UNSW Course Outline

AVIA1901 Aviation Transport Economics - 2024

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General Course Information

Course Code : AVIA1901
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 : In Person
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Undergraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

This course covers the economics of airlines, and starts by introducing students to the language and data of the aviation business before analysing the economics of the demand for, and supply of aviation services. The analysis of airline demand focuses on the drivers of demand, travel

purposes, mode of transport substitution, destination substitution, demand complements and the various price elasticities of demand. The course then explores the supply-side of the aviation business, which involves an investigation of airline revenue in the short and medium runs, airline cost and profitability. Students will investigate the curvature of the airline profit function and how it may be optimised. The course then moves onto additional topics in aviation economics such as airline relationships and the economics of oil and jet fuel markets. Students are provided with a variety of learning opportunities during the course through a combination of online and face-to-face lectures, and case-based activities that align the course material with current issues in aviation and foster meaningful discussion.

Course Aims

The main aim of this course is to provide students with the economic tools that will enable them to better understand the demand for, and the supply of air transport services, and the forces that drive airline profitability. The course also aims to provide students with an understanding of key areas related to aviation transport economics including terminology and data used within the industry, the drivers of air travel demand, the supply market, airline relationships, and oil and jet fuel market economics.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Recall and appropriately use aviation business language and terminology, and the metrics used to describe airline operational and financial performance.
CLO2 : Identify and access key information sources for aviation operational and financial data.
CLO3 : Describe the forces that drive the demand side of the aviation market and the price elasticity of demand.
CLO4 : Describe the drivers of unit cost, yield and revenue and the impact of changes in the passenger seat factor and capacity on airline profitability.
CLO5 : Explain why airlines form relationships and the impact of those relationships.
CLO6 : Build economic models of the historical movements in oil and jet fuel prices for understanding their future values.

Course Learning Outcomes	Assessment Item
CLO1 : Recall and appropriately use aviation business language and terminology, and the metrics used to describe airline operational and financial performance.	• Early Assessment Quiz • Group Presentation • Individual Assignment • Final Exam
CLO2 : Identify and access key information sources for aviation operational and financial data.	• Group Presentation • Individual Assignment
CLO3 : Describe the forces that drive the demand side of the aviation market and the price elasticity of demand.	• Early Assessment Quiz • Group Presentation • Individual Assignment
CLO4 : Describe the drivers of unit cost, yield and revenue and the impact of changes in the passenger seat factor and capacity on airline profitability.	• Final Exam • Group Presentation • Individual Assignment
CLO5 : Explain why airlines form relationships and the impact of those relationships.	• Final Exam
CLO6 : Build economic models of the historical movements in oil and jet fuel prices for understanding their future values.	• Final Exam • Individual Assignment

Learning and Teaching Technologies

Moodle - Learning Management System

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Early Assessment Quiz Assessment Format: Individual	15%	Start Date: 19 June Due Date: 19 June
Group Presentation Assessment Format: Group	20%	Start Date: Start of Term Due Date: Week 8, Times to be advised
Individual Assignment Assessment Format: Individual	25%	Start Date: Not Applicable Due Date: Week 10: 29 July - 04 August
Final Exam Assessment Format: Individual	40%	Start Date: During Exam Period (see Exam Schedule) Due Date: During Exam Period (see Exam Schedule)

Assessment Details

Early Assessment Quiz

Assessment Overview

You will be required to complete an open book multiple-choice quiz in Week 4 during class, based on the material covered in topics 1 – 3 (inclusive). The allocated time to complete the quiz is 60 minutes.

Feedback and marks will be provided immediately upon completion of the quiz.

Course Learning Outcomes

- CLO1 : Recall and appropriately use aviation business language and terminology, and the metrics used to describe airline operational and financial performance.
- CLO3 : Describe the forces that drive the demand side of the aviation market and the price elasticity of demand.

Assessment Length

1 hour

Assignment submission Turnitin type

This is not a Turnitin assignment

Group Presentation

Assessment Overview

For this assessment, you will be required to work in a randomly allocated group, assuming the

role of a consulting firm who have been engaged by the local Council to conduct some research. Your group will be required to research and address questions on a specific airport scenario, with the intention of preparing and presenting your findings to a member of the Council.

Details of the scenario and questions to answer in your presentation will be provided to you during the Term.

Your group will be required to present a 20-minute PowerPoint presentation in Week 8 to your course convenor (acting as the local Council member), using no more than 20 PowerPoint slides. In addition, as part of your assignment submission, you will be required to submit a diary of attendance and dates for all group meetings.

Feedback and marks will be provided within 10 working days after the submission deadline.

Course Learning Outcomes

- CLO1 : Recall and appropriately use aviation business language and terminology, and the metrics used to describe airline operational and financial performance.
- CLO2 : Identify and access key information sources for aviation operational and financial data.
- CLO3 : Describe the forces that drive the demand side of the aviation market and the price elasticity of demand.
- CLO4 : Describe the drivers of unit cost, yield and revenue and the impact of changes in the passenger seat factor and capacity on airline profitability.

Assessment Length

20 minutes

Assignment submission Turnitin type

This is not a Turnitin assignment

Individual Assignment

Assessment Overview

For this assignment, you will be provided with several questions to answer regarding an airport passenger route.

The task will require you to source appropriate databases and perform calculations to arrive at your response, concisely articulate your answers in report format, as well as appropriately reference all work.

You are to submit your assignment in Week 10. Feedback and marks will be provided within 10

working days after the assignment submission deadline.

Course Learning Outcomes

- CLO1 : Recall and appropriately use aviation business language and terminology, and the metrics used to describe airline operational and financial performance.
- CLO2 : Identify and access key information sources for aviation operational and financial data.
- CLO3 : Describe the forces that drive the demand side of the aviation market and the price elasticity of demand.
- CLO4 : Describe the drivers of unit cost, yield and revenue and the impact of changes in the passenger seat factor and capacity on airline profitability.
- CLO6 : Build economic models of the historical movements in oil and jet fuel prices for understanding their future values.

Assessment Length

No official word limits

Assignment submission Turnitin type

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

Final Exam

Assessment Overview

You are required to undertake an open book final examination that will assess your understanding of content covered in from Week 4 to Week 10 (inclusive). The examination comprises of multiple-choice questions, and you will be provided with 120 minutes to complete the examination which takes place during the official UNSW examination period.

Feedback is provided via inquiry with the course convenor.

Course Learning Outcomes

- CLO1 : Recall and appropriately use aviation business language and terminology, and the metrics used to describe airline operational and financial performance.
- CLO4 : Describe the drivers of unit cost, yield and revenue and the impact of changes in the passenger seat factor and capacity on airline profitability.
- CLO5 : Explain why airlines form relationships and the impact of those relationships.
- CLO6 : Build economic models of the historical movements in oil and jet fuel prices for understanding their future values.

Assessment Length

2 Hours

Assessment information

Please note: The final examination will be **in-person** and **invigilated**, with the actual examination being conducted through an online safe exam browser. The examination will occur during the official UNSW examination period, and you will be provided with 2 hours to complete the examination. Feedback is available through enquiry with the course convenor

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.

Grading Basis

Standard

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 27 May - 2 June	Lecture	Lectures Topics : Course Introduction, assessment, learning outcomes and group formation. Introduction to Airline Economics and the language of the aviation business: Operational metrics, productivity metrics, financial metrics.
	Tutorial	In-Class Activity Details : Activity 1: Air China load metrics Activity 2: Air China capacity and capacity utilization metrics Activity 3: Southwest airlines productivity and financial results Activity 4: On-time performance Activity 5: China Southern Yield and Unit Cost
	Reading	Textbook Chapter Chapter 1 Chapter 2
Week 2 : 3 June - 9 June	Lecture	Lectures Topics Topic 2: Aviation Data and Related Statistics An investigation of key aviation and tourism data sources including BITRE, EIA, BP Energy Statistics, ABS, Civil Aviation Department Databases, Airline External reporting.
	Tutorial	Activity 1: Students will investigate the BITRE database. Activity 2: Students will learn how to find jet fuel and crude oil price data. Activity 3: Students will navigate the Directorate General of Civil Aviation in India database Activity 4: Students will learn how to access and interpret American Airlines quarterly reporting. Activity 5: Students will learn how to interrogate the Qantas Investor Centre data.
	Reading	Not in Text. No reading necessary.
Week 3 : 10 June - 16 June	Lecture	Topic 3: Airline Demand
	Tutorial	Activity 1: Students will learn how to use the BITRE domestic city pairs database and draw line graphs in Microsoft Excel Activity 2: Students will learn how to use the BITRE international city pairs database and pivot tables in Microsoft Excel
	Reading	Chapter 3
Week 4 : 17 June - 23 June	Lecture	Aviation Revenue 1 Key airline revenue sources. Modelling revenue in the short run when capacity is fixed.
	Tutorial	Activity 1: Students will use the information presented to find and graph in excel the short run revenue function for Sichuan Airlines. Activity 2: Students will use the information presented to graph the relationship between Cathay Pacific PRASK and the Hang Seng equity index
	Reading	Chapter 4
Week 5 : 24 June - 30 June	Lecture	Aviation Revenue 2 Modelling airline revenue in the medium run when capacity is variable.
	Tutorial	Activity 1: Use Excel to construct the medium run revenue function for Qantas domestic in the case of both a linear and Cobb-Douglas PRASK function Activity 2: Draw a revenue surface function in Excel and determine the levels of full-service and low-cost capacity that maximise an airline Group's revenue.
	Reading	Chapter 5
Week 6 : 1 July - 7 July	Other	Study Week
Week 7 : 8 July - 14 July	Lecture	Airline Costs and Resources Key airline costs. The relationship between cost and productivity. Fuel costs. Manpower costs. Aircraft capital costs. Maintenance Costs. Ground handling costs. Economies of scale and scope.
	Tutorial	Activity 1: Students will use the data presented to graph JetBlue unit fuel cost against the spot price of jet fuel. Activity 2: Students will use the data presented to replicate the scatterplot between non-fuel cost per ASK and the average sector length.
	Reading	Chapter 6
Week 8 : 15 July - 21 July	Lecture	Airline Business Profit Analysis Joining revenue and cost concepts together to model airline profit in the short run and the medium run.
	Tutorial	Activity 1: Students will be asked to use the presented information to determine an analytical expression for the short run profit function of Regional Express

		Airlines and build a suitable graph of this function in Microsoft excel. Activity 2: Students will use the presented information to build the domestic profit curve of Qantas mainline in ASKs.
	Reading	Chapters 7 and 8
Week 9 : 22 July - 28 July	Lecture	Airline Relationships An analysis of Interline, Codeshare, Joint Ventures, Alliances, Revenue sharing, Mergers and Acquisitions and Airline Groups. Airline business models – full-service versus low-cost airlines.
	Tutorial	Activity 1: Students will answer questions in relation to fare prorating in the case of interline arrangements. Activity 2: Students will be asked to investigate the Garuda group of airlines and draw a scatterplot of CASK and ASK for these airlines to illustrate the difference between full-service and low-cost CASK.
	Reading	Chapter 10
Week 10 : 29 July - 4 August	Lecture	The Economics of Oil and Jet fuel markets The demand and supply side of the oil and jet fuel markets. Oil production costs. A dominant firm/fringe firm model of the oil market. Crude oil refining. The jet fuel market.
	Tutorial	Activity 1: Students will be asked to replicate a graph through time of changes in oil demand versus economic growth. Activity 2: Students will be asked to build a dominant firm/fringe firm model of the oil price in Microsoft Excel given the inputs that are provided in the lecture PowerPoints.
	Reading	Chapter 12

Attendance Requirements

Please note that lecture recordings are not available for this course. Students are strongly encouraged to attend all classes and contact the Course Authority to make alternative arrangements for classes missed.

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

Textbook: Tony Webber (2022), *Airline Microeconomics, Cambridge Scholars Publications. This*

textbook is available from the UNSW bookshop, from the UNSW library, or online at https://www.cambridgescholars.com/product/978-1-5275-8498-3/.

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	Anthony Webber				Send Tony Webber an email with questions. He will endeavour to respond within 24 hours.	No	Yes
Tutor	Mirjam W iedemann		Room 217, Level 2, Old Main Building	9348 1689		No	No

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)