



THE HONG KONG
POLYTECHNIC UNIVERSITY
香港理工大學

DEPARTMENT OF INDUSTRIAL AND SYSTEMS ENGINEERING
工業及系統工程學系

BSc (Hons) in Aviation Operations and Systems 航空營運及系統學 (榮譽)理學士學位

2-year Full-time Government-funded Top-up Degree Programme
年全日制政府資助銜接學位課程

(Programme Code: 45497)



What is Aviation Operations and Systems?

Aviation Operations and Systems concern design and development, planning and scheduling, and implementation and control of various processes, operations, and systems in aviation and related industries. Particular emphasis is given to the development of new processes, new operations, new systems, and the reengineering of existing processes, operations, and systems. This enables better understanding of the complex problems and interrelationships of various aviation operations, and draws on specialised knowledge and skills in engineering, management, and social sciences to specify, optimize, predict, and evaluate the results to be obtained from such processes, operations, and systems.



BSc (Hons) in Aviation Operations and Systems

航空營運及系統學(榮譽)理學士學位

Characteristics

Hong Kong needs to upgrade its manpower to meet the aviation industry's prevailing and future demands, maintaining its competitiveness in the rapidly changing world and highly competitive markets in the region. Only university graduates possessing profound aviation-related professional knowledge and diverse management skill-sets have the ability and adaptability to be successful in such an environment. This programme is designed from a multi-stakeholder perspective to cover the whole spectrum of the aviation industry, spanning policy, management, operations, logistics, and systems levels. Various relevant departments are collaborating to co-design and deliver this programme, including the Department of Industrial & Systems Engineering, the Department of Logistics & Maritime Studies, and the School of Hotel & Tourism Management. The programme offers a highly integrated, broad-based education aimed at producing degree-level aviation professionals to meet the high-level diverse manpower needs of the aviation industry.

Through the AOS programme, students will be able to practice and understand different common technological systems and processes found in the aviation industry. Moreover, by undertaking hands-on projects, students will also be able to integrate their academic knowledge with practical skills covering key engineering tasks including: problem identification, design, fabrication, and evaluation. Students will also be trained to become specialists in aviation areas such as aircraft logistics, airline operations and revenue management, and inflight service management.



Aims of the programme

The overall aim of this programme is to produce professionals who are competent in the design, development, planning, scheduling, controlling, executing, and managing aviation operations, systems, and related technologies. In this programme, students will study the underpinning Industrial Engineering fundamentals and theory used in aviation operations and systems. As a consequence, graduates of the programme will become competitive professionals in aviation operations and systems for the local and global aviation industry.

PROGRESSION CURRICULUM*#

Year 1	
Semester 1	Semester 2
<ul style="list-style-type: none"> • Introduction to Aviation Industries • Introduction to Business Law • Warehousing Technologies and Management • Applications of Operations Research in Aviation • Professional Communication in Chinese • Integrated Aviation Systems Project 	<ul style="list-style-type: none"> • Total Quality Management • Systems Modeling and Simulation • Engineering Costing and Evaluation • Aviation Safety and Security Management • Professional Communication in English for Engineering Students • Integrated Aviation Systems Project - cont'd
Year 2	
Semester 1	Semester 2
<ul style="list-style-type: none"> • Fleet and Flight Management • Society and the Engineer • Airport Logistics Engineering • Elective 1 • Individual Project 	<ul style="list-style-type: none"> • Airline Strategy and Management • Airport Management • Project Management • Elective 2 • Individual Project - cont'd

Elective Subjects:

- Inflight Service Management
- Environmental Management in the Travel and Hospitality Industry
- Data Management in Aviation Industries
- Mobile Technologies for Logistics Systems
- Green Legislation and Supply Chain Logistics
- Aircraft Service Engineering and Logistics
- Quality Management
- Air Flight Operations Management
- Airline Operations and Revenue Management
- Information Systems for Logistics Management



* Those students not meeting the equivalent standard of the Undergraduate Degree LCR (based on their previous studies in AD/HD programme and their academic performance) will be required to take degree Language and Communication Requirements (LCR) subjects on top of the normal curriculum requirement.

Students also need to fulfill the Cluster Areas Requirement (CAR) and Service-Learning credit requirements





Career Prospects

Graduates can be employed as:

- Aviation Business Analysts
- Aviation Project Engineers
- Aviation Safety Engineers
- Ground Operations Engineers
- Crew Operations Officers
- Passenger Services Officers
- Fleet Technical Engineers
- Cargo Services Coordinators
- Airworthiness Engineers
- Revenue Management Officers
- Inventory Management Analysts
- Client Support Executives
- Quality Assurance Engineers
- Operations Engineers
- Systems Engineers
- Planning Engineers

Gaining Practical Experience from WIE

Work-Integrated Education (WIE) has been incorporated into the course of studies to ensure that students gain real-life work experience that is relevant to their study disciplines, and to enhance their all-round development. Each student must attain a minimum of one WIE training credit, i.e., completion of at least 2 weeks/80 hours of full-time training, or the equivalent, before graduation.

Summer Placement

Summer placement opportunities may be provided to students to enable them to gain practical work experience.

Industry-related Final Year Projects

Most of our students' final year projects will be industry-related. Each student will collaborate with an organization and work on a specific topic under the supervision of an academic staff and a staff member from the partnered company. The main aim is to provide them with hand-on experience in applying what they have learnt in the classroom for solving real-life problems or making improvements.

Supporting Organizations

- Asia Airfreight Terminal Company Limited
- BNP Paribas
- Boeing Commercial Airplanes
- Cathay Dragon
- Cathay Pacific Airways Limited
- Cathay Pacific Catering Services (H.K.) Limited
- China Aircraft Services Limited
- Civil Aviation Department, HKSAR Government
- Committee on Aviation, The Hong Kong Chinese Enterprises Association
- DHL
- Hong Kong Aero Engine Services Limited
- Hong Kong Air Cargo Terminals Limited
- Hong Kong Airlines Limited
- Hong Kong Express Airways Limited
- Hong Kong International Airport
- Hong Kong Logistics Association
- Hong Kong Trade Development Council
- Hongkong Association of Freight Forwarding and Logistics Limited
- Jardine Airport Services Limited
- Jetstar Hong Kong Airways Limited
- Kalitta Air
- TAG Aviation Asia Limited
- The Chartered Institute of Logistics and Transport in Hong Kong
- The Hong Kong Shippers' Council
- The Institute of Purchasing and Supply of Hong Kong
- TNT Express Worldwide (HK) Limited
- Vogue Laundry Service Limited

Professional Recognition

The programme has been granted provisional accreditation by the Chartered Institute of Logistics and Transport in Hong Kong (CILTHK).

Entrance Requirements of the Programme

An Associate Degree or Higher Diploma holder in a relevant discipline or equivalent qualifications will be eligible to apply for the programme.

In addition to academic results, the potential for and interest of applicants in the programme, their language and communication skills, and their learning attitude, will also be considered. Shortlisted candidates will be invited to attend a selection interview.

Enquiries

Academic Matters

Prof. Xiaowen Fu

Programme Leader

Phone: 2766 6329

Email: xiaowen.fu@polyu.edu.hk

General Enquiries

Ms Rita Wong

Programme Manager

Phone: 2766 7943

Email: rita.ps.wong@polyu.edu.hk



Programme Website <https://www.polyu.edu.hk/ise/aos>

The content of this leaflet is subject to review and change which the programme offering department can decide to make from time to time.