in their final year.

In their last semester, they took the plunge into the pond and set up Reneniti Management Pte Ltd, also known as “OHMYEVENT” (www.ohmyevent.sg). Besides providing brick and mortar event management services, the company also runs an online marketplace where customers can log in to book event venues, hire vendors and manage their project remotely, while vendors can actively market their products and services in the portal, and even track their sales with monthly financial reports.

Tiffany, who is the Business Development Director, explains: “We aim to revolutionise events management by infusing it with technology, for the benefit of both our clients and vendors.”



Serene (left) and Tiffany

The former Presbyterian High School student is grateful for the guidance from Temasek Polytechnic’s Entrepreneurship Centre, which had helped them to obtain the ACE start-up grant of \$50,000 from SPRING Singapore.

Her partner, Business Relations Director Serene Tan, is equally grateful: “The things we learnt in our IFM subjects such as Space Planning, AutoCAD, and Project Management help us a lot now that we plan and organise events,” assesses the CHIJ (Toa Payoh) alumna.

Any advice for aspiring entrepreneurs? “The key is to understand that failure is necessary for success, so you need to bounce back from setbacks, otherwise you will lose the opportunity to succeed,” asserts Tiffany.

In a little over a year, their company has hired 8 staff and chalked up a 6-digit turnover, counting numerous established organisations among its clientele.



OHMYEVENT staff at an event which they organised for a customer

OHMYEVENT

15% OFF

event management services from
“OHMYEVENT”

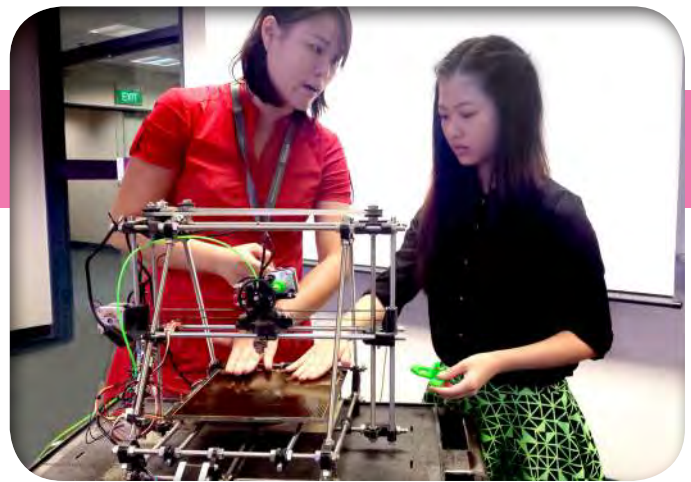
www.ohmyevent.sg

Valid till: 31 July 2015

NEW AEMs FOR SEC SCHOOLS

Our School of Engineering will be offering two new Advanced Elective Modules (AEMs) for secondary school students starting in the April 2015 semester. These are: "Introduction to Aviation & Aerospace", and "Appreciating 3D Printing with Mechatronics".

Introduction to Aviation & Aerospace centres on the world of aviation and includes both the engineering and business aspects of this important industry, while **Appreciating 3D Printing with Mechatronics** focuses on part and assembly modelling with CAD tools and the mechatronics behind a 3D printer, while providing students with hands-on experience in making solid models using 3D printing.








Offered by the various polytechnics since 2006, AEMs are MOE-approved applied subjects for secondary school students, taught using practice-oriented approaches similar to those used in the polytechnics — group work, project assignments and oral presentations. They aim to enhance students' learning experience, provide a greater diversity of curricula, and give participants a taste of how polytechnic courses are conducted.

Our two other AEMs already being offered are: "Electronic Prototype Design" and "3D Modelling & Animation".



COURSE ENQUIRIES

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	Facebook:	facebook.com/TP.Engineering
	YouTube:	youtube.com/TPEngSch

Engineering Diplomas

- 3D Interactive Media Technology
- Aerospace Electronics
- Aerospace Engineering
- Aviation Management & Services
- Biomedical Engineering
- Business Process & Systems Engineering
- Clean Energy
- Computer Engineering
- Electronics
- Green Building & Sustainability
- Infocomm & Network Engineering
- Integrated Facility Management
- Mechatronics
- Media & Communication Technology
- Microelectronics

Special Programmes

- Common Engineering Programme
- Electrical & Electronic Engineering Programme
- Mechatronics & Aerospace Programme

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