



UNSW Course Outline

FINS3645 Financial Market Data Design and Analysis - 2024

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General Course Information

Course Code : FINS3645

Year : 2024

Term : Term 2

Teaching Period : T2

Is a multi-term course? : No

Faculty : UNSW Business School

Academic Unit : School of Banking and Finance

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

Technology is a disruptive factor that is transforming the banking and finance industry. Financial market participants need to process an ever-increasing amount of heterogeneous data to make financial decisions and create disruptive financial products.

In this hands-on course, you will learn to leverage the relationship between data requirements and competitive advantage in a rapidly evolving marketplace. Through constant interaction with large datasets, you will develop the product design and delivery skills necessary for developing solutions to real-world financial data problems.

Course Aims

This course aims to develop skills in data handling in the context of banking and finance and to gain introductory exposure to state-of-the-art data modeling and analytics. This course is thus designed for students aiming to understand the connections between banking, finance and technology.

Relationship to Other Courses

Technology is a disruptive factor that is transforming the banking and finance industry. It is important that finance graduates are informed of these development and have a basic understanding of the underlying technology and data handling so they could contemplate, adapt, innovate and shape an increasingly technology driven world. This course builds on basic finance theory and capital market courses and complement other finance courses with a unique technology and innovation perspective.

Course Learning Outcomes

Course Learning Outcomes	Program learning outcomes
CLO1 : Review various data handling, analytics and computational methodologies.	<ul style="list-style-type: none">• PLO1 : Business Knowledge• PLO2 : Problem Solving
CLO2 : Interpret and analyse large sets of both structured and unstructured financial data.	<ul style="list-style-type: none">• PLO1 : Business Knowledge• PLO2 : Problem Solving
CLO3 : Apply appropriate and responsible solutions to address real-world financial data problems.	<ul style="list-style-type: none">• PLO1 : Business Knowledge• PLO3 : Business Communication• PLO5 : Responsible Business Practice
CLO4 : Design and deliver innovative data-driven solutions for the banking and finance sector.	<ul style="list-style-type: none">• PLO2 : Problem Solving• PLO3 : Business Communication• PLO7 : Leadership Development

Course Learning Outcomes	Assessment Item
CLO1 : Review various data handling, analytics and computational methodologies.	<ul style="list-style-type: none">• Quizzes
CLO2 : Interpret and analyse large sets of both structured and unstructured financial data.	<ul style="list-style-type: none">• Data Design Business Case• Quizzes
CLO3 : Apply appropriate and responsible solutions to address real-world financial data problems.	<ul style="list-style-type: none">• Data Design Model and Report• Data Design Business Case
CLO4 : Design and deliver innovative data-driven solutions for the banking and finance sector.	<ul style="list-style-type: none">• Data Design Model and Report• Data Design Business Case

Learning and Teaching Technologies

Moodle - Learning Management System | Blackboard Collaborate | EdStem

Learning and Teaching in this course

This is a practical and hands on course. Students undertake individual data driven project. The project requires all stages and steps to be fully contemplated, from idea generation to implementation. The course will draw on concepts, problems and practical implications from textbooks, academic papers, financial press articles as well as relevant financial regulators and government agencies. The aims of this course are:

- Develop skills in data handling in the context of Banking and Finance
- Gain introductory exposure to state-of-the-art data modeling and analytics

This course is thus designed and developed for students aiming to understand the connections

between banking, finance and technology.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates	Program learning outcomes
Data Design Model and Report Assessment Format: Individual	50%	Start Date: See Detailed assessment description Due Date: See Detailed assessment description	<ul style="list-style-type: none">• PLO1 : Business Knowledge• PLO2 : Problem Solving• PLO3 : Business Communication• PLO7 : Leadership Development
Data Design Business Case Assessment Format: Individual	20%	Start Date: See Detailed assessment description Due Date: See Detailed assessment description	<ul style="list-style-type: none">• PLO1 : Business Knowledge• PLO2 : Problem Solving• PLO3 : Business Communication• PLO5 : Responsible Business Practice• PLO7 : Leadership Development
Quizzes Assessment Format: Individual	30%	Start Date: See Detailed assessment description Due Date: See Detailed assessment description	<ul style="list-style-type: none">• PLO1 : Business Knowledge• PLO2 : Problem Solving

Assessment Details

Data Design Model and Report

Assessment Overview

Building on your Data Design Business Case, you will report on the prototyping and implementation of your data-driven FinTech solution. You will be required to explain your model, outline your considerations of user needs, and explain how you have addressed assumptions and difficulties, and in doing so demonstrate your capacity to take initiative and bring about innovation. Further details will be made available during term.

Assesses: PLO1, PLO2, PLO3, PLO7

BCom students: myBCom course points for PLO7

Course Learning Outcomes

- CLO3 : Apply appropriate and responsible solutions to address real-world financial data

problems.

- CLO4 : Design and deliver innovative data-driven solutions for the banking and finance sector.

Detailed Assessment Description

Weight Assessment Name Assessment Due Date

50% FinTech Project B Week 10

As an individual and a FinTech specialist you deliver on programming project and will be tasked with contemporary, complex and real-world problem to be solved by using big-data analytics and current state-of-the-art approaches in financial engineering. Final delivery is in a form of a code and data design and analysis leading to delivering FinTech product wireframes. Realistic solution of final delivery is assumed. Further details on tech cooperation and relevant tips and suggestions will be posted on Moodle.

(BCom students: myBCom course points for PL07)

Submission notes

See Detailed assessment description

Assignment submission Turnitin type

Not Applicable

Data Design Business Case

Assessment Overview

For the Data Design Business Case you will take the role of product architect to design and pitch a data-driven FinTech solution to a provided case. You will outline key product decisions and features, supported by python code of ETL and feature engineering. As part of this, you will be required to think ethically and sustainably in delivering a responsible FinTech solution. Further details will be made available during term.

Assesses: PL01, PL02, PL03, PL05, PL07

BCom students: myBCom course points for PL05

Course Learning Outcomes

- CLO2 : Interpret and analyse large sets of both structured and unstructured financial data.
- CLO3 : Apply appropriate and responsible solutions to address real-world financial data problems.
- CLO4 : Design and deliver innovative data-driven solutions for the banking and finance sector.

Detailed Assessment Description

Weight Assessment Name Assessment Due Date

20% FinTech Project A Week 8

As an individual and a FinTech specialist you deliver on programming project and will be tasked with contemporary, complex and real-world problem to be solved by using big-data analytics and current state-of-the-art approaches in financial engineering. Final delivery is in a form of a code and data design and analysis leading to delivering FinTech product wireframes. Realistic solution of final delivery is assumed. Further details on tech cooperation and relevant tips and suggestions will be posted on Moodle.

Submission notes

See Detailed assessment description

Assignment submission Turnitin type

Not Applicable

Quizzes

Assessment Overview

This individual assessment is comprised of two quizzes that assess material covered across Weeks 3-9. Each quiz will be made up of a series of multiple choice questions and short answer programming questions. This assessment is aimed at providing you with early feedback on your performance and understanding of the course topics.

Assesses: PLO1, PLO2

Course Learning Outcomes

- CLO1 : Review various data handling, analytics and computational methodologies.
- CLO2 : Interpret and analyse large sets of both structured and unstructured financial data.

Detailed Assessment Description

Weight Assessment Name Assessment Due Date

15% Quiz 1 Week 3

15% Quiz 2 Week 7

Quiz #1 to Quiz #2 test material covered across Weeks 3-7. This will be in a format of Multiple

Choice Questionnaire and Programming Short Assignments. This is aimed to allow you to receive early and continuous feedback on your performance and understanding of covered topics.

(BCom students: myBCom course points for PLO2)

Submission notes

See Detailed assessment description

Assignment submission Turnitin type

Not Applicable

General Assessment Information

As a student at UNSW you are expected to display [academic integrity](#) in your work and interactions. Where a student breaches the [UNSW Student Code](#) with respect to academic integrity, the University may take disciplinary action under the Student Misconduct Procedure. To assure academic integrity, you may be required to demonstrate reasoning, research and the process of constructing work submitted for assessment.

To assist you in understanding what academic integrity means, and how to ensure that you do comply with the UNSW Student Code, it is strongly recommended that you complete the [Working with Academic Integrity](#) module before submitting your first assessment task. It is a free, online self-paced Moodle module that should take about one hour to complete.

Grading Basis

Standard

Requirements to pass course

In order to pass this course students must:

- Achieve a composite mark of at least 50 out of 100
- Engage actively in course learning activities and attempt all assessment requirements
- Meet any additional requirements specified in the assessment details
- Meet the specified attendance requirements of the course (see Schedule section)

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 0 : 20 May - 26 May	Other	Week 0
Week 1 : 27 May - 2 June	Seminar	Data Science in Finance
Week 2 : 3 June - 9 June	Seminar	Structured Data
Week 3 : 10 June - 16 June	Seminar	Structured Data Visualisation
Week 4 : 17 June - 23 June	Seminar	Equity Markets Workshop
Week 5 : 24 June - 30 June	Seminar	Commodity Markets Workshop
Week 6 : 1 July - 7 July	Seminar	Revision
Week 7 : 8 July - 14 July	Seminar	Unstructured Data
Week 8 : 15 July - 21 July	Seminar	Sentiment Analytics Workshop
Week 9 : 22 July - 28 July	Seminar	Sentiment Utilisation Workshop
Week 10 : 29 July - 4 August	Seminar	Data Frontiers in Finance

Attendance Requirements

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

Course Resources

Prescribed Resources

Moodle course website

The website for this course is on Moodle. All materials will be posted there and discussion forums will be available for your use.

Seminar Notes and Reading List

Seminar notes and reading materials will be posted on Moodle. There is only one reading required for each seminar, the rest consists of optional supporting and supplementary readings.

Course Evaluation and Development

Feedback is regularly sought from students and continual improvements are made based on this feedback. At the end of this course, you will be asked to complete the myExperience survey, which provides a key source of student evaluative feedback. Your input into this quality enhancement process is extremely valuable in assisting us to meet the needs of our students and provide an effective and enriching learning experience. The results of all surveys are carefully considered and do lead to action towards enhancing educational quality.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Alexander Dickerson		UNSW Business School Level 3			No	Yes

Other Useful Information

Academic Information

COURSE POLICIES AND SUPPORT

The Business School expects that you are familiar with the contents of this course outline and the UNSW and Business School learning expectations, rules, policies and support services as listed below:

- Program Learning Outcomes
- Academic Integrity and Plagiarism
- Student Responsibilities and Conduct
- Special Consideration
- Protocol for Viewing Final Exam Scripts
- Student Learning Support Services

Further information is provided on the [key policies and support page](#).

Students may not circulate or post online any course materials such as handouts, exams, syllabi or similar resources from their courses without the written permission of their instructor.

STUDENT LEARNING OUTCOMES

The Course Learning Outcomes (CLOs) – under the Outcomes tab – are what you should be able to demonstrate by the end of this course, if you participate fully in learning activities and successfully complete the assessment items.

CLOs also contribute to your achievement of the Program Learning Outcomes (PLOs), which are developed across the duration of a program. PLOs are, in turn, directly linked to [UNSW graduate capabilities](#). More information on Coursework PLOs is available on the [key policies and support page](#). For PG Research PLOs, including MPDBS, please refer to the [UNSW HDR Learning Outcomes](#).

Academic Honesty and Plagiarism

As a student at UNSW you are expected to display [academic integrity](#) in your work and interactions. Where a student breaches the [UNSW Student Code](#) with respect to academic integrity, the University may take disciplinary action under the Student Misconduct Procedure. To assure academic integrity, you may be required to demonstrate reasoning, research and the process of constructing work submitted for assessment.

To assist you in understanding what academic integrity means, and how to ensure that you do comply with the UNSW Student Code, it is strongly recommended that you complete the [Working with Academic Integrity](#) module before submitting your first assessment task. It is a free, online self-paced Moodle module that should take about one hour to complete.

Submission of Assessment Tasks

SPECIAL CONSIDERATION

You can apply for special consideration when illness or other circumstances beyond your control interfere with your performance in a specific assessment task or tasks, including online exams. Students studying remotely who have exams scheduled between 10pm and 7am local time, are also able to apply for special consideration to sit a supplementary exam at a time outside of these hours.

Special consideration is primarily intended to provide you with an extra opportunity to demonstrate the level of performance of which you are capable. To apply, and for further information, see Special Consideration on the UNSW [Current Students](#) page.

Special consideration applications will be assessed centrally by the Case Review Team, who will update the online application with the outcome and add any relevant comments. The change to the status of the application immediately sends an email to the student and to the assessor with the outcome of the application.

Please note the following:

1. Applications can only be made through Online Services in myUNSW (see the UNSW [Current Students](#) page). Applications will not be accepted by teaching staff. The lecturer-in-charge/course coordinator will be automatically notified when your application is processed.
2. Applying for special consideration does not automatically mean that you will be granted a

- supplementary exam or other concession.
3. If you experience illness or misadventure in the lead up to an exam or assessment, you must submit an application for special consideration, either prior to the examination taking place, or prior to the assessment submission deadline, except where illness or misadventure prevent you from doing so.
 4. If your circumstances stop you from applying before your exam or assessment due date, you must apply within 3 working days of the assessment or the period covered by your supporting documentation.
 5. Under the UNSW Fit To Sit/Submit rule, if you sit the exam/submit an assignment, you are declaring yourself well enough to do so and are cannot subsequently apply for special consideration.
 6. If you become unwell on the day of – or during – an exam, you must stop working on your exam, advise your course coordinator or tutor and provide a medical certificate dated within 24 hours of the exam, with your special consideration application. For online exams, you must contact your course coordinator or tutor immediately via email, Moodle or chat and advise them you are unwell and submit screenshots of your conversation along with your medical certificate and application.
 7. Special consideration requests do not allow the awarding of additional marks to students.

Further information on Business School policy and procedure can be found under “Special Consideration” on the [key policies and support](#) page.

LATE SUBMISSION PENALTIES

For assessments other than examinations, late submission will incur a penalty of 5% per day or part thereof (including weekends) from the due date and time. An assessment will not be accepted after 5 days (120 hours) of the original deadline unless special consideration has been approved. An assignment is considered late if the requested format, such as hard copy or electronic copy, has not been submitted on time or where the ‘wrong’ assignment has been submitted.

For assessments which account for 10% or less of the overall course grade, and where answers are immediately discussed or debriefed, the LIC may stipulate a different penalty. Details of such late penalties will be available on the course Moodle page.

FEEDBACK ON YOUR ASSESSMENT TASK PERFORMANCE

Feedback on student performance from formative and summative assessment tasks will be provided to students in a timely manner. Assessment tasks completed within the teaching period of a course, other than a final assessment, will be assessed and students provided with

feedback, with or without a provisional result, 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.

Faculty-specific Information

PROTOCOL FOR VIEWING FINAL EXAM SCRIPTS

UNSW students have the right to view their final exam scripts, subject to a small number of very specific exemptions. The UNSW Business School has set a [protocol](#) under which students may view their final exam script. Individual schools within the Faculty may also set up additional local processes for viewing final exam scripts, so it is important that you check with your School.

If you are completing courses from the following schools, please note the additional school-specific information:

- Students in the **School of Accounting, Auditing & Taxation** who wish to view their final examination script should also refer to [this page](#).
- Students in the **School of Banking & Finance** should also refer to [this page](#).
- Students in the **School of Information Systems & Technology Management** should also refer to [this page](#).

COURSE EVALUATION AND DEVELOPMENT

Feedback is regularly sought from students and continual improvements are made based on this feedback. At the end of this course, you will be asked to complete the [myExperience survey](#), which provides a key source of student evaluative feedback. Your input into this quality enhancement process is extremely valuable in assisting us to meet the needs of our students and provide an effective and enriching learning experience. The results of all surveys are carefully considered and do lead to action towards enhancing educational quality.

QUALITY ASSURANCE

The Business School is actively monitoring student learning and quality of the student experience in all its programs. A random selection of completed assessment tasks may be used for quality assurance, such as to determine the extent to which program learning goals are being achieved. The information is required for accreditation purposes, and aggregated findings will be used to inform changes aimed at improving the quality of Business School programs. All material used for such processes will be treated as confidential.

TEACHING TIMES AND LOCATIONS

Please note that teaching times and locations are subject to change. Students are strongly advised to refer to the [Class Timetable website](#) for the most up-to-date teaching times and locations.