Applied Learning

2025-27 Cohort; 2027 HKDSE

Item	Description
1. **Course Title**	Aviation Studies
2. **Course Provider**	School of Professional and Continuing Education, The University of Hong Kong
3. **Area of Studies/ Course Cluster**	Engineering and Production / Services Engineering
4. **Medium of Instruction**	Chinese or English ("Aircraft Pilot" elective will be conducted in English only)
5. **Learning Outcomes**	Upon completion of the course, students should be able to: (i) describe the functions and operation of various aviation organisations including airport authority and airlines; (ii) describe international regulations and standard requirements in the aviation industry; (iii) apply practical skills in the aviation industry; (iv) demonstrate problem-solving skills through tackling aviation-related issues with multi-disciplinary knowledge; (v) appreciate the latest development and achievements in engineering in related fields; (vi) appreciate the importance of teamwork and communication in the aviation industry; (vii) describe the work ethics and demonstrate proper values and attitudes in the aviation industry; (viii) enhance self-understanding and explore directions on further studies and career pursuits.

6. Curriculum Map – Organisation and Structure (Aviation Studies – Overview)

* Choose any one of the electives

The course will be conducted in English for students taking "Aircraft Pilot elective"

Core (36 hours)

Knowing Aircraft and the Aviation Industry

- Introduction to the aviation industry
- Air transport systems
- Operation systems of airport
- Overview of aviation industry development and achievements in engineering
- Functions and operation of various aviation organisations
- Smart airport concept and functions
- Aircraft operation fundamental – theory of flight

- Concept of importance of aviation safety
- International regulations and services standard
- Knowledge in aircraft components

* Elective: #Aircraft Pilot (144 hours)

Modules
- AP1 Aerodynamics and Aeronautical Knowledge Basics (51 hours)
- AP2 Aircraft Structure, Operation and Performance (39 hours)
- AP3 Flight Operation (30 hours)
- AP4 Introduction to Navigation & Meteorology (24 hours)

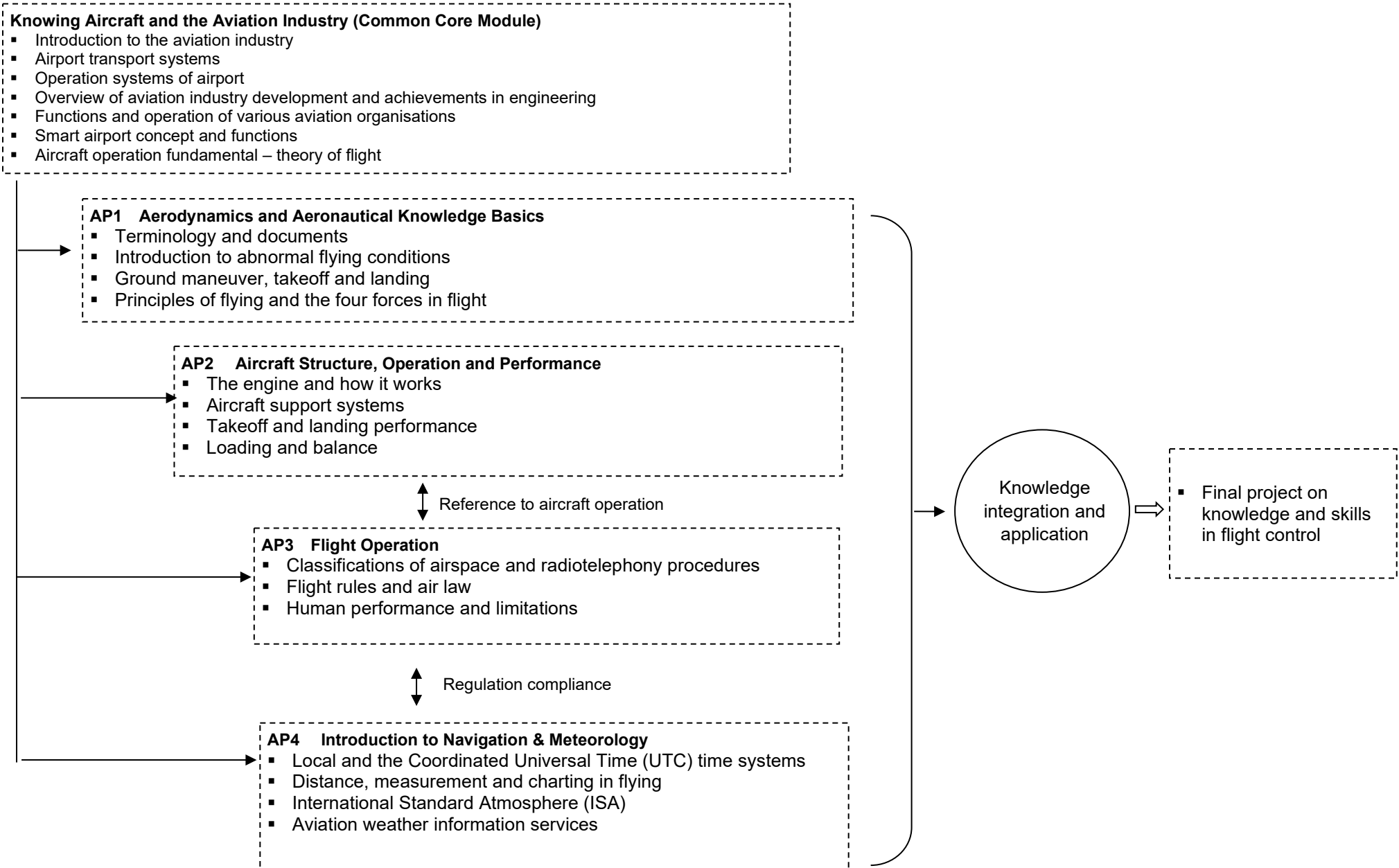*** Elective: Aircraft Maintenance (144 hours)**

Modules
- AM1 Engineering Fundamentals (21 hours)
- AM2 Aircraft Systems and Design (24 hours)
- AM3 Aircraft Components and Materials (30 hours)
- AM4 Aircraft Maintenance Practice (30 hours)
- AM5 Aviation Legislation and Human Factors (15 hours)
- AM6 Aircraft Maintenance Project (24 hours)
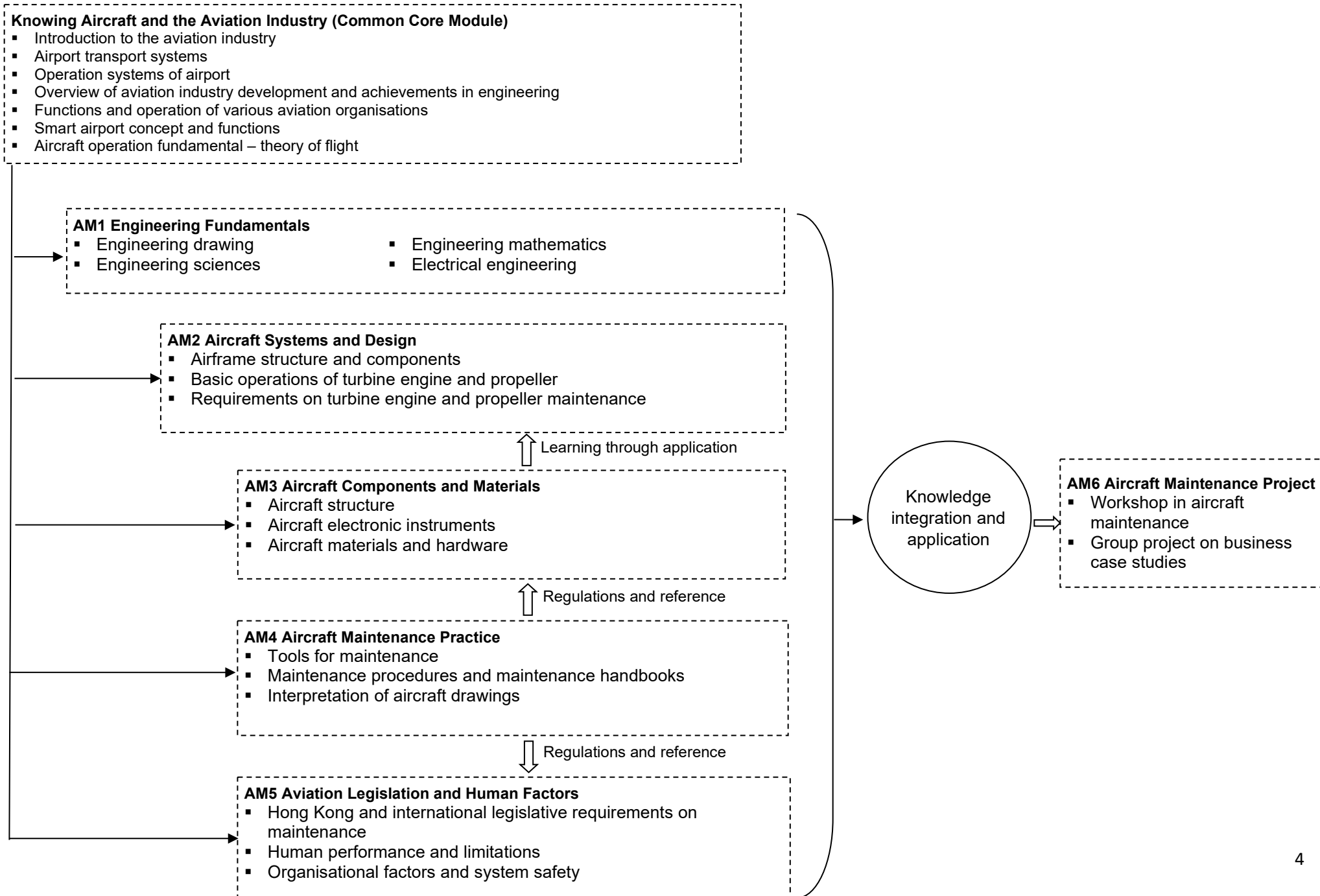
* Elective: Aviation Services (144 hours)

Modules
- AS1 Airport Customer and Airline Passenger Services (15 hours)
- AS2 Airline Cabin Crew Services (33 hours)
- AS3 Aviation Safety (51 hours)
- AS4 Cultural Issues in Aviation (15 hours)
- AS5 Human Factors in Aviation (12 hours)
- AS6 Aviation Services Project (18 hours)

6. Curriculum Map – Organisation and Structure (Elective: Aircraft Pilot) # The course will be conducted in English for students taking "Aircraft Pilot elective"

Knowing Aircraft and the Aviation Industry (Common Core Module)
- Introduction to the aviation industry
- Airport transport systems
- Operation systems of airport
- Overview of aviation industry development and achievements in engineering
- Functions and operation of various aviation organisations
- Smart airport concept and functions
- Aircraft operation fundamental – theory of flight

AP1   Aerodynamics and Aeronautical Knowledge Basics
- Terminology and documents
- Introduction to abnormal flying conditions
- Ground maneuver, takeoff and landing
- Principles of flying and the four forces in flight

AP2   Aircraft Structure, Operation and Performance
- The engine and how it works
- Aircraft support systems
- Takeoff and landing performance
- Loading and balance

Reference to aircraft operation

AP3   Flight Operation
- Classifications of airspace and radiotelephony procedures
- Flight rules and air law
- Human performance and limitations

Regulation compliance

AP4   Introduction to Navigation & Meteorology
- Local and the Coordinated Universal Time (UTC) time systems
- Distance, measurement and charting in flying
- International Standard Atmosphere (ISA)
- Aviation weather information services

Knowledge integration and application

- Final project on knowledge and skills in flight control

6. Curriculum Map – Organisation and Structure (Elective: Aircraft Maintenance)

Knowing Aircraft and the Aviation Industry (Common Core Module)
- Introduction to the aviation industry
- Airport transport systems
- Operation systems of airport
- Overview of aviation industry development and achievements in engineering
- Functions and operation of various aviation organisations
- Smart airport concept and functions
- Aircraft operation fundamental – theory of flight

AM1 Engineering Fundamentals
- Engineering drawing
- Engineering sciences
- Engineering mathematics
- Electrical engineering

AM2 Aircraft Systems and Design
- Airframe structure and components
- Basic operations of turbine engine and propeller
- Requirements on turbine engine and propeller maintenance

Learning through application

AM3 Aircraft Components and Materials
- Aircraft structure
- Aircraft electronic instruments
- Aircraft materials and hardware

Regulations and reference

AM4 Aircraft Maintenance Practice
- Tools for maintenance
- Maintenance procedures and maintenance handbooks
- Interpretation of aircraft drawings

Regulations and reference

AM5 Aviation Legislation and Human Factors
- Hong Kong and international legislative requirements on maintenance
- Human performance and limitations
- Organisational factors and system safety

Knowledge integration and application

AM6 Aircraft Maintenance Project
- Workshop in aircraft maintenance
- Group project on business case studies

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6. Curriculum Map – Organisation and Structure (Elective: Aviation Services)

Knowing Aircraft and the Aviation Industry (Common Core Module)
- Introduction to the aviation industry
- Airport transport systems
- Operation systems of airport
- Overview of aviation industry development and achievements in engineering
- Functions and operation of various aviation organisations
- Smart airport concept and functions
- Aircraft operation fundamental – theory of flight

AS1 Airport Customer and Airline Passenger Services
- Airport customer behaviour
- Airport customer service features
- Airline guide and IATA manuals
- Passenger handling procedures

AS2 Airline Cabin Crew Services
- Personal essentials for cabin crew profession
- Customer interaction and communication
- Crew resources management
- Airline catering

Regulations and reference

AS3 Aviation Safety
- Responsibility for security control of people and items
- Procedures for handling restricted and dangerous articles
- Aviation first aid

Regulations and reference

AS4 Cultural Issues in Aviation
- Cultural impacts on customer service
- Cultural awareness and coping with cultural differences
- Regional culture

AS5 Human Factors in Aviation
- Human performance and limitations
- Human factors affecting performance
- Human factors assessment and indicators

Knowledge integration and application

AS6 Aviation Services Project
- Practical skills in cabin crew services
- Group project on business case studies

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7. The Context

- The information on possible further study and career pathways is provided to enhance students' understanding of the wider context of the specific Applied Learning course.
- The recognition of Applied Learning courses for admission to further studies and career opportunities is at the discretion of relevant institutions. Students who have successfully completed Applied Learning courses have to meet other entry requirements as specified by the institutions.

Possible further study and career pathways

Further studies
- e.g. courses related to aviation, engineering, tourism, human resources management, logistics, transportation

Career development
- e.g. aircraft cadet pilot, air traffic flight services officer, engineer in aircraft maintenance / aircraft manufacture, mechanical engineer, cabin crew, customer service officer, ground service officer

Other qualifications
- e.g. (Aircraft Maintenance elective) – Civil Aviation Department HKAR-66 Category A Aircraft Maintenance Licence qualification
- e.g. (Aircraft Pilot elective) – Private Pilot Licence. Additional practical flying training is required in order to fully complete the qualification of Private Pilot Licence. The practical flying sessions are not included in this ApL curriculum and it is optional for students to attend the practical flying sessions. The Aircraft Pilot elective will focus on the theory of flight and practical exercises will mainly be computer-based flight simulation. HKU SPACE will provide students the practical flying information which will be conducted in overseas, such as Adelaide or Brisbane in Australia. Extra expenses are required for the practical flying sessions
- e.g. (Aviation Services elective) - Airline Cabin Crew Training qualification as recognized by the International Air Transport Association (IATA)


Complementarity with core subjects and other elective subjects

Enhancing and enriching, e.g.
- enhance students' Chinese and English Language skills through applying the language skills at the aviation industry standard
- Make use of mathematical knowledge to solve operational problems in aviation (e.g. aircraft loading and balance). Also, apply Information Technology skills in data research and handling

Expanding horizons, e.g.
- students studying **Physics** can broaden their knowledge of aircraft systems and design
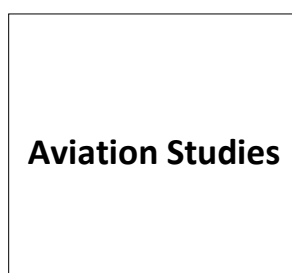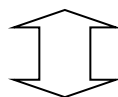
Aviation Studies

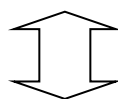**Relations with other Areas of Studies / courses of Applied Learning**

e.g.
Business, Management and Law
- legislative requirements in aviation operations

Services
- concepts and knowledge related to aviation services can enhance learning can enhance the learning in complaint handling and customer service in the area of studies of Services

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Foundation knowledge developed in junior secondary education

This course is built upon the foundation knowledge students acquired in, e.g.

- **Chinese Language and English Language** – verbal and written communication
- **Mathematics Education** – basic calculations, statistics
- **Technology Education** – data handling, information searching and software application
- **Science Education** – force and motion
- **Geography** – map reading
- **Personal, Social and Humanities Education** – culture and its impact on customer service

8. Learning and Teaching

In this course, student-centred learning and teaching activities are designed to enable students to understand fundamental theories and concepts, develop their generic skills, and address their career aspirations in the aviation industry.

Different modes of activities are employed to provide students with a systematic understanding about the context (e.g. lectures on the overview of the Hong Kong aviation industry) and eye-opening opportunities to experience the complexity of the context (e.g. on-site visits to local aviation-related organisations, sharing sessions by alumini and career talks by the aviation practitioners).

Students acquire an understanding of the requirements, fundamental knowledge and skills essential for further learning within the area through learning-by-practising opportunities in an authentic or near-authentic environment (e.g. virtual reality experience on aviation-related procedures and practical workshops under simulated working environment with industry grade tooling at industry standard).

Students are given opportunities to consolidate their learning and demonstrate entrepreneurship and innovation (e.g. case studies to evaluate the impact of the aviation industry on the local economy and analyse the operation of various aviation organisations).

9. Curriculum Pillars of Applied Learning

Through related contexts, students have different learning opportunities, for example:

(i) <u>Career-related Competencies</u>
- understand the future development trend of the local and global aviation industry through on-site visits and career talks by industry practitioners;
- explain the functions and operation of various aviation organisations; and
- enhance understanding of industry competency requirements through practical exercises which are set according to the industry standard.

(ii) <u>Foundation Skills</u>
- strengthen language ability through reading relevant information on local and international aviation regulations which is usually written in English;
- strengthen communication skills both in verbal and written forms through working on-site visits and project reports, presentation and role play practice;
- consolidate mathematical concepts and strengthen problem-solving skills by working on aviation related tasks; and
- strengthen information technology skills through doing research and information collection for assignments and projects.

(iii) <u>Thinking Skills</u>
- integrate knowledge from different aspects including Science, Mathematics and Geography, as well as knowledge of Human Biology and Psychology covered in topics on aviation human factors;
- develop critical thinking skills and analytical skills through discussions on authentic aviation cases which will stimulate students' thinking and further understanding of the competency required in the aviation industry;
- enhance thinking skills through participation in regular class activities including role play, simulation exercises, presentations and site visits; and
- develop skills in problem-solving and decision-making through project works which require information search and filtering, results analysis and consolidation.

(iv) <u>People Skills</u>
- develop team building skills through participating in the establishment and operation of self-directed working teams;
- enhance concept of division of work through group projects and role-play activities in class;
- develop skills in interpersonal communication and interaction through practicing simulated aviation operation procedures at industrial standard; and
- develop self-management skills through practice under simulated aviation working environment where students are required to follow industrial regulations and guidelines.

(v) <u>Values and Attitudes</u>
- develop responsibility through understanding the high safety requirements in the aviation industry;
- develop concept of rights and obligations, and respect for safety of other people through experience sharing by lecturers and guest speakers from the industry; and
- develop self-confidence through successful completion of practical work with feedback by tutors.