



## UNSW Course Outline

# AVIA3011 Human Factors Tools and Methods - 2024

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## General Course Information

Course Code : AVIA3011

Year : 2024

Term : Term 1

Teaching Period : T1

Is a multi-term course? : No

Faculty : Faculty of Science

Academic Unit : School of Aviation

Delivery Mode : In Person

Delivery Format : Standard

Delivery Location : Kensington

Campus : Sydney

Study Level : Undergraduate

Units of Credit : 6

### Useful Links

[Handbook Class Timetable](#)

## Course Details & Outcomes

### Course Description

Understanding human factors is critical to improving complex systems, so that systems, tasks, systems and interfaces need to be designed with consideration of the abilities and limitations of humans. A range of tools and methodologies are used in human factors practice to proactively

identify these issues to inform task and system design, or to retrospectively analyse these issues to improve future performance.

This course outlines human factors tools and methods from task analysis techniques to complex systems analysis methods and discusses their advantages, disadvantages, intended applications, and limits in practice and interpretation. Students will have opportunities to apply elements of the tools to examples from different industries tasks and systems, analyse their results, and formulate recommendations for task and system re-design.

## **Course Aims**

This course aims to showcase a range of human factors tools and methodologies that can be applied to analyse tasks and systems with the view to improving those tasks and systems for safety and productivity. A range of examples will be used from several industries, demonstrating the wide application of human factors tools across diverse systems.

The course will provide opportunities for hands-on experimentation with elements of the tools, including data collection and interpretation of results and formulation of recommendations.

# Course Learning Outcomes

Course Learning Outcomes
CL01 : Identify the main features and intended uses of a range of human factors tools and methods
CL02 : Evaluate the relative advantages and disadvantages of a range of human factors tools and methods
CL03 : Outline factors that may affect the implementation of human factors tools and the interpretation of their results
CL04 : Apply elements of one or more human factors tools or methods to incidents, tasks or systems to help identify potential system-level changes

Course Learning Outcomes	Assessment Item
CL01 : Identify the main features and intended uses of a range of human factors tools and methods	<ul style="list-style-type: none"><li>• Application of a Human Factors tool or method to an everyday scenario</li><li>• Report on the use of Human Factors tools in the literature</li></ul>
CL02 : Evaluate the relative advantages and disadvantages of a range of human factors tools and methods	<ul style="list-style-type: none"><li>• Application of a Human Factors tool or method to an everyday scenario</li><li>• Report on the use of Human Factors tools in the literature</li></ul>
CL03 : Outline factors that may affect the implementation of human factors tools and the interpretation of their results	<ul style="list-style-type: none"><li>• Application of a Human Factors tool or method</li><li>• Report on the use of Human Factors tools in the literature</li></ul>
CL04 : Apply elements of one or more human factors tools or methods to incidents, tasks or systems to help identify potential system-level changes	<ul style="list-style-type: none"><li>• Application of a Human Factors tool or method</li><li>• Application of a Human Factors tool or method to an everyday scenario</li></ul>

## Learning and Teaching Technologies

Moodle - Learning Management System

# Assessments

## Assessment Structure

Assessment Item	Weight	Relevant Dates
Application of a Human Factors tool or method to an everyday scenario Assessment Format: Individual	30%	Due Date: Not Applicable
Application of a Human Factors tool or method Assessment Format: Group	30%	Due Date: Not Applicable
Report on the use of Human Factors tools in the literature Assessment Format: Individual	40%	Due Date: Not Applicable

## Assessment Details

### Application of a Human Factors tool or method to an everyday scenario

#### Assessment Overview

You will be required to create a 4-minute (maximum) video report on the application and evaluation of one of several pre-identified human factors tools or methods (e.g., task analysis, talk-out-loud technique) to an everyday task of your choosing. You will need to outline the task, justify your choice of tool or method with reference to scholarly literature, and evaluate and communicate the results of your analysis. Details of the assessment will be made available in Week 1 of the course. The video report is due in Week 4. Written feedback and marks will be provided within 10 working days of the submission deadline.

#### Course Learning Outcomes

- CL01 : Identify the main features and intended uses of a range of human factors tools and methods
- CL02 : Evaluate the relative advantages and disadvantages of a range of human factors tools and methods
- CL04 : Apply elements of one or more human factors tools or methods to incidents, tasks or systems to help identify potential system-level changes

### Application of a Human Factors tool or method

#### Assessment Overview

For this assessment, you will be required to work in a group of 4-5 students to design, create and deliver a 15-20 minute presentation on the application of a human factors tool to a safety related scenario. Each group will be assigned a Human Factors method or tool in Week 5 in addition to details of the assessment. You will need to apply the method or tool to a safety scenario of your

choice, which you will be required to nominate in Week 8.

The presentation should be created with the intention of delivering to a relevant board or authority involved in the scenario. Your group will need to present an outline of the scenario, your analysis, and interpretation of findings using the tool. It is expected that your group will also convey recommendations for systemic changes to the relevant board or authority involved in the scenario, and use effective communication to convince the relevant parties to implement change.

Presentations will take place in person in Weeks 9 and 10, with marking being conducted by the course convenor and teaching assistants. Marks will be provided within 10 business days of the deadline.

In addition, you will be required to submit an individual review of each team member's contributions, and a reflection of your contributions to the assessment. This review must be submitted in Week 10 via Moodle prior to your weekly assigned class time. A template will be provided for you to use in your review. Although the review does not directly determine each team member's grades, the feedback will be considered by the convenor during the grading process. Therefore, it is expected that you approach the task with serious intent. Submission of this individual review, as well as your group presentation is a requirement for successful completion of this assessment.

### **Course Learning Outcomes**

- CL03 : Outline factors that may affect the implementation of human factors tools and the interpretation of their results
- CL04 : Apply elements of one or more human factors tools or methods to incidents, tasks or systems to help identify potential system-level changes

## **Report on the use of Human Factors tools in the literature**

### **Assessment Overview**

You will be required to write a 1,500-2,000 word report comparing and contrasting examples of scholarly literature that explore the use of different Human Factors tools and/or methods. The report is due in Week 7. A list of articles will be supplied, from which you can choose one to be used in your report. You will be assessed on your ability to thoughtfully research, select and justify your choice of other article(s) that you have sourced, and discuss issues in implementation, interpretation, reliability, usability, and suitability of the different Human Factors tools and/or methods considered. Details of the assessment will be made available in Week 3. Written feedback and marks will be provided within 10 working days of the submission deadline.

## Course Learning Outcomes

- CL01 : Identify the main features and intended uses of a range of human factors tools and methods
- CL02 : Evaluate the relative advantages and disadvantages of a range of human factors tools and methods
- CL03 : Outline factors that may affect the implementation of human factors tools and the interpretation of their results

## General Assessment Information

### UNSW Aviation's decision for Short Extension Policy

The School of Aviation has carefully reviewed its range of assignments and projects to determine their suitability for automatic short extensions as set out by the UNSW Short Extension Policy. After careful consideration of our course offerings and our current structure, we have determined that our current deadline structures already accommodate the possibility of unexpected circumstances that may lead students to require additional days for submission. **Consequently, the School of Aviation has decided to not adopt the Short Extension provision for all its courses and has reassured that flexibility is integrated into our assessment deadlines.** The decision is subject to revision in response to the introduction of new course offerings. Students may still apply for Special Consideration via the usual procedures.

### Grading Basis

Standard

## Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 12 February - 18 February	Workshop	Introduction to Human Factors tools and methods
Week 2 : 19 February - 25 February	Workshop	Surveys, interviews and task analyses
Week 3 : 26 February - 3 March	Workshop	Physical and cognitive HF tools and methods
Week 4 : 4 March - 10 March	Workshop	Error and incident analysis tools
Week 5 : 11 March - 17 March	Workshop	System analysis tools
Week 6 : 18 March - 24 March	Other	Flexibility week. No classes
Week 7 : 25 March - 31 March	Workshop	Problem based analysis 1: HF tools in pilot selection and operator fatigue
Week 8 : 1 April - 7 April	Online Activity	Problem based analysis 2: Tools for Psychosocial aspects of HF (online due to public holiday)
Week 9 : 8 April - 14 April	Assessment	Assessment presentations
Week 10 : 15 April - 21 April	Assessment	Assessment presentations

## Attendance Requirements

Please note that lecture recordings are not available for this course. Students are strongly

encouraged to attend all classes and contact the Course Authority to make alternative arrangements for classes missed.

## General Schedule Information

Each week will consist of a face-to-face workshop session, except for any weeks which fall on a Public Holiday. In cases where classes are scheduled on a public holiday, class materials will be made available online.

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### ***UNSW Aviation's decision to not release Lecture Recordings:***

The School of Aviation prides itself on offering education that supports students in their personalised learning journey. This involves providing opportunities for students to engage with academics and key aviation experts to identify and address learning gaps, develop core skills and knowledge, and foster an environment of collaboration and meaningful discussion with the UNSW Aviation community. To support this vision, UNSW Aviation has decided to require students to attend all synchronous lectures (in-person or online) and not release class recordings to the student cohort. If students cannot attend a class and require learning support due to unforeseen circumstances, they should contact their Course Coordinator or Program Coordinator to discuss options for support and making up for missed class time.

## Course Resources

### Prescribed Resources

All required and recommended texts can be found within the Course Reading List located in the AVIA3011 Moodle Course site.

### Recommended Resources

Students are recommended to bring a device to class (e.g., laptop, tablet) for use in interactive workshops.

## Course Evaluation and Development

UNSW Aviation highly values student feedback as a way to constantly improve course offerings, teaching excellence and the student experience. In AVIA3011, students are provided with opportunities, both informal feedback, via direct correspondence with the course convenor, face-to-face workshops and forums; and formal feedback, via myExperience Surveys. The availability

of this feedback creates a culture of continuous improvement by identifying, responding to, and acting on student feedback.

The course survey will open towards the end of Term. Students are encouraged to participate in the survey via Moodle, myUNSW, or through the direct myExperience link.

Please provide constructive feedback and focus on your learning experience in relation to the course material. While the survey is confidential, it is not anonymous. Comments that breach the Student Code of Conduct, that are hurtful, racist, sexist or ill-natured, may lead to disciplinary action.

## Staff Details

| Position | Name                  | Email | Location                      | Phone    | Availability | Equitable Learning Services Contact | Primary Contact |
|----------|-----------------------|-------|-------------------------------|----------|--------------|-------------------------------------|-----------------|
| Convenor | Carlo Capone<br>cchia |       | Old Main Building<br>Room 216 | 93857184 |              | No                                  | Yes             |

## Other Useful Information

### Academic Information

Upon your enrolment at UNSW, you share responsibility with us for maintaining a safe, harmonious and tolerant University environment.

You are required to:

- Comply with the University's conditions of enrolment.
- Act responsibly, ethically, safely and with integrity.
- Observe standards of equity and respect in dealing with every member of the UNSW community.
- Engage in lawful behaviour.
- Use and care for University resources in a responsible and appropriate manner.
- Maintain the University's reputation and good standing.

For more information, visit the [UNSW Student Code of Conduct Website](#).

### Academic Honesty and Plagiarism

**Referencing** is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words,



ideas or research. Not referencing other people's work can constitute plagiarism.

Further information about referencing styles can be located at <https://student.unsw.edu.au/referencing>

**Academic integrity** is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The [Current Students site](#),
- The [ELISE training site](#), and
- The [Use of AI for assessments](#) site.

The Student Conduct and Integrity Unit provides further resources to assist you to understand your conduct obligations as a student: <https://student.unsw.edu.au/conduct>

## Submission of Assessment Tasks

### Penalty for Late Submissions

UNSW has a standard late submission penalty of:

- 5% per day,
- for all assessments where a penalty applies,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

***Any variations to the above will be explicitly stated in the Course Outline for a given course or assessment task.***

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

### Special Consideration

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply by logging onto myUNSW and following the link in the My Student Profile Tab. Medical

documentation or other documentation explaining your absence must be submitted with your application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: <https://student.unsw.edu.au/special-consideration>

**Important note:** UNSW has a “fit to sit/submit” rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

## Faculty-specific Information

### Additional support for students

- [The Current Students Gateway](#)
- [Student Support](#)
- [Academic Skills and Support](#)
- [Student Wellbeing, Health and Safety](#)
- [Equitable Learning Services](#)
- [UNSW IT Service Centre](#)
- Science EDI Student [Initiatives](#), [Offerings](#) and [Guidelines](#)

## School Contact Information

### Email:

aviation@unsw.edu.au

### Telephone:

Undergraduate Courses - +61 2 9385 5756 (Katie Wang)

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