ENGINEERRUS

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EDUCATION Spotlight

ENGINEERRUS rounds up the changes on Singapore's education scene over the past 6 months

Poly Foundation Programme for N-level students

Students who have performed well in the GCE N-level exams can now go for a one-year Foundation Programme (FP) at one of the 5 polytechnics, instead of taking their 'O' levels in Secondary 5.

They can gain admission into a specific polytechnic's diploma course under the FP, and those who perform satisfactorily in the FP can continue pursuing their 3-year diploma course at that polytechnic. The first intake of 1,000 FP places will begin in 2013.

To Poly via Higher Nitec

N-level students who do well can also take a 10-week prep course, and then enter directly into a Higher Nitec programme at an Institute of Technical Education (ITE). If they achieve the required GPA scores for their Higher Nitec, they will be guaranteed of either a first-year or second-year place in a related course at one of the local polytechnics.

This new option will be available to eligible students admitted to the ITE Direct Entry Scheme (DES) from 2013.



Polytechnic courses today, such as TP's new Common Engineering Programme, offer students more choices and flexibility

More going to Polys

A polytechnic education in Singapore is indeed becoming more popular. About 20 years ago, only 5% of each Primary 1 cohort ended up in a polytechnic. Today, that figure is 42%. In fact, one in three students who qualify for a junior college today actually choose to attend a polytechnic instead.

Higher salaries for Poly diploma holders

Polytechnic diploma holders have been getting higher starting salaries, according to the Graduate Employment Survey jointly conducted by the 5 polytechnics in 2010.

Their average starting pay in 2010 was \$1,871, up about 5% from \$1,776 the year before. They are also landing their first job more quickly: of the 10,000 diploma holders polled, 91.5% found jobs within 6 months of graduation.

Poly diploma holders more employable

Employers today seem to have a preference for poly diploma holders over university degree holders, if job figures from the Ministry of Manpower are anything to go by.

Statistics show that during the global economic recovery from March 2009 to March 2010, the jobless rate for poly diploma holders fell from 4.1% to 2.1%, as companies started hiring again after rebounding from the downturn. Interestingly, the jobless rate for university degree holders was relatively constant, improving from 3% to 2.8% during that period.

New Poly fees

Fees for polytechnic students have been increased again with effect from April 2011. A year ago, in April 2010, fees were increased to sharpen the distinction between Singapore citizens, permanent residents, and foreigners.

New polytechnic school fees:

	Singapore Citizens	Permanent Residents	Foreign Students
Before April 2010	2,100	2,310	3,150
April 2010 (existing students)	2,150	2,370	3,230
April 2010 (new students)	2,150	2,870	4,300
April 2011 (existing students)	2,200	2,870	4,300
April 2011 (new students)	2,200	3,680	5,880

All fees are in Singapore dollars and for 1 year (comprising 2 semesters)

TP RAWKS !

ore than a thousand 'O' level school leavers from various secondary schools congregated at Temasek Polytechnic for the annual year-end Zouk-out event, called TP RAWKS, held from 18 – 20 Nov '10.

Besides getting a gist of the courses and life in a polytechnic through workshops, quizzes, tours, and games, the TP Rawkers – as all participants are called – got a taste of Temasek Poly's unique waterfront lifestyle.

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

Ending with a bang, TP Rawkers then let their hair down at a jam & hop on the final evening, celebrating newfound friendships with promises to meet again in







IT'S A BIRD, IT'S A PLANE...

ver wondered why birds can fly? And what do they have in common with aeroplanes?

About 20 secondary school students found out the answer at the "Aerospace Discovery" workshop held on 24 Nov '10.

Conducted using interactive and interesting handson activities, the full-day workshop equipped participants with fundamental knowledge of flight principles, aerodynamics and flight instruments – topics which are covered in TP's Diploma in Aerospace Electronics course.

For information about future such workshops, for which there is no charge, please email Mr David Wong at: <wingfatt@tp.edu.sg>.





A CLEAN VICTORY

lasting off the starting blocks, Temasek Poly's fuel cell-powered eco car surged to the lead and raced towards the chequered flag. With just 20 metres to go, it was pipped into second place just at the finishing line.

Designed by students from the Diploma in Clean Energy, TP's custom-built eco car was taking part in the G1 Eco Car competition held at the F1 Track at Marina Bay on 19 Sep '10.

Powered by a fuel cell engine capable of generating 1kW of electricity, the car was fashioned with a sleek lightweight carbon

fibre chassis that ensured ultimate speed and performance.

Not even expecting to get past the prelim rounds at first, team driver Brant Li explained: "Unlike the other eco cars in the race using tried-and-tested technology like solar cells and traditional internal combustion engines, we wanted to showcase the hydrogen fuel-cell technology developed in our school's Clean Energy Centre," he explained.



TP students bursting with clean energy

TP's eco car at a pitstop

Though disappointed, he added: "The most beautiful thing is that we left nothing but track-prints and water vapour."

I BELIEVE [CAN FLY

tudents from Temasek Poly's Diploma in Aerospace Engineering emerged overall champion in the MAE Blitz Super Transportation Vehicle Challenge, and also clinched the Gold medal in the Air Vehicle category, taking home \$1,000 cash, trophies and certificates.

The competition required participants to build their own vehicles using recycled materials while conforming to given specifications of size, weight and method of assembly. Participants competed in 3 categories (land, sea and air) on range, speed and accuracy.

Held on 18 Sep '10, the competition, organised by NTU, aims to promote the importance of green engineering to youths.





Preparing to fire their homemade rocket







PRACTICAL EXCELLENCE

ngineering students proved their technical excellence by winning 2 Golds, 1 Bronze, and 3 Medallions for Excellence in the World Skills Singapore (WSS) competition held on 26 Jan '11.

The WSS is a prestigious biennial competition in which participants compete in various trades that require meticulous skill and precision. The winners of the national round will proceed to represent Singapore at the international level.

GAME CHAMPIONS

Students from the Diploma in Info-Communications snatched the Gold in the national Game Development Competition organised by NUS on 6 Aug '10. They also took home the Ubisoft Award for Visual Art.

In line with the Youth Olympic Games held during that month, the theme of the competition was "Sports".

The team from Temasek Poly's Engineering School developed a "Triathlon Game" in which the player needs to navigate various obstacles and overcome challenges in cycling, swimming and running, in order to complete the race in the fastest time.





STUDENTS WIN BRONZE

team from the Diploma in Info-Communications clinched the Bronze award in the tertiary category of the annual SLA Spatial Challenge 2010, with their project on "Maximising Use of Various Community Sites". The team also won the Best Presentation Award.

The competition, held on 28 July '10, aims to raise the awareness and innovative use of Geographic Information Systems (GIS) technology among youths in Singapore, and was organised by the Singapore Land Authority (SLA).

OUR SPACE BOYS

or your next vacation, how would you like to take a trip to space?

Exorbitant air fares, oops, space fares, have thus far made space travel out of reach for all but a few billionaires. But soon, you could find yourself packing your bags and checking into a space shuttle for that ultimate holiday experience in the milky way.

Students from the Diploma in Aerospace Engineering have proposed a design of a space-plane, called "Blue Helix 1", that



Our Aerospace students help to make the dream of space travel a reality

can take off from a city airport, burst out of the earth's atmosphere, venture into space, and return to land safely.

Passengers occupy the front seats, while the pilot controls the space-plane from the rear, thereby allowing passengers (tourists) a bird's-eye view of the whole flight experience.

The students' proposed design clinched the Silver medal, as well as the Most Innovative Design Award in the annual Singapore Space Challenge 2010 organised by the Singapore Space and Technology Association.

They received their awards at a presentation ceremony held on 29 Jun '10.

A prototype of "Blue Helix 1"

GREEN IDEAS FOR BUILDINGS

eat reflective paint on the walls, day-lighting wells on the ceiling, e-savvy blinds on windows, and a wind turbine in the cooling towers to generate power through the force of rejected heat in the building – these are some of the proposals put forward by students from the Diploma in Green Building & Sustainability to improve the energy efficiency and reduce the carbon footprint of Fuji Xerox Towers.



The students, in two teams, were taking part in the inaugural Green Sparks competition held on 31 Aug '10. Their proposals, which were designed to enable Fuji Towers to qualify for the Building & Construction Authority's "Green Mark (Platinum)" rating, clinched the Silver and Bronze awards.

Their winning solutions were also showcased at BEX Asia 2010, the largest local building & construction exhibition, held from 13 – 15 Sep '10.





By Anna Krizia Amagsila (BIE)

trutting across the racetrack with cameras trained on your every move, getting up close and personal with Alonso and Hamilton, and of course, being privy to one of Singapore's top world-class events - these are the things that Tan Zi Yin enjoyed most when she was picked as one of the SingTel Grid Girls for the Formula One Motor Night Race from 24 – 26 Sep '10.



Zi Yin (arrowed) at the audition

When asked about why she had applied for the job, the second year Mechatronics student smiled and said, "They picked me, I didn't pick them." She happily recalled the day when two guys working for SingTel had approached her on the street, asking her to join the search for SingTel Grid Girls. Although without modelling experience, the plucky 19-year-old student confidently agreed.

She was eventually one of about 50 girls picked from 300 candidates after 2 rounds of interviews, an audition and photo shoots, and had to go through 3 days of training before the Race.

During the event, her job was to hold a number plate of the race driver she represented. Confidence, poise and an outgoing personality are what a SingTel Grid Girl needs, according to Zi Yin.

So was it all glam? There was only one downside to her job, explained Zi Yin – having to stand under the hot sun for about an hour each time. "You can't carry an umbrella, you know. It's not part of the uniform," she joked.

Zi Yin gladly took home the memories from the experience and the new friendships she had forged with the other Grid Girls, as well as the crew and race drivers! Her only regret was not being able to keep the uniform she wore as a souvenir.

Was the money good? "It's the experience, not so much the money," retorted Zi Yin. "But well, I could do with the S\$1,200 which I got for three days of work," she added.



Taking a break before



AN ALL STAR EXPERIENCE

Six students from the Diploma in Aviation Management & Services were attached to Air Asia Singapore for their internship from April to September 2010. One of them, Samuel Ng, reports.

By Samuel Ng (AMS)

ur internship at Air Asia gave us the opportunity to experience the full operations of a low cost carrier, a chance not to be missed!

We helped the frontline staff to manage the queues and perform ticketing duties at the check-in gates. In the last 2 months of our internship, we were given the chance to perform gate duties on our own. It gave us a huge sense of achievement ensuring that all 180 passengers boarded swiftly and smoothly each time!

But it was no cuppa tea. Once, we were assigned to chaperon a special passenger who suffers from serious claustrophobia and was afraid to board a plane. She had missed her original flight and we had to make sure



AMS interns with their Air Asia colleagues at Changi Airport Terminal 1

she didn't miss her next flight 4 hours later! Accompanying her in the transit area, we had to pacify her and convince her that flying is in fact safe and fun. It was really an unforgettable experience. Well, for the record, she eventually boarded the next flight and landed safely ©.

Following our internship, we made a trip to the company headquarters in Kuala Lumpur on 20 Oct '10 to give a presentation to Mr Loganathan Velaitham, Head of Air Asia's Regional Operations and his team. Our main finding was that flight delays were caused by the slow boarding process, rather than what the company had thought was the large quantity of arrival cargo – an eye opener for the company itself!





THEBESTJOE IN THE WORLD?

Two students from the Diploma in Integrated Facility Management (IFM) were attached to Four Seasons Resort on the Island of Seychelles, as part of a collaboration with the Seychelles Tourism Academy. They recall their experience.

By Chia Bing Xun and Koe Wei Loong (IFM)

andy beaches, crystal clear waters for snorkelling, relaxing resorts, and natural greenery – you would probably least expect such an environment to be the venue of a student internship.

But that was precisely where we spent 3 months of our lives - working, not holidaying, mind you. We were attached to Four Seasons Resort on Seychelles island, an independent state located in the Indian Ocean, off East Africa. The wealth of nature there, complemented by the finest and surely one of the most beautiful beaches around the world, make hotels and resorts a thriving business.

There, we worked on setting up an inventory control and operations system for the resort, and also attended several training courses.

Life was never boring. The resort's calendar is punctuated by numerous in-house events for its staff - such as 360 Unplugged, a music and singing session, Welele, a monthly birthday celebration for staff, as well as a monthly international gourmet day, when the food of a particular country is whipped up for employees to feast at work!

With an array of cuisine to savour, nearby islands to explore, beaches to conquer, and friends to make, how could our internship not be enjoyable? Of course, we did not forget why we were there in the first place – to work and to learn.



Chilling out with

colleagues

TO Chill Out!

here's now a new place to chill-out in Engineering School - virtually that is. It's the cool zone which we call, Chill-Eng @ http://chill-eng.com

Slide to the cool zone

That's where you can pit your skills against the clock in three original games, watch a video for laughs, discover creative ideas, surprise yourself, or pick up a skill too!

Designed to promote language awareness among Engineering students in a fun and exciting way, Chill-Eng is the brainchild of Communication Skills lecturer Ms Shirley Joseph and her teammates Ms Vivienne Mahony-Paul and Mr Ted Ollikkala, with the help of the TP Learning Academy. It was officially launched on 26 Nov '10 by Deputy Director, Mr Wong Kia Ngee.

So be cool, and check out the site!

> The Chill-Ena development team

GET A LIFE, BE AN ENGINEER!

Singapore observed its first-ever National Engineers Day on 4 Sep '10 – in conjunction with the 5 polytechnics' annual Engineering Week event



DPM Teo launching the event

rganised by the Institution of Engineers Singapore (IES), the local polytechnics and universities, A*STAR, EDB, and Singapore Science Centre, and supported by our local industry, the National Engineers Day event kicked off with an opening ceremony at *SCAPE Orchard, graced by the Guest-of-Honour, DPM Teo Chee Hean.

An exhibition featuring innovative gadgets and state-of-the-art technology was also held at the same venue from 4 – 7 Sep '10. Over the 4 days, more than 2,000 visitors were entertained at 3 pavilions: a Space pavilion showcasing NASA spacecrafts, an Automobile pavilion featuring solar and eco-green cars and a Robotics pavilion exhibiting different robots for work and play.

About 1,500 secondary school students also took part in workshops, talks, games, and competitions held at the various polytechnics as part of the annual Engineering Week activities which aim to raise youths' awareness of the potential of Engineering as an exciting, fulfilling and lucrative career.











"Oh... so this is what my son goes through in school!"

MEETING OUR PARTNERS IN EDUCATION

hey came, they listened, they asked, they found out, and they left – reassured that their children are in good hands.

That was the scenario at the annual Parents' Day event held at Temasek Poly's Engineering School on 13 Nov '10.

About 500 parents of first year Engineering students met course managers, lecturers and Care Persons to find out about the academic performance of their children, and to discuss ways to help enhance their chances of success.

For the first time, parents were also taken on a conducted tour of the labs and facilities in the school, giving them an idea of what students experience.

COME AND HAVE SOME FUND!

ow many fish can you scoop up from a bucket within 20 seconds? Well, this reporter managed to net just 1 guppy and 3 tetras.

Don't laugh. You think it's easy? Then you should have visited our biannual Campus Care Network (CCN) Day carnival and tried your hands at it!

Held on 19 Nov '10, the biannual CCN Day saw students turning entrepreneurs for a day, setting up stalls along the concourse to peddle their wares and raise funds for the polytechnic's CCN fund.

From snacks, drinks, clothes and iPhone covers, to manicure, massage and car-washing services as well as games, the carnival incidentally showcased the creativity and many talents of our Engineering students too!

The event netted \$38,604, which will go towards helping less financially able students in Temasek Polytechnic.

Mr John Leong, chairperson of the polytechnic's CCN Committee, beamed: "Besides raising funds, this biannual event is indeed meaningful and definitely contributes to a positive learning experience for our students."

CCN Day collection (2007 – 2010)

Amount collected from the 2 annual CCN Day carnivals

2007

\$51,608.80

2008

\$51,789.01

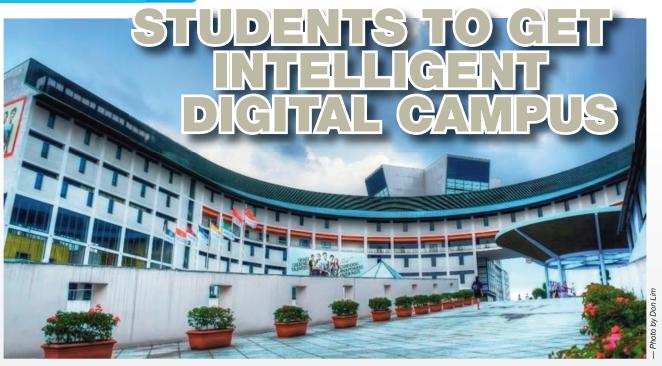
2009

\$61,575.12

2010

\$80,890.26





Horseshoe Plaza - the centre of gravity and heart of student life on campus

Oon, the Temasek Poly campus will have a giant LED video wall at the Horseshoe Plaza, much like the one at Times Square in New York or Hong Kong!

Interactive digital signages and security surveillance devices will also be installed at key locations. The new digital displays will be used to broadcast news and events, as well as a new in-house educational channel.

These are some of the exciting new additions which TP students can look forward to. It is part of an \$8 million plan to develop an intelligent digital campus (i-Campus), made possible by a collaboration among Temasek Polytechnic, LG Electronics Singapore and iEcopolis.

The three parties signed a Memorandum of Understanding (MOU) on 11 Aug '10.





CLEAN ENERGY FOR MARITIME INDUSTRY

emasek Poly will collaborate with the Maritime and Port Authority of Singapore (MPA) in developing clean energy technology – such as fuel cell applications – for the maritime industry and provide funding of up to \$6 million over 3 years for clean energy research.

The two parties will also work together on projects, share expertise in clean energy technologies, and help aspiring companies to bring their products to market.

This was formalised through the signing of an MOU between the polytechnic and MPA on 29 Nov '10.

IT'S AMAZING,
WE WON!

LIFE (Love Initiative From Engine), a community interest group in the TP School of Engineering, organises regular meaningful activities for students. Goh Yong Qiang reports on two such activities.

By Goh Yong Qiang (IBT)



The Quest (20 Nov '10)

e took part in The Quest 2010, an outdoor adventure race similar to the TV reality show, Amazing Race. Organised by nEbO, the youth arm of NTUC Club, the event attracted about 400 teams.

We ran around Pasir Ris Park looking for clues. After the fifth station, the sky threatened to open. Competing against time and the weather, our team managed to solve the clues at all 20 stations, beating about 400 other teams to nab the top prize of 4 iPads, 4 return tickets to Kuantan, and \$1,000 worth of vouchers!

Victory aside, we learnt the value of teamwork and a positive mindset. We had gone into the race determined to win, and that's what we did!

Book Donation Drive (13 – 14 Nov '10)

Teaming up with the Northeast CDC, 55 Engineering students collected used books from various homes in the Punggol area, and issued them to needy families which had registered for the scheme.

Midway through the exercise, it started to pour. Omg, our books were in danger of becoming no better than used toilet paper. So with quick thinking, we used trash bags to keep the books (and ourselves too!) dry. We even had to borrow a couple of umbrellas, LOL!

The one-day exercise netted about 8,000 books. Never seeing so many books in our lives, we sorted them according to their type: storybooks, educational, textbooks, or recreational.

On the second day, we distributed the collected books to needy residents at Hougang, where a carnival was concurrently staged. Our students were deployed to assist as packers and ushers, and we even provided our very

own talent - a balloonist! It was

meaningful fun indeed.





LOOK MA...

ONLY ONE HAN

hy does it always seem that you need a tissue paper or napkin most when one of your hands is occupied?

That is why these Mechatronics students invented the "EZ Napkin Holder". Besides serving as a stand for a roll of kitchen napkin, this holder allows the user to tear a piece of napkin using only one hand.

The attached spring mechanism will only allow the holder to spin for the length of a single napkin, after which it will be locked in place, thereby allowing the user to tear the napkin along its perforated line.

Designed to allow only a single piece of napkin to be detached each time, the device also minimises the use of napkins. After a piece of napkin is torn out, the mechanism springs back into place, ready to be used again.









READY, STEADY, GO.

s you dine in a posh restaurant, savouring exquisite cuisine prepared by renowned chefs, the conducive peaceful ambience is suddenly interrupted by the annoying crashing sound of glass or porcelain shattering on the floor.

Well, don't be too quick to blame the waiter or waitress responsible for dropping the glass or utensils – if you've worked as one before, you'll know that it's not easy to hold a tray with tall glasses on it, while navigating your way around the restaurant!

That is precisely why three Mechatronics students have come up with the idea of a unique tray for training novice waiters or waitresses.

A hand placement holder is attached under the tray to prevent the user's hand from sliding. A velcro strap secures the user's wrist, adding extra stability.

Someday, all restaurant trays will be built this way!



NO MOUNTAIN **TOO**

By Rohit Menon (ELN)

hink of Switzerland, and snow-capped mountains, or perhaps chocolates and fine watches come to mind.

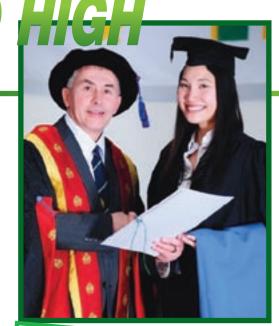
But actually, Switzerland is also known for its high standards of training in hotel and tourism management. So that was where **Wang Yuyan**, 22, headed to straight after graduating from Temasek Polytechnic in 2009.

Armed with a Diploma in Integrated Facility Management (IFM) from TP's Engineering School, she was accepted into the prestigious International Hotel Management Institute in Lucrene, Switzerland, and achieved a BA (Hons) in International Hotel and Tourism Management last year.

Adventurous by nature, the pioneer IFM graduate took the chance to go mountain-trekking during her semester breaks, as well as to visit Milan, London and Amsterdam. "These are cities I have always dreamt of visiting, so I took the chance to travel," she recalls.

She credits her diploma course for helping her to get to where she is today. "My diploma from TP provided me with the foundation that allowed me to advance to a higher level of study at university," she assesses.

Ms Wang aspires to hold a managerial position at a five-star hotel someday. With the training she has received, that should not be too high a mountain for her to climb.



Yuyan on Graduation Day

How'd you like to live in a place like this? Yuyan at her residence in Switzerland

CO-PILOTS OF THEIR FUTURE

Sisters-in-arms, Canice Yeo Lay Ken, 22, and Jade Yeo Shi Min, 21, are alike in more ways than one.

No, they are not blood siblings, but they are alike in their dreams – Canice and Jade both aspire to become Licenced Aircraft Engineers (LAE).

Graduating from Temasek Poly's Engineering School with a Diploma in Mechatronics (Aerospace) in 2010, they found immediate employment at ST Aerospace Ltd as Trainee LAEs.

Said Canice: "As an LAE, we will need to perform routine inspection and maintenance of aircraft. Ultimately we will be responsible for certifying an aircraft before it can fly."

A heavy responsibility, no doubt, for two demure and petite ladies who should be sitting behind a desk – or perhaps in the kitchen?

"Excuse me," retorts Jade. "Women can handle anything that a man can do!" Canice chips in: "So long as you've a strong and firm determination, there is always a chance to succeed."

Currently, Canice and Jade are undergoing training and need to pass all their CAAS modules as well as an interview before becoming an LAE.

Toughened by their rigorous diploma course at TP and sharpened by their training stint at Lufthansa Technical Training (LTT), they are already cruising on the runway, ready to take off to their dreams.



Canice (left) and Jade a ST Aerospace





THE ONLY REDITED JAGEMENT OMA COURSE

Enhanced career prospects now await IFM students following the accreditation of their diploma course

emasek Polytechnic's Diploma in Integrated Facility Management (IFM) has been certified by the International Facility Management Association (IFMA) as an accredited degree programme - thereby becoming only the 2nd IFM programme in Asia and the 14th in the world to be accredited.

IFM is also the only diploma course in the world to be accredited; the other 13 accredited programmes are all degree courses.

This accreditation will benefit IFM students at Temasek Poly, who are now eligible to sit for the Certified Facility Manager (CFM) exam one year sooner than those from non-accredited programmes.

The IFM course will also be included in accredited lists which the IFMA sends to potential employers, thereby giving IFM diploma holders brighter career prospects.



IFM Course Manager, Mr Chan Kim Kai, receiving the certification plaque from IFMA Foundation's Director of Academic Affairs, Mr Charles M Claar in November 2010

IFMA is a Texas-based professional body which certifies facility managers from 78 countries.

SCHOOL OF ENGINEERING DIPLOMA COURSES / PROGRAMMES

- ▶ 3D Interactive Media Technology NEW!
- Aerospace Electronics
- Aerospace Engineering
- Aviation Management & Services
- ▶ Biomedical Informatics & Engineering
- Business Process & Systems Engineering
- Clean Energy
- Computer Engineering
- Electronics

- Green Building & Sustainability
- Infocomm & Network Engineering



- Integrated Facility Management
- Media & Communication Technology
- Microelectronics

SPECIAL PROGRAMMES

Common Engineering Programme NEWI



- Electrical & Electronic Engineering Programme
- Mechatronics & Aerospace Programme NEW!



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