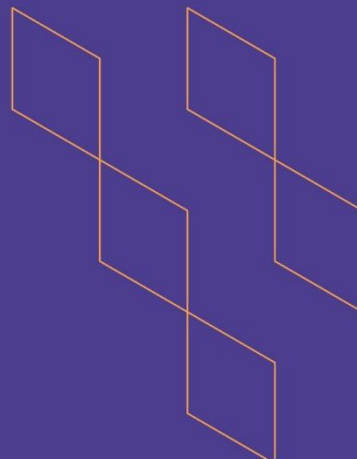




T-104
2022

Course Specification



Course Title: **Applied Calculus I**

Course Code: **MATH111**

Program: **All Programs In the College Of Business And Tourism**

Department: **General Studies**

College: **Deanship of Educational Services**

Institution: **The University of Prince Mugrin (UPM)**

Version: **3**

Last Revision Date: **10/04/2023**



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A. General information about the course:

Course Identification	
1. Credit hours:	
2. Course type	
a.	University <input type="checkbox"/> College <input checked="" type="checkbox"/> Department <input type="checkbox"/> Track <input type="checkbox"/> Others <input type="checkbox"/>
b.	Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>
3. Level/year at which this course is offered: Level 1/First year	
4. Course General Description This course covers linear equations and inequalities. System of Linear equations. Basic Material on Matrices. An elementary introduction to linear programming Permutations and Combinations. Application in mathematics for business.	
5. Pre-requirements for this course (if any): Math 012	
6. Co- requirements for this course (if any): None	
7. Course Main Objective(s) In this course the students will learn: <ul style="list-style-type: none"> • How to solve financial problems. • How to apply linear programming problems techniques. • How to solve business related problems using equations and inequalities. 	

1. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1.	Traditional classroom	45	75%
2.	E-learning	15	25%
3.	Hybrid <ul style="list-style-type: none"> • Traditional classroom • E-learning 		
4.	Distance learning		

2. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	45
2.	Laboratory/Studio	
3.	Field	
4.	Tutorial	15
5.	Others (specify)	
	Total	60





B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with ACCT and FIN program	Teaching Strategies	Assessment Methods
1.0	By the end of this course, students will be able to..... Knowledge and understanding			
1.1	Describe the concept of linear systems and matrices used in economics.	ACCT PLO K2 FIN PLO K3	<ul style="list-style-type: none"> Highlight keywords. List Memory activities Reading materials Watching presentations and videos 	<ul style="list-style-type: none"> Fill in the blanks. Label Match Multiple choice Quizzes True and false questions
1.2	Identify sets and logical statements.	ACCT PLO K2 FIN PLO K3	<ul style="list-style-type: none"> Concept map Demonstrations Diagrams Flowcharts Group discussions Summarize 	<ul style="list-style-type: none"> Concept map Create a summary. Essay Diagrams Presentation Provide examples. Quizzes Short answers
...				
2.0	Skills			
2.1	Evaluate financial problems involving simple and compound interests, present and future values.	ACCT PLO S2	<ul style="list-style-type: none"> Debates Compare and contrast (with charts, tables, and Venn diagrams) Concept map Journal Pros and cons list Mind map 	<ul style="list-style-type: none"> Argumentative or persuasive essay Debates Discussions Presentation Provide alternative solutions.
2.2	Solve business problems using linear programming, equations and inequalities.		<ul style="list-style-type: none"> Calculate Concept map 	<ul style="list-style-type: none"> Discussion board post E-portfolio
2.3	Apply matrices to solve systems of linear equations.		<ul style="list-style-type: none"> Creating examples Demonstrations 	<ul style="list-style-type: none"> Presentation Problem-





Code	Course Learning Outcomes	Code of CLOs aligned with ACCT and FIN program	Teaching Strategies	Assessment Methods
2.4	Apply the permutations, and combinations and their application in business.		<ul style="list-style-type: none"> • Flipped classroom. • Gamification • Group work • Problem-solving tasks • Short answers 	<ul style="list-style-type: none"> • solving tasks. • Short answers
3.0	Values, autonomy, and responsibility			
3.1	Demonstrate teamwork strategies in collaborative activities.		<ul style="list-style-type: none"> • Active participation in classroom activities • Brainstorm ideas • Group discussions • Present in front of an audience. • Problem-solving activities • Written assignments (essays, reports) 	<ul style="list-style-type: none"> • Answer questions • Ability to follow procedures. • Critical questioning • Feedback and peer evaluation • Willingness to participate
3.2				
...				

C. Course Content

No	List of Topics	Contact Hours
1.	Mathematics of Finance.	8
2.	systems of Linear Equations; Matrices.	16
3.	Linear Inequalities and Linear Programming.	12
4.	Linear Programming: The Simplex Method.	12
5.	Sets, and counting.	12
Total		60

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Homework	Every week	10%



No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
2.	Quizzes	Every two weeks	15%
3.	Midterm	8 th Week	25%
4.	Class Participation	Continues assessment	10%
5.	Project	15 th week	5%
6.	Final Exam	16 th week	35%
	Total		100%

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.)

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	Finite Mathematics for Business, Economics, Life Sciences, and Social Sciences (13th Edition) 13th Edition by Raymond A. Barnett (Author), Michael R. Ziegler (Author), Karl E. Byleen (Author)
Supportive References	
Electronic Materials	<ul style="list-style-type: none"> • Microsoft Team • Calculator
Other Learning Materials	N/A

2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	<ul style="list-style-type: none"> • Classrooms with a 30 students capacity • computer lab • Projector • Smart Board
Technology equipment (projector, smart board, software)	<ul style="list-style-type: none"> • Microsoft Teams
Other equipment (depending on the nature of the specialty)	



F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students	Indirect
Effectiveness of students assessment	External evaluator	Direct
Quality of learning resources	Instructor	Direct
The extent to which CLOs have been achieved	Quality Committee	Direct
Other		

Assessor (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval Data

COUNCIL /COMMITTEE	GS COUNCIL MEETING
REFERENCE NO.	AY-2022-2023-NO.4
DATE	12/04/2023

