



UNSW Course Outline

FINS3646 Toolkit for Finance - 2024

Published on the 25 Aug 2024

General Course Information

Course Code : FINS3646

Year : 2024

Term : Term 3

Teaching Period : T3

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 : Undergraduate

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 Finance (TFF) 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. TFF 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. TFF 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
CL01 : 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"> • PL01 : Business Knowledge • PL02 : Problem Solving • PL03 : Business Communication • PL04 : Teamwork
CL02 : Implement alternative ways to collect, manipulate, and analyse data to answer questions related to market efficiency.	<ul style="list-style-type: none"> • PL01 : Business Knowledge • PL02 : Problem Solving • PL03 : Business Communication
CL03 : Evaluate implications of technological advances on the current and future states of the financial services industry.	<ul style="list-style-type: none"> • PL01 : Business Knowledge • PL02 : Problem Solving • PL03 : Business Communication
CL04 : Translate abstract financial theories into usable tools for competing in the finance workplace.	<ul style="list-style-type: none"> • PL01 : Business Knowledge • PL02 : Problem Solving • PL03 : Business Communication
CL05 : Collaborate in teams to find solutions to real-world problems in the finance sector.	<ul style="list-style-type: none"> • PL01 : Business Knowledge • PL02 : Problem Solving • PL03 : Business Communication • PL04 : Teamwork

Course Learning Outcomes	Assessment Item
CL01 : 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"> • Class Contribution and Weekly Quizzes • Individual Project • Group Project
CL02 : Implement alternative ways to collect, manipulate, and analyse data to answer questions related to market efficiency.	<ul style="list-style-type: none"> • Class Contribution and Weekly Quizzes • Individual Project • Group Project
CL03 : Evaluate implications of technological advances on the current and future states of the financial services industry.	<ul style="list-style-type: none"> • Class Contribution and Weekly Quizzes • Individual Project • Group Project
CL04 : Translate abstract financial theories into usable tools for competing in the finance workplace.	<ul style="list-style-type: none"> • Individual Project • Group Project
CL05 : Collaborate in teams to find solutions to real-world problems in the finance sector.	<ul style="list-style-type: none"> • Class Contribution and Weekly Quizzes • Individual Project • Group Project

Learning and Teaching Technologies

Moodle - Learning Management System | EdStem

Learning and Teaching in this course

Toolkit for Finance 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 Finance 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%		• PLO1 : Business Knowledge • PLO2 : Problem Solving • PLO3 : Business Communication
Individual Project Assessment Format: Individual	30%		• PLO1 : Business Knowledge • PLO2 : Problem Solving • PLO3 : Business Communication
Group Project Assessment Format: Group	35%		• PLO1 : Business Knowledge • PLO2 : Problem Solving • PLO3 : Business Communication • PLO4 : Teamwork

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

- CL01 : Develop a kit of common tools used in the financial markets that can be applied in a variety of real-world settings.
- CL02 : Implement alternative ways to collect, manipulate, and analyse data to answer questions related to market efficiency.
- CL03 : 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

Weight	Assessment Name	Assessment Due Date / Timing
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10%	Online contribution	On-going, weeks 1-10
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25%	Weekly Online Coding Quizzes	On-going, weeks 1-10
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Submission notes

See Detailed assessment description

Assignment submission Turnitin type

This is not a Turnitin assignment

Generative AI Permission Level

No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.

For more information on Generative AI and permitted use please see [here](#).

Individual Project

Assessment Overview

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

Assesses: PLO1, PLO2, PLO3

BCom students: myBCom course points for PLO2

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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BCom students: myBCom course points for PL02

Assignment submission Turnitin type

This is not a Turnitin assignment

Generative AI Permission Level

No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.

For more information on Generative AI and permitted use please see [here](#).

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

BCom students: myBCom course points for 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.

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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BCom students: myBCom course points for PL04

Assignment submission Turnitin type

This is not a Turnitin assignment

Generative AI Permission Level

No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.

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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 : 9 September - 15 September	Lecture	Introduction to financial analysis with Python: Downloading stock prices.
Week 2 : 16 September - 22 September	Lecture	Financial analysis with Python: The building blocks (I) <ul style="list-style-type: none">• Weekly assignment• Course contribution
Week 3 : 23 September - 29 September	Lecture	Financial analysis with Python: The building blocks (II) <ul style="list-style-type: none">• Weekly assignment• Course contribution
Week 4 : 30 September - 6 October	Lecture	Assessing and storing financial data <ul style="list-style-type: none">• Weekly assignment• Course contribution
Week 5 : 7 October - 13 October	Lecture	Working with financial data in Pandas (I) <ul style="list-style-type: none">• Weekly assignment• Course contribution
Week 6 : 14 October - 20 October	Other	Flexibility week N/A
Week 7 : 21 October - 27 October	Lecture	Working with financial data in Pandas (II) <ul style="list-style-type: none">• Weekly assignment• Course contribution
Week 8 : 28 October - 3 November	Lecture	Event studies in Finance (I): <ul style="list-style-type: none">• Working with time-series• Course project: Do analyst recommendations affect stock prices? <ul style="list-style-type: none">• Weekly assignment• Course contribution
Week 9 : 4 November - 10 November	Lecture	<ul style="list-style-type: none">• Event studies in Finance (II): Design and techniques• Implementation of course project in Python (I)• Weekly assignment• Course contribution
Week 10 : 11 November - 17 November	Lecture	<ul style="list-style-type: none">• Event studies in Finance (III)• Implementation of course project in Python (II)• Weekly assignment• Course contribution

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	Breno Schmidt					No	Yes
	Yiping Lin					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 [Policies and Guidelines](#) 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 [Policies and Guidelines](#) page. For PG Research PLOs, including MPDBS, please refer to [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 Code of Conduct](#) with respect to academic integrity, the University may take disciplinary action. 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 Code of Conduct, 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

SHORT EXTENSIONS

Short Extension is a new process that allows you to apply for an extended deadline on your assessment without the need to provide supporting documentation, offering immediate approval during brief, life-disrupting events. Requests are automatically approved once submitted.

Short extensions are ONLY available for some assessments. Check your course outline or Moodle to see if this is offered for your assessments. Where a short extension exists, all students enrolled in that course in that term are eligible to apply. Further details are available the UNSW [Current Students](#) page.

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. Special consideration is primarily intended to provide you with an extra opportunity to demonstrate the level of performance of which you are capable.

Applications can only be made online and will NOT be accepted by teaching staff. 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. The majority of applications will be processed within 3-5 working days.

For further information, and to apply, see Special Consideration on the UNSW [Current Students](#) page.

LATE SUBMISSION PENALTIES

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. In the case of an approved Equitable Learning Plan (ELP) provision, special consideration or short extension, the late penalty applies from the date of approved time extension. After five days from the extended deadline, the assessment cannot be submitted.

An assessment is considered late if the requested format, such as hard copy or electronic copy, has not been submitted on time or where the 'wrong' assessment 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.