(2) Business Mathematics-BMTH1023

<table>
<tr><td>1.</td><td colspan="5">Name of Course</td><td colspan="4">Business Mathematics</td></tr>
<tr><td>2.</td><td colspan="5">Course Code</td><td colspan="4">BMTH1023</td></tr>
<tr><td>3.</td><td colspan="5">Name(s) of academic staff</td><td colspan="4"></td></tr>
<tr><td>4.</td><td colspan="5">Rationale for the inclusion of the course/module in the programme</td><td colspan="4">Business Mathematics is very important for modern business management. The forecasting and operating procedures are based primarily on business mathematics. Things such as simple interest, compound interest show a company that what will it lose or gain over the years if it invests in a particular asset. Business mathematics will assist student in understanding cost and price calculations which are the basis of cash inflows and outflows.</td></tr>
<tr><td>5.</td><td colspan="5">Semester and Year offered</td><td colspan="4">1/2</td></tr>
<tr><td rowspan="3">6.</td><td rowspan="2">Total Student Learning Time (SLT)</td><td colspan="4">Face to Face</td><td colspan="3">Total Guided and Independent Learning</td></tr>
<tr><td rowspan="2">L = Lecture
T = Tutorial
P = Practical
O= Others</td><td>L</td><td>T</td><td>P</td><td>O</td><td rowspan="2" colspan="3">Guided = 42
Independent = 84
Total = 126</td></tr>
<tr><td>28</td><td>14</td><td></td><td></td></tr>
<tr><td>7.</td><td colspan="5">Credit Value</td><td colspan="4">3</td></tr>
<tr><td>8.</td><td colspan="5">Prerequisite (if any)</td><td colspan="4">Nil</td></tr>
<tr><td>9.</td><td colspan="9">Objectives:
The primary objective of Business Mathematics is to prepare students for subsequent work in the Business College and for their future careers in business.
For this reason all aspects or the program follow business practices and use common tools of the business world.
Business Mathematics presents math skills and knowledge that students can apply to solve financial problems</td></tr>
<tr><td>10.</td><td colspan="9">Learning outcomes:
At the end of this subject, students should be able to:
Understand the importance of mathematical analysis to solve business and economic applications
Understand linear equations
Understand linear programming using the geometric approach
Understand the mathematics of finance
Understand basic calculus such as functions of two or more variables, differentiations and difference equations</td></tr>
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11.	Transferable Skills: • Overcome difficulties when dealing with numbers or financial data • Sharpen skills in working with and interpreting numbers • Empowered to use numbers to think and act more clearly • Manipulate numbers and apply mathematical relationships with speed and accuracy for better decision making
12.	Teaching-learning and assessment strategy A variety of teaching and learning strategies are used throughout the course, including: • Lecture sessions • Tutorial sessions • Case Studies • Student-Lecturer discussion • Collaborative and co-operative learning • Workshops and Training Seminars • Independent study Assessment strategies include the following: • Ongoing quizzes • Midterm tests • Performance Assessment (Participation, project, Assigned exercises) • Case Presentations
13.	Synopsis: Business Mathematics is a comprehensive introduction to the concepts and applications of mathematics to personal and commercial business problems. This course will maximise student interest by presenting the necessary mathematics through real-world applications. By providing solid, practical, and up-to-date coverage of business mathematics topics, the course begins with a brief review of basic mathematics and goes on to introduce key business topics
14.	Mode of Delivery: Face to Face • Lecture sessions • Tutorial sessions

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15. Assessment Methods and Types:
The assessment for this course will be based on the following:

Coursework	**50%**
Quizzes	10%
Assignments	10%
Project	10%
Mid-Semester Exam	20%
Final Examination	**50%.**
Total	**100%**

16. Mapping of the course/module to the Programme Aims
The individual course is mapped to the programme aims using a scale of **one** to **five** where (one being the least relevant/related and five being the most relevant/ related).

A1	A2	A3	A4	A5	A6
4	2	4	2	2	2

17. Mapping of the course/module to the Programme Learning Outcomes
The learning outcomes of this course are mapped to the eight MQF domains using a scale of **one** to **five** where (one being the least relevant/related and five being the most relevant/ related).

LO1	LO 2	LO3	LO4	LO5	LO 6	LO7	LO8	LO9	LO10	LO11	LO12
5	2	2	2	2	5	2	2	2	2	5	2

18. Content outline of the course/module and the SLT per topic

WEEK	Details	SLT L	SLT T	SLT Indep.	SLT Total
WEEK 1	**Whole Numbers and Decimals** • Whole Numbers • Application Problems • Basics of Decimals • Addition and Subtraction of Decimals • Multiplication and Division of Decimals	2	1	6	9

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	WEEK 2	**Fractions and Percent** • Basics of Fractions • Addition and Subtraction of Fractions • Addition and Subtraction of Mixed Numbers • Multiplication and Division of Fractions • Converting Decimals to Fractions and Fractions to Decimals • Writing Decimals and Fractions as Percents • Finding Part • Finding Base • Supplementary Application Exercises on Base and Part • Finding Rate	2	1	6	9
	WEEK 3	**Mathematics of Buying** • Invoices and Trade Discounts Series Discounts and Single Discount Equivalents • Cash Discounts: Ordinary Dating Method • Cash Discounts: Other Dating Method • Trade Discounts, and Cash Discounts	2	1	6	9
	WEEK 4	**Mathematics of Selling** • Markup on Cost • Markup on Selling Price • Supplementary Application Exercises on Markup • Markdown • Turnover and Valuation of Inventory	2	1	6	9
	WEEK 5	**Simple Interest and Compound Interest** • Basics of Simple Interest • Finding Principal, Rate, and Time • Simple Discount Notes • Discounting a Note Before Maturity • Compound Interest • Interest-Bearing Bank Accounts and Inflation	2	1	6	9

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	WEEK 6	**Annuities, Stocks, and Bonds** • Annuities and Retirement Accounts • Present Value of an Ordinary Annuity • Sinking Funds (Finding Annuity Payments) • Supplementary Application Exercises on Annuities and Sinking Funds • Stocks • Bonds	2	1	6	9
	WEEK 7	**Financial Statements and Ratios** • The Income Statement • Analyzing the Income Statement • The Balance Sheet • Analyzing the Balance Sheet	2	1	6	9
	WEEK 8	**Business Statistics** • Frequency Distributions and Graphs • Mean, Median, and Mode	2	1	6	9
	WEEK 9	**Linear equations and functions** • Applications of linear equations • Break-even analysis (BEP) • CVP analysis	2	1	6	9
	WEEK 10	**Linear programming: geometric approach** • Formulating business problems into mathematical equations • Solving linear programming using graphs • Sensitivity analysis	2	1	6	9
	WEEK 11	**Functions of two or more variables** • Functions and their graph • Partial derivatives • Local maxima and local minima • Lagrange multipliers	2	1	6	9
	WEEK 12	**Differentiation** • Derivative formulas, • First and second order derivatives, • Applications: graphing functions, optimizations	2	1	6	9

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	WEEK 13	**Integral calculus** • Antiderivative • Indefinite integral • Integration by substitution • Integration by parts • Definite integral • Area under the graph • Approximating • Definite integrals • Improper integrals	2	1	6	9
	WEEK 14	**Difference equations** • Introduction to difference equations • Sequence of number • Discrete dynamical system • Iterated function.	2	1	6	9
		Total	28	14	84	126
19.	**Main references supporting the course**: Charles D. Miller / Stanley A. Salzman / Gary Clendenen (2008), *Business Mathematics:International Edition*, Pearson Education, (11th Edition)					
	Additional references supporting the course: 1. Bittinger. (2010*). Basic College Mathematics*. Pearson, (11th Edition) 2. Debra Ann Ross, (2009), *Master Math: Basic Math and Pre-Algebra*, Paperback Publication 3. Sullivan & Mizrahi (2005) *Mathematics: An applied approach,* John Wiley & Sons, (8th Edition)					
20.	**Other additional information** All related subject materials will be available to the students during the period of the course					