



## **Course Outline**

### **FN211 Financial Mathematics and Statistics**

**Semester 2/2024 (January 20 - May 14, 2025)**

**Lecture Time:** Thursday, 13.00-16.00 hours

**Lecture Venue:** Room 202

**Teaching Materials Platform:** <https://tinyurl.com/fn-211-2025>

#### **Instructor:**

**Name:** Dr. Isariya Suttakulpiboon

**Office Hours:** Friday 9 AM - 12 PM

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**Phone:** 092-250-0910

**Number of Credit:** 3 Credits (3-0-6)

**Prerequisite:** -

#### **Course Description:**


Essentials of statistics and mathematics for financial applications; basic statistics, the concept of risk and return, probability, regression analyses, basic calculus (e.g. introduction to derivatives, integration, and integral), optimization, and basic matrices

#### **Course Objectives:**


1. Acquaint students with the financial mathematics tools necessary for assessment of risk and return in financial decision making and investment management.
2. Learn techniques to organize and analyze data.
3. Develop scientific thinking and overcome anxiety about applying calculus and statistics in finance work.
4. Develop familiarity with the use of excel statistics functions.

## Expected Learning Outcomes


### 1. Morality and Ethics

Applicability	Expected Learning Outcomes	Evaluation Method
N/A	1. Possess honesty, sacrifice, self-social, and environmental responsibility.	
N/A	2. Value "sufficiency" theory and adapt it in life path by adhering to adequacy, rationale, and immunity development.	
	3. Value disciplines, respect, and comply with the rules and regulations of the institution and society at large.	
N/A	4. Acquire knowledge related to business morality and ethics, and be able to handle ethical dilemma with integrity.	


### 2. Knowledge

Applicability	Expected Learning Outcomes	Evaluation Method
N/A	1. Acquire knowledge on and understand the important concepts in business management.	
	2. Acquire knowledge on and understand the important social and science concepts related to business management.	
N/A	3. Acquire knowledge on and understand the important concepts related to business processes, planning, corporate structures, operations, control, performance evaluation and contingency plan to suit the circumstances.	
N/A	4. Acquire the knowledge on academic advancement and professional development in business management including the understanding of the situational adaptability and its impacts on business.	


### 3. Intellectual Development

Applicability	Expected Learning Outcomes	Evaluation Method
	1. Be able to search and process information and utilize various concepts appropriately in a given circumstance in order to obtain relevant information to benefit in the rapidly changing business environment.	
N/A	2. Be able to think systematically, rationally and creatively and to integrate knowledge from other disciplines to solve the problems in business and other settings.	
N/A	3. Be able to collectively propose solutions to problems at hand and analyze the impacts of the proposed solutions and be able to choose the solution that is appropriate to a given situation to ensure business competitive advantages.	

### 4. Interpersonal Skills and Responsibilities

Applicability	Expected Learning Outcomes	Evaluation Method
	1. Be able to work in team, possess interpersonal skills and leadership skills, and be professionally adaptive to a given situation.	
N/A	2. Be creative and constructively criticize to solve problem of the team.	
N/A	3. Be responsible in lifelong learning to develop self and professional career.	

## 5. Quantitative Analysis, Communication and Information Technology

Applicability	Expected Learning Outcomes	Evaluation Method
	1. Be able to apply mathematics, statistics, quantitative analysis in analyzing and making decisions in business and daily life.	
N/A	2. Be able to efficiently communicate in Thai and foreign languages that are relevant in doing Business.	
N/A	3. Be able to explain the issues and make the issues clear in verbal or writing, and be able to choose the appropriate pattern of communication for different groups of audience both in business context and in other contexts.	
N/A	4. Be able to utilize the information technologies or others to support the business operations.	

**Remark:**  Primary expected outcome □ Secondary expected

**Main Text:** See the class website

**Recommended Texts & Materials:** See the class website

**Suggested Readings:** See the class website

### Evaluation Methods:

30% Assignment

30% Group Final Project

20% Midterm Exam

20% Final Exam

### Grading Criteria:

A 85%-100% B+ 80%-84.99%

B 75%-79.99% C+ 70%-74.99%

C 65%-69.99% D+ 60%-64.99%

D 55%-59.99% F < 55%

## Tentative Class Schedule:

<b>Date</b>	<b>Topic</b>	<b>Assignment</b>	<b>Due Date</b>
January 23, 2025	Calculus for Finance and Risk Management		
January 30, 2025	Calculus for Finance and Risk Management		
February 6, 2025	Calculus for Finance and Risk Management	Assignment 1	February 20, 2025
February 13, 2025	Basic Data Analytics		
February 20, 2025	Basic Data Analytics		
February 27, 2025	Random Variable and Probability Distribution		
March 6, 2025	Random Variable and Probability Distribution		
March 14, 2025	Midterm Exam	Midterm	March 14, 2025
February 13, 2025	Simulations		
February 20, 2025	Simulations	Assignment 2	March 6, 2025
February 27, 2025	Statistical Inference		
March 6, 2025	Statistical Inference		
March 20, 2025	Basic Matrix Algebra		
March 27, 2025	Regression Analysis		
April 3, 2025	Regression Analysis	Assignment 3	April 17, 2025
	Group Project Announcement		
April 10, 2025	Working with Financial Data Part 1		
April 24, 2025	Working with Financial Data Part 2		
May 1, 2025	Working with Financial Data Part 3		
May 8, 2025	Group Project Presentation	Group Project	May 8, 2025
May 30, 2025	Final Exam	Final Exam	May 30, 2025