

Subject Description Form

Subject Code	AAE3010
Subject Title	Airline Operations
Credit Value	3
Level	3
Pre-requisite/ Co-requisite/ Exclusion	Pre-requisite: AAE2004 Introduction to Aviation System and Air Transport Regulation
Objectives	<p>This subject will provide students with</p> <ol style="list-style-type: none"> 1. The ability of problem formulation and mathematical modelling for airline operations; 2. The concept and management style in achieving organisational and operations efficiency in airline business; and 3. Design philosophy and principles of aircraft cabin interiors design.
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> a. Formulate mathematical model and deduce its solution to airline operations related problem; b. Design and validate proper solution and alternatives in fostering airline business and operations efficiency; c. Design and suggest ICAO requirements related to cabin safety, cabin crew, pilot flight time limitations, fleet operations and maintenance requirement; and d. Determine airline solution contributing to the passengers, organisational, societal, economic, and global environment factors.
Subject Synopsis/ Indicative Syllabus	<p>Fleet operations and management – Aircraft cabin interiors design; airline fleet management, crew management, aircraft routing; aircraft model configuration and serviceability; aircraft life cycle and associated legislation.</p> <p>Airline operations and management – Air route planning, forecasting and development; risk management in airline operation; human resource management: crew pairing and rostering management; ICAO requirements related to cabin safety, cabin crew, pilot flight time limitations and training requirement; Personnel licensing and continuity.</p> <p>Airline financial management – Airline revenue; airport slot coordination, policy, and regulation.</p>

<p>Teaching/Learning Methodology</p>	<p>Teaching is conducted through class lectures and project. The basic knowledge, research methodology and theoretical models will be introduced.</p> <p>The understanding of how to address and formulate problems by using mathematical modelling and operations research is emphasised. Research methodology, case studies and data analytics skills are taught in class as well as the related real-life scenarios using data to enhance their research abilities.</p> <table border="1" data-bbox="488 501 1434 819"> <thead> <tr> <th rowspan="2">Teaching/Learning Methodology</th> <th colspan="4">Intended subject learning outcomes to be covered</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>1. Lecture</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>2. Project</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> </tbody> </table>					Teaching/Learning Methodology	Intended subject learning outcomes to be covered				a	b	c	d	1. Lecture	✓	✓	✓	✓	2. Project	✓	✓	✓	✓															
Teaching/Learning Methodology	Intended subject learning outcomes to be covered																																						
	a	b	c	d																																			
1. Lecture	✓	✓	✓	✓																																			
2. Project	✓	✓	✓	✓																																			
<p>Assessment Methods in Alignment with Intended Learning Outcomes</p>	<table border="1" data-bbox="488 896 1434 1335"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="4">Intended subject learning outcomes to be assessed</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> </tr> </thead> <tbody> <tr> <td>1. Assignment</td> <td>30%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>2. Group project</td> <td>20%</td> <td></td> <td>✓</td> <td>✓</td> <td></td> </tr> <tr> <td>3. Final examination</td> <td>50%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Total</td> <td>100 %</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>Overall assessment:</p> <p>$0.50 \times \text{End of Subject Examination} + 0.50 \times \text{Continuous Assessment}$</p> <p>The continuous assessment (50%) is aimed at enhancing the students' comprehension and assimilation of various topics of the syllabus via several assignments and group project. The final examination assessment (50%) will also be considered to assess the students learning outcome.</p>					Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed				a	b	c	d	1. Assignment	30%	✓	✓	✓		2. Group project	20%		✓	✓		3. Final examination	50%	✓	✓	✓	✓	Total	100 %				
Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed																																					
		a	b	c	d																																		
1. Assignment	30%	✓	✓	✓																																			
2. Group project	20%		✓	✓																																			
3. Final examination	50%	✓	✓	✓	✓																																		
Total	100 %																																						

Student Study Effort Expected	Class contact:	
	▪ Lecture/Project	39 Hrs.
	Other student study effort:	
	▪ Self-study / preparation	39 Hrs.
	▪ Case study, assignment and group project	39 Hrs.
	Total student study effort	117 Hrs.
Reading List and References	<ol style="list-style-type: none"> 1. Abdelghany, A., & Abdelghany, K. (2016). Modeling applications in the airline industry. Routledge. 2. Bazargan, M. (2016). Airline operations and scheduling. Routledge. 3. Clark, P. (2017). Buying the big jets: fleet planning for airlines. Taylor & Francis. 4. Wu, C.-L. (2016). Airline operations and delay management: insights from airline economics, networks and strategic schedule planning: Routledge. 	

December 2021