Subject Description Form

Subject Code	AAE4903
Subject Title	Human Factors in Aviation
Credit Value	3
Level	4
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	To provide students with fundamental human factors concepts and develop students' understanding of the applied multi-disciplinary approach mostly concerned on airline transport pilot perspective.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a. Explain the basic concepts of human factors HF in the aviation industry; b. Explain the application of ergonomics in flight deck design; and c. Identify and explain the human errors in airport operations, air traffic control, and pilot operation.
Subject Synopsis/ Indicative Syllabus	**Basic Concepts:** Basic Aviation Physiology**:** Basics of flight physiology, Vision, Hearing, Equilibrium, Integration of sensory inputs. Health Maintenance**:** Body rhythm and sleep, Problem areas for pilots, Incapacitation in flight; **Research methods:** Statistical analysis, Experiment design, Expert interview, Simulation. **Cognitive Ergonomics** - Human information processing, Attention and vigilance, Perception, Memory, Response selection, Human error and reliability, Mental models and situation awareness, Theory and model of human reliability, Error management, Safety awareness, Coordination (multi-crew concepts), Cooperation, Communication, Cockpit management: Personality, attitude and behavior, Display, Fatigue and stress management, Advanced cockpit automation. **Physical Ergonomics**: Anthropometry, Posture, Design strategies, Workstation design.

Teaching/Learning Methodology

Lectures are used to deliver the fundamental knowledge in relation to various aspects of aviation systems (outcomes a to c).

Group projects are used to help students to deepen their knowledge on a specific topic through search of information, analysis of data and report writing (outcomes a to c).

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

Assessment Methods in Alignment with Intended Learning Outcomes

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed		
		a	b	c
1. Assignments	15%	✓	✓	✓
2. Group project	20%	✓	✓	✓
3. In-class Test	15%	✓	✓	✓
4. Final Exam	50%	✓	✓	✓
Total	100%			

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

Overall Assessment:

0.5 × Continuous Assessment + 0.5 × Final Exam

The final exam and In-class test is adopted to assess students on the overall understanding and the ability of applying the concepts. The continuous assessment is aimed at enhancing the students' comprehension and assimilation of various topics of the syllabus. In particular, group project is used to assess the students' capacities of self-learning and problem-solving and effective communication skill in English so as to fulfill the requirements of working in the aviation industry.

Student Stud Effort Expected	Class contact:	
	▪ Lecture	36 Hrs.
	Other student study effort:	
	▪ Week 7 reading week	3 Hrs.
	▪ Course work	21 Hrs.
	▪ Self-study	65 Hrs.
	Total student study effort	125 Hrs.
Reading Lis and References	1. Salas, Eduardo, Florian Jentsch, and Dan Maurino, eds. Human factors in aviatio Academic Press, 2010. 2. Oxford ATPL Manual 8 - Human Performance & Limitations - EASA, 1st Editio Oxford Publishing. 3. FAA (2007)**.** Operator's manual: Human factors in airport Operations. 4. Reason J.T. & Hobbs, A.. Managing Maintenance Error: A Practical Guide. Ashgat latest edition.	

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