UNSW Course Outline

DATA3001 Data Science and Decisions in Practice - 2024

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General Course Information

Course Code : DATA3001
Year : 2024
Term : Term 3
Teaching Period : T3
Is a multi-term course? : No
Faculty : Faculty of Science
Academic Unit : School of Mathematics & Statistics
Delivery Mode : In Person
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Undergraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

This is the capstone course for the Data Science and Decisions program. The course will bring students in the three Data Science Majors together to share their knowledge, expertise and training in a way that is typical of industry. Students will attend seminars by industry

representatives from Data Science industries, and students will work on group projects related to real world industry problems. Typical groups will be composed of students across the three different streams of the Data Science and Decisions program. The course will expose students to Data Science as it is practiced in industry.

Assumed knowledge: students are assumed to have completed all Level 1 and 2 courses in the 3959 program before enrolling in this course, as well as a level 3 course on advanced modelling methods: one of COMP9417, MATH3821, ECON3208 or ECON3210.

Course Aims

The course aims to introduce students to professional practice of data science by working collaboratively on a project sourced from industry..

Relationship to Other Courses

You should do this course in your last year of the Data Science and Decisions program - it is an opportunity to apply skills you have learnt in your program to a real-world problem, and if you were to attempt this course earlier in your program you would put yourself at a disadvantage as compared to other students.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Apply mathematical and computational techniques, and business sensibilities, to real-world problems in data science.
CLO2 : Collaborate effectively with people with different expertises within data science to solve a real-world problem.
CLO3 : Write a technical report that clearly communicates project outcomes and recommendations.
CLO4 : Assess reports and provide constructive feedback on draft technical reports written by others.
CLO5 : Present the rationale, analyses, and results for a data science project to a client in oral and multimedia formats.

Course Learning Outcomes	Assessment Item
CLO1 : Apply mathematical and computational techniques, and business sensibilities, to real-world problems in data science.	• Draft README file • Group Presentation • Modelling Report • Data Product
CLO2 : Collaborate effectively with people with different expertises within data science to solve a real-world problem.	• Draft README file • Group Presentation • Modelling Report • Data Product
CLO3 : Write a technical report that clearly communicates project outcomes and recommendations.	• Draft README file • Modelling Report • Data Product
CLO4 : Assess reports and provide constructive feedback on draft technical reports written by others.	• Draft README file
CLO5 : Present the rationale, analyses, and results for a data science project to a client in oral and multimedia formats.	• Group Presentation

Learning and Teaching Technologies

Moodle - Learning Management System | Microsoft Teams

Learning and Teaching in this course

Log in to Moodle to find assessment information - https://moodle.telt.unsw.edu.au

Announcements will be made via Moodle and in class.

Each group will have a private channel assigned to them on Microsoft Teams that they can use to communicate with each other and their supervisor, and to share materials. They also will have a Github repository where they should post their code, data and associated documentation. Some of this material will be assessed (as previously), and records of user contributions will be used to inform assessment of individual contributions.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Draft README file Assessment Format: Group	15%	Start Date: 10/09/2024 12:00 AM Due Date: 24/09/2024 09:00 AM
Group Presentation Assessment Format: Individual	25%	Due Date: Week 10: 11 November - 17 November
Modelling Report Assessment Format: Individual	30%	Start Date: 07/11/2024 05:00 PM Due Date: 21/11/2024 05:00 PM
Data Product Assessment Format: Individual	30%	Start Date: 01/10/2024 09:00 AM Due Date: 11/10/2024 05:00 PM

Assessment Details

Draft README file

Assessment Overview

Your data group will submit a draft README file (no more than 3 A4 pages in length) to receive feedback on your plans for your data product from your peers and supervisor, and your modelling group will provide feedback (no more than 350 words) to a data group on their draft README file. Details concerning the format of this draft report and its assessment criteria will be made available in week 1. The draft report will be due in week 3, and the peer review of other teams' reports will be due in week 4. Peer and supervisor feedback on the draft will be provided within a week of submission.

Course Learning Outcomes

- CLO1 : Apply mathematical and computational techniques, and business sensibilities, to real-world problems in data science.
- CLO2 : Collaborate effectively with people with different expertises within data science to solve a real-world problem.
- CLO3 : Write a technical report that clearly communicates project outcomes and recommendations.
- CLO4 : Assess reports and provide constructive feedback on draft technical reports written by others.

Assignment submission Turnitin type

This is not a Turnitin assignment

Generative AI Permission Level

Planning/Design Assistance

You are permitted to use generative AI tools, software or services to generate initial ideas, structures, or outlines. However, you must develop or edit those ideas to such a significant extent that what is submitted is your own work, i.e., what is generated by the tool, software or service should not be a part of your final submission. You should keep copies of your iterations to show your Course Authority if there is any uncertainty about the originality of your work.
If your Convenor has concerns that your answer contains passages of AI-generated text or media that have not been sufficiently modified you may be asked to explain your work, but we recognise that you are permitted to use AI generated text and media as a starting point and some traces may remain. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct & Integrity Office for investigation for academic misconduct and possible penalties.
For more information on Generative AI and permitted use please see here.

Group Presentation

Assessment Overview

Your modelling group will deliver a 12 minute presentation to the rest of the class, and to your industry client, summarising key project outcomes and recommendations, and answer questions from the audience. This task includes both a group allocated mark (10%) and an individually assessed component (15%).

The presentation will be held in week 10, details will be available in week 8.

Feedback on the presentation will be posted on Moodle within one week of the presentation.

Course Learning Outcomes

- CLO1 : Apply mathematical and computational techniques, and business sensibilities, to real-world problems in data science.
- CLO2 : Collaborate effectively with people with different expertises within data science to solve a real-world problem.
- CLO5 : Present the rationale, analyses, and results for a data science project to a client in oral and multimedia formats.

Assessment Length

12 minutes (+ 3 minutes questions)

Assignment submission Turnitin type

This is not a Turnitin assignment

Generative AI Permission Level

Not Applicable

Generative AI is not considered to be of assistance to you in completing this assessment. If you do use generative AI in completing this assessment, you should attribute its use.
For more information on Generative AI and permitted use please see here.

Modelling Report

Assessment Overview

Your modelling group will submit a report (no more than 15 A4 pages in length, excluding references and appendices) summarising your modelling project outcomes and recommendations. Each group member is expected to make a significant contribution to the project, but each member will receive an individual mark, based on contributions to the project as assessed by supervisor, peers, and an individual meeting with each student (where appropriate).

The final report is due in the exam period. Information regarding the format of this report will be provided in week 7. The individual questionnaire accompanying the draft report will need to be completed by each student after the group report has been submitted. This task includes both a group allocated mark (10%) and an individually assessed component (20%).

Feedback on the final report will be available on Moodle within two weeks of submission.

Course Learning Outcomes

- CLO1 : Apply mathematical and computational techniques, and business sensibilities, to real-world problems in data science.
- CLO2 : Collaborate effectively with people with different expertises within data science to solve a real-world problem.
- CLO3 : Write a technical report that clearly communicates project outcomes and recommendations.

Assessment Length

30 A4 pages (plus additional references or appendices if needed)

Assignment submission Turnitin type

Not Applicable

Generative AI Permission Level

Planning/Design Assistance

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Data Product

Assessment Overview

Your data group will produce a data frame (as a .csv file), ready for use by other parties for modelling, designed to help answer a qusetion of interest to your industry client. This should come together with a README file (no longer than 12 A4 pages long) that summarises the data frame properties and intended usage. Each group member is expected to make a significant contribution to the project.

The data product is due in week 5. Information regarding its format will be provided in week 1. An individual questionnaire accompanying your submission will need to be completed by each student after submission. This task includes both a group allocated mark (10%) and an individually assessed component (20%).

Feedback on your data product will be available on Moodle within two weeks of submission.

Course Learning Outcomes

- CLO1 : Apply mathematical and computational techniques, and business sensibilities, to real-world problems in data science.
- CLO2 : Collaborate effectively with people with different expertises within data science to

solve a real-world problem.
- CLO3 : Write a technical report that clearly communicates project outcomes and recommendations.

Generative AI Permission Level

Planning/Design Assistance

You are permitted to use generative AI tools, software or services to generate initial ideas, structures, or outlines. However, you must develop or edit those ideas to such a significant extent that what is submitted is your own work, i.e., what is generated by the tool, software or service should not be a part of your final submission. You should keep copies of your iterations to show your Course Authority if there is any uncertainty about the originality of your work.
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For more information on Generative AI and permitted use please see here.

General Assessment Information

A dedicated and consistent effort on the project is expected by each group member throughout the term. You should load your work onto Teams (or on some other platform that tracks user activity such as Github), and you should communicate with your group on Teams, so that you have an electronic record of your contributions to the group, if required. It is not expected that all students will contribute equally at all stages of the project (on the contrary, teams usually work more effectively when this is not the case!), but all students are expected to make a significant contribution. Individuals from a group may receive different group report marks if this is not the case.

Standard penalties apply for late submissions.

Grading Basis

Standard

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 9 September - 15 September	Group Activity	Work on developing a data product and its documentation
Week 2 : 16 September - 22 September	Group Activity	Work on developing a data product and its documentation
Week 3 : 23 September - 29 September	Assessment	Submit draft README file for peer feedback (Tues 9 AM, Github)
	Group Activity	Review a draft README file and work on feedback
	Group Activity	Work on developing a data product and its documentation
Week 4 : 30 September - 6 October	Group Activity	Work on developing a data product and its documentation
	Assessment	Submit peer review of draft README file by Tuesday 9 AM (Github)
Week 5 : 7 October - 13 October	Assessment	Submit data product and its documentation, complete group dynamics questionnaire
Week 7 : 21 October - 27 October	Group Activity	Work on modelling project, prepare presentation and report
Week 8 : 28 October - 3 November	Group Activity	Work on modelling project, prepare presentation and report
Week 9 : 4 November - 10 November	Group Activity	Work on modelling project, prepare presentation and report
Week 10 : 11 November - 17 November	Presentation	Group presentation during classes
Week 11 : 18 November - 24 November	Assessment	Modelling report due Thursday 5 PM, complete individual group dynamics questionnaire

Attendance Requirements

Please note that lecture recordings are not available for this course. Students are strongly encouraged to attend all classes and contact the Course Authority to make alternative arrangements for classes missed.

General Schedule Information

Students will work on two projects motivated by problems sourced from industry - a data product project (weeks 1-5), then a modelling project (weeks 7-10) that makes use of a data product produced by a different group. These are both group projects, but group membership will differ across the two projects.

Students are required to ***meet with their supervisor*** each week and to meet regularly with team members as timetabled.

Course Resources

Course Evaluation and Development

Student feedback is very important to continual course improvement. The UNSW online student survey myExperience allows students to evaluate their learning experiences in an anonymous way. The course authority will use the feedback to make ongoing improvements to the course. If you have any thoughts or queries about the course structure during term, feel free to contact

your course authority.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	David Warton		Anita Lawrence Centre room 2052		Tuesdays 11-12	Yes	Yes
	Gustavo Batista					No	No
	Yiyuan Xie					No	No

Other Useful Information

Academic Information

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

You are required to:

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

For more information, visit the UNSW Student Code of Conduct Website.

Academic Honesty and Plagarism

Referencing is a way of acknowledging the sources of information that you use to research your assignments. You need to provide a reference whenever you draw on someone else's words, ideas or research. Not referencing other people's work can constitute plagiarism.
Further information about referencing styles can be located at https://student.unsw.edu.au/referencing

Academic integrity is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage. At UNSW, this means that your work must be your own, and others'

ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.
Further information about academic integrity, plagiarism and the use of AI in assessments can be located at:

- The Current Students site,
- The ELISE training site, and
- The Use of AI for assessments site.

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

Submission of Assessment Tasks

Penalty for Late Submissions

UNSW has a standard late submission penalty of:

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

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

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

Special Consideration

If circumstances prevent you from attending/completing an assessment task, you must officially apply for special consideration, usually within 3 days of the sitting date/due date. You can apply by logging onto myUNSW and following the link in the My Student Profile Tab. Medical documentation or other documentation explaining your absence must be submitted with your application. Once your application has been assessed, you will be contacted via your student email address to be advised of the official outcome and any actions that need to be taken from there. For more information about special consideration, please visit: https://student.unsw.edu.au/special-consideration

Important note: UNSW has a "fit to sit/submit" rule, which means that if you sit an exam or

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

Faculty-specific Information

Additional support for students

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

School-specific Information

School of Mathematics and Statistics and UNSW Policies

The School of Mathematics and Statistics has adopted a number of policies relating to enrolment, attendance, assessment, plagiarism, cheating, special consideration etc. These are in addition to the Policies of The University of New South Wales. Individual courses may also adopt other policies in addition to or replacing some of the School ones. These will be clearly notified in the Course Initial Handout and on the Course Home Pages on the Maths Stats web site. Students in courses run by the School of Mathematics and Statistics should be aware of the School and Course policies by reading the appropriate pages on the web site starting at: The School of Mathematics and Statistics assessment policies

The School of Mathematics and Statistics will assume that all its students have read and understood the School policies on the above pages and any individual course policies on the Course Initial Handout and Course Home Page. Lack of knowledge about a policy will not be an excuse for failing to follow the procedure in it.

Special Consideration - Short Extension Policy

The School of Mathematics and Statistics has carefully reviewed its range of assignments and

projects to determine their suitability for automatic short extensions as set out by the UNSW Short Extension Policy. Upon comprehensive examination of our course offerings that incorporate these types of assessments, we have concluded that our current deadline structures already accommodate the possibility of unexpected circumstances that may lead students to require additional days for submission. Consequently, the School of Mathematics and Statistics has decided to universally opt out of the Short Extension provision for all its courses, having pre-emptively integrated flexibility into our assessment deadlines. The decision is subject to revision in response to the introduction of new course offerings. Students may still apply for Special Consideration via the usual procedures.

Computing Lab

The main computing laboratory is room G012 of the Anita B.Lawrence Centre (formerly Red Centre). You can get to this lab by entering the building through the main entrance to the School of Mathematics (on the Mezzanine Level) and then going down the stairs to the Ground Level. A second smaller lab is Room M020, located on the mezzanine level through the glass door (and along the corridor) opposite the School's entrance.

For more information, including opening hours, see the computing facilities webpage. Remember that there will always be unscheduled periods when the computers are not working because of equipment problems and that this is not a valid excuse for not completing assessments on time.

School Contact Information

Please visit the School of Mathematics and Statistics website for a range of information.

For information on Courses, please go to “Student life & resources” and either Undergraduate and/or Postgraduate and respective "Undergraduate courses" and "Postgraduate courses" for information on all course offerings.

All school policies, forms and help for students can be located by going to the "Student Services" within “Student life & resources” page. We also post notices in "Student noticeboard" for your information. Please familiarise yourself with the information found in these locations. If you cannot find the answer to your queries on the web you are welcome to contact the Student Services Office directly.

Undergraduate

E: ug.mathsstats@unsw.edu.au

P: 9385 7011 or 9385 7053

Postgraduate

E: pg.mathsstats@unsw.edu.au

P: 9385 7053

Should we need to contact you, we will use your official UNSW email address of in the first instance. **It is your responsibility to regularly check your university email account. Please use your UNSW student email and state your student number in all emails to us.**