
PGPH930: Observational Epidemiology and Understanding Causes

Subject Outline

6 credit points

Subject Information

Autumn, 2026, Wollongong
Flexible

Autumn, 2026, UOW Online Wollongong
Distance

PGPH930 is offered to students enrolled in the Graduate Certificate in Public Health, the Master of Public Health and the Master of Public Health Extension programs. These programs may be taken in flexible or distance mode, and therefore the subject is offered in both modes. Check your enrolment for which applies to your degree.

Flexible Delivery A combination of online and on-campus or location-based components where the on-campus/location component is compulsory.

Distance/ Online Delivery This subject is delivered entirely online. It involves no on-campus or other in-person learning activities.

Subjects with a delivery mode of On Campus and/or Flexible with International Student enrolments will be delivered in accordance with the ESOS National Code. That is, online learning experiences (such as lectures, tuition, and resources) will be supplementary to in-person learning experiences such as scheduled classes and/or scheduled contact hours.

UOW may need to modify teaching locations, teaching delivery, and assessment delivery at short notice in response to unforeseen circumstances such as health or environmental factors.

For up-to-date information please refer to your subject's Moodle site.

The Faculty of Science, Medicine and Health

The Faculty of Science, Medicine and Health offers a range of undergraduate and postgraduate programs designed to meet the needs of a diverse student population. We carry out world-leading research which is strongly aligned with our teaching program

As a student of our faculty, you will be actively engaged in learning with extensive clinical, laboratory and/or field work experiences, use of advanced educational technologies and opportunities for enriching work experience. More information about the Faculty of Science, Medicine and Health and our School is available on our web pages: <https://www.uow.edu.au/science-medicine-health/>

Within many of our courses, attending a workplace experience or clinical placement is an exciting part of your course program. Whilst integral to your learning, these health-related placements also let you experience what it's like to work as a professional in real-life workplace settings. More information about requirements for Health Placements is available on our webpage: <https://www.uow.edu.au/student/health-placements/>

Teaching Staff

Teaching Role	Coordinator
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Teaching Role	Tutor
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Expectations of Students

UOW values are intellectual openness, excellence and dedication, empowerment and academic freedom, mutual respect and diversity, recognition and performance. We will provide a safe, equitable and orderly environment for the University community, and expect each member of our community to behave responsibly and ethically ([Student Conduct Rules](#)).

We expect that students demonstrate these values and professional behaviour, both face to face and online, making genuine efforts to complete their studies successfully, arriving on time to class, taking part constructively in class discussions and activities, demonstrating appropriate professional and ethical conduct in all communication with UOW staff and community members, and submitting assignments on time (or completing a request for Academic Consideration in advance if needed).

Guiding Communication Principles for Students

Moodle Announcements will be the primary platform for communication of general information to students

- Students should ensure they regularly check the main announcements forum at the top of each subject's Moodle site. Information distributed via a Moodle Announcement MAY not be duplicated on any other forum on the Moodle site.
- Moodle Discussion forums pertinent to specific assignments will be used but will not replace or be used for overarching subject announcements.
 - Assignment discussion forums for specific assignments will be clearly labelled in the forum description to identify the purpose of the forum (e.g. 'Please ask any questions you have about Assessment Task 1 in this discussion forum') - students should check and ask any assignment questions on these forums and not through email.
 - The Moodle assignment discussion forums should always be used in the first instance when inquiring about assessment tasks.
- It is the student's responsibility to check all subject Moodle sites regularly for information and notifications.

SOLS messages will be used for all central communication relating to the following:

- Administrative matters relating to student enrolment
- Critical information relating to course or subject, e.g. Changes to assignments, policy updates, class cancellations or changes
- Timetable information
- Security and emergency information
- Students are encouraged to check SOLS messages daily as these messages are often of high priority

SOLS and Moodle announcements can NOT be responded to.

Appropriate Online Behaviour

The University is committed to providing a safe, respectful, equitable and orderly environment for the University community, and expects each member of that community to behave responsibly and ethically. Students must comply with the University's [Student Conduct Rules](#) and related policies including the [IT Acceptable Use Policy](#) and [Bullying Prevention Policy](#), whether undertaking their studies face-to-face, online.

For more information on appropriate communication and etiquette in the online environment please refer to the guide [Online and Email Etiquette](#).

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Hardcopies of this document are considered uncontrolled please refer to your Moodle site for the latest version.

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Section A: General Information

Learning Outcomes

Subject Learning Outcomes

On successful completion of this subject, students will be able to:

1. Explain key elements of the potential outcomes model of causation.
2. Use causal inference principles to write and critique research questions of interest to public health.
3. Create a directed acyclic graph and identify causal and potentially biasing paths.
4. Critically evaluate observational study designs, their limitations and advantages.
5. Describe the concept of triangulation in observational epidemiology and how it may be applied to the study of causes.

Subject Description

In this subject, students are introduced to contemporary methods in epidemiology. The subject begins with the concept of ‘potential outcomes’ (counterfactuals) to help develop a deeper understanding about causes and how this approach can assist with critical thinking about study designs and research questions. The subject includes directed acyclic graphs (DAGs) for identifying potential bias. The subject will also cover the use of selected novel study designs and how triangulation of evidence from study designs that have different limitations can add depth to the evidence base.

Course Handbook

Information about subject pre-requisites, co-requisites and restrictions as well as course completion requirements and Course Learning Outcomes can be found in the [Course Handbook](#).

Subject Details: Practical Activities, eLearning, Readings and Materials

Subject eLearning

The University uses the eLearning system Moodle to support all coursework subjects. The subject Moodle site can be accessed via your SOLS page.

Safety Guidelines

The rules below are general rules that are required when participating in labs or practical activities. Before commencing these activities, you are to ensure that you understand specific procedures and policy related to safety.

- All first-year students undertaking Chemistry (CHEM101/102/104/105) must complete the Moodle WHS Induction (see the subject Moodle site for more details below)
- Before commencing any activity, you are to ensure that you understand specific procedures and policy related to the lab in which you work and safety in general.
- You may need to review a Risk Assessment and complete a Participant Acknowledgement form before commencing any experiments/practical work. These materials will be made available by the lab supervisor/Subject Coordinator.
- You must inform the Subject Coordinator of any medical conditions which may impact upon your ability to participate in these activities before commencing the practical.
- All Reasonable Adjustment cases (Access Plans) must be discussed with the Subject Coordinator prior to commencing the activity.
- Participation in the lab/practical/field/simulation activities may be denied to students who do not abide by these, and other conditions which may be specified by the Subject Coordinator.

- Never use any equipment or attempt any experiment without checking the safety implications with your laboratory supervisor or experienced delegated laboratory worker.
- Undergraduate students are not permitted to work after hours unless there is appropriate approval and supervision.

Using Generative Artificial Intelligence (GenAI)

UOW is committed to embracing GenAI as a tool to enhance learning and development of important digital and work-readiness skills.

Your subject coordinator will provide specific guidance on the use of GenAI in your assessment tasks via your Subject Outline and/or your subject Moodle site. If GenAI use is permitted, it should be used thoughtfully, critically, and in ways that support your own learning.

Guidance on appropriate use of AI in assessments, including how to [acknowledge GenAI](#) can be found on the [Using Generative Artificial Intelligence in Assessment website](#)

You are responsible for all work you submit, and ethical use of GenAI is an important part of maintaining academic integrity. Misuse or unauthorised use may breach the [Academic Integrity Policy](#).

Major Text(s)

There is NO major textbook for PGPH930.

If there is a textbook available for purchase, you can find the details at University Bookshop <https://unishop.uow.edu.au/>

Recommended Readings and Other Resources

A complete list of recommended subject readings will be available in Moodle. All readings are freely available online or can be found in the UOW library.

The following are examples of introductory readings:

- Chatton A, Rohrer JM (2024). The Causal cookbook: Recipes for propensity scores, G-computation, and doubly robust standardization. *Advances in Methods and Practices in Psychological Science*. 7(1). doi:10.1177/25152459241236149
- Hernán MA, Robins JM (2025). *Causal Inference: What If*. Boca Raton: Chapman & Hall/CRC <https://miguelhernan.org/whatifbook>
- Hernán MA, Dahabreh IJ, Dickerman BA, Swanson SA (2025). The target trial framework for causal inference from observational data: Why and when is it helpful? *Annals of Internal Medicine*. 178(3), 402-407. <https://doi.org/10.7326/ANNALS-24-01>
- Hernán MA (2018). The C-word: Scientific euphemisms do not improve causal inference from observational data. *American Journal of Public Health*. 108(5), 616–619. <https://doi.org/10.2105/AJPH.2018.304337>
- Igelström E, Craig P, Lewsey J, Lynch J, Pearce A, & Katikireddi S V (2022). Causal inference and effect estimation using observational data. *Journal of Epidemiology and Community Health*. 76(11), 960–966. <https://doi.org/10.1136/jech-2022-219267>

This is not an exhaustive list of references. Students should also use the library catalogue and databases to locate additional resources.

Lectures, Tutorials and Attendance Requirements

Lecture Times *

UOW may need to modify teaching locations, teaching delivery, and assessment delivery at short notice in response to unforeseen circumstances such as health or environmental factors.

For up-to-date information please refer to your subject's Moodle site.

Up to date timetable and delivery information is located at <http://www.uow.edu.au/student/timetables/index.html>

You can access your personal timetable by logging into SOLS and selecting 'My Timetable'

Lecture Program *

Week	Commencing	Topics Covered	Readings
1	02 Mar 2026	Module 1: Models of Causation	<ul style="list-style-type: none"> Hernán MA, Hsu J & Healy B. (2019). A second chance to get causal inference right: A Classification of data science tasks, <i>CHANCE</i>, 32(1):42-49 Igelström E, Craig P, Lewsey J, et al. (2022). Causal inference and effect estimation using observational data <i>J Epidemiol Community Health</i>, 76:960-966 Hernán MA (2004). A definition of causal effect for epidemiological research <i>Journal of Epidemiology & Community Health</i>, 58:265-271 Hernán MA (2018). The C word: Scientific euphemisms do not improve causal inference from observational data. <i>Am J Public Health</i>, 108(5):616-620
2	09 Mar 2026	Module 2: Research questions - The Elements of PICO	<ul style="list-style-type: none"> Cochrane (2025) What is PICO? https://www.cochranelibrary.com/about-pico Clinical Information Access Portal (2025) EBP Learning Module 2: Ask the Question https://www.ciap.health.nsw.gov.au/training/ebp-learning-modules/module2/clinical-examples-using-pico.html
3	16 Mar 2026	Module 2: Research Questions - PICO in Research	<ul style="list-style-type: none"> Grewal A, Kataria H, & Dhawan I (2016). Literature search for research planning and identification of research problem. <i>Indian Journal of Anaesthesia</i>, 60(9), 635–639. https://doi.org/10.4103/0019-5049.190618 Schiavenato M & Chu F (2021). PICO: What it is and what it is not. <i>Nursing Education Practice</i>. 56:103194
4	23 Mar 2026	Module 3: Directed Acyclic Graphs - Introduction to DAGs	<ul style="list-style-type: none"> Shrier, I & Platt RW (2008). Reducing bias through directed acyclic graphs. <i>BMC Medical Research Methodology</i>. 8:70 Williams TC, Bach CC, Matthiesen NB et al. (2018) Directed acyclic graphs: a tool for causal studies in paediatrics. <i>Pediatric Research</i>. 84:487–493
5	30 Mar 2026	Module 3: Directed Acyclic	<ul style="list-style-type: none"> Westreich D & Greenland S (2013). The table 2 fallacy: Presenting and interpreting confounder and modifier

		Graphs - DAGs & Confounding	<p>coefficients. <i>American Journal of Epidemiology</i>. 177(4):292-8</p> <ul style="list-style-type: none"> Wysocki AC, Lawson KM, Rhemtulla M (2008). Statistical control requires causal justification. <i>Advances in Methods and Practices in Psychological Science</i>. 5(2):1-19
6	06 Apr 2026	Module 4: Potential bias and critique of typical observational studies - Selection Bias & Measurement Error	<ul style="list-style-type: none"> Barratt H, Kirwan M, Shantikumar S. Biases and Confounding. UK Faculty of Public Health; 2009. Available from: https://www.healthknowledge.org.uk/public-health-textbook/research-methods/1a-epidemiology/biases [Accessed 23 January 2026].
7	13 Apr 2026	Module 4: Potential bias and critique of typical observational studies - Missing Data & p-values	<ul style="list-style-type: none"> Amerhein V, Greenland S, McShane B (2019). Scientists rise up against statistical significance. <i>Nature</i>. 567:305-307 Donders A, Rogier T et al (2006). A gentle introduction to imputation of missing values. <i>Journal of Clinical Epidemiology</i>. 59(10):1087 - 1091
	20 Apr 2026	Mid-Session Recess	
8	27 Apr 2026	Module 5: Novel study designs for causal inference - Negative Control Designs	<ul style="list-style-type: none"> Hernán MA, Dahabreh IJ, Dickerman BA, Swanson SA (2025). The target trial framework for causal inference from observational data: Why and when is it helpful? <i>Annals of Internal Medicine</i>. 178(3), 402-407 Lipsitch M, Tchetgen Tchetgen E, Cohen T (2010). Negative controls: a tool for detecting confounding and bias in observational studies. <i>Epidemiology</i>. 21(3):383-388.
9	04 May 2026	Module 5: Novel study designs for causal inference - Sibling Studies	<ul style="list-style-type: none"> Richmond RC, Al-Amin A, Davey Smith G, Relton CL (2014). Approaches for drawing causal inferences from epidemiological birth cohorts: A review. <i>Early Human Development</i>. 90(11):769-80.
10	11 May 2026	Module 5: Novel study designs for causal inference - Instrumental Variables for Causal Inference	<ul style="list-style-type: none"> Widding-Havneraas T and Zachrisson HD (2022). A Gentle Introduction to Instrumental Variables. <i>Journal of Clinical Epidemiology</i>;149:203-205
11	18 May 2026	Module 5: Novel study designs for causal inference - Other Designs	<ul style="list-style-type: none"> Anonymous. Difference-in-Difference Estimation. New York, USA: Colombia Mailman School of Public Health; Available from: https://www.publichealth.columbia.edu/research/population-health-methods/difference-difference-estimation [Accessed 6 January 2026].

			<ul style="list-style-type: none"> Calonico S, Jawadekar N, Kezios K, Zeki Al Hazzouri A (2024). Regression discontinuity design studies: a guide for health researchers, <i>BMJ</i>, 384.
12	25 May 2026	Module 6: Triangulation	<ul style="list-style-type: none"> Lawlor DA, Tilling K, Davey Smith G (2016). Triangulation in aetiological epidemiology. <i>International Journal of Epidemiology</i>. 45(6):1866-1886
	08 Jun 2026	Study Recess	
	13 Jun 2026	Examinations	
	20 Jun 2026	Examinations	

* The above times and program may be subject to change. Students will be notified of any change via SOLS.

Additional Lecture Comments

This subject is comprised of six modules:

1. Module One: Modules of Causation
2. Module Two: Research Questions
3. Module Three: Directed Acyclic Graphs
4. Module Four: Potential bias and critique of typical observational studies
5. Module Five: Novel Study Designs for Causal Inference
6. Module Six: Triangulation

Each module in this subject will be comprised of online video/s and resources on Moodle. There are no in-person lectures (all lecture content is provided online). The videos are complemented by readings, which together form the basis of your learning materials.

There is one tutorial per module, tutorials occur each fortnight starting in week 2. Those enrolled as on-campus "Flexible" students must attend in-person tutorials. Distance mode students are expected to complete tutorial activities in their own time. (See also the **Minimum Requirements to Pass** section below).

Further information about the videos, readings and resources will be available on the Moodle site.

Recording of Teaching and Learning Activities

The University of Wollongong supports the recording of UOW educational content as a supplemental study tool, to provide students with equity of access, and as a technology-enriched learning strategy to enhance the student experience.

If you make your own recording of a lecture, class, seminar, workshop or any other educational session provided as part of your course of study you can only do so with the explicit permission of the lecturer and those people who are also being recorded.

You may only use educational content recorded through the delivery of subject or course content, whether they are your own or recorded by the university, for your own educational purposes. Recordings cannot be altered, shared or published on another platform, without permission of the University, and to do so may contravene the University's Copyright Policy, Privacy Policy, Intellectual Property Policy, IT Acceptable Use Policy and Student Conduct Rules. Unauthorised sharing of recordings may also involve a breach of law under the Copyright Act 1969.

Most lectures in this subject will be recorded, when they are scheduled in venues that are equipped with lecture recording technology and made available via the subject Moodle site within 48 hours.

Your Privacy - Recording of Teaching and Learning

In accordance with the Student Privacy & Disclosure Statement, and Lecture Recording Procedures when undertaking our normal teaching and learning activities, the University may collect your personal information. This collection may occur incidentally during the recording of lectures in equipped venues (i.e. when your identity can be ascertained by your image, voice or opinion), or via the delivery of online content therefore the University further advises students that:

- Lecture recordings are made available to students, university staff, and affiliates, securely via the Learning Platform;
- Recordings are made available only for the purpose for which they were recorded, for example, as a supplemental study tool or to support equity and access to educational resources;

If you have any concerns about the use or accuracy of your personal information collected in a lecture recording, you may approach your Subject Coordinator to discuss your particular circumstances.

The University is committed to ensuring your privacy is protected. If you have a concern about how your personal information is being used or managed, please refer to the University's Privacy Policy or consult our Privacy webpage <https://www.uow.edu.au/privacy/>

Tutorial/Seminar/Workshop Times

The Faculty uses the SMP Online Tutorial System and your class times and locations can be found at <https://www.uow.edu.au/student/timetables/index.html>. Please note that class times on the timetable are provisional and may change.

Tutorial/Seminar/Workshop Program

Where the restrictions require temporary adjustments for delivery and tutorial/seminar/workshop arrangements, any necessary changes will be advised and provided by your Subject Coordinator. Please check Subject Moodle site regularly

Week	Week Commencing	Topics Covered	Readings and Activities
2	09 Mar 2026	Models of causation and PICO	For Distance mode students, all activities are provided online. For Flexible delivery students, the tutorial will be provided on campus.
4	23 Mar 2026	PICO and DAGs	For Distance mode students, all activities are provided online. For Flexible delivery students, the tutorial will be provided on campus.
6	06 Apr 2026	DAGs and bias	For Distance mode students, all activities are provided online. For Flexible delivery students, the tutorial will be provided on campus.
	20 Apr 2026	Mid-Session Recess	
8	27 Apr 2026	Bias and target trial emulation	For Distance mode students, all activities are provided online. For Flexible delivery students, the tutorial will be provided on campus.
10	11 May 2026	More on novel study designs	For Distance mode students, all activities are provided online.

			For Flexible delivery students, the tutorial will be provided on campus.
12	25 May 2026	Triangulation	For Distance mode students, all activities are provided online. For Flexible delivery students, the tutorial will be provided on campus.
	08 Jun 2026	Study Recess	
	13 Jun 2026	Examinations	
	20 Jun 2026	Examinations	

The above program may be subject to change.

Recent Improvements to Subject

The Faculty of Science, Medicine and Health is committed to continual improvement in teaching and learning and takes into consideration student feedback from many sources including, direct student feedback to tutors and lecturers and responses to the Subject and Course Evaluation Surveys. Feedback is also used to inform comprehensive reviews of subjects and courses.

Extraordinary Changes to the Subject Outline

In extraordinary circumstances the provisions stipulated in this Subject Outline may require amendment after the Subject Outline has been distributed. All students enrolled in the subject must be notified and have the opportunity to provide feedback in relation to the amendment, where practicable, prior to the amendment being finalised.

Learning Analytics

Learning Analytics data (such as student engagement with Moodle, access to recorded lectures, University Library usage, task marks, and use of SOLS) may be used by the Subject Coordinator and your faculty's Head of Students to assist in analysing student engagement, and to identify and recommend support for students identified who may be in need of assistance. If you have questions about the kinds of data the University uses, how we collect it, and how we protect your privacy in the use of this data, please refer to

<https://www.uow.edu.au/privacy/>

Section B: Assessment

Assessment Summary

Assessment Item	Form of Assessment	%
Assessment 1	Quiz	30%
Assessment 2	Report	30%
Assessment 3	Assignment	40%
	TOTAL MARKS	100%

Please note: Copies of student work may be retained by the University in order to facilitate quality assurance of assessment processes.

Assessment 1: Quiz - Online Quizzes

Marking Criteria	There will be three quizzes. Each quiz is worth 10% of your overall grade (30% in total). Quizzes will include approximately 10 multiple-choice, matching, numerical or short-answer questions. One mark will be awarded for each correct answer. Quizzes will be completed during tutorial times for on-campus (flexible) delivery and by the corresponding Sunday evening for distance mode students.
Length	20 minutes per quiz.
Weighting	30%
Assessment Due	23 Mar 2026 (In your assigned tutorial in Session Week 4) 28 Apr 2026 (In your assigned tutorial in Session Week 8) 25 May 2026 (In your assigned tutorial in Session Week 12) Final submission time: 11:30pm
Type of Collaboration	Individual assessment
Style and format	The quizzes will be opened and completed online, during class time (for on-campus students) and by 11:30pm Sunday (for distance mode students).
Generative AI use	Generative AI is not permitted for this assessment. The purpose of the quizzes are to assess your own understanding of causal inference concepts in epidemiology.
Assessment submission	Online via Moodle
Assessment return	Via Moodle
Detailed information	<p>Quiz 1 will be based on the material included in Module One (Modules of Causation) and Module Two (Research Questions). For flexible mode students, the quiz will be completed in the week 4 tutorial and for distance mode students by Sunday 11:30pm at the end of week 4.</p> <p>Quiz 2 will be based on the material included in Module Three (Directed Acyclic Graphs) and Module Four (Potential bias and Critique of Typical Observational Studies). For flexible mode students, the quiz will be completed in the week 8 tutorial and for distance mode students by Sunday 11:30pm by the end of week 8.</p> <p>Quiz 3 will be based on the material included in Module Five (Novel Study Designs for Causal Inference) and Module Six (Triangulation). For flexible mode students, the quiz will be completed in the week 12 tutorial and for distance mode students by Sunday 11:30pm at the end of week 12.</p>

Assessment 2: Report - Research Questions and DAGs

Marking Criteria	A marking rubric will be provided on the Moodle site.
Length	This assessment does not have a 'traditional' length. Instead, you will define PICO, write a research question, provide two images of directed acyclic graphs (DAGs), and a critique of your DAG compared with a published article that will be provided.
Weighting	30%
Assessment Due	08 Apr 2026 (Wednesday in Session Week 6) Final submission time: 11:30pm
Type of Collaboration	Individual assessment
Style and format	Students will be required to submit their report via Turnitin. Formatting instructions will be provided on the Moodle site. Briefly, formatting requirements include: <ul style="list-style-type: none"> • Font size 11 point, Calibri or Times New Roman style • Double-spaced paragraphs • Page margins at 2 cm on all sides
Generative AI use	<p>Generative AI tools (e.g. copilot, ChatGPT, claude) are permitted for this assessment. However, their use is not necessary and strongly discouraged. You must submit your own work.</p> <p>The purpose of this assessment is to demonstrate your (i) understanding of causal inference concepts, and (ii) competence in formulating and identifying specific causal research questions. Reliance on generative AI undermines the acquisition of these skills by limiting critical reasoning, judgment, and methodological practice.</p> <p>Permitted Uses:</p> <ul style="list-style-type: none"> • Brainstorming and planning • Structuring your report (e.g. organising sections logically) • Editing and proofreading your report for clarity and grammar <p>Prohibited Uses:</p> <ul style="list-style-type: none"> • Generating substantive content (e.g. creating DAGs, writing critique) <p>Acknowledgement Requirement: All submissions must include a Generative AI Statement disclosing whether or not you used Gen AI. If you use Gen AI:</p> <ul style="list-style-type: none"> • Specify which tools were used, why, and how • Maintain complete records of all Gen AI interactions and working drafts of your report. These may be requested by the subject coordinator to verify the extent of independent work
Assessment submission	<p>Online via Moodle</p> <p>This assessment task has been set up to be checked by Turnitin, a tool for checking if it has unreferenced content. You can submit your assessment task to Turnitin prior to the due date and Turnitin will give you an originality</p>

	report. You can then make any changes that may be required and re-submit your final version by the due date.
Assessment return	Via Moodle.
Detailed information	<p>You will be provided with a published research article from which you will be required to identify the PICO criteria and write out the research question in full.</p> <p>You will then construct two DAGs using DAGitty. The first DAG will be drawn from information presented in the published study only. This is the DAG that is implied by the authors' analysis. You will assume that any variables described as adjustment factors were conceptually thought of as confounders by the authors. (Hint: Remember to draw the arrows as confounders.)</p> <p>For the second DAG, you must keep the same exposure and outcome, but you will construct the DAG based on your own ideas about the research question and the confounding structure. In other words, the second DAG will be based on your own thinking about the topic. You are free to include different variables that you deem relevant and draw arrows in the direction that is plausible and logical to you.</p> <p>In the final section of the report you will include an explanation of the similarities and differences in the variables included in the DAG that you prepared from the DAG based on the published article, and critique the findings of the published article on the potential for bias (based on your DAG). This is an opportunity to explain your thinking about the research question. The final sentence for this section should include your recommendation for the final adjustment set to minimise bias due to confounding. The written component can be up to 300 words.</p> <p>You may reference your report. The references should support your claims for including other variables or for the direction of arrows. Please note though, that simply referencing another paper to say they adjusted for a variable is not a sufficiently strong justification for a variable to be included in your DAG. The reference list is not included in the word count.</p>

Assessment 3: Assignment - Novel Study Designs

Marking Criteria	A marking rubric will be provided on the Moodle site.
Length	Word limits will apply to each question. Any words over the limit will not be read and assessments not adhering to the word limit will be penalised.
Weighting	40%
Assessment Due	01 Jun 2026 (Monday in Session Week 13) Final submission time: 11:30pm
Type of Collaboration	Individual assessment
Style and format	<p>Assignments will be submitted via Turnitin. Please adhere to formatting requirements (more details will be provided on Moodle), including</p> <ul style="list-style-type: none"> • Size 11-point font Calibri or Times New Roman style • Double-spaced paragraphs • Page margins at 2 cm on all sides
Generative AI use	Generative AI tools (e.g. copilot, ChatGPT, claude) are permitted for this assessment. However, their use is not necessary and strongly discouraged . You must submit your own work.

	<p>The purpose of this assessment is to evaluate evidence of causal relationships from observational research designs. Reliance on Generative AI for this task undermines the acquisition of these skills by limiting critical reasoning, judgment, and methodological practice.</p> <p>Permitted Uses:</p> <ul style="list-style-type: none"> • Brainstorming and planning • Structuring your report (e.g. organising sections logically) • Editing and proofreading your report for clarity and grammar <p>Prohibited Uses:</p> <ul style="list-style-type: none"> • Generating substantive content (e.g. creating DAGs, writing critique) <p>Acknowledgement Requirement: All submissions must include a Generative AI Statement disclosing whether or not you used GenAI. If you use GenAI:</p> <ul style="list-style-type: none"> • Specify which tools were used, why, and how • Maintain complete records of all GenAI interactions and working drafts of your report. These may be requested by the subject coordinator to verify the extent of independent work
Assessment submission	<p>Online via Moodle</p> <p>This assessment task has been set up to be checked by Turnitin, a tool for checking if it has unreferenced content. You can submit your assessment task to Turnitin prior to the due date and Turnitin will give you an originality report. You can then make any changes that may be required and re-submit your final version by the due date.</p>
Assessment return	<p>Students may request feedback from the subject coordinator after the release of grades.</p>
Detailed information	<p>Students will be provided with two published studies, one of which will have a typical observational design, and the other will have a novel observational design. Students will be required to complete some short answer questions that involve identifying key features of the studies such as the PICO, research question and the DAG implied by the analysis in the typical observational design. Students will critique the typical design for major sources of bias [200 words] and explain which issues the novel design will be able to overcome [50 words]. Students will contrast the findings between both studies and write a short commentary on the strengths and weaknesses of the different designs [400 words]. Finally, students will critique which results they deem more trustworthy [200 words].</p>

Minimum Requirements to Pass this Subject

Student attendance supports learning and achievement and is strongly encouraged in all classes. As a minimum requirement of this subject, those enrolled as on-campus "flexible" students must attend at least 80% of face-to-face tutorial classes. Attendance will be recorded. If attendance is affected due to compassionate, compelling, or extenuating circumstances an academic consideration application should be lodged via SOLS and supporting documentation, for example a Medical Certificate, submitted as soon as practical. For further details about applying for academic consideration visit the Student Central webpage:

<http://www.uow.edu.au/student/central/academicconsideration/index.html>

To receive a clear pass in this subject a total mark of 50% or more must be achieved. In addition, failure to meet any of the minimum performance requirements is grounds for awarding a Technical Fail (TF) in the subject, even where total marks accumulated are greater than 50%. The minimum performance requirements for this subject are:

- attempt all assessment tasks
- meet the minimum attendance requirements

Hurdle Assessment

Subjects may include a hurdle assessment. A hurdle assessment is an assessment that requires a minimum level of performance as a condition for passing the subject. Examples include, achievement of a pass grade or above in a skills-based assessment or final examination. Hurdle assessments are applied to subjects to ensure students:

1. meet learning outcomes
2. demonstrate you can complete a task safely and/or meet professional standards.

For more on hurdle assessments see the Assessment and Feedback Policy [Section 8: Hurdle Assessments \(50-51-52\)](#).

Failure to meet a hurdle assessment requirement may constitute grounds for the award of a Technical Fail (TF) grade in this subject.

Should this subject contain a hurdle assessment, it will be stated under the specific assessment in Section B: Assessments.

UOW Grade Descriptors

The UOW Grade Descriptors are general statements that communicate what our grades represent, in terms of standards of performance, and provide a frame of reference to ensure that assessment practice across the University is appropriate, consistent and fair. Grade Descriptors are expressed in general terms so that they are applicable to a broad range of disciplines. Grade Descriptors are available here <https://www.uow.edu.au/student/exams/results/>. For more information on the UOW grade descriptors refer to the Teaching and Assessment: Assessment and Feedback Policy: [Teaching and Assessment: Assessment and Feedback Policy](#)

Assessment Learning Outcome Matrix

Learning Outcomes	Measures - Assessment weighting		
	Online Quizzes	Research Questions and DAGs	Novel Study Designs
	(30%)	(30%)	(40%)
Explain key elements of the potential outcomes model of causation.	✓	✓	✓
Use causal inference principles to write and critique research questions of interest to public health.	✓	✓	✓
Create a directed acyclic graph and identify causal and potentially biasing paths.	✓	✓	✓
Critically evaluate observational study designs, their limitations and advantages.	✓		✓
Describe the concept of triangulation in observational epidemiology and how it may be applied to the study of causes.	✓		✓

Submission, Retention and Collection of Written Assessment

Assessed work must be handed in by the date and time listed under each assessment task. All assessment tasks must represent the enrolled student's own ORIGINAL work and must not have been previously submitted for assessment in any formal course of study.

Extensions

Students requesting an extension of time to submit an assessment task, deferred exam or exemption of a compulsory attendance requirement, must apply using Academic Consideration through SOLS. Students must apply before, or on the assessment/s due date and where evidence is required, students must provide evidence no later than three working days after the assessable item's due date for their request to be considered. **For information on the Academic Consideration Policy, eligibility requirements and how to apply, see: <https://www.uow.edu.au/student/admin/academic-consideration/>**

Late Submission of Assessment Tasks and Penalties

Assessed work must be submitted in by the date and time given. If an assessment is submitted late, it will be marked in the normal way, and a penalty will then be applied.

In the absence of an approved request for Academic Consideration in the form of an extension, assessment tasks must be submitted in line with the assessment instructions.

- An assessment task that is submitted late will receive a penalty of 5% of the total possible marks for each 24-hour period, or part thereof, that it is late.
- Work submitted after seven calendar days will not be marked and will be given a mark of 0.
- No assessment task can be handed in for a mark once the assessment task has been returned to students.
- Penalties accrue on each day that the assessment task is late, including Saturday, Sunday and public holidays

Note: Assessments must still be submitted to meet minimum performance requirements even though no mark is to be awarded.

Collection

Students will be notified when they can collect or view their marked assessment. In accordance with University Policy marked assessments will usually only be held for 21 days after the declaration of marks for that assessment.

Retention

The university may retain copies of student work in order to facilitate quality assurance of assessment processes, in support of the continuous improvement of assessment design, assessment marking and for the review of the subject. The University retains records of students' academic work in accordance with the University Records Management Policy and the State Records Act 1988 and uses these records in accordance with the University Privacy Policy and the Privacy and Personal Information Protection Act 1998.

Scaling

Marks awarded for any assessment task or part of any assessment task, including an examination may be subject to scaling at the end of the session. Marks will be scaled only when unpredicted circumstances occur and in order to ensure fairness of marking across groups of students. The method of scaling will depend on the type of scaling required by the circumstances. When scaling is deemed necessary, it will follow a detailed consideration by the Unit Assessment Committee and/or the Faculty Assessment Committee of the marks of the group of students concerned. Scaling will not affect any individual student's rank order within their cohort. For more information please refer to [Finalisation of Student Results Policy](#) for details.

Supplementary Assessment

Supplementary assessment may be offered to students whose performance in this subject is close to that required to pass the subject and are otherwise identified as meriting an offer of a supplementary assessment. For information about eligibility criteria and the form and timing of supplementary assessments see the [Supplementary Assessment Procedure](#)

Review and Appeal of Academic Decisions

A student may request an explanation of a mark for an assessment task or a final grade for a subject consistent with the student's right to appropriate and useful feedback on their performance in an assessment task. A student may also seek further explanation for other academic decisions such as Academic Consideration, Supplementary Assessment or Credit for Prior Learning. If a student is not satisfied with the explanation, or have further concerns, they may have grounds for a formal review. For further information refer to [Review and Appeal of Academic Decisions Policy](#)

Assessment Quality Cycle

The UOW Assessment Quality Cycle provides a level of assurance that assessment practices across the University are appropriate, consistent and fair. Quality assurance activities are undertaken to support the continuous improvement of assessment and promote good practices in relation to assessment design, marking and review of the subject prior to subsequent delivery.

Academic Integrity

The University's Academic Integrity Policy, faculty handbook and subject guides clearly set out the University's expectation that students submit only their own original work for assessment and avoid plagiarising the work of others or cheating. Re-using any of your own work (either in part or in full) which you have submitted previously for assessment is not permitted without appropriate acknowledgement. Plagiarism can be detected and has led to students being expelled from the University.

The use by students of any website that provides access to essays or other assessment items (sometimes marketed as 'resources'), is extremely unwise. Students who provide an assessment item (or provide access to an assessment item) to others, either directly or indirectly (for example by uploading an assessment item to a website) are considered by the university to be intentionally or recklessly helping other students to cheat. Uploading an assessment task, subject outline or other course materials without express permission of the University is considered academic misconduct and students place themselves at risk of being expelled from the University.

Students should visit the following University website and become familiar with the University's policy on plagiarism [Academic Integrity Policy](#)

Referencing

The Author-Date (Harvard) referencing system should, unless otherwise specified for a particular assessment (check Details of Assessment Tasks), be utilised. A summary of the Harvard system can be accessed on the Library website at: <http://uow.libguides.com/refcite>

Section C: General Advice for Students - Policies and Procedures

Student Services and Support

There are a range of services available to students that are provided free of charge. A good place to get to know services that may be of use to you is the [Get Started @ UOW](#) or search for "Get Started @ UOW". Services available include:

Service	Link to information about the service
Aboriginal & Torres Strait Islander	https://www.uow.edu.au/about/services/woolyungah-indigenous-centre/about-us/
Careers advice	https://www.uow.edu.au/student/careers/
Counselling	https://www.uow.edu.au/student/support-services/counselling/
Student Accessibility and Inclusion (SAI)	https://www.uow.edu.au/student/support-services/sai/
Information Tech.	https://www.uow.edu.au/its/index.html?ssSourceSiteId=getstarted
Study Skills	https://www.uow.edu.au/student/support-services/academic-skills/

Student Support Coordinator (SSC)

If you have a temporary or ongoing issue or a problem that is affecting your study, including issues that are related to belonging to an equity group, then the Student Support Coordinators may be able to help. There are Student Support Coordinators available to assist students who are studying at all UOW Campuses and in all UOW Faculties. Contact details can be found on the UOW website: <https://www.uow.edu.au/student/support-services/coordinators/>

Student Advocacy Service

The Student Advocacy Service (SAS) is free, confidential and independent service for all UOW students. The SAS provides advocacy and referral for a range of academic, procedural and administrative issues. For more information visit: <https://www.uow.edu.au/student/support-services/advocacy/>

AskUOW

AskUOW is your primary administrative and information contact during your studies.

Our purpose is to ensure students have access to the information they need, at the time they need it. We can help with a wide range of enquiries, including key topics such as:

- Applying for [academic consideration](#)
- Fees and scholarships
- Official documentation and student letter requests
- Student forms such as course transfer and leave of absence applications
- Student ID card issuance and replacement
- Subject enrolment
- Transport concession cards and Opal cards
- Updating personal details

Get instant answers 24/7 online using [AskUOW](#). Log in with your UOW username and password.

For further support contact askuow@uow.edu.au or call on 1300 275 869 (1300 ASK UOW) or +61 2 4221 3927.

Library Services

Save yourself time and enhance your studies: connect with information specialists and resources anytime, anywhere.

- For Library support connect with [Live Chat](#) or [contact the Library](#).
- For self-help see [Frequently Asked Questions](#) or browse [Library guides](#) to find information, databases and skills tutorials.
- [Research consultations](#) are available to UOW Postgraduate, Honours and Deans Scholar students.

Academic Integrity Policy

Academic integrity involves upholding ethical standards in all aspects of academic work, including learning, teaching and research. It involves acting with the principles of honesty, fairness, trust and responsibility and requires respect for knowledge and its development. The Policy can be found at:

<https://policies.uow.edu.au/document/view-current.php?id=26>

Code of Practice - Research

This Code mandates the current policy and best practice relating to procedures for responsible research. The Code can be found at: <https://policies.uow.edu.au/document/view-current.php?id=11>

Honours Policy

This policy sets out the responsibilities of all parties involved in managing students undertaking Honours Programs. The Code can be found at: <https://policies.uow.edu.au/document/view-current.php?id=36>

The Code of Practice - Work Integrated Learning (Professional Experience)

The Code of Practice - Work Integrated Learning (Professional Experience) sets out what is expected from students, the University and Host Organisations in providing work integrated learning professional experience programs. It applies to professional experience programs that form the whole or part of a subject or course offered at the University. The Code assists in promoting a productive work integrated learning experience for students and in promoting relevant UOW Work Integrated Learning Design Principles.

<https://policies.uow.edu.au/document/view-current.php?id=12>

Copyright Policy

The purpose of this Policy is to outline responsibilities and procedures regarding the use of third party copyright material, with the objectives of reducing staff and UOW exposure to the risks associated with the use of third party copyright material, assisting staff to make full legal use of the materials at their disposal by clearly identifying responsibilities and promoting copyright compliance. The Policy can be found at:

<https://policies.uow.edu.au/document/view-current.php?id=135>

Course Progress Policy

The Course Progress Policy establishes the requirements, definitions and procedures to be used in determining the standards of acceptable course progress. The Policy can be found at:

<https://policies.uow.edu.au/document/view-current.php?id=30>

Examination Rules and Procedures

The UOW rules and procedures outline exam conditions, student conduct in exams, and the procedures for exam management. Further information can be found here: <https://www.uow.edu.au/student/exams/>

Ethical Objection by Students to the Use of Animal and Animal Products in Coursework Subjects

This policy provides a framework for recognition of and responses to students' ethical or religious objection to animal use in coursework subjects at the University of Wollongong. For the purpose of this policy, animal use includes killing of animals in experimental work, dissection of animals that are already dead, use of animal tissues, use of animal-derived products (such as sera). These uses are relevant to teaching and assessment. Further information about this policy can be found here: <https://policies.uow.edu.au/document/view-current.php?id=154>

Coursework Rules

The Coursework Rules (hereafter the Rules) govern the admission, enrolment, progression through, and qualification for a coursework award offered by the University. Further information can be found here: <https://policies.uow.edu.au/document/view-current.php?id=4>

Human Research Ethics

The Human Research Ethics Committee protects the welfare and rights of the participants in research activities. Further information can be found here: <https://www.uow.edu.au/research-and-innovation/researcher-support/ethics/human-ethics/>

Inclusive Language Guidelines

UOW endorses a policy of non-discriminatory language practice in all academic and administrative activities of the University. Further information is available from: <https://policies.uow.edu.au/document/view-current.php?id=239>

Intellectual Property Policy

UOW's IP Intellectual Property Policy provides guidance on the approach taken to Intellectual Property (IP), including its ownership, protection and exploitation. Further information about the management of IP is available at <https://policies.uow.edu.au/document/view-current.php?id=146>

Review and Appeal of Academic Decisions Policy

UOW aims to provide a transparent and consistent process for resolving a student concern about an academic decision that has affected their academic progress, including a mark or grade. Further information is available at: <https://policies.uow.edu.au/document/view-current.php?id=40>

Student Academic Consideration Policy

The purpose of the Student Academic Consideration Policy is to enable student requests for academic consideration for assessable components of a subject to be evaluated in a fair, reasonable, timely and consistent manner throughout the University. **For information on the Policy, eligibility and how to apply see:** <https://www.uow.edu.au/student/admin/academic-consideration/>

The Student Charter - Your Rights and Responsibilities

The Student Charter is based on principles that guide all members of the University and that promote responsible partnerships within and beyond the University community. <https://www.uow.edu.au/student/charter/>

Student Assignment of Intellectual Property (IP) Policy

This policy applies to all Students (under-graduate and post-graduate) of the University of Wollongong (UOW). It may also apply to other persons by agreement. This policy sets out the approach taken by UOW in relation to

Student assignment of intellectual property. Further information about this policy can be found here: <https://policies.uow.edu.au/document/view-current.php?id=146>

Student Conduct Rules

These Rules outline the required conduct of students of UOW, and direct staff and students to University Rules, standards, codes, policies, guidelines, procedures and other requirements which specify acceptable and unacceptable student conduct, and the management of alleged student misconduct. <https://policies.uow.edu.au/document/view-current.php?id=6>

Teaching and Assessment: Assessment and Feedback Policy

The purpose of this Policy is to set out the University of Wollongong's approach to effective learning, teaching and assessment, including the principles and minimum standards underlying teaching and assessment practice. The Policy can be found at: <https://policies.uow.edu.au/document/view-current.php?id=38>

Teaching and Assessment: Code of Practice - Teaching

This Code is a key document in implementing the University's Teaching and Assessment Policy and sets out the specific responsibilities of parties affected in relation to learning, teaching and assessment, as well as procedures for teaching staff. The Code can be found at: <https://policies.uow.edu.au/document/view-current.php?id=9>

Teaching and Assessment: Subject Delivery Policy

This Policy sets out specific requirements in relation to the delivery of Subjects. The policy can be found at: <https://policies.uow.edu.au/document/view-current.php?id=39>

Workplace Health & Safety Policy

The Workplace Health and Safety (WHS) unit at UOW aims to provide structures, system and support to ensure the health, safety and welfare of all at the campus. Further information is available from: <https://policies.uow.edu.au/document/view-current.php?id=177>