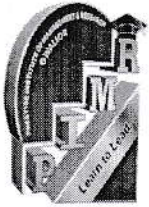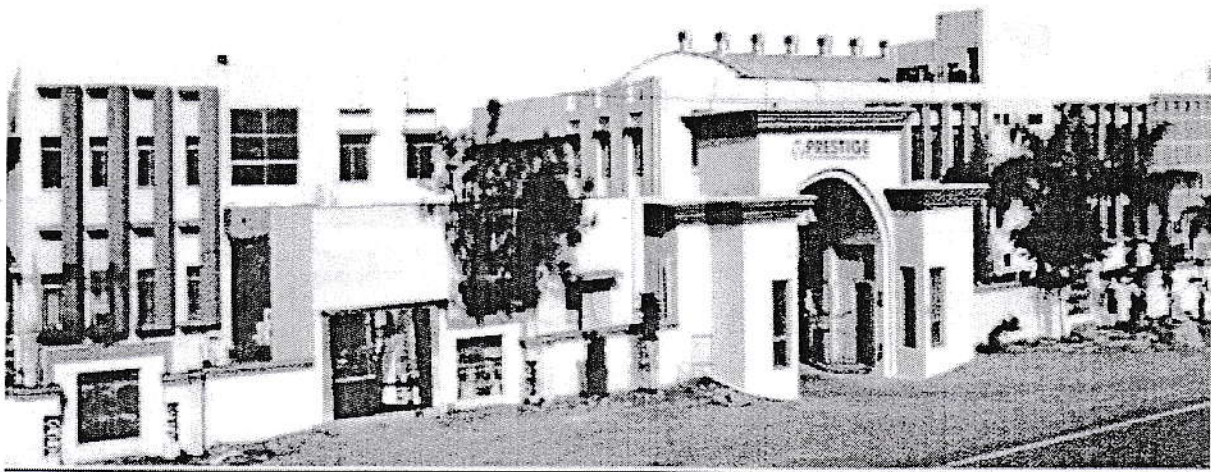# Prestige Institute of Management & Research, Gwalior

NIRF | NAAC 'A' GRADE | AUTONOMOUS

Course Curriculum
BCA
2024-28

Prestige Institute of Management & Research, Gwalior

Airport Road, Opposite DD Nagar, Gwalior (M.P.) INDIA

Three Years (6 Semester) CBCS Programme

First Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk	IA*		EA*		Total Marks
									Max	Min	Max	Min	
1	BCA - 101	Programming in C	CC	3	1		4	4	40	14	60	21	100
2	BCA - 102	Computer Organization and Architecture	CC	3	1		4	4	40	14	60	21	100
3	BCA - 103	Discrete Mathematics	CC	3	1		4	4	40	14	60	21	100
4	BCA - 104	English and Communication Skills	AEC	3	1		4	4	40	14	60	21	100
5	BCA - 105	Principles and Practices of Management	MDE	3	1		4	4	40	14	60	21	100
6	BCA - 106	Programming in C Lab	CC		1	2	2	3	20	7	30	11	50
7	BCA - 107	MS Office (LAB)	AEC		1	2	2	3	20	7	30	11	50
8	BCA - 108	Sports	VAC	-	-	-	-	-	-	-	-	-	-
		Total		15	7	4	24	26	240	84	360	127	600

Programming in C	Max. Marks: 100
	Min. Marks: 40
PAPER CODE: 101	External 60
	Internal: 40
	Credits: 4

Course outcomes

CO1a:	Understand the problem solving constructs and techniques through flowcharts
CO1b:	Understand various tokens and predefined functions of C language.
CO2:	Understand & apply control statements and arrays to solve problems for Computers.
CO3:	Create modular program using functions and utilize various storage class.
CO4:	Understand & apply pre-processor directives, structures, and union in solving problems.

CO/PO Matrix

CO/PO Matrix					
Course Outcomes	PO1	PO2	PO3	PO4	PO5
CO1a	2	1	1	-	3
CO1b	2	2	2	-	3
CO2	2	2	2	-	3
CO3	2	2	2	-	3
CO4	2	2	2	-	3

Course Mapping:

Local	Regional	National	Global
N	N	Y	N

Professional Ethics	Gender	Human Values	Environment &Sustainability
Y	N	Y	N

Employability	Entrepreneurship	Skill Development
Y	Y	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

UNIT 1: **Programming fundamentals:** program concept, algorithms, flow charts - symbols, rules for making flow chart, types of flowchart, advantage & disadvantage, techniques of problem solving: programming techniques – top down, bottom up, modular, structured - features, merits & demerits, programming logic- simple, branching, looping. Testing & debugging & their tools.

UNIT 2: Programming in c including features of 'c', c tokens, variables, identifiers, keywords, data types, constants, operator and expression, operators: arithmetic, logical, relational, conditional and bit wise operators, precedence and associativity of operators, type conversion in expression, basic input/output and library functions single character input/output i.e. getch(), getchar(). Getche(), putchar(),formatted input output i.e. printf() and scanf().

UNIT 3: **Branching constructs:** If statement, if.....else statement, nesting of if....else statement, else if ladder, the ?: operator, switch statement, compound statement, loop controls: for, while, do-while loops, break, continue, goto statement, arrays : what is array, declaring initializing 1d, 2d and 3d array. String: declaration, string functions – strcat, strcpy, strcmp, strlen, strstr.

UNIT 4: **Functions:** Categories of functions user defined and library function, recursion, function arguments, return values and nesting of function, calling of functions, scope and life of variables - local and global variable, storage classes - auto, extern, static, pointers: operations on pointers, operators for pointers, pointers and function, array of pointers, pointer and strings.

UNIT 5: **Preprocessor directives:** #define, defining functions like macros, include, conditional compilation directives. Structures: the concept of structure, initializing a structure, the structure tag, dot operator, array of structure, structure and pointer, arrow operator and nesting of structure. Unions: initialization and use of it in a program. Command line arguments

Suggested Readings:

1. Kanitkar Y. *Let us C.* BPB Publicatiuon.
2. *C Programming.* Schaum's series.
3. Balgurusuamy. *Programming in ANSI C.* Tata McGraw Hill

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	5
Assignment 2	5
Assignment 3	5
Skill Development	5
Total Marks- Internal Examination	40

Marks Distribution Scheme for final exams: (For 4 Credit Course)*

*will vary as per credits

Unit	Marks
1	10
2	10
3	10
4	10
5	10
Case study/Matching/Assertions	10
Total Marks- End Examination	60

Total (Internal Assessment + External Assessment)	100

COURSE OUTLINE
BCA I SEMESTER

Computer Organization and Architecture **PAPER CODE: 102**	**Max. Marks: 100** **Min. Marks: 40** **External 60** **Internal: 40**

Credits: 04

Course Objectives: The course focus on structure and function of the computer system. Analyze and understand the Logic Gates, Boolean algebra, Combinational and sequential circuits, instruction sets. Addressing modes, Memory hierarchy, I/O systems DMA technique.

Course Outcomes: At the end of the course, students will be able to-

	PO1	PO2	PO3	PO4	PO5
CO1a-Understand the concepts of Logic Gates, map simplification, Different Digital Circuits.	2	2	1	1	3
CO 1b-Use of the data representation Techniques and codes.	2	2	2	1	3
CO2-Understand the concepts of computer organization.	2	2	2	-	3
CO3-Understand central processor organization.	2	2	2	-	3
CO4-Understanding the various types of Memories and I/O organization.	2	3	3	-	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment &Sustainability
N	N	N	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:
Lecture, Case study, hands on analysis

Course Contents:

Unit-I

Digital Logic Circuits: Logic gates Boolean algebra, map simplification, combinational circuits, and sequential circuits.

Unit-II

Data Representation: Representation signed and unsigned integer, fixed-point representation, floating – point representation, other binary codes.

Unit-III

Basic Computer Organization and Design: Computer instruction, Instruction codes, timing and control, execution and instruction, input-output and interrupt, priority interrupt, computer system design.

Unit-IV

Central Processor Organization: Processor bus organization, arithmetic logic unit (ALU) instruction formats, addressing modes, data transfer and manipulation, program control, microprocessor organization.

Unit-V

Memory Organization: Auxiliary memory, microcomputer memory hierarchy, associative memory, virtual memory, cache memory. **Input-Output Organization:** Peripheral devices. Asynchronous and synchronous data transfer, direct memory access (DMA), input –output processor (IOP).

Suggested Text Books:

1. Williams S. *Computer Organization and Architecture*, PHI.
2. Mano M. M. *Computer Organization and Architecture*, PHI.
3. John P. Hayes, *Computer Architecture and Organization*, Tata McGraw Hill.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	5
Assignment 2	5
Assignment 3	5
Skill Development	5
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*

will vary as per credits

Unit	Marks
1	10
2	10
3	10
4	10
5	10
Case study/Matching/Assertions	10
Total Marks- End Examination	**60**

Total (Internal Assessment + External Assessment)	100

BCA I SEMESTER

MATHEMATICS-I DISCRETE MATHEMATICS PAPER CODE: 103	Max. Marks: 100 Min. Marks: 40 External 60 Internal: 40

Credits: 04

Course Outcomes:

CO1a	Understand the key concept of propositions and quantifiers.
CO1b	Construct proofs of basic set-theoretic identities involving unions, intersections, and Cartesian products
CO2	Understand the concept of relation and function and its operations.
CO3	Evaluate Boolean algebra expressions and functions and simplify the Boolean expression representing switching circuit.
CO4	Demonstrate graph, path, cycles, complement of a graph, trees and its types

COPO Matrix:

CO/PO Matrix					
Course Outcomes	PO1	PO2	PO3	PO4	PO5
CO1a	3	2	2	-	3
CO1b	3	2	2	-	3
CO2	3	2	3	-	3
CO3	3	2	3	-	3
CO4	3	2	2	-	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
N	N	N	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

UNIT 1:

Introduction and Preliminaries: Logical connectives, Truth tables, Tautologies and Contradiction, Logical equivalence, Algebra of propositions. Quantifiers, existential quantifiers and universal quantifiers.

UNIT-2:

Set Theory: Set, Singleton set, Finite and Infinite sets, Subsets, Proper subsets, Equality of sets, Union, Intersection and Difference of sets, Universal set, De Morgan laws, Symmetric difference of sets, Cartesian product of sets.

UNIT 3:

Relations: Relation between two sets, Binary relation on a set, Types of binary relations, Equivalence relation, Equivalence class, Partition of a set, Fundamental theorem of equivalence relation, Composition of relations.

Functions: Function or mapping, one-one, Many-one, into and onto mappings, Identity mapping, Constant mapping, Equality of mappings, Inverse of a mapping, Composition of mappings.

UNIT 4:

Boolean algebra: Definition and properties of Boolean algebra, a brief introduction to the application of Boolean algebra to switching theory, conversion of complicated switching circuits to simple one, Disjunctive and Conjunctive normal forms.

UNIT 5:

Graph Theory: Introduction of graph theory, types of graph, Paths and Circuits, Trees and their properties, binary trees, spanning trees, Kruskal's and Prim's algorithms for minimum spanning tree.

Suggested Readings:

1. Tremblay, J. P., & Manohar, R. (1975). *Discrete mathematical structures with applications to computer science*. McGraw-Hill, Inc.
2. Deo, N. (2017). *Graph theory with applications to engineering and computer science*. Courier Dover Publications.
3. Discrete Mathematics by B.R. Thakur (Ram Prasad Publication).
4. Discrete Mathematic by D.C. Agrawal (Shree Sai Publication).

Reference Books

1. Liu, C. L. (1987). *Elements of discrete mathematics*. Tata McGraw-Hill Education.
2. Johnsonbaugh, R. (2005). *Discrete Mathematics*. Pearson Education.
3. Bernard, K., Robert, B., & Sharon, R. (1996). *Discrete mathematical structures*. Prentice Hall of India.

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	5
Assignment 2	5
Assignment 3	5
Skill Development	5
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*

will vary as per credits

Unit	Marks
1	10
2	10
3	10
4	10
5	10
Case study/Matching/Assertions	10
Total Marks- End Examination	**60**

Total (Internal Assessment + External Assessment)	**100**

05/8/24

Palka Sikarwar

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COURSE OUTLINE

ENGLISH AND COMMUNICATION SKILLS PAPER CODE: 104	Max. Marks: 100 Min. Marks: 40 External 60 Internal: 40
	Credits: 04

Course Outcomes:

CO1a	Students will be able to acquire a wide vocabulary and understanding of basic functional grammar and knowledge for reading, writing and spoken language.
CO1b	Students will be able to develop creative and critical writing skills along with developing an interest and appreciation of literary texts.
CO2	To enable the learners to communicate effectively and appropriately in real life situations.
CO3	Students will be able to demonstrate the use of basic and advanced business writing skills and to produce clear and concise written business documents.
CO4	Students will be able to summarize and synthesize information into a coherent text and develop language competence, presentation and public speaking skills.

COPO Matrix:

CO/PO Matrix					
Course Outcomes	PO1	PO2	PO3	PO4	PO5
CO1a	3	-	3	1	2
CO1b	2	-	3	-	1
CO2	3	3	3	3	2
CO3	2	3	3	3	3
CO4	3	2	3	3	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment &Sustainability
Y	Y	Y	Y

Employability	Entrepreneurship	Skill Development
Y	Y	Y

Course Pedagogy: *Lecture, PPT's , Role plays, Mock Group Discussions, Extempore, JAM etc.*

Course Content:

UNIT 1: Review of English Grammar, Vocabulary Building (Synonyms, Antonyms, Homonyms, Idioms, Proverbs, One word substitution), Paragraph Writing, Precis Writing, Report Writing

UNIT 2: Where the Mind is without fear by R.N. Tagore, Life by Sarojini Naidu, Our Trees Still grow in Dehra by Ruskin Bond, The Bird with the Golden Wings by Sudha Murthy

UNIT 3: Communication,- Definition and Process of Communication, Essentials of Effective Communication, Barriers to Communication & Role of Communication in Organizational Effectiveness, Non-Verbal Communication: Meaning, Types and Importance, Listening, Difference between Listening and Hearing

UNIT 4: Business Correspondence, Essentials of Effective Business Correspondence, Structure of Business Letter, Types of Business Letter: Enquiry, Reply, Orders, Complaints, and Circular Letter, Writing Emails, Drafting of Notices, Agendas, Minutes, Job Application Letters, Preparation of a Curriculum Vitae(CV) and Resume, their difference and usage.

UNIT 5: Public Speech – Composition Principles, Speech Delivering Skills, Group Discussion: Do's and Don'ts of Group Discussions, Communication in Committees, Seminars and Conferences

Suggested Readings:

- *Chaturvedi, P.D, Mukesh. The Art and Science of Business Communication. 4th ed. 2017, Pearson, India*
- *Higgins, Jessica. 10 Skills for Effective Business Communication. Foreword by Ben Way 2021. Embassy Books, India.*
- *Kumar, Sanjay &PushpLata. Communication Skills. 2nd ed. 2015. Oxford University Press, India*
- *Swan, Michael. Practical English Usage 4th Ed, 2016. Oxford University Press, India.*
- *Wren and Martin. High School English Grammar&Composition.Revised by NDV Prasada Rao. Regular Edition, S. Chand Publishing. India.*

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Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	5
Assignment 2	5
Assignment 3	5
Skill Development	5
Total Marks- Internal Examination	**40**

Marks Distribution Scheme for final exams: (For 4 Credit Course)*

will vary as per credits

Unit	Marks
1	10
2	10
3	10
4	10
5	10
Case study/Matching/Assertions	10
Total Marks- End Examination	**60**

Total (Internal Assessment + External Assessment)	100

COURSE OUTLINE

PRINCIPLES AND PRACTICES OF MANAGEMENT PAPER CODE: BCA 105	Max. Marks: 100 Min. Marks: 40 External 60 Internal: 40

Credits: 04

Course Objectives: After the completion of this subject the students will be able to

CO1a	Understand the concepts and functions of Management.
CO1b	To articulate management agenda using tools and techniques of planning
CO2	Devise the organization structure and distill the organization function.
CO3	Developing skills in directing individuals and groups.
CO4	Analyze various control systems and their effectiveness in achieving organization goals.

COPO Matrix:

CO/PO Matrix					
Course Outcomes	PO1	PO2	PO3	PO4	PO5
CO1a	3	2	1	1	2
CO1b	1	3	2	1	2
CO2	1	2	3	2	1
CO3	1	1	2	3	2
CO4	2	1	2	2	3

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	N

Professional Ethics	Gender	Human Values	Environment &Sustainability
Y	Y	Y	N

Employability	Entrepreneurship	Skill Development
Y	N	Y

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

UNIT 1: Introduction to Management

Concept, Nature& Functions of Management, Evolution of Management: Early Contributors; Management vs. Administration, Management Skills, Levels of Management, Introduction to Functions of Management, Responsibility of Managers.

UNIT 2: Planning

Planning: Nature, Significance of Planning, Types of Planning, Process of Planning, Objectives and Management By Objective (MBO), setting objectives, policies, Planning premises, Planning Tools and Techniques, Decision making steps and process.

UNIT 3: Organizing

Nature and purpose, Definition and Importance of Organizing: Concept, Forms of Organizational Structure, Formal and informal organization, organization chart, organization structure, departmentalization, delegation of authority, centralization and Decentralization, Span of Management.

UNIT 4: Directing

Foundations of individual and group behavior – motivation – motivational techniques – job enlargement –job enrichment – leadership – types and theories of leadership – communication – process of communication– barrier in communication – effective communication.

UNIT V:Controlling and Coordinating-

Elements of Managerial Control, Control Systems, Management Control Techniques, Effective

Control Systems. Coordination Concept, Importance, Principlesand Techniques of Coordination, Concept of Managerial Effectiveness.

Suggested Readings:

- *Koontz Harold &Weihrich Heinz (2008). Essentials of management (5th ed.). New Delhi; TataMcGrawHill.*
- *Robbins S.P. and Decenzo David A. (2009). Fundamentals of Management EssentialConceptsandApplications 6th ed.). Delhi: Pearson Education*
- *Weihrich Heinz ond Koontz Harold (2008). Management: A Global and EntrepreneurialPerspective(12th ed.). New Delhi: McGraw Hill*

Course Evaluation Criteria:

Instruments	Marks
Mid Term Exam	20
Assignment 1	5
Assignment 2	5
Assignment 3	5
Skill Development	5
Total Marks- Internal Examination	40

Marks Distribution Scheme for final exams: (For 4 Credit Course)*
will vary as per credits

Unit	Marks
1	10
2	10
3	10
4	10
5	10
Case study/Matching/Assertions	10
Total Marks- End Examination	60

Total (Internal Assessment + External Assessment)	100

Programming in C Lab	Max. Marks: 50
	Min. Marks: 18
PAPER CODE: 106	External 30
	Internal: 20

Credits: 1

Course Outcomes:

CO1a	Read understand and trace the execution of programs written in C language
CO1b	Write the C program for a given algorithm using control statements with input and output.
CO2	Write the modular program for given problem.
CO3	Write the program to solve problem using array, structure and pointers
CO4	Implement the solutions of real world problem.

COPO Matrix:

CO/PO Matrix					
Course Outcomes	PO1	PO2	PO3	PO4	PO5
CO1a	1	3	1	-	3
CO1b	1	3	2	-	3
CO2	1	3	2	-	3
CO3	1	3	2	-	3
CO4	1	3	2	-	3

Course Mapping:

Local	Regional	National	Global
N	N	Y	Y

Professional Ethics	Gender	Human Values	Environment & Sustainability
Y	N	N	N

Employability	Entrepreneurship	Skill Development
Y	Y	Y

BCA Curriculum & Evaluation Scheme [Session: 2024-28]

Course Pedagogy:

Lecture, Case study, hands on analysis

Course Content:

BCA – 105 Programming in C Lab

1. WAP to print the sum and product of digits of an integer.
2. WAP to reverse a number.
3. WAP to compute the sum of the first n terms of the following series S = 1/2+1/3+1/4+......
4. WAP to compute the sum of the first n terms of the following series S =1-2+3-4+5..........
5. Write a function that checks whether a given string is Palindrome or not. Use this function to find whether the string entered by user is Palindrome or not.
6. Write a function to find whether a given no. is prime or not. Use the same to generate the prime numbers less than 100.
7. WAP to compute the factors of a given number.
8. Write a macro that swaps two numbers. WAP to use it.
9. WAP to print a triangle of stars as follows (take number of lines from user):

   ```
   *
   ***
   *****
   *******
   *********
   ```

10. WAP to perform following actions on an array entered by the user:
    i) Print the even-valued elements
    ii) Print the odd-valued elements
    iii) Calculate and print the sum and average of the elements of array
    iv) Print the maximum and minimum element of array
    v) Remove the duplicates from the array
    vi) Print the array in reverse order The program should present a menu to the user and ask for one of the options. The menu should also include options to re-enter array and to quit the program.
11. WAP that prints a table indicating the number of occurrences of each alphabet in the text entered as command line arguments.
12. Write a program that swaps two numbers using pointers.
13. Write a program in which a function is passed address of two variables and then alter its contents.
14. Write a program which takes the radius of a circle as input from the user, passes it to another function that computes the area and the circumference of the circle and displays the value of area and circumference from the main() function.
15. Write a program to find sum of n elements entered by the user. To write this program, allocate memory dynamically using malloc()/ calloc() functions .
16. Write a menu driven program to perform following operations on strings:
    a) Show address of each character in string
    b) Concatenate two strings without using strcat function.
    c) Concatenate two strings using strcat function.
    d) Compare two strings
    e) Calculate length of the string (use pointers)

    f) Convert all lowercase characters to uppercase

    g) Convert all uppercase characters to lowercase

    h) Calculate number of vowels

    i) Reverse the string

17. Given two ordered arrays of integers, write a program to merge the two-arrays to get an ordered array.
18. WAP to display Fibonacci series (i)using recursion, (ii) using iteration
19. WAP to calculate Factorial of a number (i)using recursion, (ii) using iteration
20. WAP to calculate GCD of two numbers (i) with recursion (ii) without recursion
21. Create Matrix class using templates. Write a menu-driven program to perform following Matrix operations (2-D array implementation): a) Sum b) Difference c) Product d) Transpose.
22. WAP to count frequency of each element of an array.
23. WAP to find encoded array from original array for any parameter.
24. WAP to perform following operation on string without using Library function:

    a) Length of a string

    b) Reverse of a String

    c) Check it is palindrome or not

25. WAP to count sum of each digit of string if string have only digits.
26. WAP to calculate sum of n number using command line argument.
27. WAP to convert lower to upper case or vice-versa of each character of string..
28. WAP to count vowel's in a string.
29. WAP to create a structure of student (ID, Name, Age) perform Insert and display operation.
30. WAP to perform operation on file handling:

    a) Write character into a file.

    b) Read character from a file.

    c) Create Copy a file.

Suggested Text Books:

1. Kanitkar Y. *Let us C*. BPB Publicatiuon.
2. *C Programming*. Schaum's series.
3. Balgurusuamy. *Programming in ANSI C*. Tata McGraw Hill.

Course Evaluation Criteria:

Instruments	Marks
Assignment -1	5
Assignment -2	5
Assignment -3	5
Viva	5
Total(Internal assessment)	20

Marks Distribution Scheme for final exams: (For 1 Credit Course)*

*will vary as per credits

Unit	Marks
External Viva	30

Total (Internal Assessment + External Assessment)	50

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MS Office	Max. Marks: 50
	Min. Marks: 18
PAPER CODE: 107	External: 30
	Internal: 20

Credits: 1

Course outcomes
After the completion of course, students will be able to:

CO1a: Understand computer basics fundamentals to familiar with computer and its parts.
CO1b: Working with MS Word , various menus and formatting structures along with special features.
CO2: Hands on MS Excel spread sheet including various formatting techniques.
CO3: Working with MS Excel functions and formulas and statistical functions.
CO4: Hands on ms power point presentation slide with its features.

CO/PO Matrix

Course Outcomes	PO1	PO2	PO3	PO4	PO5
CO1a	2	3	3	3	3
CO1b	3	2	2	3	2
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	2	3	2

Course Mapping:

Local	Regional	National	Global
Y	Y	Y	Y

Professional Ethics	Gender	Human Values	Environment &Sustainability
Y	N	N	N

Employability	Entrepreneurship	Skill Development
Y	Y	Y

Course Pedagogy:
Lecture, Case study, hands on analysis.

Course Content:

UNIT 1: Introduction to MS office

Computer Basic, Creating Folder, Paint Directories, input units, Output unit, Central Processing Units, hard ware, Soft ware, Windows short cut keys.

UNIT 2: MS Word

New, Open, Close, Save, Save As Formatting Text: Font Size, Font Style, Font Color, Use the Bold, Italic, and Underline, Change the Text Case, Line spacing, Paragraph spacing, Shading text and paragraph, Working with Tabs and Indents. Header and Footer: Inserting custom Header and Footer, Inserting objects in the header and footer, Add section break to a document. Working with bullets and numbered lists. Tables and Mail merge.

UNIT 3: MS Excel

Introduction to Excel interface, Understanding rows and columns, Naming Cells, Working with excel workbook and sheets, Formatting excel work book: New, Open, Close, Save, Save As Formatting Text: Font Size, Font Style, Font Color, Use the Bold, Italic, and Underline, Wrap text, Merge and Centre, Currency, Accounting and other formats, Modifying Columns, Rows & Cells. Sort and Filter Data with Excel: Sort and filtering data Using number filter, Text filter, Custom filtering, Removing filters from columns, Conditional formatting.

UNIT 4: MS Excel Functions and Formulas

Lookup and reference functions- VLookup, HLookup, Index, Match, Address, Offset.
Logical Functions- If/Else, True, False, AND, OR, NOT.
Data Base functions- Dget, Dmax/min, Dproduct, Dsum, Dvar, Dvarp.
Date and Time functions- Date, Day, Day360, Seconds, Minutes, Hours, Now, Today, Month, Year.
Math and Trig functions- Round, Rand, Int, LCM, Mod, Even, Sum, Sumif, Sumifs.
Statistical functions- Average, Averagea, Averageif, Count, CountA,Countblank, Countif, Forecast, Max, MaxA, Min, MinA,Avedev.

UNIT 5: MS Power Point

Inserting new slide, changing layout of slides, Duplicating slides, Copying and pasting slide, Applying themes to the slide layout, changing theme color, Slide background, Formatting slide background, and Using slide views. Master slide and its usages, Shapes, Clipart and Picture, Word Art, Smart Art Change the Order of Objects, Inserting slide header and footer, Inserting Text boxes, Inserting shapes, using quick styles, Inserting Word art, Inserting symbols, Inserting Chart.

Suggested Readings:
1. Microsoft Office 2003: The Complete Reference, Jennifer, Guy Hart-Davis, Curt Simmons, Jennifer Ackerman Kettel, McGraw-Hill Osborne Media.
2. Analyzing Business Data With Excel, Forecasting, Statistics, and Data Management, Shroff/O'Reilly.
3. MICROSOFT OFFICE 365 ALL-IN-ONE FOR BEGINNERS & POWER USERS: The Concise Microsoft Office 365, by Tech Demystified.
4. Mastering Financial Mathematics In Microsoft Excel: A Practical Guide for Business Calculations, Alastair L. Day, PHI.

Course Evaluation Criteria:

Instruments	Marks
Assignment -1	5
Assignment -2	5
Assignment -3	5
Viva	5
Total(Internal assessment)	20

Marks Distribution Scheme for final exams: (For 1 Credit Course)*

*****will vary as per credits**

Unit	Marks
External Viva	30

Total (Internal Assessment + External Assessment)	50