



Fall 2023/24 Course Syllabus

MOS 3305A Section – 002 **Human Factors in Aviation** Course Mode (In-Person)

Instructor: **Dr. Sadeem M. Qureshi**, *PhD, LSSBB, CCPE*
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1. Course Information:

1.1 Course Description:

Psychology and physiology as they relate to human performance in a complex operating environment. Topics include pilot decision-making and crew resource management, interpersonal relations, effects of noise and vibration, pressure change, balance, motion sickness, jet lag, human factors in aircraft accidents.

Antirequisite(s): n/a

Prerequisite(s): Enrollment in 3rd or 4th year of the Commercial Aviation Management module of BMOS or Geography and Commercial Aviation Management module

1.2 Accessibility:

DAN Department of Management & Organizational Studies strives at all times to provide accessibility to all faculty, staff, students and visitors in a way that respects the dignity and independence of people with disabilities.

Contact Academic Support & Engagement at <http://academicsupport.uwo.ca/> for information about Western's Accessible Education.

More information about "Accessibility at Western" is available at: <http://accessibility.uwo.ca>

1.3 Land Acknowledgement:

We acknowledge that Western University is located on the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Attawandaron peoples, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum.

With this, we respect the longstanding relationships that Indigenous Nations have to this land, as they are the original caretakers. We acknowledge historical and ongoing injustices that Indigenous Peoples (e.g. First Nations, Métis and Inuit) endure in Canada, and we accept responsibility as a public institution to contribute toward revealing and correcting miseducation as well as renewing respectful relationships with Indigenous communities through our teaching, research and

community service.

<https://indigenous.uwo.ca/initiatives/docs/indigenous-land-acknowledgment.pdf>

1.4 Senate Regulations

Senate Regulations state, “unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you will be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.”

This regulation is in regard to the PREREQUISITE COURSES required.

Students not in BMOS are permitted to enroll in up to 1.0 MOS courses, per the Academic Timetable. The requirement that states you must be in BMOS is lifted during registration on the priority lift dates as noted in the [Timetable](#).

2. Course Materials

Berlin C. & Adams C. 2017. Production Ergonomics: Designing Work Systems to Support Optimal Human Performance. London: Ubiquity Press. DOI: <https://doi.org/10.5334/bbe> (FREE!)

Wise, J.A., Hopkin, V.D., & Garland, D.J. (Eds.). (2009). Handbook of Aviation Human Factors (2nd ed.). CRC Press. <https://doi.org/10.1201/b10401>

Instructor PowerPoint slides and other relevant material posted on OWL

3. Course Objectives and Format

The DAN Department of Management and Organizational Studies as a whole draws upon an evidence-based management approach. Evidence-based management is the systematic process of gathering evidence from multiple sources, critically appraising the evidence, and using that evidence in making and evaluating management decisions to improve organizational performance.

3.1 Course objectives

This course is intended to introduce students to the wonderful world of Human Factors and Ergonomics, and its implementation in Aviation. The course delves into a diverse range of topics, spanning from design and work environment to system and user performance, as well as accident investigations.

3.2 Course format

Lecture, Case Studies, Projects, and Discussions through synchronous lecture period.
Attendance is expected.

4. Learning Outcomes

- Develop a comprehensive understanding of the field of Human Factors and Ergonomics, including its historical background and significance in various industries.
- Analyze and compare different Human Factors Models like Dirty Dozen, PEAR, and Swiss Cheese to comprehend their applications in identifying errors and improving safety.
- Explore the intricacies of Human Information Processing, covering topics such as memory, errors, Hick's Law, Fitt's Law, and their practical implications in design.
- Evaluate the role of Control Design, Warning Signs, Symbols, and Flight Deck Aesthetics in enhancing user experience and safety in various contexts.
- Examine the complex interplay between Pilot Performance, Workload, Psychosocial Factors, and Work Environment Design, including the effects of light, noise, and vibration on human capabilities.

- Analyze the factors influencing Human Performance, such as Jet lag, Fatigue, Body rhythms, Sleep/Nap patterns, Motion sickness, and their relevance in work scheduling.
- Investigate the critical aspects of Risks, Accidents, Safety, and Investigations, gaining insights into accident causation, prevention, and safety protocols.
- Develop strategies for effectively Selling Human Factors/Ergonomics concepts and gaining buy-in from stakeholders, considering communication and persuasion techniques.

5. Evaluation

Midterm Exam (October 17, 2023)	= 25%
Final Exam (December 5, 2023)	= 35%
Project (Presentation and Report)	= 25%
Discussion Post	= 2%
Assignments	= 13%
Total = 100%	

All exams will be **closed-book examinations**. **Dictionaries are NOT allowed into the examinations.**

Only non-programmable calculators will be allowed into the exams. If you are unsure, please ask your Instructor.

Electronic devices of any kind, including (but not limited to) cell phones, smartwatches, and earphones/headphones, are NOT permitted at exams.

All students must be present and must speak during their project presentations. Failure to do so leads to a zero.

Late Assignments will be accepted with a late penalty of 25% per day.

Students are responsible for the material covered in the lectures as well as the assigned chapters/sections in the text. Exams will not be returned to students but may be reviewed by contacting your instructor.

Students are **REQUIRED TO COMPLETE ALL COMPONENTS** of this course. There are no exceptions to this. Extra assignments to improve grades **will NOT** be allowed.

Grades will not be adjusted on the basis of need. It is important to monitor your performance in the course. Remember: *You* are responsible for your grades in this course.

The DAN Department has a grade policy which states that for courses in the 3000-4000 range, the class average must fall between 70% and 77% for all sections of a course taught by the same instructor. In very exceptional circumstances only, class averages outside this range may be approved by the Undergraduate Chair or Chair. Class averages are not grounds for appeal.

6. Lecture and Examination Schedule

1. Sept 12, 2023	Introduction to Human Factors and Ergonomics
2. Sept 19, 2023	Human Factors Model (Dirty Dozen, PEAR, Swiss Cheese etc.)
3. Sept 26, 2023	Human Information Processing (Memory, Errors, Hick's law and Fitt's Law, its application, Heuristics in Cognitive Design etc.)
4. Oct 3, 2023	Control Design, Warning Signs, Symbols and Flight Deck Aesthetics
5. Oct 10, 2023	Pilot Performance, Workload, Psychosocial Factors and Work Environment Design (Effect of Light, Noise, and Vibration etc.)
6. Oct 17, 2023	Midterm Exam
7. Oct 24, 2023	Human Performance (Effect of Jet lag, Fatigue, Body rhythms, Sleep/Nap,

	Motion sickness, Work and rest scheduling)
8. Oct 31, 2023	Fall Study Break (no class)
9. Nov 7, 2023	Project Presentations
10. Nov 14, 2023	Project Presentations (cont.)
11. Nov 21, 2023	Risks, Accidents, Safety and Investigations
12. Nov 28, 2023	Selling Human Factors/Ergonomics, Gaining buy-in from stakeholders and Crew Resource Management
13. Dec 5, 2023	Final Exam

Please Note:

- *This is a tentative list of topics. The topics and/or their sequence may change.*
- *Please DO NOT make any travel arrangements before the final exam.*
- *For further details, please see the schedule on OWL*

7. Student Responsibilities

Students should familiarize themselves with Western University Senate Regulations, please see: http://www.uwo.ca/univsec/academic_policies/index.html.

Material covered in lectures will not always be the same as material covered in the textbook. These two sources should be viewed as complimentary and not redundant. As such, students who want to do well in this course are **strongly encouraged** to attend lectures on a regular basis. Please note that the instructor will not be providing copies of lectures notes or overheads. Therefore, if you miss a lecture, you should try to obtain this material from another student.

7.1 Respect

Please act respectfully towards the classroom, the instructor and your fellow students. Acting respectfully means arriving on time, turning off phones, avoiding private discussions during lectures, refraining from viewing non-course material on your laptops, and cleaning up after yourself. Acting respectfully provides a better learning experience for everyone.

Private in-class discussions are distracting to students and the instructor. If other students are distracting your attention from the material, you should ask them to be quiet. If you feel uncomfortable doing this (or the problem persists), please see your instructor.

Late arrivals are also distracting. Please try to arrive on time for classes.

7.2 No Recording of Classes

Students are not permitted to record any portion of a class, audio or video, without the prior written permission of the instructor.

7.3 Copyright Notice

Lectures and course materials, including power point presentations, outlines, and similar materials, are protected by copyright. You may take notes and make copies of course materials for your own educational use. You may **not** record lectures, reproduce (or allow others to reproduce), post or distribute lecture notes, wiki material, and other course materials publicly and/or for commercial purposes without the written consent of your instructor.

8. Exam Policies

- Bring student identification to exams.
- Nothing is to be on/at one's desk during an exam except a pencil, an eraser, and the individual's student card
- Do not wear baseball caps to exams

- Do not bring or wear smart watches, music players, cell phones, beepers, or other electronic devices to exams

9. E-mail Policies

The following policies apply to all emails between students and the instructor. Please respect the fact that your Instructor receives hundreds of emails from students and must deal with those emails in a fair and organized manner. Unacceptable emails will receive a reply saying only “Please see Email Policies on the course outline”.

9.1 UWO.CA Email Addresses Only

For privacy reasons, students must use their Western email accounts to contact their Instructor. The Instructor will not respond to emails from non-uwo.ca addresses (e.g. hotmail.com, gmail.com, etc.).

9.2 Subject Line Must Include Course and Section Number

The subject line of emails must contain the name or number of the course, and the section number in which the student is enrolled. The Instructor teaches different courses and sections and cannot properly respond to questions if they do not know which course or section you are enrolled in.

9.3 Acceptable Emails

- questions about the course content or materials
- asking to set up an appointment to ask questions or review an exam
- notification of illness or other special circumstances
- providing constructive comments or feedback about the course

9.4 Unacceptable Emails

- questions that may be answered on OWL or on this course outline
- asking when grades will be posted
- asking what grade a student received
- asking where or when an exam is scheduled or the material covered on an exam
- requests for grade increases, extra assignments, or reweighting of course components

10. Attendance

IN-PERSON: It is expected that students will attend all classes. The instructor does not provide access to lecture notes. Students are encouraged to obtain missed lecture notes from a fellow student.

10.1 Short Absences.

If you miss a class due to minor illness or other problems, check your course outlines for information regarding attendance requirements and make sure you are not missing a test or exam. Cover any readings and arrange to borrow the missed lectures notes from a classmate.

10.2 Extended Absences.

If you are absent more than approximately two weeks or if you get too far behind to catch up, you should consider reducing your workload by dropping one or more courses. The [Academic Counsellors](#) can help you to consider the alternatives. At your request, they can also keep your instructors informed about your difficulties.

11. Grade Fairness

Fairness requires that all students be treated equally and be evaluated using the criteria set out in this course outline. The evaluation criteria are based on actual achievement and not on how hard a student has tried.

Claims by students of an excellent academic history, good attendance record, need to obtain or maintain a scholarship, desire to be admitted to Ivey or graduate school, or other personal issues, cannot be used to justify a higher grade in the course or a reweighting of course components. There is no extra work or assignments available for extra credit or to “make up” for a course component that was missed or performed poorly.

You, the student, are responsible for the grades earned.

12. Posting of Grades

Midterm exam grades will be posted on OWL once the grades are available. Final exam grades and final course grades are not posted on OWL and are available once they have been posted by the Registrar under “Academic Summary” at the Student Centre website.

13. University Policy Regarding Illness, Absence and Accommodation

13.1 Illness

Students will need to provide a Student Medical Certificate if the absence is medical or provide appropriate documentation if there are compassionate grounds for the absence in question. Students are encouraged to contact their Faculty Academic Counselling office to obtain more information about the relevant documentation.

For privacy reasons, students should also note that individual instructors should not receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. All documentation required for absences must be submitted to the Academic Counselling office of a student's Home Faculty.

For details on the Policy on Accommodation for Medical Illness, go to:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration.pdf

Students can download the Student Medical Certificate (SMC) here:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf

13.2 Accessible Education

Students with disabilities work with Accessible Education (formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The accommodation policy can be found here:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf

Students needing access to Accessible Education should register here:

http://academicsupport.uwo.ca/accessible_education/index.html

13.3 Religious Accommodation

Students should consult the University's list of recognized religious holidays, and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the Western Multicultural Calendar.

13.4 Make Up Examinations

A student must write a make-up exam if any scheduled exam is missed for reasons for which adequate documentation is received by the instructor (this documentation must be supplied by the Academic Counseling office).

The date and time of the make-up examination will be determined by the department and the University Special Examination dates as outlined in the Academic Handbook: https://www.uwo.ca/univsec/pdf/academic_policies/exam/definitions.pdf. The make-up exam will be held at [9:00am / 1:00pm] in SSC 4317.

First Term Half Course: January 12, 2024

If a student is unable to meet the scheduled make-up, then the student is responsible for obtaining new accommodations from Academic Counselling, and seeking a new make-up date with the instructor within a reasonable time frame (i.e. 1 week).

14. University Policy on Cheating and Academic Misconduct

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

Students are responsible for understanding the nature of and avoiding the occurrence of plagiarism and other academic offenses. Students are urged to read the section on Scholastic Offenses in the Academic Calendar.

Note that such offenses include plagiarism, cheating on an examination, submitting false or fraudulent assignments or credentials, impersonating a candidate, or submitting for credit in any course without the knowledge and approval of the instructor to whom it is submitted, any academic work for which credit has previously been obtained or is being sought in another course in the University or elsewhere. If you are in doubt about whether what you are doing is inappropriate, consult your instructor. A claim that "you didn't know it was wrong" will not be accepted as an excuse.

Within this course, students are permitted to use AI tools exclusively for information gathering and preliminary research purposes. These tools are intended to enhance the learning experience by providing access to diverse information sources. However, it is essential that students critically evaluate the obtained information, exercise independent thinking, and engage in original research to synthesize and develop their own ideas, arguments and perspectives. The use of AI tools can serve as a starting point for exploring a topic, with students expected to uphold academic integrity by appropriately attributing all sources of information and avoiding plagiarism. Essays, written assignments and/or lab reports should reflect the student's own thoughts and independent written work. Students should also generate their own figures (e.g., graphs, diagrams) rather than using AI generated ones. By adhering to these guidelines, students contribute to a responsible and effective learning environment that promotes critical thinking, independent inquiry and all them to produce original written contributions. The same principles also apply to the use of translation software to support the writing the essays and other written assessments.

A copy of guidelines about how to avoid cheating can be obtained from the Office of the Ombudsperson, Room 3135 WSSB, (519) 661-3573, ombuds@uwo.ca.

Cheating on exams will not be tolerated; students are referred to the university policy on scholastic offenses. Looking at the test of another student, allowing another student to view your exam, or obtaining information about a test in advance are all examples of cheating.

Students found cheating will receive a zero (0%) on that exam. A number of safeguards will be employed to discourage cheating. For example, examination supervisors (proctors) of the tests may ask students to move to another seat during the exam, cover their paper, avert their eyes from other students' papers, remove baseball caps, etc. This is not meant as a personal affront nor as an accusation of cheating, rather as vigilant attempts at proctoring.

The penalties for a student guilty of a scholastic offense include refusal of a passing grade in the assignment, refusal of a passing grade in the course, suspension from the University, and expulsion from the University.

15. Procedures For Appealing Academic Evaluations

1. In the first instance, all appeals of a grade must be made to the course instructor (informal consultation).
2. If the student is not satisfied with the decision of the course instructor, a written appeal must be sent to the Undergraduate Chair of the Department of Management and Organizational Studies.
3. If the response of the Undergraduate Chair is considered unsatisfactory to the student, they may then appeal to the Dean of the Faculty in which the course of program was taken.
4. Only after receiving a final decision from the Dean may a student appeal to the Senate Review Board Academic. A Guide to Appeals is available from the Office of the Ombudsperson.

16. Support Services

16.1 Support Services

The Registrar's office provides you with information on services, courses, student finances, resources, latest news, as well as Student Central's hours of operation at <http://www.registrar.uwo.ca>

Student Support Services (*including the services provided by the USC listed here*) can be reached at: <http://westernusc.ca/services/>

Academic Support & Engagement can be reached at: <http://academicsupport.uwo.ca>

Students who are in emotional/mental distress should refer to Health and Wellness: <https://www.uwo.ca/health/> for a complete list of options about how to obtain help.

16.2 Academic Concerns.

If you are in academic difficulty, it is strongly recommended that you see your academic counsellor.