University of Moratuwa

Sri Lanka

BACHELOR OF BUSINESS SCIENCE HONOURS DEGREE IN THE FACULTY OF BUSINESS

MODULE DESCRIPTORS
2021

Table of Contents

MODULES OFFERED BY THE DEPARTMENT OF DECISION SCIENCES

Module Code	DA1111	Module Title						Probability and Statistics for Business – I	
Credits	3	Hours/Week			C	E	O	Evaluation %	Prerequisites
GPA/NGPA	GPA	Lectures	Lab / Tutorials	Self-study	█			CA	WE	None
		2	2	6				50	50	
Module Aim:	This module aims to provide a basic knowledge of probability and statistics for solving business problems.								

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Apply fundamental probabilistic techniques to quantify the uncertainty of a random experiment

LO-2 Analyze and evaluate data using fundamental descriptive statistical techniques

LO-3 Apply rudimentary statistical techniques such as sampling, estimation and hypothesis testing in analyzing business scenarios and problems

LO-4 Make use of statistical software (R, Python) for statistical data analysis

Syllabus Outline		Learning Outcomes
1	Introduction to set theory and basic probability [6 hrs] *Counting and sets, basics of combinatorics and permutations, basics of probability, conditional probability, Bayes' Theorem*	LO-1
2	Random variables and probability distributions [10 hrs] *Introduction to random variables, discrete and continuous distributions, moments of random variables, moment generating functions, Binomial, Poison and normal distributions*	LO-1
3	Descriptive statistics and exploratory data analysis [10 hrs] *Types of data, organizing and visualizing data, measures of central tendency and dispersion, correlation analysis*	LO-2, LO-4
4	Sampling distributions [6 hrs] *Sampling methods, sampling distribution of the mean and proportion, the Central Limit Theorem*	LO-1, LO-3
5	Confidence interval estimation [6 hrs] *Confidence interval estimation for the mean and proportion, determining sample size*	LO-3, LO-4
6	Fundamentals of hypothesis testing [4 hrs] *Null and alternative hypothesis, critical value, errors in testing, power of a statistical test, one-sample tests*	LO-1, LO-3, LO-4

Assessments

Assessment		Weight	Learning outcomes
Continuous Assessments (CA)	In-class test - 01	25% [1.5 hrs]	LO-1, LO-2, LO-3
	Lab practical test – 01	25% [1.5 hrs]	LO-2, LO-3, LO-4
Written examination (WE)		50% [3 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA1321	Module Title						Principles of Programming	
Credits	3	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**	**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	None
		2	2	6				50	50	

Module Aim:	The aim of this course is to build students' confidence in their ability to learn programming and problem-solving skills.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Analyze simple computing problems

LO-2 Apply procedural statements — assignments, conditional statements, loops, method calls and arrays

LO-3 Develop small programs using a selected programming language (e.g. Python) that meet the expressed requirements

Syllabus Outline		**Learning Outcomes**
1	Concepts of Programming [6hrs] *Programming languages, problem definition, flow charts, pseudo codes*	LO-1
2	Elementary Programming [10 hrs] *Expressions, variables, operators*	LO-1, LO-2
3	Programming Structures [12 hrs] *Conditions, Loops, Procedures and Functions*	LO-2, LO-3
4	Advanced Concepts in Programming [12 hrs] *Lists, recursions, algorithms for problem solving*	LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class programming test - 01	20% [2 hrs]	LO-1, LO-2
	In-class programming test - 02	30% [2 hrs]	LO-2, LO-3
Written examination (WE)		50% [3 hrs]	LO-1, LO-2

References

Module Code	DA1311	Module Title				Computing Fundamentals			
Credits	3	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■		**CA**	**WE**	None
		3	-	7			50	50	

Module Aim:	This course aims to introduce the fundamental principles on which computer systems are based on.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Describe how a program is executed in a computer
LO-2	Design Boolean circuits for simple logical problems
LO-3	Apply knowledge about operating system behavior to develop efficient programs
LO-4	Explain the basic models of computation

Syllabus Outline		**Learning Outcomes**
1	Boolean logics [6 hrs] *Boolean algebra, Truth tables, Logic gates and circuits*	LO -2
2	System architecture [12 hrs] *von Neumann architecture, Memory hierarchy, Instruction sets and I/O Techniques*	LO-1
3	Basics of operating systems [12 hrs] *Process model, threads, scheduling, deadlocks and IO management*	LO-1, LO-2
4	Computing models [12 hrs] *Basic models of computation, finite automata and Turing machines*	LO-1, LO-4

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test - 01	25% [1.5 hrs]	LO-1, LO-2
	In-class test - 02	25% (1.5 hrs)	LO-2, LO-3
Written examination (WE)		50% [3 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA1411	Module Title				Mathematical Foundations for Business			
Credits	3	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**	**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**		■		**CA** **WE**	None
		2	2	6				50 50	

Module Aim:	The primary aim of this course is to provide an understanding of business calculus and apply basic calculus to solve applications in business and economics

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Demonstrate algebraic knowledge with topics including quadratic, exponential, logarithmic and trigonometric functions.
LO-2	Analyze problems in business and management sciences to find optimal solutions using the theory of maxima and minima
LO-3	Construct and interpret graphs of basic functions and their derivatives
LO-4	Evaluate limits, continuity and derivatives of functions from their graphs and/or equations.

Syllabus Outline		**Learning Outcomes**
1	Fundamentals of Algebra [8 hrs] *Real numbers, polynomials, factoring polynomials, rational expressions, integral exponents and radicals, quadratic equations, inequalities and absolute value.*	LO -1
2	Functions and their graphs [6 hrs] *Cartesian coordinate system, equations of lines, functions and their graphs, algebra of functions, linear functions, cost, revenue & profit functions, quadratic functions, market equilibrium, demand & supply curves*	LO-1, LO-4
3	Exponential and Logarithmic Functions [6 hrs] *Introduction to exponential functions and its inverse, the logarithmic function and their applications.*	LO-1, LO-2
4	Topics in Trigonometry [4 hrs] *Trig functions and their graphs, Trig identities*	LO-1, LO-4
5	Calculus of one variable [18 hrs] *Limits, continuity, derivatives, Marginal functions, applications of the derivative, optimization, Implicit differentiation*	LO 2, LO-3, LO- 4

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test – 1	15% [1.5 hrs]	LO-1, LO-3
	In-class test – 2	15% [1.5 hrs]	LO-2, LO-3, LO-4
	Quizzes [Take home]	10% [3 hrs]	LO-2, LO-3, LO-4
	Homework [Tutorials]	10% [12 hrs]	LO-2, LO-3, LO-4
Written examination (WE)		50% [3 hrs]	LO-1, LO-2, LO-3, LO-4

References

Module Code	DA1121	Module Title						Probability and Statistics for Business – II	
Credits	3	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**	**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	DA1111
		2	2	6				50	50	

Module Aim:	This module aims to provide knowledge of inferential statistics for solving business problems

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Formulate hypotheses based on different scenarios and apply appropriate parametric and non-parametric hypothesis testing techniques

LO-2 Explain the concept of regression and use regression techniques to assist in decision making

LO-3 Make use of statistical software to carry out analyses based on the above topics

Syllabus Outline		**Learning Outcomes**
1	Two-sample tests [6 hrs] *Comparing two means from independent populations, paired t-test, F-test for ratio of two variances, z-test for difference in proportions*	LO-1, LO-3
2	ANOVA [12 hrs] *One-way ANOVA, two-way ANOVA, introduction to design-of-experiments*	LO-1, LO-3
3	Categorical data analysis [6 hrs] *Probability structure for contingency tables, relative risk and odds-ratios, Chi-square test for differences in proportions, tests of independence*	LO-1, LO-3
4	Non-parametric tests [6 hrs] *Wilcoxon rank sum test, Kruskal Wallis rank test, and other non-parametric tests*	LO1, LO3
5	Introduction to simple linear regression [6 hrs] *Ordinary least squares, measures of variation, linear regression assumptions*	LO2, LO-3
6	Multiple linear regression and model building [6 hrs] *Extending the simple bivariate model, testing portions of the model, dummy variables and interaction terms, modelling non-linearities*	LO1, LO2, LO-3

Assessments

Assessment			**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test - 01		15% [1.5 hrs]	LO-1, LO-2
	Lab practical test - 01		15% (1.5 hrs)	LO-2, LO-3
	Take-home assignment		20% (xx hrs)	LO-1, LO-2, LO-3
Written examination (WE)			50% (3 hrs)	LO-1, LO-2

References

Module Code	DA1341	Module Title						Data Structures and Algorithms		
Credits	3	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	DA1321
		2	2	6				50	50	

Module Aim:	The aim of this module is to introduce database and program development techniques to the participants.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Construct common data structures
LO-2	Design appropriate data structures and algorithms for a given situation business problem
LO-3	Analyse the complexity/performance of basic algorithms

Syllabus Outline		**Learning Outcomes**
1	Basic data structures and operations [8 hrs] *Arrays, Linked lists, Queues, Stacks and hash tables*	LO-1
2	Basic algorithms [12 hrs] *Recursions, searching and sorting*	LO-3
3	Basic algorithm design techniques [12 hrs] *Divide-and-conquer, greedy approach, dynamic programming*	LO-2, LO-3
4	Complexity analysis of algorithms [10 hrs] *Big O, Big Omega, and Big Theta analysis*	LO-3

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Lab programming tests – 01	20% [1.5 hrs]	LO-1, LO-2
	Lab programming tests - 02	30% [1.5 hrs]	LO-2, LO-3
Written examination (WE)		50% [2 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA1421	Module Title				Business Calculus				
Credits	3	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	
		2	2	6				50	50	
Module Aim:	This module aims to provide knowledge on advanced business calculus and its applications in business and finance.									

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Solve definite and indefinite integrals of algebraic, trigonometric, exponential, logarithmic functions and solve related business application problems

LO-2 Develop basic integration techniques to solve simple differential equations

LO-3 Evaluate multivariable functions, compute limits and derivatives and find the local extrema for multivariable functions.

Syllabus Outline		Learning Outcomes
1	Integration [14 hrs] *Antiderivatives and rules of integration, area and the definite integral, the fundamental theorem of calculus, application of the definite integral to business, integration techniques, improper integrals*	LO -1, LO-2
2	Differential Equations [12 hrs] *Differential equations, separable equations, Logistic differential equations, first order linear equations, Applications to business*	LO-1, LO -2
3	Calculus of Several Variables [16 hrs] *Functions of several variables, limits and continuity, partial derivatives, chain rule, implicit differentiation, maxima and minima of functions of several variables, Lagrange Multipliers*	LO -2, LO -3

Assessments

Assessment		Weight	Learning outcomes
Continuous Assessments (CA)	In-class test - 01	15% [1.5 hrs]	LO-1, LO-2
	In-class test - 02	15% [1.5 hrs]	LO-2, LO-3
	Quizzes [Take Home]	10% [3 hrs]	LO-2, LO-3
	Homework [Tutorials]	10% [12 hrs]	LO-1, LO-2, LO-3
Written examination (WE)		50% [3 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA2421	Module Title				Introduction to Econometrics			
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**	**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	⬛			**CA**	**WE**	DA1111
		2	-	4.66				50	50	

Module Aim: This module aims to provide the knowledge required for econometric modelling.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Describe the properties of regression estimators and how to address violations of regression assumptions

LO-2 Distinguish between cross-sectional, time series and panel data and describe the challenges associated with modelling these types of data

LO-3 Interpret reported regression results

LO-4 Examine relationships between variables using appropriate econometric models and diagnostic tests using statistical software

Syllabus Outline		**Learning Outcomes**
1	Properties of regression estimators [6 hrs] *Deriving OLS estimates, properties of the OLS estimators, violations of regression assumptions, diagnostic testing*	LO-1, LO-2, LO-3, LO-4
2	Linear regression with regularization [6 hrs] *Introduction to over-fitting and regularization, Lasso & ridge regression*	LO1, LO-3, LO4
3	Qualitative response models [6 hrs] *Introduction to maximum likelihood estimation, Linear Probability Model, Logit, Probit, Multinomial Logit*	LO-2, LO-3, LO-4
4	Introduction to panel data [6 hrs] *Pooling independent cross sections, differences in differences, fixed effects and random effects models*	LO-2, LO-3, LO-4
5	Simultaneous Equation Models [4 hrs] *Simultaneous equation bias, identification problem, IV estimation and 2SLS*	LO-1, LO-3, LO-4

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test - 01	20% [1 hrs]	LO-1, LO-2, LO-3
	In-class test - 02	20% [1 hrs]	LO-1, LO-2, LO-3
	Take-home assignment	10% [2 hrs]	LO-1, LO-2, LO-3, LO-4
Written examination (WE)		50% [2 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA2311	Module Title				Database Management				
Credits	3	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	None
		3	-	7				50	50	

Module Aim:	This module provides students with theoretical knowledge and practical skills required to design and work with databases.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Make use of database processing concepts to solve the information requirements of organizations
LO-2	Apply database theory to the design and implementation of relational databases
LO-3	Apply SQL queries

Syllabus Outline		**Learning Outcomes**
1	Introduction [6 hrs] *Definition of a database, database management systems and their importance to business organizations*	LO-1
2	Database Design Process [10 hrs] *Entities and relationships, ER diagrams*	LO-1, LO-2
3	Relational Model [6 hrs] *Relational database model, tables, integrity constraints and foreign keys*	LO-1, LO-2
4	Normalization [8 hrs] *Boyce-Codd Normal forms, database optimization*	LO-2
5	SQL [12 hrs] *Querying databases, selection, insertion, updates, joins, groups and constructing complex queries to retrieve data*	LO-3

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Lab practical test - 01	25% [1.5 hrs]	LO-1, LO-2
	Lab practical test - 02	25% [1.5 hrs]	LO-2, LO-3
Written examination (WE)		50% [3 hrs]	LO-1, LO-2

References

Module Code	DA2321	Module Title						Systems Analysis & Design			
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**	
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	None	
		2	-	4.66				50	50		
Module Aim:	The course aims to make the student competent to analyse a business process in an information systems perspective for developing a business model for computer-based implementation										

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Explain data to analyze and specify the requirements of a system

LO-2 Demonstrate business functions and processes using UML

LO-3 Appraise design decisions depending on business scenarios

LO-4 Propose appropriate strategies for system implementation, project management and deployment

Syllabus Outline		Learning Outcomes
1	Project Initiation [5 hrs] *Requirement determination, functional and non-functional requirements*	LO-1
2	Modeling [6 hrs] *Functional, structural and behavioral modeling of requirements*	LO-1, LO-2
3	Design [6 hrs] *Databases, human-computer interactions and physical architecture designs*	LO-3
4	Construction [6 hrs] *Implementation, project management, installation, change management*	LO-3, LO-4
5	Administration [6 hrs] *Operations, backups, configurations, user support*	LO-4

Assessments

Assessment		Weight	Learning outcomes
Continuous Assessments (CA)	In-class test - 01	25% [1 hrs]	LO-1, LO-2
	Individual Assessment (Take home)	25% [1 hrs]	LO-2, LO-3, LO4
Written examination (WE)		50% [2 hrs]	LO-1, LO-2

References

Module Code	DA2411	Module Title		Linear Algebra				
Credits	3	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■		**CA**	**WE**	DA1421
		2	2	6			50	50	
Module Aim:	This course aims to provide knowledge on multivariable calculus and linear algebra to solve business applications. It is intended to give the appropriate conceptual and computational mathematical background for future study in business.							

Learning Outcomes
After completing this module, the students should be able to:

LO-1	Define the concepts of sequence and series and determine limits of sequences and convergence of series
LO-2	Solve eigenvalues and eigenvectors
LO-3	Solve systems of linear equations using matrices and apply these methods in business applications
LO-4	Make use of technological tools to solve linear algebra concepts

Syllabus Outline		**Learning Outcomes**
1	Introduction to vectors [3 hrs] *Introduction to vectors and vector functions, dot product, orthogonal vectors, linearly dependent/independent vectors, norm of vectors*	LO -3
2	Systems of Linear equations and Matrices [15 hrs] *Systems of linear equations, matrix algebra, Gauss-Jordan elimination, Gaussian elimination, LU factorization, error in solving linear systems, iteration methods, Leontief Input-Output analysis, Solving linear systems using mathematical software*	LO -3, LO -4
3	The Eigenvalue Problem [15 hrs] *Characteristic polynomial, determining eigenvalues and eigenvectors, QR algorithm, Singular value decomposition*	LO-2, LO-4
4	Infinite Sequences and Series [9 hrs] *Infinite sequences, infinite series, ratio test & power series, Taylor and Maclaurin series and their applications*	LO -1

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test – 01	10% [1.5 hrs]	LO-3, LO-4
	In-class test - 02	10% [1 .5hrs]	LO-2, LO-3, LO-4
	Homework Quiz - 01	10% [1.5 hrs]	LO -3, LO-4
	Tutorials/ Lab practical test	10% [1 .5hrs]	LO-1, LO -3, LO-4
Written examination (WE)		50% [3 hrs]	LO-1, LO-2, LO-3, LO-4

References

Module Code	DA2921	Module Title						Operations Management			
Credits	3	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	None
		3	-	7				50	50	

Module Aim:	This module aims to enable students to investigate methods, systems and procedures for managing planned co-ordination of operations and the global impact on organizations.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Identify key concepts and issues of operations management in both manufacturing and service organizations
LO-2	Explain the strategic role of operations management in creating and enhancing an organization's competitive advantages
LO-3	Analyze tactical, managerial, and strategic roles that an operations manager has to engage in

Syllabus Outline		**Learning Outcomes**
1	Introduction [8 hrs] *Operations Management, Operations Performance, Operations Strategy, Competitiveness, and Managing Change*	LO-1, LO-2
2	Product & Service Design and Process Selection [18 hrs] *Process Analysis, Product design and Process Selection for Manufacturing, Product design and Process Selection for Services, Location Planning and Analysis, Facility Layout Planning and Analysis, Work Design and Measurement*	LO-2, LO-3
3	Planning & Controlling Processes [16 hrs] *Forecasting, Strategic Capacity Planning for Products and Services, Aggregate Planning and Master Scheduling, Material Requirement Planning (MRP I), Manufacturing Requirement Planning (MRP II) and ERP, Inventory Management, Operations Scheduling*	LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test – 01	25% [1.5 hrs]	LO-1, LO-2
	In-class test – 02	25% [1.5 hrs]	LO-3
Written examination (WE)		50% [3 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA2111	Module Title				Statistical & Machine Learning			
Credits	3	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■		**CA**	**WE**	DA1121, DA2421
		2	2	6			100	-	
Module Aim:	This course aims to provide theoretical and practical aspects of statistical and machine learning techniques for business analytics.								

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Describe the fundamental concepts in problem-solving with intelligent systems
LO-2	Explain the mathematical basis for the techniques used in statistical and machine learning
LO-3	Apply the appropriate computational intelligence techniques for a given problem
LO-4	Make use of machine learning tools in software to solve business-related problems

Syllabus Outline		**Learning Outcomes**
1	Introduction to Statistical Machine Learning [6 hrs] Empirical Risk Minimization, Bayes Optimal classifier, PAC learnability, Uniform Convergence, VC dimensions	LO-1, LO-2
2	Supervised Learning Algorithms I: Regression Algorithms [7 hrs] *Review of Linear Regression, Model Selection and Regularization (Subset Selection, Stepwise Selection, Ridge Regression, LASSO), Model Comparisons*	LO-1, LO-3, LO-4
3	Supervised Learning Algorithms II: Classification [6 hrs] *Logistic Regression (Binary, Multi-Class), Naive Bayes, KNN, Linear and Quadratic Discriminant Analysis, Decision Trees, Support Vector Machine*	LO-1, LO-3, LO-4
4	Supervised Learning Algorithms III: Ensemble Techniques [6 hrs] *Bagging (Random Forests), Boosting (Gradient Tree Boosting, ADA Boost)*	LO-1, LO-3, LO-4
5	Model Testing, Evaluation and Validation [6 hrs] *Overfitting and Underfitting, Bias-Variance Trade-off, Errors in Estimation (Training vs Test MSE, Mean Absolute Error, Root Mean Squared Error), Confusion Matrix, Sensitivity and Specificity, ROC Curve, Validation test Split, Cross validation*	LO-1, LO-2, LO-3
6	Unsupervised Learning Algorithms [12 hrs] *Clustering, Dimensionality Reduction, Principal Component Analysis, Singular Value Decomposition*	LO-1, LO-3, LO-4

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Group Assessment – 01 (Take home)	40% [3 hrs]	LO-1, LO-2
	Individual Assessment – 01 (Take home)	30% [3 hrs]	LO-2, LO-3, LO-4
	Lab practical test - 01	30% [2 hrs]	LO-1, LO-2, LO-3, LO-4

References

Module Code	DA2451	Module Title		Multivariate Methods in Business			
Credits	3	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Prerequisites**

Credits	3	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	DA1121
		3	-	7				50	50	

Module Aim:	The aim of this module is to introduce common statistical methods for analyzing data with multiple variables per observation.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Explain the use of multivariate data in business applications

LO-2 Apply different techniques to visualise multivariate data and derive summary statistics

LO-3 Select and apply appropriate multivariate techniques to real datasets in view of obtaining insights from the data

LO-4 Discuss the limitations and assumptions underlying the analyses

Syllabus Outline		**Learning Outcomes**
1	Aspects of multivariate analysis [6 hrs] *Organization of data, data displays, distance*	LO-1
2	Sample geometry and random sampling [6 hrs] *Geometry of the sample, random samples and expected values of the sample mean and covariance matrix, generalized variance, linear combinations of variables*	LO-2
3	Multivariate normal distribution [6 hrs] *Multivariate normal density, sampling from a multivariate normal distribution, sampling distribution and large sample properties, detecting outliers*	LO-2
4	Comparisons of several multivariate means [6 hrs] *Paired comparisons, one-way MANOVA, two-way MANOVA, profile analysis, repeated measures designs*	LO-3, LO-4
5	Multivariate linear regression [6 hrs] *Least squares estimation, inference, model checking, comparing two formulations*	LO-3, LO-4
6	Principle components and factor analysis [9 hrs] *Population principal components, summarizing sample variation, graphing principal components, orthogonal factor model*	LO-3, LO-4
7	Discriminant analysis [3 hrs] *The discriminant function and tests of significance for two groups*	LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test – 01	25% [1.5 hrs]	LO-1, LO-2
	Lab practical test – 01	25% [1.5 hrs]	LO-2, LO-3
Written examination (WE)		50% [3 hrs]	LO-1, LO-2, LO-4

References

Module Code	DA2431	Module Title				Introduction to Operations Research			
Credits	3	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**	**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	DA1421
		3	-	7				50	50	

Module Aim:	This course aims to introduce fundamentals of operations research concepts.

Learning Outcomes
After completing this module, the students should be able to:
LO-1	Identify the importance of operations research for business decisions
LO-2	Explain operations research theories and models and their applications
LO-3	Apply software and mathematical methods to obtain optimal solutions

Syllabus Outline		**Learning Outcomes**
1	Introduction [6 hrs] *Origins of OR, Defining the problem, Formulate a mathematical model, Deriving solutions, Model testing and Application*	LO -1
2	Linear Programming [12 hrs] *Introduction, Simplex method, Duality theory and Sensitivity analysis, Other LP solution algorithms and Transportation & Assignment problems*	LO -2, LO -3
3	Integer Programming [12 hrs] *Use of binary variables in model formulation, Solutions methods of Integer Programming Problems, Branch-bound technique and Mixed Integer Programming*	LO -2, LO -3
4	Network Optimization Models [6 hrs] *Shortest-path problem, Minimum spanning tree problem, Maximum flow problem, Minimum cost flow problem and Network simplex problem*	LO-2, LO-3
5	Dynamic Programming [6 hrs] *Overview, Deterministic DP, and Stochastic DP*	LO-2, LO-3

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test - 01	25% [1.5 hrs]	LO-1, LO-2
	Individual Assessment (Take home)	25% [1.5 hrs]	LO-2, LO-3
Written examination (WE)		50% [3 hrs]	LO-1, LO-2
References			

Module Code	DA2121	Module Title				Data Management & Visualization			
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**	**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**				**CA**	**WE**	None
		-	4	2.66				100	-	

Module Aim: This course aims to help students to articulate ideas/stories behind big data and communicate findings in visual, oral and written contexts appropriate for various applications.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Explain the need for data visualization and the data visualization process

LO-2 Develop appropriate visualizations for given data

LO-3 Develop business performance dashboards using data visualization software

Syllabus Outline		**Learning Outcomes**
1	Data search and acquisition [6 hrs]	LO -1
2	Data analysis using software tools [6 hrs] *Static charts, Reshaping data, Measure names and values*	LO -2, LO -3
3	Chart types and Chart selection [5 hrs]	LO -2, LO -3
4	Annotations and Maps [4 hrs]	LO-2, LO-3
5	Data stories and Interactive dashboards [6 hrs]	LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Individual Assessment	30% [1.5 hrs]	LO-1, LO-2
	Lab practical test	30% [1.5 hrs]	LO-1, LO-2
	Group assignment (Take home)	40% [3 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA2911	Module Title					Technical & Scientific Writing			
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	None
		2	-	4.66				100	-	

Module Aim:	This course is designed to develop skills that will enable to produce clear and effective scientific and technical documents

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Identify online and other sources and methods of research and documentation on business and technology areas.
LO-2	Demonstrate the understanding of writing and editing process and be able to produce a variety of technical documents in an acceptable level of Standard British / American English.
LO-3	Discuss ethical considerations in technical and scientific writing.

Syllabus Outline		**Learning Outcomes**
1	Activity Studio *Writing process, Analyzing audiences, Types and purposes of technical documents* *Writing technical/scientific documents, Word processing tools (MS Word, LaTex), Basics of technical communications*	LO -1, LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class activity – 01	30% [1.5 hrs]	LO-1, LO-2, LO-3
	In-class activity – 02	30% (1.5 hrs)	LO-1, LO-2, LO-3
	Individual Assessment (Take home)	40% [3 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA3111	Module Title							Text Analytics		
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	DA2111
		-	4	2.66				100	-	

Module Aim:	This module aims to enable participants to get a hands-on experience on text mining.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Identify the linguistic features of natural languages
LO-2	Demonstrate the understanding of principles of various natural language processing and text retrieval techniques
LO-3	Apply text analytics algorithms for real world problem solving

Syllabus Outline		**Learning Outcomes**
1	Overview [5 hrs] *What is NLP, basics linguistics, ambiguity and uncertainty in language*	LO-1
2	Regular Expressions [5 hrs] *Regular languages, finite-state automata, morphology*	LO-2
3	Basic Text Processing [5 hrs] *Tokenization and segmentation, normalization, morphological analysis*	LO-2, LO-3
4	Semantics [5 hrs] *Representing meaning, semantic analysis, lexical semantics*	LO-2, LO-3
5	Topic Modelling [5 hrs] *Probabilistic Semantic Indexing, Latent Dirichlet Allocation*	LO-2, LO-3
6	Advanced Topics [5 hrs] *POS tagging, named entity recognition, machine translation*	LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Individual Assessment (Take home)	50% [4 hrs]	LO-1, LO-2
	Group Assessment (Report & Presentation)	50% [3 hrs]	LO-2, LO-3

References

Module Code	DA3481	Module Title					GIS and Spatial Data Analysis		
Credits	3	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**	**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**		■		CA	WE	None
		2	2	6				100	-	

Module Aim:	This module aims to introduce spatial data applications in the decision science domain in conjunction with applied geoinformatics concepts such as geo-statistics and modelling, geospatial data supply for geographic information systems: digital maps, digitizing, basic satellite remote sensing, and thematic classification of raster and vector data.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Explain the basics of geographic information systems (GIS) and remote sensing

LO-2 Select and acquire both primary and secondary spatial data for use in GIS

LO-3 Analyze digital data in raster and vector formats to derive informed decisions

Syllabus Outline		Learning Outcomes
1	Introduction [6 hrs] *Components of a GIS, Raster and Vector Data , GIS software Platforms*	LO-1
2	Remote Sensing and Acquisition of Spatial Data [6 hrs] *Introduction to Space Technology, Public Domain Satellite Imagery, GPS Applications*	LO-2, LO-3
3	Spatial Analysis and Modelling [12 hrs] *Vector Operations, Spatial Optimization Techniques, Spatial Data Models, Spatiotemporal Processes, Spatial Correlation, Proximity Analysis*	LO-2, LO-3
4	Digital Image Processing in GIS [6 hrs] *Raster Analysis, Image Classification Algorithms, Statistical and Machine Learning for spatial Analysis*	LO-2, LO-3
5	Business Applications of GIS Technologies [6 hrs] *Location-based Business, Spatial Planning and Policy Analysis, Consumer Analysis using GIS*	LO-2, LO-3
6	Spatial Big Data [6 hrs] *Overview, Types of Spatial and Spatiotemporal Big Data, Spatial Decision Support Systems*	LO-2, LO-3

Assessments

Assessment		Weight	Learning outcomes
Continuous Assessments (CA)	In-class test - 01	25% [1.5 hrs]	LO-1, LO-2
	Lab practical test – 01	25% [1.5 hrs]	LO-2, LO-3
	Group project (Take home)	50% [3 hrs]	LO-2, LO-3

References

Module Code	DA3411	**Module Title**						Business Valuation and Analysis			
Credits	3	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**	
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**		■		**CA**	**WE**	None	
		3	-	7				50	50		

Module Aim:	This module aims to help students develop business valuation and financial analysis skills.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Make use of financial information to value and analyse firms

LO-2 Appraise and value projects based on discounted cash flow method

LO-3 Develop business valuation models.

Syllabus Outline		**Learning Outcomes**
1	Financial Statement Analysis [9 hrs] *Financial statements, Financial ratio analysis, Risk analysis, Analysis of growth potential, Comparative analysis of ratios*	LO-1
2	Forecasting and Valuation of Free Cash Flows [9 hrs] *Free cash flows, Building financial models, Enterprise valuation, Continuation value, Cash flow to equity valuation,*	LO-2
3	Equity and Cost of Capital [9 hrs] *Estimating cost of capital, Cost of equity and leverage, CAPM and beyond, Cost of debt*	LO-2
4	Relative Valuation [9 hrs] *Equity multiples, Options strategies and pay-offs, Equity/debt valuation, Real option valuation*	LO-3
5	Mergers, Acquisitions, Buyouts and Restructuring [6 hrs] *Mergers & acquisitions, Offer structures, and Leveraged buyouts*	LO-3

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test - 01	25% [1.5 hrs]	LO-1, LO-2
	In-class test - 02	25% [1.5 hrs]	LO-2, LO-3
Written examination (WE)		50% [3 hrs]	LO-1, LO-2
References			

Module Code	DA3331		Module Title					Business Application Development			
Credits	3		**Hours/Week**			C	E	O	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**					**CA**	**WE**	DA1321
		1	4	5					100	-	
Module Aim:	The aim of this course is to introduce the concepts of object-oriented programming for business application development.										

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Demonstrate Integrated Development Environments for efficient programming
LO-2	Explain modern web technologies
LO-3	Apply version controlling for development projects
LO-4	Develop web applications with database access and GUI

Syllabus Outline		**Learning Outcomes**
1	Integrated Development Environments [10 hrs]	LO-1
2	Web Applications [15 hrs] *Web servers, application frameworks, Web APIs, HTML and CSS*	LO-2, LO-4
3	Version Controlling [10 hrs] *Version control systems, Git, GitHub*	LO-3
4	Modern Trends [10 hrs] *No code development, Single page applications, Progressive web applications*	LO-3, LO-4

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Group project (Take home)	50% [5 hrs]	LO-2, LO-3, LO-4
	Individual Assessments (Take home)	50% [4 hrs]	LO-2, LO-3

References

Module Code	DA3451	Module Title				Numerical Methods			
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**	**Prerequisites**

GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	None
		2	-	4.66				50	50	

Module Aim:	This course aims to equip the students with necessary knowledge and skills on numerical methods applicable for business

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Demonstrate the knowledge of common numerical techniques and how they are used to obtain approximate solutions to otherwise analytically intractable problems
LO-2	Develop numerical techniques for various mathematical operations, such as interpolation, differentiation, integration, solutions of linear and non-linear equations, solution of differential equations & partial differential equations
LO-3	Evaluate the accuracy of common numerical methods

Syllabus Outline		**Learning Outcomes**
1	Basics of Numerical Methods [4 hrs] *Number representation, rounding, truncation, propagation of error, stability and Order of convergence*	LO-1
2	Solving Nonlinear Equations [4 hrs] *Bisection method, Newton's method, Secant method, fixed point iteration*	LO-1, LO-2
3	Function Approximation and Interpolation [4 hrs] *Linear interpolation, quadratic interpolation, higher degree interpolation, Newton's divided differences, The Weierstrass theorem, The Taylor's theorem and minmax approximation problems*	LO-2, LO-3
4	Numerical Differentiation and Integration [6 hrs] *Errors in numerical differentiation, derivatives based on Newton's forward and backward interpolation formulas, numerical integration using Trapezoidal rule and Simpson's rule*	LO-2, LO-3
5	Numerical Solutions of Ordinary Differential Equations [5 hrs] *Existence, uniqueness, stability, Taylor series method, Euler's method, Runge-Kutta method & Picard's method of successive approximations*	LO-2, LO-3
6	Finite Difference methods for Partial Differential Equations [5 hrs] *Solving parabolic equations (Black- Scholes equation belongs to this class)*	LO-2, LO-3

Assessments

Assessment			**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test – 01		10% [1 hrs]	LO-1, LO-2
	In-class test – 02		10% [1 hrs]	LO-2, LO-3
	Lab (Take home)		30% [5 hrs]	LO-2, LO-3
Written examination (WE)			50% [2 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA3931	Module Title						Ethics and Professionalism		
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	NGPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	None
		2	-	4.66				50	50	

Module Aim:	This module aims to provide a holistic approach incorporating good practices and ethics.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Describe the concepts of ethics and professionalism
LO-2	Explain the effect of, and the source of, bias or discrimination in a data-intensive system
LO-3	Analyze ethical issues related to

Syllabus Outline		**Learning Outcomes**
1	Why Ethics for Business Analytics Professionals [6 hrs] *Moral theory and ethical principles, Moral and philosophical claims, arguments and goals frequently found in ethics*	LO -1
2	Ethics & Technology [6 hrs]	LO -1
3	Ethics & Professionalism: Guidelines [6 hrs] *Ethical foundations of the delivery of organizations, developing a unique ethics code, Contemporary ethical issues in the business environment and possible solutions*	LO -2, LO -3
4	Accountability and Responsibility [6 hrs] *Level of autonomy, Influence, Complexity and Risk management*	LO-2, LO-3
5	Review of Code of Conduct of relevant professional bodies [6 hrs]	LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Individual Assessment (Take home, Portfolio)	50% [10 hrs]	LO-1, LO-2, LO-3
Written examination (WE)		50% [2 hrs]	LO-1, LO-2, LO-3

References

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Module Code	DA3941	Module Title						Supply Chain Management		
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	███			**CA**	**WE**	None
		2	-	4.66				50	50	

Module Aim:	The module aims to develop skills of the participants to contribute to key decisions in supply chain management in an organization.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Analyze the combination of customer accommodation, market distribution, procurement, and manufacturing that represents the supply chain areas
LO-2	Discuss models for integrative logistics and supply chain in a theoretical framework
LO-3	Design and provide a practical approach to support the business' decision making within the context of supply chain management and the real world

Syllabus Outline		**Learning Outcomes**
1	Introduction, Process and Results in SCM [4 hrs] *Introduction to concepts of SCM, SCM Overview, CRM, Market Distribution Strategy, Procurement, Manufacturing and Logistics*	LO-1
2	Integrating the Supply Chain and Global Supply Chains [8 hrs] *Integrated Operations Planning, Global Supply Chains*	LO-2
3	Supply Chain Design and Collaboration [8 hrs] *Network Design, Collaboration*	LO-2, LO-3
4	Strategies and Results in SCM [8 hrs] *Converting Performance Measurement, Risk and Sustainability, Project Presentations*	LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test - 01	25% [1 hrs]	LO-1
	Case study – 01	25% [1 hrs]	LO-2
Written examination (WE)		50% [2 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA3211	Module Title			Agile Business Analysis				
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	DA2321
		2	-	4.66				100	-	

Module Aim:	This course aims to show how agile values can affect the traditional business analysis approach.

Learning Outcomes
After completing this module, the students should be able to:
LO-1 Demonstrate an understanding of the scope, application and practices of business analysis principles and techniques
LO-2 Discuss agile approach and its relevance to business analysis.

Syllabus Outline		**Learning Outcomes**
1	Business Analysis & Strategic Context of Business Analysis [6 hrs] *Business change lifecycle, Internal & external environment analysis, Situational analysis, Market & competitor analysis, Critical success factors, Key performance indicators, Performance target, Balance scorecard approach, Stakeholder analysis*	LO -1
2	Analysis and modelling of Business Processes [8 hrs]	LO -1
3	Agile for Business Analysis [10 hrs] *Philosophy, principles, methods, models, requirements*	LO -2
4	Role of Agile Business Analyst [4 hrs] *Managing requirements & iterations, analysis and adoption*	LO-1, LO-2

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Individual Assessment – 01 (Take home)	25% [2 hrs]	LO-1
	Individual Assessment – 02 (Take home)	25% [2 hrs]	LO-1, LO-2
	In class test – 01	25% [1 hrs]	LO-1, LO-2
	In class test – 02	25% [1 hrs]	LO-1, LO-2

References

Module Code	DA3131	Module Title						Data Mining			
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**				**CA**	**WE**	DA2111
		1	2	3.66				50	50	

Module Aim: This course aims to provide both theoretical and practical knowledge on finding useful patterns for business applications in large databases.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Describe the fundamental concepts involved in the process of discovering useful, possibly unexpected, patterns in large data sets

LO-2 Explain the various stages involved in the data mining and information retrieval process

LO-3 Apply various data mining tools to extract useful patterns and information from a data set

Syllabus Outline		**Learning Outcomes**
1	Introduction [4 hrs] *Descriptive, Predictive and Prescriptive models*	LO-1
2	Data Preprocessing [5 hrs] *Missing value handling, Data cleaning, Data integration and transformation, Data reduction, Data discretization and concept hierarchy generation*	LO-2, LO-3
3	Mining Frequent Patterns, Associations, and Correlations [6 hrs] *Apriori algorithm: Finding frequent itemsets using candidate generation, Generating association rules from frequent itemsets, FP Growth Algorithm: Mining frequent itemsets without candidate generation*	LO-2, LO-3
4	Clustering [4 hrs] *Similarity measures, hierarchical clustering, non-hierarchical clustering, clustering based on statistical models*	LO-2, LO-3
5	Data mining applications [4 hrs] *Affinity, Churn*	LO-2, LO-3
6	Applications of ML platforms [4 hrs] *MS Azure ML, AWS ML*	LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test - 01	25% [1.5 hrs]	LO-1, LO-2
	In-class test - 02	25% [1.5 hrs]	LO-2, LO-3
Written examination (WE)		50% [2 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA3311	**Module Title**				Enterprise Resource Planning (ERP) Systems				
Credits	2	**Hours/Week**			C	E	O	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	None
		1	2	3.66				50	50	

Module Aim:	This course aims to impart technical know-how to students for applying ERP in a practical context.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Model uncertainties in business decision making
LO-2	Assess the impact of uncertainties on the decision-making process
LO-3	Evaluate difficulties of incorporating uncertainties into optimization models

Syllabus Outline		**Learning Outcomes**
1	Introduction [3 hrs] *Introduction to ERP, Market, Reasons for the Failure of ERP Implementation: Roadmap for successful ERP implementation*	LO-1
2	ERP and Related Technologies [5 hrs] *Product Life Cycle Management, Supply Chain Management, ERP Security*	LO-1
3	ERP Implementation [5 hrs] *Life Cycle ERP Tools and Software, ERP Selection Methods and Criteria, ERP Selection Process, ERP Vendor Selection, ERP Implementation Lifecycle, Pros and cons of ERP implementation, Factors for the Success of an ERP Implementation*	LO-1, LO-2
4	ERP Modules [5 hrs] *Structure Finance, Sales and Distribution, Manufacturing and Production, Planning, Quality Management; Cost Management, Human Resource, Quality Management, Purchasing; Vendor Evaluation; Inventory Management and Invoice Verification and Material Inspection*	LO-2, LO-3
5	ERP Vendors, Consultants, and Employees [5 hrs] *Vendors- Role of the Vendor; Consultant Types of consultants; Role of a Consultant, Employees- Role of employees, Different ERP Vendors - ERP Vendors*	LO-3
6	Future Directions in ERP [5 hrs] *New Trends in ERP, ERP to ERP II, Implementation of Organization-Wide ERP, Development of New Markets and Channels, Latest ERP Implementation Methodologies, ERP and e-business, Market Snapshot, The SOA Factor*	LO-2

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Lab Test– 01	25% [1 hrs]	LO-1, LO-2
	Case study – 01	25% [1 hrs]	LO-2, LO-3
Written Examination (WE)		50% [2 hrs]	LO-1, LO-2, LO-3
References			

Module Code	DA3461	**Module Title**			Advanced Operations Research			
Credits	3	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**	**Prerequisites**

Credits	3	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	DA2431
		3	-	7				50	50	

Module Aim:	This course aims to provide students with knowledge and skills in advanced optimization techniques.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Construct a mathematical model for managerial decision problems.
LO-2	Evaluate limitations in mathematical programming models
LO-3	Propose OR models to find acceptable solutions for real-life decision-making problems

Syllabus Outline		**Learning Outcomes**
1	Decomposition methods [6 hrs] *Primal and Dual models*	LO -1, LO -2
2	Nonlinear Programming [12 hrs] *Graphical illustrations, One-variable unconstrained optimization, Multivariable unconstrained optimization, KKT conditions, Quadratic programming, Convex and Nonconvex Programming*	LO-1, LO -2, LO – 3
3	Multi-objective optimization [6 hrs] *Goal Programming and Heuristic techniques*	LO -1, LO -2, LO – 3
4	Applications of Queuing theory [6 hrs] *Basic structure, Real world examples, Queuing models based on Birth-and-Death process and Queuing networks*	LO-2, LO-3
5	Inventory theory [6 hrs] *Components, Deterministic continuous-review models, Deterministic periodic-review model, Stochastic continuous-review model, Stochastic single-period model for perishable goods and Stochastic periodic-review model*	LO-2, LO-3
6	Markov decision process [8 hrs] *Markov decision processes, LP and optimal policies and Algorithms for policy improvements*	LO -1, LO -2, LO – 3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test - 01	25% [1 hrs]	LO-1, LO-2
	Individual Assessment (Take home)	25% [3 hrs]	LO-2, LO-3
Written examination (WE)		50% [3 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA3121	Module Title				Business Workflow Automation				
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	None
		-	4	2.66				100	-	

Module Aim:	This course aims to impart some foundation knowledge and skills on Business Process Analysis, Re-design, Automation and relevant IoT applications.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Explain as-is model of a business process using process analysis techniques and develop a process re-design
LO-2	Appraise theoretical concepts in developing IoT applications and demonstrate the use of components, devices and data management in IoT
LO-3	Construct business process models for executable workflows.

Syllabus Outline		**Learning Outcomes**
1	The Concept of Process Approach [6 hrs] *BPM lifecycle, Process modeling, Descriptions & representations, Modeling standards & notations such as BPMN, UML, IDEF*	LO -1
2	Process Analysis [8 hrs] *Decomposition, reuse, rework and repetition, events & exceptions handling*	LO -1
3	IoT and Edge Computing Fundamentals [8 hrs] *IoT hardware & software, IoT programming, Data analytics in IoT, IoT commercial platforms / environments*	LO -2
4	Automation [8 hrs] *Workflow patterns, Process automation environments such as MS Power Platform*	LO-1, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Individual Assessment (Mini project, take home)	50% [5 hrs]	LO-2
	Group Assessment (Report writing & Presentation)	50% [4 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA3441	Module Title			Investment and Portfolio Management				
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**	**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**		█		**CA**	**WE**	None
		1	2	2.66				50	50	

Module Aim:	This course aims to impart knowledge, skills and techniques required to analyze investments and manage financial asset portfolios.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Explain risk and return in view of capital asset pricing and arbitrage pricing theory
LO-2	Describe important concepts of diversification, efficient frontiers
LO-3	Apply techniques of stock, bond and other tradable investment portfolio management

Syllabus Outline		**Learning Outcomes**
1	Investment and Asset Allocations [3 hrs] *Return and Risk, Portfolio Management Process, Selecting Investments*	LO-1
2	Security Markets [4 hrs] *Market structure, Primary and Secondary Capital Markets, Exchange & OTC Market,*	LO-1
3	Market Indicators [5 hrs] *Constructing market indexes, Stock and Bond market indicators*	LO-1, LO-2
4	Investment Theory [5 hrs] *Efficient market hypothesis and its implications*	LO-1, LO-2, LO-3
5	Portfolio Management [5 hrs] *Markowitz portfolio theory, Asset pricing models and Multifactor models of risk and return*	LO-1, LO-2, LO-3
6	Fixed-Income Securities and Other Investments [5 hrs] *Types of fixed-income securities, Bond valuation, analysis and portfolio management, Investment companies, derivatives and international investments*	LO-1, LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test - 01	25% [1 .5 hrs]	LO-1, LO-2
	In-class test - 02	25% [1.5 hrs]	LO-2, LO-3
Written examination (WE)		50% [2 hrs]	LO-1, LO-2

References

Module Code	DA3951	Module Title						Principles of Marketing			
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**	
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**		■		**CA**	**WE**	None	
		2	-	4.66				50	50		

Module Aim:	This course aims to provide an introduction to basic marketing concepts to understand factors that influence marketing decisions in the global market.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Demonstrate an understanding of marketing concepts and marketing orientations.

LO-2 Explain consumer behavior and its application in different contexts.

LO-3 Explain the process of product development, brand management.

LO-4 Describe the role of pricing in the firm's decision-making process and common pricing practices and evaluate common models of distribution and retailing.

LO-5 Analyze different marketing communication tactics.

Syllabus Outline		**Learning Outcomes**
1	Principles of Marketing Management [4 hrs] *Basic concepts of marketing management and its applications*	LO-1, LO-3
2	Paradigms of Marketing [4 hrs] *History and philosophies of marketing management*	LO-2
3	Environment Scanning & Marketing Planning [4 hrs] *Marketing audit, opportunity identification and strategic planning for marketing*	LO-2, LO-3
4	Dynamics of consumer behavior [4 hrs] *Identify consumer market, influencing factors, buyer decision behaviour, application of the concepts in Sri Lankan and Global Markets*	LO-2
5	Customer-driven marketing strategy (STP) [4 hrs] *Segmenting bases, segmenting, targeting, differentiating and positioning the opportunities*	LO-1, LO-2
6	Marketing research [4 hrs] *The importance of information, how to analyse and distribute information for marketing decision making*	LO-3
7	Marketing mix strategies [4 hrs] *Product and brand strategies, pricing strategies, marketing communication strategies and distribution strategies*	LO-4, LO-5

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Individual Assessment (Take home)	25% [4 hrs]	LO-1, LO-2
	Case study	25% (2 hrs)	LO-1, LO-2, LO-3, LO-4
Written examination (WE)		50% [2 hrs]	LO-1, LO-2, LO-3, LO-4, LO-5

References

Module Code	DA3921	Module Title					Organization Behaviour & Management			
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	None
		2	-	4.66				50	50	

Module Aim:	To explain the basic concepts and theories of organizational management. To apply these concepts and theories to modern organizations.

Learning Outcomes
After completing this module, the students should be able to:

LO-1	Explain the basic concepts and theories of organizational behaviour and applications.
LO-2	Apply organizational management theories to modern organizations

Syllabus Outline		**Learning Outcomes**
1	Principles of Management [15 hrs] *Introduction to management, Systems theory, Organizational theory, Stakeholder analysis, Organizational vision, Mission and Objectives. Types of organizations, Organizational strategy, Structures of modern organization, Concept of learning organization. Different roles of manager, Manager and leader, , Modern management techniques, Management styles, Decision making and planning function, Organizing staffing, Directing and controlling*	LO -1
2	Organization Behaviour [12 hrs] *Basic human process and characteristics, Group behavior, Power and leadership, Communication and motivation, Individual and organizational effectiveness. Organizational culture and control, concepts of authority, Power, Responsibility and their applications, Management of conflict. Management of change, Importance of change management and Conflict management*	LO -2

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test – 01	25% [1.5 hrs]	LO-1
	In-class test - 02	25% [1.5 hrs]	LO-2
Written examination (WE)		50% [2 hrs]	LO-1, LO-2
References			

Module Code	DA4421		Module Title					Time Series Econometrics			
Credits	3		**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA		**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	DA2421
			2	2	6				50	50	

Module Aim: This course aims to familiarize the student with the time-series econometrics models.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Explain the concepts and properties of stationary and integrated univariate time series

LO-2 Describe the properties of different time series models and identify appropriate univariate and multivariate time series models based on the data

LO-3 Experiment with parametric variance models

LO-4 Apply the basic methodology of identification, estimation, diagnostic checking and model selection to time series model building

Syllabus Outline		Learning Outcomes
1	Introduction [8 hrs] *Components of time series, basic time series models, ACF and correlogram, tests of serial correlation*	LO-1
2	Stationary processes [8 hrs] *AR, MA, ARMA, Box-Jenkins methodology*	LO-2, LO-4
3	Non-stationary processes [8 hrs] *Tests of stationarity, ARIMA models, cointegration and error correction models*	LO-2, LO-4
4	Multivariate models [8 hrs] *Simultaneous equation bias, triangular systems, VAR models*	LO-2, LO-4
5	Modelling volatility [12 hrs] *ARCH, GARCH models*	LO-3, LO-4

Assessments

Assessment			Weight	Learning outcomes
Continuous Assessments (CA)		In-class test - 01	15% [1 hrs]	LO-1, LO-2
		Take-home assignment	35% [3 hrs]	LO-2, LO-3, LO-4
Written examination (WE)			50% [3 hrs]	LO-1, LO-2, LO-4

References

Module Code	DA4321	Module Title						Data Privacy & Security			
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**	
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	None	
		2	-	4.66				100	-		

Module Aim: This course aims to introduce information security principles and privacy, legal and ethical issues related to data.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Demonstrate the understanding of vulnerability in a computer system

LO-2 Demonstrate the knowledge of fundamentals of computer and data security

LO-3 Apply information security principles to protect of security of data

LO-4 Discuss the legal, privacy and ethical issues around data and their impact

Syllabus Outline		**Learning Outcomes**
1	Threats and Attacks [6 hrs] *Viruses, Spyware, Phishing, Spoofing, Social engineering, Denial of service attacks*	LO -1
2	Information Security [6 hrs] *What is Information Security, Goals of information security, CIA triad*	LO -2
3	Introduction to Cryptography [10 hrs] *Ciphers, Symmetric and asymmetric key algorithms, Public-Private key encryption, Digital signatures*	LO-2, LO-3
4	Data Privacy and Ethics [6 hrs] *Privacy Issues, Privacy Laws and Ethics*	LO-4

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test - 01	25% [1 hrs]	LO-1
	In-class test - 02	25% [1 hrs]	LO-2, LO-3
	Individual Assessment / Portfolio	50% [5 hrs]	LO-4

References

Module Code	DA4131	Module Title			Advanced ML Applications for Business			
Credits	3	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■		**CA**	**WE**	DA2111
		2	2	6			100	-	

Module Aim:	This course aims to give hands-on experiences to students in deep learning and reinforcement learning which are most revolutionary advances in machine learning.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Identify the principles of deep learning neural networks

LO-2 Explain common methods for deep learning

LO-3 Demonstrate an understanding of reinforcement learning

Syllabus Outline		**Learning Outcomes**
1	Introduction to Neural Networks [3 hrs] *Overview/Recap of Machine Learning, A Brief History of Neural Networks, The Basic Idea and layered architecture, Applications of DL, Challenges of DL*	LO -1
2	Training Neural Networks [5 hrs] *Multilayer perceptron, Regularization, Parameter Norm Penalties, Weight Decay, Early Stooping, Dropout, Data-set Augmentation and Artificial Noise*	LO -1
3	Optimization of Neural Networks [5 hrs] *Gradient Descent and Stochastic Gradient Descent, Chain rule and Computational graphs, Back-propagation, Cost functions*	LO -1
4	Convolutional Neural Networks (CNNs) [5 hrs] *Convolutional operator, Convolution layer, CNN Architecture, Implementation*	LO -2
5	Applications of CNN [3 hrs] *Classification using CNN, Neuro-style transfer, Siamese networks, Computer vision*	LO -2
6	Recurrent Neural Networks (RNNs) [5 hrs] *Motivation and idea for RNNs, RNN Architecture, Long Short-Term Memory (LSTM), Exponential Smoothing RNN (ES-RNN)*	LO -2
7	Applications of RNN [3 hrs] *Classification and Prediction, Language Modelling and Generating Text, Machine Translation. Speech Recognition, Word/Sentence embedding*	LO -2
8	Unsupervised Deep Learning [5 hrs] *Autoencoders, Generative Adversarial Networks*	LO -2
9	Deep Reinforcement learning [5 hrs] *Types of Deep RL algorithms, Deep Q learning*	LO -3
10	Model Selection, Architecture Search and Research Areas in DL [6 hrs] *Sequential model-based optimization, Hyperband, Neural Architecture Search, Transfer learning, Explainability*	LO -1, LO-2

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Individual Assessment – 01 (Take home)	50% [5 hrs]	LO-1, LO-2
	Individual Assessment – 02 (Take home)	50% [5 hrs]	LO-2, LO-3

References

Module Code	DA4481	Module Title						Spatial Data Analytics		
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**				**CA**	**WE**	DA3481
		-	4	2.66				100	-	

Module Aim:	This module aims to introduce geospatial data science concepts with practical introduction to cloud based geoinformatics.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Explain the basics of spatial data science

LO-2 Examine geospatial data using data science approaches and cloud-based GIS services

LO-3 Develop decision making intelligence using geospatial data

Syllabus Outline		**Learning Outcomes**
1	Introduction [4 hrs] *Data science vs spatial data science, Python spatial data science ecosystem*	LO-1
2	Geospatial data science [8 hrs] *Machine learning in geospatial data science, Open source GIS software, GeoPandas*	LO-2, LO-3
3	Cloud-based GIS services [8 hrs] *Web GIS technology, Google earth engine, Map visualization*	LO-2, LO-3
4	Spatial databases [4 hrs] *PostGIS, Spatial SQL*	LO-2, LO-3
5	Automated GIS analysis [4 hrs] *Custom SQL functions, Deploying spatial databases*	LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Lab test - 01	25% [1 hrs]	LO-1, LO-2
	Lab test - 02	25% [1 hrs]	LO-2, LO-3
	Group project (Take home)	50% [4 hrs]	LO-2, LO-3

References

Module Code	DA4411	Module Title						Financial Derivatives		
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**				**CA**	**WE**	None
		2	-	4.6				50	50	

Module Aim:	This course aims to impart fundamental understanding of tradable financial derivatives.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Demonstrate knowledge of how different types of derivatives operate, and how they are applied and priced in the markets
LO-2	Explain the attributes of main financial derivatives
LO-3	Decide the type of security to be used for hedging and speculative purposes

Syllabus Outline		**Learning Outcomes**
1	Derivative markets and Securities [8 hrs] *Structure of Forward, Futures and Option markets, Basic payoff diagrams, Relationship between Forward and Option contracts, Derivative portfolio management*	LO-1
2	Forward and Futures contracts [6 hrs] *Contract mechanisms, hedging, valuation and strategies*	LO-1, LO-2
3	Option contracts [6 hrs] *Option markets, valuation and trading strategies*	LO-1, LO-2, LO-3
4	Swap and other derivatives [7 hrs] *Swap contracts, warrants and convertible securities and other embedded derivatives*	LO-1, LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test - 01	20% [1.5 hrs]	LO-1, LO-2
	In-class test - 02	20% [1.5 hrs]	LO-2, LO-3
	Quizzes, Homework, pop-Quizzes [Take-Home]	10%	LO-1, LO-2, LO-3
Written examination (WE)		50% [2 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA4471	Module Title						Stochastic Finance		
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab /Tutorials**	**Self-study**		███		**CA**	**WE**	None
		2	-	4.6				50	50	

Module Aim:	This module aims to provide knowledge in the area of stochastic finance and its applications.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Recognize different derivative instruments
LO-2	Explain the concept of arbitrage and arbitrage free pricing in the discrete time-setting
LO-3	Apply skills to formulate continuous-time stochastic models
LO-4	Make use of software tools to solve stochastic finance problems
LO-5	Evaluate market securities using continuous-time stochastic models

Syllabus Outline		**Learning Outcomes**
1	Introduction to Financial Calculus [8 hrs] *Derivative security and types of derivatives, Expectation pricing, Arbitrage pricing and Expectation versus Arbitrage*	LO-1, LO2
2	Discrete process [6 hrs] *Binomial branch model, Binomial tree model and Binomial representation theorem*	LO-2, LO-4
3	Continuous process [7 hrs] *Continuous process, Stochastic calculus, Ito calculus, Change of measure, Martingale representation theorem, Construction strategies and Black-Scholes model*	LO-3, LO-4
4	Pricing market securities [7 hrs] *Equity and Dividends, Forex and Bonds*	LO-4, LO-5

Assessments

Assessment			**Weight**	**Learning outcomes**
Continuous Assessments (CA)		In-class test – 01 (based on python)	20% [2 hrs]	LO-1, LO-2, LO-3, LO-4
		In-class test – 02	20% [1 hrs]	LO-3, LO-5
		Quizzes/ Homework	10% [Take Home]	LO-1, LO-2, LO-3, LO-5
Written examination (WE)			50% [2 hrs]	LO-1, LO-2, LO-3, LO-5

References

Module Code	DA4431	Module Title						Statistical Simulation			
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**	
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**		■		**CA**	**WE**	None	
		1	2	3.6				50	50		
Module Aim:	The aim of this course is to understand different types of simulation techniques and develop the ability to solve practical problems										

Learning Outcomes

After completing this module, the students should be able to:

LO-1   Describe statistical simulations methods to analyze, design, and solve problems

LO-2   Apply different techniques to generates random variates and numbers

LO-3   Discuss simulation modeling techniques and applications

Syllabus Outline		**Learning Outcomes**
1	Overview of Simulation [3 hrs] *Introduction, Simulation examples, Steps in a simulation study*	LO-1
2	Generating Random Variates and Numbers [6 hrs] *General approaches to generating random numbers and variates, Generating continuous and discrete random variates, Generating arrival processes*	LO-2
3	Simulation Modeling [6 hrs] *Simulation of Queueing system, Simulation of an inventory system, Agent-based modeling, Practical simulation models using case studies*	LO-1, LO-3
4	Resampling Methods for Simulations [6 hrs] *Jack-knife, Cross validation, Bootstrap, Permutation tests*	LO-1
5	More Topics in Simulation Modeling and Analysis [6 hrs] *Monte Carlo Simulation, Variance Reduction Techniques, Experimental designs, and optimization*	LO-1, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test - 01	25% [1.5 hrs]	LO-1, LO-2
	Lab test – 01	25% [1.5 hrs]	LO-3
Written examination (WE)		50% [2 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA4311	Module Title			Advanced Database Management				
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**				**CA**	**WE**	DA2311
		1	2	3.6				100	-	

Module Aim:	This module aims to explore advanced database systems management and their role in a business organization.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Explain techniques to optimize databases and queries

LO-2 Apply transaction management concepts for databases

LO-3 Discuss the use of advanced data storage and manipulation techniques for complex business problems

Syllabus Outline		Learning Outcomes
1	Optimization [4 hrs] *Database optimization, query optimization, indexing*	LO-1
2	Transaction Management in Databases [6 hrs] *Database transactions, atomicity, consistency, isolation and durability*	LO-2
3	NoSQL Databases [6 hrs] *Non-relational databases, object databases*	LO-3
4	Big data [6 hrs] *Storage, analysis and processing of complex and large data sets*	LO-3, LO-3
5	Distributed Databases [6 hrs] *Replication, transparency, consistency*	LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Lab test – 01	25% [1 hrs]	LO-1
	Lab test – 02	25% [1 hrs]	LO-1, LO-2
	Individual Assessment – 01 (Take home)	50% [3 hrs]	LO-1, LO-2
	Individual Assessment – 02 (Take home)	50% [3 hrs]	LO-2, LO-3

References

Module Code	DA4621	**Module Title**						Big Data Technology Principles		
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	None
		-	4	2.6				100	-	

Module Aim:	This module aims to provide a fundamental understanding of big data technology and analytics, inspiring the capacity of thinking and dealing with big data problems in business applications.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Explain the need for the big data technology and analytics
LO-2	Demonstrate the understanding of appropriate big data computing systems including NoSQL databases
LO-3	Develop business intelligence using big data technology applications

Syllabus Outline		**Learning Outcomes**
1	Introduction to big data analysis [3 hrs] *Drivers of Big Data, What is big data? And key concepts of big data, Big Data Systems Characteristics of Big Data Systems, Technologies for Big Data Systems, Big Data Analytics*	LO-1
2	Big data structures [4 hrs] *Peculiarities and principles of big data structure, Principles of bloom filter, MinHash clustering*	LO-2
3	Data Warehousing [3 hrs] *Introduction to DW, OLTP vs DW (OLAP), Data Warehousing Architectures, Data Warehouse Designs & Concepts (Dimensional Data Modelling), ETL/ELT Process (Data Ingestion Flows), OLAP Cubes and Related Concepts*	LO-2, LO-3
4	NoSQL databases [3 hrs] *Basics of relational database systems (SQL databases), History of NoSQL systems, Concepts- ACID, BASE, CAP, Data Models- Key-Value, Document, Column-based, Graph*	LO-2
5	Batch Processing Systems [3 hrs] *Distributed File Systems, HDFS and YARN, MapReduce Algorithm, Hive*	LO-2
6	Distributed Analytics with Spark [3 hrs] *Introduction to Spark, Spark RDDs, Spark Components – SparkSQL, MLib, GraphX, Spark Streaming*	LO-2
7	Software support for big data applications [4 hrs] *Hadoop ecocluster, MapReduce method, Graph parallel computing, Data cleaning, processing, analysis technology*	LO-2, LO-3
8	Big data distributed storage and computing architectures [3 hrs] *Hadoop database, NoSQL database, Cloud database, Data warehouse Hive, Spark, Stream analytics, Flink*	LO-2, LO-3
9	Real-world big data analytics [3 hrs] *Cluster analysis, Association analysis, Big data dimensionality reduction, Social network service, Recommender system*	LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Lab test - 01	30% [1 hrs]	LO-1, LO-2
	Design project (Take home)	50% [3 hrs]	LO-1, LO-2, LO-3
	Individual Assignment (Take home)	20% [3 hrs]	LO-2, LO-3

References

Module Code	DA4621	Module Title					Project Management			
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**	■			**CA**	**WE**	None
		2	-	4.6				50	50	

Module Aim:	The module aims to develop skills of the participants to enable them to contribute to key decisions in project management in an organization.

Learning Outcomes

After completing this module, the students should be able to:

LO-1   Recognize the project management process from initiation to closing, including planning, monitoring and controlling the project.

LO-2   Outline the key challenges faced by project managers during each stage of the life-cycle of a project, and the tools and methods applicable during the course of a project.

LO-3   Discuss project management tasks including planning for risks, estimating time & costs, procurement and overall quality.

Syllabus Outline		**Learning Outcomes**
1	Development of Project Management as a Discipline [4 hrs] *Basic Principles, the Project 'Life Cycle', Project Management Terminology*	LO-1
2	Project Initiation & Planning [6 hrs] *Strategic and Operations Planning Frameworks, Establishing Project Goals and Objectives, Deliverables, Process Models, Scoping, Basic Feasibility Models, Resourcing, Costing, Scheduling, Presentation and Outcomes, Work Breakdown Structures, Gantt charts, Project Management Software*	LO-1, LO-2
3	Monitoring & Control [6 hrs] *Project control life cycle, Progress evaluation, Reporting and Corrective actions*	LO-2, LO-3
4	Communication & Organization [2 hrs]	LO-2
5	Quality [4 hrs] *Quality control & assurance, quality measurements & procedures, Quality management systems,*	LO-3
6	Estimating & Risk [6 hrs] *Overestimates/underestimates, Estimates & targets, Estimating methods, Risk categorization, Identifying and prioritizing risk, Assessment of risk exposure, Risk response strategies*	LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test – 01	25% [1 hrs]	LO-1, LO-2
	In-class test – 02	25% [1 hrs]	LO-2, LO-3
Written examination (WE)		50% (2 hrs)	LO-1, LO-2

References

Module Code	DA4461	Module Title					Technical Analysis		
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**	**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**				**CA** / **WE**	None
		2	-	4.6				50 / 50	

Module Aim: This course provides the principles of technical analysis and its applications.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Describe various tools and techniques in Technical Analysis

LO-2 Apply Technical Analysis when making trading decisions

Syllabus Outline		Learning Outcomes
1	Principles of Technical Analysis and Basics of Trend [5 hrs] *Primary, secondary, short-term and intraday trends, uptrend, downward trend, support & resistance*	LO -1
2	Concept of Moving Averages [5 hrs] *Simple, Exponential*	LO -1, LO -2
3	Patterns [4 hrs] *Reversals & short-term patterns, common candlestick patterns and how to use interpret them within a trend,*	LO -1, LO -2
4	Wave Principle [4 hrs] *Basic operation of the Wave principle, Label waves using standard Elliot Wave notation*	LO -1, LO -2
5	Conformation [6 hrs] *Major indexes & oscillators designed to use volume as a confirmation, concept of momentum in price action, application of indexes & oscillators such as MACD, RSI and stochastics*	LO -1, LO -2
6	Fibonacci Relationships for Stock Trading [6 hrs] *Fibonacci ratio, Golden ratio and Phi can be used for stock price pattern analysis*	LO -1, LO -2

Assessments

Assessment		Weight	Learning outcomes
Continuous Assessments (CA)	Individual Assessment – 01 (Take home)	25% [4 hrs]	LO-1, LO-2
	Individual Assessment – 02 (Take home)	25% [4 hrs]	LO-1, LO-2
Written examination (WE)		50% [2 hrs]	LO-1, LO-2

References

Module Code	DA4441		Module Title					Financial Risk Management			
Credits	2		**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**
GPA/NGPA	GPA		**Lectures**	**Lab / Tutorials**	**Self-study**		■		**CA**	**WE**	None
			2	-	4.6				50	50	

Module Aim: This course aims to provide the concepts, processes and techniques of risk management.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Explain the nature of risk management practices in the world of business

LO-2 Make use of tools and techniques required for financial risk assessment and evaluations

LO-3 Formulate risk management reporting

Syllabus Outline		Learning Outcomes
1	Risk Finance Theory [4 hrs]	LO-1
2	Basic Risk Management Instruments [6 hrs]	LO-2
3	Managing Market Risk [4 hrs]	LO-2, LO-3
4	Value-at-Risk [6 hrs]	LO-2
5	Credit Risk [4 hrs]	LO-2, LO-3
6	Limitations of Risk Modeling [4 hrs]	LO-2, LO-3

Assessments

Assessment		Weight	Learning outcomes
Continuous Assessments (CA)	In-class test - 01	25% [1.5 hrs]	LO-1
	Lab Test – 01	25% [1.5 hrs]	LO-2
Written examination (WE)		50% [2 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA4451	Module Title						Stochastic Programming			
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		**Prerequisites**	
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**				**CA**	**WE**	DA3461	
		2	-	4.6				100	-		

Module Aim:	This course provides an introduction to modelling and solution methods for problems of decision-making under uncertainty.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 Model uncertainties in business decision making

LO-2 Assess the impact of uncertainties on the decision-making process

LO-3 Evaluate difficulties of incorporating uncertainties into optimization models

Syllabus Outline		**Learning Outcomes**
1	Introduction to stochastic programming models [6 hrs]	LO-1
2	Use of sensitivity analysis [6 hrs]	LO-2, LO-3
3	Sensitivity analysis and uncertainty [6 hrs]	LO-2, LO-3
4	Multi-stage models and scenario trees [6 hrs]	LO-2, LO-3
5	Stochastic programming algorithms [6 hrs]	LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Individual Assessment (Take home)	50% [4 hrs]	LO-1, LO-2
	Group Assessment (Take home, presentation)	50% (4 hrs)	LO-2, LO-3

References

Module Code	DA4511	Module Title					Statistical Quality Control			
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		Prerequisites
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**		■		**CA**	**WE**	None
		2	-	4.6				50	50	

Module Aim:	The aim of this course is to familiarize students with statistical tools and methods for quality control and improvement by applying them in a variety of situations.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Demonstrate the understanding of the necessity of using quality control in industries
LO-2	Describe the principles of quality control analysis to improve the quality of the industrial processes
LO-3	Apply quality control techniques to improve processes in industrial environments

Syllabus Outline		**Learning Outcomes**
1	Introduction and overview of statistical quality control [4 hrs] *Quality improvement in the modern business environment, Overview of DMAIC process, Statistical methods for quality control and improvement.*	LO-1
2	Statistical Process Control [6 hrs] *The magnificent seven, control charts and limits, choice of control limits and interpretation of control charts.*	LO-1, LO-2
3	Control Charts for Variables [6 hrs] *Control charts for sample mean ($\underline{x}$), range (R), and variance (s^2), Estimating process capability, Changing sample size, Average run length, Control charts with variable sample size, OC curves*	LO-2, LO-3
4	Control Charts for Attribute Data [6 hrs] *Fraction nonconforming control charts (p-chart), Control charts for nonconformities (c-chart, and u-chart (per-unit chart)), Guidelines for implementing control charts*	LO-2, LO-3
5	Acceptance Sampling for Attributes [3 hrs] *Single and multiple sampling plan, Acceptance number, Acceptable quality level, Lot tolerance percent defective*	LO-2, LO-3
6	Overview of six-sigma [3 hrs]	LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test - 01	25% [1 hrs]	LO-1, LO-2
	Lab test - 02	25% [1 hrs]	LO-3
Written examination (WE)		50% [2 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA4641	Module Title			Introduction to FinTech				
Credits	2	**Hours/Week**			**C**	**E**	**O**	**Evaluation %**	**Prerequisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**				**CA**	**WE**	None
		2	-	4.6				50	50	

Module Aim:	The module aims to provide an understanding of how the FinTech innovations can be used to transform organizations.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	Identify main FinTech innovations in Financial Services Industry
LO-2	Explain emerging applications in FinTech
LO-3	Discuss the risks and challenges of using FinTech

Syllabus Outline		**Learning Outcomes**
1	Introduction & Overview [4 hrs]	LO-1
2	FinTech Innovations [6 hrs] *Cryptocurrencies, Smart contracts, Stablecoins & Enterprise Blockchain,*	LO-2
3	ML and AI Strategies [6 hrs]	LO-2, LO-3
4	Alternative Lending and Payment Platforms [6 hrs]	LO-2, LO-3
5	Opportunities, Risk, Challenges & Regulations [6 hrs]	LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Case study – 01	25% [1 hrs]	LO-1, LO-2, LO3
	Case study – 02	25% [1 hrs]	LO-1, LO-2, LO-3
Written examination (WE)		50% [2 hrs]	LO-1, LO-2, LO-3

References

Module Code	DA4901		Module Title						Analytics Practicum		
Credits	8		**Hours/Week**			**C**	**E**	**O**	**Evaluation %**		Prerequisites
GPA/NGPA	GPA	**Lectures**	**Lab / Tutorials**	**Self-study**				**CA**	**WE**	None
		-	-	400					100	-	

Module Aim:	This module aims to requires students to demonstrate both theoretical and practical knowledge, analytical skills and personal characteristics at levels which are appropriate with professional business practice.

Learning Outcomes
After completing this module, the students should be able to:

LO-1	Formulate the business problem into a viable project proposal under individual supervision
LO-2	Review relevant literature and critique the impact of the proposed project to evaluate the suitability of alternative research methods applicable to the chosen business problem
LO-3	Recommend courses of action by debating the effectiveness of the proposed business solution
LO-4	Defend project results to peers and supervisors

Syllabus Outline		**Learning Outcomes**
1	Problem identification & Proposal development	LO -1
2	Research methodology and Research design	LO -2
3	Analysis, discussion and recommendations	LO -2, LO -3
4	Project presentation	LO-4

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Proposal presentation	20%	LO-1
	Publishable research paper / article	30%	LO-2, LO-3
	Research Report, Oral presentation and viva	50%	LO-2, LO-3, LO-4

References

Module Code	DA4801	Module Title			Internship			
Credits	6	Hours/Week		C	E	O	Evaluation %	Prerequisites
GPA/NGPA	NGPA	Lectures	Training	■			CA	WE	None
		-	600				100	-	
Module Aim:	This module aims to enable the participants to acquire transferable skills in the area of business and finance analytics by offering them the chance to gain practical exposure. .							

Learning Outcomes	
After completing this module, the students should be able to:	
LO-1	Compare academic and industrial environments
LO-2	Relate the knowledge gained via training to the R & D project
LO-3	Appraise professional ethics and business practices
LO-4	Discuss the findings in a training report

Syllabus Outline		Learning Outcomes
1	Induction *This is an initial period to help the student in the transition from academic to industrial life. The students should meet his/her Mentor to discuss the contents and the objectives of training. He/She should also receive information about the training organization, its products or services and the terms and conditions of employment*	LO -1
2	General Training *In a large organization, this should include an introduction to the work done in a number of departments. Under these circumstances, the student may eventually be working as a member of a team in the organization. The student should be made aware of the management and administration sectors of the organization*	LO – 1, LO -2
3	Practical Skills *During this period, the student should receive instructions in the practical skills essential for his/her future employment. It should also include an appreciation of the business processes.*	LO -2, LO -3
4	Directed Objective Training *The major part of the training should have directed application to the activity which the student intends to follow after the training program (activities should be relevant to the specialisation in which the student will be graduating in). At this stage, the student should be encouraged to work on a real project and be given increasing responsibility for independent work to establish interest and confidence in his/her work*	LO – 3, LO-4

Assessments			
Assessment		Weight	Learning outcomes
Continuous Assessments (CA)	Training report	50%	LO-1, LO-2, LO-3, LO-4
	Final presentation and viva	50%	

References	

MODULES OFFERED BY THE DEPARTMENT OF INDUSTRIAL MANAGEMENT

Module Code	IM1641		Module Title		Microeconomics				
Credits	2		**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■				**CA**	**WE**	None
		2						50	50	

Module Aim:	This is an introductory course which explores the concepts, terminologies and methodologies of microeconomics for decision making.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	identify the microeconomics concepts, tools of analysis and various frameworks, standards and norms.
LO-2	describe price theory and grasp basic ingredients of market mechanism in terms of supply, demand, elasticity and equilibrium.
LO-3	explain production, costs, revenue and profit maximization including consumer and producer behavior.
LO-4	discuss the efficiency and equity implications of various market structures.

Syllabus Outline		**Learning Outcomes**
1	**Introduction to microeconomic concepts and tools of analysis [3 Hrs]** *Microeconomics concepts and tools.*	LO-1
2	**Production analysis and consumer and producer behaviour [6 Hrs]** *Basic concepts of demand, supply and equilibrium, Impact of change in demand or supply on equilibrium*	LO-1, LO-2
3	**Costs, revenue and profits maximization [7 Hrs]** *Major influences in consumer behavior, Relevance of consumer behavior theories and concepts for marketing decision making.*	LO-3
4	**Market structures and analytical tools [7 Hrs]** *Characteristics of market structures, Effect of market on firm behaviour, market structures in real world*	LO-4
5	**Pricing and price discrimination [6 Hrs]** *Market information, Market Failures and the role of government*	LO-4

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class tests – 20 % **[1 Hr]** Individual assignment – 30%	50%	LO-1, LO-2, LO-3
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3, LO-4

Module Code	IM1351		**Module Title**			Introduction to Accounting			
Credits	3		**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA		**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	None
			2	2				50	50	
Module Aim:		This module aims to provide an introductory knowledge on accounting principles, standards and policies relating to the preparation of financial reports to facilitate sound decision making.							

Learning Outcomes
After completing this module, the students should be able to:
LO-1   explain the concepts of financial reporting.
LO-2   demonstrate the reporting of accounting transactions.
LO-3   apply accounting concepts, principles and standards in accounting practice.
LO-4   develop financial statements for profit motive and non-profit motive organization.

Syllabus Outline		**Learning Outcomes**
1	**Accounting information in its decision-making context [9 Hrs]** *History of accounting, Accounting environment, Double entry system, Ledger system and trial balance, Discuss accounting concepts and Accounting equations*	LO-1, LO-2
2	**The statement of financial position and income statement [9 Hrs]** *LKAS 01, LKAS 02, LKAS 16, Preparing the Financial Statement of private and listed companies*	LO-1, LO-4
3	**Reporting and interpreting cash flows [6 Hrs]** *LKAS 07, Identify the operational, investing and financial activities, Preparing the cash flows on direct and indirect methods and interpretation*	LO-4
4	**Accounting for manufacturing concerns [6 Hrs]** *Different cost classifications, Analyze costs in allocating OH cost, Calculating the product cost, Preparing manufacturing accounts and statement of costs*	LO-3
5	**Accounting for incomplete records [3 Hrs]** *Converting the incomplete records into useful information, Accounting equation method and final accounts preparation method*	LO-2
6	**Accounting in non-profit organizations [3 Hrs]** *Types of non-profit organizations, Subscription account, Income and expenses account, Cash receipts and payments account*	LO-4
7	**Cash flows and financial statement analysis [7 Hrs]** *Interpreting the financial statements, Horizontal and vertical analysis, Ratio analysis, Net present value and payback period.*	LO-1, LO-4

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class tests **[2 Hrs]**	20%	LO-1, LO-2, LO-3
	Individual assignment	30%	
Written examination (WE)		50% **[3 Hrs]**	LO-1, LO-2, LO-3, LO-4

Module Code	IM1531	Module Title			Principles of Management					
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**			**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**		None
		2					50	50		

Module Aim:	The aim of this module is to introduce the fundamentals of management and provide an understanding of the key theoretical and contemporary challenges in management.

Learning Outcomes
After completing this module, the students should be able to:

LO-1	explain evolution of management theories.
LO-2	describe management principles and processes in consideration of interrelation.
LO-3	discuss the role of management in addressing contemporary challenges in organizations.

Syllabus Outline		**Learning Outcomes**
1	**Introduction to management [3 Hrs]** *Introduction to organizations and management discipline, Evolution of management thought*	LO-1
2	**Organizational environment and decision making [6 Hrs]** *Organizational Environment and corporate social responsibility, Managerial decision making and problem solving*	LO-1, LO-2
3	**Planning as a management function [5 Hrs]** *Introduction to "Planning" as a function of management and its relationship with other managerial functions*	LO-2, LO-3
4	**Organizing and its culture [5 Hrs]** *Introduction to "organizing" as a function of management, The importance of organisational structure in influencing the behaviour of people and organisational performance*	LO-2, LO-3
5	**Leading people [4 Hrs]** *Introduction to "leading", "motivation" and "communication" as functions of management.*	LO-2, LO-3
6	**Organizational control [3 Hrs]** *Introduction to "controlling", Behavioral implications control*	LO-2, LO-3
7	**Contemporary management practices [3 Hrs]** *New trends in management and contemporary challenges in management*	LO-1, LO-2, LO-3

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class/Mid-term test 20% **[1 Hr]** Group assignments 30%	50%	LO-1, LO-2, LO-3
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM1421	**Module Title**				Marketing Management			
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	▓			**CA**	**WE**	IM1531
		2					50	50	

Module Aim:	This course aims to provide an introduction to basic marketing concepts to understand the factors that influence marketing decisions in the global market.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 demonstrate an understanding of marketing concepts and marketing orientations.

LO-2 explain consumer behavior and its application in different contexts.

LO-3 explain the process of product development, brand management.

LO-4 discuss the role of pricing in the firm's decision-making process and common pricing practices and evaluate common models of distribution and retailing.

LO-5 analyse different marketing communication tactics.

Syllabus Outline		**Learning Outcomes**
1	**Principles of marketing management [4 Hrs]** *Basic concepts of marketing management and its applications*	LO-1, LO-3
2	**Paradigms of marketing [2 Hrs]** *History and philosophies of marketing management*	LO-2
3	**Environment scanning & marketing planning [2Hrs]** *Marketing audit, opportunity identification and strategic planning for marketing*	LO-2, LO-3
4	**Customer-driven marketing strategy (STP) [4 Hrs]** *Segmenting bases, Segmenting, Targeting, Differentiating and positioning the opportunities*	LO-1, LO-2
5	**Marketing research [4 Hrs]** *The importance of information, How to analyse and distribute information for marketing decision making*	LO-3
6	**Dynamics of consumer behaviour [4 Hrs]** *Identify consumer market, Influencing factors, Buyer decision behaviour, Application of the concepts in Sri Lankan and global markets*	LO-2
7	**Marketing mix strategies [9 Hrs]** *Product and brand strategies, Pricing strategies, Marketing communication strategies and distribution strategies*	LO-4, LO-5

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test 20% **[1 Hr]** Group + Individual assignment 30%	50%	LO-1, LO-2, LO-3, LO-4
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3, LO-4, LO-5

Module Code	IM1631		Module Title		Macroeconomics				
Credits	2		**Hours/Week**	**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	IM1641
		2					50	50	
Module Aim:	The purpose of this course is to provide a basic understanding of the mechanisms that drive economic phenomena such as inflation, unemployment, balance of payments, interest rate, exchange rate, economic growth and stability.								

Learning Outcomes

After completing this module, the students should be able to:

LO-1   explain the basic macroeconomics concepts such as national income accounting, growth models and unemployment.

LO-2   analyse the real economy by applying macro models.

LO-3   discuss the causes and consequences of business cycles and long-term economic growth.

Syllabus Outline		**Learning Outcomes**
1	**Introduction to Macroeconomics [4 Hrs]** *Science and data of macroeconomics, Determinants, distribution and equilibrium in national income accounting and the related various concepts and measurements.*	LO-1
2	**Aggregate Demand and Supply & Inflation and Unemployment [12 Hrs]** *IS-LM model and categories of inflation and unemployment and possible relationships between various macro-economic concepts*	LO-1, LO-2
3	**Exchange and interest rate regimes and determination [4 Hrs]** *Fixed and floating regimes, Nominal and real exchange rate determinants*	LO-2, LO-3
4	**Monetary and Fiscal policies [4 Hrs]** *Identification of various components of monetary and fiscal policies and their macroeconomic implications for growth and stability of the economy.*	LO-2, LO-3
5	**Balance of Payments, External Trade and development [5 Hrs]** *Basic of BoP accounts and its macroeconomic importance and relationships with other macro variables.*	LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test/quiz 20% **[1 Hr]** Report and Presentation 30%	50%	LO-1, LO-2, LO-3
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM1261	Module Title			Fundamentals of Finance			
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	None
		2	0				50	50	

Module Aim:	This course aims to introduce fundamentals of finance.

Learning Outcomes

After completing this module, the students should be able to:

LO-1   identify the role and the significance of finance for corporate, public and personal decision making.

LO-2   apply the time value of money concept.

LO-3   evaluate the investment options based on risk and return.

Syllabus Outline		**Learning Outcomes**
1	**Introduction [2 Hrs]** *Introduction to finance, Financial system, Role of a finance manager*	LO -1
2	**Time Value of money [10 Hrs]** *Introduction, Present value, Future value, Annuities, Perpetuities, Amortization schedules*	LO -2
3	**Risk and Return [6 Hrs]** *Historical risk and returns, Expected risk and returns, Selection of assets, Investor behavior, Introduction to two asset portfolio risk and return, Systematic vs unsystematic risk*	LO -3
4	**Role of financial markets and intermediaries [4 Hrs]** *Financial markets, Financial institutions, Central Bank*	LO-1
5	**Financial Statement Analysis [4 Hrs]** *Ratio analysis, Horizontal analysis, Vertical analysis*	LO-1
6	**Personal Finance [2 Hrs]** *Budgeting, taxes, making personal finance decisions (Buying a car, Getting a credit card, Selecting a checking and deposit accounts*	LO-1, LO-3

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Presentation	20%	LO-1
	Quiz **[2 Hrs]**	30%	LO-2, LO-3
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM2211	**Module Title**		Financial Management				
Credits	3	**Hours/Week**		C	E	O	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA** | **WE**	IM1261
		2	2				50 | 50	

Module Aim:	The purpose of this unit is to provide an understanding of how organizations can be managed more effectively through efficient financial management.

Learning Outcomes

After completing this module, the students should be able to:

LO-1   define and explain the decision-making role and tasks of a financial manager.

LO-2   describe the importance of the concepts of risk and return in making financial decisions.

LO-3   apply finance principles to the main categories of corporate financial decisions.

Syllabus Outline		**Learning Outcomes**
1	**Introduction to finance and financial environment [2 Hrs]** *Objectives of profit and not-for-profit organizations, Stakeholder analysis and agency theory, Investment, financing and dividend decisions of a financial manager in the Sri Lankan financial market*	LO -1
2	**Risk and return [8 Hrs]** *Types of risk and return, Measuring and analyzing risk and return, Risk diversification, Capital Asset Pricing Model, Markowitz Portfolio Theory.*	LO -2
3	**Valuation of Securities [4 Hrs]** *Develop mathematical formulas for bond and stock valuation methods, The concept of yield to maturity*	LO-2, LO-3
4	**Capital Budgeting [8 Hrs]** *Apply mathematical formulas for investment appraisal techniques (NPV, IRR, Payback period, Capital rationing), Incremental cash flow analysis, Further issues in capital budgeting, Risk analysis.*	LO-3
5	**Cost of Capital [4 Hrs]** *Measurement of gearing, Cost of equity/debt/preference shares, WACC*	LO -3
6	**Working Capital [8 Hrs]** *Net working capital, Operating cycle, Working capital cycle, Determinants of working capital, Estimating working capital needs, Receivables management, Inventory management, Cash management, Working capital finance.*	LO-3
7	**Introduction to Dividend Policy [8 Hrs]** *Objectives of dividend policy, Practical considerations in dividends, Stability of dividends, Target payout ratio and dividend smoothing, Forms of dividends, Share buybacks, Chronology of dividend dates, Cum-dividend vs Ex-dividend prices.*	LO-3

Assessments

Assessment			**Weight**	**Learning outcomes**
Continuous Assessments (CA)		In-class tests **[2 Hrs]**	20%	LO-1, LO2, LO-3
		Group Assignment	30%	LO-2, LO-3
Written examination (WE)			50% **[3 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM2521		**Module Title**		Organizational Behavior				
Credits	2		**Hours/Week**	**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	▉			**CA**	**WE**	IM1531
		2					50	50	

Module Aim: This module aims to examine the behavior of individuals working as groups in contemporary organizations.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 describe individual behaviour in relation to organizational effectiveness.
LO-2 discuss group behaviour in organizational settings.
LO-3 evaluate relevant organizational theories with relation to organizational effectiveness.

Syllabus Outline		**Learning Outcomes**
1	**Introduction to Organizational Behaviour [2 Hrs]** *Individual, group and organizational behaviour in modern workplaces*	LO -1, LO-2
2	**Individual behaviour [2 Hrs]** *Individual values, attitudes and workplace emotions*	LO -1
3	**Perception and learning in organizations [4 Hrs]** *Perception and perceptual errors in decision making*	LO -1
4	**Personality, impression management and employee motivation [6 Hrs]** *Personality theories, Impression management strategies, Motivational theories and strategies*	LO-2, LO-2
5	**Groups and teams [4 Hrs]** *Group formation, Group dynamics, Group cohesiveness and effectiveness*	LO-2
6	**Power and influence in the workplace and conflict-management [4 Hrs]** *Sources of power, Power dynamics, Hard and soft influencing strategies*	LO-2, LO-3
7	**Decision making, culture and creativity [6 Hrs]** *Rational decision-making model, Emotional intelligence and creativity*	LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class/Mid-term test 20% **[1 Hr]**	50%	LO-1, LO-2, LO-3
	Group assignment 30%		
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM 2331		**Module Title**		Cost and Management Accounting	
Credits	3		**Hours/Week**	**C** **E** **O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Tutes**	■	**CA** **WE**	None
		3			50 50	

Module Aim:	This module aims to provide a comprehensive ability to use Management Accounting perspectives in strategic decision making.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 explain the role of management accounting perspective in the contemporary business context.

LO-2 apply the modern and traditional costing systems for a given business context.

LO-3 develop cost control techniques and budgets.

LO-4 discuss the different pricing methods and other management accounting techniques.

Syllabus Outline		**Learning Outcomes**
1	**Overview of management accounting [6 Hrs]** *Management Accounting vs financial accounting, Cost and management accounting concepts, Role of management accountant, Different cost classifications.*	LO-1
2	**Different costing methods [6 Hrs]** *Overheads costing, Absorption costing method (traditional costing method), Activity based costing (Modern costing system).*	LO-1, LO-2
3	**Short term decision making and management accounting (CVP analysis) [3 Hrs]** *Fixed and variable costs, Assumptions for CVP analysis, Break-even point, Margin of safety, Decision making based on CVP analysis, Limitations of CVP.*	LO-1, LO-2
4	**Standard Costing and variance analysis [9 Hrs]** *Standard cost and standard costing, Advantages and disadvantage of standard costing, Types of standards, Standard cost card, Variance analysis, Type of variance.*	LO-1, LO-3
5	**Budgeting and control [9 Hrs]** *Budgeting and strategic planning, Purpose of budgeting, Type of different type of budgeting, Step of functional budgeting.*	LO-1, LO-3
6	**Inventory management [4 Hrs]** *Cost of Inventory, EOQ model, Different stock levels, and valuation of inventory under FIFO and WAC.*	LO-1, LO-4
7	**Theory of cost based pricing [3 Hrs]** *Short run and long run pricing decisions, Pricing Factors, Pricing objectives, Target costing and Lifecycle costing, Pricing methods.*	LO-1, LO-4
8	**Strategic cost management and accounting [3 Hrs]** *JIT system, Kaizen costing, Lean Production, 5S methods and Value chain analysis [3h]*	LO-4

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Group assignment	30%	LO-1, LO-2, LO-3
	In-class test/ Individual assignment **[2 Hrs]**	20%	LO-3, LO-4
Written examination (WE)		50% **[3 Hrs]**	LO-1, LO-2, LO-3, LO-4

Module Code	IM2541	**Module Title**				Management Science				
Credits	3	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**			**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**		None
		2	2				50	50		
Module Aim:	This course aims to provide students with fundamentals of Management Science approach to problem formulation and solutions using quantitative techniques in order to address a wide range of business issues.									

Learning Outcomes

After completing this module, the students should be able to:

LO-1 identify the subject of Management Science, selected management science models and computational methods that are helpful in solving management problems in a business context.

LO-2 apply mathematical formulations for business decision making problems.

LO-3 discuss basic Management science approaches, techniques and tools in solving management problems in Finance, Operations and Service Management, Accounting and Marketing by using modern software applications.

Syllabus Outline		**Learning Outcomes**
1	**Introduction [3 Hrs]** *Evolution of management science approach to business decision making.*	LO -1
2	**Linear programming [12 Hrs]** *Graphical Solution, Simplex method, Duality theory and Sensitivity analysis, Other LP solution algorithms, Transportation & assignment problem, Computer applications*	LO -2, LO-3
3	**Integer programming [9 Hrs]** *Use of binary variables in model formulation, Solutions methods of Integer Programming Problems, Computer applications*	LO -2, LO-3
4	**Network optimization models [6 Hrs]** *Shortest-path problem, Minimum spanning tree problem, Maximum flow problem, Minimum cost flow problem, Network simplex problem, Computer applications*	LO-2, LO-3
5	**Dynamic programming [6 Hrs]** *Overview, Deterministic DP, Computer applications*	LO-2, LO-3
6	**Queuing analysis [6 Hrs]** Overview, Queuing Systems, Computer applications	LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In class Quizzes **[2 Hrs]**	20%	LO-1, LO-2
	Lab based Assignment	30% **[3 Hrs]**	LO-2, LO-3
Written examination (WE)		50% [3 Hrs]	LO-1, LO-2

Module Code	IM 2221		**Module Title**			Corporate Finance				
Credits	3		**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA		**Lectures**	**Lab / Tutes**				**CA**	**WE**	IM2211
			2					50	50	
Module Aim:	The purpose of this module is to provide a broader understanding on how corporate financial decision making is facilitated.									

Learning Outcomes
After completing this module, the students should be able to:
LO-1   demonstrate and understanding of finance strategy in creating shareholder value.
LO-2   apply corporate finance theories.
LO-3   discuss advanced asset valuation techniques in corporate decision making.

Syllabus Outline		**Learning Outcomes**
1	**Shareholder value and corporate governance [2 Hrs]** *Financial goals and strategy, Shareholder value creation, Corporate governance, Behavioral issues.*	LO -1
2	**Leasing and project finance [4 Hrs]** *Operating leases, Financial leases, Leveraged leases, Evaluation of leases, Hire purchase, Infrastructure project finance.*	LO-1, LO-2
3	**Advanced capital budgeting techniques [8 Hrs]** *Decision tree analysis in finance, Types of real options, Option value calculations, Capital budgeting risk analysis techniques.*	LO -1, LO-2, LO-3
4	**Capital structure theories [4 Hrs]** *The Modigliani–Miller theory, The static trade-off theory ,The under-investment problem, Asymmetric information, The risk-shifting problem, Free cash-flow arguments, The pecking order theory, Debt overhang.*	LO-2
5	**Capital raising methods [8 Hrs]** *Venture Capital, Initial Public Offerings, Alternative Issue Procedures, Private Placements, Private equity.*	LO-1, LO-2
6	**Dividend theories [4 Hrs]** *Dividend relevance (Walter's Model), Dividend relevance (Gordon's Model), Dividend and uncertainty, Dividend irrelevance (Miller & Modigliani), Market imperfections and dividends, Information content of dividends, Taxes.*	LO-2
7	**Valuation of corporations [4 Hrs]** *Asset-based, earnings-based, dividend-based and cash flow-based valuation techniques, Contingent valuation.*	LO-1, LO-3
8	**Mergers and acquisitions [7 hrs]** *Sensible motives, Dubious motives, Estimating merger gains and costs, Mechanics of a merger.*	LO-1, LO-3
9	**Introduction to corporate risk management [2 Hrs]** *Importance of risk, Probability of default, Value at risk, Insurance, Reducing risk with derivatives.*	LO-1, LO-2

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class tests [**2 Hrs**]	25%	LO-1, LO-2, LO-3, LO-4
	Group assignment	25%	LO-1, LO-2, LO-3, LO-4
Written examination (WE)		50% [**2 Hrs**]	LO-1, LO-2, LO-3, LO-4

Module Code	IM 2421		Module Title				Consumer Behaviour		
Credits	2		**Hours/Week**	**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	▮			**CA**	**WE**	None
		2					50	50	
Module Aim:	This module aims to enable the participants to learn and understand the theory of consumer behavior and relates it to the practice of marketing financial products and services. It will present relevant material drawn from psychology, anthropology, social and behavioral sciences within the framework of the consumer decision process, its main influencing factors with an analytical approach..								

Learning Outcomes

After completing this module, the students should be able to:

LO-1 apply knowledge of consumer behavior in a range of business contexts specially in financial products and services.

LO-2 analyze a range of consumer behaviors using analytical tools and make recommendations for interventions designed to impact the behavior patterns in a making decision for purchasing financial products and services

LO-3 develop consumer behavior models and concepts to develop effective marketing strategies for financial products and services.

Syllabus Outline		**Learning Outcomes**
1	*Introduction to Consumer Behaviour and Consumer Research* *Introduction to Consumer Behaviour, Consumer Research, Consumer Behaviour and Marketing Strategy*	LO -1
2	*Internal Influences on Consumer Behaviour* *Motivation and Involvement, Personality, Self-Image, and Life Style, Consumer Perception, Consumer Learning and Neuro-Science Consumer Attitude Formation and Change, Communication and Consumer Behaviour*	LO-1, LO-2
3	*External Influences on Consumer Behaviour* *The Influences of Culture on Consumer Behaviour, Subcultures and Consumer Behaviour, Social Class and Consumer Behaviour, Reference Groups and Family, Consumer Influence and the Diffusion of Innovations*	LO-1, LO-2
4	*Consumer Decision Making, Consumer Analytics and Applications on Financial Product and Services* *Consumer Decision Making-Process, Consumer Decision Making-Outcomes, Consumer Big Data Analytics and Case Studies on the Financial Products and Services Marketing*	LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Individual Consumer Research on a Selected Topic Area	15%	LO1
	Engagement with In-class Activities	10%	LO1, LO2, LO3
	Group Presentations and Written-report	25%	LO3
Written examination (WE)		50%	LO1, LO2, LO3

Module Code	IM 2231		**Module Title**		Financial Markets and Institutions		
Credits	3		**Hours/Week**	**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**

		Lectures	**Lab / Tutes**			**CA**	**WE**	
GPA/NGPA	GPA	2		■		50	50	IM2211

Module Aim:	This course aims to introduce financial markets and study its structure, institutions, instruments and participants.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 identify different financial assets and services offered by the different types of financial institutions.
LO-2 explain the functioning of other financial centers/markets.
LO-3 discuss the use and valuation of different financial assets traded on the local and global financial markets.

Syllabus Outline		**Learning Outcomes**
1	**Introduction to financial markets-institutions [2 Hrs]** *Components of the financial system, economic role of the financial system, Structure of the Sri Lankan financial system.*	LO -1
2	**Financial institutions-banks [4 Hrs]** *Role, structure and function of a bank, sources and used of funds, Off balance sheet activities, Banking regulations.*	LO-1
3	**Financial institutions-non-banks [8 Hrs]** *Types of Non-Bank Financial Institutions (NBFIs), NBFIs and the financial system, Financial products offered by NBFIs, Regulation and structure of the NBFI sector.*	LO-1
3	**Interest rates determination and yield curves [8 Hrs]** *Monetary policy and the economy, Theory of asset demand, Liquidity preference theory, Loanable funds theory, Term structure of interest rates, Theories explaining shape of yield curve, Risk structure of interest rates, Credit ratings.*	LO-2
4	**Debt securities [8 Hrs]** *Types of short- and long-term debt, Main features and advantages of various types of debt securities, Valuation of debt (Clean prices and dirty prices), Duration and immunization, securitization.*	LO-3
5	**FOREX markets [4 Hrs]** *Nature and function of forex markets, Participants in forex markets, Types of transaction, Market conventions, foreign exchange rate calculations.*	LO-3
6	**Equity investing and market microstructure [4 Hrs]** *Types of common stock transactions, Electronic communication systems, Regulation of stock transactions, Margin trading, International transactions, Investing styles, Fundamental analysis vs technical analysis.*	LO-2
7	**Derivatives market and assets – hedging and speculating [4 Hrs]** *Importance of financial risk management, Risk management process, Fundamentals of futures contracts, Forward contracts, Options and Swaps.*	LO-2 LO-3

Assessments				
Assessment			**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In Class Quizzes **[2 Hrs]**		25%	LO-1, LO-2 LO-3
	Presentations and Assignments		25%	LO-1, LO-2, LO-3
Written examination (WE)			50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM2541	**Module Title**			Human Resource Management			
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	⬛			**CA** / **WE**	None
		2					50 / 50	

Module Aim:	The aim of this course is to introduce principles and practice of contemporary human resource management with a specific focus on the strategic role that it plays in helping organizations to build and maintain competitive advantage.

Learning Outcomes
After completing this module, the students should be able to:

LO-1	demonstrate an understanding of the role of HR functions.
LO-2	apply necessary tools and techniques for the redesign of operations, processes, and culture of business establishments.
LO-3	discuss HRM practice in business establishments.

Syllabus Outline		**Learning Outcomes**
1	**HRM roles and responsibilities [6 Hrs]** *The changing role of HRM and growing professionalism within the HR function*	LO -1
2	**Performance management, learning and growth & rewards management. [8 Hrs]** *Performance management, learning and career planning, and rewarding employees*	LO-1, LO-2
3	**HRM for managing creative professionals, innovative groups and project teams [8 Hrs]** *Managing knowledge in innovative climates*	LO-2, LO-3
4	**Employee relations and employee well-being [6 Hrs]** *Foundations of effective employee relations and well-being*	LO-3

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class tests 20% **[1 Hr]**	50%	LO-1, LO-2
	Report & Presentation 30%		LO-1, LO-2, LO-3
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM2551	Module Title			Project Management				
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	None
		2	-				50	50	
Module Aim:	This course aims to introduce fundamentals of operations research concepts.								

Learning Outcomes

After completing this module, the students should be able to:

LO-1 explain the key principles and practices of Project Management.

LO-2 analise projects using appropriate project management tools.

LO-3 discuss the methods of project status reporting.

Syllabus Outline		Learning Outcomes
1	**Define projects with clearly identified scope, requirements, and stakeholders [8 Hrs]** *PMBoK knowledge areas, Definition of project management and relationship to other management disciplines, Role of the project manager, Evaluate project environment factors. Define project requirements and scope, Identify and manage stakeholders through a Stakeholder Register and Stakeholder Engagement Plan*	LO -1
2	**Project Execution [14 Hrs]** *Plan and estimate project scope, resources, and schedule, Scope management, Network diagrams and critical path analysis, Resource histograms, Project quality and project performance. Manage project costs, Procurement management, Project appraisal, Risk management, Case Studies*	LO -2
3	**Communicate project information effectively both orally and in writing [6 Hrs]** *Determine the information and communication needs of the stakeholders, Communicate the status of project to appropriate stakeholders, Prepare professional documentation consistent standards.*	LO -3

Assessments

Assessment		Weight	Learning outcomes
Continuous Assessments (CA)	In-class test **[1 Hr]**	20%	LO-1, LO-2
	Group /Individual Assignment	30%	LO-2, LO-3
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM2361	**Module Title**		Advanced Accounting				
Credits	2	**Hours/Week**		C	E	O	**Evaluation %**	**Pre– requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			CA	WE	IM1351
		2					50	50	

Module Aim:	This module aims to analyse accounting beyond the organizational level and identify its role in different social and economic environments.

Learning Outcomes
After completing this module, the students should be able to:

LO-1	identify issues, alternatives, and provide recommendations using advanced accounting knowledge and ethical professional judgment.
LO-2	explain the concept of business combinations and the main theories and methods of accounting for business combinations.
LO-3	develop consolidated financial statements at acquisition and in subsequent years for both fully owned and partially owned subsidiaries.
LO-4	analyse the foreign currency transactions and consolidate foreign operations.

Syllabus Outline		**Learning Outcomes**
1	**Regulatory framework [4 Hrs]** *Regulatory system of accounting, Harmonisation and international differences, Corporate governance*	LO -1
2	**Group financial statements [12 Hrs]** *Consolidated accounts, Business combinations, Foreign currency translation, Cash flow statements*	LO -2, LO -3, LO-4
3	**Preparation of reports** *[6 Hrs]* *Measurement of performance, Price changes and corporate failures, Ratio analysis*	LO-3
4	**Environmental, international and current issues [4 Hrs]** *Social and cultural issues, International issues in accounting, Current issues*	LO-1
5	**Accounting standards [2 Hrs]** *Financial Instruments, Off-balance sheet finance, Reporting financial performance*	LO-1, LO-2

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class Tests **[2 Hrs]**	20%	LO-1, LO-3
	Group Assignments	30%	LO-2
Written examination (WE)		50% **[2 Hrs]**	LO-2, LO-3, LO-4

Module Code	IM3211	Module Title			Business Valuation and Analysis				
Credits	3	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Assignments**	■			**CA**	**WE**	IM2221
		2	2				50	50	

Module Aim:	This module aims to help students develop business valuation and financial analysis skills

Learning Outcomes

After completing this module, the students should be able to:

LO-1   make use of financial information to analyse firms.

LO-2   develop valuation models based on discounted cash flow method.

LO-3   discuss valuations using alternative business valuation approaches.

Syllabus Outline		**Learning Outcomes**
1	**Financial Statement Analysis [8 Hrs]** *Financial statements, Financial ratio analysis, Risk analysis, Analysis of growth potential, Comparative analysis of ratio, Industry analysis.*	LO -1
2	**Forecasting and Valuation of Free Cash Flows [10 Hrs]** *Free cash flows, Building financial models, Enterprise valuation, Continuation value, Cash flow to equity valuation.*	LO -2
3	**Equity and Cost of Capital [8 Hrs]** *Estimating cost of capital, Cost of equity and leverage, CAPM and beyond, Cost of debt.*	LO -2
4	**Relative Valuation [8 Hrs]** *Equity multiples, Options strategies and pay-offs, Equity/debt valuation, Real option valuation.*	LO-3
5	**Mergers, Acquisitions, Buyouts and Restructuring [8 Hrs]** *Mergers & acquisitions, Offer structures, and Leveraged buyouts*	LO-3

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Assignment with individual and group components	50%	LO-1, LO-2, LO-3
Written examination (WE)	End of semester written examination	50% **[3 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM3421	Module Title			Customer Relationship Management				
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Assignments**	■			**CA**	**WE**	None
		2	0				50	50	

Module Aim:	The aim of this course is to give students a full understanding of the key principles of customer relationship management and how to formulate and implement a Customer Relationship Management program for the financial services sector.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 apply developed knowledge of customer relationship management in a range of business contexts for financial services.

LO-2 analyze a customer relationship management program and develop a program for the financial service sector.

LO-3 discuss CRM models and concepts to develop effective marketing strategies for financial products and services.

Syllabus Outline		**Learning Outcomes**
1	**Introduction to Customer Relationship Management, Key Elements of CRM [4 Hrs]** *The strategic imperatives, Conceptual foundations of CRM, Building customer relationships, Economics of CRM*	LO -1
2	**Internal and External relationships for marketing [12 Hrs]** *Ethics & relationships, Internal stakeholders & internal marketing, external stakeholders & marketing*	LO -1, LO -3
3	**Key role of CRM in delivering the value & strategic processes of CRM [8 Hrs]** *B to B and B to C relationships, eCRM solutions, Product offerings in the CRM market space, Data analytics*	LO -1, LO -2
4	**Integrated effort for an effective CRM [5 Hrs]** *CRM implementation, The CRM roadmap, operational issues in implementing CRM, Cross functional support*	LO-3, LO-2

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Individual evaluation of the nature of RM in a selected organization 10%	50%	LO-1
			LO-1, LO-2, LO-3
	Engagement with In-class Activity / Quiz 10 %		
	Group Presentations and Written-report 30%		LO-3
End Semester Examination	End of semester examination	50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM3531	Module Title				Small Business Management & Entrepreneurship		
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre– requisites**
GPA/NGPA	NGPA	**Lectures**	**Lab / Tutes**		█		**CA**	**WE**	None
		2	-				50	50	

Module Aim:	This course aims to introduce fundamentals of small business management and entrepreneurship.

Learning Outcomes
After completing this module, the students should be able to:

LO-1 describe the theoretical and empirical framework of small business management.

LO-2 apply theories and concepts relevant to small business strategy development.

LO-3 develop a business a business plan for a small enterprise.

Syllabus Outline		**Learning Outcomes**
1	**Small Business Management: Introduction [8 Hrs]** *Scale, nature and role of small business in a developing country, Characteristics of small businesses, Role of small businesses in an economy, Reasons for failure of small businesses & barriers in establishing and managing small businesses. Business environment and industrial supporting system in Sri Lanka for SMEs*	LO -1
2	**Managing and growing an entrepreneurial firm [10 Hrs]** *Strategic environmental analysis, Market entry strategies, SME marketing, strategy for firm growth*	LO -2
3	**Entrepreneurship Concepts and Types [4 Hrs]** *Corporate innovation philosophy, Corporate entrepreneurship and strategy and sustainability, Social, international and women entrepreneurship.*	LO-3
4	**Initiation of Entrepreneurship Ventures [6 Hrs]** *Application of knowledge - Opportunity identification, creativity, and innovation; Assessment of opportunities and critical factors, strategic entrepreneurship, Developing an effective business plan*	LO-3

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test [**1 Hr**]	20%	LO-1, LO-2
	Assignment	30%	LO-2, LO-3
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM3431	Module Title			Digital Marketing			
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	NGPA	**Lectures**	**Lab / Tutes**		■		**CA** **WE**	None
		2	0				50 50	
Module Aim:		This course aims to equip students with the skills necessary to create and execute an effective digital marketing strategy by leveraging a range of digital marketing tools, tactics and techniques.						

Learning Outcomes

After completing this module, the students should be able to:
- **LO-1** identify the significant role of digital marketing in overall business strategy in the era of Industry 4.0.
- **LO-2** apply concepts and tools to develop a winning digital marketing strategy
- **LO-3** evaluate the effectiveness of various digital marketing approaches and tools in achieving business goals.

Syllabus Outline		**Learning Outcomes**
1	**Introduction [2 Hrs]** *Introduction to digital marketing strategy, Digital customer and customer value*	LO-1
2	**Digital Marketing Tools, Tactics and Techniques [12 Hrs]** *Content marketing, Web user experience for marketing acquisition & conversion, social media marketing, Advertising and influencer marketing, Search Engine Marketing (SEM), Direct marketing tools in digital marketing*	LO-2
3	**Digital Marketing Performance Evaluation [10 Hrs]** *Digital marketing metrics*	LO-3
4	**Digital Marketing Applications in real life organizations [4 Hrs]** *Digital marketing case analysis*	LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Case based Presentations	30%	LO-2, LO-3
	In class quiz and Activities **[1 Hr]**	20%	LO-1, LO-2
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2

Module Code	IM 3251		**Module Title**		Theory and Practice in Banking				
Credits	3		**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Assignments**		▮			**CA**	**WE**	None
		3						50	50	
Module Aim:	This course provides a complete and comprehensive view of banking and related activities by addressing different trends in banking services for the development of financial services sector.								

Learning Outcomes
After completing this module, the students should be able to:

LO-1	demonstrate a clear understanding of the Sri Lankan banking system with an emphasis on the role and functions of its regulators.
LO-2	evaluate the performance of the banking industry via bank lending policies and practices.
LO-3	discuss the changing composition of the Sri Lankan financial services sector.

Syllabus Outline			**Learning Outcomes**
1	**Evolution of banking institutions and central banking [6 Hrs]** *Nature of financial intermediation, Historical development of the banking system, Types of banks, The role of central banking*		LO -1
2	**Legal background of the banking industry [3 Hrs]** *Evolution of central banking and regulatory requirements*		LO -1
3	**Bank and customer relationship [3 Hrs]** *Bank activities and services, Managing customer requirements*		LO -2
4	**Analyzing bank performance [12 Hrs]** *Capital adequacy, Asset quality, Earnings management, Liquidity, Sensitivity to market risks*		LO-2
5	**Asset and liability management [6 Hrs]** *Risk management (Liquidity, interest rate, and currency), Profit planning and growth projection*		LO-2,3
6	**Liquidity management/ Commercial and industrial lending [9 Hrs]** *Essential principles of bank liquidity management, BASEL III liquidity metrics, Lending strategies*		LO-2,3
7	**New trends and future of banking [3 Hrs]** *Digital transformation, fintech and other disruptive trends in banking*		LO-3

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test/Quiz /Case Study Analysis 20% **[2 Hrs]**	50%	LO-1, LO-3
	Report & Presentation 30%		LO-2
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM3231	Module Title		Principles of Insurance					
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Assignments**	■			**CA**	**WE**	IM2221; IM2231
		2					50	50	

Module Aim:	This module aims to provide the knowledge of general principles and practices of insurance in managing personal and/or commercial assets.

Learning Outcomes

After completing this module, the students should be able to:

LO-1   identify what insurance is, why insurance works and how to determine insurance needs.

LO-2   explain the operation of insurance, including the functions of insurance, insurance markets, insurance regulations and the uses of insurance as a protection against losses.

LO-3   distinguish between major insurance products, such as life insurance, health insurance, property and liability insurance.

Syllabus Outline		**Learning Outcomes**
1	**Risk Assessment and Insurance [2 Hrs]** *Introduction to risk and insurance, Risk management techniques*	LO -1
2	**Insurance Industry [2 Hrs]** *Evolution of the types of insurers and marketing systems, Insurance company operations*	LO -2
3	**Framework of Insurance Regulations [2 Hrs]** *Legal principles of insurance, Analysis of insurance contracts*	LO -2
4	**Personal Property and Liability Risks [8 Hrs]** *Auto insurance, Homeowners insurance, Other property and liability insurance coverages*	LO -3
5	**Commercial Property and Liability Risks [6 Hrs]** *Commercial package policies and coverages*	LO-3
6	**Life and Health Insurance [8 Hrs]** *Contractual provisions of life insurance, Health insurance coverages, Employee benefits*	LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Report & Presentation 30% In class Test/Quiz 20% **[2 Hrs]**	50%	LO-1, LO-2
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM3711	Module Title				Business Law				
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**	
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	None	
		2					50	50		
Module Aim:	The module aims to examine the sources of Sri Lankan law and the contractual relationships between individuals and businesses.									

Learning Outcomes	
After completing this module, the students should be able to:	
LO-1	describe the basic functions of the Sri Lankan legal system.
LO-2	explain the ways the general legal environment impacts businesses in Sri Lanka.
LO-3	identify the legal constraints on business.
LO-4	evaluate the basic legal structures that constitute businesses and the law that regulates businesses and the business environment.
LO-5	propose potential solutions to legal problems within the business environment.

Syllabus Outline		Learning Outcomes
1	**Introduction to Sri Lankan Legislation [4 Hrs]**	LO-1, LO-2
2	**Theories of Contract Law [6 Hrs]**	LO-3, LO-4
3	**Sole traders, partnerships and incorporated bodies [6 Hrs]**	LO -4
4	**Managing business organisations [6 Hrs]**	LO-5
5	**Implications of contractual arrangements on business organisations, the authority and liability of partners [6 Hrs]**	LO-5

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test/quiz 10% **[1 Hr]** Case Study Analysis 10% **[1 Hr]** Report & Presentation 30%	50%	LO-1, LO-2, LO-3, LO-4, LO-5
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3, LO-4, LO-5

Module Code	IM3821	**Module Title**		Business Research Methods				
Credits	2	**Hours/Week**		C	E	O	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	None
			4				50	50	
Module Aim:	The module aims to enhance the range of research methods and underpinning philosophical approaches to research and explain epistemological and ontological considerations in research design and methodology.							

Learning Outcomes

After completing this module, the students should be able to:

LO-1 identify the significance of the major steps involved in conducting business research in a global context.

LO-2 apply concepts of various business research designs and methods and be able to evaluate the strengths and weaknesses in research designs for particular projects.

LO-3 apply an appropriate research design for a particular project, explaining the limitations, advantages, and implications of the technique employed.

LO-4 justify and design suitable questions for a survey instrument and other alternative data collection approaches.

LO-5 analyse data in relation to a particular research question using multiple analytical tools.

Syllabus Outline		**Learning Outcomes**
1	**Introduction to the philosophy of research and the research process [2 Hrs]**	LO-1
2	**The role of literature, literature reviews and critiques [2 Hrs]**	LO-2
3	**Experimental design, Surveys and questionnaires [8 Hrs]**	LO-4
4	**Qualitative field work and analyzing qualitative data [8 Hrs]**	LO-4
5	**Archival research and sampling, descriptive and inferential statistics [6 Hrs]**	LO-2
6	**Data analysis using appropriate software packages - practical session [4 Hrs]**	LO-4, LO-5

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Individual Assignment: Ethics and critical literature review 20%	50%	LO-3, LO-4
	Group Report: Interviews, survey design and quantitative data analysis 30%		LO-2, LO-6, LO-7
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3, LO-4, LO-5

Module Code	IM3441		**Module Title**		Financial Service Marketing				
Credits	2		**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	▮			**CA**	**WE**	None
		3	0				50	50	

Module Aim:	This module aims to encourage students to apply key marketing management concepts to the Financial Services sector in an increasing need for marketing professionals in this field.

Learning Outcomes

After completing this module, the students should be able to:

LO-1   explain the overall marketing environment of financial services.
LO-2   outline the key issues and future trends that surround financial services marketing.
LO-3   distinguish differences of the Sri Lankan financial markets compared to others.
LO-4   develop a comprehensive marketing plan for financial services.

Syllabus Outline		**Learning Outcomes**
1	**Overview: Marketing and Financial services [2 Hrs]** *Marketing theory and financial services, Recent developments in financial services, Key Issues for financial marketers, marketing new share and bond issues.*	LO-1, LO-2
2	**Financial Services Environment [4 Hrs]** *Importance of environmental scanning in the marketing of financial services, External influences in the marketing of financial services, Integrating the Stakeholder perspective into environmental scanning*	LO-1, LO-2
3	**Customer driven marketing strategy for Financial Services [6 Hrs]** *Segmenting, Targeting, Differentiation and positioning the financial services, Understanding the perspectives of the customers in the industry*	LO-3, LO-4
4	**Building and sustaining the brands of Financial Services [4 Hrs]** *Branding theory and Financial services, Development of branding strategies, Corporate branding, corporate communications*	LO-1, LO-3, LO-4
5	**Information for marketing financial services [4 Hrs]** *Data driven financial services marketing, information for customer relationship Management*	LO-2, LO-3, LO-4
6	**7 Ps in Financial Services [4 Hrs]** *Creating a Financial value, pricing, distribution of financial services, positioning the value, The importance and application of process, people and physical evidences in financial services*	LO-3, LO-4
7	**Overview: Marketing and Financial services [4 Hrs]** *Marketing theory and financial services, Recent developments in financial services, Key issues for financial marketers*	LO-1, LO-2

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Individual Assignment 10%	50%	LO-1, LO-2, LO-3
	Engagement with in-class Activities 10% **[1 Hr]**		LO-3
	Group Marketing plan, presentation and Report 30 %		LO-1, LO-2, LO-3, LO-4
Written examination (WE)		50 %**[2 Hr]**	LO-1, LO-2, LO-3

Module Code	IM3251	Module Title			Financial Technology			
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**		■		**CA**	**WE**	None
		2	0				50	50	

Module Aim:	This course provides an understanding about various technologies and innovations that have changed the nature of "Financial Services"

Learning Outcomes
After completing this module, the students should be able to:
LO-1	describe the chronology of financial innovation and environment dynamics that influence the financial sector.
LO-2	explain the role of AI and machine learning in finance.
LO-3	explain the digital finance infrastructure and instruments and how they function.
LO-4	discuss the types of money that exits finance& recognize financial regulatory frameworks and how they affect innovation.

Syllabus Outline		**Learning Outcomes**
1	**History of Financial Innovation [3 Hrs]**	LO-1
2	**Harnessing data with artificial intelligence and machine learning application of data [5 Hrs]** *Analytics in finance, The role of data and security in data-driven finance, How AI is transforming the future of fintech*	LO-2
3	**The Forms of Finance and Markets [5 Hrs]** *Transforming personal finance with FinTech, Digitization of financial services, Crowdfunding, Peer-to-peer lending.*	LO -3
4	**Digital Currencies [5 Hrs]** *Introduction to cryptocurrency markets, Block chain technology, types of currencies*	LO-4
5	**FinTech Regulation and RegTech [5 Hrs]** *Regulation of Mobile Money, Legal and Regulatory Implications of cryptocurrencies*	LO-4
6	**Case studies on digital currency (bitcoin), settlements (blockchain), hedging, trading and financial advisory [5 Hrs]**	LO-2, LO-3, LO-4

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Report and Presentation	50%	LO 1, LO-2 LO-3
Written examination (WE)		50% [**2 Hrs**]	LO1, LO-2 LO-3, LO-4

Module Code	IM3261		Module Title		Entrepreneurial Finance			
Credits	2		**Hours/Week**	**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**		■		**CA**	**WE**	None
		2					50	50	
Module Aim:	This course provides a basic understanding on investment and financing decisions in entrepreneurial settings and different stages of venture development life cycle.							

Learning Outcomes

After completing this module, the students should be able to:

LO-1   identify financial tools and techniques needed for an entrepreneur to start, build and harvest a successful venture.

LO-2   predict future financing needs and uses.

LO-3   develop a financial plan to attract outside funding.

Syllabus Outline		Learning Outcomes
1	**Introduction to entrepreneurial finance [6 Hrs]** *Basic concepts in entrepreneurial finance, overview of Sri Lankan context*	LO-1
2	**Financial environment and small business financial structure [6 Hrs]** *Small business structure, Main challenges, Advantages and disadvantages for smaller businesses.*	LO-2
3	**New venture development and sources of financing [6 Hrs]** *Main methods used to finance new ventures, Addressing information and incentive problems in uncertain environment.*	LO-2
4	**Financial plan in business planning [6 Hrs]** *Business planning process in new ventures, Main elements of a business plan for a new venture, importance of forecasting.*	LO-3
5	**Financial planning, forecasting and managing working capital requirements [6 Hrs]** *Profitability, liquidity, pro-forma financial statements.*	LO-3
6	**Valuation of new ventures and small businesses [6 Hrs]** *Process and tools used to value early-stage businesses, the use of venture capital method, real options.*	LO-3
7	**Harvesting the business venture investment [6 Hrs]** *Structure of venture capital funds, Fund raising process, role of angel investors, other emerging issues.*	LO-3

Assessments

Assessment		Weight	Learning outcomes
Continuous Assessments (CA)	In-class test/quiz /Case Study Analysis **[2 Hrs]**	25%	LO-1, LO-2, LO-3
	Report & Presentation	25%	LO-1, LO-2, LO-3
Written examination (WE)		50% **[2 hrs]**	LO1, LO2, LO3

Module Code	IM3281	**Module Title**				Treasury Dealing			
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	NGPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	IM2231
		1	2				50	50	
Module Aim:		This course will combine classroom teaching and direct experimental learning in financial markets. Topics may include market participants, treasury operations, dealers, and price formation.							

Learning Outcomes
After completing this module, the students should be able to:

LO-1	explain dealing practices and conventions in the foreign exchange market and cash market
LO-2	organize the front office and back-office functions of a treasury dealing room.
LO-3	evaluate transactions completed in the simulated treasury dealing room

Syllabus Outline		**Learning Outcomes**
1	**Introduction to the market conventions [7 Hrs]** *The main practices and conventions, Price formation, Risks and uncertainty.*	LO-1
2	**Overview of the function of a dealer. [7 Hrs]** *The main functions and practical issues facing FOREX dealing, Risk management function, Position keeping function.*	LO -1, LO-2
3	**Foreign Exchange Theory and Practice [7 Hrs]** *Advanced practical concepts in FOREX markets, the transaction process, Information environment.*	LO -3
4	**Securities Trading [7 Hrs]** *Advanced practical concepts in share and bond trading, Unique features in the market, Market conventions.*	LO -3

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Individual Assignment	25%	LO-1, LO -2
	Report & Presentation	25%	LO-1, LO-2, LO-3
Written examination (WE)		50% **[2 Hrs]**	LO 1, LO-2, LO-3

Module Code	IM3291		Module Title			Investment and Portfolio Management			
Credits	3	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	IM2231
		2	1				50	50	
Module Aim:		This course aims to impart knowledge, skills and techniques required to analyse investments and manage financial asset portfolios.							

Learning Outcomes	
After completing this module, the students should be able to:	
LO-1	demonstrate an understanding of asset pricing theory.
LO-2	explain different portfolio theories.
LO-3	propose performance measures for portfolio constructions.

Syllabus Outline		**Learning Outcomes**
1	**Introduction and overview [6 Hrs]** *Statistical and theoretical background of portfolio management.*	LO-1
2	**Portfolio theory [6 Hrs]** *Risk aversion, discrete versus continuous compounding, Asset allocation across risky and risk free portfolios, Diversification, Optimal portfolios, Black Litterman Model.*	LO-1; LO-2
3	**Informational efficiency [6 Hrs]** *Definitions, theory, empirical evidence with relevance to funds management, Behavioural issues.*	LO -1, LO-2
4	**Asset pricing theory and practice [6 Hrs]** *Capital Asset Pricing Model, Arbitrage Pricing Theory and Factor models.*	LO -1, LO-2, LO-3
5	**Equity portfolio management [6 Hrs]** *Index investment, Active management, Investment strategies (strategic, tactical, statistical arbitrage etc.)*	LO -1, LO-2, LO-3
6	**Performance measurement [6 Hrs]** *Jensen, Sharpe, Treynor Indices; Information ratio, Portfolio Performance Index (PPI), Extrapolation issues.*	LO-3
7	**Portfolio Construction (Extensions), Derivatives and Portfolio Management [6 Hrs]** *Alternative objectives and portfolio construction criteria; Risk management, The role of derivatives.*	LO-3

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Case Study based Assignment with group and individual components	50%	LO -1, LO-2, LO-3
Written examination (WE)		50% [**3 Hrs**]	LO -1, LO-2, LO-3

Module Code	IM4511	**Module Title**			Strategic Management				
Credits	2	**Hours/Week**		C	E	O	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	IM 1531
		2					50	50	
Module Aim:		The module aims to provide an understanding of strategic analysis, strategic decision-making and strategic processes within and between organisations.							

Learning Outcomes	
After completing this module, the students should be able to:	
LO-1	identify the fundamentals of strategy.
LO-2	discuss the role strategy plays in aligning organizational competencies with challenges of static and dynamic business environments.
LO-3	compare and contrast the processes of formulating and implementing strategy.
LO-4	review the strategic management processes that may lead to sustainable competitive advantage of an organization.
LO-5	analyse different types of business strategies and means by which they contribute to sustainable development

Syllabus Outline		**Learning Outcomes**
1	**Strategic management and strategic competitiveness [2 Hrs]**	LO -1
2	**The external environment: Opportunities, threats, industry competition and competitor Analysis [4 Hrs]**	LO -1, LO -2
3	**The internal environment: Resources, capabilities and core competencies [4 Hrs]**	LO -1, LO -2
4	**Business-level strategy & Corporate-level strategy [6 Hrs]**	LO-3
5	**Merger and acquisition strategies [4 Hrs]**	LO-5
6	**Cooperative strategy [2 Hrs]**	LO-5
7	**Corporate governance [2 Hrs]**	LO-5
8	**Strategy implementation: Strategic Leadership, Organisational structure and controls [4 Hrs]**	LO-3, LO-4

Assessments				
Assessment			**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class quiz	10% **[2 Hrs]**	50%	LO-1, LO-2, LO-3, LO-4, LO-5
	Individual Assignment	10%		
	Group Project	30%		
Written examination (WE)			50% **[2 Hrs]**	LO1, LO2, LO-3, LO-4, LO-5

Module Code	IM4341	Module Title			Auditing				
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre– requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**		■		**CA**	**WE**	None
		2					50	50	
Module Aim:		The purpose of this course is to provide a detailed overview of auditing and its professional practice.							

Learning Outcomes
After completing this module, the students should be able to:

LO-1	explain the basic concepts related to auditing
LO-2	describe relevant auditing standards.
LO-3	discuss the applications of auditing standards.

Syllabus Outline		**Learning Outcomes**
1	**Introduction to auditing, audit engagement and planning [6 Hrs]** *Audit materiality, Audit evidence, Analytical procedures, Audit sampling*	LO -1
2	**Internal controls and internal auditing [4 Hrs]** *Internal control environment, Types of fraud detection, Types of internal controls*	LO -1, LO -2
3	**Fundamental principles and ethics [4 Hrs]** *Code of Professional Conduct and Ethics*	LO -1, LO -2
4	**Audit procedures and evidences [6 Hrs]** *Audit procedures on different class of transactions and account balances*	LO-2, LO-3
5	**Auditors, law and corporate governance [4 Hrs]** *Responsibilities, roles, and regulatory framework*	LO-2, LO-3
6	**Audit report [6 Hrs]** *Reporting responsibilities of an auditor, Elements of an audit report, Different types of audit qualifications.*	LO -3

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Report & Presentation	50%	LO-1, LO-2, LO-3
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM4271		**Module Title**			Behavioural Finance			
Credits	2		**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**

GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**				**CA**	**WE**	IM2221
		2	0		■		50	50	

Module Aim:	This course examines cognitive biases people exhibit when making financial decisions. It provides an understanding of the nature of these cognitive biases using insights from psychology, neuroscience and experimental economics.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 explain how cognitive biases predictably and consistently affect financial decisions.

LO-2 explain theories of behavioural finance in predicting investor behaviour.

LO-3 apply behavioral finance models to financial markets.

Syllabus Outline		**Learning Outcomes**
1	**Introduction to behavioural finance [4 Hrs]** *Intellectual underpinnings, Rational Market Hypothesis, Behavioralist views, Neo-classical vs Behavioural economics, Empirical evidence and practical issues.*	LO -1
2	**Heuristics and biases [6 Hrs]** *Information processing errors, Self-deception, Emotional and social factors.*	LO -1, LO -2
3	**Foundations of behavioural finance [6 Hrs]** *Prospect theory and mental accounting, Challenges to Efficient Market Hypothesis, Neuroscientific and evolutionary perspective.*	LO -1, LO -2
4	**Behavioural aspects of investing [6 Hrs]** *Investor behaviour, Market anomalies, Value investing.*	LO-3
5	**Behavioural corporate finance [6 Hrs]** *Behavioural aspects of investing, financing, dividends. M&A, corporate governance issues.*	LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test/quiz /Case Study Analysis	25%	LO-1, LO-3, LO-4
	Report & Presentation	25%	LO-2
Written examination (WE)		50% **[2 hrs]**	LO-1, LO-2, LO-3, LO-4

Module Code	IM4741	**Module Title**			Corporate and Commercial Law				
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**		■		**CA**	**WE**	None
		2	2				50	50	

Module Aim:	This course aims to introduce fundamentals of company law.

Learning Outcomes

After completing this module, the students should be able to:
LO-1 outline the concept of corporate status, in particular as it applies to the registered company.
LO-2 explain the core principles of company law.
LO-3 develop their critical faculties by evaluating the rules, policies, and principles of company law.
LO-4 develop their analytical faculties by identifying and resolving legal issues relating to the operation of companies.

Syllabus Outline		**Learning Outcomes**
1	**Introduction to corporate and commercial law [5 Hrs]** *Main concepts that underpin company law, including separate legal personality and limited liability, The nature of legal personality and lifting the veil of incorporation.*	LO -1
2	**The formation of the company [6 Hrs]** *The company as a legal vehicle for different types of business, The registration process, including the memorandum and articles of association, pre-incorporation contracts, The duties and liabilities of promoters and in class test.*	LO -2, LO -3
3	**Management of the company [6 Hrs]** *Relations between the company and outsiders, the growth and decline of the doctrines of ultra vires and constructive notice, directors and other officers, division of functions among officers and organs of the company.*	LO -2, LO -3
4	**Minority shareholders [6 Hrs]** *The statutory remedies for the protection of minority shareholder, shareholders' personal rights, including under the statutory contract and discussion of Assignments.*	LO-3, LO-4
5	**Corporate governance [6 Hrs]** *Overview, Corporate accountability (stakeholder v shareholder issues), problems arising from the separation of ownership and control, including executive compensation and shareholder engagement.*	LO-3, LO-4

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test **[1 Hr]**	20%	LO-1, LO-2
	Assignments	30%	LO-1, LO-2, LO-3
Written examination (WE)		50% **[2 Hrs]**	LO-1, LO-2, LO-3, LO-4

Module Code	IM4431		Module Title			Integrated Marketing Communications			
Credits	2		**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**					**CA** / **WE**	None
		2	0			■		50 / 50	
Module Aim:	This course aims to provide students with knowledge and skills to create and manage promotional tools in an integrated manner in order to successfully execute the strategic plan of a business.								

Learning Outcomes

After completing this module, the students should be able to:

LO-1 apply the key terms, definitions, and concepts used in integrated marketing communications (IMCs).

LO-2 examine how integrated marketing communications help to build brand identity and brand relationship, and create brand equity through brand synergy.

LO-3 develop an integrated cross-media strategy and creative message and concept to reach the target audience and deliver the brand promise through an IMC campaign

LO-4 evaluate the communications effects and results of an IMC campaign to determine its success.

Syllabus Outline		**Learning Outcomes**
1	**Introduction [2 Hrs]** *IMC and marketing communication*	LO -1
2	**IMC and Planning [6 Hrs]** *MC planning overview, IMC planning situation analysis, SWOT analysis, IMC planning targeting and segmenting, and IMC positioning*	LO -2
3	**IMC and Media [8 Hrs]** *Out-of-Home and support media, Sales promotion media, Public relations media, Direct marketing media, Internet media, IMC media planning*	LO -3
4	**IMC and Brand Messages [8 Hrs]** *IMC and communication planning, IMC and media planning, IMC and message planning, IMC and creative concept, IMC and message execution*	LO -3
5	**IMC and Regulations and Issues[6 Hrs]** *IMC and regulation, IMC and ethical, social, and legal issues, IMC and measuring effectiveness*	LO-4

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Case based Presentations	30%	LO-3, LO-4
	In class quiz and Activities[1 Hr]	20%	LO-2, LO-3
Written examination (WE)		50% [2 Hrs]	LO-1, LO-2, LO-3

Module Code	IM4211	Module Title			Personal Financial Planning				
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	IM2221
		2					50	50	

Module Aim:	This course provides the necessary knowledge and skills for personal financial planning.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 identify the personal financial needs and personal financial market in Sri Lanka.

LO-2 explain the nature of currently available financial and insurance products that may be used for personal financial planning.

LO-3 discuss various components of the financial planning processes.

Syllabus Outline		**Learning Outcomes**
1	**Financial Planning Environment and Market [4 Hrs]** *Personal financial industry in Sri Lanka and trends*	LO -1
2	**Principles of Financial Planning and Planning Process [6 Hrs]** *Determine current financial situation, Develop personal financial goals, Identify alternative courses of action, Evaluate alternatives, Create and implement financial action plan, Review and revise the financial plan.*	LO -2, LO -3
3	**Risk Management and Insurance [4 Hrs]** *Managing risks and insuring resources*	LO -2, LO -3
4	**Components of Financial Planning Process [14 Hrs]** *Tax planning, Retirement planning, Investment planning, Personal debt management*	LO-2, LO-3

Assessments

Assessment			**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Group Projects In-class quizzes/exams	30% 20% **[1 Hr]**	50%	LO-1, LO-2, LO-3
Written examination (WE)			50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM4231	Module Title				Case Studies in Applied Finance			
Credits	3	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	IM2221
		2	2				50	50	

Module Aim:	This module provide an understanding of the finance industry from different perspectives, using real world case studies of actual events.

Learning Outcomes

After completing this module, the students should be able to:

LO-1 demonstrate an understanding of the practical issues faced in financial decision making in the real world.

LO-2 apply knowledge and skills to assess contemporary case studies in applied finance.

LO-3 evaluate decision outcomes when faced with real world financial issues.

Syllabus Outline		Learning Outcomes
1	**Corporate governance and Strategic Finance [7 Hrs]** *Case studies in corporate governance and strategy.*	LO-1, LO-3
2	**Personal Financial Planning [7 Hrs]** *Case studies in Personal financial planning (Time value of money, risk, return, investment horizon, budgeting, investing, saving).*	LO-2, LO-3
3	**Corporate Finance [7 Hrs]** *Case studies corporate finance (Capital budgeting, Financing, Working capital and dividends.)*	LO-3
4	**Investments [7 Hrs]** *Case studies in investing (Securities analysis, portfolio management, risk minimization.)*	LO-1, LO-2, LO-3
5	**Risk Management [7 Hrs]** *Case studies in risk management (Risk Management, Futures, Swaps, Options and Forwards.)*	LO-1, LO-2, LO-3
6	**Regulation and ethics [7 Hrs]** *Case studies in regulation and ethics (Ethics, Taxation, Legal environment, ESG factors.)*	LO-1, LO-2, LO-3

Assessments

Assessment		Weight	Learning outcomes
Continuous Assessments (CA)	Individual Assignment	25%	LO-1
	Group Assignment	25%	LO-2, LO-3
Written examination (WE)		50% **[3 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM 4901		Module Title			Research and Development Project				
Credits	8 (Semester 7= 4 + Semester 8= 4)		**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA		**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	None
								100		
Module Aim:	This module aims to demonstrate both theoretical and practical knowledge, analytical skills and personal characteristics at levels which are appropriate with professional business practice.									

Learning Outcomes
After completing this module, the students should be able to:

LO-1	discuss a business problem and its context.
LO-2	formulate the problem into a viable project proposal under individual supervision.
LO-3	review relevant literature and critique the impact of the proposed project.
LO-4	evaluate the suitability of alternative research methods and apply appropriate methods to the chosen business problem.
LO-5	recommend courses of action through an appropriately written project report.
LO-6	debate the effectiveness of the proposed business solution.
LO-7	defend project results to peers and supervisors.

Syllabus Outline: The following should be covered with the communication and interaction with the academic / project supervisor with a minimum of 120 contact hours during the semester 7 and 8) Research and thesis supervision on individual basis with special reference to Financial Service Management aspects.		**Learning Outcomes**
1	**Problem identification [10 Hrs]**	LO-1
2	**Research methodology and Research design [20 Hrs]**	LO-2, LO-3, LO-4
3	**Project proposal writing and presentation [30 Hrs]**	LO-4, LO-5
4	**Field work, analysis, discussion and recommendations [30 Hrs]**	LO-3 LO-4,
5	**Project report writing and presentation [30 Hrs]**	LO-5, LO-6, LO-7

Assessments			
Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Detailed proposal, Research Report/Oral presentation and viva	100%	LO-1, LO-2
Written examination (WE)			

Module Code	IM4251	Module Title		Financial Derivatives					
Credits	3	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	IM2221; IM2231
		2	2				50	50	

Module Aim:	This module aims to impart fundamental understanding of tradable financial derivatives.

Learning Outcomes

After completing this module, the students should be able to:

LO-1   demonstrate knowledge on how different types of derivatives operate, and how they are applied and priced in the markets.

LO-2   distinguish the attributes of main financial derivatives.

LO-3   decide the type of security to be used for hedging and speculative purposes.

Syllabus Outline		**Learning Outcomes**
1	**Derivative markets and Securities [12 Hrs]** *Structure of Forward, Futures and Option markets, Basic payoff diagrams, Relationship between Forward and Option contracts, Derivative portfolio management*	LO -1
2	**Forward and Futures contracts [10 Hrs]** *Contract mechanisms, hedging, valuation and strategies*	LO -1, LO -2
3	**Option contracts [10 Hrs]** *Option markets, valuation and trading strategies.*	LO -1, LO -2, LO-3
4	**Swap and other derivatives [10 Hrs]** *Swap contracts, warrants and convertible securities and other embedded derivatives*	LO -1, LO -2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Assignment with Individual and Group Components	50%	LO-1, LO-2, LO-3
Written examination (WE)		50% **[3 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM4411		Module Title		Intercultural Business Etiquettes			
Credits	2		**Hours/Week**	**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	NGPA	**Lectures**	**Lab / Tutes**				**CA**	**WE**	None
		2					100		
Module Aim:	This module introduces the principles of building and maintaining professional relationships, as well as providing practical guidance for typical workplace situations in order to foster engaging, productive and long-term business relationships.							

Learning Outcomes

After completing this module, the students should be able to:

LO-1 define etiquette and understand how it is valuable to companies and other organisations.

LO-2 explore the art of conversation both in person and on the phone.

LO-3 explore the business etiquette of different cultures and countries and understand the etiquette of how to deal with ethical dilemmas, personal issues, and difficult people.

LO-4 apply effective and customised strategies to engage politely in different situations

Syllabus Outline		Learning Outcomes
1	**Introduction to business etiquette [2 Hrs]**	LO-1
2	**Written etiquette [8 Hrs]**	LO-2
3	**Behaviour etiquette [6 Hrs]**	LO-3
4	**Telephone etiquette [4 Hrs]**	LO-3
5	**Facing job interviews [6 Hrs]**	LO-4
6	**Networking etiquette [4 Hrs]**	LO-4

Assessments

Assessment			Weight (%)	Learning outcomes
Continuous Assessments (CA)	Individual Assignment	50%	100%	LO-1, LO-2, LO-3
	Group Presentation/Role play	50%		LO-4
Written examination (WE)				

Module Code	IM4231	Module Title				Financial Services Regulation and Ethics			
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	None
		2					50	50	
Module Aim:		The aim of this module is to provide knowledge about the financial services industry, its regulation and professional practice.							

Learning Outcomes		
After completing this module, the students should be able to:		
LO-1	identify the structure of the financial services industry in Sri Lanka.	
LO-2	explain the importance of a regulatory framework.	
LO-3	discuss legal aspects and ethical conduct.	

Syllabus Outline		Learning Outcomes
1	**Introduction to financial services industry [4 Hrs]**	LO-1, LO-2
2	**Structure and components of financial services industry [4 Hrs]**	LO-1
3	**Regulatory framework [4 Hrs]**	LO-2
4	**Concept of Risk and its implications on stakeholders [8 Hrs]**	LO-2
5	**Legal aspects [4 Hrs]**	LO-3
6	**Professionalism and ethical practices [4 Hrs]**	LO-2, LO-3

Assessments				
Assessment			**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Group Projects	30%	50%	LO-1, LO-2, LO-3
	In-class quiz/exam	20% [1 Hr]		
End Semester Examination			50% **[2Hrs]**	LO-1, LO-2, LO-3

Module Code	IM4441		Module Title			Professional Selling			
Credits	2		**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre– requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**					**CA**	**WE**	None
		2	2		■			50	50	
Module Aim:	This module aims to enable the participants to undertake an overall analysis of the professional selling function and gain insight into the role of personal selling in marketing and society and its applications with reference to organisations which develop and market financial products and services.								

Learning Outcomes

After completing this module, the students should be able to:

LO-1 explain the key components, frameworks, and methods used in the selling process and in sales management in financial services organisations.

LO-2 develop relationship strategies, product strategies, customer strategies, and presentation strategies that advance the sale in financial services industry

LO-3 design, execute, document, and critique a comprehensive sales strategy for a real organisation marketing financial products and services.

Syllabus Outline		**Learning Outcomes**
1	**Make-up of a professional salesperson [4 Hrs]** *Developing a personal selling philosophy, Developing a relationship strategy, Entrepreneurial selling, Building an ethical foundation*	LO-1, LO-2
2	**Know-how of product [4 Hrs]** *How to add value, Becoming a product expert, Features and benefit, Product positioning*	LO -1, LO -2
3	**Exploring customers [4 Hrs]** *Understanding buyer behaviour: Planning your prospecting, generating prospects building a prospect database*	LO -1, LO -2
4	**Presenting the product and closing sales [8 Hrs]** *Pre-approach, Approach, Consultative sales presentations, Sales demonstrations, Identifying buyer concern, Addressing buyer concern, Closing the sale, Building future sales*	LO-2
5	**Managing sales operations and applications on personal selling in the financial services industry [8 Hrs]** *Sales forecasting, Setting sales quota, Managing sales territory, Managing time & stress, Managing a sales force, Case studies on personal selling and sales administration in the financial services industry*	LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Prospecting Assignment 10%		LO1, LO2
	Engagement with in-class Activities 10% **[1 Hr]**	50%	LO-2
	Group Sales Presentation and Report 30%		LO-1, LO-2, LO-3
End Semester Examination	End of semester examination	50 % **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM4281	Module Title			Contemporary Issues in Finance			
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**		■		**CA**	**WE**	IM2221/ IM2231
		2	2				50	50	

Module Aim:	This course provides synoptic understanding about various issues from research published in the discipline of finance accounting.

Learning Outcomes

After completing this module, the students should be able to:

LO-1	assess multiple sources of financial and/or accounting research in order to develop a comprehensive understanding of relevant issues.
LO-2	develop individual-led critical thinking skills through exposure to both academic and industry-led research in finance.
LO-3	discuss contemporary issues in finance and/or accounting to a non-technical audience as part of a group.

Syllabus Outline		**Learning Outcomes**
1	**Contemporary issues in corporate finance [6 Hrs]** *Contemporary issues in main corporate finance categories (investing, financing, dividends, working capital and corporate governance)*	LO-1, LO-2, LO-3
2	**Contemporary issues in investments [6 Hrs]** *Contemporary issues in financial market and, portfolio management*	LO-1, LO-2, LO-3
3	**Contemporary issued in financial institution management [6 Hrs]** *Contemporary issues in banking and non-banking institutions*	LO-1, LO-2, LO-3
4	**Contemporary issues in corporate social responsibility [5 Hrs]** *Reputation, ESG factors, Corporate social responsibility, Societal trust*	LO-1, LO-2, LO-3
5	**Contemporary issues in financial technology [5 Hrs]** *Contemporary issues in emerging trends in financial technology*	LO-1, LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Report & Presentation	50%	LO-1, LO-2, LO-3
End Semester Examination	End of semester examination	50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM4251	Module Title			Financial Institutions Management			
Credits	2	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**		■		**CA** **WE**	None
		2	2				50 50	

Module Aim:	This course provides an intermediate knowledge in the management of financial institutions and intermediaries. The module builds on the knowledge gained in the Baking Theory and Practice module and the Financial Markets and Institutions module.

Learning Outcomes

After completing this module, the students should be able to:

LO-1   explain the importance of financial institutions in the global economy.

LO-2   evaluate the performance of different types of financial institutions.

LO-3   discuss the main types of risks in financial institutions.

Syllabus Outline		**Learning Outcomes**
1	**Overview of Financial Institutions in the Global Context [7 Hrs]** *Local and global context of the financial industry, Regulatory environment, Emerging issues. Off-balance sheet business*	LO-1
2	**Measuring Financial Performance [7 Hrs]** *Measuring important aspects such as profitability, liquidity, capital adequacy*	LO-1, LO-2
3	**Measuring Risk Exposure [7 Hrs]** *Credit risk, market risk, liquidity risk operational risk and capital risk. Impact of off-balance sheet activities*	LO-2, LO-3
4	**Risk Management and Compliance [7 Hrs]** *Risk management process, Methods used for management of risks identifies in Topic 3*	LO-2, LO-3

Assessments

Assessment		**Weight**	**Learning outcomes**
Continuous Assessments (CA)	Report & Presentation	50%	LO-1, LO-2 LO-3
End Semester Examination	End of semester written examination	50% **[2 Hrs]**	LO-1, LO-2, LO-3

Module Code	IM4261		Module Title			International Financial Management			
Credits	3		**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre– requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**			▉		**CA**	**WE**	None
		2	2					50	50	
Module Aim:	The aim of this course is to provide a good understanding of finance from an international perspective.								

Learning Outcomes	
After completing this module, the students should be able to:	
LO-1	demonstrate knowledge of the global nature of money and capital and analyze the motives, opportunities and risks of cross-border business transactions.
LO-2	explain the background and use of international markets.
LO-3	analyse exchange rate systems and evaluate each system.
LO-4	discuss key factors that influence foreign direct investment and its drivers

Syllabus Outline		Learning Outcomes
1	**An Overview on multinational financial management [2 Hrs]**	LO-1
2	**International flow of funds [8 Hrs]** *Balance of Payment, Current account deficit, Factors affecting international trade flows/FDIs.*	LO-1
3	**International financial markets [8 Hrs]** *Foreign exchange market, International money market, International credit market, International bond market, International stock market*	LO-2
4	**Exchange rate Systems, Dollarization, Transactional and Translational Exposure [8 Hrs]**	LO-3
5	**International Arbitrage and Interest Rate Parity [6 Hrs]**	LO-3
6	**Relationship between inflation, interest rates and exchange rates (4 Hrs)** *Absolute form PPP, Relative form PPP, International Fisher's effect*	LO-3
7	**International capital Budgeting and transfer pricing [4 Hrs]** *Foreign investment analysis, Foreign project appraisal, Transfer pricing*	LO-4
8	**Country Risk [4 Hrs]** *Political stability, Economic stability, Emerging market crisis*	LO-4

Assessments				
Assessment			**Weight**	**Learning outcomes**
Continuous Assessments (CA)	In-class test/quiz 20% **[1 Hr]**		50%	LO-1
	Group Assignment 30%			LO-2
Written examination (WE)			50% **[2 Hrs]**	LO-1, LO-2, LO-3, LO-4

Module Code	IM4371	Module Title			Corporate and Personal Taxation		
Credits	3	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**	**Pre–requisites**
GPA/NGPA	GPA	**Lectures**	**Lab / Tutes**	■			**CA**	**WE**	None
		3	0				50	50	
Module Aim:	On successful completion of this module, the learners should be able to demonstrate a comprehensive ability of taxation matters within Sri Lanka.						

Learning Outcomes

After completing this module, the students should be able to:

LO-1   demonstrate an overall understanding of the types of taxes in Sri Lanka (Direct and Indirect Taxes).
LO-2   determination of residency rule application in taxation and source of income.
LO-3   estimate the income tax liability of an individual, a partnership and a company.
LO-4   assess the indirect tax liability (i.e. Value Added Tax) to obtain awareness of tax obligations and procedures.

Syllabus Outline		Learning Outcomes
1	**Introduction of Taxation [3 Hrs]** *Objectives and principles of taxation, Imposition of taxes, Types of taxes (Direct and Indirect Taxes), Tax bases, Sources of income*	LO-1, LO-2
2	**Employment Income [9 Hrs]** *Taxable and exempted employment income, Non cash benefits, APIT payment*	LO-2
3	**Business Income [9 Hrs]** *General deductions, Main deduction, Specific deductions*	LO-2
4	**Investment Income and other Income [3 Hrs]** *Type of investment incomes, exemption on each investment incomes and capital gains tax*	LO-2
5	**Tax computation of a person (individual, Company and Partnership) [9 Hrs]** *Tax computation on individual, Company and partnership, Qualifying payment and relief, Tax rate and tax credits*	LO-3
6	**Value Added Tax (VAT) [6 Hrs]** *Registration, Time of supply, Tax invoice, VAT rate, Computation of VAT, VAT payment and VAT Return, Simplified Value Added Tax (SVAT)*	LO-4
7	**Tax obligations and procedures [3 Hrs]** *Payment of income tax, Furnishing of Income tax return, Assessments, objections and appeals.*	LO-4

Assessments

Assessment		Weight	Learning outcomes
Continuous Assessments (CA)	Report and Presentation	30%	LO-1, LO-2, LO-3
	In class Test **[2 Hrs]**	20%	
Written examination (WE)		50% **[3 Hrs]**	LO-2, LO-3, L-4

Module Code	IM 4801	Module Title			Industrial Training / Internship				
Credits	6	**Hours/Week**		**C**	**E**	**O**	**Evaluation %**		Prerequisites
GPA/NGPA	NGPA	**Lectures**	**Lab / Tutorials**	■			**CA**	**WE**	None
		-	-				100	-	
Module Aim:	This module aims to enable the participants to acquire transferable skills in the area of business and financial services by offering them the chance to gain practical exposure.								

Learning Outcomes

After completing this module, the students should be able to:

LO-1 compare academic and industrial environments.

LO-2 relate the knowledge gained via training to the R & D project.

LO-3 appraise professional ethics and business practices.

LO-4 discuss the findings in a training report.

Syllabus Outline: The following should be covered with a minimum of 600 hours on the job under an assigned supervisor of the training organisation and an academic coordinator.		**Learning Outcomes**
1	**Induction** *This is an initial period to help the student in the transition from academic to industrial life. The students should meet his/her mentor to discuss the contents and the objectives of training. He/She should also receive information about the training organisation, its products or services and the terms and conditions of employment.*	LO -1
2	**General training** *In a large organisation, this should include an introduction to the work done in a number of departments. Under these circumstances, the student may eventually be working as a member of a team in the organisation. The student should be made aware of the management and administration sectors of the organisation.*	LO-1, LO-2
3	**Practical Skills** *During this period, the student should receive instructions in the practical skills essential for his/her future employment. It should also include an appreciation of the business processes.*	LO-2, LO-3
4	**Directed objective training** *The major part of the training should have directed application to the activity which the student intends to follow after the training program (activities should be relevant to the specialization in which the student will be graduating in). At this stage, the student should be encouraged to work on a real project and be given increasing responsibility for independent work to establish interest and confidence in his/her work.*	LO-3, LO-4

Assessments

Assessment		Weight	Learning outcomes
Continuous Assessments (CA)	Training report and Training Diary	50%	LO-1, LO-2, LO-3, LO-4
	Final presentation and viva	50% **[1 Hr)**	

MODULES OFFERED BY THE DEPARTMENT OF MANAGEMENT OF TECHNOLOGY

Module Code	TM1111	Module Title	Business Process Management Foundations			
Credits	**3**	**Hours/Week**	**Lectures**	**3**	**Pre – requisites**	**None**
GPA/NGPA	**GPA**		**Lab/Assignments**			

Module Aim:	To provide the fundamental knowledge on Business Process Management (BPM)

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain the fundamentals of a business
LO-2	explain the process approach
LO-3	identify the essential elements of BPM
LO-4	identify the importance of BPM to businesses

Syllabus Outline		**Learning Outcomes**
1	Introduction to business, its functions, and principles of management	LO-1
2	Process approach and essentials required in managing processes in organisations (i.e., Governance, structure).	LO-2
3	Introduction to BPM – Evolution and latest developments, importance of BPM in Business.	LO-3, LO-4
4	Introduction to essential elements of BPM Process maturity, design, visualization, measuring performance, analysis, optimisation /excellence, transformation, and technologies	LO-3
5	Associations, organisations, and standards working to elevate the BPM practice in the world and in the country. Use of BPM to create value differentiation. Roles in business process management, possible career paths and required competencies	LO-4

Assessments		**Weightage (%)**
Continuous Assessments	Group report and presentation (LO-1, LO-2, LO-3, LO-4)	30-50%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3, LO-4)	70-50%
Recommended Texts		

Module Code	TM1121	Module Title	Introduction to Business Process Excellence (BPE) Methodologies			
Credits	**2**	**Hours/Week**	**Lectures**	**2**	**Pre –requisites**	**None**
GPA/NGPA	**GPA**		**Lab/Assignments**			

Module Aim:	To provide the fundamental knowledge on Business Process Excellence (BPE) methodologies

Learning Outcomes

After completing this module, the students should be able to:

LO-1	relate the role of BPE in business
LO-2	explainthe BPE methods used in BPM initiatives
LO-3	identify the factors to be considered during the deployment and selection of a suitable BPE method(s) for an organisation

Syllabus Outline		**Learning Outcomes**
1	Evolution of business process excellence methodologies, latest developments, and their importance to organisations	LO-1
2	Introduction to the trending BPE methods, their benefits for businesses and factors to be considered during deployments	LO-2
3	Factors to be considered when selecting a suitable BPE method (s) for an organisation	LO-3
4	Roles related to BPE, competencies required for these roles and future career opportunities	LO-1
5	Institutions, associations, organisations, and standards working to elevate the BPE practice in the world and in the country.	LO-1

Assessments		**Weightage (%)**
Continuous Assessments	In-class activities (LO-1, LO-2, LO-3)	30-50%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	70-50%

Recommended Texts

Module Code	TM1131	Module Title	Strategy Development			
Credits	3	**Hours/Week**	Lectures	2.5	Pre – requisites	None
GPA/NGPA	GPA		Lab/Assignments	1		
Module Aim:		To provide the essential understating of the business strategy development process, critical success factors and the contributing role of BPM				

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain the business strategy and the strategy development process
LO-2	identify the critical success factors leading to successful strategy implementation and sustainable competitive advantage
LO-3	explain the role of BPM in strategy implementation and associated tools

Syllabus Outline		Learning Outcomes
1	Introduction to business strategy and the strategy development process	LO-1
2	Role of economics in strategy development	LO-1
3	Understand the strategy development process and key concepts, methods, tools, and contemporary developments	LO-1
4	Factors affecting successful strategy deployment and creating sustainable competitive advantage	LO-2
5	How BPM can support the strategy development and implementation in an organisation and associated tools: Hoshin planning, methods of prioritizing improvement areas by drill down methods (business level, operational level, and process level)	LO-3

Assessments		Weightage (%)
Continuous Assessments	In-class activities, group report and presentation (LO-1, LO-2, LO-3)	30-50%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	70-50%
Recommended Texts		

Module Code	TM1141	Module Title	**Key Business Functions and Role of BPM – I**			
Credits	**3**	**Hours/Week**	Lectures	**3**	**Pre – requisites**	**None**
GPA/NGPA	**GPA**		Lab/Assignments			
Module Aim:		To provide the essential understanding of key business functions (Finance and Human Resource Management (HRM)), their activities, important elements, and interrelations required for successful implementation of BPM practice in an organisation				

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain finance function and its importance and implications towards BPM practice
LO-2	explain HRM function and its importance and implications towards BPM practice

Syllabus Outline		**Learning Outcomes**
1	Human resource management function – Introduction, key sub functions /key activities, essential theories, roles and its importance towards BPM practice and related concepts	LO-1
2	Finance function – Background, key activities, elements, roles, and its importance towards BPM practice	LO-2

Assessments		**Weightage (%)**
Continuous Assessments	Finance related assignment (LO-1) HRM related assignment (LO-2)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2)	40-60%

Recommended Texts

Module Code	TM1151	Module Title	Business Statistics and Software Applications			
Credits	3	**Hours/Week**	Lectures	1	Pre – requisites	None
GPA/NGPA	GPA		Lab/Assignments	4		

Module Aim:	To provide the essential understanding on business statistics, statistical software applications and basic concepts required to make meaning out of data for BPM activities

Learning Outcomes

After completing this module, the students should be able to:

LO-1	apply basic statistics in analysing business problems
LO-2	apply basic probability theory in analysing business problems
LO-3	apply sampling techniques, estimation, and hypothesis testing in analysing business scenarios
LO-4	demonstrate the ability to use statistical software applications

Syllabus Outline		Learning Outcomes
1	Introduction to statistics and statistical software applications	LO-1, LO-4
3	Fundamentals of data visualization *Chart selection based on the type of data, essential considerations, building and interpretation of graphs*	LO-1
2	Descriptive statistics	LO-1
4	Elements of probability	LO-2
5	Distribution theory	LO-1
6	Sampling and sampling distributions	LO-3
7	Estimations (*point estimation, interval estimation*)	LO-3
8	Fundamentals of hypothesis testing	LO-3

Assessments		Weightage (%)
Continuous Assessments	In-class activities, lab sessions, assignments (LO-1, LO-2, LO-3, LO-4)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	40-60%
Recommended Texts		

Module Code	TM1211	Module Title	Managing Customer Experience			
Credits	**2**	**Hours/Week**	**Lectures**	**1**	**Pre – requisites**	**None**
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**		

Module Aim:	To provide a detailed understanding on managing customer experience in organisations including measuring experience, understanding customer life cycle, tools and contemporary concepts used to enhance customer experience and implications on BPM practice

Learning Outcomes	
After completing this module, the students should be able to:	
LO-1	explain methods, metrics, and standards related to customer experience management
LO-2	apply tools to manage stages of customer life cycle
LO-3	apply design thinking to develop / modify service designs

Syllabus Outline		**Learning Outcomes**
1	Methods of understanding customer experience, generating insights and identifying improvement opportunities	LO-1
2	Understand the stages of customer life cycle and key consideration at each stage of the life cycle, use of tools and role to be played by the BPM practitioners	LO-2
3	Key metrics related to customer experience management in various industries	LO-1
4	Learn about international and local associations, organisation, standards, and certification on customer experience management.	LO-1
5	Understand the process of design thinking and service design Empathies, define, ideate, prototype, test, implement, storytelling with data	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	Assignment on measuring and assessing customer experience (LO-1, LO- 2) Assignment on design thinking and service design (LO-3)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	40-60%
Recommended Texts		

Module Code	TM1221	Module Title	Business Process Maturity Models			
Credits	**2**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**None**
GPA/NGPA	**GPA**		**Lab/Assignments**			

Module Aim:	To provide a detailed understanding on the business process maturity classifications, the levels of maturity, frequently used maturity models, the process of undertaking business process maturity assessments and the implication on BPM and BPE activities

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain the evolution of business process maturity assessment and levels of maturity
LO-2	discuss business process maturity assessment models
LO-3	assess the maturity of a business process
LO-4	examine the implications of business process maturity assessment on BPM and BPE practice

Syllabus Outline		Learning Outcomes
1	Evolution of business process maturity assessment, five levels of business process maturity and associated tools, methods at each level of maturity	LO-1
2	Understand commonly used business process maturity assessment models	LO-1
3	Learn the process of undertaking business process maturity assessment	LO-2, LO-3
4	Implications on business process maturity assessment on BPM and BPE practice	LO-3, LO-4

Assessments		Weightage(%)
Continuous Assessments	Business process maturity assessment (LO-1, LO-2, LO-3, LO-4)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3, LO-4)	40-60%

Recommended Texts

Module Code	TM1231	Module Title	Managing Business Performance			
Credits	**2**	**Hours/Week**	**Lectures**	**1**	**Pre – requisites**	**TM1131**
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**		

Module Aim:	To provide the essential knowledge towards understanding, managing, and sustaining business performance

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain goal setting, cascading process, and key metrics applicable for each business function
LO-2	develop budgets
LO-3	apply measures of process capability in various business contexts
LO-4	demonstrate the ability to use techniques to monitor and sustain business performance

Syllabus Outline		**Learning Outcomes**
1	Goal setting and cascading of goals	LO-1
2	Understanding key business metrics in relation to each organisational function (critical to quality, critical to process, key result areas, key performance indicators etc.) including productivity (single factor and multi factor productivity metrics) calculation	LO-1
3	Budget preparation and resource allocation process	LO-2
4	Evaluating long term and short-term process capability	LO-3
5	Tracking and reporting performance for each level and use of visual performance management techniques Use of dashboard software applications	LO-4
6	Performance based reward and engagement programmes	LO-4

Assessments		**Weightage(%)**
Continuous Assessments	Assignment on goal setting and budget preparation for an organisation (LO-1, LO-2) Lab assignment on measuring and reporting business performance (LO-3, LO-4)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3, LO-4)	40-60%

Recommended Texts

Module Code	TM1241	Module Title	Key Business Functions and Role of BPM – II			
Credits	3	**Hours/Week**	**Lectures**	3	**Pre – requisites**	**None**
GPA/NGPA	GPA		**Lab/Assignments**			

Module Aim:	To provide the essential understanding of key business functions (Marketing, Customer Service/ Service Excellence, and ICT), their activities and important elements, interrelations required for successful implementation of BPM practice in an organisation

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain marketing function and its importance and implications towards BPM practice
LO-2	explain customer service / service excellence function and its importance and implications towards BPM practice
LO-3	explain ICT function and its importance and implications towards BPM practice

Syllabus Outline		**Learning Outcomes**
1	Marketing, branding, and sales function – key activities, roles, key concepts, strategies, and implications on BPM	LO-1
2	Customer service/ service excellence function – key activities, roles, key methods, and tools used and the implications on BPM Practice	LO-2
3	ICT function – key activities, roles, key concepts, and implications on BPM	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	Marketing related assignment (LO-1) Customer service/ service excellence related assignment (LO-2) ICT related assignment (LO-3)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	40-60%
Recommended Texts		

Module Code	TM1251	Module Title	Business Process Visualization – I			
Credits	**3**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**None**
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**		

Module Aim:	To provide a detailed understanding on business process visualization including levels of visualization, associated tools, governance and use of suitable software applications

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain business process visualization
LO-2	build Level 02 diagrams using suitable tools and software applications
LO-3	build Level 03 diagrams using suitable tools and software applications
LO-4	build Level 04 diagrams using suitable tools and software applications
LO-5	build Level 05 diagrams using suitable tools and software applications

Syllabus Outline		**Learning Outcomes**
1	Importance of process visualisation and different perspectives. Levels of business process visualization and characteristics / usage of each level Key considerations including process governance	LO-1
2	Level 02 – objectives and use of visualisation; tools; developing End to End functional diagrams using suitable software applications	LO-2
3	Level 03 – objectives and use of visualisation; tools - SIPOC/ COPIS diagrams	LO-3
4	Level 04 – objectives and use of visualisation; tools; developing process maps for single and cross functional activities using suitable applications	LO-4
5	Level 04 – objectives and use of visualisation; tools; video mapping using suitable software applications	LO-4
6	Level 05 – Developing check lists, work instructions and guidelines supporting Level 04 diagrams using suitable software applications	LO-5

Assessments		**Weightage(%)**
Continuous Assessments	Lab assignments based on process visualization for levels 0-5 (LO-1, LO-2, LO-3, LO-4, LO-5)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3, LO-4, LO-5)	40-60%
Recommended Texts		

Module Code	TM1800	Module Title	Seminar I – Business Process Management in Practice			
Credits	**2**	**Hours/Week**	**Lectures**		**Pre – requisites**	**None**
GPA/NGPA	**NGPA**		**Lab/Assignments**	**4**		
Module Aim:	To provide practical insights on contemporary practices in BPM and future predictions on BPM industry					

Learning Outcomes

After completing this module, the students should be able to:

LO-1	identify BPM practices in service and manufacturing organisations
LO-2	identify the current trends and development of BPM practice and future predictions

Syllabus Outline		**Learning Outcomes**
1	BPM practices in selected service and manufacturing companies	LO-1
2	Business process visualization methods and performance management methods used in a selected service and manufacturing organisations	LO-1
3	Customer Experience management practices in organisations	LO-1
4	Current trends and developments of the BPM practice and future predictions	LO-2

Assessments		**Weightage(%)**
Continuous Assessments	Individual assignment, group report and presentation (LO-1, LO-2)	100%
End Semester Examination		NA
Recommended Texts		

Module Code	TM2111	Module Title	Operations Management				
Credits	3	**Hours/Week**	**Lectures**	3	**Pre – requisites**	**None**	
GPA/NGPA	GPA		**Lab/Assignments**				

Module Aim:	To enable students to investigate methods, systems, and procedures for managing planned coordination of operations

Learning Outcomes
After completing this module, the students should be able to:

LO-1	explain key concepts of operations management in both manufacturing and service organisations
LO-2	analyse the product / service design and process selection
LO-3	apply planning and forecasting techniques to manage operations

Syllabus Outline		**Learning Outcomes**
1	Fundamentals of operations management	LO-1
2	Product / service design and process selection, value engineering	LO-2
3	Planning and controlling in operations management	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	In class activities, group presentation and report (LO-1, LO-2, LO-3)	60-40%
End Semester Examination	Written examination (LO-1, LO-2, LO-3)	40-60%

Recommended Texts

Module Code	TM2121	Module Title	BPE Methods – Lean Management				
Credits	**3**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**TM1121**	
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**			

Module Aim:	To provide a detailed understanding on lean management including its origins, aims, key problem-solving frameworks and tools

Learning Outcomes
After completing this module, the students should be able to:

LO-1	explain Toyota Production System (TPS), its evolution, key aims and pillars
LO-2	discuss lean management and its essential elements
LO-3	discuss and apply tools and process improvement frameworks under lean management

Syllabus Outline		**Learning Outcomes**
1	Introduction to TPS	LO-1
2	Introduction to lean management	LO-2
3	Process improvement frameworks used under lean management	LO-3
4	Detail understanding of problem-solving tools used by lean management	LO-3

Assessments		**Weightage (%)**
Continuous Assessments	Group project on lean tools and improvements (LO-1, LO-2, LO-3)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	40-60%

Recommended Texts

Module Code	TM2131	Module Title	BPE Methods – Lean Six Sigma I				
Credits	3	**Hours/Week**	Lectures	2	Pre – requisites	TM1121
GPA/NGPA	GPA		Lab/Assignments	2		

Module Aim:	To provide the fundamental knowledge on Lean Six Sigma, its goals, aims, different problem-solving frameworks and problem-solving tools discussed under the DMAIC framework

Learning Outcomes

  After completing this module, the students should be able to:

LO-1	explain the historical perspective, generations, and the concept of Six Sigma
LO-2	discuss the concept of Lean Six Sigma
LO-3	discuss the key process improvement frameworks in Lean Six Sigma
LO-4	identify basic problem-solving tools under DMAIC framework

Syllabus Outline		Learning Outcomes
1	Introduction to Six Sigma	LO-1
2	Introduction to Lean Six Sigma	LO-2
3	Problem solving frameworks in Lean Six Sigma to match different situations	LO-3
4	Fundamental tools discussed under each phase of the DMAIC framework: define, measure, analyse, improve, and control	LO-4

Assessments		Weightage(%)
Continuous Assessments	In-class activities and group assignments (LO-1, LO-2, LO-3, LO-4)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3, LO-4)	40-60%

Recommended Texts

Module Code	TM2141	Module Title	Business Analysis and Diagnosis			
Credits	3	**Hours/Week**	Lectures	2	Pre – requisites	None
GPA/NGPA	GPA		Lab/Assignments	2		

Module Aim:	To provide a detailed understanding on the process of analysing and diagnosing business performance to identify suitable focus areas for BPM practitioners to undertake improvement actions

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain the basics of business analysis and relevance to BPM
LO-2	apply business analysis planning and elicitation techniques to business scenarios
LO-3	apply process performance analysis techniques to business scenarios

Syllabus Outline		**Learning Outcomes**
1	Introduction to business analysis	LO-1
2	As-is status of business performance – financial statement analysis, voice of customer analysis	LO-2
3	Requirement analysis and benchmarking	LO-2
4	Process performance analysis	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	In-class activities, group assignment and presentation (LO-1, LO-2, LO-3, LO-4)	60-40%
End Semester Examination	End of Semester written examination (LO-1, LO-2, LO-3, LO-4)	40-60%

Recommended Texts

Module Code	IM2151	Module Title	Business Process Visualization – II			
Credits	**2**	**Hours/Week**	**Lectures**	**1**	**Pre – requisites**	**TM1251**
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**		

Module Aim:	To provide a detailed understanding on Level 04 process visualization technique – Value Stream Mapping (VSM) and related concepts, tools, and applications

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain the historical background, key concepts, metrics, and objectives of VSM mapping and the concept of value
LO-2	build current and future state VSM using suitable software applications
LO-3	discuss the concept of mixed model VSM

Syllabus Outline		**Learning Outcomes**
1	Historical background of VSM and the concept of value	LO-1
2	Key concepts, metrics, and objectives of VSM	LO-1
3	Current and future state value stream maps using suitable software applications. Differences in using of symbols in services and manufacturing applications	LO-2
4	Mixed model value stream mapping – understand implications and considerations in developing mixed model maps	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	Assignment - Develop current and future state VSM with recommendations (LO-1, LO-2)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	40-60%

Recommended Texts	

Module Code	TM2800	Module Title	Seminar II – Business Process Excellence in Practice			
Credits	**2**	**Hours/Week**	**Lectures**		**Pre – requisites**	**None**
GPA/NGPA	**NGPA**		**Lab/Assignments**	**4**		
Module Aim:		To provide practical insights on the contemporary practices, and future predictions on Business Process Excellence (BPE) methodologies				

Learning Outcomes

After completing this module, the students should be able to:

LO-1	identify BPE methods in service and manufacturing organisations
LO-2	identify current trends and development of BPE methods and future predictions

Syllabus Outline		Learning Outcomes
1	BPE practices used in selected service and manufacturing companies	LO-1
2	Lean management and Lean Six Sigma in a selected service and manufacturing organisations	LO-1
3	Current trends and developments of operations management and future predictions	LO-2
4	Use of business analysis and diagnosis practices in service and manufacturing organisations	LO-1

Assessments		Weightage(%)
Continuous Assessments	Individual assignment, group report and presentation (LO-1, LO-2)	100%
End Semester Examination		NA

Recommended Texts

Module Code	TM2211	Module Title	Supply Chain Management				
Credits	3	**Hours/Week**	**Lectures**	3	**Pre – requisites**	**None**	
GPA/NGPA	GPA		**Lab/Assignments**				

Module Aim:	To provide a detailed understanding on Supply Chain Management (SCM) function including procurement and logistics required by BPM practitioners

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain the SCM function and its key components
LO-2	discuss logistics functions and its relationship with SCM and BPM
LO-3	discuss procurement function and its relationship with SCM and BPM

Syllabus Outline		**Learning Outcomes**
1	Introduction to SCM and role of BPM	LO-1
2	SCM strategies	LO-1
3	SCM design, collaboration and integrating with global supply chain	LO-1
4	Introduction to logistics management and its relationship with SCM and the role of BPM	LO-2
5	Logistic strategies and planning, production logistics, marketing logistics, distribution and warehousing logistics, multi-tiered distribution systems, outsourcing logistics and event management	LO-2
6	Introduction to procurement function, procurement strategies including industrial buying, innovative sourcing the link to SCM and role of BPM	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	In-class activities, group report and presentation (LO-1, LO-2, LO-3)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	40-60%

Recommended Texts

Module Code	TM2221	Module Title	Quality Management				
Credits	**3**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**None**	
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**			

Module Aim:	To provide a detailed understanding on quality management, its associated concepts, methodologies, and contemporary theories

Learning Outcomes	
After completing this module, the students should be able to:	
LO-1	explain the concepts of quality management
LO-2	discuss and apply contemporary theories of quality management
LO-3	discuss the concepts of total quality environment
LO-4	demonstrate the ability to use quality management software applications

Syllabus Outline		**Learning Outcomes**
1	Quality definitions and its evolution	LO-1
2	Concept of value, customer focus and key quality metrics	LO-1
3	Key quality concepts brought forward by Gurus of quality, contemporary theories	LO-2
4	Creating total quality environment and quality leadership in an organisation	LO-3
5	Introduction to quality management software used in organisations	LO-4

Assessments		**Weightage(%)**
Continuous Assessments	In-class activities and group presentations (LO-1, LO-2, LO-3, LO-4)	40-60%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	60-40%

Recommended Texts

Module Code	TM2231	Module Title	BPE Methods – Lean Six Sigma II			
Credits	3	**Hours/Week**	Lectures	2	Pre – requisites	TM2131
GPA/NGPA	GPA		Lab/Assignments	2		

Module Aim:	To provide a detailed understanding of Lean Six Sigma DMAIC framework

Learning Outcomes

After completing this module, the students should be able to:

LO-1	make use of concepts and models of experimental design in DMAIC framework
LO-2	apply suitable statistical tools in different phases of DMAIC framework
LO-3	explain design for Lean Six Sigma

Syllabus Outline		Learning Outcomes
1	DMAIC Framework – analyse and improve phase advance topics: introduction to design of experiments, full factorial design, and response optimisation	LO-1
2	DMAIC Framework – analyse and improve phase advance topics: fractional factorial designs and response surface methodology (dealing with curvature)	LO-1
3	DMAIC Framework – analyse phase advance topics: logistic regression	LO-2
4	DMAIC Framework – analyse phase advance topics: general linear model, multivariate analysis	LO-2
5	DMAIC Framework – define phase advance topics: cluster analysis, dendrograms, k-means analysis	LO-2
6	Introduction to design of Lean Six Sigma – DMADV and IDOV methods	LO-3

Assessments		Weightage(%)
Continuous Assessments	In-class activities and take-home assignments on statistical concepts (LO-1, LO-2, LO-3)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	40-60%
Recommended Texts		

Module Code	TM2241	Module Title	BPE Methods – Total Productive Maintenance				
Credits	**3**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**TM1121**	
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**			

Module Aim:	To provide the essential understanding of key concepts in Total Productive Maintenance (TPM)

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain the fundamentals of TPM
LO-2	explain key concepts of TPM
LO-3	discuss the steps of TPM implementation

Syllabus Outline		**Learning Outcomes**
1	Evolution of maintenance and TPM introduction	LO-1
2	Japanese 5S+ workplace organisation practice	LO-2
3	Loss structure and the concept of equipment efficacy	LO-2
4	Introduction to eight pillars of TPM	LO-2
4	Steps of successful implementation of TPM and critical success factors	LO-3

Assessments		**Weightage (%)**
Continuous Assessments	In-class activities and Group Presentation (LO-1, LO-2, LO-3)	40-60%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	60-40%
Recommended Texts		

Module Code	TM2251	Module Title	BPM Software Applications – I				
Credits	**3**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**None**	
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**			

Module Aim:	To provide basic knowledge and skills on BPM software applications

Learning Outcomes	
After completing this module, the students should be able to:	
LO-1	explain BPM software landscape and their benefits
LO-2	identify factors to be considered in selecting a BPM software application / vendor and implementation
LO-3	demonstrate the ability to use basic features of selected BPM software applications

Syllabus Outline		**Learning Outcomes**
1	Introduction to BPM software applications and their benefits	LO-1
2	Factors to be considered in selecting and implementing a BPM software application / vendor	LO-2
3	Basic features and functions of selected BPM software applications	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	Lab assessments on selected BPM software applications (LO-1, LO-2, LO-3)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2)	40-60%

Recommended Texts

Module Code	TM2261	Module Title	Change Management				
Credits	2	**Hours/Week**	Lectures	2	Pre – requisites	None	
GPA/NGPA	GPA		Lab/Assignments				

Module Aim:	To provide the essential understanding required on managing change for BPM professionals

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain concepts of change management
LO-2	compare traditional and contemporary strategies for change
LO-3	develop a comprehensive change management programme and plans for managing stakeholder expectations

Syllabus Outline		Learning Outcomes
1	Fundamentals of organisational behaviour and change management	LO-1
2	Drivers of change and identifying change requirements, impact, and the role of BPM professionals	LO-1
3	Traditional and contemporary strategies for change	LO-2
4	Implementation of change, developing change management programmes, and strategies for managing stakeholder expectations	LO-3
5	Communicating change and role of social media in change management	LO-3
6	Managing resistance to change	LO-3

Assessments		Weightage(%)
Continuous Assessments	Group assignment on developing a change management programme (LO-1, LO-2, LO-3) Case study analysis – successful and failed change management cases (LO-1, LO-2, LO-3)	40-60%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	60-40%

Recommended Texts

Module Code	TM3111	Module Title	Improvement Project Management				
Credits	3	Hours/Week	Lectures	2	Pre – requisites	None	
GPA/NGPA	GPA		Lab/Assignments	2			

Module Aim:	To provide knowledge and skills on project management in business process improvement projects

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain concepts of project management
LO-2	apply project management tools and techniques in stages of project life cycle
LO-3	demonstrate the use of project management software application

Syllabus Outline		Learning Outcomes
1	Development of project management as a discipline, key concepts, and life cycle	LO-1
2	Improvement project initiation (using software application)	LO-2, LO-3
3	Improvement project planning and project management tools and techniques (using software application)	LO-2, LO-3
4	Improvement project implementation and sustaining gains (using software application)	LO-2, LO-3

Assessments		Weightage(%)
Continuous Assessments	Lab assessment on improvement project management (LO-1, LO-2, LO-3)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2)	40-60%

Recommended Texts

Module Code	TM3121	Module Title	Process Mining				
Credits	**3**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**None**	
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**			

Module Aim:	To provide detail understanding on process mining and related software applications outlining the benefits towards BPE practice

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain the fundamentals of process mining
LO-2	identify factors to be considered in selecting a process mining software application / vendor and implementation
LO-3	demonstrate the ability to use selected process mining software applications
LO-4	evaluate information generated by process mining software applications for BPE activities

Syllabus Outline		**Learning Outcomes**
1	Introduction to process mining Evolution, benefits, contemporary developments, and contribution towards BPM practice	LO-1
2	Process mining software applications/vendors, criteria for selection and features, considerations during implementations	LO-2
3	Process mining software applications in simulated environments	LO-3
4	Assess information provided by the process mining applications for BPE activities.	LO-4

Assessments		**Weightage(%)**
Continuous Assessments	In-class activities and lab assessments on process mining concepts using software applications (LO-1, LO-2, LO-3, LO-4)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-4)	40-60%

Recommended Texts

Module Code	TM3131	Module Title	Operations Research – I				
Credits	**3**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**None**	
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**			

Module Aim:	To introduce fundamental theories and techniques in operations research

Learning Outcomes
After completing this module, the students should be able to:

LO-1	identify the importance of operations research for business decisions
LO-2	formulate operations research models for practical applications
LO-3	apply operations research techniques to obtain optimal solutions using computer solvers

Syllabus Outline		**Learning Outcomes**
1	Introduction to operations research	LO-1
2	Linear programming algorithms	LO-2, LO-3
3	Integer programming	LO-2, LO-3
4	Network optimisation models	LO-2, LO-3
5	Dynamic programming in deterministic and stochastic environments	LO-2, LO-3

Assessments		**Weightage(%)**
Continuous Assessments	In-class activities using computer tools (LO-1, LO-2, LO-3) Group report (LO-2, LO-3)	60-40%
End Semester Examination	Written examination (LO-1, LO-2, LO-3)	40-60%

Recommended Texts

Module Code	TM3141	Module Title	Industrial Revolution and the Future of BPM				
Credits	**2**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**None**	
GPA/NGPA	**GPA**		**Lab/Assignments**				

Module Aim:	To provide the essential understanding on industrial revolutions, the associated concepts, tools, and their effects on the future of BPM

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain different industrial revolutions
LO-2	explain the technological dimensions linked to current industrial revolutions and how they impact BPM practice
LO-3	assess contemporary and trending concepts shaping the next industrial revolution

Syllabus Outline		**Learning Outcomes**
1	Introduction to industrial revolutions Nature of each revolution, background, associated technologies	LO-1
2	Technological dimensions linked to current industrial revolution and how these dimensions can impact BPM practice	LO-2
3	Contemporary and trending concepts shaping the next industrial revolution and their potential impact on BPM practice	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	Group report and presentation (LO-1, LO-2, LO-3)	40-60%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	60-40%

Recommended Texts

Module Code	TM 3151	Module Title	BPM Software Applications – II			
Credits	**3**	**Hours/Week**	**Lectures**	**1**	**Pre – requisites**	**TM2251**
GPA/NGPA	**GPA**		**Lab/Assignments**	**4**		

Module Aim:	To provide advanced knowledge and skills on BPM software applications

Learning Outcomes
After completing this module, the students should be able to:

LO-1	demonstrate the ability to use advanced features of selected BPM software applications in simulated environments
LO-2	evaluate how BPM software applications can support BPE activities

Syllabus Outline		**Learning Outcomes**
1	Advanced features and operations of selected BPM software applications and considerations during implementation	LO-1
2	BPM software applications in a simulated environment	LO-1
3	Assess information provided by the BPM applications for BPE activities	LO-2

Assessments		**Weightage(%)**
Continuous Assessments	In-class activities and lab assessments on application of BPM software for BPE activities (LO-1, LO-2)	100%
End Semester Examination		NA
Recommended Texts		

Module Code	TM3211	Module Title	Qualitative and Quantitative Forecasting				
Credits	**2**	**Hours/Week**	**Lectures**	**1**	**Pre – requisites**	**TM2111**	
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**			

Module Aim:	To provide advanced knowledge and skills on qualitative and quantitative forecasting methods and their usage in day-to-day business decision making

Learning Outcomes

After completing this module, the students should be able to:

LO-1	apply quantitative forecasting methods to business problems
LO-2	apply qualitative forecasting methods to business problems
LO-3	make use of forecasting methods to predict resources in a business organisation

Syllabus Outline		**Learning Outcomes**
1	Introduction to forecasting methods and importance in business applications	LO-1, LO-2
2	Quantitative forecasting methods – time series analysis	LO-1
3	Quantitative forecasting methods – causal analysis techniques	LO-1
4	Qualitative forecasting methods	LO-2
5	Forecasting error calculation using software	LO-1
6	Demand and capacity forecasting for an organisation using software	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	In-class activities, group assignment on forecasting methods (LO-1, LO-2, LO-3)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	40-60%

Recommended Texts

Module Code	TM3221	Module Title	Data Science for BPM				
Credits	**3**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**TM1151**	
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**			

Module Aim:	To provide an understanding on foundations and applications of data science for BPM

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain the fundamental concepts of data science and its benefits to BPM practice
LO-2	demonstrate the ability to use programming languages/applications in data science
LO-3	explain the mathematical basis for the techniques used in machine learning
LO-4	propose appropriate computational intelligence techniques for a given business problem and apply machine learning tools to find solutions to it

Syllabus Outline		Learning Outcomes
1	Introduction to Data Science Evolution, associated concepts, popular tools and techniques and the benefits for BPM practice	LO-1
2	Essentials of programming languages/applications used in data science	LO-2
3	Application of selected data science tools and languages to make meaning out of data and use them in BPM / BPE	LO-3, LO-4

Assessments		Weightage(%)
Continuous Assessments	In-class activities, mini project (LO-1, LO-2, LO-3, LO-4)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-3, LO-4)	40-60%

Recommended Texts

Module Code	TM3241	Module Title	ERP Systems and Applications				
Credits	3	**Hours/Week**	**Lectures**	2	**Pre – requisites**	**None**	
GPA/NGPA	GPA		**Lab/Assignments**	2			
Module Aim:	To provide a detailed understanding of ERP systems, their operation, and applications important for BPM professionals						

Learning Outcomes
After completing this module, the students should be able to:

LO-1	discuss features/functions and benefits of ERP systems and applications
LO-2	evaluate ERP systems and select suitable systems for an organisation
LO-3	demonstrate the ability to use selected ERP software applications in business environments

Syllabus Outline		Learning Outcomes
1	Introduction to ERP systems and applications	LO-1
2	Evaluating ERP systems, selection, and implementation	LO-1
3	ERP software and modules and using them for BPM activities	LO-2
4	Extracting information from ERP systems and using them for BPE activities	LO-3

Assessments		Weightage(%)
Continuous Assessments	In-class activities and lab assignments using ERP software (LO-1, LO-2, LO-3)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2)	40-60%

Recommended Texts

Module Code	TM3251	Module Title	Business Process Modelling and Simulation – I				
Credits	**2**	**Hours/Week**	**Lectures**	**1**	**Pre – requisites**	**None**	
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**			

Module Aim:	To provide knowledge and skills on modelling business processes

Learning Outcomes

After completing this module, the students should be able to:

LO-1	identify different business process modelling languages
LO-2	demonstrate the ability to use business process modelling notations (BPMN) diagrams in different business scenarios
LO-3	demonstrate the ability to use advanced process modelling using BPMN
LO-4	identify the role of simulation in businesses

Syllabus Outline		**Learning Outcomes**
1	Business process modelling languages	LO-1
2	Business process modelling notation diagrams	LO-2
3	Advanced process modelling using software applications	LO-3
4	Introduction to business process simulation	LO-4

Assessments		**Weightage(%)**
Continuous Assessments	In-class assessment and mini project (LO-1, LO-2, LO-3, LO-4)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3, LO-4)	40-60%

Recommended Texts

Module Code	TM3261	Module Title	Business Research Methods			
Credits	**3**	**Hours/Week**	**Lectures**	**3**	**Pre – requisites**	**None**
GPA/NGPA	**GPA**		**Lab/Assignments**			

Module Aim:	To provide knowledge and skills to conduct business research with theoretical and practical rigour

Learning Outcomes

After completing this module, the students should be able to:

LO-1	identify and explain the process of conducting business research
LO-2	demonstrate the ability to use academic writing
LO-3	evaluate and propose a research design to a given research problem

Syllabus Outline		**Learning Outcomes**
1	Introduction to business research	LO-1
2	Process of conducting research	LO-1
3	Literature review	LO-2
4	Research designs	LO-3
5	Academic writing and referencing	LO-2

Assessments		**Weightage(%)**
Continuous Assessments	In-class activities and individual assignments	100%
End Semester Examination		NA

Recommended Texts

Module Code	TM3711	Module Title	Operations Research – II				
Credits	**2**	**Hours/Week**	**Lectures**	**1**	**Pre – requisites**	**TM3131**
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**		

Module Aim:	To enhance the understanding on operations research methods and techniques to solve business related applications

Learning Outcomes

After completing this module, the students should be able to:

LO-1	apply operations research techniques for effective decision making in multi-criterion scenarios
LO-2	make use of mathematical application models to solve managerial decision-making problems
LO-3	appraise the nature of uncertainty in decision making using mathematical modelling applications

Syllabus Outline		**Learning Outcomes**
1	Inventory theory	LO-2
2	Markov decision process	LO-3
3	Applications of queuing theory	LO-2, LO-3
4	Multi-criteria decision making	LO-1, LO-2

Assessments		**Weightage(%)**
Continuous Assessments	In-class assignments and lab assignments (LO-1, LO-2, LO-3)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	40-60%

Recommended Texts

Module Code	TM4111	Module Title	**Management System Standards and Assuring Process Governance**			
Credits	**2**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**None**
GPA/NGPA	**GPA**		**Lab/Assignments**			

Module Aim:	To provide the essential understanding on management system standards and process governance

Learning Outcomes	
After completing this module, the students should be able to:	
LO-1	explain management system standards and the accreditation process
LO-2	examine the requirements of various management system standards
LO-3	discuss the process of assuring process governance adhering to the requirements of the management system standards

Syllabus Outline		**Learning Outcomes**
1	Introduction to management system standards	LO-1
2	Management system standards and their requirements (e.g., ISO 9001 QMS, ISO 14001 EMS, ISO 45001 OHSAS, ISO 22000 FSMS) and role played by BPM professionals	LO-2
3	Assuring process governance and management system auditing	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	In-class activities and case study analysis (LO-1, LO-2, LO-3)	40-60%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	60-40%

Recommended Texts

Module Code	TM4121	Module Title	Robotic Process Automation and Applications				
Credits	**3**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**None**	
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**			

Module Aim:	To provide the essential understanding of Robotic Process Automation (RPA), its applications, and use in BPM

Learning Outcomes

After completing this module, the students should be able to:

LO-1	examine RPA and its use in BPM
LO-2	evaluate selected RPA software applications and their usage
LO-3	demonstrate the ability to use RPA software application

Syllabus Outline		**Learning Outcomes**
1	Introduction to RPA and the benefits towards BPM	LO-1
2	Evaluate RPA Software applications and their usage	LO-2
3	Use of selected RPA software application	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	Group project - Use of RPA software tool to automate a process in a service or manufacturing organisation (LO-1, LO-2, LO-3)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2)	40-60%

Recommended Texts

Module Code	TM4131	Module Title	**Business Process Outsourcing and Shared Services**			
Credits	3	**Hours/Week**	**Lectures**	2	**Pre – requisites**	**None**
GPA/NGPA	GPA		**Lab/Assignments**	2		

Module Aim:	To provide a detailed understanding on Business Process Outsourcing (BPO) and shared service operations and the role of BPM

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain the fundamentals of BPO and shared services
LO-2	discuss business process outsourcing and shared service operations in the context of Sri Lankan BPO industry
LO-3	evaluate the role of BPM professionals in BPO and shared service operations

Syllabus Outline		**Learning Outcomes**
1	Introduction to business process outsourcing and shared service practice	LO-1
2	Sri Lankan BPO industry and the potential sectors for future growth	LO-2
3	The standards, BPE methods, value enabling models and best practices in business process outsourcing and shared service operations	LO-3
4	Factors to be considered when establishing a BPO or shared service operation and role to be played by BPM professional	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	In-class activities, group report and presentation (LO-1, LO-2, LO-3)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	40-60%
Recommended Texts		

Module Code	TM4151	Module Title	Business Process Modelling and Simulation – II				
Credits	2	Hours/Week	Lectures	1	Pre – requisites	TM3251
GPA/NGPA	GPA		Lab/Assignments	2		

Module Aim:	To provide knowledge and skills for business process modelling and simulation to solve real world problems

Learning Outcomes

After completing this module, the students should be able to:

LO-1	relate statistical concepts to business process simulation
LO-2	formulate discrete-event simulation models for various business scenarios using simulation software
LO-3	assess simulation results and recommend appropriate solutions

Syllabus Outline		Learning Outcomes
1	Statistical concepts associated with simulation	LO-1
2	Modelling and simulating business processes	LO-2
3	Simulation data analysis	LO-3

Assessments		Weightage(%)
Continuous Assessments	In-class activities and mini project (LO-1, LO-2, LO-3)	70-50%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	30-50%

Recommended Texts

Module Code	TM4901	Module Title	R & D Project			
Credits	4	**Hours/Week**	Lectures		Pre – requisites	TM3261
GPA/NGPA	GPA		Lab/Assignments	8		

Module Aim:	To enable students to propose solutions to real world business problems using their theoretical and practical knowledge, and analytical skills

Learning Outcomes

After completing this module, the students should be able to:

LO-1	identify a business problem and its context
LO-2	formulate the problem into a viable project proposal
LO-3	appraise and critique relevant literature
LO-4	design and apply an appropriate research design
LO-5	discuss findings and recommend solutions to problems identified

Syllabus Outline		Learning Outcomes
1	Problem identification and formulation	LO-1, LO-2
2	Review of literature	LO-3
3	Design the research project	LO-4
4	Data collection and analysis	LO-4
5	Discussion of findings and recommendations	LO-5

Assessments		Weightage(%)
Continuous Assessments	Detailed proposal, research report, oral presentation, and viva (LO-1, LO-2, LO-3, LO-4, LO-5)	100%
End Semester Examination		NA

Recommended Texts

Module Code	TM4211	Module Title	Business Excellence Models and Awards			
Credits	2	**Hours/Week**	Lectures	2	Pre – requisites	None
GPA/NGPA	GPA		Lab/Assignments			

Module Aim:	To provide an understanding on key business excellence models, award criteria and frameworks

Learning Outcomes
After completing this module, the students should be able to:

LO-1	discuss business excellence models
LO-2	discuss the application of various business excellence awards

Syllabus Outline		Learning Outcomes
1	Introduction to the business excellence models and their aspirations	LO-1
2	Malcolm Baldrige National Quality Award (MBNQA) framework and National Quality Award (NQA) framework Key elements, application, and requirements	LO-2
3	Deming Prize and Prof. Ayano TQM Excellence Award Key elements, application, and requirements	LO-2
4	National Productivity Awards Key elements, application, and requirements	LO-2
5	Other award programmes and their similarities (such as European Foundation for Quality Management model, Shingo Assessment, Taiki Akimoto 5S Award and Kaizen Award, SLAAQP Quality Circle, Lean Six Sigma Awards, APQO Global Performance Excellence Awards)	LO-2

Assessments		Weightage(%)
Continuous Assessments	In-class activities and group assignments (LO-1, LO-2)	40-60%
End Semester Examination	End of semester written examination (LO-1, LO-2)	60-40%

Recommended Texts

Module Code	TM4221	Module Title	Managing Innovation			
Credits	3	**Hours/Week**	**Lectures**	3	**Pre – requisites**	**None**
GPA/NGPA	GPA		**Lab/Assignments**			

Module Aim:	To provide the essential understanding on managing innovation in organisation

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain key concepts in managing innovation
LO-2	discuss the process of innovation and apply tools in the stages of innovation process
LO-3	assess factors contributing to successful innovation management

Syllabus Outline		**Learning Outcomes**
1	Introduction to managing innovation	LO-1
2	The process of innovation	LO-2
3	Ideation and use of ideation tools	LO-2
4	Key elements of managing innovation; creating and sustaining culture enabling innovation	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	In-class activities, group report and presentation (LO-1, LO-2, LO-3)	40-60%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	60-40%
Recommended Texts		

Module Code	TM4231	Module Title	Technology Management				
Credits	2	**Hours/Week**	Lectures	2	Pre – requisites	None	
GPA/NGPA	GPA		Lab/Assignments				

Module Aim:	To provide knowledge and skills to make key decisions in technology management in an organisation

Learning Outcomes

After completing this module, the students should be able to:

LO-1	demonstrate how technology is embodied in an organisation and the capabilities required to exploit it for achieving competitive advantage
LO-2	analyse the issues involved in the process of technology forecasting, acquisition, and technology transfer
LO-3	propose technology management strategies for both organisations and nations to secure sustainable competitive advantage

Syllabus Outline		**Learning Outcomes**
1	Fundamentals of technology management	LO-1
2	Overview and patterns of technology development	LO-1
3	Predicting and analysing technology futures	LO-2
4	Formulating technology strategy for competitive edge and protecting innovations	LO-2, LO-3
5	National innovation system	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	Group projects and in-class activities (LO-1, LO-2, LO-3)	40-60%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3)	60-40%

Recommended Texts

Module Code	TM4711	Module Title	Data Protection and Information Security Management			
Credits	2	**Hours/Week**	Lectures	2	Pre – requisites	None
GPA/NGPA	GPA		Lab/Assignments			

Module Aim:	To provide the essential understanding on data protection and information security management requirements in BPM practice

Learning Outcomes

After completing this module, the students should be able to:

LO-1	discuss the importance of data protection and information security management in BPM practice
LO-2	discuss data protection laws, regulations, and standards
LO-3	assess ethics in information sharing

Syllabus Outline		**Learning Outcomes**
1	Introduction to data protection, information security management systems and its importance in BPM practice	LO-1
2	Relevant aspects of the law related to data protection in Sri Lanka and for global trade	LO-2
3	Requirements of ISO 27001 Information Security Management Standard	LO-2
4	Managing information security in social media networks and maintaining ethics in information sharing	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	In-class activities and case studies (LO-1, LO-2, LO-3)	40-60%
End Semester Examination	End of Semester written Exam (LO-1, LO-2, LO-3)	60-40%
Recommended Texts		

Module Code	TM4721	Module Title	Enterprise Risk Management			
Credits	**2**	**Hours/Week**	**Lectures**	**1**	**Pre – requisites**	**None**
GPA/NGPA	**GPA**		**Lab/Assignments**	**2**		

Module Aim:	To provide a detailed understanding on Enterprise Risk Management (ERM) process

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain the essential elements of enterprise risk management
LO-2	explain risk management framework
LO-3	explain the process of assessing risk maturity in an organisation
LO-4	discuss the standards and guidelines associated with risk management

Syllabus Outline		**Learning Outcomes**
1	Introduction to enterprise risk management	LO-1
2	Enterprise risk management framework	LO-2
3	Risk management maturity	LO-3
4	Standards and guideline associated with risk management, their requirements, and the process of achieving compliance (ISO 31000)	LO-4

Assessments		**Weightage(%)**
Continuous Assessments	In-class activities and case studies (LO-1, LO-2, LO-3, LO-4)	60%-40%
End Semester Examination	End of Semester written Exam (LO-1, LO-2, LO-3, LO-4)	40%-60%

Recommended Texts

Module Code	TM4731	Module Title	Assuring Excellence in Service Organisations				
Credits	3	**Hours/Week**	Lectures	3	Pre – requisites	None	
GPA/NGPA	GPA		Lab/Assignments				

Module Aim:	To provide a detailed understanding on the process of assuring service excellence

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain key aspects of assuring excellence in service organisations
LO-2	discuss the process of developing service standards, measuring service quality and reporting performance
LO-3	apply BPE practices in enabling service excellence
LO-4	evaluate industry specific requirements for assuring service excellence

Syllabus Outline		Learning Outcomes
1	Introduction to service excellence	LO-1
2	Developing service standards, measuring service quality, and reporting performance	LO-2
3	Driving service quality excellence	LO-3
4	Industry specific service excellence considerations	LO-4

Assessments		Weightage(%)
Continuous Assessments	Case studies, group report and presentation (LO-1, LO-2, LO-3, LO-4)	40-60%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3, LO-4)	60-40%

Recommended Texts

Module Code	TM4741	Module Title	Managing Processes in Software Companies			
Credits	3	Hours/Week	Lectures	3	Pre – requisites	None
GPA/NGPA	GPA		Lab/Assignments			

Module Aim:	To provide an understanding on the role of BPM and BPE in managing processes in software companies

Learning Outcomes

After completing this module, the students should be able to:

LO-1	discuss software development life cycle and process models
LO-2	assess the process maturity and performance in software companies
LO-3	explain the methods used in assuring quality in software processes
LO-4	assess the possibilities of applying BPE initiatives in software companies

Syllabus Outline		Learning Outcomes
1	Introduction to software development life cycle (SDLC) and software process models	LO-1
2	Detail illustrations of implementing selected process model(s), considerations, critical success factors	LO-1
3	Assessing process maturity software processes and identifying the gaps for improvement	LO-2
4	Assuring quality in software processes	LO-3
5	Measuring software process performance, undertaking BPE activities and assuring compliance to contemporary software standards	LO-2, LO-4

Assessments		Weightage(%)
Continuous Assessments	In-class activities, group report and presentation (LO-1, LO-2, LO-3, LO-4)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-3, LO-4)	40-60%

Recommended Texts

Module Code	TM4801	Module Title	Internship			
Credits	6	**Hours/Week**	Lectures		Pre – requisites	None
GPA/NGPA	NGPA		Lab/Assignments			

Module Aim:	To enable students to acquire transferable skills in the area of business process management by offering them an opportunity to gain industry exposure

Learning Outcomes

After completing this module, the students should be able to:

LO-1	appraise the differences between academic and industrial environments
LO-2	value the training institutions relevant to business and management
LO-3	make use of professional ethics and business practices

Syllabus Outline		**Learning Outcomes**
1	Induction to internship programme	LO-1
2	General training	LO-1, LO-2
3	Practical skills	LO-2, LO-3
4	Specific on the training	LO-3

Assessments		**Weightage(%)**
Continuous Assessments	Training report, Final presentation, and viva (LO-1, LO-2, LO-3, LO-4)	100%
End Semester Examination		NA

Recommended Texts

COMMON FACULTY ELECTIVES

Module Code	DB1111	Module Title	Business Communication I			
Credits	**2**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**None**
GPA/NGPA	**GPA**		**Lab/Assignments**	**-**		

Module Aim:	To revise English Language Skills, improve the understanding on business writing, professional communication etiquette and effective presentations skills.

Learning Outcomes

After completing this module, the students should be able to:

LO-1   demonstrate the effective use of English grammar and writing skills
LO-2   demonstrate professional communication etiquette required in business environments
LO-3   demonstrate the overall understanding of making business presentations including the use of relevant software applications

Syllabus Outline		**Learning Outcomes**
1	Business English for Professionals Revisit key elements of English Grammar , Vocabulary, Reading Skills	LO-1
2	Essentials of Business Writing Sentence building, Letter writing, General Punctuation Review, Summarizing ,Paraphrasing	LO-1
3	Professional Communication Etiquette Telephone etiquette, E-mail etiquette, Meeting etiquette (virtual & physical), Making appointments, Minute taking, Formatting texts, Common business abbreviations and phrases	LO-2
4	Making Effective Business Presentations *Analysing Audience,preparing for presentations, delivering presentations, shaping a presentation, software applications (i.e. PowerPoint, Keynote, Prezi)*	LO-3

Assessments		**Weightage (%)**
Continuous Assessments	In-class test/quiz 30% (LO-1) Assignment 20% (LO-2) Business Presentation Assignment 30% (LO-3)	80%
End Semester Examination	End of semester written examination (LO-1,LO-2,LO-3)	20%

Recommended Texts

Module Code	DB1121	Module Title	Business Communication II			
Credits	**2**	**Hours/Week**	**Lectures**	**2**	**Pre – requisites**	**DB1111**
GPA/NGPA	**GPA**		**Lab/Assignments**	**-**		

Module Aim:	To provide students with the Business English skills they need to survive in the globalized world

Learning Outcomes

After completing this module, the students should be able to:

LO-1 explain the use of nonverbal communication methods and essential communication skills required in handling business negotiations and managing conflicts
LO-2 develop business proposals, reports, and correspondence
LO-3 develop academic reports and case study analysis
LO-4 design of personal brands and professional resumes.

Syllabus Outline		**Learning Outcomes**
1	Effective use of Nonverbal communication - Body Language, Emotional intelligence	LO-1
2	Handling Business Negotiations and Conflict management *Assertiveness, Negotiation techniques*	LO-1
3	Preparing Business Proposals, Reports and Correspondence Format, Style and Content, Writing Disclaimers, Use of Graphs and illustrations, Summarizing	LO-2
4	Introduction to Academic writing Structure of a Report, Academic Referencing (APA) – Use of referencing applications (e.g. Mendeley)	LO-3
5	Case Study Analysis – Analysis of critical elements, summarizing	LO-3
6	Preparing a compelling resume, cover letters and personal branding Use of social media platforms like Linkedin	LO-4

Assessments		**Weightage (%)**
Continuous Assessments	Role-play activity (LO-1) – 25% Assignment – Business Proposal & Report (LO-2) - 25% Academic Report (LO-3) – 20% Case Study Analysis (L0-3) – 15% Assignment - Professional Resume & Social Media Profile (LO-4) – 15%	100%
End Semester Examination		

Recommended Texts

3. Outlines of new modules

Module Code	TM3712	Module Title	ERP Best Business Practice Models			
Credits	3		Lectures	2	Pre – requisites	None
GPA/NGPA	GPA	Hours/Week	Lab/Assignments	2		

Module Aim:	To provide a detailed understanding of the foundational business processes within ERP implementations

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain any Best Business Practice (BBP) Scenario
LO-2	discuss the functional flows that make up the BBP Scenarios

Syllabus Outline		Learning Outcomes
1	Introduction Best Business Practice Models	LO-1
2	Lead to Cash	LO-1/LO-2
3	Procure to Pay	LO-1/LO-2
4	Hire to Retire	LO-1/LO-2
5	Make to Order / Make to Stock	LO-1/LO-2
6	Engineer to Order	LO-1/LO-2
7	Acquisition to Disposal	LO-1/LO-2
8	Service Based Solution	LO-1/LO-2
9	Project Based Solution	LO-1/LO-2

Assessments		Weightage (%)
Continuous Assessments	In-class activities and Final Presentation (LO-1, LO-2)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2)	40-60%

Recommended Texts

Module Code	TM4702	Module Title	ERP Solutioning			
Credits	3		Lectures	2	Pre – requisites	None
GPA/NGPA	GPA	Hours/Week	Lab/Assignments	2		

Module Aim:	To enable students to identify an organizational need and to provide a practical solution

Learning Outcomes

After completing this module, the students should be able to:

LO-1	identify gaps within a process
LO-2	apply the ERP knowledge in overcoming the gaps using process maps
LO-3	present a mapped solution prior to Implementation

Syllabus Outline		Learning Outcomes
1	Requirement gathering and Gap Analysis	LO-1
2	Cross Functional Flows	LO-2
3	Process Mapping	LO-2
4	Solution Proofing	LO-3
5	Presales Demonstration	LO-3

Assessments		Weightage (%)
Continuous Assessments	Presentation of a Mapped Solution (LO-1, LO-2, LO-3)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2)	40-60%

Recommended Texts

Module Code	TM4751	Module Title	The ERP Implementation Process			
Credits	3		Lectures	2	Pre – requisites	None
GPA/NGPA	GPA	Hours/Week	Lab/Assignments	2		
Module Aim:	To provide an understand on the intricacies of the ERP implementation process and the post implementation process					

Learning Outcomes

After completing this module, the students should be able to:

LO-1	explain ERP implementation and customer service
LO-2	develop an ERP implementation plan
LO-3	implement a business scenario within an ERP
LO-4	discuss data visualization and reporting within the context of ERP

Syllabus Outline		Learning Outcomes
1	ERP Implementation Methodologies	LO-1
2	ERP Implementation Planning and Budgeting	LO-2
3	The Conference Room Pilot - Showcasing the customer specific Solution	LO-3
4	Data Visualization and Report - Operational Intelligence	LO-4
5	Moments of Service - Customer Interaction and Support	LO-5

Assessments		Weightage (%)
Continuous Assessments	Demonstration of functional flow using ERP and Data Visualization using ERP (LO-1, LO-3, LO-4)	60-40%
End Semester Examination	End of semester written examination (LO-1, LO-2, LO-4)	40-60%
Recommended Texts		