



UNSW Course Outline

AVIA5008 Air Traffic Management - 2024

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General Course Information

Course Code : AVIA5008

Year : 2024

Term : Term 2

Teaching Period : T2

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

Air Traffic Management (ATM) is a vital part of the aviation industry, as it enables aircraft operators to meet their planned times of departure and arrival, and adhere to their preferred flight profiles with minimum constraints and without compromising agreed levels of safety. The

principal stakeholder groups in today's air transport industry are the end-users; customers in terms of passengers and freight, the airspace users, the aerodrome community, the Air Navigation Service Providers and the supply industry. This course looks at the industry from an air traffic management perspective and through the eyes of an Air Navigation Service Provider to provide an overview of the impacts of ATM on the end-user as a part of aviation systems and processes.

This fully online course introduces students to ATM-related topics including automation, human factors, safety and training, environmental impacts, ATM efficiency, and the future of ATM. Through case studies and assessments that draw on real world or simulated real world situations, students are provided with opportunities to problem-solve aviation issues from an ATM perspective.

Course Aims

The aim of this course is to provide a basic understanding of Air Traffic Management (ATM), its key underlying philosophies and the multi-faceted challenges confronting Air Navigation Service Providers (ANSP) in the provision of their services. The course also introduces the various aspects of ATM, and how their effective delivery contributes to providing air navigation services in an environmentally conscious, less costly, safer and more efficient way, within a constantly changing technological and regulatory framework. By providing a full understanding of the ATM dimension and an opportunity for students to obtain knowledge of the global ATM system, a holistic view on the aviation industry and the dependencies of the different stakeholders will be enabled.

Relationship to Other Courses

This course will look at the industry through the lense of Air Traffic Management and allow students to obtain a holistic view on the aviation industry, and it's inner relationships between airports, airlines and the Air Navigation Service Providers.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Explain core air traffic management concepts including the role of an air traffic controller.
CLO2 : Discuss the different types of airspace and services provided within them.
CLO3 : Critique the air navigation service provider's role in environmental and community issues and the commercial and political challenges they experience.
CLO4 : Evaluate how air navigation service providers can measure their efficiency within an air traffic management.
CLO5 : Propose ways to improve the efficiency and quality of specific air navigation services provided within various operational contexts.

Course Learning Outcomes	Assessment Item
CLO1 : Explain core air traffic management concepts including the role of an air traffic controller.	<ul style="list-style-type: none">• Assignment 1• Assignment 3
CLO2 : Discuss the different types of airspace and services provided within them.	<ul style="list-style-type: none">• Assignment 1• Assignment 3
CLO3 : Critique the air navigation service provider's role in environmental and community issues and the commercial and political challenges they experience.	<ul style="list-style-type: none">• Assignment 2• Assignment 3
CLO4 : Evaluate how air navigation service providers can measure their efficiency within an air traffic management.	<ul style="list-style-type: none">• Assignment 2• Assignment 3
CLO5 : Propose ways to improve the efficiency and quality of specific air navigation services provided within various operational contexts.	<ul style="list-style-type: none">• Assignment 2• Assignment 3

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

The course is delivered electronically via UNSW Moodle website, on a distance-learning basis. The core component of delivery is the course manual. The AVIA5008 course manual was written by the current course facilitator (based on legacy content). The course manual approach allows students to study at their own pace, in accordance with their particular work schedules and locations, subject to having studied sufficient material to be able to address the assessments as they come due. The course manual provides a considerable range of articles, references and case studies the student can absorb. Academic review and feedback is delivered via e-mail or

Moodle, an online learning and teaching platform.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Assignment 1 Assessment Format: Individual	20%	Start Date: Week 3/4 - See Announcements on Moodle Due Date: 30/06/2024 11:59 PM
Assignment 2 Assessment Format: Individual	30%	Start Date: Week 8 Due Date: 04/08/2024 11:59 PM
Assignment 3 Assessment Format: Individual	50%	Start Date: 09/08/2024 12:00 AM Due Date: 16/08/2024 11:59 PM

Assessment Details

Assignment 1

Assessment Overview

The assignment details will be made available to you via Moodle in Week 3/4. You will need to complete a 1200 word essay from a choice of two or three questions relating to air traffic management. All arguments should be supported by citing evidence from academic literature, data and statistics. This essay will need to be submitted via Turnitin on Moodle in Week 5. Marks and written feedback will be provided via Moodle within 10 working days following submission.

Course Learning Outcomes

- CL01 : Explain core air traffic management concepts including the role of an air traffic controller.
- CL02 : Discuss the different types of airspace and services provided within them.

Assessment Length

1200 words (+/- 10%)

Submission notes

Please refer to Assessments Hub on Moodle

Assignment submission Turnitin type

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

Assignment 2

Assessment Overview

The detail of this assignment will be made available to you via Moodle in Week 8. You will need to complete a 1200 word essay from a choice of two or three questions. All arguments should be supported by citing evidence from academic literature, data and statistics. This essay will need to be submitted via Turnitin on Moodle in Week 10. Marks and written feedback will be provided via Moodle within 10 working days following submission .

Course Learning Outcomes

- CL03 : Critique the air navigation service provider's role in environmental and community issues and the commercial and political challenges they experience.
- CL04 : Evaluate how air navigation service providers can measure their efficiency within an air traffic management.
- CL05 : Propose ways to improve the efficiency and quality of specific air navigation services provided within various operational contexts.

Assessment Length

1200 words (+/- 10%)

Submission notes

Please refer to Assessments Hub on Moodle

Assessment information

Assignment submission Turnitin type

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

Assignment 3

Assessment Overview

This assignment comprises of two Parts with details released at the start of the official UNSW examination period . You will have 1 week to complete and submit this assessment.

Part A consists of short-answer type questions. Part B consists of short essay type questions.

You will be assessed on your understanding of the wider industry context and not 'model answers' copied from the text. You will also be assessed on your ability to communicate and show understanding of the interconnection between theoretical concepts and the 'real-life' context of the aviation industry. You must submit both Part A and Part B in one single document via Turnitin on Moodle.

Feedback is available through inquiry with the course convenor.

Course Learning Outcomes

- CL01 : Explain core air traffic management concepts including the role of an air traffic controller.
- CL02 : Discuss the different types of airspace and services provided within them.
- CL03 : Critique the air navigation service provider's role in environmental and community issues and the commercial and political challenges they experience.
- CL04 : Evaluate how air navigation service providers can measure their efficiency within an air traffic management.
- CL05 : Propose ways to improve the efficiency and quality of specific air navigation services provided within various operational contexts.

Submission notes

Please refer to Assessments Hub on Moodle

Assignment submission Turnitin type

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

General Assessment Information

Please note that you are provided with an opportunity to complete an early self-assessment quiz, due by the end of Week 4. This is a formative assessment item and the marks will not be used as a summative contribution to the final mark. However, it is expected that you will attempt it with serious intent, as the aim of this assignment is to assess your understanding of the course material early in the course to help you understand your progress and identify areas for improvement.

Marks will be provided immediately after completion of the test.

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## **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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Assessment Criteria and Standards

- 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.

The criteria for assessment of all written work will be:

- Evidence of understanding of the concepts and problems being studied or reviewed.
- Ability to apply solutions in this aviation field from your own areas of experience.
- Ability to write in a concise and simple manner whilst solving complex and difficult issues.
- Being original and developing your own thoughts will be highly rewarded

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 AVIA5008 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.

Late Submission

NO late submissions will be accepted past the deadline unless students have approved extension.

Feedback on Assessment

At all times assessment is intended to form a component of the learning process and assignments are designed to encourage you to apply what you learn to your own organization. Assignments will be assessed on the basis of how you apply course material to gaining new insight into your organization. Written comments will accompany your return assignments and exercises and should provide useful feedback. The examination will provide you and us with feedback about your comprehension of the course content.

Feedback has a significant impact on learning; it has been described as "the most powerful

single moderator that enhances achievement" (Hattie, 1999). The main objectives of feedback in this course are to:

- justify to students how their mark or grade was derived
- identify and reward specific qualities in student work
- guide students on what steps to take to improve
- motivate them to act on their assessment
- develop their capability to monitor, evaluate and regulate their own learning

Grading Basis

Standard

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 27 May - 2 June	Topic	Unit 1 : The History of Air Traffic Management This unit provides information on the development of ATM in the world and in Australia. There are occurrences in history that still impact on today's developments. These units provide essential and interesting background reading.
Week 2 : 3 June - 9 June	Topic	Unit 2 : The ATM System This unit introduces the Air Traffic Management system and provides an overview on its most important components and how they are normally organised. Air Navigation Service Providers are introduced their standard organisational structure is explained.
Week 3 : 10 June - 16 June	Topic	Unit 3 : Air Traffic Control This unit provides the background to the most important element of the ATM system: Air Traffic Control. The main elements and the most important operational base concepts are explained and provide a good overview on the topic.
Week 4 : 17 June - 23 June	Topic	Unit 4 : Tasks of an ATCO (and what if things go wrong) This unit looks closer at the functions and tasks of the system operator: The Air Traffic Controller. How their work is impacted by external factors and what their challenges consist of is demonstrated in this unit. Assessment Early Assessment Quiz: Please refer to Assessments Hub on Moodle
Week 5 : 24 June - 30 June	Topic	Unit 5 : Automation in ATM This unit moves away from the operator and focuses on the new technology and support systems that are designed to support the ATCO in their execution of their daily tasks. Automation theory will help to provide the necessary academic fundament for this section.
Week 6 : 1 July - 7 July	Topic	Unit 6 : Human Factors in ATM This unit is a natural follow-up chapter to automation and introduced the main concept Human Factors. The study of Human factors has transformed the view the aviation community looks at the teamwork within aviation and had helped to understand the breakdown in the human –machine and human – human interaction.
Week 7 : 8 July - 14 July	Topic	Unit 7 : ATM Safety and Training This unit considers the importance of comprehensive safety and risk management processes that are demanded within such a highly responsible undertaking as ATM and provides with a closer look at the specifics of ATM training (& licensing).
Week 8 : 15 July - 21 July	Topic	Unit 8 : ATM and the Environment This unit discusses the community and environment issues that are now day-to-day management issues for any ANSP.
Week 9 : 22 July - 28 July	Topic	Unit 9 : ATM Efficiency and the Customer Relationship This unit deals with how the ANSP and the customers interact, what is expected and how expectations are dealt with. This includes the strategic planning forums and the stakeholders that are part of that process.
Week 10 : 29 July - 4 August	Topic	Unit 10 : The Future of ATM This unit reviews what the future holds for ATM. Where do the ideas come from, how are they developed and what can be expected by the large investment programs such as NextGen and SESAR.

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

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

Prescribed Resources

There is no prescribed textbook for this course.

Recommended Resources

The individual units contain a summary of relevant Readings and resources that are recommended. the provided Readings are divided into two levels of priority, to assist you in arranging your study time:

- Essential readings are those all students are expected to read;
- Recommended readings are those that students are encouraged to read to obtain context and greater subject breadth and depth.

In addition, the course facilitator informs the students through Moodle announcements about relevant additional reading material, which can be newspaper articles, journal articles, links to websites or book sections.

Course Evaluation and Development

The myExperience Survey aims to boost student feedback which 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	Marek Bekier				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 Plagiarism

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

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