

Bachelor of Applied Science (Aviation) (Top-Up)
RMIT University, Australia

Brief Outline of Modules (Updated 8 July 2024)

This module provides an understanding of the principles and practices critical to the aviation industry. These relate to airports, commercial airlines, and the general aviation sector.

The module introduces the major players that comprise the global air transport system, the types of and major functions of airports, the basic principles of aviation policy, airline commercial economics, flight planning and flight dispatch, and air cargo management.

AERO2484 INTRODUCTION TO AIRCRAFT

This module provides a broad introduction to aircraft by considering a number of topics related to the role, function and operation of flight vehicles. The module introduces the fundamental science underpinning aerodynamics, propulsion and structures. Practical integration issues relating to achieving flight - such as aircraft economics - are also addressed. This includes exploring attributes and limitations relating to the atmosphere and well as examining the anatomy and configuration of aircraft. Other areas of study include; stability and control, high-speed flight and emerging technologies. Contemporary issues in aviation are also addressed when relevant.

AERO2496 AIRPORT/AIRLINE OPERATIONS

A study of the broad range of practical operational issues that airports contend with on a daily basis is introduced.

Airport/Airline Operations cover both airside operations (mainly for airlines) and landside operations (mainly for passengers).

To consider some of the complexities of airport in the context of operational and commercial environments, Airport-Airline relationship, ground handling, passenger handling, baggage handling, apron operations, catering, freight handling, Air Traffic Control, airport technical services, and airport rescue and safety are studied.

At the completion of this subject, students will have developed an understanding both airside and landside operations of contemporary airports.

AERO2500 HUMAN FACTORS IN AVIATION

“Human Factors” is a contributing factor in almost all aircraft accidents, and is reported to be the major causal factor in three out of every four. It is therefore crucial for students to gain an understanding of what Human Factors are, and how aviation operations can be managed effectively, with due recognition of the impact of Human Factors, so as to create a safe operating environment.

This module is designed to introduce students to the principles and application of Human Factors. Human Factors is a discipline in aviation safety management that is fast being recognised as one of the most important risk areas that can contribute positively and negatively to an organisation’s success in the industry. In this module students will learn about human characteristics and how they contribute to errors in task performance. Approaches to improving safety through management of human factors will also be covered.

AERO2498 AVIATION INDUSTRY ENVIRONMENT

This module introduces students to the four distinct broad environments which include regulation, operational, economical and international issues. It is primarily focussed the common carrier system of air transportation, that is, commercial air services offered to the public. The knowledge and skills developed through this module will support modules later in this programme in relation to airline operations and airport operations, aircraft maintenance and other core modules.

AERO3334 MANAGING THE AIR TRAFFIC ENVIRONMENT

The module introduces students to the major players and their roles that comprise the global air transport system. Through air traffic control (ATC) and related services, Air traffic Management (ATM) provides the connecting infrastructure that allows aircraft to fly safely between airports. Through managing the separation of aircraft and air traffic flows, ATM provides services that are essential for safe and efficient air transport.

This module also explore the National Airways System more broadly, discussing the effects of weather, in flight emergencies, aeronautical publications, airspace management across Air Navigation Service providers and the cultural aspects of safety in such an environment. Whether aspiring to be a pilot or an aviation manager, an understanding of how the system works and its interdependence with airlines and airports is vital.

AERO2495 AVIATION SAFETY AND SECURITY SYSTEMS

Achieving a safe working environment in any organisation is important, but in aviation this is particularly so, as the working environment includes the use of aircraft that are responsible for hundreds, sometimes thousands of lives each day. However, safety within aviation operations is not confined to the safety of aircraft operations. It also depends on the safety of maintenance, engineering, air traffic control and other airport operations, flight crew, regulatory bodies, and other staff within the organisation. Safety is also not just a concern for major airlines, but for all aircraft operators, and other supporting organisations.

Therefore, a system needs to be in place to ensure that all of the above (and more) are continually addressed, reviewed, and measures implemented to ensure that all safety concerns are either eliminated, or mitigated. Within aviation, this can be completed by the development and implementation of a safety management system, and a risk management system. Safety management systems are focused upon ensuring that all safety concerns are addressed appropriately, whilst risk management systems have a broader focus and include consideration for not only safety, but other commercial concerns. Although the two of these have many shared aims, it is generally the case that they are kept separate to ensure that the goals of both are met. Therefore, an aviation safety system is a way of managing 11 safety and other risk areas (which can indirectly affect safety) within aviation operations. The principles and considerations included within the module can be applied to small and large organisations, and are designed to provide an overview of safety within aviation. However, it must be remembered that the studies and other measures that are involved in aviation safety are much larger than what can be placed into this module. Therefore, a brief overview has been provided into most main topics, which in turn can provide a springboard into further research by the student.

Key areas of study:

- The elements which go to make up an Aviation Safety Management Systems
- The stakeholders of an Aviation Safety Management System and their input into the system as a whole.

AERO2486 AIRCRAFT MAINTENANCE MANAGEMENT

This module introduces students to the principles of aircraft maintenance management and airworthiness requirements.

The module covers aircraft maintenance checks and tasks; the regulatory framework for airline air and ground crews, aircraft maintenance organisations structures, the impact of integrated logistics support on aircraft operational availability, the role of aircraft maintenance as a source of competitive advantage, airworthiness requirements, aircraft type certification, production of parts and components, certificates of airworthiness, continued airworthiness of flight operations.

AERO2497 AIRPORT PLANNING AND MANAGEMENT

The aim of this module is to provide rich information that allows students to gain knowledge of the various facets of airport planning and management. It is for the student to understand 'how and why' of airports, and the role of the airport managers in the management activities, economics, financing and operating of medium, large, or hub airports.

Short case studies and practical exercises oriented to the airport industry will be used to demonstrate particular features. Topics and assignments will also serve to enhance and test the depth of understanding airport planning and management.

AERO2490 AIRLINE OPERATIONS

This module covers the operational aspects of starting and operating an airline, including airline operational strategy and objectives, route structure, fleet planning, manpower planning, airline product distribution, airfare structure, and fuel conservation and its economic impact.

Key areas of study:

- Airline operational strategy and objectives
- Economics of airline operations
- Route structure, route planning and route market analysis
- Fleet planning and network scheduling
- Forecasting and passenger research
- Pricing and distribution
- Fuel consumption
- Airline operational performance

AERO2492 AVIATION STRATEGY IN THE GLOBAL CONTEXT

This module "Aviation Strategy in the Global Context" is primarily focused on the role of the manager and emphasises the insights that may be gained in understanding the process of strategy development that influence the manager's ability to guide an organisation to achieve its goals or mission, particularly in the context of an aviation industry workplace.

AERO2489 AIR CARGO MANAGEMENT & OPERATIONS

This module introduces students to the international air cargo mode. Student will learn about the economics underpinning air cargo operations, the regulatory environment as it relates to the international air cargo mode, the roles of the air cargo mode in global supply chains, the air cargo services offered to the public, the rationale for and the forms of strategic partnerships and alliances employed in the air cargo industry, and the strategies employed by the various key stakeholders.

The module introduces students to the technical characteristics of aircraft as they relate to the air cargo mode, in particular, cargo capacity and air cargo revenue management, and ground and terminal handling requirements of air cargo.

AERO2585 AIRCRAFT AIRWORTHINESS

This course introduces students to the different aspects of initial and continuing airworthiness management frameworks, both in the operational and technical field. Students will examine different legislation, guidelines and technical manuals relating to airworthiness as commonly used in both civil organisations (ICAO, EASA, FAA, CASA, etc.) and defence (US Defence Forces, UK MAA, EDA MAWA Forum, ADF AA, etc).

Students will learn how to apply technical airworthiness management frameworks and how to implement airworthiness assurance functions in:

- Aircraft design approval and control.
- Aircraft and component manufacturing and certification.
- Aircraft modifications.

AERO2488 AVIATION INDUSTRY PROJECT

The Aviation Industry Project is intended to provide students with an opportunity to undertake a project that is approximately equivalent to a six-week long full-time task that a new graduate might be expected to undertake shortly after starting work in the aviation industry.

The Aviation Industry Project requires students to demonstrate technical skills and personal attributes as a junior aviation professional. Student will receive supervision from an internal RMIT Supervisor and may also have an External Supervisor (depending on the project). Students are expected to perform your project work independently with only limited guidance from RMIT staff and/or external industry supervisors.