

ENGINEERUS

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Early Admissions Exercise

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GET IN EARLY

From June 2016, 'O' level students can apply for a polytechnic diploma course under the Early Admissions Exercise (EAE), formerly known as the Direct Poly Admissions (DPA) Exercise. What is the EAE and how is it different from the previous DPA? **ENGINEERRUS** gives you the answers in a nutshell.



What is EAE?

The EAE, or Early Admissions Exercise, allows current Sec 4 (Special / Express) and Sec 5 (Normal Academic) students to apply for, and secure, a place in a polytechnic even before they sit for their 'O' level exams.

The EAE combines the previous DPA, as well as the Joint Poly Special Admissions Exercise (JPSAE) under which students were accepted into a diploma course based on achievements in co-curricular activities.

Under the EAE, you may indicate 3 choices. You can choose any diploma offered by any of the 5 polytechnics, and will be assessed based on your aptitude for the course, passion and interest for the field of study, as well as non-academic talent such as leadership, sports and community service. Applications open in June each year and the selection process comprises an interview and an aptitude test held in July. You will be notified of the outcome by September.

The good news is that, the total EAE intake for each cohort has been raised from the previous quota of 7.5%, to 12.5% from June 2016.

If you are unsuccessful in your EAE application, or if you are offered a place but reject it, you may still apply again at the Joint Admissions Exercise (JAE) the following January, using your actual 'O' level results. The EAE application will not affect your chances at the JAE in any way.

Benefits

The main benefit of applying through the EAE is that you can "lock in" a place in the diploma or polytechnic that you like, even if your eventual 'O' level aggregate

(L1R2B2) fails to meet the Lowest Aggregate Score (LAS) — formerly known as Cut Off Point — for that diploma course. This is especially helpful if you are aiming for a highly popular course with an extremely demanding LAS.

Conditions for admission

Once accepted through the EAE, you will still have to sit for your 'O' level exams. However, you are guaranteed a place in the diploma course offered to you. The only condition is that your eventual 'O' level aggregate (L1R2B2) must not exceed 26 points, and you must meet the minimum entry requirements of that diploma course — such as not being colour blind or not suffering from uncontrolled epilepsy.

A case in point

Is the EAE really beneficial? Well, just ask Justin Siew Wei Jin. Fearing that he might not do well in his 'O' level exams, the former Dunman Sec School student applied through the EAE (then known as DPA), and secured a place in the Diploma in Aerospace Engineering at Temasek Polytechnic.

When the 'O' level results were announced, his worst fears came true — he obtained an aggregate of 25 points, which would have put most Poly diplomas out of his reach.

"Had it not been for the DPA scheme, I would not have got into any Aerospace diploma course, let alone TP's reputable Aerospace courses!" recalled Justin thankfully. "My aerospace dreams would have died a premature death at Sec 4," he added.



Justin (right) on his graduation day in 2013

WERE YOU HERE?

Hundreds of secondary school students visited our School of Engineering on 31 Mar '16 as part of the annual "TP Sneak Preview" event so as to get, well, a sneak preview of the Poly life that awaits them.

They checked out the facilities and equipment, attended workshops to pick up Engineering-related skill-sets, and had great fun too! Were you one of them?





● PSST... HERE'S HOW YOU GET IN!

About a dozen secondary school students attended an Early Admissions Exercise (EAE) preparation programme, dubbed the "EAE Camp", organised by our School of Engineering on 18 Jun '16.

They were briefed on the criteria for EAE selection, how to write the 600-character explanation of why they chose each course including a description of their achievements, as well as what course managers would look out for during the selection interview and how to prepare for it.

They also visited key facilities in the School and had fun playing ice-breaking games.



TEACHERS HAVE MORE

CLASS

A delegation of 16 teachers including the Vice Principal and Heads of Department from Bedok South Sec School visited the School of Engineering on 3 Jun '16.

Their objective? To check out the best practices in our academic system, pedagogy and student support programmes.

Their learning journey included a briefing on the industry relevance and learner-centred focus of our diploma courses, the pastoral care support systems, the infrastructure for career guidance and the programmes to prepare our students for university.

The teachers also toured various Centres of Excellence in the School to get a better picture of the facilities and equipment which support student learning.



Bedok South's VP Andrew Kang presenting a token of appreciation to Ms Angela Cheong, Outreach Marketing Executive of TP's School of Engineering

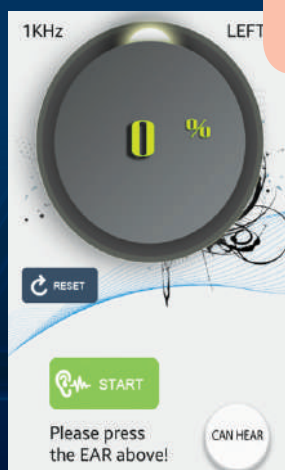




FINALLY... HELP IS HEAR!



Biomedical Engineering (BME) students develop a system to prevent noise-induced hearing loss among youths, winning awards at two national competitions.



A screenshot of the app

Fond of listening to loud music from an ear-piece plugged to your mobile device? Be warned: it could make you deaf.

To address this problem, two BME students developed an Android app that is able to automatically reduce the volume of music played on the mobile device, if it exceeds the safe threshold — established through research to be 85 decibels. The app also provides a hearing test and displays the test results on the screen of the mobile device in real time.

This project, known as “Hearing & Audiometry Test System (HATS)”, won the “Best Presentation” award in the annual Assistive & Rehabilitation Technology Students’ Innovation Challenge held on 29 Mar ’16.

A slightly modified version, called “Hearing & Audiometry Test & Training System (HATTS)”, won a Bronze award at the annual IES Innovation Challenge on 9 Apr ’16.

OUR AVIATION SAFETY EXPERTS

Students from the Diploma in Aviation Management & Services (AMS) come up with award-winning solutions to tackle common aviation problems and enhance safety.

Our AMS students showed why their diploma is still the best local aviation training programme today, when they applied what they have learnt from their diploma course to devise a solution — deemed the best among competing teams — for a given aviation problem, winning the Gold award in the Aviation Safety Competition on 19 May ’16.

Presented with four operational challenges on the Singapore-Bali flight route, namely, low visibility, volcanic activity, unruly and drunken passengers, and failure of the aircraft’s electrical generator, the AMS students, calling themselves “Team Scootees”, came up with an operational plan which included recommendations on the type of aircraft to use, the amount of fuel to carry, and operating procedures for handling various critical scenarios.

A second AMS team, named “TR-Safe”, took home a Consolation award.



Victorious AMS students with their lecturers

THE APP WAY TO TRAVEL



A new touch-screen application will help to optimise time for duty-free shopping in the airport transit area before departure.



Have you wished you had more time to do your duty-free shopping but were afraid to miss your flight?

Now, a touch-screen application called "Airee" will help you to make optimal use of your time between clearing immigration and boarding. Invented by four students from the Diploma in Infocomm & Network Engineering (INE), "Airee" will plan an efficient itinerary for you, based on the amount of time available, as well as the activities that you wish to do.

Just scan your boarding pass at one of the many touch-screen terminals in the airport and pick your choice of activities. The system will then generate an itinerary and mark out the route that you should take on a map, which can be downloaded into your mobile phone.

For their ingenious invention, the INE students won a Silver award in the Imagine Cup competition organised by Microsoft on 1 Apr '16.



FLYING WONDER

Engineering students develop flying drone capable of despatching first-aid kit in disaster relief operations.

Students from the Diploma in Electronics and Diploma in Aerospace Electronics, calling themselves Team Nightingale, have designed and built a remote-controlled first-aid drone capable of carrying a first-aid box over difficult terrain and dropping the payload, with a parachute, at a designated spot with remarkable accuracy, thereby making it ideal for emergency relief operations.

The drone earned the students a Bronze award in the annual Singapore Amazing Flying Machine competition on 19 Mar '16.

In the same competition, our second team of 5 students from the Diploma in Aerospace Engineering designed a drone with a spherical cage, thereby providing more flight stability and enhancing the safety of passers-by when the drone is being flown. Their unique spherical-shaped flying machine earned them a Gold, a Silver and two Bronze awards.



GLITTERING SUCCESS

Temasek Polytechnic reaffirms its invincibility in intelligent robots, winning the Gold in that competition category for the 7th consecutive year.

Demonstrating their strength in robotics, our Engineering students claimed a total of 6 medals — 4 Gold, 1 Silver and 1 Bronze — at the annual Singapore Robotic Games on 28 Jan '16.

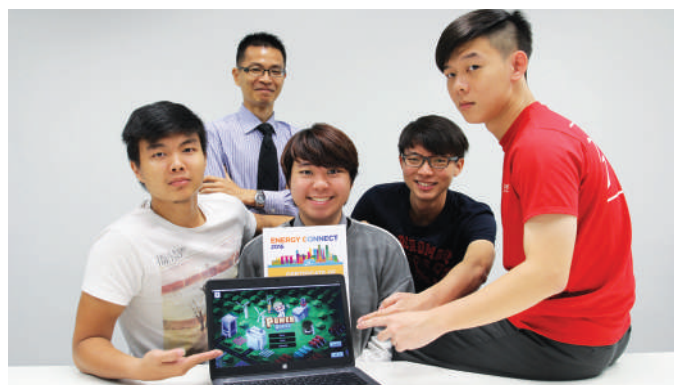
Besides winning the “Intelligent Robot” category, also extremely satisfying for the team was being able to break another competitor’s stranglehold of “Legged Robot Marathon” event, when they reclaimed the Gold for this category after 9 long years.

TP’s robotics expert, Mr Lim Hock Beng, explained why the team did not bring home even more medals despite its magnificent performance at the competition: “There is a rule under which each institution is allowed to win only one award within a category (except for the Sumo category). Hence, once we won the Gold, we could not additionally win the Silver, Bronze, or Commendation from that category — which we would easily have done without the ruling,” he explained.



GAME FOR A CHALLENGE?

Playing an energy simulation game, students from the Diploma in Clean Energy (CER) win two awards in the Sembcorp-EMA Energy Challenge 2016.



The CER teams which emerged second (left) and third (right)

Applying the knowledge they had gained from their diploma course, as well as information they had gathered from mandatory site visits to the Jurong Island power station and the Micro-grid test-bed at Pulau Ubin, the CER students won a Silver and a Bronze award in the Sembcorp-EMA Energy Challenge held in conjunction with the Energy Connect 2016 Seminar and Exhibition on 3 Jun '16.

Playing the role of Energy Managers in a simulation game, the CER students had fun strategising, planning, and making vital decisions on the operation and management of power plants and energy systems, taking into account profitability, operational efficiency and environmental sustainability.



COLOUR MY WORLD

Those with colour blindness can now “see” actual colours, thanks to this revolutionary iPhone app.

An iPhone app, developed by 3 students from the Diploma in Media & Communication Technology, will enable those with colour blindness to see the full range of colours.

For a person with partial colour blindness, the app works by enhancing the intensity of the colour which he has difficulty seeing, so as to make it more visible. Alternatively, the app shifts the colour spectrum so as to recreate the colour which he cannot see, replacing it with a similar one that he can.

For those who are totally colour blind, the system detects colours in real time and displays it as text captions next to each object on the screen. The user can also fine-tune the colour identification further by calibrating the settings in the app.

The iPhone is mounted on a commercially available Google viewer and worn over the eyes.

This outstanding project won a Merit award at the Tan Kah Kee Young Inventors' Award competition on 12 Apr '16.



Colour captions for the colour-blind

BUDDING GREEN PROFESSIONALS

Students from the Diploma in Green Building & Sustainability (GBS) propose a stunning design of a living garden for City Square Mall's rooftop Sky Park.

If a team of GBS students had their way, City Square Mall along Serangoon Road would have a new rooftop garden with environment-friendly features such as solar panels, rain harvesting tanks, “Big Ass” ceiling fans regulated by temperature sensors, a water feature wall with aqua plants, a herb garden and an energy meter display, as well as inclusive features such as charging stations for motorised wheelchairs, tactile flooring and Braille information for the visually impaired.

The proposed design, which aims to promote environmental awareness and an inclusive society, clinched the Bronze award in the biennial Green Sparks competition on 8 Apr '16.



A digital rendition of the proposed design



Team GBS (in blazers) with staff and supporters

WELCOME TO OUR FAMILY!

Thousands of students were welcomed to the TP family during the annual Freshman Orientation held from 20 — 21 Apr '16.

Besides academic briefings and introduction to campus facilities, the freshmen took part in telematch games, bonding activities, cheering contests and the prestigious Temasek Regatta — a dragon boat rowing competition in which the strongest hunks and most energetic babes from each school maxed out their toned muscles to power their boats to the finishing line in the fastest time.

Engineering School won the Regatta — the third consecutive year they have done so — as well as the cheer leading championship.

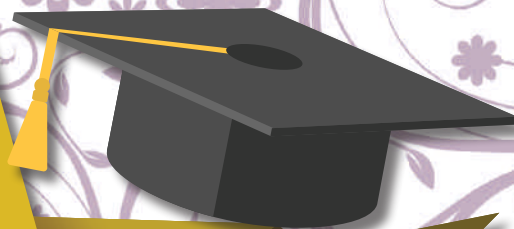
Regatta Results

ENG Team	2013	2014	2016
Girls (Freshies)	1 st	1 st	3 rd
Girls (Seniors)	1 st	1 st	1 st
Boys (Freshies)	2 nd	1 st	1 st
Boys (Seniors)	2 nd	2 nd	2 nd
Overall	Champion	Champion	Champion

(There was no Regatta in 2015)



GRADUATION 2016



About 1,500 Engineering students received their diplomas over 5 graduation ceremonies held on 11 & 12 May '16 at Temasek Polytechnic's Convention Centre. Congratulations to all graduates!



POWER OF LOVE

With his life plunging downhill, Darren Loo made a dramatic U-turn to become one of the top students in his Diploma in Electronics course and win the prestigious Tay Eng Soon gold medal.

Darren Loo Jian Han was doing well academically at Yuying Sec School until an unfortunate incident in Sec 2. Bumping into a female friend in his estate, he sat down in the basketball court to chat with her harmlessly. Her jealous boyfriend then came along and punched him in the face.

The hurt, anger and humiliation from that incident made him rebellious and cynical. He started playing truant, mixed with bad company and got involved in fights. Totally losing interest in his studies, he even slept right through his 'N' level "Principles of Accounts" exams and got a zero for the paper.

He managed to get a place in a NITEC course at ITE, but his poor attitude to studies continued. While he was there, he took on a part-time sales job where he met a girl who eventually became his girlfriend. "She who was then about to start her Business diploma course at TP, and I felt very inferior to her," recalled Darren. "But she accepted me as I was, and told me that I could do even better than her in my studies," he continued, tears almost welling up in his eyes.



Motivated by the desire to be able to provide for his girlfriend in future, he went on to do a Higher NITEC (Electronics Engineering) course, worked hard, and graduated with a CGPA of 3.92 — good enough to earn him direct entry in the second year of the Diploma in Electronics course at Temasek Polytechnic.

Continuing to unleash his full potential, Darren earned his diploma with Merit and clinched the prestigious Tay Eng Soon gold medal with a CGPA of 3.95.

"I am grateful to my girlfriend as well as my parents," said the self-declared "new man", as he embarks on his Electrical Engineering degree course at NUS.



Darren with the 3 most important people in his life





LET'S GET SNAPPY!

Do you enjoy taking photographs?
Have a go at our green building photo competition and win an iPad or cash!

FACETS 2016

Green Building Photo Competition

Theme: **Daylighting in Green Buildings**

1st prize: iPad mini 3
2nd prize: \$300
3rd prize: \$200
Voters' Choice: \$100
Four Merit prizes: \$50 each

The competition is open to all secondary school students in Singapore.
Each contestant may submit up to 5 photos.

Submit your photos with captions via Instagram (**#gbsfacets2016**), and please email the Instagram link with your name, school and NRIC number to: **GBS_T29@tp.edu.sg**

Closing date: 30 Sep '16.

Prizes are sponsored by the Singapore Green Building Council.

FACETS 2015 RESULTS

Theme: Shading Systems in Green Buildings



1st prize:
Clive Tua Guan Yu
(School of Science & Technology)



2nd prize:
Dillon Ong
(Bedok View Sec)



3rd prize:
Jarrett Kow
(School of Science & Technology)

Voters' Choice: Joel Tan (Sch of Science & Tech)
Merit prizes: Shawnn Tan Yan Sheng (Sch of Science & Tech), Shawn Ng (Dunman High), Ahmad Zafir Hazim (Crest Sec), Faye Yeo Han Fei (Nan Hua High)

FIGURE IT OUT...

AND WIN A LIMITED EDITION 16GB WOODEN THUMB-DRIVE!

The table below continues indefinitely in the format shown. What is the middle letter in the 731st row?

ROW 1	G	L	A	D	Y	S	G
ROW 2	L	A	D	Y	S	G	L
ROW 3	A	D	Y	S	G	L	A
ROW 4	D	Y	S	G	L	A	D
ROW 5	Y	S	G	L	A	D	Y
ROW 6	S	G	L	A	D	Y	S
ROW 7	G	L	A	D	Y	S	G
ROW 8	L	A	D	Y	S	G	L
↓							
ROW 731				?			

This contest is open to secondary school and ITE students only. Email your answers, with full name, school, and HP number, to: cheeseng@tp.edu.sg with the subject title, "Engineerrus Maths Puzzle 12".

The first 10 correct entries drawn after the closing date (1 Dec 2016) will each win a limited edition 16GB wooden thumb-drive. Winners will be notified by email.



ANSWER TO PUZZLE #11

You are a noble knight trying to kill a dragon with 3 heads and 3 tails. With one swipe of your magic sword, you can either cut off one head, two heads, one tail or two tails. But...

- (a) When you cut off one head, another one grows
- (b) When you cut off one tail, two new tails grow
- (c) When you cut off two tails, one head grows instead
- (d) When you cut off two heads, nothing grows.

To kill the dragon, you must cut off all heads and tails so that what remains is only the lower body with its two useless wings.

How many swipes of your magic sword are needed to kill the dragon?

Answer: 9 swipes

Winners:

Mira Mardiana (Serangoon Gdn), Jess Clarke (Bt Panjang), Yuka Komatsu (Queensway), Trini Teo Chin (Northland), Joshua Pang Yu Hui (Changkat Changli), Samantha Chua Cheng Bee (Temasek), Low Sea Adele (St Margaret's), Rasyida Shameem (Northview), Foo Yong Yeow (Tampines), Kayla Lim Jia En (St Hilda's).

SOARING ABOVE THE GUYS



Tessar Goh took up the flying programme offered as part of her Aviation Management & Services (AMS) diploma course, and became the first female TP student to obtain her “wings”.



Photo credit: cyberpioneerTV

It was dream come true for **Tessar Goh Pei Xuan**, who received her Private Pilot Licence (PPL) after completing a 6-month flying course at the Singapore Youth Flying Club (SYFC) during the final year of her diploma course in 2015.

Offered as part of the “Aeronautical Science” option in her diploma, the flying programme — which would normally have cost about S\$36,000 if taken privately — required her to attend theory lessons and flight training at the SYFC outside school hours.

“Flying has always been my passion, so when my diploma offered me the opportunity to learn to fly for free, I grabbed the chance!” said the former Junyuan Sec School student.

She remembers an incident which still sends shivers down her spine. Returning from one of her solo training flights in a Diamond DA40 training aircraft, she was unable to land as the runway was blocked by a stalled aircraft with a punctured tyre. “I was told to circle in the air, which I did for 30 minutes, during which it began to rain and thunder, and the aircraft literally shook,” she recalled.

“Alone in the aircraft, I had all kinds of thoughts at that point. What if I ran out of fuel? What if my aircraft was struck by lightning? What if I were to black-out and faint?” she continued emotionally. Eventually, her fears proved unfounded and she landed the aircraft safely.

Tessar has signed on with the RSAF as a fighter pilot and is doing her Basic Military Training (BMT). So the next time you hear an F16 roaring across the sky, look up and wave. It could be Tessar in the cockpit.



Tessar (third) with some of her AMS flying mates



Power Girls: Tessar's BMT female platoon

A CENT-SIBLE BLOOD TEST

Researchers from our School of Engineering develop a new system for checking the level of procalcitonin (PCT) in patients' blood, that is cheaper and faster than existing methods used in the healthcare industry.



Unusually high levels of PCT, a type of hormone produced mainly in the thyroid gland, may indicate the presence of bacteria which causes ailments such as Sepsis — a condition whereby the body's immune system overreacts, resulting in widespread inflammation that can be fatal.

Measuring the level of PCT is therefore vital for diagnosing bacterial infections, as well as differentiating it from viral infections (which do not cause a rise in PCT levels), so that the appropriate treatment can be given.

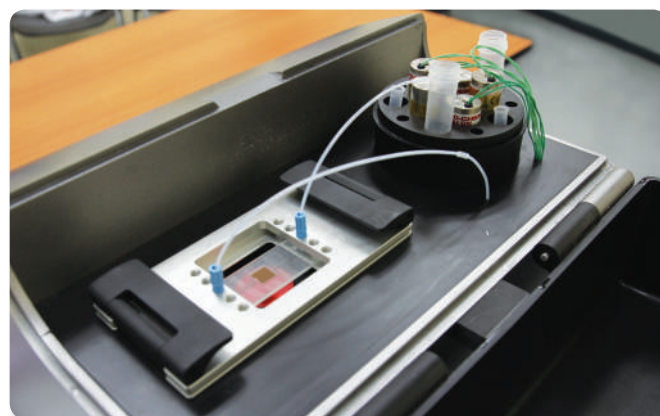
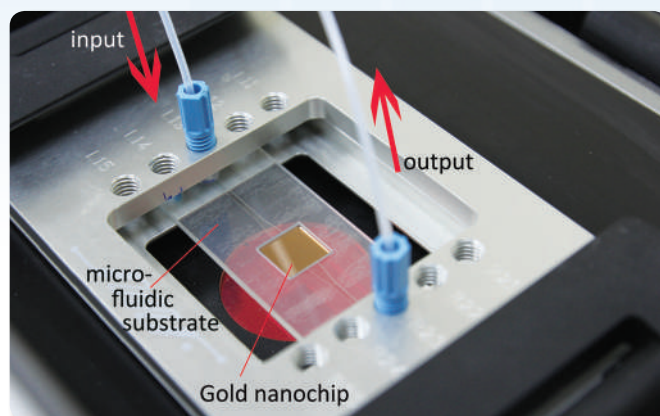
Currently, a typical PCT screening process in local hospitals takes about 4 hours, besides involving bulky equipment. On the other hand, this new patent-pending system, called "Rapid Diagnosis of Sepsis Using a Plasmonic Sensor-based Point-of-Care System", will display the results on a handy desktop screen in just 30 minutes.

This new system is also cheaper, costing S\$10 per test, and requires only 50µl of blood sample to detect up to 1 ng/ml of PCT, compared to about 5–10ml of blood needed in hospital tests.

How it works

Unlike conventional testing systems, this new system incorporates gold nano-pillars fabricated on a glass substrate which is embedded into the middle of the microfluidic chip. The clinical sample (serum or blood) is then injected into the chip, which has been established with several layers of reactants. As the gold nano-pillars are illuminated, they amplify the light emitted by the dye labels (also known as quantum dots) there. The intensity of the light emitted is then measured to determine the concentration of PCT.

This project, which was developed in collaboration with staff from the Institute of Material Research & Engineering (IMRE) and Tan Tock Seng Hospital, won the IES Prestigious Engineering Achievement Award on 23 July '16.



BODIES OF EVIDENCE

Never judge a book by its cover. But you can be forgiven for judging **Jasmine Chye** and **Desmond Wee** by their external appearance.

These gorgeous graduates from the Diploma in Integrated Facility Management (IFM) have shown that all which glitters may in fact be gold — Jasmine is a beauty queen while Desmond is a body-building champion. But their voluptuous curves or bulging biceps certainly understate their greater career accomplishments.



Jasmine, who graduated from TP in 2011, went on to obtain a Bachelor of Business degree in International Hotel & Resort Management from the Blue Mountains International Hotel Management School in Australia. As a Business Development Manager at Scarlet Singapore Hotel, she now manages corporate accounts and negotiates sales deals.

The Miss Singapore Beauty Pageant (2014) winner has represented the republic at various international beauty contests, winning the Miss International Friendship title at the Global City Pageant in Shanghai last year.

"I compete not for the prizes, but to prove to myself that I can achieve something to be proud of," explains the 1.70m tall wannabe, who has been modelling part-time since her Poly days.

Like Jasmine, Desmond also flaunts his body professionally. The infantry platoon commander and Sword of Merit award winner signed on with the SAF after graduating from TP in 2012, and is currently pursuing a full-time Bachelor of Engineering (Hons) degree in Sustainable Infrastructure Engineering at the Singapore Institute of Technology on an SAF scholarship.

The 2016 Physique War Junior silver medalist sees body-building as a form of art: "Just as artists portray their thoughts in their art pieces, I portray my determination with my muscles," says the enthused young man, who started serious body-building only a year ago.

Both Jasmine and Desmond find that their IFM diploma gives them an edge in their current pursuits.

"My IFM training has given me a better understanding of building amenities which I am now studying at university," explains Desmond. Similarly, Jasmine adds: "The things I've learnt about resorts and hospitality facilities, and how they are designed and marketed, certainly comes in very handy in my present job."



NEW MAN AT THE HELM

Temasek Polytechnic has a new Principal and CEO — Mr Peter Lam.

On 2 Jul '16, Mr Lam took over from Mr Boo Kheng Hua who had helmed the polytechnic for close to 15 years, since December 2001.

An Engineer by training, Mr Lam brings to TP years of experience honed in education and the public sector, having served in the Ministries of Environment, Manpower, Education, and the Infocomm Development Authority of Singapore. He then joined Ngee Ann Polytechnic in 2008, where he was Director of Special Projects, and then its Deputy Principal and Registrar.

In his welcome message to all TP staff, the St Gabriel's Sec School and Victoria Junior College alumni said: "I am very excited to join the TP family... and I look forward to working closely with all of you to bring education to life and life to education, so that we can help our young Singaporeans to be the best in the things that they do."



ENGINEERING DIPLOMA COURSES



- 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
- Integrated Facility Management
- Mechatronics
- Microelectronics

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- Common Engineering Programme
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