

EPMATH 235: Statistics

Ourimbah

Semester 2 - 2023



THE UNIVERSITY OF
NEWCASTLE
AUSTRALIA

The Pathways and Academic Learning Support Centre recognises and respects the unique history and culture of Aboriginal and Torres Strait Islander peoples and their unbroken relationship with the lands and the waters of Australia over millennia. We are dedicated to reconciliation and to offering opportunities for Aboriginal and Torres Strait Islander peoples to access and succeed in higher education. The Centre is committed to providing a culturally safe and inclusive environment for all.

OVERVIEW

Course Description	This course provides a foundation for concepts in statistics and probability and is a good preparation for students wishing to proceed with further study in statistics or to study in field where statistics is an important component.
Requisites	If you are currently enrolled in or have successfully completed EPMATH234, EPMATH302 or EPMATH303 you cannot enrol in this course.
Contact Hours	Lecture Face to Face On Campus 2 hour(s) per Week for 12 Weeks Tutorial Face to Face On Campus 1 hour(s) per Week for 11 Weeks
Unit Weighting	10
Workload	Students are required to spend on average 120-140 hours of effort (contact and non-contact) including assessments per 10 unit course.

COURSE OUTLINE

www.newcastle.edu.au

CRICOS Provider 00109J

CONTACTS

Course Coordinator	Ms Maureen Townley-Jones Maureen.Townley-Jones@newcastle.edu.au (02) 4921 5359 Consultation: Please email to schedule an appointment.	
Teaching Staff	Other teaching staff will be advised on the course Canvas site.	
School Office	Callaghan Ground Floor, General Purpose Building (GP) Ph: 02 4921 5558 enabling@newcastle.edu.au	Ourimbah HO 168, Humanities Building Ph: 02 4348 4076 enabling@newcastle.edu.au

SYLLABUS

Course Content	<p>Descriptive statistics</p> <ul style="list-style-type: none">• Types of data• Representing data in tables and graphs• Measures of central tendency• Measures of dispersion• Percentiles• Stat mode on the calculator <p>Probability</p> <ul style="list-style-type: none">• Types of probability events• Complementary events• Conditional probability• Contingency tables• Tree diagrams• Probability distributions• Binomial formula <p>Bi-variate data</p> <ul style="list-style-type: none">• Statistical independence• Linear correlation and regressions <p>Introduction to statistical inference</p> <ul style="list-style-type: none">• The normal distribution• Z-scores• Confidence intervals• Normal approximation of other distributions
Course Learning Outcomes	<p>On successful completion of this course, students will be able to:</p> <ol style="list-style-type: none">1. Apply probability theory to solve specific problems.2. Present data and conduct analysis of statistics at a basic level.
Course Materials	All course materials will be provided on the course Canvas site.

SCHEDULE

Week	Week Begins	Topic	Learning Activity	Assessment Due
1	17 Jul	Module 1 Gathering Data	No tutorial	No Quiz
2	24 Jul	Module 2 Measures of Central Tendency	Tutorial 1	Quiz 1
3	31 Jul	Module 3 Measures of Dispersion	Tutorial 2	Quiz 2
4	7 Aug	Module 4 Percentages & Percentiles	Tutorial 3	Quiz 3
5	14 Aug	Module 5 Probability	Tutorial 4	Quiz 4
6	21 Aug	Module 6 Tree diagrams	Tutorial 5	Quiz 5
7	28 Aug	No lecture – class test held during scheduled lecture time	No Tutorial	No Quiz Class test
8	4 Sep	Module 7 Bivariate Data	Tutorial 6	Quiz 6
9	11 Sep	Module 8 Correlation and Regression	Tutorial 7	Quiz 7
10	18 Sep	Module 9 Discrete probability	Tutorial 8	Quiz 8
Mid Term Break				
Mid Term Break				
11	9 Oct	Module 10 The Normal Distribution	Tutorial 9	Quiz 9
12	16 Oct	Module 11 Applications of the Normal Distribution	Tutorial 10	Quiz 10
13	23 Oct	No Lecture	Tutorial 11	Quiz 11
Examination Period				
Examination Period				

ASSESSMENTS

This course has 3 assessments. Each assessment is described in more detail in the sections below.

	Assessment Name	Due Date	Involvement	Weighting	Learning Outcomes
1	Quizzes	Quizzes will be made available from 9am of Monday, until Sunday at 11:59pm each week (except week 7), starting from Week 2. The best 9 out of 11 marks will count towards 20% of final mark.	Individual	20%	1, 2
2	Class Test	Week 7 during lecture time	Individual	30%	1, 2
3	Final Examination	Exam Period (To Be Announced)	Individual	50%	1, 2

Late Submissions

The mark for an assessment item submitted after the designated time on the due date, without an approved extension of time, will be reduced by 5% of the possible maximum mark for that assessment item for each day or part day that the assessment item is late. Note: this applies equally to week and weekend days.

Assessment 1 - Quizzes

Assessment Type	Quiz
Description	Each quiz is based on previous week's Module topic.
Weighting	The best 9 out of 11 marks will count towards 20% of final mark.
Due Date	Quizzes will be made available from 9am on Monday of each week and close by 11:59pm Sunday of that week. Quizzes starting from Week 2. There is no quiz in week 7.
Submission Method	Online
Assessment Criteria	Correctness of Answer
Return Method	Online
Feedback Provided	Online after quiz due date

Assessment 2 - Class Test

Assessment Type	In Term Test
Description	A test covering all topics from modules 1-5 (inclusive). All answers (including working out) must be written on paper and submitted at the end of the allocated time. This test permits the use of a memory aid.
Weighting	30%
Due Date	Scheduled Lecture time in Week 7
Submission Method	On Campus
Assessment Criteria	The marking scheme will have a strong emphasis on the problem-solving technique. Clearly written solutions showing all steps in the working-out will attract the highest marks.
Return Method	Via tutorials
Feedback Provided	Via tutorials

Assessment 3 - Final Examination

Assessment Type	Formal Examination
Description	An examination covering all topics from all Modules 6-11(inclusive). The online exam paper will be made available for a period of time. Once the exam has commenced, it must be completed with-in the time limit given on the exam paper.
Weighting	50%
Due Date	Exam Period (To be announced).
Submission Method	Online via Canvas
Assessment Criteria	All questions will require written responses. Students must be able to demonstrate their understanding, by showing working.
Return Method	Not returned. Final Examinations are not returned to students (University policy).
Feedback Provided	No Feedback

ADDITIONAL INFORMATION

Grading Scheme

This course is graded as follows:

Range of Marks	Grade	Description
85-100	High Distinction (HD)	Outstanding standard indicating comprehensive knowledge and understanding of the relevant materials; demonstration of an outstanding level of academic achievement; mastery of skills*; and achievement of all assessment objectives.
75-84	Distinction (D)	Excellent standard indicating a very high level of knowledge and understanding of the relevant materials; demonstration of a very high level of academic ability; sound development of skills*; and achievement of all assessment objectives.
65-74	Credit (C)	Good standard indicating a high level of knowledge and understanding of the relevant materials; demonstration of a high level of academic achievement; reasonable development of skills*; and achievement of all learning outcomes.
50-64	Pass (P)	Satisfactory standard indicating an adequate knowledge and understanding of the relevant materials; demonstration of an adequate level of academic achievement; satisfactory development of skills*; and achievement of all learning outcomes.
0-49	Fail (FF)	Failure to satisfactorily achieve learning outcomes. If all compulsory course components are not completed the mark will be zero. A fail grade may also be awarded following disciplinary action.

*Skills are those identified for the purposes of assessment task(s).

Communication Methods

Email is the principal form of communication at the university and within this course. Always use your student email (NUmail), rather than a private email address, and check this regularly. As Course Coordinator I will try to respond to your email within three (3) working days. I will not normally respond to emails over the weekends. Please be courteous in your email communication and in the online space. The University of Newcastle has a [Social Media Communication Guideline](#) that covers all communications in the University for staff and students.

Canvas is used to distribute course material, announcements and other information. It is also used for online quizzes and to allow students to track their individual progressive assessment results throughout the semester via Grades. Recordings of the lectures will also be available.

Discussions: You can ask questions about minor issues on the Discussion forums. Students are strongly encouraged to use these to communicate with each other, discuss issues relating to the course, and solve minor problems.

Additional Contact Details

If you have any questions about your course, please speak with your course coordinator, lecturer or tutor first.

For general enquiries, please contact the Pathways and Academic Learning Support Centre Office or your Student Liaison Officer. Additional contacts will be available on your Canvas site.

Pathways and Academic Learning Support Centre Office

Callaghan
Ground Floor, General Purpose Building (GP)
Ph: 02 4921 5558
enabling@newcastle.edu.au

Ourimbah
HO 168, Humanities Building
Ph: 02 4348 4076
enabling@newcastle.edu.au

Student Liaison Officer

PALS-SLO@newcastle.edu.au

Yapug	Indigenous Enabling Learning Advisor Hannah Pipe Birabahn Building Ph: 02 4921 7952 Hannah.Pipe@newcastle.edu.au	Program Convenor Dan Collins SAS-217, Birabahn Building Ph: 02 4055 3266 Daniel.Collins@newcastle.edu.au
Attendance and Engagement	<p>In addition to face-to-face hours in class, out-of-class study and related work will require an additional commitment of up to 10 hours per week of reading, preparation, and study time over the semester. Students are required to spend on average 120-140 hours of effort (contact and non-contact including assessment) per semester per 10 unit course.</p> <p>To maximise your learning opportunities, you should read all relevant material prior to attending lectures and tutorials.</p> <p>It is strongly recommended that you attend your lectures and tutorials every week. Our data shows that you will get better results if you attend these classes with your peers. If you do have to miss a class, you should catch up on any missed work by accessing lecture recordings and resources available on your Canvas site. If you cannot attend at least 50% of your tutorials, please contact your Course Coordinator or Student Liaison Officer and discuss the options.</p> <p>A plan of regular revision throughout the semester is also strongly recommended to help you manage your time, consolidate information and retain that knowledge for the duration of the course and beyond.</p> <p>Assessment items have been designed to reinforce and revise the course material, and ensure you are up to date with course content. You are required to submit all assessable items by the due dates unless prior arrangements have been made.</p>	
Timetable	Your timetable for this course is available via the myUni Student Portal and can also be found here .	
Software	Free Microsoft Office software is available to enrolled students here and includes 5 TB of free cloud storage with OneDrive.	
Written Assessment Word Limits	Word limits for your written assessments includes headings, sub-heading, in-text citations, quotes and referencing but does not include the list of references, appendices and footnotes. You will not receive a penalty for exceeding the word limit (there is a tolerance of up to 10%), but any work after the maximum word limit may not be included within the allocation of marks.	
Final Examination	<p>This course has a formal examination. All formal examinations will be held during the University's Examination Period. Your exam timetable will be available approximately 4 weeks before the exam period and you must ensure that you are available to undertake your exam at any time during the Examination Period.</p> <p>If you are unable to attend a scheduled examination due to illness or you have another significant, verifiable reason, contact the Pathways and Academic Learning Support Office and advise your lecturer at the earliest opportunity. Completion of an online Adverse Circumstances application including appropriate documentation is required.</p> <p>If you have a permanent or temporary disability or medical condition that means you may need adjustments made during your examination, you must register with AccessAbility at the start of semester so that these arrangements can be made.</p> <p>If you have a Reasonable Adjustment Plan (RAP), your examination will be scheduled in accordance with it. If you are unable to attend your scheduled examination due to illness or other circumstance, you will need to submit an online Adverse Circumstances application and supply appropriate documentation to support your application. Your RAP is not able to be used as your documentation.</p>	

Adverse Circumstances	<p>The University acknowledges the right of students to seek consideration for the impact of allowable adverse circumstances that may affect their performance in assessment item(s).</p> <p>Applications for special consideration due to adverse circumstances will be made using the online Adverse Circumstances system where:</p> <ol style="list-style-type: none">1. the assessment item is a major assessment item; or2. the assessment item is a minor assessment item and the Course Co-ordinator has specified in the Course Outline that students may apply the online Adverse Circumstances system;3. you are requesting a change of placement; or4. the course has a compulsory attendance requirement. <p>Before applying you must refer to the Adverse Circumstances Affecting Assessment Items Procedure.</p> <p>In the Pathways and Academic Learning Support Centre, applications for Adverse Circumstances must be lodged via the online Adverse Circumstances system for all individual assessment items worth 30% or greater.</p>
Oral Interviews (Vivas)	<p>As part of the evaluation process of any assessment item in this course an oral examination (viva) may be conducted. The purpose of the oral examination is to verify the authorship of the material submitted in response to the assessment task. The oral examination will be conducted in accordance with the principles set out in the Oral Examination (viva) Procedure. In cases where the oral examination reveals the assessment item may not be the student's own work the case will be dealt with under the Student Conduct Rule.</p>
Academic Misconduct	<p>All students are required to meet the academic integrity standards of the University. These standards reinforce the importance of integrity and honesty in an academic environment. Academic Integrity policies apply to all students of the University in all modes of study and in all locations. Please refer to the Student Academic Integrity Policy.</p>
Student Support	<p>A wide range of help, advice and support sessions will be available during your studies and emails will be sent throughout the semester as a reminder at key times.</p>
Course Evaluation	<p>Each year feedback is sought from students and other stakeholders about the courses offered in the University for the purposes of identifying areas of excellence and potential improvement.</p>
Important Policy Information	<p>The Help button in the Canvas Navigation menu contains helpful information for using the Learning Management System. Students should familiarise themselves with the policies and procedures that support a safe and respectful environment at the University.</p>
Workplace Health and Safety Requirements	<p>There are no specific WH&S requirements for this course.</p>

This course outline was approved by the Director, PALS. No alteration of this course outline is permitted without Director approval. If a change is approved, students will be notified and an amended course outline will be provided in the same manner as the original.

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