FACULTY OF BUSINESS

MASTER OF SCIENCE IN FINANCE WITH DATA ANALYTICS

LEARNING MODULE OUTLINE

Academic Year	2025-2026	Semester	1
Module Code	Applied Econometrics		
Learning Module	FIDA6105-211		
Pre-requisite(s)	Nil		
Medium of Instruction	English		
Credits	3	Contact Hours	45
Instructor	Dr. Siu Wai Cheong	Email	siuwaich@mpu.edu.mo
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MODULE DESCRIPTION

This module introduces applied statistics and econometrics primarily in the context of finance and economics. It covers the classical linear regression model, univariate time-series modelling and forecasting, multivariate models, modelling long-run relationships in finance, modelling volatility and correlation and panel data, etc. Programming languages, such as Python or R, may facilitate the learning process.

MODULE INTENDED LEARNING OUTCOMES (ILOS)

On completion of this learning module, students will be able to:

M1.	analyse the classical linear regression model,
M2.	analyse univariate time-series modelling and forecasting,
M3.	analyse multivariate models,
M4.	analyse how to model long-run relationships in finance,
M5.	analyse how to model volatility and correlation,
M6.	analyse panel data and
M7.	apply the above models and techniques to real-world finance and the economy.

These ILOs aims to enable students to attain the following Programme Intended Learning Outcomes (PILOs):

PILOs	**M1**	**M2**	**M3**	**M4**	**M5**	**M6**	**M7**
P1. Master critical knowledge of financial theories, financial models and data analytics in finance and apply it to a wide range of complex financial issues.	✓	✓	✓	✓	✓	✓	✓

P2. Expand knowledge of finance and data analytics through critically evaluating current issues informed by leading edge research and practice in the industry.							✓
P3. Conduct applied research, particularly using data analytics, into financial issues through a rigorous and systematic approach.							✓
P4. Communicate effectively, written and orally, to both professional and non-professional audiences on local and global financial issues.							
P5. Demonstrate skills in time management, teamwork, leadership and independent study so that tasks can be planned and implemented at a professional level.							
P6. Identify and address ethical dilemmas and social responsibility issues to uphold high standards of integrity, professionalism and ethical behaviour.							

MODULE SCHEDULE, COVERAGE AND STUDY LOAD

Week	Content Coverage	Contact Hours
1-2	The classical linear regression model (Chapter 3, 4, 5)	6
3-4	Univariate time-series modelling and forecasting (Chapter 6)	6
5-6	Multivariate models (Chapter 7)	6
7-8	Modelling long-run relationships in finance (Chapter 8)	6
9-11	Modelling volatility and correlation (Chapter 9)	9
12-14	Panel data (Chapter 11)	9
15	Midterm Examination	3

TEACHING AND LEARNING ACTIVITIES

In this learning module, students will work towards attaining the ILOs through the following teaching and learning activities:

Teaching and Learning Activities	M1	M2	M3	M4	M5	M6	M7
T1. Lectures,	✓	✓	✓	✓	✓	✓	✓
T2. case studies,	✓	✓	✓	✓	✓	✓	✓

ATTENDANCE

Attendance requirements are governed by the Academic Regulations Governing Master's Degree Programmes of the Macao Polytechnic University. Students who do not meet the attendance requirements for the learning module shall be awarded an 'F' grade.

ASSESSMENT

In this learning module, students are required to complete the following assessment activities:

Assessment Activities	Weighting (%)	ILOs to be Assessed
A1. Assignment(s)	20%	M1-M7
A2. Quizzes	20%	M1-M7
A3. Midterm Test	25%	M1-M7
A4. Final Examination	35%	M1-M7

The assessment will be conducted following the University's Assessment Strategy (see www.mpu.edu.mo/teaching_learning/en/assessment_strategy.php). Passing this learning module indicates that students will have attained the ILOs of this learning module and thus acquired its credits.

MARKING SCHEME

	Assessment Task	Criterion	Excellent	Very Good, Good	Satisfactory	Pass	Fail
			A, A-	B+, B, B-	C+, C, C-	D+, D	F
			88% - 100%	73% - 87%	58% - 72%	50% - 57%	0 – 49%
1.	Projects /Assignments (if applicable)	Demonstrate the understanding of the subjects	High	Significant	Moderate	Basic	Not even reaching marginal levels
2.	Oral presentation (if applicable)	Demonstrate the ability to answer questions on topics covered in the outline					
3.	Midterm / Final / Resit Exam (if applicable)	Demonstrate the understanding of the subject and the arguments are articulated and organized in terms of skills, presentation, writing, concepts, methods and techniques. Be able to provide a specific conclusion					

		/ solution in some cases (if applicable)					

REQUIRED READINGS

Brooks, C., 2019, Introductory econometrics for finance, Cambridge University Press.

REFERENCES

Tsay R. S., 2010, Analysis of Financial Time Series, 3rd ed., Wiely.

STUDENT FEEDBACK

At the end of every semester, students are invited to provide feedback on the learning module and the teaching arrangement through questionnaires. Your feedback is valuable for instructors to enhance the module and its delivery for future students. The instructor and programme coordinators will consider all feedback and respond with actions formally in the annual programme review.

ACADEMIC INTEGRITY

The Macao Polytechnic University requires students to have full commitment to academic integrity when engaging in research and academic activities. Violations of academic integrity, which include but are not limited to plagiarism, collusion, fabrication or falsification, repeated use of assignments and cheating in examinations, are considered as serious academic offenses and may lead to disciplinary actions. Students should read the relevant regulations and guidelines in the Student Handbook which is distributed upon the admission into the University, a copy of which can also be found at www.mpu.edu.mo/student_handbook/.