

## SPECIAL REPORT

## MSC IN AERONAUTICAL ENGINEERING

# THE SKY'S THE LIMIT AS JOB PROSPECTS IN AVIATION SOAR

With China tipped to become the world's largest civil aviation market within five years, HKUST can help supply aeronautical engineers, writes **Ben Young**

When it comes to masters' degrees that open up new career opportunities, few do so better than the newly introduced Master of Science in Aeronautical Engineering (MScAE) at the University of Science and Technology (HKUST).

According to professor David Lam, MScAE programme director and professor of mechanical and aerospace engineering, demand for engineering talent in the aviation industry is at an all-time high, especially in the Greater China region. "The growth of aviation in China is driving the need for talent in the aviation industry," Lam says. "Aeronautical engineering is in a high growth phase driven by the need for talent in Hong Kong for the third runway and the strong growth in China."

The programme, first established in 2016, is offered in partnership with French aviation university Ecole Nationale de l'Aviation Civile (ENAC),

currently Europe's largest aeronautical university.

"ENAC has great pre-eminence in the aviation industry," Lam says. "Its graduates dominate the aviation industry both in terms of government jobs, and in major European airline companies like Airbus, which is sponsored by the French government."

Lam says HKUST's partnership with ENAC makes the MScAE one of the most well respected aeronautical engineering degrees in Asia – as it has a well-balanced blend of Eastern and Western teaching philosophies.

"The programme is Asian-based, industry-oriented, with a selection of courses taught by senior industrial professionals, with a European flavour thanks to our partnership with ENAC," he says.

"The programme aims to equip those who want to enter the aeronautical engineering profession, or to enhance the knowledge of those who have

already been working in the aeronautical field."

The MScAE is also a great option for students who have studied aeronautical engineering or something similar at the undergraduate level as it "complements the existing undergraduate and graduate curricula in mechanical and aerospace engineering, allowing students to get an exposure to the various core aspects of aeronautical engineering and how they are used in the real world".

In addition, the career opportunities afforded by the MScAE go far beyond the construction and maintenance of aeroplanes. According to Lam, the career prospects of the aeronautical engineering industry can be broken up into six categories, each of which has multiple nested subcategories.

These categories include: aviation infrastructure & management (airport, air traffic management); aviation services (fuel service systems, ramp



The global civil aviation market is shifting east to Asia, with China the main impetus, creating thousands of new jobs in the industry. Photo: Reuters

handling, security); maintenance suppliers (line maintenance, ground support equipment maintenance); airlines (passengers, cargo); passenger (global distribution system, travel agencies) and cargo (freight forwarders, cargo integrators).

"Graduates of the MScAE programme have rich career choices in aviation," Lam says. "HKUST is also well regarded by the industry as seen in our consistently high ranking in employability, which was number one in Greater China and 16th globally. Our graduates are also sought after by industries in non-aviation sectors because of the excellent blend of courses from industry, European partners, and practise training through projects."

That said, there is no better time than now to enter the

aviation industry in China, which is already a powerhouse and growing at breakneck pace.

"China is becoming the key influencer of the global civil aviation industry," Alexandre de Juniac, CEO and director general of the International Air Transport Association (IATA) said in a recent interview with *Xinhua*. "And China's civil aviation authorities is the key dynamic force in powering the global civil aviation industry."

He went on to explain that China is currently the world's second largest civil aviation market, and that IATA forecasts that it will become the world's largest civil aviation market by 2024-25.

"The global civil aviation market has shown an apparent eastward shift to Asia, with China being the major impetus," De Juniac said, noting that China has more members of IATA than any other nation.

"And IATA is shifting our focus to the surging market here. The country's civil aviation industry handled 610 million passenger trips in 2018, representing an 11.4 per cent year-on-year increase," he adds.

Moreover, Randy Tinseth, vice-president of marketing for American aviation giant Boeing Commercial Airplanes, says Chinese airlines will spend nearly US\$1.1 trillion to buy 7,240 new aeroplanes by 2037.

"The world's most important

market both today, and in the future, is the domestic China market," Tinseth says, adding that China's market size can accommodate both domestic and international competitors. "The entire size of the single-aisle market is approach 30,000 aircraft – that's big enough for Boeing to grow, it's big enough for Airbus to grow, and it's big enough for a third competitor."

Despite the fact that the aviation industry is booming, both in China and around the world, Lam emphasises that experience and a world-class education are essential in breaking into it. "The aviation industry is a strongly regulated industry," he explains. "Seasoned professional

experience in navigating the competitive government-regulated industry is of particular value to success in the profession.

"For this reason, HKUST has established an Industrial Advisory Committee to advise HKUST on the curriculum and on courses to ensure that professional practice is strongly integrated into the curriculum."

The MScAE is available for both full- and part-time study, which takes one and two years to complete, respectively. The programme fee is HK\$135,000. Students should preferably have a bachelor's degree in a relevant engineering field, or some professional experience in the aviation industry.



Chinese airlines will need 7,240 new planes by 2037. Photo: ImagineChina



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**Postgraduate Information Day**  
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## MBA

## Staying home for a world class learning experience

Douglas Parkes

Whether it's handling international financial transactions or dealing with the huge volume of cargo that moves in and out of the city's port, Hong Kong companies require sophisticated employees who are up to date in the latest business practices and theory.

As one would expect, "Asia's world city" is home to some of the world's top MBA programmes – something that is essential in an era when business is increasingly global rather than just local.

Gone are the days when Hongkongers needed to head abroad for the best teaching. Last year, six institutions from mainland China and Hong Kong ranked in the top 100 in the *Financial Times'* Global MBA Ranking 2019.

One relatively new institution making waves is City University (CityU), which ranked fourth in the QS Top 50 under 50 rankings for 2020, and 15th in the *Times Higher Education Asia University Rankings* in 2019. However, it now aspires to become one of the world's leading global MBA programmes.

As befits a programme with international aspirations, CityU's MBA has increasingly sought to bring into the classroom practical and cutting-edge knowledge tempered with a global perspective. Students have benefited from a broad spectrum of experiential learning opportunities from around the world.



Kevin Chiang. Photo: CityU

In the UK, CityU has partnered with Imperial College London for a global brand management workshop, while University of California Berkeley of the United States helped offer a similar workshop focused on fostering entrepreneurship.

"These courses are all projects in which students will have to reach out and work with different organisations," explains professor Kevin Chiang Wei-yu, director of CityU's MBA programme.

"In the global brand management workshop, our MBA students have worked on projects for iconic brands including luxury car maker Bentley, supermarket chain Tesco, and Edwardian Hotels, where students developed branding strategies for the Asian market," Chiang continues. "At the same time, the entrepreneurship workshop allowed students to learn from Berkeley faculty and entrepreneurs in Silicon Valley through workshops and visits to innovative companies such as

Ford and Google. They put what they learn into practice by developing a comprehensive business plan, which they present to venture capitalists for genuine evaluation."

Closer to home, students also have the chance to take part in a diagnostic residential trip in Asia which provides the opportunity to work as part of a consulting team that helps partnering companies tackling business challenges. Although the course originally focused on mainland China, as inter-regional trade has expanded so have students' prospective destinations. Recent students have worked in countries as varied as South Korea, Cambodia and Malaysia.

Chiang is keen to emphasise that it is the hands-on components of CityU's course that are so valuable. Its MBA is designed to prepare student to take on business leadership roles spanning disciplines, industries and regions, providing tailor-made courses that allow students to gain first-hand experience of business and real-world challenges.

"Given the complex nature of the global business environment, and the needs of today's businesses practices, experiential learning or 'learning by doing' enables students to gain practical experience they can apply in real-world situations," says Chiang.

"Importantly, no matter what career they pursue, experiential learning can help students increase their business acumen and develop the cross-functional decision-making skills that are crucial for any profession."

