Subject Description Form

Subject Code	AAE4013
Subject Title	Aviation Logistics and Supply Chain Informatics
Credit Value	3
Level	4
Pre-requisite/ Co-requisite/ Exclusion	**Pre-requisite:** AAE2004 Introduction to Aviation System and Air Transport Regulation
Objectives	This subject will provide students with 1. The advanced supply chain operations and management in air logistics; 2. The regulation, logistics flow and distribution methods of air cargo, freight forwarding and intra-modal transportation; and 3. The emerging wireless sensing technologies improving the transparency of air logistics operations.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. Design and develop suitable mathematical model for air logistics and supply chain operations; b. Design and develop solutions following the regulations by local authorities and international standard (IATA-suggested regulations and solutions); c. Illustrate, interpret, and analyse the mode of air transport, cargo route profitability, perishable live animals and non-perishable cargo logistics operations and management; and d. Deduce the best solution and its outcome according to the planned cargo business strategy.
Subject Synopsis/ Indicative Syllabus	**Cargo operations -** Regulations and international standard on cargo operations; Cargo accident investigation and prevention; Cargo, apron, and warehouse operations; Dangerous goods regulations for general cargo; International air law. **Air logistics and supply chain informatics -** Air logistics, supply chain operations and management; Wireless sensing technologies and temperature sensitive cargo operations; Aviation logistics business intelligence and competition analysis **Route profitability -** Profitability and route analysis; Tonnes kilometre; Cargo yield. **Transportation analytics -** Intra-modal transportation and transportation modelling; Air cargo competitor analysis and market research.

Teaching/Learning Methodology

Teaching is conducted through class lectures and case study. The basic knowledge, research methodology and theoretical models will be introduced. The understanding of how to address and formulate problems by using mathematical programming and optimisation techniques with modern programming language is emphasised. Case studies and analysis are taught in class as well as the related real-life scenarios using data to enhance their research abilities.

Teaching/Learning Methodology	Intended subject learning outcomes to be covered			
	a	b	c	d
1. Lecture	✓	✓	✓	✓
2. Case studies	✓	✓	✓	✓

Assessment Methods in Alignment with Intended Learning Outcomes

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed			
		a	b	c	d
1. Assignment	20%	✓	✓	✓	✓
2. Test	30%	✓	✓	✓	✓
3. Final examination	50%	✓	✓	✓	✓
Total	100 %				

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Overall assessment:

$0.50 \times$ End of Subject Examination + $0.50 \times$ Continuous Assessment

The continuous assessment (50%) is aimed at enhancing the students' comprehension and assimilation of various topics of the syllabus via several assignments and mid-term examination. The final examination assessment (50%) will also be considered to assess the students learning outcome.

Student Study Effort Expected	Class contact:	
	▪ Lecture / Case Studies	39 Hrs.
	Other student study effort:	
	▪ Self-study / preparation	36 Hrs.
	▪ Assignments	36 Hrs.
	Total student study effort	111 Hrs.
Reading List and References	1. Ashford, N. J., Stanton, H. M., Moore, C. A., Pierre Coutu, A. A. E., & Beasley, J. R. (2013). Airport operations. McGraw-Hill Education. 2. Abdelghany, A., & Abdelghany, K. (2016). Modeling applications in the airline industry. Routledge. 3. Frazelle, E. (2002). Supply chain strategy: the logistics of supply chain management. MCGraw-Hill Education. 4. Hillier, F. S. (2012). Introduction to operations research. Tata McGraw-Hill Education. 5. Michael, L. P. (2018). Scheduling: theory, algorithms, and systems. Springer.	

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