COURSE OUTLINE: AVT248 - HUMAN FACTORS-FLIGHT

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Course Code: Title	AVT248: HUMAN FACTORS IN FLIGHT
Program Number: Name	4061: AVIATION TECHNOLOGY
Department:	AVIATION TECHNOLOGY
Academic Year:	2023-2024
Course Description:	Students will examine how psychological and physiological factors play an important role in flight safety. Some of the topics included are pilot decision-making, human error, communications and attitudes in aviation. Case studies of domestic and international aircraft incident and accident reports will be examined to determine cause-analysis, in the hope of preventing similar mistakes by future pilot generations.
Total Credits:	2
Hours/Week:	2
Total Hours:	24
Prerequisites:	AVT119
Corequisites:	There are no co-requisites for this course.
This course is a pre-requisite for:	AVT252, AVT257, AVT258, AVT259, AVT378
Essential Employability Skills (EES) addressed in this course:	EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience. EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication. EES 3 Execute mathematical operations accurately. EES 4 Apply a systematic approach to solve problems. EES 5 Use a variety of thinking skills to anticipate and solve problems. EES 6 Locate, select, organize, and document information using appropriate technology and information systems. EES 7 Analyze, evaluate, and apply relevant information from a variety of sources. EES 8 Show respect for the diverse opinions, values, belief systems, and contributions of others. EES 9 Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals. EES 10 Manage the use of time and other resources to complete projects. EES 11 Take responsibility for ones own actions, decisions, and consequences.
Course Evaluation:	Passing Grade: 70%, B

	A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.
Other Course Evaluation & Assessment Requirements:	The student will be assessed by a combination of attendance and deportment, quizzes, tests and a final exam. Weighting of each will be as follows: 30% for quizzes, 30% for all tests prior to the final exam and 40% for the final exam. In order to pass the course, A minimum grade of B must be achieved, otherwise the course must be repeated in accordance with the Aviation Standard Operating Procedures. Make-up tests are not permitted except in accordance with section VI of this outline. Unexcused absences will result in 2% deduction of the final mark for each occurrence, arriving for class late will result in a 1% deduction of the final mark for each occurrence, and violations of the dress code will result in a 1% deduction of the final mark for each occurrence. Refer to the SOP GEN 1.3 for dress code policies and SOP GEN 1.6.7 for policy regarding absence from classes - Quizzes will be given without prior notice. - Students may request a deferment of a test for compassionate reasons. Compassionate Grounds for deferment will include but not be limited to death of an immediate family member, personal illness, or recent diagnosis of a serious illness of a family member. Make-ups will not be permitted after the fact for compassionate reasons. Although attitude, co-operation, etc., are not graded, students may be terminated based on their performance in this area (see section VI). These attributes are also considered in the selection of the Air Canada Award and other scholarships. - Dates of tests will be announced at least 1 week in advance. - A classroom code of conduct can be found in the SOP General section, and will be adhered to. The following semester grades will be assigned to students: Grade Definition Grade Point Equivalent A+ 90 - 100% 4.00 A 80 - 89% B 70 - 79% 3.00 C 60 - 69.4% 2.00 D 50 - 59% 1.00 F (Fail) 49% and below 0.00 X A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course. NR Grade not reported to Registrar`s office. W Student has withdrawn from the course without academic penalty. If a faculty member determines that a student is at risk of not being successful in their academic pursuits and has exhausted all strategies available to faculty, student contact information may be confidentially provided to Student Services in an effort to offer even more assistance with options for success. Any student wishing to restrict the sharing of such information should make their wishes known to the coordinator or faculty member.
Course Outcomes and Learning Objectives:	

Course Outcome 1	Learning Objectives for Course Outcome 1
1. Explore various quantitative models of particular interest to the field of aviation psychology.	1.1 Apply the SHELL model to explain how aviation systems contribute to human performance and active latent failures 1.2 Apply the Wicken`s model to explain how the human brain processes new and learned information.

	1.3 Apply the Reason`s model to explain how to determine causation while mitigating risk. 1.4 Apply various ADM models to determine pilot decision-making and process influencers.
Course Outcome 2	**Learning Objectives for Course Outcome 2**
2. Analyze human factors and errors to explain their impact on the aviation.	2.1 Manage interpersonal factors to improve crew performance and flight safety. 2.2 Reviewing predictions and criteria in pilot job selection. 2.3 Analyze fatigue, body rhythms, nutrition, chemical agents and human physiology as causative factors in aviation accidents. 2.4 Explain how the measurement of light and the physiology of the human eye contribute to visual illusions in a flying environment.
Course Outcome 3	**Learning Objectives for Course Outcome 3**
3. Explain how human factors contributed to selected aircraft incidents or accidents.	3.1 Investigate an accident to identify failures in both the pre-condition and organizational activity levels 3.2 Create a relationship between the identified failures and an associated model explained in class 3.3 Suggest ways in which these accidents could have been prevented
Course Outcome 4	**Learning Objectives for Course Outcome 4**
4. Analyze human factors and the design of aviation systems	4.1 Explore system design, operator and human errors. 4.2 Understand the principals of display design 4.3 Study the implications of electronic displays and printed checklists. 4.4 Examine various current issues such as global positioning systems, unmanned aerial vehicles and electronic flight bags.
Course Outcome 5	**Learning Objectives for Course Outcome 5**
5. Explore how culture, organizations and leadership effect aircraft incidents and accidents.	5.1 Dive into organizational issues, national, professional and safety culture. 5.2 Understand the implications of reorganization and adapting to new working conditions. 5.3 Understand attitudes towards women in aviation.

Evaluation Process and Grading System:

Evaluation Type	Evaluation Weight
Case Study	15%
Final Exam	40%
Mid Term	30%
Quizzes	15%

Date: June 1, 2023

Addendum: Please refer to the course outline addendum on the Learning Management System for further information.