

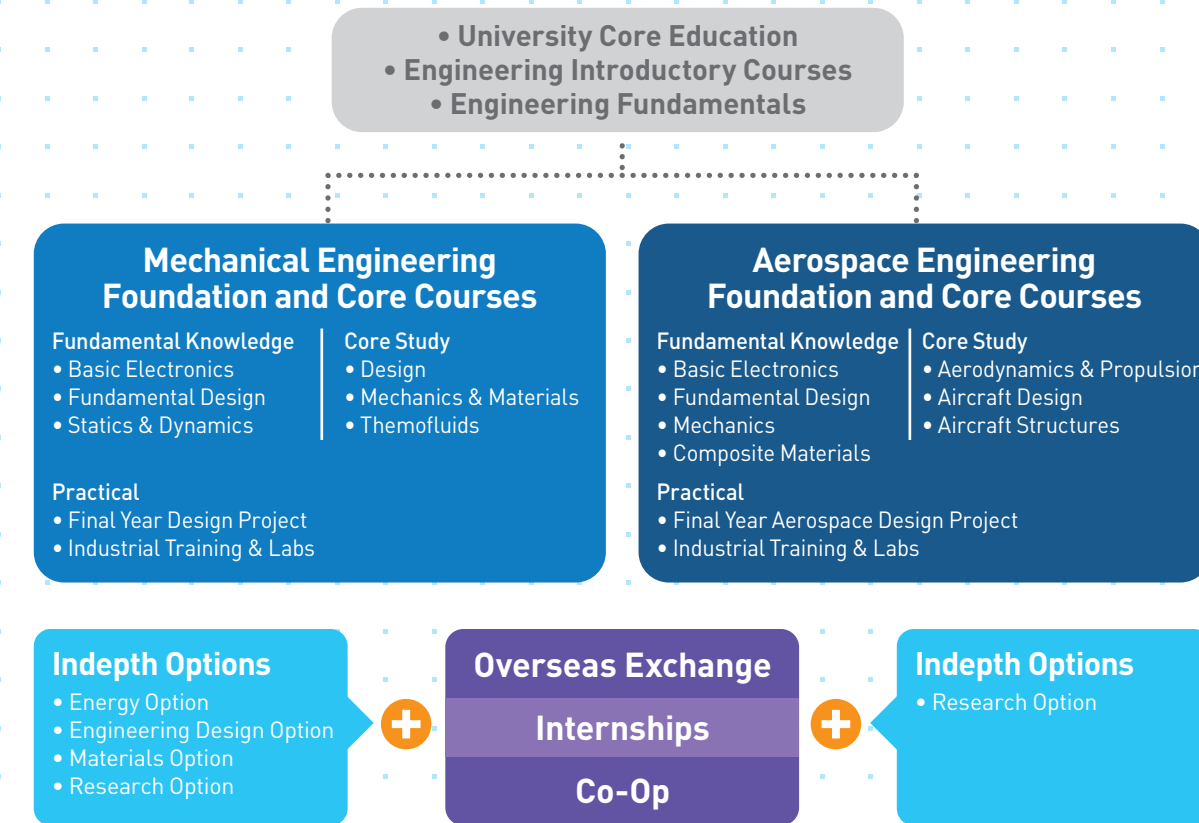
CURRICULUM HIGHLIGHTS

Bachelor of Engineering in Mechanical Engineering

The BEng (Mechanical Engineering) program is designed for students who aspire to become high-caliber Mechanical Engineering professionals in Hong Kong. The program integrates fundamental Mechanical Engineering principles and core science via theoretical learning and practical hands-on laboratory experiences. The curriculum is composed of a balanced coverage of Mechanics and Materials, Thermal and Fluids, Control and Design in the foundation year, accompanied by additional training to provide quantitative analytical skills. Mechanical Engineering students are expected to graduate with an interwoven body of theoretical and practical Mechanical Engineering knowledge that nurtures them to develop innovative engineering solutions.

Bachelor of Engineering in Aerospace Engineering

The BEng (Aerospace Engineering) program is designed for students who aspire to become high-caliber professionals in aeronautical and aerospace industries in the Pearl River Delta Region and beyond. The program covers all the fundamental aspects of the field, from aerodynamics, aircraft structure, propulsion and controls to aviation safety and also offers flexibility in choice of advanced core electives. Our curriculum not only emphasizes realistic engineering problems in aerospace and related areas, but also enables students to apply advanced knowledge and concepts to the interdisciplinary study of an overall system in their final year aerospace design project. Graduates are expected to pursue a professional career in the field pertinent to aircraft services, component manufacturing and maintenance.



Extended Major Program in Artificial Intelligence (Major + AI)

The "Major + X" initiative has been launched in 2021-22 and the first Extended Major subject area "X" is **Artificial Intelligence (A.I.)**. Students may apply for enrollment in the MECH/AE + AI program to receive additional knowledge in the AI area such as fundamentals of artificial intelligence, machine learning, data visualization, image processing, etc. Students will learn innovative application of AI in their Major fields on top of the solid knowledge in an engineering discipline.

Minor in Aeronautical Engineering

Qualified students may apply to study for a minor program in addition to their major. The MAE Department offers a minor program in **Aeronautical Engineering**, which covers topics such as aerodynamics, aircraft structure, and aerospace systems. Graduates will be able to pursue a broad career in those areas.



Mechanical and Aerospace Engineering

own your future, realize your goal



What is MECHANICAL AND AEROSPACE ENGINEERING?




Engineering involves the acquisition and application of scientific, mathematical, economic, social, and practical knowledge to solve problems in our daily lives. Engineering is everywhere in the world around us.

Mechanical Engineering is one of the earliest branches of engineering, which has been traditionally associated with power generation, mining, machinery, and manufacturing, design, development, construction, and early testing of aircraft and space vehicles. Examples of the different aspects of mechanical engineering that have transformed our society include automobiles, aircraft, rockets, spacecraft, ships and submarines, robots, wind turbines, material coatings, offshore structures, refrigeration systems, and manufacturing systems.


Aerospace engineering is a significant branch in Mechanical Engineering; it deals with the design, development, construction, testing and all technological aspects of aerial and space vehicles, such as aircraft and spacecraft. It includes broad disciplines of aeronautical engineering and astronautical engineering, covering the operation of these vehicles both within the earth's atmosphere and beyond.

In practice, mechanical and aerospace engineers conceive, plan, design and direct the manufacture, distribution, and operation of a wide variety of devices, machines, and systems used for energy conversion, environmental control, materials processing, transportation via air, space and land, and the manufacture of consumer products.


Why HKUST MAE?




A unique curriculum which integrates fundamental principles and hands-on laboratory experience



State-of-the-art laboratories and computing facilities: Students can design, practice and experiment



World-Class Academic Innovators



Wide range of career opportunities: Transportation, Building and Infrastructure, Design, Manufacturing, Aeronautics, and Astronautics

CONTACT US

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[HKUST.MAE](https://www.hkust.hk/mae) [hkustmae](https://www.instagram.com/hkustmae) mae.hkust.edu.hk

Enrichment Programs

To enhance students' communication skills and widen their exposure to the industry, HKUST MAE provides a wide range of enrichment activities.

Co-Op Programs

The credit-bearing program enables the final year students to gain practical work experience and valuable engineering design opportunities in the engineering sector. MAE students have gained valuable experience in:

- China Aircraft Services
- CLP
- Compass
- HAECO
- HAESL
- HK Ferry
- Jardine Group (JEC)
- Johnson Controls
- MTR Corporation
- Ove Arup & Partners (HK)
- SAE
- Towngas
- UGL



International Exchange Program

It offers an opportunity for students to build cross-cultural understanding and widen their network by providing them with an experience to study and work abroad. MAE students have gained valuable exchange experiences around the world, included but not limited to:

- Cornell University, USA
- University of California Berkeley, USA
- Georgia Institute of Technology, USA
- University of Michigan, USA
- University of Minnesota, USA
- INP Grenoble, France
- Royal Institute of Technology, Sweden
- Technical University of Denmark
- KAIST, Korea
- Kyoto University, Japan
- National University of Singapore
- Tsinghua University, China

Undergraduate Research Opportunities Program (UROP)

UROP provides a unique opportunity for undergraduate students to engage in academic research to help them develop a broad and insightful perspective of their areas of interest.



Industrial Training

This training course aims to broaden students' understanding of engineering practice and enhance their appreciation of the knowledge acquired from the classrooms in a simulated industrial environment.

Mentorship Scheme

It offers students an early connection with industrial professionals from MAE related sectors for valuable insight and career advice. The scheme also brings invaluable long-term knowledge-sharing and friendship between mentors and mentees.



ACCREDITATION BY HKIE

The HKUST BEng in Mechanical Engineering and BEng in Aerospace Engineering are accredited by the Hong Kong Institute of Engineers (HKIE), which are also recognized by many engineering institutions/authorities throughout the world.

Graduates are qualified to join the HKIE formal training scheme in the related discipline offered by major Hong Kong companies. The training, plus a period of practical experience, can lead to the status of Professional Engineer.

CAREER PROSPECTS

The key employment sectors for BEng in Mechanical and Aerospace Engineering graduates are:

Transportation Systems sector:

Aircraft Engineering, Automatic Engineering, Piloting, Marine Engineering. Companies include Cathay Pacific, HAECO, HAESL, MTR, etc.



Building & Infrastructure sector:

Building Services, E&M Systems. Companies include AECOM Asia Company Limited, ATAL, Chevalier International Holdings Limited, Otis Elevator Company, SWIRE, etc.



Energy sector:

Power Generation, Renewable Energy, New Products, Energy Management. Companies include Arup, Hong Kong & China Gas, CLP, HK Electric, WSP Parsons Brinckerhoff, etc.



Design & Manufacturing sector:

Electronic Packaging, Aeronautical Engineering and Service, Automobile Industry, and Automation Systems. Companies include ASM, Foxconn, Huawei, Jardine Engineering Corporation Limited (JEC), NXP, etc.



Others:

EMS, EPD government agencies, Consultancy, Strategic business analysis and start-ups.

ADMISSION

Under the 4-year School-based program, all students will be admitted to the Engineering School for their 1st year of study. Students will have at least one year to explore various programs before declaring their majors. Interested students should apply for MAE as a major through the major selection exercise.



HKDSE Entry Requirements

The University requires

4C + 2X
(four core subjects plus two electives)

4C + M1/M2 + 1X
(four core subjects with Mathematics Extended Module 1 or 2 plus one elective)

Direct-Entry Admission Applications

Local students holding **international qualifications, local sub-degree and post-secondary or other qualifications** may apply for program enrollment via submitting applications through **HKUST Online Application System**.

Please visit <http://join.ust.hk/> for more information about application procedure and important dates.

ALUMNI SHARING

Mr. WONG Man Hang, Henry (Class of 2014)

Second Officer
Cathay Pacific Airways Limited



Being an avid aviation enthusiast, I found my sense of belonging in this university. HKUST not only has experienced professors and teaching staff, but also offers unlimited opportunities to students with passion in this field. As international exposure is conducive to students' career development, HKUST endeavors to provide a blend of overseas exchange and internship opportunities for students to broaden their horizon. I was fortunate enough to intern at Boeing and Cathay Pacific during my school time. These internships fortified my aviation interest and laid a solid foundation for my career.

Mr. CHIU Wai, Peter (Class of 2020)

Graduate Engineer
China State Construction Engineering (Hong Kong) Limited



Studying in MAE at HKUST was a meaningful experience. During the undergraduate period, we not only learn more about academic knowledge but also let us have an international view and broaden our horizons more. In 2018, it is my pleasure to have the opportunity to join the two times exchange which is going to Tsinghua University and National University of Singapore. We can learn how to be passionate and outgoing people, easy to escape our comfort zone and adapt to a new environment. Also, HKUST Co-op program can let us gain more working experience and understand the whole picture of the industry to prepare for our career path. After graduation, I work in China State Construction Engineering (Hong Kong) Limited for cultural construction and epidemic prevention projects related to society. It let me know engineering is not only the job, but also the mission which contributes to society.

Mr. YEUNG Chi Shing, Sam (Class of 2021)

Graduate Engineer
Ove Arup & Partners Hong Kong Limited



Like most the students when they first get into the School of Engineering, I was not clear about my career direction. Thankfully, the School of Engineering provides plenty of resources for students to explore their interests and achieve what they imagine. In particular, the MAE department encourages students to participate in different competitions to gain hands-on experience and foster their entrepreneurial spirit. Being a member of the HKUST Robotics team, I collaborated with multidisciplinary students to design and build a Remotely Operated Vehicle (ROV) for an international competition. This experience helped me build up the technical skills necessary for a mechanical engineer and sharpened my communication skills in a team environment. With my experience at HKUST, I would like to encourage students to step out of their comfort zone and seize every opportunity to make a difference.