



UNSW Course Outline

PHCM2002 Biostatistics - 2024

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General Course Information

Course Code : PHCM2002

Year : 2024

Term : Term 2

Teaching Period : T2

Is a multi-term course? : No

Faculty : Faculty of Medicine and Health

Academic Unit : School of Population Health

Delivery Mode : Multimodal

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

This course is offered in two modes: either face to face (on campus) and fully online

Biostatistics is an introductory course to statistical methods used in the healthcare field. This course introduces students to the quantitative methods that are the cornerstone of public health research and evidence-based public health policy and practice. Students will learn about the

principles of statistical reasoning, underlying assumptions, and methods to analyze and interpret data.

Course Aims

This course develops understanding of, and skills in, the core concepts of statistics, a foundation discipline needed for the collection, analysis and interpretation of health data. Knowledge and skills in biostatistics is central to becoming a public health practitioner as the concepts and techniques developed in the course (along with PHCM2001 Epidemiology) are fundamental to studying and practice in public health. Students will develop skills and understanding of basic statistical analysis methods, with hands-on experience analysing epidemiological data using statistical software. While there are some computational elements to the course, the aim of this course is to enable students to apply appropriate statistical techniques in the analysis of public health data and interpreting the results.

Relationship to Other Courses

Assistance with progression checking:

If you are unsure how this course fits within your program, you can seek guidance on optimising your program structure from staff at the [Nucleus Student Hub](#).

Progression plans for UNSW Medicine and Health programs can be found on the [UNSW Medicine & Health website](#).

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Demonstrate understanding of statistical inference and confidence intervals, and recognise the appropriate statistical test of significance for different types of variables.
CLO2 : Use statistical software to summarise features of data graphically and numerically, perform t-tests, chi-squared test, correlation and simple linear regression, and interpret and make appropriate conclusions about computer output of these tests appropriately.
CLO3 : Demonstrate an understanding of the importance of collecting, managing, and presenting health data
CLO4 : Determine the clinical and practical significance of research findings

Course Learning Outcomes	Assessment Item
CLO1 : Demonstrate understanding of statistical inference and confidence intervals, and recognise the appropriate statistical test of significance for different types of variables.	<ul style="list-style-type: none">• Peer feedback task• Data analysis report• Data analysis report
CLO2 : Use statistical software to summarise features of data graphically and numerically, perform t-tests, chi-squared test, correlation and simple linear regression, and interpret and make appropriate conclusions about computer output of these tests appropriately.	<ul style="list-style-type: none">• Peer feedback task• Data analysis report
CLO3 : Demonstrate an understanding of the importance of collecting, managing, and presenting health data	<ul style="list-style-type: none">• Data analysis report• Peer feedback task• Data analysis report
CLO4 : Determine the clinical and practical significance of research findings	<ul style="list-style-type: none">• Data analysis report• Peer feedback task• Data analysis report

Learning and Teaching Technologies

Moodle - Learning Management System | Microsoft Teams

Learning and Teaching in this course

All course materials and course announcements are provided on the course learning management system, Moodle (or Open Access).

By accessing and using the ICT resources provided by UNSW, you are agreeing to abide by the ['Acceptable Use of UNSW ICT Resources'](#) policy particularly on respect for intellectual property and copyright, legal and ethical use of ICT resources and security and privacy.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Peer feedback task Assessment Format: Individual	20%	Start Date: TASK 1: released week 1. TASK 2: released week 7 Due Date: TASK 1: submit week 3, peer feedback week 4. TASK 2: submit week 9, peer feedback week 10.
Data analysis report Assessment Format: Individual Short Extension: Yes (2 days)	40%	Start Date: Released week 4 Due Date: 08/07/2024 10:00 AM
	40%	Start Date: Released week 9 Due Date: 12/08/2024 10:00 AM

Assessment Details

Peer feedback task

Assessment Overview

You will complete short tasks relevant to data analysis, for example creating and describing a plot. You will then provide feedback to a small number of your peers by assessing their submissions against a rubric. You will be assessed on the quality of the feedback you provide to your peers.

This assessment will occur twice during the term, including before census, in preparation for the larger data analysis reports. Individual feedback will be provided within 10 working days of submission.

Course Learning Outcomes

- CL01 : Demonstrate understanding of statistical inference and confidence intervals, and recognise the appropriate statistical test of significance for different types of variables.
- CL02 : Use statistical software to summarise features of data graphically and numerically, perform t-tests, chi-squared test, correlation and simple linear regression, and interpret and make appropriate conclusions about computer output of these tests appropriately.
- CL03 : Demonstrate an understanding of the importance of collecting, managing, and presenting health data
- CL04 : Determine the clinical and practical significance of research findings

Detailed Assessment Description

Throughout the term, you will complete two short tasks that focus on essential skills for the larger data analysis report. Examples of the types of tasks you may be asked to complete include generating a plot using software or explaining a statistical result to a specific audience.

You will then review submissions from your peers and provide feedback.

Each task consists of 2 steps:

Step 1: Complete the task as per instructions and submit to Moodle.

Step 2: Evaluate the submissions of three peers against a marking guide. Your feedback will focus on identifying strengths and areas for improvement, without assigning grades. The quality of your feedback will be assessed by the course convenor.

You will have the opportunity to review the feedback provided by your peers on your submission and incorporate their suggestions into your larger data analysis reports.

Detailed information about this assessment will be provided on the course Moodle page.

Note: Due to the timing of submission and peer review, extensions are not possible for this assessment.

Submission notes

This task does not have a short extension option. Please refer to Moodle for detailed submission information.

Assignment submission Turnitin type

This is not a Turnitin assignment

Data analysis report

Assessment Overview

You will be presented with a real-world scenario and accompanying data, which you will analyse using statistical software. You will communicate your findings in a report. This assessment is due after flexibility week. Individual feedback will be provided within 10 working days.

Course Learning Outcomes

- CL01 : Demonstrate understanding of statistical inference and confidence intervals, and recognise the appropriate statistical test of significance for different types of variables.
- CL03 : Demonstrate an understanding of the importance of collecting, managing, and presenting health data
- CL04 : Determine the clinical and practical significance of research findings

Detailed Assessment Description

The purpose of this assessment is to apply the concepts and methods covered in weeks 1

through to 5 of this course to research questions using real-world data. Analysing data using statistical software, interpreting the results, and communicating the findings are fundamental skills in public health. Conducting an analysis is an iterative process which involves critical reflection of your methods, choices and knowledge gaps. This assessment has been designed to help build these skills.

Detailed information about this assessment will be provided on the course Moodle page.

Submission notes

Refer to Moodle for submission information.

Assignment submission Turnitin type

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

Data analysis report

Assessment Overview

You will be presented with a real-world scenario and accompanying data, which you will analyse using statistical software. You will communicate your findings in a report. This assessment is due at the end of the term. Individual feedback will be provided within 10 working days.

Course Learning Outcomes

- CLO1 : Demonstrate understanding of statistical inference and confidence intervals, and recognise the appropriate statistical test of significance for different types of variables.
- CLO2 : Use statistical software to summarise features of data graphically and numerically, perform t-tests, chi-squared test, correlation and simple linear regression, and interpret and make appropriate conclusions about computer output of these tests appropriately.
- CLO3 : Demonstrate an understanding of the importance of collecting, managing, and presenting health data
- CLO4 : Determine the clinical and practical significance of research findings

Detailed Assessment Description

In this assessment you will apply the methods covered in this course to real-world scenarios. Analysing data using statistical software, interpreting the results, and communicating the findings are fundamental skills in public health. Conducting an analysis is an iterative process which involves critical reflection of your methods, choices and knowledge gaps. This assessment has been designed to help build these skills.

Detailed information about this assessment will be provided on the course Moodle page.

Submission notes

Refer to Moodle for submission information

Assignment submission Turnitin type

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

General Assessment Information

Detailed instructions regarding assessments for this course are provided on the course Moodle page.

For student information on results, grades, and guides to assessment see: <https://student.unsw.edu.au/assessment>

Adopting a critical approach to your assignments

It is important that you adopt a critical approach to the material that you source for assignments, to the required readings, and to other resources you are presented with during the course. Think about and evaluate the material which you are reading and which you are presenting in assignments. Attempt to cast aside your assumptions and biases and attempt to assess the logic and consistency of the material in light of the supporting evidence. Wide reading on a topic facilitates this.

Referencing

School of Population Health requires students to use either APA or Vancouver referencing styles for all assignments for this course.

It is your responsibility to learn either APA or Vancouver referencing and use it consistently to acknowledge sources of information (citing references). Failure to reference correctly may limit marks to PS or below. Guidelines for acknowledging sources of information can be found on the following websites:

- UNSW Library: <http://subjectguides.library.unsw.edu.au/elise>
- UNSW Academic Skills and Support: <https://student.unsw.edu.au/skills>

Word limits

All word limits are to be strictly adhered to (i.e. there is no 10% leeway). Word limits include all text (e.g. headings, title, main text) and exclude tables and figures, in-text citations (if you are

using APA) and reference lists. Exceptions may apply. Please refer to your individual task description for exceptions.

Turnitin

All written assessment tasks in courses in the School of Population Health use Turnitin. Turnitin is a similarity and generative AI detection software that enables assignments to be checked against the submitted assignments of other students using Turnitin, as well as the internet. If you are unfamiliar with the Turnitin software, a demonstration can be found at: <https://student.unsw.edu.au/turnitin>

Originality and Generative AI reports

In School of Population Health courses, access to the originality report of your submission through Turnitin is available to you. Students do not have access to the Generative AI report.

In School of Population Health courses, you are permitted to resubmit until the assignment due date (each file uploaded overwrites the previous version). This will help you in self-reviewing and revising your submission until the due date. **No resubmissions will be allowed after the due date and time of the assignment.** Therefore, draft assignments submitted in this way will be regarded as the final version at the due date if you have not uploaded a subsequent, finalised version.

IMPORTANT: there are delays in the availability of subsequent Originality reports. For more details, see <https://www.student.unsw.edu.au/turnitin>

Grading and feedback

You will be provided with feedback on your assignment via Moodle. You will be marked according to the marking assessment criteria listed for that specific assessment task. The aim of any academic feedback for an assessment task is not only to grade your work. Importantly, it is also to help you to identify your strengths and weaknesses, and how you can improve and progress in your studies and professional abilities.

In addition to feedback, you will receive a mark that reflects the overall quality of the work you have submitted across the marking criteria. The marking criteria for assessments in this course are provided on Moodle.

Please note these grading criteria are:

- Not intended to be a **rigid formula** for interpreting your result. The descriptive criteria for each

grade provides the basis for consistent standards within and across our courses while still embracing academic judgement on how well you have achieved the standard required.

- Applied to **each assessment** task within a course. That is, the grading policy is used with each assessment task specified for a course. Your final grade for a course is dependent on the combined sum of the grades across the number of specified assessment tasks.
- Based on a **criterion-referenced assessment**. That is grades are awarded on how well a student meets the standard required for a particular assessment task, not on how well they do compared to other students in the course.

Feedback on assessment and review of results

If you believe the mark you've received for an assessment task doesn't reflect your performance you should first check you have grounds to seek a review: <https://student.unsw.edu.au/results>

In the first instance, you should discuss your performance with your Course Convenor. In your communication, you should clearly outline the reasons you are seeking clarification and do so against the marking criteria for the assessment.

Students may also formally apply to have their results reviewed. An application, which includes a justification for the review must be submitted through The Nucleus (<https://student.unsw.edu.au/results>) **within 5 days** of receiving the result. A review of results may result in an increase or decrease in marks.

Grading Basis

Standard

Requirements to pass course

In order to pass this course students must:

- Achieve a composite grade of at least 50 out of 100
- Meet any additional requirements specified in the assessment details section and on Moodle.

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 27 May - 2 June	Module	Module 1: Presenting Data
Week 2 : 3 June - 9 June	Module	Module 1: Presenting Data
Week 3 : 10 June - 16 June	Module	Module 2: Precision and confidence intervals
Week 4 : 17 June - 23 June	Module	Module 3: Analysing continuous outcomes
Week 5 : 24 June - 30 June	Module	Module 3: Analysing continuous outcomes
Week 6 : 1 July - 7 July	Other	Flexibility week
Week 7 : 8 July - 14 July	Module	Module 4: Analysing categorical outcomes
Week 8 : 15 July - 21 July	Module	Module 4: Analysing categorical outcomes
Week 9 : 22 July - 28 July	Module	Module 5: Correlation and linear regression
Week 10 : 29 July - 4 August	Module	Module 6: Analysing non-normal data

Attendance Requirements

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

General Schedule Information

The times and locations of classes can be found on [myUNSW](#) under Class Timetable.

Students enrolled in online courses should also refer to Moodle as some classes are not centrally timetabled (e.g., workshops) and will not appear on the timetable website.

The expected engagement for all UNSW 6UOC courses is 150 hours per term. This includes lectures, tutorials, readings, and completion of assessments and exam preparation (if relevant).

Course Resources

Prescribed Resources

JAMOVİ: In this course we will use the statistical software Jamovi. This software is free for students to download and install on their personal computers. Instructions for installing and using Jamovi will be provided on Moodle.

Recommended Resources

If you wish to supplement the content we provide in this course, we recommend the following text and have aligned appropriate chapters to the Modules (see Moodle). The text is available as an e-book through the UNSW library:

- Kirkwood BR, Sterne JAC (2003). Essential medical statistics, 2nd edition. Blackwell

Science. [UNSW Library Link](#)

ENDNOTE: As a UNSW student Endnote is freely available to you. If you don't already use Endnote you are recommended to download it and learn it now: <https://www.myit.unsw.edu.au/software-students>

You can find details about Endnote training here: <https://www.library.unsw.edu.au/research/support-for-your-research/managing-references>

Additional Costs

There are no additional costs associated with this course.

Course Evaluation and Development

Student feedback is taken seriously, and continual improvements are made to the course based, in part, on such feedback.

We use student feedback from myExperience surveys to develop and make improvements to the course each year. We do this by identifying areas of the course that require development from both the rating responses and written comments. Please spare a few minutes to complete the myExperience surveys for this course posted at the top of the Moodle page at the end of term.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Lecturer	Katrina Blazek				Monday to Friday 8am to 4pm (Sydney time). Email for appointment	Yes	Yes

Other Useful Information

Academic Information

As a student of UNSW Medicine & Health you are expected to familiarise yourself with the contents of this course outline and the UNSW Student Code and policies and procedures related to your studies.

Student Code of Conduct

Throughout your time studying at UNSW Medicine & Health, you share a responsibility with us for maintaining a safe, harmonious and tolerant University environment. This includes within the courses you undertake during your degree and your interactions with the UNSW community, both on campus and online.

The [UNSW Student Code of Conduct](#) website provides a framework for the standard of conduct expected of UNSW students with respect to both academic integrity and your responsibility as a UNSW citizen.

Where the University believes a student may have breached the code, the University may take disciplinary action in accordance with the [Student Misconduct Procedure](#).

The [Student Conduct and Integrity Office](#) provides further resources to assist you to understand your conduct obligations as a student at UNSW.

Academic Honesty and Plagiarism

Academic integrity

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 the principle of academic integrity, and ethical scholarship of learning is fundamental to your success at UNSW Medicine & Health.

Plagiarism, contract cheating, and inappropriate use of generative AI undermine academic integrity and are not tolerated at UNSW. For more information see the [Academic Integrity and Plagiarism toolkit](#).

In addition to the information you are required to review in your [ELISE training](#), UNSW Medicine & Health strongly recommends that you complete the [Working with Academic Integrity](#) module before submitting your first assessment task.

Referencing

Referencing is a way of acknowledging the sources of information that you use to research your assignments. Preferred referencing styles vary among UNSW Medicine & Health disciplines, so check your course Learning Management System (e.g. Moodle or Open Learning) page for information on preferred referencing styles.

For further information on referencing support and styles, see the Current Student [Referencing page](#).

Academic misconduct and plagiarism

At UNSW, academic misconduct is managed in accordance with the [Student Misconduct Procedure](#). Allegations of plagiarism are generally handled according to the [UNSW Plagiarism Management Procedure](#). Plagiarism is defined in the [UNSW Plagiarism Policy](#) and is not tolerated at UNSW.

Use of Generative AI and other tools in your assessment

UNSW has provided guiding statements for the [use of Generative AI in assessments](#). This will differ, depending on the individual assessment task, your course requirements, and the course stage within your program.

Your course convenor will outline if and how you can use Generative AI in each your assessment tasks. Options for the use of generative AI include: (1) no assistance; (2) simple editing assistance; (3) planning assistance; and (4) full assistance with attribution.

You may be required to submit the original generative AI responses, or drafts of your original work. Inappropriate use of generative AI is considered academic misconduct.

See your course Moodle (or Open Learning) page for the full instructions for individual assessment tasks for your course.

Submission of Assessment Tasks

Special Consideration

In cases where illness, misadventure or other circumstances beyond your control will prevent you from submitting your assessment by the due date and you require an extension, you need to formally apply for [Special Consideration](#) through myUNSW.

UNSW has a **Fit to Sit/Submit rule**, which means that by sitting or submitting an assessment on the scheduled assessment date, you are declaring that you are fit to do so and cannot later apply for Special Consideration.

Timed online assessment tasks

If you experience a technical or connection problem during a timed online assessment, such as a timed quiz, you can apply for Special Consideration. To be eligible to apply you need to contact the Course Convenor and advise them of the issue immediately. You will need to submit an application for Special Consideration immediately, and upload screenshots, error messages or other evidence of the technical issue as supporting documentation. Additional information can be found on: <https://student.unsw.edu.au/special-consideration>

Examinations

Information about the conduct of examinations in your course is provided on your course Moodle page.

Other assessment tasks

Late submission of assessment tasks

UNSW has standard late submission penalties as outlined in the [UNSW Assessment Implementation Procedure](#), with no permitted variation. All late assignments (unless extension or exemption previously agreed) will be penalised by 5% of the maximum mark per calendar day (including Saturday, Sunday and public holidays).

Late submissions penalties are capped at five calendar days (120 hours). This means that a student is not permitted to submit an assessment more than 5 calendar days (120 hours) after the due date for that assessment (unless extension or exemption previously agreed).

Failure to complete an assessment task

You are expected to complete all assessment tasks for your courses. In some courses, there will be a minimum pass mark required on a specific assessment task (a “hurdle task”) due to the need to assure clinical competency.

Where a hurdle task is applicable, additional information is provided in the assessment information on your course Moodle page.

Feedback on assessments

Feedback on your performance in assessment tasks will be provided to you in a timely manner. For assessment tasks completed within the teaching period of a course, other than a final assessment, feedback will be provided within 10 working days of submission, under normal

circumstances.

Feedback on continuous assessment tasks (e.g. laboratory and studio-based, workplace-based, weekly quizzes) will be provided prior to the midpoint of the course.

Any variation from the above information that is specific to an assessment task will be clearly indicated in the course and assessment information provided to you on your course Moodle (or Open Learning) page.

Faculty-specific Information

Additional support for students

The university offers a wide range of support services that are available for students. Here are some links for you to explore.

- The Current Students Gateway: <https://student.unsw.edu.au>
- Academic Skills and Support: <https://student.unsw.edu.au/academic-skills>
- Student support: <https://www.student.unsw.edu.au/support>
- Student Wellbeing, Health and Safety: <https://student.unsw.edu.au/wellbeing>

Mind Smart Guides are a series of mental health self-help resources designed to give you the psychological flexibility, resilience and self-management skills you need to thrive at university and at work.

- Mind Smart Guides: <https://student.unsw.edu.au/mindsmart>
- Equitable Learning Services: <https://student.unsw.edu.au/els>
- Guide to studying online: <https://www.student.unsw.edu.au/online-study>

Most courses in UNSW Medicine & Health use Moodle as your Learning Management System. Guidance for using UNSW Moodle can be found on the Current Student page. Difficulties with Moodle should be logged with the IT Service Centre.

- Moodle Support: <https://student.unsw.edu.au/moodle-support>

The IT Service Desk is your central point of contact for assistance and support with remote and on-campus study.

- UNSW IT Service Centre: <https://www.myit.unsw.edu.au/services/students>

Course evaluation and development

At UNSW Medicine & Health, students take an active role in designing their courses and their overall student experience. We regularly seek feedback from students, and continuous improvements are made based on your input. Towards the end of the term, you will be asked to participate in the [myExperience survey](#), which serves as a source of evaluative feedback from students. Your input to this quality enhancement process is valuable in helping us meet your learning needs and deliver an effective and enriching learning experience. Student responses are carefully considered, and the action taken to enhance educational quality is documented in the myFeedback Matters section of your Moodle (or Open Learning) course page.

School-specific Information

Additional Resources

Additional resources are available on the SPH website: <https://sph.med.unsw.edu.au/current-students/student-resources>

Subject guides

Use these guides as a quick and easy pathway to locating resources in your subject area. These excellent guides bring together the core web and print resources in one place and provide a one click portal into the online resources.

UNSW Library Subject Guides: <http://subjectguides.library.unsw.edu.au/subjectguides>

Public Health Subject Guide: <http://subjectguides.library.unsw.edu.au/publichealth>

Recording of lectures, tutorials and other teaching activities

Lectures, tutorials and other teaching activities *may* be recorded. Students should be advised

that they are consenting to the recording by their enrolment in the course or participation in the activity. The purpose of audio and video recordings is to enhance the student experience by supporting engaged learning in an online teaching environment and ensure equitable access to all course resources for our students. If you have concerns about accessing course recordings, or being recorded, please contact the Course Convenor.

School Contact Information

School guidelines on contacting staff:

Course questions

All questions related to course content should be posted on Moodle or as directed by your Course Convenor.

In cases where email communication with course convenors is necessary, we kindly request the following:

- Use your official email address for any correspondence with teaching staff.
- We expect a high standard of communication. All communication should avoid using short-hand or texting language.
- Include your full name, student ID, and your course code and name in all communication.

Our course convenors are expected to respond to emails during standard working hours of Monday to Friday, 9am-5pm.

Administrative questions

If you have an administrative question about your program of study at the School please submit your enquiry online at [UNSW Ask Us](#).

Complaints and appeals

Student complaints and appeals: <https://student.unsw.edu.au/complaints>

If you have any grievances about your studies, we invite you to address these initially to the Course Convenor. If the response does not meet your expectations, you may then contact the

School Grievance Officer, A/Prof Timothy Dobbins (t.dobbins@unsw.edu.au).