



UNSW

UNSW Course Outline

ZEIT8402 Evidence-based Decision Making - 2024

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General Course Information

Course Code : ZEIT8402

Year : 2024

Term : Semester 1

Teaching Period : Z1

Is a multi-term course? : No

Faculty : UNSW Canberra

Academic Unit : School of Systems and Computing

Delivery Mode : Online

Delivery Format : Standard

Delivery Location : UNSW Canberra at ADFA

Campus : UNSW Canberra

Study Level : Postgraduate

Units of Credit : 6

[Useful Links](#)

[Handbook Class Timetable](#)

Course Details & Outcomes

Course Description

Government organisations, including defence, and industry are more and more insisting on making decisions and policies based on evidence. What is a piece of evidence? How to provide scientific evidence under tight time constraints to make decisions? Why is it vital to understand

how humans make decisions in natural settings to properly design and identify the role of evidences in decision making? This course aims to answer these questions by exposing students to the methodologies used to gather evidence, discussing the quality framework for good decision making, explaining different topics on judgement-based, behavioural, and naturalistic decision making, and discussing the biases that can occur in human-decision making.

Relationship to Other Courses

This course aims to expose students to the methodologies used to gather evidence, discuss the quality framework for good decision-making, explain different topics on judgment-based, behavioral, and naturalistic decision-making, and discuss the biases that can occur in human-decision making and the qualitative tools applicable to the evidence-based decision-making process.

However, as a core course in the Master of Decision Analytics Program, this course is closely aligned with two other core courses, ZEIT8403-Capability Options Analysis and ZEIT8404-Decision Making Analytics. While the ZEIT8403 explains how to analyse different capability options by using multiple decision making tools (mostly covered in ZEIT8404), ZEIT8402 explains the methodologies to gather evidence and then use them for qualitative and quantitative decision making.

Nevertheless, there are no prerequisites for this course. Each course has unique contents to merit students.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Articulate the need for evidence based decision making
CLO2 : Identify and convert a practical issue or problem into an answerable question
CLO3 : Identify and develop approaches to search and retrieve evidence
CLO4 : Demonstrate the ability to assess and aggregate evidence to support decision
CLO5 : Critically analyse and evaluate the outcome of the decision taken

Course Learning Outcomes	Assessment Item
CLO1 : Articulate the need for evidence based decision making	<ul style="list-style-type: none">• Assignment• Individual Tasks• Capstone Project
CLO2 : Identify and convert a practical issue or problem into an answerable question	<ul style="list-style-type: none">• Assignment• Individual Tasks• Capstone Project
CLO3 : Identify and develop approaches to search and retrieve evidence	<ul style="list-style-type: none">• Assignment• Capstone Project
CLO4 : Demonstrate the ability to assess and aggregate evidence to support decision	<ul style="list-style-type: none">• Capstone Project
CLO5 : Critically analyse and evaluate the outcome of the decision taken	<ul style="list-style-type: none">• Capstone Project

Learning and Teaching Technologies

Moodle - Learning Management System | Blackboard Collaborate

Learning and Teaching in this course

Collaborative /interactive sessions via Moodle (known as Blackboard Collaborative Session) will be arranged weekly. The details will be provided during the course. The teaching approach for this course includes:

- Use of examples/demonstrations and/or modelling – it involves practical and textbook-based activities where good practice can be exemplified, and the process stages made explicit so that students can model their own practice on the exemplars,
- Project-based learning – activities are targeted at students completing several assignments (small projects) and a major project. Assessments are usually based on the different parts of the project. Information and skills are developed sequentially as needed by the project.

Other Professional Outcomes

At the completion of this course, students will also be able to:

- Identify problems in real life that can be addressed by the evidence-based approaches.
- Define the problems for modelling.
- Apply appropriate modelling approaches and tools to address the defined problems.
- Use the appropriate solution approaches to solve the issue/model.
- Analyse the solutions of the model; and
- Interpret the applicability of solutions.

Additional Course Information

This course is a 6-credit unit course for the postgraduate program. The objective of the course “Evidence-Based Decision Making” is to introduce the student to the world of analytics and relevant qualitative decision tools for solving operational problems. Evidence-Based Decision Making follows a series of phases that transform evidence into management decisions within a specific context. The phases may involve the generation of evidence through research, experience, education, and judgment, managers’ preferences and values, stakeholders’ preferences and values, the context of the issue, determination of the decision options, and ethical, political, cultural, and environmental constraints leading to solid and effective decisions.

Evidence-based practice is about making decisions through the conscientious, explicit, and judicious use of the best available evidence from multiple sources retrieved through asking, acquiring, appraising, aggregating, applying, and assessing it to increase the likelihood of a favorable outcome.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Assignment	30%	Start Date: Not Applicable Due Date: 18/03/2024 11:59 PM
Individual Tasks	20%	Start Date: Not Applicable Due Date: 13/05/2024 11:59 PM
Capstone Project	50%	Start Date: Not Applicable Due Date: 10/06/2024 11:59 PM

Assessment Details

Assignment

Assessment Overview

Demonstrating learning through modelling and complex scenario based problem solving

Course Learning Outcomes

- CLO1 : Articulate the need for evidence based decision making
- CLO2 : Identify and convert a practical issue or problem into an answerable question
- CLO3 : Identify and develop approaches to search and retrieve evidence

Detailed Assessment Description

It is an individual assignment that should be completed before the first four weeks of the semester. Note that electronic files submitted for assessment may be passed through our anti-plagiarism and AI detection software. Detailed marking rubrics will be provided once the semester starts.

Assessment Length

Minimum 3000 words.

Submission notes

The assignment should be submitted through Moodle. More information will be provided via the Moodle platform.

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Individual Tasks

Assessment Overview

Demonstrating learning through modelling and simple textbook based problem solving

Course Learning Outcomes

- CLO1 : Articulate the need for evidence based decision making
- CLO2 : Identify and convert a practical issue or problem into an answerable question

Detailed Assessment Description

This is an individual assignment, and students should submit it through the Moodle platform. A detailed marking rubric will be provided once the semester starts. Note that electronic files submitted for assessment may be passed through our anti-plagiarism and AI detection software.

Assessment Length

2000 words

Submission notes

The assignment should be submitted through Moodle. More information will be provided once the semester starts.

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

Capstone Project

Assessment Overview

A major project based on problem selected from real-world situations

Course Learning Outcomes

- CLO1 : Articulate the need for evidence based decision making
- CLO2 : Identify and convert a practical issue or problem into an answerable question
- CLO3 : Identify and develop approaches to search and retrieve evidence
- CLO4 : Demonstrate the ability to assess and aggregate evidence to support decision
- CLO5 : Critically analyse and evaluate the outcome of the decision taken

Detailed Assessment Description

This is an individual project; students should submit it through the Moodle platform. A detailed marking rubric will be provided once the semester starts. Note that electronic files submitted for assessment may be passed through our anti-plagiarism and AI detection software.

Assessment Length

5000 words

Submission notes

This is an individual project; students should submit it through the Moodle platform

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

General Assessment Information

Collaborative /interactive sessions via Moodle (known as Blackboard Collaborative Session) will be arranged weekly. The details will be provided during the course. We will host three unique online synchronous sessions to discuss these assignment items respectively (in addition to our

weekly webinars if needed).

Late assignments will be penalized at the rate of 5% of the assignment mark for each working day past the due date up to a maximum of 5 days (120 hours), after which an assessment can no longer be submitted, and a grade of 0 will be applied. Late assignments with accompanying medical certificates will not incur any penalties. Submissions for waiver of the deadline on compassionate grounds, providing the grounds can be substantiated, will be considered individually on their own merit.

Note: Penalties for late submission will be applied from the original submission date unless that date is formally varied by agreement. If a late submission is allowed, the extra time granted should be viewed solely as a period of grace. If this delayed date is not met, the penalty should apply from the original date of submission, not from the end of the period of grace.

In this course, students are required to reference following the APA 6 / Chicago NB referencing style. Information about referencing styles is available at: <https://guides.lib.unsw.adfa.edu.au/c.php?g=472948&p=3246720>.

Grading Basis

Standard

Requirements to pass course

All marks obtained for assessment items during the session are provisional. The final mark as published by the university following the assessment review group meeting is the only official mark. The overall passing mark is set at 50% by the university and this must not be varied. However, you must submit all assessments with reasonable work. As per school policy, the final marks in this course may be moderated. Your marks on assignments with feedback will be posted on Moodle.

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 26 February - 1 March	Lecture	<p>Evidence-based Decision-Making approach</p> <ul style="list-style-type: none"> • Textbook 4 Chapter 1: Envisioning Evidence-Based Management • Textbook 4 Chapter 2: Learning from Other Evidence-Based Practices: The Case of Medicine
Week 2 : 4 March - 8 March	Lecture	<p>Information collection techniques and creative thinking tools</p> <ul style="list-style-type: none"> • Textbook 5 Chapter 2: Unravelling complexity • Textbook 5 Chapter 3: Thinking about Futures • Textbook 5 Chapter 4: Identifying strategic actions • Notes on the Moodle page
Week 3 : 11 March - 15 March	Lecture	<p>Problem Solving Techniques (PSTs)</p> <ul style="list-style-type: none"> • Textbook 1 Chapter 1: A New Paradigm of Analysis • Textbook 5 Chapter 3: Thinking about Futures • Textbook 5 Chapter 10: Stimulating innovation: possibilities, relevance and impacts
Week 4 : 18 March - 22 March	Lecture	<p>Soft System Methodology</p> <ul style="list-style-type: none"> • Textbook 1 Chapter 4: Soft Systems Methodology • Textbook 1 Chapter 5: Soft Systems Methodology in Action: Participative Creation of an Information Strategy for an Acute Hospital
Week 5 : 25 March - 29 March	Lecture	<p>SODA, SCA, and other PSTs; RA</p> <ul style="list-style-type: none"> • Textbook 1 Chapter 2: SODA – The Principles • Textbook 1 Chapter 3: SODA – Journey Making and Mapping in Practice • Textbook 1 Chapter 6: The Strategic Choice Approach • Textbook 1 Chapter 8: Robustness Analysis: Keeping Your Options Open
Week 6 : 1 April - 5 April	Lecture	<p>Social Science Research, Systemic Reviews</p> <ul style="list-style-type: none"> • Textbook 4 Chapter 7: Systematic Review and Evidence Synthesis as a Practice and Scholarship Tool • Textbook 2 Chapter 1: Why Do Research? • Textbook 2 Chapter 2: What Are the Major Types of Social Research? • Textbook 2 Chapter 13: Field Research and Focus Group Research • Textbook 2 Chapter 14: Analysis of Qualitative Data • Notes on the Moodle page
Week 7 : 22 April - 26 April	Lecture	<p>Designing Experiments, Measurement & Metrics</p> <ul style="list-style-type: none"> • Textbook 2 Chapter 7: Qualitative and Quantitative Measurement • Notes on the Moodle page
Week 8 : 29 April - 3 May	Lecture	<p>Reliability & Validity, Errors in EBDM</p> <ul style="list-style-type: none"> • Textbook 2 Chapter 7: Qualitative and Quantitative Measurement [Pages 211-221] • Textbook 6 Chapter 6: Measurement Foundations • Notes
Week 9 : 6 May - 10 May	Lecture	<p>Theory of Change, Concept of Evaluation</p> <ul style="list-style-type: none"> • Notes on the Moodle Page
Week 10 : 13 May - 17 May	Lecture	<p>Counter Factual & Impact Evaluation</p> <ul style="list-style-type: none"> • Notes on the Moodle Page
Week 11 : 20 May - 24 May	Lecture	<p>Decision Making Approaches</p> <ul style="list-style-type: none"> • Textbook 3 Chapter 2: How people make decisions involving multiple objectives • Textbook 3 Chapter 6: Decision making under uncertainty • Textbook 3 Chapter 7: Decision trees and influence diagrams • Notes
Week 12 : 27 May - 31 May	Lecture	<p>Multi-attribute Decision making</p> <ul style="list-style-type: none"> • Textbook 3 Chapter 3: Decisions involving multiple objectives: SMART • Textbook 3 Chapter 4: Decisions involving multiple objectives: alternatives to SMART • Notes on the Moodle page
Week 13 : 3 June - 7 June	Lecture	Course Summary

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

General Schedule Information

We will run synchronous online sessions on each week, preferably on Thursday between 6-7 pm.

More information will be provided via announcement.

Course Resources

Prescribed Resources

You are expected to utilise a library and online sources to obtain additional resources. The compulsory textbooks are used extensively to provide a comprehensive coverage of the basic concepts. Additional materials on selected topics and a list of topics referring to particular chapters and sections in the textbook may be provided later.

You will need to obtain the following essential texts:

1. Jonathan Rosenhead and John Mingers “**Rational Analysis for a Problematic World Revisited**”, 2nd Edition, John Wiley & Sons, 2001 or 2009.
2. W. Lawrence Neuman, “**Social Research Methods – Qualitative and Quantitative Approaches**”, 6th or subsequent edition, Allyn & Bacon [Ebook available at Academy library].

Recommended Resources

It is recommended that you also obtain the following texts:

1. Paul Goodwin & George Wright, “**Decision Analysis for Management Judgment**”, 5th Edition, John Wiley & Sons, 2014 [Ebook available at Academy library].
2. Denise M. Rousseau, Editor, “**The Oxford Handbook of Evidence-Based Management**”, Oxford Library of Psychology, Oxford University Press, paperback, 2012 or subsequent edition [Ebook available at Academy library].
3. Geoff Coyle, “**Practical Strategy – Structured Tools and Techniques**”, Pearson Education Limited, 2004 [Ebook available at Academy library].
4. Robert W. Janke and Bruce S. Cooper, “**Errors in Evidence-Based Decision Making**” – Improving and Applying Research Literacy”, Rowman and Littlefield, 2014 [Ebook available at Academy library].

Notably, almost all the reading materials can be accessed online. We will only use a few chapters

from these textbooks (details are on the Course Schedule table).

The Moodle platform shall also be considered a good source of resources.

Course Evaluation and Development

One of the key priorities in the 2025 Strategy for UNSW is a drive for academic excellence in education. One of the ways of determining how well UNSW is progressing towards this goal is by listening to our own students. Students will be asked to complete the myExperience survey towards the end of this course.

Students can also provide feedback during the semester via: direct contact with the lecturer, the “On-going Student Feedback” link in Moodle, Student-Staff Liaison Committee meetings in schools, informal feedback conducted by staff, and focus groups. Student opinions really do make a difference. Refer to the Moodle site for this course to see how the feedback from previous students has contributed to the course development.

Important note: Students are reminded that any feedback provided should be constructive and professional and that they are bound by the Student Code of Conduct Policy

<https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf>

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Discipline coordinator	Ripon Chakra bortty		Room 367, Building 21	+61 2 5114 5133	Tuesday, between 12 and 1.	Yes	Yes

Other Useful Information

Academic Information

Course Evaluation and Development

One of the key priorities in the 2025 Strategy for UNSW is a drive for academic excellence in education. One of the ways of determining how well UNSW is progressing towards this goal is by listening to our own students. Students will be asked to complete the myExperience survey towards the end of each course.

Students can also provide feedback during the semester via: direct contact with the lecturer, the “On-going Student Feedback” link in Moodle, Student-Staff Liaison Committee meetings in schools, informal feedback conducted by staff, and focus groups (where applicable). Student opinions really do make a difference. Refer to the Moodle site for your course to see how the feedback from previous students has contributed to the course development.

Important note: Students are reminded that any feedback provided should be constructive and professional and that they are bound by the Student Code of Conduct.

<https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf>

Equitable Learning Services (ELS)

Students living with neurodivergent, physical and/or mental health conditions or caring for someone with these conditions may be eligible for support through the Equitable Learning Services team. Equitable Learning Services is a free and confidential service that provides practical support to ensure your mental or physical health conditions do not adversely affect your studies.

Our team of dedicated **Equitable Learning Facilitators (ELFs)** are here to assist you through this process. We offer a number of services to make your education at UNSW easier and more equitable.

Further information about ELS for currently enrolled students can be found at: <https://www.student.unsw.edu.au/equitable-learning>

Academic Honesty and Plagiarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW staff and students have a responsibility to adhere to this principle of academic integrity. All students are expected to adhere to UNSW’s Student Code of Conduct. Find relevant information at: [Student Code of Conduct \(unsw.edu.au\)](https://www.unsw.edu.au/students/student-code-conduct)

Plagiarism undermines academic integrity and is not tolerated at UNSW. It's defined as using the words or ideas of others and passing them off as your own, and can take many forms, from deliberate cheating to accidental copying from a source without acknowledgement.

For more information, please refer to the following:

Submission of Assessment Tasks

Special Consideration

Special Consideration is the process for assessing and addressing the impact on students of short-term events, that are beyond the control of the student, and that affect performance in a specific assessment task or tasks.

Applications for Special Consideration will be accepted in the following circumstances only:

- Where academic work has been hampered to a substantial degree by illness or other cause;
- The circumstances are unexpected and beyond the student's control;
- The circumstances could not have reasonably been anticipated, avoided or guarded against by the student; and either:
 - (i) they occurred during a critical study period and was 3 consecutive days or more duration, or a total of 5 days within the critical study period; or
 - (ii) they prevented the ability to complete, attend or submit an assessment task for a specific date (e.g. final exam, in class test/quiz, in class presentation)

Applications for Special Consideration must be made as soon as practicable after the problem occurs and at the latest within three working days of the assessment or the period covered by the supporting documentation.

By sitting or submitting the assessment task the student is declaring that they are fit to do so and cannot later apply for Special Consideration (UNSW 'fit to sit or submit' requirement).

Sitting, accessing or submitting an assessment task on the scheduled assessment date, after applying for special consideration, renders the special consideration application void.

Find more information about special consideration at: <https://www.student.unsw.edu.au/special-consideration/guide>

Or apply for special consideration through your [MyUNSW portal](#).

Late Submission of assessment tasks (other than examinations)

UNSW has a standard late submission penalty of:

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

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

Electronic submission of assessment

Except where the nature of an assessment task precludes its electronic submission, all assessments must be submitted to an electronic repository, approved by UNSW or the Faculty, for archiving and subsequent marking and analysis.

Release of final mark

All marks obtained for assessment items during the session are provisional. The final mark as published by the university following the assessment review group meeting is the only official mark.

School-specific Information

The Learning Management System

Moodle is the Learning Management System used at UNSW Canberra. All courses have a Moodle site which will become available to students at least one week before the start of semester. Please find all help and documentation (including Blackboard Collaborate) at the Moodle Support page.

UNSW Moodle supports the following web browsers:

- Google Chrome 50+
- Safari 10+

Internet Explorer is not recommended. Addons and Toolbars can affect any browser's performance.

Operating systems recommended are:

- Windows 10,
- Mac OSX Sierra,
- iPad iOS10

Further details:

[Moodle System Requirements](#)

[Moodle Log In](#)

If you need further assistance with Moodle:

For enrolment and login issues please contact:

IT Service Centre

Email: itservicecentre@unsw.edu.au

Phone: (02) 9385-1333

International: +61 2 9385 1333

For all other Moodle issues please contact:

External TELT Support

Email: externalteltsupport@unsw.edu.au

Phone: (02) 9385-3331

International: +61 2 938 53331

Opening hours:

Monday – Friday 7:30am – 9:30 pm

Saturday & Sunday 8:30 am – 4:30pm

[Study at UNSW Canberra](#)

Study at UNSW Canberra has lots of useful information regarding:

- Where to get help
- Administrative matters
- Getting your passwords set up
- How to log on to Moodle
- Accessing the Library and other areas.

[UNSW Canberra Student Hub](#)

For News and Notices, Student Services and Support, Campus Community, Quick Links, Important Dates and Upcoming Events

School Contact Information

Deputy Head of School (Education): Dr Erandi Hene Kankanamge

E: e.henekankanamge@adfa.edu.au

T: 02 5114 5157

Syscom Admin Support: syscom@unsw.edu.au

T: 02 5114 5284

Syscom Admin Office: Building 15, Level 1, Room 101 (open 10am to 3pm, Mon to Fri)