UNSW Course Outline

AVIA5039 Airworthiness for Transport Category Aircraft - 2024

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General Course Information

Course Code : AVIA5039
Year : 2024
Term : Term 1
Teaching Period : T1
Is a multi-term course? : No
Faculty : Faculty of Science
Academic Unit : School of Aviation
Delivery Mode : Online
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Postgraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

Travel by air is the safest mode of transport in terms of distance travelled and, given the technological complexity involved, is extremely reliable. However, when serious accidents do occur, there is often a significant loss of life and associated extensive public concern and,

appropriately, an intense focus on investigating and determining the root cause of the accident and rectifying the situation. The main contributor to ensuring safe air travel is airworthiness of an aircraft, in conformance with its approved design and in a state suitable for safe flight. Airworthiness is at the core of aviation safety and is a constant and vital thread running all the way from the initial aircraft conceptual design through the detailed design, prototype testing and certification, manufacture, entry into service, sustained and reliable operations in-service, maintenance, repairs and modifications throughout its operating life and ultimately to aircraft disposal.

This fully online, distance learning course explores the major phases that constitute airworthiness: initial airworthiness and continuing airworthiness. There is a focus on understanding the regulatory framework and structure associated with airworthiness, design, certification, entry-into-service, continuing airworthiness compliance, conformance and change management, managing acquittal of work, maintenance organisation, and logistics and inventory management.

Course Aims

The aim of this course is to provide an understanding of the international and national frameworks, underlying principles, regulatory requirements, processes, terminology, governance and implementation challenges presented by the regulatory, business and societal expectations associated with initial and continuing airworthiness. The course is relevant to those involved in the operation of transport category aircraft including regulators, engineers, flight crews, maintainers, schedulers, operations controllers, general managers and those holding accountable roles. It is based around the regulatory systems and concepts of the Australian, European and U.S. environments. Areas covered include relevant regulations, design, certification, entry-into-service, continuing airworthiness compliance, conformance and change management, managing acquittal of work, maintenance organisations, and logistics and inventory management.

The course aims to support students with acquiring and applying key skills required for their aviation careers to address and fulfil their airworthiness responsibilities. This is facilitated through a combination of self-paced modules and embedded formative exercises based on real-life airworthiness scenarios, and assessments aimed to assist students with practising the application of skills and knowledge learnt throughout the course.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Discuss the national and international framework and regulations covering airworthiness, including safety, quality and risk management systems and compliance and conformance in relation to airworthiness.
CLO2 : Describe the initial airworthiness concepts and principles involved in aircraft design, production, testing, certification and aircraft entry-into-service.
CLO3 : Explain the concepts, principles and obligations associated with planning, monitoring and sustaining continuing airworthiness for the operational life of an aircraft, including the key factors that determine how maintenance is planned, acquitted, certified and tracked.
CLO4 : Explain the airworthiness management responsibilities and accountabilities of an operator, and strategies for meeting these obligations.

Course Learning Outcomes	Assessment Item
CLO1 : Discuss the national and international framework and regulations covering airworthiness, including safety, quality and risk management systems and compliance and conformance in relation to airworthiness.	• Assignment 1: Airworthiness Regulations and Requirements essay • Assignment 3: The Role and Responsibilities of Management Accountable for Airworthiness
CLO2 : Describe the initial airworthiness concepts and principles involved in aircraft design, production, testing, certification and aircraft entry-into-service.	• Assignment 2: Airworthiness Principles and Compliance essay • Assignment 1: Airworthiness Regulations and Requirements essay • Assignment 3: The Role and Responsibilities of Management Accountable for Airworthiness
CLO3 : Explain the concepts, principles and obligations associated with planning, monitoring and sustaining continuing airworthiness for the operational life of an aircraft, including the key factors that determine how maintenance is planned, acquitted, certified and tracked.	• Assignment 2: Airworthiness Principles and Compliance essay • Assignment 3: The Role and Responsibilities of Management Accountable for Airworthiness
CLO4 : Explain the airworthiness management responsibilities and accountabilities of an operator, and strategies for meeting these obligations.	• Assignment 1: Airworthiness Regulations and Requirements essay • Assignment 2: Airworthiness Principles and Compliance essay • Assignment 3: The Role and Responsibilities of Management Accountable for Airworthiness

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

This course provides an integrated background and understanding of the main tasks, challenges and requirements to attain and maintain airworthiness for transport category aircraft. This is achieved using contemporary examples and exercises.

The content of the course is written by aviation experts from various backgrounds within the aviation industry, and a cross section of disciplines at UNSW, to ensure all perspectives pertaining to the airline corporate management space are captured. Students are provided with course material to work through in a self-paced manner, and practical exercises are integrated throughout to test and consolidate knowledge and skills learnt, and consider how these can translate to their own careers in aviation. In addition to individualised assessment feedback, general academic review and feedback is provided to the entire cohort in this course to ensure consistent and collaborative learning and closing of the feedback loop.

Additional Course Information

All assignments should be submitted electronically in Word, Rich-text or Acrobat format to the School of Aviation submitted through the Assignment Submission Box on the UNSW Moodle site.

Late submission will only be allowed in exceptional circumstances and must be agreed in advance with the Course facilitator.

If you are not clear about what is required of you, then it is your responsibility to contact the Course facilitator as soon as possible – and certainly well before the due date for an assessment task.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Assignment 1: Airworthiness Regulations and Requirements essay Assessment Format: Individual	30%	Start Date: Week 2: 19/02/2024 Due Date: Week 4 : 10/03/2024 11:59PM
Assignment 2: Airworthiness Principles and Compliance essay Assessment Format: Individual	30%	Start Date: Week 5 : 11/03/2024 Due Date: Week 7 : 31/03/2024. 11:59PM
Assignment 3: The Role and Responsibilities of Management Accountable for Airworthiness Assessment Format: Individual	40%	Start Date: Week 8 : 01/04/2024 Due Date: Week 10 : 21/04/2024 11:59PM

Assessment Details

Assignment 1: Airworthiness Regulations and Requirements essay

Assessment Overview

For Assignment 1, you are required to write and submit a report communicating key information to an aviation audience. You will be required to base the information in the report on a prescribed scenario related to Airworthiness Regulations and Requirements, drawing on your understanding of relevant course content, and appropriate literature where necessary. The brief should be 1300-1500 words in length (excluding references and appendices) and is due in Week 4.

Detailed information on the assignment will be released in Week 2 of the course.

Written feedback and marks for the assignment will be provided within 10 working days following submission.

Course Learning Outcomes

- CLO1 : Discuss the national and international framework and regulations covering airworthiness, including safety, quality and risk management systems and compliance and conformance in relation to airworthiness.
- CLO2 : Describe the initial airworthiness concepts and principles involved in aircraft design, production, testing, certification and aircraft entry-into-service.
- CLO4 : Explain the airworthiness management responsibilities and accountabilities of an operator, and strategies for meeting these obligations.

Assessment Length

1300-1500 words

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Assignment 2: Airworthiness Principles and Compliance essay

Assessment Overview

For Assignment 2, you are required to assume a key governance role where you are required to identify and describe key issues related to Airworthiness Principles and Compliance for discussion. The assignment word length is 1300-1500 words (excluding references and appendices) and it is due in Week 7.

Detailed information on the assignment will be released in Week 5 of the course.

Written feedback and marks for the assignment will be provided within 10 working days following submission.

Course Learning Outcomes

- CLO2 : Describe the initial airworthiness concepts and principles involved in aircraft design, production, testing, certification and aircraft entry-into-service.
- CLO3 : Explain the concepts, principles and obligations associated with planning, monitoring and sustaining continuing airworthiness for the operational life of an aircraft, including the key factors that determine how maintenance is planned, acquitted, certified and tracked.
- CLO4 : Explain the airworthiness management responsibilities and accountabilities of an operator, and strategies for meeting these obligations.

Assessment Length

1300-1500 words

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Assignment 3: The Role and Responsibilities of Management Accountable for Airworthiness

Assessment Overview

For Assignment 3, you are required to submit a 2000-2500 word essay with an emphasis on the role and responsibilities of management accountable for airworthiness. The essay is to be based on a case study provided, and is to be submitted by Week 10.

The purpose of this Assignment is to test the comprehensiveness of your overall understanding of Transport category airworthiness and how to manage airworthiness in an actual operating

environment.

Detailed information on the assignment will be released in Week 8 of the course.

Written feedback and marks for the assignment will be provided within 10 working days following submission.

Course Learning Outcomes

- CLO1 : Discuss the national and international framework and regulations covering airworthiness, including safety, quality and risk management systems and compliance and conformance in relation to airworthiness.
- CLO2 : Describe the initial airworthiness concepts and principles involved in aircraft design, production, testing, certification and aircraft entry-into-service.
- CLO3 : Explain the concepts, principles and obligations associated with planning, monitoring and sustaining continuing airworthiness for the operational life of an aircraft, including the key factors that determine how maintenance is planned, acquitted, certified and tracked.
- CLO4 : Explain the airworthiness management responsibilities and accountabilities of an operator, and strategies for meeting these obligations.

Assessment Length

2000-2500 word

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

General Assessment Information

UNSW Aviation's decision for Short Extension Policy

The School of Aviation has carefully reviewed its range of assignments and projects to determine their suitability for automatic short extensions as set out by the UNSW Short Extension Policy. After careful consideration of our course offerings and our current structure, we have determined that our current deadline structures already accommodate the possibility of unexpected circumstances that may lead students to require additional days for submission. **Consequently, the School of Aviation has decided to not adopt the Short Extension provision for all its courses and has reassured that flexibility is integrated into our assessment deadlines.** The decision is subject to revision in response to the introduction of new course offerings. Students may still apply for Special Consideration via the usual procedures.

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You will be provided with an opportunity to test your understanding of material covered early in the AVIA5039 course through the completion of a formative quiz. The quiz comprises of multiple-choice questions on material covered in Weeks 1 to 3 (inclusive) of the course. It is to be completed by the start of Week 4.

The assessments in AVIA5039 are designed in alignment with course content, and provide an opportunity for you to assess your level of skills and knowledge gained in the course, and areas for improvement.

Essays and the Final Assignment must be written as proper academic papers and will be marked in accordance with normal academic conventions/standards. Characteristics associated with competent essays are:

- evidence of understanding of the concepts, principles, requirements and best practices considered in the Course;
- comprehensive and appropriate coverage of relevant issues for the given topic, addressing the specified assignment requirements;
- where appropriate, the incorporation of brief personal, professional experience to illustrate important issues;
- ability to structure a logical presentation of information and argument concisely and accurately written within the stipulated length;
- appropriate use of reference material, evidence of research and deliberations beyond the Course notes and appropriate and correct referencing (see below); and
- appropriate acknowledgement of material, to avoid issues with respect to plagiarism.

Students who do not comply with these general criteria are unlikely to receive a passing grade for the Course. It is acknowledged that many students undertaking AVIA5039 are working professionals, sometimes without previous substantial academic exposure; however students are expected to demonstrate an understanding of the subject matter and to adopt academic conventions, such as consistent referencing.

Grading Basis

Standard
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Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 12 February - 18 February	Topic	Unit 1: Overview, Regulatory Framework and Structure • This unit sets the context for Transport category aircraft operations and explains what airworthiness means, how it has evolved and the role it plays in safe operations. Given the significant part compliance plays in airworthiness, the framework of international and national airworthiness regulation and its structure is covered. Related CLO : 1
Week 2 : 19 February - 25 February	Topic	Unit 2: Compliance and Conformance – Concepts and Processes • Requirements that must be met and approvals gained in order to function in this industry the systems and key mechanisms an organisation uses to provide assurance of compliance and conformance with the regulations and standards; and with its own procedures, standards and requirements; and concepts and terminology are explained. Related CLO : 1
Week 3 : 26 February - 3 March	Topic	Unit 3: Initial Airworthiness • Introduces the four main stages that together provide an understanding of the initial airworthiness process: design, certification, production (manufacture) and the maintenance concepts associated with aircraft acceptance and entry into service. As each of these stages is considered the key concepts and aspects associated with each are described. Related CLO : 2
Week 4 : 4 March - 10 March	Topic	Unit 4: Operator First of Type Entry into Service • There is considerable overlap between the initial and the continuing airworthiness obligations of the holder of the Type Certificate and the Operator when a new aircraft is acquired. This unit considers those issues and actions a person responsible for the future continuing airworthiness requirements of a fleet must consider and have in place to meet the regulator's and senior management's requirements and how they must work collaboratively with the State of Design and State of Registry National Aviation Authorities to ensure a smooth and compliant entry into service. Related CLO : 2
Week 5 : 11 March - 17 March	Topic	Unit 5: Continuing Airworthiness – Governance and Change Management note: units 5 to 7 • These three units address the critically important and ongoing role and functions of the Operator's organisation and the individuals who manage airworthiness through the operating life of the aircraft. Areas covered include the setup, governance and responsibilities of the continuing airworthiness organisation; how it manages change, plans maintenance and monitors compliance; brings about continuous improvement in airworthiness and ensures the mandated work is actually done. Related CLO : 3
Week 6 : 18 March - 24 March	Topic	Unit 6: Continuing Airworthiness – Planning, Monitoring and Improvement
Week 7 : 25 March - 31 March	Topic	Unit 7: Continuing Airworthiness – Acquittal of Work
Week 8 : 1 April - 7 April	Topic	Unit 8: Approved Maintenance Organisations – Establishment and Approval note : units 8 and 9 • These units consider what is required to set up and have a maintenance organisation approved, including scoping the breadth and depth of activities to be undertaken and consequently acquiring all the required resources and wherewithal to acquit that work. Related CLO : 3
Week 9 : 8 April - 14 April	Topic	Unit 9: Approved Maintenance Organisations – Perform Work
Week 10 : 15 April - 21 April	Topic	Unit 10: Inventory and Supply Management and the Airworthiness Management Process • Considers the vital role the provisioning of aircraft parts, parts repair and materials management contribute to airworthiness, safety and efficient operations. The overall Airworthiness Management Process consolidates and considers airworthiness from the perspective of an integrated management process. Whilst this is an over-simplification of what is a complex system, this approach does enable the key functions, responsibilities and accountabilities of those charged with creating and sustaining airworthiness to be encapsulated. Related CLO : 3, 4

Attendance Requirements

Not Applicable - as no class attendance is required

General Schedule Information

UNSW Aviation's decision to not release Lecture Recordings:

The School of Aviation prides itself on offering education that supports students in their personalised learning journey. This involves providing opportunities for students to engage with academics and key aviation experts to identify and address learning gaps, develop core skills and knowledge, and foster an environment of collaboration and meaningful discussion with the UNSW Aviation community. To support this vision, UNSW Aviation has decided to require students to attend all synchronous lectures (in-person or online) and not release class recordings to the student cohort. If students cannot attend a class and require learning support due to unforeseen circumstances, they should contact their Course Coordinator or Program Coordinator to discuss options for support and making up for missed class time.

Course Resources

Recommended Resources

Reading activities are mentioned throughout the course content (located in the weekly Course Units) and the respective readings can be found in the reading list located in the AVIA5039 Moodle course site. All readings are available online to support a distance-learning format.

Provided Readings are divided into two levels of priority, to assist you in arranging your study time:

- *Mandatory/Required* readings are those all students are expected to read;
- *Recommended/Optional* readings are those that students are encouraged to read to obtain context and greater subject breadth and depth.

Texts recommended as being useful for this course and for students with a professional interest in airworthiness are: Please see reading list

Course Evaluation and Development

UNSW Aviation highly value student feedback as a way to constantly improve course offerings, teaching excellence and the student experience. In AVIA5039, students are provided with opportunities, both informal feedback, via direct correspondence with the course convenor,

forums, and survey questions in the Reflect and Review activities; and formal feedback, via myExperience Surveys. The availability of this feedback creates a culture of continuous improvement by identifying, responding to, and acting on student feedback.

The course survey will open towards the end of Term. Students are encouraged to participate in the survey via Moodle, myUNSW, or through the direct myExperience link.

Please provide constructive feedback and focus on your learning experience in relation to the course material. While the survey is confidential, it is not anonymous. Comments that breach the Student Code of Conduct, that are hurtful, racist, sexist or ill-natured, may lead to disciplinary action.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	John Vincent				via email and/or Moodle forums	No	Yes

Other Useful Information

Academic Information

Upon your enrolment at UNSW, you share responsibility with us for maintaining a safe, harmonious and tolerant University environment.

You are required to:

- Comply with the University's conditions of enrolment.
- Act responsibly, ethically, safely and with integrity.
- Observe standards of equity and respect in dealing with every member of the UNSW community.
- Engage in lawful behaviour.
- Use and care for University resources in a responsible and appropriate manner.
- Maintain the University's reputation and good standing.

For more information, visit the UNSW Student Code of Conduct Website.

Academic Honesty and Plagarism

Referencing is a way of acknowledging the sources of information that you use to research your

assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.
Further information about referencing styles can be located at https://student.unsw.edu.au/referencing

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.
Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The Current Students site,
- The ELISE training site, and
- The Use of AI for assessments site.

The Student Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: https://student.unsw.edu.au/conduct

Submission of Assessment Tasks

Penalty for Late Submissions

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Any variations to the above will be explicitly stated in the Course Outline for a given course or assessment task.

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

Special Consideration

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply

by logging onto myUNSW and following the link in the My Student Profile Tab. Medical documentation or other documentation explaining your absence must be submitted with your application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: https://student.unsw.edu.au/special-consideration

Important note: UNSW has a "fit to sit/submit" rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

Faculty-specific Information

Additional support for students

- The Current Students Gateway
- Student Support
- Academic Skills and Support
- Student Wellbeing, Health and Safety
- Equitable Learning Services
- UNSW IT Service Centre
- Science EDI Student Initiatives, Offerings and Guidelines

School Contact Information

Email:

aviation@unsw.edu.au

Telephone:

Undergraduate Courses - +61 2 9385 5756 (Katie Wang)

Postgraduate Courses - +61 2 9385 5787 (Michelle Lee)