



## UNSW Course Outline

# FINS5546 Toolkit for Financial Market Decisions - 2024

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## General Course Information

**Course Code :** FINS5546

**Year :** 2024

**Term :** Term 1

**Teaching Period :** T1

**Is a multi-term course? :** No

**Faculty :** UNSW Business School

**Academic Unit :** School of Banking and Finance

**Delivery Mode :** In Person

**Delivery Format :** Standard

**Delivery Location :** Kensington

**Campus :** Sydney

**Study Level :** Postgraduate

**Units of Credit :** 6

### Useful Links

[Handbook Class Timetable](#)

## Course Details & Outcomes

### Course Description

This course provides an introduction to some of the computational tools and techniques necessary to navigate through recent technological advances in the financial services industry. Using a hands-on approach, you will learn how to write simple Python codes to solve a number of

practical problems. Potential projects covered in the course include the collection of Internet-based financial data, real-time analysis of arbitrage opportunities, implementation of event studies, and asset pricing, along with related analytical methods. The concepts learned in this course will help you develop a Python toolkit, which can be extended to tackle more complex problems in both traditional Finance and FinTech.

## Course Aims

Toolkit for Financial Market Decisions (TFFMD) is intended for students of all backgrounds; no prior coding experience is required. TFFMD is part of the School of Banking and Finance's FinTech (Financial Technology) series of courses, and it should provide useful background knowledge for more advanced courses. TFFMD should also prove useful if you wish to pursue careers outside FinTech, as it teaches you more efficient ways to solve standard financial problems.

## Relationship to Other Courses

Toolkit for Financial Market Decisions (TFFMD) is intended for students of all backgrounds; no prior coding experience is required. FINS3645 (Financial Market Data Design and Analysis) provides useful background information on active areas in FinTech but is not a prerequisite for this course. TFFMD is part of the School of Banking and Finance's FinTech (Financial Technology) series of courses, and it should provide useful background knowledge for more advanced courses. TFFMD should also prove useful for students pursuing careers outside FinTech, teaching them more efficient ways to solve standard Financial problems.

# Course Learning Outcomes

Course Learning Outcomes	Program learning outcomes
CLO1 : Develop a kit of common tools used in the financial markets that can be applied in a variety of real-world settings.	<ul style="list-style-type: none"> <li>PLO1 : Business Knowledge</li> <li>PLO2 : Problem Solving</li> <li>PLO3 : Business Communication</li> <li>PLO4 : Teamwork</li> </ul>
CLO2 : Implement alternative ways to collect, manipulate, and analyse data to answer questions related to market efficiency.	<ul style="list-style-type: none"> <li>PLO1 : Business Knowledge</li> <li>PLO2 : Problem Solving</li> <li>PLO3 : Business Communication</li> </ul>
CLO3 : Evaluate implications of technological advances on the current and future states of the financial services industry.	<ul style="list-style-type: none"> <li>PLO1 : Business Knowledge</li> <li>PLO2 : Problem Solving</li> <li>PLO3 : Business Communication</li> </ul>
CLO4 : Translate abstract financial theories into usable tools for competing in the finance workplace.	<ul style="list-style-type: none"> <li>PLO1 : Business Knowledge</li> <li>PLO2 : Problem Solving</li> <li>PLO3 : Business Communication</li> </ul>
CLO5 : Collaborate in teams to find solutions to real-world problems in the finance sector.	<ul style="list-style-type: none"> <li>PLO1 : Business Knowledge</li> <li>PLO2 : Problem Solving</li> <li>PLO3 : Business Communication</li> <li>PLO4 : Teamwork</li> </ul>
CLO6 : Apply state-of-the-art code-sharing techniques and version control systems to navigate a real-world team project.	<ul style="list-style-type: none"> <li>PLO1 : Business Knowledge</li> <li>PLO2 : Problem Solving</li> <li>PLO3 : Business Communication</li> <li>PLO4 : Teamwork</li> </ul>

Course Learning Outcomes	Assessment Item
CLO1 : Develop a kit of common tools used in the financial markets that can be applied in a variety of real-world settings.	<ul style="list-style-type: none"> <li>Class Contribution and Weekly Quizzes</li> <li>Individual Project</li> <li>Group Project</li> </ul>
CLO2 : Implement alternative ways to collect, manipulate, and analyse data to answer questions related to market efficiency.	<ul style="list-style-type: none"> <li>Class Contribution and Weekly Quizzes</li> <li>Individual Project</li> <li>Group Project</li> </ul>
CLO3 : Evaluate implications of technological advances on the current and future states of the financial services industry.	<ul style="list-style-type: none"> <li>Class Contribution and Weekly Quizzes</li> <li>Individual Project</li> <li>Group Project</li> </ul>
CLO4 : Translate abstract financial theories into usable tools for competing in the finance workplace.	<ul style="list-style-type: none"> <li>Individual Project</li> <li>Group Project</li> </ul>
CLO5 : Collaborate in teams to find solutions to real-world problems in the finance sector.	<ul style="list-style-type: none"> <li>Class Contribution and Weekly Quizzes</li> <li>Individual Project</li> <li>Group Project</li> </ul>
CLO6 : Apply state-of-the-art code-sharing techniques and version control systems to navigate a real-world team project.	<ul style="list-style-type: none"> <li>Group Project</li> </ul>

# Learning and Teaching Technologies

Moodle - Learning Management System

## Learning and Teaching in this course

Toolkit for Financial Market Decisions uses a hands-on, project-oriented teaching approach. Sessions will first introduce a high-level task in Finance. We will then discuss solutions to that problem, building intuition from non-automated solutions. The class then pivots to the key concepts of the day, before finally implementing a solution in Python. Toolkit for Financial Market Decisions is intended to help people studying Finance develop new skills. Such skills can help them learn alternate ways to accomplish typical work-place tasks or do things that would not otherwise be possible. Such skills help people work efficiently and develop long-term marketplace competitiveness.

## Assessments

### Assessment Structure

Assessment Item	Weight	Relevant Dates	Program learning outcomes
Class Contribution and Weekly Quizzes Assessment Format: Individual	35%	Start Date: See Detailed assessment description Due Date: See Detailed assessment description	<ul style="list-style-type: none"><li>• PLO1 : Business Knowledge</li><li>• PLO2 : Problem Solving</li><li>• PLO3 : Business Communication</li></ul>
Individual Project Assessment Format: Individual	30%	Start Date: See Detailed assessment description Due Date: See Detailed assessment description	<ul style="list-style-type: none"><li>• PLO1 : Business Knowledge</li><li>• PLO2 : Problem Solving</li><li>• PLO3 : Business Communication</li></ul>
Group Project Assessment Format: Group	35%	Start Date: See Detailed assessment description Due Date: See Detailed assessment description	<ul style="list-style-type: none"><li>• PLO1 : Business Knowledge</li><li>• PLO2 : Problem Solving</li><li>• PLO3 : Business Communication</li><li>• PLO4 : Teamwork</li></ul>

### Assessment Details

#### Class Contribution and Weekly Quizzes

##### Assessment Overview

The weekly activities provide opportunities to students to practice weekly content discussed in

each lecture.

Assesses: PLO1, PLO2, PLO3

#### Course Learning Outcomes

- CLO1 : Develop a kit of common tools used in the financial markets that can be applied in a variety of real-world settings.
- CLO2 : Implement alternative ways to collect, manipulate, and analyse data to answer questions related to market efficiency.
- CLO3 : Evaluate implications of technological advances on the current and future states of the financial services industry.
- CLO5 : Collaborate in teams to find solutions to real-world problems in the finance sector.

#### Detailed Assessment Description

<u>Weight</u>	<u>Assessment Name</u>	<u>Assessment Due Date / Timing</u>
10%	Online contribution	On-going, weeks 1-10
25%	Weekly Online Coding Quizzes	Ongoing, weeks 1-10

#### Submission notes

See Detailed assessment description

#### Assignment submission Turnitin type

This is not a Turnitin assignment

### **Individual Project**

#### Assessment Overview

The projects evaluate student's capability of using programming skills to solve practical problems individually.

Assesses: PLO1, PLO2, PLO3

#### Course Learning Outcomes

- CLO1 : Develop a kit of common tools used in the financial markets that can be applied in a variety of real-world settings.
- CLO2 : Implement alternative ways to collect, manipulate, and analyse data to answer questions related to market efficiency.
- CLO3 : Evaluate implications of technological advances on the current and future states of the financial services industry.
- CLO4 : Translate abstract financial theories into usable tools for competing in the finance workplace.

- CLO5 : Collaborate in teams to find solutions to real-world problems in the finance sector.

#### Detailed Assessment Description

Weight	Assessment Name	Assessment Due Date / Timing
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30%	Individual Project	Week 7
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#### Assignment submission Turnitin type

This is not a Turnitin assignment

### Group Project

#### Assessment Overview

This project evaluates student's capability in using programming skills to solve complex practical problems in a team environment.

Assesses: PL01, PL02, PL03, PL04

#### Course Learning Outcomes

- CLO1 : Develop a kit of common tools used in the financial markets that can be applied in a variety of real-world settings.
- CLO2 : Implement alternative ways to collect, manipulate, and analyse data to answer questions related to market efficiency.
- CLO3 : Evaluate implications of technological advances on the current and future states of the financial services industry.
- CLO4 : Translate abstract financial theories into usable tools for competing in the finance workplace.
- CLO5 : Collaborate in teams to find solutions to real-world problems in the finance sector.
- CLO6 : Apply state-of-the-art code-sharing techniques and version control systems to navigate a real-world team project.

#### Detailed Assessment Description

Weight	Assessment Name	Assessment Due Date / Timing
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30%	Group component	Week 10
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5%	Peer review	Week 10
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#### Assignment submission Turnitin type

This is not a Turnitin assignment

# General Assessment Information

## 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 1 : 12 February - 18 February	Lecture	Introduction to financial analysis with Python: Downloading stock prices. <ul style="list-style-type: none"><li>• Weekly assignment</li><li>• Course contribution</li></ul>
Week 2 : 19 February - 25 February	Lecture	Financial analysis with Python: The building blocks (I) <ul style="list-style-type: none"><li>• Weekly assignment</li><li>• Course contribution</li></ul>
Week 3 : 26 February - 3 March	Lecture	Financial analysis with Python: The building blocks (II) <ul style="list-style-type: none"><li>• Weekly assignment</li><li>• Course contribution</li></ul>
Week 4 : 4 March - 10 March	Lecture	Assessing and storing financial data <ul style="list-style-type: none"><li>• Weekly assignment</li><li>• Course contribution</li></ul>
Week 5 : 11 March - 17 March	Lecture	Working with financial data in Pandas (I) <ul style="list-style-type: none"><li>• Weekly assignment</li><li>• Course contribution</li></ul>
Week 6 : 18 March - 24 March	Other	Flexibility week Team Collaboration
Week 7 : 25 March - 31 March	Lecture	Working with financial data in Pandas (II) <ul style="list-style-type: none"><li>• Weekly assignment</li><li>• Course contribution</li></ul>
Week 8 : 1 April - 7 April	Lecture	Event studies in Finance (I): <ul style="list-style-type: none"><li>• Working with time-series</li><li>• Course project: Do analyst recommendations affect stock prices?</li><li>• Weekly assignment</li><li>• Course contribution</li></ul>
Week 9 : 8 April - 14 April	Lecture	Event studies in Finance (II): Design and techniques <ul style="list-style-type: none"><li>• Implementation of course project in Python (I)</li><li>• Weekly assignment</li><li>• Course contribution</li></ul>
Week 10 : 15 April - 21 April	Lecture	Event studies in Finance (III) <ul style="list-style-type: none"><li>• Implementation of course project in Python (II)</li><li>• Weekly assignment</li><li>• Course contribution</li></ul>

# **Attendance Requirements**

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

# **Course Resources**

## **Prescribed Resources**

All course materials will be delivered through Moodle and Ed platforms. Students will need a computer and internet connection. Setup and configuration instructions will be available from Moodle. Online discussion forums serve as the first point of contact between students and instructors. Instructors will actively monitor the boards. Please do not email instructors directly as online discussion allows information to be shared by everyone. Students should actively participate in the online discussion and may freely answer one another's questions. Good online etiquette is expected, and a failure to behave properly online may be punished with negative marking on the overall course grade. There is no formal textbook for the course. A list of recommended reference books and other material will be available on Moodle.

## **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	Yiping Lin					No	Yes
Lecturer	Sarah Xiao					No	No

## **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.