

WESTERN SYDNEY
UNIVERSITY



School of Computer, Data and Mathematical Sciences



Learning Guide

301111 Discovery Project
Spring 2020

Unit Details

Unit Code:	301111
Unit Name:	Discovery Project
Credit Points:	10
Unit Level:	3
Assumed Knowledge:	Completed the bachelor's degree units in the students primary discipline.

Note: Students with any problems, concerns or doubts should discuss those with the Unit Coordinator as early as they can.

Unit Coordinator

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Consultation Arrangement:

On Microsoft Teams: by chat or appointment for online video.

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Note: The relevant Learning Guide Companion supplements this document

1 About Discovery Project

1.1 An Introduction to this Unit

In this unit students will gain experience in applying data science skills and using knowledge gained during their bachelor's course of their primary discipline. Students will carry out a real life project transforming data to knowledge under the supervision of an academic mentor. Students will develop a knowledge discovery project proposal and carry out a literature review highlighting the current status of the problem. Assisted by a mentor they will apply the data science skills learned through-out the degree and produce a final discovery project report and/or interactive project tool and give an oral presentation.

1.2 What is Expected of You

Study Load

A student is expected to study an hour per credit point a week. For example a 10 credit point unit would require 10 hours of study per week. This time includes the time spent within classes during lectures, tutorials or practicals.

Attendance

Lectures are designed to scaffold learning and assist students to gain an understanding of the unit content, and subsequently to complete their assessment tasks. Students should note that attendance is considered critical for students to gain full value from this subject, and is closely correlated with student success and grades. Students are encouraged to participate in all class activities, as non-engagement may seriously undermine a students ability to satisfactorily complete the unit.

Online Learning Requirements

Unit materials will be made available on the unit's vUWS (E-Learning) site (<https://vuws.westernsydney.edu.au/>). You are expected to consult vUWS at least twice a week, as all unit announcements will be made via vUWS. Teaching and learning materials will be regularly updated and posted online by the teaching team.

Special Requirements

Essential Equipment:

Not Applicable

Legislative Pre-Requisites:

Not Applicable

Policies Related to Teaching and Learning

The University has a number of policies that relate to teaching and learning. Important policies affecting students include:

- [Assessment Policy](#)
- [Bullying Prevention Policy](#) and
- [Guidelines](#)
- [Enrolment Policy](#)
- [Examinations Policy](#)
- [Review of Grade Policy](#)
- [Sexual Harassment Prevention Policy](#)
- [Special Consideration Policy](#)

- [Student Misconduct Rule](#)
- [Teaching and Learning - Fundamental Code](#)
- [Student Code of Conduct](#)

Academic Integrity and Student Misconduct Rule

In submitting assessments, it is essential that you are familiar with the policies listed above and that you understand the principles of academic integrity. You are expected to act honestly and ethically in the production of all academic work and assessment tasks, submit work that is your own and acknowledge any contribution to your work made by others.

Important information about academic integrity, including advice to students is available at https://www.westernsydney.edu.au/studysmart/home/academic_integrity_and_plagiarism. It is your responsibility to familiarise yourself with these principles and apply them to all work submitted to the University as your own.

When you submit an assignment or product, you will declare that no part has been: copied from any other student's work or from any other source except where due acknowledgement is made in the assignment; submitted by you in another (previous or current) assessment, except where appropriately referenced, and with prior permission from the Unit Coordinator; written/produced for you by any other person except where collaboration has been authorised by the Unit Coordinator.

The Student Misconduct Rule applies to all students of Western Sydney University and makes it an offence for any student to engage in academic, research or general misconduct as defined in the Rule.

The University considers plagiarism, cheating and collusion as instances of academic misconduct. The University also considers submitting falsified documentation in support of applications for special consideration, including sitting of deferred examinations, as instances of general misconduct. You should be aware that changes were made to the Student Misconduct Rule commencing 1 January 2020 that provide for minimum sanctions that apply to certain conduct, including the provision of falsified documentation to the University.

You are strongly advised to read the [Student Misconduct Rule](#) and the Inappropriate Behaviour Guidelines at the commencement of each session to familiarise yourself with this process and the expectations of the University in relation to work submitted for assessment.

1.3 Changes to Unit as a Result of Past Student Feedback

The University values student feedback in order to improve the quality of its educational programs. The feedback provided helps us improve teaching methods and units of study. The survey results inform unit content and design, learning guides, teaching methods, assessment processes and teaching materials.

You are welcome to provide feedback that is related to the teaching of this unit. At the end of the semester you will be given the opportunity to complete a Student Feedback on Unit (SFU) questionnaire to assess the unit. You may also have the opportunity to complete a Student Feedback on Teaching (SFT) questionnaire to provide feedback for individual teaching staff.

2 Assessment Information

2.1 Unit Learning Outcomes

	Outcome
1	Design a data driven knowledge discovery project plan and develop an investigative project proposal
2	Collect, integrate, clean and prepare the data source relevant to the problem being studied
3	Undertake self-directed study and literature search relevant to the problem being investigated
4	Undertake a computational and/or analytical approach in problem solving and predictive modelling
5	Undertake a multidisciplinary project
6	Write and produce a comprehensive research report in a logical, concise and professional manner
7	Present a project and its results to an audience in an oral presentation

2.2 Approach to Learning

In this unit students undertake a major project to consolidate all the learnings and activities of the Bachelor of Data Science.

2.3 Contribution to Course Learning Outcomes

3734: Bachelor of Data Science

Course Learning Outcomes	ULO 1	ULO 2	ULO 3	ULO 4	ULO 5	ULO 6	ULO 7
1. collect or design the collection of data and extract, transform and load the data into an analysis system	Assured	Assured	Assured				
2. visualise and present data to understand its information content and find patterns or trends				Assured			
3. build models and write computer code to make predictions, test hypotheses and validate conclusions drawn from the analysis process				Assured			
4. formulate problems and use data ethically and responsibly to provide information and advice that is reliable, valid, timely and relevant for their chosen specialty.					Assured		
5. present results and define actions to be taken to generate impact in application domains						Assured	Assured
6. provide interpretive and predictive reports for professional colleagues to inform decision-making						Assured	Assured
7. advise on the technical validity and reliability of interpretations and predictions based on analysis of large data sets						Assured	Assured
8. advise on the methods and ethics of data collection and use within a professional context.						Assured	Assured

2.4 Assessment Summary

The assessment items in this unit are designed to enable you to demonstrate that you have achieved the unit learning outcomes. Completion and submission of all assessment items which have been designated as mandatory or compulsory is essential to receive a passing grade.

To pass this unit you must:

-Achieve a mark of at least 50% overall.

Item	Weight	Due Date	ULO's Assessed	Threshold
Project Proposal Report	20%	Week 3	1, 5	No
Literature Review	10%	Week 3	3	No
Final Project Report	60%	Week 14	2, 3, 4, 6	No
Project Presentation	10%	Week 14	7	No

Feedback on Assessment

Feedback is an important part of the learning process that can improve your progress towards achieving the learning outcomes. Feedback is any written or spoken response made in relation to academic work such as an assessment task, a performance or product. It can be given to you by a teacher, an external assessor or student peer, and may be given individually or to a group of students. As a Western Sydney University student, it is your responsibility to seek out and act on feedback that is provided to you as a resource to further your learning.

2.5 Assessment Details

2.5.1 Project Proposal Report

Weight:	20%
Type of Collaboration:	Individual
Due:	Week 3
Submission:	Online in vUWS
Format:	PDF document written together with the literature review. It is recommended to write the document using jupyter or in LaTeX.
Length:	1,000 words
Curriculum Mode:	Report

A short report detailing the project to be undertaken, after consulting with a suitable supervisor/mentor.

Put it together with the literature review as one document. It is recommended to write the document using jupyter or in LaTeX, and from that generate a PDF file.

Marking Criteria:

Criteria	High Distinction	Distinction	Credit	Pass	Unsatisfactory
Mark	85% or higher	75% to 84%	65% to 74%	50% to 64%	less than 50%

2.5.2 Literature Review

Weight:	10%
Type of Collaboration:	Individual
Due:	Week 3
Submission:	Online in vUWS
Format:	PDF document written together with the project proposal report.
Length:	1,000 words
Curriculum Mode:	Report

A short literature review, to accompany the project proposal.

Put it together with the project proposal report as one document. It is recommended to write the document using jupyter or in LaTeX, and from that generate a PDF file.

Marking Criteria:

Criteria	High Distinction	Distinction	Credit	Pass	Unsatisfactory
Mark	85% or higher	75% to 84%	65% to 74%	50% to 64%	less than 50%

2.5.3 Final Project Report

Weight:	60%
Type of Collaboration:	Individual
Due:	Week 14
Submission:	Online in vUWS
Format:	PDF document or jupyter notebook.
Length:	4,000 words
Curriculum Mode:	Report

A finalised report detailing the work undertaken, highlighting the data science aspects of the project.

It is recommended to write the document using jupyter or in LaTeX, and from that generate a PDF file.

Marking Criteria:

Criteria	High Distinction	Distinction	Credit	Pass	Unsatisfactory
Mark	85% or higher	75% to 84%	65% to 74%	50% to 64%	less than 50%

2.5.4 Project Presentation

Weight:	10%
Type of Collaboration:	Individual
Due:	Week 14
Submission:	In class
Format:	Online zoom presentation.
Length:	25 mins including question time
Curriculum Mode:	Presentation

Presenter must prepare electronic version of slides and submit the slides online in advance via vUWS. These should be in PDF format.

Remember that this is a presentation and that slides are support material – they should not be designed to be standalone readable. Fewer slides are almost always better, as are uncrowded single messages per slide.

Marking Criteria:

Criteria	High Distinction	Distinction	Credit	Pass	Unsatisfactory
Mark	85% or higher	75% to 84%	65% to 74%	50% to 64%	less than 50%

2.6 General Submission Requirements

Submission

- All assignments must be submitted by the specified due date and time.
- Complete your assignment and follow the individual assessment item instructions on how to submit. You must keep a copy of all assignments submitted for marking.

Turnitin

- The Turnitin plagiarism prevention system may be used within this unit. Turnitin is accessed via logging into vUWS for the unit. If Turnitin is being used with this unit, this means that your assignments have to be submitted through the Turnitin system. Turnitin from iParadigms is a web-based text-matching software that identifies and reports on similarities between documents. It is also widely utilised as a tool to improve academic writing skills. Turnitin compares electronically submitted papers against the following:
 - Current and archived web: Turnitin currently contains over 24 billion web pages including archived pages
 - Student papers: including Western Sydney University student submissions since 2007
 - Scholarly literature: Turnitin has partnered with leading content publishers, including library databases, text-book publishers, digital reference collections and subscription-based publications (e.g. Gale, Proquest, Emerald and Sage)
- Turnitin is used by over 30 universities in Australia and is increasingly seen as an industry standard. It is an important tool to assist students with their academic writing by promoting awareness of plagiarism. By submitting your assignment to Turnitin you will be certifying that:
 - I hold a copy of this assignment if the original is lost or damaged
 - No part of this assignment has been copied from any other student's work or from any other source except where due acknowledgement is made in the assignment
 - No part of the assignment has been written for me by any other person/s
 - I have complied with the specified word length for this assignment
 - I am aware that this work may be reproduced and submitted to plagiarism detection software programs for the purpose of detecting possible plagiarism (which may retain a copy on its database for future plagiarism checking).

Self-Plagiarising

- You are to ensure that no part of any submitted assignment for this unit or product has been submitted by yourself in another (previous or current) assessment from any unit, except where appropriately referenced, and with prior permission from the Lecturer/Tutor/Unit Co-ordinator of this unit.

Late Submission

- If you submit a late assessment, without receiving approval for an extension of time, (see next item), you will be penalised by 10% per day for up to 10 days. In other words, marks equal to 10% of the assignment's weight will be deducted from the mark awarded.
- For example, if the highest mark possible is 50, 5 marks will be deducted from your awarded mark for each late day.
- Saturday and Sunday are counted as one calendar day each.
- Assessments will not be accepted after the marked assessment task has been returned to students.
- This is consistent with Clause 51 of the Western Sydney University's Assessment Policy - Criteria and Standards-Based Assessment.

Extension of Due Date for Submission

Extensions are only granted in exceptional circumstances. To apply for an extension of time, locate an application form via the Western Sydney University homepage or copy the following link:

https://www.westernsydney.edu.au/currentstudents/current_students/forms

Application forms must be submitted to the Unit Coordinator/Convenor. Requests for extension should be made as early as possible and submitted within policy deadlines. Appropriate, supporting documentation must be submitted with the application. An application for an extension does not automatically mean that an extension will be granted. Assessments will not be accepted after the marked assessment task has been returned to students.

Resubmission

Resubmission of assessment items will not normally be granted if requested.

Application for Special Consideration

It is strongly recommended that you attend all scheduled learning activities to support your learning. If you have suffered misadventure, illness, or you have experienced exceptional circumstances that have prevented your attendance at class or your completion and submission of assessment tasks, you may need to apply for Special Consideration via the Western Sydney University website. http://www.westernsydney.edu.au/currentstudents/current_students/services_and_facilities/special_consideration2 or the Student Centre/Sydney City Campus Reception. Special Consideration is not automatically granted. It is your responsibility to ensure that any missed content has been covered. Your lecturer will give you more information on how this must be done.

3 Teaching and Learning Activities

Weeks	Assessments Due
Week 1 20-07-2020	
Week 2 27-07-2020	
Week 3 03-08-2020	- Project Proposal Report - Literature Review
Week 4 10-08-2020	
Week 5 17-08-2020	
Week 6 24-08-2020	
Week 7 31-08-2020	
Week 8 07-09-2020	
Week 9 14-09-2020	
Week 10 21-09-2020	
Week 11 28-09-2020	
Week 12 05-10-2020	
Week 13 12-10-2020	
Week 14 19-10-2020	- Final Project Report - Project Presentation
Week 15 26-10-2020	

Weeks	Assessments Due
Week 16 02-11-2020	
Week 17 09-11-2020	

The above timetable should be used as a guide only, as it is subject to change. Students will be advised of any changes as they become known on the unit's vUWS site.

4 Learning Resources

4.1 Recommended Readings

Essential Reading

Clarity English. (2014). Clarity English modules [Interactive English resources] from <http://ezproxy.uws.edu.au/login?url=http://www.clarityenglish.com/library/UWSL/index.php>

Western Sydney University Library. (2014). How to find information on Quantitative and Qualitative Research Methods from <https://www.youtube.com/watch?v=mVZg9MVZoN8>

Western Sydney University Library. (2015). Library Searchbox: Advanced Search. from https://www.youtube.com/watch?v=Mk7_3cDWQbU&t=9s

Western Sydney University Library. (2017). Referencing and Citation. from <http://library.westernsydney.edu.au/main/guides/referencing-citation>

Western Sydney University Library. (2017). Subject Guides by School. from <http://subjectguides.library.westernsydney.edu.au/schoolsubguides>

Additional Reading

Atkinson, C. (2011). Beyond Bullet Points Using Microsoft PowerPoint to Create Presentations that Inform, Motivate, and Inspire (3rd ed.). Sebastopol: Microsoft Press.

Berry, R. (2013). The Research Project How to Write It (6th ed.). Hoboken: Taylor and Francis.

Campbell, C. A., & Campbell, M. (2013). The new one-page project manager communicate and manage any project with a single sheet of paper. Hoboken, N.J.: Wiley.

Daniel, C. A. (2012). Reader-friendly reports : a no-nonsense guide to effective writing for MBAs, consultants, and other professionals. New York: McGraw-Hill.

Dongen, M. R. C. v. (2012). LaTeX and friends. Heidelberg; New York: Springer.

Ellison, C. (2010). McGraw-Hill's concise guide to writing research papers. New York: McGraw-Hill.

Fisher, C. M., & Buglear, J. (2010). Researching and writing a dissertation : an essential guide for business students (3rd ed.). New York: Financial Times/Prentice Hall.

Forsyth, P. (2013). How to write reports & proposals (3rd ed.). London/Philadelphia, Pa.: Kogan Page Limited.

Kottwitz, S. (2011). LaTeX Beginner's Guide. Birmingham: Packt Publishing.

Mamishv, A. (2010). Technical writing for teams the STREAM tools handbook. Piscataway, NJ : Hoboken, N.J.: IEEE Press; John Wiley & Sons.

Murray, R. (2011). How to write a thesis (3rd ed.). Maidenhead, England; New York; Buckingham: Open University Press.

Oliver, P. a. (2014). Writing your thesis (3rd ed.). London SAGE Publications Ltd.

Silvis, C. A. (2015). Presentation Skills: Cengage Learning PTR.

Snyder, C. S. (2013). A project manager's book of forms a companion to the PMBOK guide, fifth edition (2nd ed.).

Hoboken, N.J.: Wiley.

Snyder, C. S. (2013). A user's manual to the PMBOK guide - fifth edition (Updated ed.). Hoboken, N.J.: Wiley.

Theobald, T. (2013). Develop Your Presentation Skills (2nd ed.). London: Kogan Page.