Rayat Shikshan Sanstha's

SADGURU GADAGE MAHARAJ COLLEGE, KARAD.

(An Autonomous)

Accredited By NAAC with 'A^{+} (3.63 CGPA)' Grade

ISO- 9001-2015 Certified

Affiliated to Shivaji University, Kolhapur

Bachelor of Computer Application

DEPARTMENT OF COMPUTER SCIENCE

Under the Faculty of Commerce and Management

Choice Based Credit System (CBCS)

Regulations in accordance with **National Education Policy**
to be implemented from Academic Year 2023-24

Syllabus For

B.C.A. Part – I

SEMESTER I & II

(Syllabus to be implemented from June 2023)

Rayat Shikshan Sanstha's
SADGURU GADAGE MAHARAJ COLLEGE, KARAD.
(An Autonomous College)
Regulations and Guidelines as per NEP 2020
Choice Based Credit System (CBCS) Syllabus for Bachelor of Computer Application Part- I

1. **Title:** B.C.A.
2. **Year of Implementation:** 2023-24
3. **Preamble:**

BCA stands for Bachelor of Computer Application. It is a 3-year full-time course approved by the All India Council for Technical Education (AICTE). The course curriculum provides a sound knowledge of computer fundamentals, programming concepts, and applications. BCA is the most sought-after degree course in India today. The course combines computer science fundamentals and business studies to provide a broad understanding of how technology can be applied to decision-making processes in various industries. The course is divided into 6 semesters, further divided into 8 terms. Each semester has core subjects along with other subjects.

BCA is a field that combines basics of computer application oriented concepts and management concepts. It has been one of the most fast-growing fields in last few decades. BCA is a three-year undergraduate program covering all computer applications areas, including software, hardware, and networks. The course has a lot of potential in India because there is a lot of need for qualified and experienced IT professionals.

Besides networking positions such as Network Engineer and Network Administrator, some of the highest-paying jobs in the IT industry, most students usually become software engineers and choose programming jobs. In addition, they can also get jobs in the government sector as they are one of the most sought-after professionals. Not only in India but also internationally, there is a growing demand for IT specialists. After completing the course, students can work for reputable IT firms such as IBM, Oracle, Infosys, and Google. A student's work profile after completing the course may contain the following:

1. **System Engineer**: Top firms like Infosys, Wipro, HP, and Google hire system engineers. A system engineer creates, tests, and evaluates software, circuits, and computers.
2. **Programmer:** Programmer for several software development companies. The job of a programmer is to write software code. A programmer primarily works with computer

languages such as Assembly, COBOL, C, C++, C#, Java, Lisp, Python, and other similar languages.

3. **Web developer:** Web developer for various web design and online digital marketing firms. A web developer is a programmer who focuses on creating web-based applications. A web developer's job is to create and maintain websites. A web developer requires HTML/XHTML, CSS, PHP, JavaScript, and other programming languages.
4. **System Administrator:** In a bank, a school, or a college, you might be a system administrator. A system administrator is in charge of configuring and managing a computer system or server. Work as a software developer for organizations such as Microsoft, Google, and Facebook.
5. **Software Developer:** The sole responsibility of a software developer is to create software that makes people's jobs easier and allows them to work more efficiently. A software developer is also responsible for installing, testing, and maintaining the software.

If you want to work in sales and marketing, you can apply for positions like IT Sales Associate, Management Trainee, etc. A fresher's typical BCA salary is around INR 2.5-5 LPA, which can go up to INR 6-12 LPA for an experienced professional, depending on your technical skills, projects, and theoretical understanding.

4. Programme Outcomes:

- Apply knowledge of ICT in solving business problems.
- Learn various programming languages and custom software.
- Identify, formulate, and solve problems using computational temperaments.
- Effective Communication Skills.
- Utilize the techniques, skills and modern tools, for actual development process.

5. General Objectives:

- Enrichment of basic knowledge in areas of Computer Application.
- Provide a strong foundation in fundamentals of computers.
- Prepare the students with exceptional skills of problem solving, communication and leadership skills.
- Facilitate overall understanding of the requirements of the subjects.

Credit Distribution Structure for B.C.A.

Sem	DSC (Major)		DSE (Minor-I)	OE/GE	AEC (Language)	Value Added Courses	SEC	IKS	Summer Internship	Research Project / Dissertation	Total Credits
I	Programming in C-I (2) Web Technologies (2) Practical on C-I (2)		Financial Accounting with tally-I (2) Principle of Mgt.-I (2) Practical on Web Technology (2)	Maths-I (2) Maths-II (2) Practical-I (2)	English (2)	-		IKS (2) Introduction to IKS		-	22
	W-L/W=4+4=8		W-L/W=4+4=8	W-L/W=4+4=8	W-L/W=2						W-L/W=28
II	Programming in C-II (2) Advance Web Technologies (2) Practical on C-II and Adv. Web (2)		Financial Accounting with tally-II (2) Principle of Mgt.-II (2) Practical of Tally (2)	Stat-I (2) Stat-II (2) Practical-II (2)	English (2)		SEC-I (2) PHP-I			-	22
	W-L/W=4+4=8		W-L/W=4+4=8	W-L/W=4+4=8	W-L/W=2		W-L/W=2				W-L/W=28
Credits	8+4=12		8+4=12	6+6=12	04		02	02		-	44
Level 5 -Students exiting the programme after securing 49 credits will be awarded UG Certificate in the relevant Discipline /Subject (Computer)											

Structure of the Course: B.C.A. Part-I

Level	Year	Sem.	Course Type	Course Code	Course Title	Credits	No. of Lectures / Practical's
4.5	I	Sem. I	Major	N-MJT-23-171	Programming in C-I	2T	30
			Major	N-MJT-23-172	Web Technologies	2T	30
			Minor	N-MNT-23-173	Financial Accounting with Tally-I	2T	30
			Minor	N-MNT-23-174	Principal of Management-I	2T	30
			OE /GE	N-OET-23-175	Mathematics-I	2T	30
			OE /GE	N-OET-23-176	Mathematics-II	2T	30
			AEC	N-AEC-I-23-177	English-I (AEC-I)	2T	30
			IKS	N-IKS-23-178	IKS History of Computers in India	2T	30
			Major	N-MJP-23-179	Lab Course-I on Programming in C-I	2P	15
			Minor	N-MNP-23-180	Lab Course-II on Web Tech.	2P	15
			OE /GE	N-OEP-23-181	Lab Course-III on Mathematics	2P	15

N-MJT-23-171
N-MJT-23-172
N-MNT-23-173
N-MNT-23-174
N-OET-23-175
N-OET-23-176
N-AEC-I-23-177
N-IKS-23-178
N-MJP-23-179
N-MNP-23-180
N-OEP-23-181

4.5	I	Sem-II	Major	N-MJT-23-271	Programming in C –II	2T	30
			Major	N-MJT-23-272	Advanced Web Technology	2T	30
			Minor	N-MNT-23-273	Financial Accounting with Tally-II	2T	30
			Minor	N-MNT-23-274	Principal of Management-II	2T	30
			OE /GE	N-OET-23-275	Statistics-I	2T	30
			OE /GE	N-OET-23-276	Statistics-II	2T	30
			AEC	N-AEC-II-23-277	English-II(AEC-II)	2T	30
			SEC	N-SEC-I-23-278	SEC-I PHP-I	2T	30
			Major	N-MJP-23-279	Lab Course-IV on C-II & Adv. Web Technology	2P	15
			Minor	N-MNP-23-280	Lab Course-V on Tally	2P	15
			OE /GE	N-OEP-23-281	Lab Course-VI on Statistics	2P	15

N-MJT-23-271
N-MJT-23-272
N-MNT-23-273
N-MNT-23-274
N-OET-23-275
N-OET-23-276
N-AEC-II-23-277
N-SEC-I-23-278
N-MJP-23-279
N-MNP-23-280
N-OEP-23-281

BCA I (Sem I)

Subject Code: N-MJT-23-171 Programming in C part-I

Credits:02 **Total Lectures:30**

Course Objectives:

1) To provide problem solving techniques.
2) To gain the basic terms used in C programming.
3) To know program writing skills

Module	Descriptions	Teaching Hrs.
I	**Introduction to C :** ALGORITHM, advantages and disadvantages FLOWCHARTS, Character set, Identifiers: variables, constants, keywords, Tokens, Data types.	**7.5**
II	**Operators:** Arithmetic, relational, logical, assignment, bitwise, increment/decrement, Comments-types of comments, Header Files (conio, stdio, string, math). Structure of C Program, Input and Output Functions	**7.5**
III	**Control Structures:** Conditional statements: if, If-else nested if-else, switch statement. Loops: while, for, do...While loop, Unconditional statements: Break, continue, exit, goto statements.	**7.5**
IV	**Arrays and Strings:** Arrays- Meaning and definition, Declaration, Initialization and types of arrays (single and multidimensional arrays). **Strings**: Meaning and definition, Declaration, Initialization String functions strlen(), strrev(), strlwr(), strupr(), strcat(), strcmp() , strcpy().	**7.5**

Course Outcomes:

1) Understand the problem solving techniques.
2) Develop algorithm and flowcharts for different problems.
3) Design programs using control statements.
4) Handle multi-dimensional array.

Books Recommended:

1) Computer fundamentals by Rajaraman
2) Computer fundamentals by P.K.Sinhaand PritiSinha
3) Computer fundamentals, architecture and organisation by B. Ram
4) Computer Today - Basandara

Subject Code: N-MJT-23-172 Web Technologies

Credits:02 **Total Lectures:30**

Course Objective:

1) To comprehend the basics of the internet and web terminologies.
2) To construct basic websites using HTML and Cascading Style Sheets

Unit No.	Descriptions	No. of Periods
I	**Introduction to HTML-5:** What is HTML-5 , Basic Tags, Structure, Layout, Web Development Process Overview of HTML Tags, Formatting Tags, Headings(H1-H6), Tags and Attributes, Paragraph Tag, FONT Tag,	**7.5**
II	**List Tags:** Ordered and Unordered Tags, Hyperlink, <HR> <Marquee> Tags, Image <img> Tag with all attributes, Image and Image map. <TABLE>.. </TABLE> tag with all attributes. .<FORM> tag,Examples and case studies based on all tags.	**7.5**
III	**Basic of CSS** Introduction to CSS, CSS Basics, Syntax / Rule of CSS , Selectors, properties and values, Applying CSS to HTML tags, Types : Internal, Inline, External CSS with Properties	**7.5**
IV	**CSS – Page Layout** Case Study: Select any topic of your interest and Design Project using above technologies which suit for Desktop and Laptop computer screen only.	**7.5**

Course Outcomes

1. Understand the basic working of Internet and its main services.
2. Create web pages using HTML.
3. Applying CSS styles in web page development.
4. Utilize theoretical skills and practical experience of web design.

Books Recommended:

1. Internet 6-in-1 by Kraynak and Habraken, Prentice Hall of India Pvt. Ltd., New Delhi
2. Internet for Everyone by Alexis Leon and Mathews Leon; Vikas Publishing House Pvt. Ltd., New Delhi.
3. Josh Hill, HTML5 and CSS3 in Simple Steps, 2011, Pearson.
4. Joel Sklar, Principle of Web Design, 2014, 5th Edition, Cengage Learning.
5. Alexis Goldstein, Louis Lazaris, Estelle Way, HTML5 and CSS3 for the Real World, 2015, SitePoint

Subject Code: N-MNT-23-173 Financial Accounting with Tally-I

Credits:02 **Total Lectures:30**

Course Objectives:-

1) Student should get knowledge about accounting.
2) Student learn the Different accounting terminology.

Unit No.	Descriptions	No. of Periods
I	**Introduction to Financial Accounting** Meaning and Definition of Financial Accounting, Objectives of Accounting, Various users of Accounting Information.	**7.5**
II	**Accounting Terminologies**, Accounting Concepts and Conventions, Double entry system, Types of Accounts and Golden rules of accounting. Books of Prime Entry, Subsidiary Books and Ledger Creation.	**7.5**
III	**Preparation of Financial Statements** Trial Balance – Meaning, Definition, purpose and features, preparation of Trial Balance	**7.5**
IV	**Final Accounts** – Introduction, Objectives of Final Accounts, Adjustments before Preparing Final Accounts, Preparation of Trading Account, Profit and Loss Account, Balance Sheet.	**7.5**

Course Outcomes:

- Use basic accounting terminology, procedures and systems of maintaining accounting records.
- Understand financial statements.
  Learn to create company, enter accounting voucher entries and also print financial statements etc. in tally.
- Demonstrate various reports in tally.

Books Recommended:

1. Advanced Accountancy - Shukla, Grewal and Gupta
2. Advanced Accountancy - Jain and Narang
3. Advanced Accountancy - Maheshwari
4. Advanced Accountancy - L.B. Singh & V. P. Singh
5. Computerized Financial Accounting Using Tally – Rajan Chouga

Subject Code: N-MNT-23-174 Principles of Management-I

Credits:02 **Total Lectures:30**

Course Objectives:-

1. To gain understanding of the function and responsibility of managers.
2. To provide them tools and techniques to be used in the performance of the managerial job.

Unit No.	Descriptions	No. of Periods
I	**Introduction to Management:** Definition of Management, nature and importance of management, Functions of Management, Levels of management,	**7.5**
II	Role of Manager in Organization, Contribution of F.W. Taylor, Henry Fayol and Max Weber, **Peter Drucker to management theory**.	**7.5**
III	**Planning, Organizing and Staffing:** Planning: Meaning, Definition & Nature, Steps in Planning Organizing: Meaning, Definition & Classification.	**7.5**
IV	(Formal & Informal organization, Virtual organization.), **Staffing: Meaning Definition & Functions.**	**7.5**

Course Outcomes

1. Understand the influence of historical forces on current practice of management.
2. Utilize frameworks in the functions of management.
3. Understand leadership styles to anticipate the consequences of each leadership style
4. Identify and apply appropriate management techniques for organizations; and understand social responsibility involved in business situations.

Books Recommended:

1. Vaishali Sheth, Principles of Management.
2. P. C. Tripathi, Principles of Management.
3. Koontz. H, Essentials of Management.
4. Pardesi P.C, Principles & Practices of Management.
5. Prasad L.M, Principles & Practices of Management.
6. Shejwalkar P.C, Principles & Practices of Management.
7. Geeage Terry, Principles & Practices of Management.
8. Tripathis C. Reddy, Principles & Practices of Management. Stepham P. Robbins, Fundamentals of Management.
9. Journal of Managemen

Subject Code: N-OET-23-175 Mathematics-I (Foundation of Mathematics)

Credits:02 **Total Lectures:30**

Course Objectives:-

Module	Content	Teaching Hrs.
I	**Sets** 1.1 Meaning of Set. 1.2 Method of describing of a set. 1.2.1 Tabular form 1.2.2 Set-builder form 1.3 Types of set 1.3.1 Finite set, Infinite set, empty set, Subset, Universal set 1.3.2 Equal set, Disjoint set, and Complementary set. 1.4 Operation on sets 1.4.1 Union of sets 1.4.2 Intersection of sets 1.4.3 Difference of a sets. 1.5 De Morgan's laws 1.6 Venn Diagram. 1.7 Cartesian product of two sets. 1.8 Algebra of sets 1.9 Duality. 1.10 Computer Representation of sets and its operations. 1.11 Examples based on above	8
II	**Counting Principle** 2.1 Counting : Addition & Multiplication principle, Permutation And Combination 2.2 Cardinality of finite set 2.3 Cardinality of union of sets (Addition principle) 2.4 Principle of inclusion & exclusion, examples	8
III	**Logic-I** 3.1 Introduction 3.2 Meaning of Statement (Proposition). 3.3 Simple and compound Statements. 3.4 Truth values of a statement. 3.5 Laws of excluded middle. 3.6 Logical Operations: Negation, Conjucation, Contingency, Implication, Double Implication. 3.7 Equivalence of Logical Statements. 3.8 Truth Tables and construction of truth tables. 3.9 Converse, Inverse and Contra positive.	8
IV	**Logic-II** 4.1 Statements forms: Tautology, Contradiction, Contingency. 4.2 Duality, Laws of logic: Idempotent laws, Commutative laws, Associative laws, Identity laws, Involution laws, Distributive Laws, Complement laws, De Morgan's laws. 4.3 Argument: Valid and invalid arguments. 4.4 Examples based on above	6

Course Outcomes:

On completion of the course, the students will be able to:

CO1: Understand the basic concepts of set and perform the operation of union, intersection, complement.

CO2: Apply basic counting techniques of combinatorial problems.

CO3: Have substantial experience to comprehend formal logic.

CO4: The formulation of general methods for reasoning so that statements can be proven correct or incorrect in a formal way.

Recommended Books:

- Discrete Mathematics and structures by Satinder Bal Gupta, University science Press

Reference books:

- Fundamental Approach to Discrete mathematics by D.P.Acharjya, sreekumar, New Age
- Discrete Mathematics by K D Joshi

Subject Code: N-OET-23-176 Mathematics-II (Computer Mathematics)

Credits:02 **Total Lectures:30**

Course Objectives:-

Module	Content	Teaching Hrs.
I	**Matrices** 1.1 Meaning of Matrix, Order of Matrix. 1.2 Types of matrices 1.2.1 Row matrix, Column matrix, Null matrix, Unit matrix 1.2.2 Square matrix, Diagonal matrix, Scalar matrix, 1.2.3 Symmetric matrix, Skew-symmetric matrix 1.2.4 Transpose of matrix, 1.3 Singular and Non-Singular Matrices 1.4 Algebra of matrices 1.4.1 Equality of matrices 1.4.2 Scalar Multiplication of matrix 1.4.3 Addition of matrices, Subtraction of matrices 1.4.4 Multiplication of matrices	8
II	**Determinant and inverse of a matrix** 2.1Definition of Determinants of order 2^{nd} and 3^{rd} and their Examples 2.2 Elementary Row and Column Transformation 2.3 Inverse of matrix (Using Elementary Transformations) 2.4 Examples based on above.	8
III	**Graph theory** 3.1 Introduction of Graph 3.2 Kinds of Graph: Simple,Multi and Pseudo Graph 3.3Degree of vertex, Isolated Vertex 3.4 Types of Graph:, Weighted of Graph, Regular, Bi-Partite, Complete Bipartite, Diagraph 3.5 Matrix representation of graphs : Adjacency matrix and incidence matrix 3.6 Operations on graphs: union, intersection and ring sum of two graphs	8
IV	**Connected Graph** 4.1 Definitions: walk, trail, tour, path and circuit 4.2 Definitions of connected, disconnected graphs 4.3 Definition of tree and examples 4.4 Elementary results on tree graph(without proof)	6

Course Outcomes:

On completion of the course, the students will be able to:

CO1: Learn about concept of matrices.

CO2: Define determinants and understand their relation to matrices.

CO3: Understand basic concept of graph.

CO4: Apply principles and concept of graph theory in practical situations.

Recommended Books:

- Discrete Mathematics structures by Kolman, Busby, Ross, Pearson Education Asia

Reference books:

- Matrices by Shanti Narayan S Chand and Co. New Delhi
- Discrete Mathematics by Schaum Series.

Subject Code: N-IKS-23-178 History of Computers in India

Credits:02 **Total Lectures:30**

Course Objectives: Student will be able to:

1) understand design for a steam-powered, mechanical computer
2) learn why digital computing replaced analog methods in the 1940s and 1950s
3) Study the Evolution of Indian programming languages
4) Identify the story behind the Modern Computing

Credits=2	SEMESTER-I History of Computers in India	No. of hours per unit/credits
Unit I	**Pre-Independence Era of Computers**	7
	Introduction: Computing in the Pre-industrial World, Establishment of the Tata Institute of Fundamental Research, Analog Computing in the 19th and early 20th, Introduction of electronic computers in India, Information Technology before 1945	
Unit II	**Early Computing Initiatives**	7
	Development of the first indigenous electronic computer: HEC-2M, Role of F.C. Kohli in setting up the first computer manufacturing company in India, Computers and Culture in the 1960s, Early Computer Languages and Software	
Unit III	**Era of Mainframes and Minicomputers**	8
	Introduction of mainframe and minicomputer technologies in India, Role of the Department of Electronics (DoE) in promoting computerization, Evolution of Indian programming languages (FORTRAN, COBOL).	
Unit IV	**Modern Computing**	8
	Emergence of Indian IT companies and software exports, Role of NRIs in the growth of the Indian IT industry, Internet and Digital Revolution, Mobile computing and smartphone revolution in India, Artificial Intelligence (AI) and Machine Learning (ML) in Indian industries.	

Course Outcomes: - Student should be able to …

1) design for a steam-powered, mechanical computer
2) evaluate digital computing replaced Analog methods in the 1940s and 1950s
3) gain the knowledge about Evolution of Indian programming languages
4) evaluate the story behind the Modern Computing

Required books:

- Martin Campbell-Kelly and William Aspray, Computer: A History of the Information Machine (Basic Books, 2004). Please purchase the second edition (2004), not the first edition (1996)
- Fred Turner, From Counterculture to Cyberculture (University of Chicago Press, 2006)
- Martin Campbell-Kelly, From Airline Reservations to Sonic the Hedgehog: A History of the Software Industry (MIT Press, 2003) Janet Abbate, Inventing the Internet (MITPress, 1999)

N-MJP-23-179 Lab Course I : Based on C Programming Part-I

Credits: 02 **Total Lectures:15**

1 Write a program to addition of two numbers.

2 Write a program to get number from user and display its square and cube.

3 Write a program to find the sum of first n natural numbers.

4 Write a program to display whether a given number is even or odd.

5 Write a program to find greater number from given two/three number.

6 Write a program to display table of given number (by methods sum & multiplication).

7 Write a program to calculate given power of given number. (Calculate raise to)

8 Write a program to calculate factorial of given number.

9 Write a program to calculate sum of digits of a given number.

10 Write a program to reverse the given number and find whether it is palindrome or not.

11 Write a program to find whether a given number is prime number or not.

12 Write a program to add two Matrices; Use two Dimensional arrays

13 Write a program to find the product of given two matrices.

14 Write a program to accept the range and generate Fibonacci Series.

15 Write a program to find given number is Armstrong or not

N-MNP-23-180 Lab Course II: Based on Web Technology

Credits: 02 **Total Lectures:15**

1 Create HTML page to add basic tags

2 Write an HTML code to illustrate the usage of the following: • Ordered List • Unordered List • Definition List.

3 Write HTML page to add image and 2 paragraph,and insert a table.

4 Use tag and Div tag and design page

5 Write an HTML code to demonstrate the usage of inline CSS. C3

6 Write an HTML code to demonstrate the usage of internal CSS.

7 Write an HTML code to demonstrate the usage of external CSS.

8 Design a simple website using Header, Menubar , content, footer on any topic Home page having three links: About Us, Our Services and Contact Us.

N-OEP-23-181 Lab Course III : Based on Mathematics

Credits: 02 **Total Lectures:15**

Practical No.	Title of Practical
1	Operation on sets
2	Permutation and combination
3	Principle of inclusion & exclusion, examples
4	Equivalence of Logical statements using Truth table.
5	Validity of arguments
6	Algebra of Matrices
7	Determinants of order 2nd and 3rd and their Examples
8	Inverse of matrix by using elementary transformation
9	Matrix representation of graphs: Adjacency matrix and incidence matrix
10	Operations on graphs: union, intersection and ring sum of two graphs

BCA-I Sem-II

Subject Code: N-MJT-23-271 Programming in C Part –II

Credits:02 **Total Lectures:30**

Course Objectives

1. To provide knowledge of user defined function.
2. To gain skills of program writing using advance C concepts.

Unit No.	Descriptions	No. of Periods
I	User defined functions and pointer: form of a c function, return value and their type, calling a function, category of a functions, Actual and Formal arguments, functions with array.	7.5
II	Pointers: Understanding pointers, accessing address of variable, declaration and initializing pointers, pointer expression, pointer to array and functions, function call by value and by reference. Dynamic memory allocation-malloc(),calloc(),realloc().	7.5
III	Structures and Unions: Defining and processing a structure, array of structure, array within structure, structure within structure, Defining and processing a Unions. Difference between structure and union.	7.5
IV	File Handling: Defining and opening a file, File opening mode- open, modify, write, Closing a file, Functions:fopen(), fclose(), fscanf(), Input/Output Operations on file: getc(), putc(), getw(), putw(), fprintf(), fscanf(), ftell(), fseek(), rewind().	7.5

Course Outcomes:

1**.** Understand the different techniques used in C programming.
2. Write programs using advance C concepts.

Books Recommended:

1. Internet 6-in-1 by Kraynak and Habraken, Prentice Hall of India Pvt. Ltd., New Delhi
2. Internet for Everyone by Alexis Leon and Mathews Leon; Vikas Publishing House Pvt. Ltd., New Delhi.
3. Josh Hill, HTML5 and CSS3 in Simple Steps, 2011, Pearson.
4. Joel Sklar, Principle of Web Design, 2014, 5th Edition, Cengage Learning.
5. Rference Books 1. Alexis Goldstein, Louis Lazaris, Estelle Way, HTML5 and CSS3 for the Real World, 2015, SitePoint

Subject Code: N-MJT-23-272 Advanced Web Technology

Credits: 02 **Total Lectures: 30**

Course Objectives:

1. To design and implement website and to know the latest technical know-how's.
2. Develop basic programming skills using Javascript.
3. Develop server side scripting using PHP.

Unit No.	Descriptions	No. of Periods
I	Introduction to Javascript: Overview, Client-Side JavaScript, Advantages of JavaScript, Limitations of JavaScript, Syntax:- First JavaScript Code, Java Script	7.5
II	Java Script: Variables, Data types, Variables, Operators:- Reserve words, Control statements, Loops, Function:- Function Definition.	7.5
III	Eevnts in JavaScript &DOM: What is an Event?, onclick Event Type, onsubmit Event Type, onmouseover and onmouseout, Standard Events, Dialog Box:- Alert Dialog Box, Confirmation Dialog Box, Prompt Dialog Box.	7.5
IV	JAVA Script Objects:- Object Properties, Object Methods, User-Defined Objects, Defining Methods for an Object DOM (Document Object Model), Array, String, Form Validation:- Basic Form Validation.	7.5

Course Outcomes:

1. To analyze a web page and identify its eements
2. Integrate java and server side scripting languages to develop web applications.

Books Recommended:

1. Web Technologies by Black Book
2. HTML,CSS & JavaScript by SAMS-Pearson
3. PHP for Absolute Beginners – Jason Lengstort
4. PHP and MySQL Web Development: – Lokesh Gupta
5.Web Development Using PHP:- Rjinder Kumar,Gunjan Gupta.

Subject Code: N-MNT-23-273 Financial Accounting with Tally-II

Credits: 02 **Total Lectures:30**

Course Objectives:

1. To find out arithmetic accuracy of balance sheet.
2. To helps students to work with well known accounting software i.e. Tally.
3. To create company, enter accounting voucher entries including advance voucher entries, do reconcile bank statement.

Unit No.	Descriptions	No. of Periods
I	**Introduction to Tally** Tally History and Journey, Difference between manual accounting v/s computerized accounting, Tally features.	7.5
II	**Tally Fundamentals** - Company Data – Gateway of Tally, Creating and Maintaining a Company, Loading a Company, F11: Company Features, F12: Configuration	7.5
III	**Voucher Entry, Inventory** - Stock Groups, Stock Categories, Stock Items, Units of Measurement, Bills of Materials, Batches & Expiry Dates.	7.5
IV	**Report** - Profit and Loss A/C, Balance Sheet, Interest Calculations, Statutory Master-VAT, Inventory report, Day Book, Use of Reports in Business.	7.5

Course Outcomes:

1. Use basic accounting terminology, procedures and systems of maintaining accounting records.
2. Understand financial statements.
3. Learn to create company, enter accounting voucher entries and also print
4. financial statements etc. in tally.
5. Demonstrate various reports in tally.

Books Recommended:

1. Advance Accountancy: M.C. Shukla & T.S. Grewal
2. Advance Accountancy: S.C. Jain & K.L. Narang
3. Advance Accountancy: S.M. Shukla
4. Advance Accountancy: Maheshwari
5. Advance Accountancy: R.L.Gupta

Subject Code: N-MNT-23-274 Principles of Management Part-II

Credits: 02 **Total Lectures: 30**

Course Objectives:

1. To gain understanding of the function and responsibility of managers.
2. To provide them tools and techniques to be used in the performance of the managerial job.

Unit No.	Descriptions	No. of Periods
I	**Directing :**Leadership: Meaning & Definition, Theories of Leadership, Qualities of Leadership & Types of Leaders Motivation: Meaning, definition & importance of motivation	7.5
II	Theories of motivation –Maslow's Hierarchy Theory, Herzberg's theory & Theory X & Y. Communication- Types, Problems	7.5
III	Controlling and Trends in Management Management Information System: Meaning, Definition & Types of Information Management of Change: Meaning Definition & Forms or Types of changes	7.5
IV	Controlling :- Meaning, Importance, Steps in Control Process, Types of control- Feed forward control, Concurrent control & feedback control, Techniques of control.	7.5

Course Outcomes:

1. Understand the influence of historical forces on current practice of management.
2. Utilize frameworks in the functions of management.
3. Understand leadership styles to anticipate the consequences of each leadership style
4. Identify and apply appropriate management techniques for organizations and understand social responsibility involved in business situations.

Books Recommended:

1. Vaishali Sheth, Principles of Management.
2. P. C. Tripathi, Principles of Management.
3. Koontz. H, Essentials of Management.
4. Pardesi P.C, Principles & Practices of Management.
5. Prasad L.M, Principles & Practices of Management.
6. Shejwalkar P.C, Principles & Practices of Management.
7. Geeage Terry, Principles & Practices of Management.
8. Tripathis C. Reddy, Principles & Practices of Management. Stepham P. Robbins, Fundamentals of Management.
9. Journal of Managemen

Subject Code: N-OET-23-275 Statistics-I (Elements of Statistics –I)

Credits: 02 **Total Lectures: 30**

Course Objectives:

Unit No.	Descriptions	No. of Periods
I	**Introduction to Statistics** 1.1 Meaning and Scope of Statistics, Primary and Secondary data. 1.2 Frequency, Frequency distribution, Qualitative and quantitative data, Discrete and Continuous variables. 1.3 Representation of frequency distribution by graphs: Histogram, Frequency polygon, Frequency curve, Ogive curve. Representation of Statistical data by Bar diagram and Pie chart. 1.4 Numerical examples.	7
II	**Measures of Central Tendency** 2.1 Measures of central Tendency (Averages) 2.2 Meaning of averages, Requirements of good average. 2.3 Definitions of Arithmetic mean (A.M.), Combined mean, Median, Quartiles, Mode, Relation between mean, median and mode. 2.4 Merits and Demerits of Mean, Median and Mode. 2.5 Determination of Median and Mode by Graph. 2.6 Numerical examples	8
III	**Measures of Dispersion (Variability)** 3.1 Meaning of Variability, Absolute and Relative measures of Dispersion. 3.2 Definitions of Range, Q.D., S.D. and Variance, Combined variance and their relative measures, Coefficient of Variation (C.V.). 3.3 Numerical examples .	7
IV	**Analysis of Bivariate data** 4.1 Correlation: Concept of Correlation, Types of correlation (Positive, Negative, Linear and Non-linear), Methods of studying correlation: Scatter diagram, Karl Pearson's Correlation Coefficient (r) and Spearman's Rank Correlation Coefficient (R). 4.2 Interpretation of r = + 1, r = -1, r = 0. 4.3 Regression: Concept of Regression, Definitions of regression coefficients and Equa of regression lines. Properties of regression coefficients (Statements only) 4.4 Numerical examples.	8

Course Outcomes :

After completion of this course student should be able to-

1) Demonstrate understanding of descriptive statistics by practical application of quantitative reasoning and data visualization
2) Explain various term used in Statistics.

3) Describe the Measures of Central Tendency and Dispersion
4) Understand Analysis of Bivariate data (Correlation and Regression)

Reference Books:-

1) Statistical Methods, by Dr. S. P. Gupta, Sultan Chand and Sons Publication.
2) Introduction to Statistics, by C.B. Gupta.
3) Mathematical Statistics, by H.C. Saxena and J.N. Kapur.
4) Business Statistics, by S.S. Desai.
5) Business Statistics, by G.V. Kumbhojkar.
6) Fundamentals of Statistics, by S.C.Gupta.
7) Business Statistics-SIM- Shivaji University, Kolhapur.

Subject Code: N-OET-23-276 Statistics-II (Elements of Statistics –II)

Credits: 02 **Total Lectures: 30**

Course Objectives:

Unit No.	Descriptions	No. of Periods
I	**Probability** 1.1 Definitions: sample space (finite and countably infinite), events, types of events. 1.2 Classical (apriori) definition of probability of an event, simple examples of probability of an events. 1.3 Addition and Multiplication laws of Probability (without proof). 1.4 Examples without use of permutations and computations.	7
II	**Conditional probability and independence of events** 2.1 Definition of conditional probability of an event. 2.2 Partition of sample space, Baye's theorem (only statement). 2.3 Concept of independence of two events. 2.4 Proof of the result that if A and B are independent events then i) A and B', ii) A' and B, iii) A' and B' are also independent. 2.5 Pairwise and complete independence of three events. 2.6 Elementary examples.	8
III	**Sampling Techniques and Time Series :** **Sampling Techniques** 3.1 Definitions of Sample, Population, Sampling, Sampling Method and Census method. Advantages of sampling method over census method. 3.2 Types of sampling: Simple Random Sampling (with and without replacement), Stratified Random Sampling, Merits and Demerits of S.R.S. and Stratified Sampling. **Time Series** 3.3. Definition and uses of Time series 3.4 Meaning and components of Time Series 3.5 Methods of determination of trend by (I) Method of Moving Averages. (II) Method of Progressive Averages. 3.6 Numerical examples on 3.5	9
IV	**Index Numbers** 4.1 Need and meaning of Index Numbers, 4.2 Problems involved in Construction of index numbers 4.3 Price, Quantity and Value based index numbers, 4.4 Laspeyre's, Paasche's and Fisher's index numbers, 4.5 Numerical examples.	6

Course Outcomes :

After completion of this course student should be able to-

1) Explain various term used in Statistics.
2) Describe the concept of probability
3) Elaborate Sampling Techniques and Time Series Analysis.
4) Understanding concept of time series.

Note: Use of Nonprogrammable calculator is allowed.

Reference Books:

1) Mathematical Statistics by H.C. Saxena and J. N. Kapur
2) Business Statistics by G. V. Kumbhojkar
3) Fundamentals of Statistics by S. C. Gupta
4) Business Statistics by S. S. Desai
5) Business Statistics - SIM-Shivaji University, Kolhapur

Skill Enhancement Course

Course Name: N-SEC-I-23-278 SEC-I PHP-I

Credits: 2 **Total Lectures:30**

Course Objectives:

1. PHP Basic syntax for variable types and calculations.
2. Creating conditional structures
3. Storing data in arrays
4. Using PHP built-in functions and creating custom functions
5. Understanding POST and GET in form submission.

Unit No.	Descriptions	No. of Periods
I	INTRODUCTION TO PHP: PHP Basic syntax, PHP data Types, PHP Variables, PHP Constants, PHP Expressions, PHP Operators, PHP Control Structures, PHP Loops. PHP Enumerated Arrays, PHP Associative Arrays, Array Iteration, PHP Multi-Dimensional Arrays, Array Functions.	15
II	PHP FUNCTIONS AND FORMS: PHP Functions, Syntax, Arguments, Variables, References, Pass by Value & Pass by references, Return Values, Variable Scope, PHP include(), PHP require(),PHP Form handling, PHP GET, PHP POST, PHP Form Validation, PHP Form Sanitization.	15

Course Outcomes:

1**.** Implement basic functionsof PHP.

2. Design a responsive web site using PHP, HTML and CSS3

N-MJP-23-279 Lab Course IV: Based on C-II & Adv.Web Technology

Credits: 02 **Total Lectures:15**

Sr. No.	Description
1.	Write the programs to understand categories of function. (Minimum three programs)
2.	Write a program to demonstrate actual arguments and formal arguments.
3.	Write a program to calculate mean two numbers which are given at command line.
4.	Write a programs based on Pointer
5.	Write a program which swap two number using a) call by value and b) call by reference.
6.	Write programs which create student structure which accept stud rollno, student name, address, subject marks, and percentage and display same on screen.
7.	Write a program to calculate factorial of given number by using user defined function.
8.	Create a structure employee (id, name, salary). Accept details of n employees and write a menu driven program to perform the following operations. Write separate functions for the different options. i) Search by name ii) Search by id iii)Display all
9.	Write a program based on union.
10.	Write a program to count the no. of words in a given text file.
11.	Write a program to remove blank lines from a file.
12.	Write a program to copy content of one file into another file.

List of Practical's Advance Web Technology

Sr. No.	Description
1.	Write a Javascript code to welcome user.
2.	Write a Javascript code to show arithmetic calculation with user input.
3.	Write a Javascript code to check given number is even or odd.
4.	Write a Javascript code to calculate factorial of given number.
5.	Write a Javascript code to calculate Length of string.
6.	Write a Event Driven Javascript code to display 7 different colours.
7.	Write a Event Driven Javascript code to convert the given string into upper case and lowercase.
8.	Write a Event Driven Javascript code to accept a string from user and dsiplay number of Vowels.

N-OEP-23-281 Lab Course VI: Based on Statistics

Credits: 02 **Total Lectures:15**

Statistics Practical: List of Statistics experiments to be performed

1) Construction of frequency distributions
2) Graphical Representation.
3) Measures of Central tendency (Ungrouped data)
4) Measures of Central tendency (Grouped data)
5) Measures of dispersion (Ungrouped data).
6) Measures of dispersion (Grouped data).
7) Computation of correlation coefficient and scatter diagram.
8) Fitting of lines of regression (Ungrouped data).
9) Time series.
10) Index Number.

Note:

i. Calculations using statistical formulae should be done by scientific calculator and verify by using MS-EXCEL.
ii. Computer printouts should be attached to the journal if necessary.
iii. Student must produce the laboratory journal along with the completion certificate signed by Head of Department, at the time of practical examination.

QUESTION PAPER PATTERN FOR BCA-I SEMESTE-I and II

Duration:3 Hours **Total Marks –50**

Q1.Multiple choice question	**5mks**
Q2.Fill in the blanks	**5mks**
Q3.Brief Questions (solve any 2)	**10*2**
Q4.Write short notes (any 2)	**5*2**