VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS)

STATEMENT OF SYLLABUS COVERED

Year- 2022-23

Term- 1st Term

Name of teacher- Mr. Vijay Bapuso Pujari

Department-BCA

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A	Programming in	Module I	Module I		
I	C (part-I)	Problem Solving Methods: Problem definition,	Problem Solving Methods: Problem		
Sem-I		Steps in Problem Solving (Define Problem,	definition, Steps in Problem Solving (Define		
		Analyze Problem, Explore Solution).	1		
		ALGORITHM: Definition, notations,	ALGORITHM: Definition, notations,		
		characteristics of algorithm, examples on	characteristics of algorithm, examples on	******	
		algorithm. FLOWCHARTS: Definition, features	algorithm. FLOWCHARTS: Definition,		
		of flowcharts, symbols, examples, coding,	features of flowcharts, symbols, examples,		
		running, debugging-types of errors (syntax,	coding, running, debugging-types of errors	:-	
		logical, runtime errors.)	(syntax, logical, runtime errors.)		
		Module II	Module II		
		Introduction to c:History, features of c	Introduction to c: History, features of c		
		language, Character set, Identifiers:	language, Character set, Identifiers: variables,		
		variables, constants, symbolic constants,	constants, symbolic constants, keywords. Data		
		keywords. Data types, Operators:	types, Operators: Arithmetic, relational, logical,		
		Arithmetic, relational, logical, assignment,	assignment, bitwise, increment/decrement and		
		bitwise, increment/decrement and special	special operators, Concept of operator		
		operators, Concept of operator Precedence	Precedence & Associatively. Comments-types		
	-	& Associatively. Comments-types of	of comments, Use of Comments, Header Files		
		comments, Use of Comments, Header	(conio,stdio,string,math). Structure of C		
		Files (conio, stdio, string, math). Structure	Program, Input and Output Functions.		
		of C Program, Input and Output unctions.			
		Module III	Module III		
		Control Structures: Conditional statements: if,	Control Structures: Conditional statements:		
	COLLEGE	If-else nested if-else, switch statement. Loops:	if, If-else nested if-else, switch statement.		
	COLLEGE	while, for, doWhile loop, Unconditional	Loops: while, for, doWhile loop,	*****	
	ESTD E	statements: Break, continue, exit,	Unconditional statements: Break, continue,		
	JUNE JUNE 1964	gotostatements.	exit, goto statements.	vi.	

		Module IV	Module IV		
		Arrays and Strings: Arrays- Meaning and			
		definition, Declaration, Initialization and types	definition, Declaration, Initialization and types		
8		of arrays (single and multidimensional arrays).	of arrays (single and multidimensional arrays).		
		Strings: Meaning and definition, Declaration,	Strings: Meaning and definition, Declaration,	•••••	
		Initialization String functions strlen(), strrev(),	Initialization String functions strlen(), strrev(),		
		strlwr(), strupr(), strcat(), strcmp(), strcpy().	strlwr(), strupr(), strcat(), strcmp(), strcpy().		
		Handling of character array.OS.	Handling of character array.		
B.C.A	Visual	Module: Introduction	Module:Introduction		
III	Programming	1.1 overview, Architecture, Features of .NET,	1.1 overview, Architecture, Features of .NET,		
Sem-		1.2 Meta data, CLR, Managed and unmanaged	1.2 Meta data, CLR, Managed and unmanaged		
$ \mathbf{v} $		code	code		
		1.3 CTS, CLS, .NET base classes	1.3 CTS, CLS, .NET base classes		
		1.4 Introduction to Visual Studio .NET IDE	1.4 Introduction to Visual Studio .NET IDE		
		1.5 Types of JIT compiler	1.5 Types of JIT compiler		
		Module II Introduction To C# 12	Module II Introduction To C# 12		
		2.1 Introduction to C#, Entry point method,	2.1 Introduction to C#, Entry point method,		
		command line arguments	command line arguments		
		2.2 Compiling and building projects, Compiling	2.2 Compiling and building projects,		
		a C# program using command	Compiling a C# program using command		
		line utility, CSC.EXE, Different valid forms of	line utility, CSC.EXE, Different valid forms of		
		main.	main.		
		2.3 Global stack and heap memory, reference	2.3 Global stack and heap memory, reference	•••••	
	Y	type and data type, casting implicit and explicit	type and data type, casting implicit and explicit		
		2.4 Boxing and unboxing, pass by value and	2.4 Boxing and unboxing, pass by value and		
		pass by reference and outparameters	pass by reference and outparameters		
		2.5 Partial class, DLL, Difference between DLL	2.5 Partial class, DLL, Difference between		
		and EXE	DLL and EXE		
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Module-III: Introduction to Web	Module-III: Introduction to Web		2.63
Programming	Programming		
3.1 Understanding role of WEB server and	3.1 Understanding role of WEB server and		
WEB browser, HTTP request and	WEB browser, HTTP request and		
response structure.	response structure.		
3.2 Introduction to ASP, Types of path, FORM	3.2 Introduction to ASP, Types of path, FORM		
tag	tag		
3.3 Types of server controls	3.3 Types of server controls		
3.4 Validation controls-Base validator, compare	3.4 Validation controls-Base validator,		
validator, range validator,	compare validator, range validator,	*****	
grouping control validator	grouping control validator		
3.5 Web forms life cycle	3.5 Web forms life cycle		
3.6 Event handling in WEB forms,	3.6 Event handling in WEB forms,		
response.redirect, server.response, cross page	response.redirect, server.response, cross page		
post back property of button	post back property of button		
3.7 ASP.NET state management	3.7 ASP.NET state management		
3.8 WEB.config, globalization and localization,	3.8 WEB.config, globalization and localization,		
AppDomain	AppDomain		
Module IV ADO .NET 12	Module ADO .NET 12		
4.1 Introduction to ADO.Net	4.1 Introduction to ADO.Net		
4.2 ADO.NET Architecture- Conncetion,	4.2 ADO.NET Architecture- Conncetion,		
command, dat reader, data adapter,	command, dat reader, data adapter,		
data set	data set	******	
4.3 Understanding connected layaer of	4.3 Understanding connected layaer of		
 ADO.NET and disconnected layer of	ADO.NET and disconnected layer of		
ADO.NET	ADO.NET4.9 Validation & Verification		

(Signature of the Head of Department)

MEAD
DEPARTMENT OF D. C. A.
VIVEKANAND COLFEGE, KOLHAPUR
(AUTONOMOUS)



VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

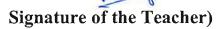
STATEMENT OF SYLLABUS COVERED

Year- 2022-23 Name of teacher- Ms. Vaishali D. Patil Term- Ist
Department- BCA

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A I Sem-I	Fiancial Accounting with Tally	Introduction to Financial Accounting Meaning and Definition of Financial Accounting, Objectives of Accounting, Various users of Accounting Information, 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.	Introduction to Financial Accounting Meaning and Definition of Financial Accounting, Objectives of Accounting, Various users of Accounting Information, 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.	· •••••	
	(0)	Preparation of Financial Statements Trial Balance – Meaning, Definition, purpose and features, preparation of Trial Balance. Final Accounts – Introduction, Objectives of Final Accounts, Adjustments before Preparing Final Accounts, Preparation of Trading Account, Profit and Loss Account, Balance Sheet.	Preparation of Financial Statements Trial Balance – Meaning, Definition, purpose and features, preparation of Trial Balance. Final Accounts – Introduction, Objectives of Final Accounts, Adjustments before Preparing Final Accounts, Preparation of Trading Account, Profit and Loss Account, Balance Sheet.		
N N		Introduction to Tally Tally History and Journey, Difference between manual accounting v/s computerized accounting, Tally features, Tally Fundamentals - Company Data - Gateway of Tally, Creating and Maintaining a Company, Loading a Company, F11: Company Features, F12: Configuration. Voucher Entry, Inventory - Stock Groups, Stock Categories, Stock Items, Units of Measurement, Bills of Materials, Batches & Expiry Dates.	Introduction to Tally Tally History and Journey, Difference between manual accounting v/s computerized accounting, Tally features, Tally Fundamentals - Company Data - Gateway of Tally, Creating and Maintaining a Company, Loading a Company, F11: Company Features, F12: Configuration. Voucher Entry, Inventory - Stock Groups, Stock Categories, Stock Items, Units of Measurement, Bills of Materials, Batches & Expiry Dates.	•••••	
	COLLEGE TIME KAMAN TO THE LANGE	Report: Profit and Loss A/C, Balance Sheet, Interest Calculations, Statutory Master-VAT, Inventory report, Day Book, Use of Reports in Business	Report: Profit and Loss A/C, Balance Sheet, Interest Calculations, Statutory Master-VAT, Inventory report, Day Book, Use of Reports in Business	ş	

B.C.A II Sem- III	Entrepreneurship Development	Entrepreneurship:- Concept, Classification – Functions, Qualities of successful Entrepreneurship, Concept of Entrepreneur and Intrapreenur. Entrepreneurship in modern Era.	Entrepreneurship:- Concept, Classification – Functions, Qualities of successful Entrepreneurship , Concept of Entrepreneur and Intrapreenur. Entrepreneurship in modern Era.		
		Entrepreneurship Development:- Concept, objectives, process, problems, measures in Entrepreneurship Development, Role of Entrepreneurship In Economic Development (Theories), Institutional support for Entrepreneurship Development - National Institute	Entrepreneurship Development:- Concept, objectives, process, problems, measures in Entrepreneurship Development, Role of Entrepreneurship In Economic Development (Theories), Institutional support for Entrepreneurship Development - National Institute		
		Project Management:- Company formation, forms of business organization project- classification of project, Stages of Project Management, Reasons for failure for, Project, Project for Retail stores, Hotel, Hospital, Dairy. (Practical: student should visit any firm and prepre project report)	Project Management:- Company formation, forms of business organization project- classification of project, Stages of Project Management, Reasons for failure for, Project, Project for Retail stores, Hotel, Hospital, Dairy. (Practical: student should visit any firm and prepre project report)	******	
		Successful Indian Entrepreneurs:- Ratan Tata, Azim Premji, Narayan Murthy, Anand Mahindra, Kumar Mangalam Birla, Nandan Nilekani.	Successful Indian Entrepreneurs:- Ratan Tata, Azim Premji, Narayan Murthy, Anand Mahindra, Kumar Mangalam Birla, Nandan Nilekani.	KERREE	
B.C.A III Sem- V	Cost Accounting	Introduction to cost Accounting: Concept of cost, costing, Cost Accounting and Cost Accountancy, Objectives, Advantages and Limitations of Cost Accounting, Difference between cost Accounting & Financial Accounting, CostUnit and cost centre. Elements of Cost, Preparation of cost sheet.	Introduction to cost Accounting: Concept of cost, costing, Cost Accounting and Cost Accountancy, Objectives, Advantages and Limitations of Cost Accounting, Difference between cost Accounting & Financial Accounting, CostUnit and cost centre. Elements of Cost, Preparation of cost sheet.	ş	
	ESTD JUNE 1964	Cost Accounting of Material, Labour and Overheads: Methods of pricing of material issues FIFO, LIFO, Simple Average, weighted Average. Methods of Wages-Time basis, Piece Basis, Labour Turn over(Theory) Classification, Allocation, Absorption and Apportionment of Overheads (Theory)	Cost Accounting of Material, Labour and Overheads: Methods of pricing of material issues FIFO, LIFO, Simple Average, weighted Average. Methods of Wages- Time basis, Piece Basis, Labour Turn over(Theory) Classification, Allocation, Absorption and Apportionment of Overheads (Theory)		
	JUNE 1964 - S	Methods of Costing - Process: Costing excluding calculation of Equivalent production, contract costing, service costing	Methods of Costing - Process: Costing excluding calculation of Equivalent production, contract costing, service costing		

(Transport Costing).	(Transport Costing).	=	,
Reconciliation of Cost and Financial Accounts:	Reconciliation of Cost and Financial Accounts:		
Reconciliation of Cost and Financial Accounts	Reconciliation of Cost and Financial Accounts		



HEAD
DEPARTMENT OF B. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(AUTONOMOUS)



(Signature of the Head of Department)

VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS) STATEMENT OF SYLLABUS COVERED

Year- 2022-23

Name of teacher- Mrs. Vaishali D. Patil

Term- IInd
Department- BCA

		vame of teacher- wits. Valshan D. 1 ath	Department-BCA		
Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Rema rk
B.C.A- I Sem-II	HRM	Introduction to HRM: Introduction, Concept, Definition, HRD, Functions of HRM, Organization of HR, Role HRM, Qualities of HR Manager, Limitations & challenges of HRM.	Introduction to HRM: Introduction, Concept, Definition, HRD, Functions of HRM, Organization of HR, Role HRM, Qualities of HR Manager, Limitations & challenges of HRM.		
		Human resource Planning & Development: Meaning and need of HRP, Process of HRP in I.T. Industry, Factors affecting HRP, Job Analysis, Job Description, Recruitment and Selection procedures in I.T. Industry. Training and Development methods followed in I.T. Industry.	Human resource Planning & Development: Meaning and need of HRP, Process of HRP in I.T. Industry, Factors affecting HRP, Job Analysis, Job Description, Recruitment and Selection procedures in I.T. Industry. Training and Development methods followed in I.T. Industry.		
	(#)	Employee Separation Employee Separation practices in I.T. industry, Voluntary Retirement Schemes, Resignation-Discharge- Dismissal-Suspension-Layoff, Exit interview.	Employee Separation Employee Separation practices in I.T. industry, Voluntary Retirement Schemes, Resignation-Discharge- Dismissal-Suspension-Layoff, Exit interview.	******	
		Compensation Management: Components of remuneration, factors effecting wage and salary levels, variable compensation, incentive schemes.	Compensation Management: Components of remuneration, factors effecting wage and salary levels, variable compensation, incentive schemes.		
B.C.A II Sem-IV	Principles of Marketing	Introduction: Meaning, & definition of Marketing, features of Marketing, Significance of marketing, core concepts of Marketing- Need, Want, Demand, Value, Satisfaction, exchange, transaction & relationship. Modern Marketing concept, holistic marketing & green marketing. Marketing in 21st Century- Challenges &	Introduction: Meaning, & definition of Marketing, features of Marketing, Significance of marketing, core concepts of Marketing- Need, Want, Demand, Value, Satisfaction, exchange, transaction & relationship. Modern Marketing concept, holistic marketing & green marketing. Marketing in 21st Century- Challenges &		14.1
UNEKANA	ESTD JUNE 1964	A) Distribution Marketing Management: Introduction, Need for Marketing Channels, Decision involved in setting up the channels, Channel Management strategy B) Consumer Behaviour: Meaning & significance of consumer behaviour, factors affecting consumer behaviour.	A) Distribution Marketing Management: Introduction, Need for Marketing Channels, Decision involved in setting up the channels, Channel Management strategy B) Consumer Behaviour: Meaning & significance of consumer behaviour, factors affecting consumer behaviour.	*****	
	Autonomous!	Environmental analysis and Marketing Mix: - Elements in Macro & Micro environment, Analysis of their impact on Marketing function of an organization Marketing	Environmental analysis and Marketing Mix: - Elements in Macro & Micro environment, Analysis of their impact on Marketing function of an organization Marketing	******	

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		Mix-meaning , definition, elements of marketing mix.	Mix-meaning , definition, elements of marketing mix.	>
		A) Marketing of Services- Meaning, Characteristics of	A) Marketing of Services- Meaning, Characteristics of	,
Ä.		services, problems in services Marketing, Outsourcing	services, problems in services Marketing, Outsourcing	
		of I.T. services. B)E- Marketing: Concept & techniques,	of I.T. services. B)E- Marketing: Concept & techniques,	
		significance of e-Marketing in 21st Century	significance of e-Marketing in 21st Century	
			The state of the s	
BCA III	Strategic	Introduction to Strategic Management	Introduction to Strategic Management	
Sem-VI	Manageme	Concept of Mission, Vision, Objectives, Concept of	Concept of Mission, Vision, Objectives, Concept of	
	nt	Strategy, Importance of Strategy, Levels of Strategy,	Strategy, Importance of Strategy, Levels of Strategy,	
		Strategic Management Process – Different Phases.	Strategic Management Process – Different Phases.	
		Environment Analysis	Environment Analysis	
		Concept and Characteristics of environment,	Concept and Characteristics of environment,	
		components of internal environment, SWOC,	components of internal environment, SWOC,	
		Components of external environment, PESTEL	Components of external environment, PESTEL	
		Framework – Porter's Five Forces	Framework – Porter's Five Forces	
		Strategies Types and Analysis	Strategies Types and Analysis	
		Corporate strategies: stability strategy, expansion	Corporate strategies: stability strategy, expansion	
		strategy, retrenchment strategyadv/disadv. Competitive	strategy, retrenchment strategyadv/disadv. Competitive	2.0202-202
		strategy: cost leadership, Differentiation and Focus	strategy: cost leadership, Differentiation and Focus	•••••
		Strategy – Types – adv/disadv.	Strategy – Types – adv/disadv.	
		BCG Matrix, TOWS Matrix, ANSOFF Matrix.	BCG Matrix, TOWS Matrix, ANSOFF Matrix.	
		Strategic Evaluation and Control	Strategic Evaluation and Control	
		Strategic evaluation: imp, problems -Benchmarking for	Strategic evaluation: imp, problems -Benchmarking for	
		strategy evaluation.	strategy evaluation.	
		Strategic Control: Types and techniques of strategic	Strategic Control: Types and techniques of strategic	20223000
		control, -operational control-managing strategic change-	control, -operational control-managing strategic change-	
		types, mechanism and process of	types, mechanism and process of	

(Signature of the Head of Department)

MEAD

DEPARTMENT OF 3, C. A.

VIVEKANAND COLLEGE, KOLMAPUR

(AUTONOMOUS)



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VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

STATEMENT OF SYLLABUS COVERED

Year- 2022-23 Name of teacher- Mrs. Megha Sagar Patil Term- Ist
Department- BCA

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A I Sem-I	Fundamental of Computers	Module I Introduction to computer: Computer Characteristics, Concept of Hardware, Software, Evolution of computer and Generations, Types of computer — Analog & Digital computers, Hybrid computers, General purpose & Special Purpose Computer, Limitations of Computer, Applications of Computer in Various fields. Structure and Working of Computer: Functional Block diagram of computer. CPU, ALU, Memory Unit, Bus structure of Digital Computer	Introduction to computer: Computer Characteristics, Concept of Hardware, Software, Evolution of computer and Generations, Types of computer — Analog & Digital computers, Hybrid computers, General purpose & Special Purpose Computer, Limitations of Computer, Applications of Computer in Various fields. Structure and Working of Computer: Functional Block diagram of computer. CPU, ALU, Memory Unit, Bus structure of Digital Computer - Address, data		
		Address, data and control bus. Module II Input /Output Devices: Input device – Keyboard, Mouse, Scanner, MICR, OMR. Output devices – VDU, Printers – Dot Matrix, Daisy-wheel, Inkjet, Laser, Line printers and Plotters. Computer Memory: Memory Concept, Memory cell, memory organization, Semiconductor memory- RAM, ROM, PROM, EPROM, Secondary Storage devices - Magnetic tape, Magnetic Disk (floppy disk & Hard disk.), Compact Disk.	and control bus. Module II Input /Output Devices: Input device – Keyboard, Mouse, Scanner, MICR, OMR. Output devices – VDU, Printers – Dot Matrix, Daisy-wheel, Inkjet, Laser, Line printers and Plotters. Computer Memory: Memory Concept, Memory cell, memory organization, Semiconductor memory- RAM, ROM, PROM, EPROM, Secondary Storage devices - Magnetic tape, Magnetic Disk (floppy disk & Hard disk.), Compact Disk.	•••••	
	ESTD JUNE 1964	Module III Computer Language and Software: Number System - Decimal, Binary, Octal & Hexadecimal, Conversion from One base to another base. Computer Codes - : BCD, EBCDIC, ASCII, Machine Language, Assembly language, High Level language, Assembler, Compiler, Interpreter. Characteristics of good Language. Software - System and application software	Module III Computer Language and Software: Number System - Decimal, Binary, Octal & Hexadecimal, Conversion from One base to another base. Computer Codes - : BCD, EBCDIC, ASCII, Machine Language, Assembly language, High Level language, Assembler, Compiler, Interpreter. Characteristics of good Language. Software - System and application software	**************************************	

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nd Features of
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plex, or full-
disadvantages
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t Server and
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and Serial -(
P/IP reference
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	address	address		4
	Module III Data link, Network and	Module III Data link, Network and		
	Transport layer	Transport layer		
	3.1 Data link Layer-	3.1 Data link Layer-		
	3.1.1Design issues	3.1.1Design issues		
	3.1.2 Framing, error detection and correction	3.1.2 Framing, error detection and correction		
	3.2 Network layer	3.2 Network layer		
	3.2. 1 design issues of network layer	3.2. 1 design issues of network layer		
	3.2.2 Routing algorithm (shortest path,	3.2.2 Routing algorithm (shortest path,	*****	
	Flooding, distance vector,)	Flooding, distance vector,)		
	3.2.3 Congestion control	3.2.3 Congestion control		
	3.3 Transport layer	3.3 Transport layer		
	3.3.1 Transport Layer Primitives: listen,	3.3.1 Transport Layer Primitives: listen,		0
	connect, send, receive, disconnect	connect, send, receive, disconnect		
	3.3.2 Protocols: TCP, UDP	3.3.2 Protocols: TCP, UDP		
	Module IV Session, Presentation and	Module IV Session, Presentation and		
	Application layer 12	Application layer 12		
	4.1 Session layer:	4.1 Session layer:		
	4.1.1 Services: dialog management,	4.1.1 Services: dialog management,		
	synchronization, activity management,	synchronization, activity management,		
	exception handling	exception handling		
T)	4.1.2 Remote procedure calls	4.1.2 Remote procedure calls		
	4.2 Presentation layer:	4.2 Presentation layer:		
	4.2.1 Services: Translation, compression,	4.2.1 Services: Translation, compression,		
	encryption	encryption	•••••	
	4.2.2 Cryptography: concept, symmetric key &	4.2.2 Cryptography: concept, symmetric key &		
	asymmetric key cryptography	asymmetric key cryptography		
	4.3 Application layer:	4.3 Application layer:		
	4.3.1 Function4.3.2 Domain name system	4.3.1 Function4.3.2 Domain name system		
	(DNS), Hypertext Transfer Protocol	(DNS), Hypertext Transfer Protocol		
	(HTTP), Simple Mail Transfer Protocol (SMTP)	(HTTP), Simple Mail Transfer Protocol		
	Telnet, File Transfer Protocol	(SMTP) ,Telnet, File Transfer Protocol		
	(FTP)	(FTP)		

(Signature of the Head of Department)

DEPARTMENT OF B. C. A. VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)



VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS) STATEMENT OF SYLLABUS COVERED

Year- 2022-23

Name of teacher- Mrs. Megha Sagar Patil

Term- IInd
Department- BCA

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Rema rk
B.C.A-I Sem-II	DBMS	Module I Introduction of Database 1.1 Introduction 1.2 Definition of DBMS 1.3 file processing system Vs DBMS 1.3.1 Limitation of file processing system 1.3.2 Comparison of File processing system and DBMS 1.4 Advantages and Disadvantages of DBMS 1.5 Users of DBMS 1.5.1 Database Designers 1.5.2 Application programmer 1.5.3 Sophisticated Users 1.5.4 End Users 1.6 Capabilities of good DBMS 1.7 Types of Database System: 1.7.1 Centralized database system 1.7.2 client-server system 1.7.3 Distributed database system.	Module I Introduction of Database 1.1 Introduction 1.2 Definition of DBMS 1.3 file processing system Vs DBMS 1.3.1 Limitation of file processing system 1.3.2 Comparison of File processing system and DBMS 1.4 Advantages and Disadvantages of DBMS 1.5 Users of DBMS 1.5.1 Database Designers 1.5.2 Application programmer 1.5.3 Sophisticated Users 1.5.4 End Users 1.6 Capabilities of good DBMS 1.7 Types of Database System: 1.7.1 Centralized database system 1.7.2 client-server system 1.7.3 Distributed database system.	*****	
	ESTD JUNE 1964	Module II Organization of Database System 2.1 Introduction 2.2. Logical and Physical Files 2.2.1 Logical and Physical Files Definitions 2.2.2 File Structure 2.3 Basic File Operations 2.3.1 Opening Files 2.3.2 Closing Files 2.3.3 Reading and Writing 2.3.4 Seeking 2.4 File Organization 2.4.1 Field and Record structure in file 2.4.2 Record Types 2.5 Types of file organization 2.5.1 Files of Unordered Records (Heap Files)	Module II Organization of Database System 2.1 Introduction 2.2. Logical and Physical Files 2.2.1 Logical and Physical Files Definitions 2.2.2 File Structure 2.3 Basic File Operations 2.3.1 Opening Files 2.3.2 Closing Files 2.3.3 Reading and Writing 2.3.4 Seeking 2.4 File Organization 2.4.1 Field and Record structure in file 2.4.2 Record Types 2.5 Types of file organization 2.5.1 Files of Unordered Records (Heap Files)		

9	16	2.5.2 File of Ordered Records (Sorted	2.5.2 File of Ordered Records (Sorted	2	11
11		Files)	Files)		
		2.5.3 Hash Files	2.5.3 Hash Files		
	22	2.5.4 Indexed file	2.5.4 Indexed file		
		Module III Data Models	Module III Data Models	-	
		3.1 Introduction	3.1 Introduction		
		3.2 Data Models	3.2 Data Models		
	~	3.2.1 Object Based Logical Model	3.2.1 Object Based Logical Model		
		3.2.2 Record Base Logical Model	3.2.2 Record Base Logical Model		
		a. Relational Model	a. Relational Model	1	
		b. Network Model	b. Network Model		
		c. Hierarchical Model	c. Hierarchical Model		
		3.3 Entity Relationship Model	3.3 Entity Relationship Model		
		3.3.1 Entity Set	3.3.1 Entity Set		
		3.3.2 Attribute	3.3.2 Attribute		
		3.3.3 Relationship Set	3.3.3 Relationship Set	1	
		3.4 E-R Model terms Introduction	3.4 E-R Model terms Introduction		
		a. Relation	a. Relation		
		b. Tuple	b. Tuple		
		c. Attribute	c. Attribute	1	
		d. Cardinality	d. Cardinality		
		e. Degree	e. Degree		
		f. Domain	f. Domain		
			3.5 Keys		
		3.5 Keys	3.5.1 Super Key		
		3.5.1 Super Key	3.5.2 Candidate Key		
		3.5.2 Candidate Key	3.5.3 Primary Key		
		3.5.3 Primary Key	3.5.4 Foreign Key		
		3.5.4 Foreign Key	3.6. Relational Database Design		
		3.6. Relational Database Design	3.6.1 Introduction		
		3.6.1 Introduction	3.6.2Normalization		
		3.6.2Normalization			
		3.6.3 Normal Form	3.6.3 Normal Form		
		3.6.1 1 NF	3.6.1 1 NF		
		3.6.2 2 NF	3.6.2 2 NF		
		3.6.3 3 NF	3.6.3 3 NF		
	COLLEGE				
	S ESTD	Module IV Relational algebra	Module IV Relational algebra		
	(E) JUNE	4.1 Introduction	4.1 Introduction		
	1964	4.2 Operations	4.2 Operations	******	
	Rutonomous	a. Select	a. Select		
	ONOMO	b. Project	b. Project		

			3		
		c. Union	c. Union		140
		d. Difference	d. Difference		(7)
		e. Intersection	e. Intersection		
		f. Cartesian Product	f. Cartesian Product		
		g. Natural Join	g. Natural Join	1	
		4.3. SQL (Structured Query Language)	4.3. SQL (Structured Query Language)		
1		4.3.1 Introduction	4.3.1 Introduction		
		4.3.2 History of SQL	4.3.2 History of SQL		
		4.3.3 Basic Structure	4.3.3 Basic Structure		
		4.3.4 DDL Commands	4.3.4 DDL Commands		
		4.3.5 DML Commands	4.3.5 DML Commands		
		4.3.6 Simple Queries	4.3.6 Simple Queries		
		4.3.7 Nested Queries	4.3.7 Nested Queries		
		4.3.8 Aggregate Functions	4.3.8 Aggregate Functions		
- D - C'	DILIDAG	4.3.9 Clauses	4.3.9 Clauses		
B.C.A	DWDM	Module I Introduction to Data Mining	Module I Introduction to Data Mining		
		1.1 Basic Data mining Task	1.1 Basic Data mining Task		
Sem-VI		1.2 DM versus Knowledge Discovery in	1.2 DM versus Knowledge Discovery in		
		Databases	Databases		
		1.3 Data Mining Issues	1.3 Data Mining Issues		
		1.4 Data Mining Metrics	1.4 Data Mining Metrics		
		1.5 Social implementation of Data Mining	1.5 Social implementation of Data Mining		
		1.6 Overview of Application of Data mining	1.6 Overview of Application of Data mining		
		1.6.1 Architecture of DW	1.6.1 Architecture of DW	₩.	
		1.6.2 OLAP and Data Cubes	1.6.2 OLAP and Data Cubes		
		1.6.3 Dimensional Data Modeling - star,	1.6.3 Dimensional Data Modeling - star,		
		snowflake schemas	snowflake schemas		
		1.6.4 Data processing - Need Data cleaning.	1.6.4 Data processing - Need Data cleaning.		
		Data integration and Transformation,	Data integration and Transformation,		
		Data reduction	Data reduction		
		1.6.5 machine learning	1.6.5 machine learning	-	
		1.6.6 pattern matching	1.6.6 pattern matching		
		Module II Data Mining techniques	Module II Data Mining techniques		
		2.1 Frequent item - set and association rule	2.1 Frequent item - set and association rule		
	COLLEGE	mining: apriori algorithm, use of	mining: apriori algorithm, use of		
	3000000	sampling for frequent item- set tree algorithm	sampling for frequent item- set tree algorithm		
1	FY ESTD YE	2.2 graph sampling : frequent sub graph mining	2.2 graph sampling : frequent sub graph mining	•••••	
V.	JUNE 15 1964	. tree mining ,sequence mining	. tree mining , sequence mining		
	X / X /	2.3 Classification and prediction:	2.3 Classification and prediction:		
	Autonomous	_	_		
		2.3.1 Decision tree [3 hrs]	2.3.1 Decision tree [3 hrs]		

	2.3.2 Construction, performance, attribute	2.3.2 Construction, performance, attribute		7
	selection	selection		
	2.3.3 Issues: Over fitting tree pruning methods,	2.3.3 Issues: Over fitting tree pruning methods,		*
	missing values, continuous	missing values, continuous		
	classes	classes		
	2.3.4 Classification and regression tree(CART)	2.3.4 Classification and regression tree(CART)		
	2.3.5 Bayesians Classification [6 hrs]	2.3.5 Bayesians Classification [6 hrs]		
	2.3.6 Bayesians theorem, Narvee Bayes	2.3.6 Bayesians theorem, Narvee Bayes		
	classifier	classifier		
	2.3.7 Bayesian networks	2.3.7 Bayesian networks		
(2.3.8 Inference	2.3.8 Inference		
	2.3.9 Parameter and structure learning	2.3.9 Parameter and structure learning		
	2.3.10 Leaner classification [4 hrs]	2.3.10 Leaner classification [4 hrs]		
	2.3.11 Least squares, logistics, perception and	2.3.11 Least squares, logistics, perception and		
	SVM classifiers	SVM classifiers		
	2.3.12 Prediction [3 hrs]	2.3.12 Prediction [3 hrs]		
	2.3.13 Linear regression	2.3.13 Linear regression		
	2.3.14 Non-linear regression	2.3.14 Non-linear regression		
	Module III Clustering	Module III Clustering		
	3.1 K-means	3.1 K-means		
	3.2 expectation maximization (EM) algorithm	3.2 expectation maximization (EM) algorithm		
	3.3 Hierarchical clustering, Carrolton clustering	3.3 Hierarchical clustering, Carrolton clustering		
	Module IV Software for Data mining and	Module IV Software for Data mining and		
	application of Data mining 10	application of Data mining 10		
	4.1 R	4.1 R	******	
	4.2 Weka	4.2 Weka		
	4.3 Sample applications of data mining	4.3 Sample applications of data mining		

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DEPARTMENT OF E. C. A.

VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)



VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS) STATEMENT OF SYLLABUS COVERED

Year- 2022-23

Term- I

Name of teacher- Mr. Raju Shivaji Sawant Department- BCA

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Rema rk
B.C.A	Visual	Module: 1	Module: 1		
Ш	Program	Introduction	Introduction		
Sem-V	ming	1.1 overview, Architecture, Features of .NET,	1.1 overview, Architecture, Features of .NET,		
	,g	1.2 Meta data, CLR, Managed and unmanaged	1.2 Meta data, CLR, Managed and unmanaged		
		code	code		
		1.3 CTS, CLS, .NET base classes	1.3 CTS, CLS, .NET base classes	_	
		1.4 Introduction to Visual Studio .NET IDE	1.4 Introduction to Visual Studio .NET IDE		
		1.5 Types of JIT compiler	1.5 Types of JIT compiler		
		Module: 2	Module:2		
		Introduction To C# 12	Introduction To C# 12		
		2.1 Introduction to C#, Entry point method,	2.1 Introduction to C#, Entry point method,		
	9	command line arguments	command line arguments		
		2.2 Compiling and building projects, Compiling	2.2 Compiling and building projects,		
		a C# program using command	Compiling a C# program using command		
		line utility, CSC.EXE, Different valid forms of	line utility, CSC.EXE, Different valid forms of		
		main.	main.		
		2.3 Global stack and heap memory, reference	2.3 Global stack and heap memory, reference		
		type and data type, castingimplicit	type and data type, castingimplicit		
100	OLLEGE	and explicit	and explicit		
13/	STD (2)	2.4 Boxing and unboxing, pass by value and	2.4 Boxing and unboxing, pass by value and		
SH C	IUNE (E)	pass by reference and out	pass by reference and out		
MINEKAN	1964 /5/	parameters	parameters		
2 / 0	Onomous)	2.5 Partial class, DLL, Difference between	2.5 Partial class, DLL, Difference between		
198		DLL and EXE	DLL and EXE		

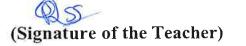
Module:3 Introduction to Web Programming 12 3.1 Understanding role of WEB server and WEB browser, HTTP request and response structure. 3.2 Introduction to ASP, Types of path, FORM tag 3.3 Types of server controls 3.4 Validation controls-Base validator, compare validator, range validator, grouping control validator 3.5 Web forms life cycle 3.6 Event handling in WEB forms, response redirect, server response, cross page post back property of button 3.7 ASP.NET state management 3.8 WEB.config, globalization and localization, AppDomain	Module:3 Introduction to Web Programming 12 3.1 Understanding role of WEB server and WEB browser, HTTP request and response structure. 3.2 Introduction to ASP, Types of path, FORM tag 3.3 Types of server controls 3.4 Validation controls-Base validator, compare validator, range validator, grouping control validator 3.5 Web forms life cycle 3.6 Event handling in WEB forms, response redirect, server response, cross page post back property of button 3.7 ASP.NET state management 3.8 WEB.config, globalization and localization, AppDomain		¥
Module:4 ADO .NET 12 4.1 Introduction to ADO.Net 4.2 ADO.NET Architecture- Conncetion, command, dat reader, data adapter, data set 4.3 Understanding connected layaer of ADO.NET and disconnected layer of ADO.NET	Module:4 ADO .NET 12 4.1 Introduction to ADO.Net 4.2 ADO.NET Architecture- Conncetion, command, dat reader, data adapter, data set 4.3 Understanding connected layaer of ADO.NET and disconnected layer of ADO.NET	1.	

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DEPARTMENT OF B. C. A.

VIVEKANAND COLLEGE, KOLHAPUR
(AUTONOMOUS)





VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS) STATEMENT OF SYLLABUS COVERED

Year- 2022-23 Name of teacher- Mr. Raju Shivaji Sawant Term- II Department- BCA

Class	Subject	Syllabus assigned	Syliabus Covered	Syllabus not to Covered	Rema rk
B.C.A- I Sem-II	Basics of Web Technology	Module I Introduction: Introduction to internet and its applications, E-mail, telnet, FTP, E-commerce, video conferencing, e-business. Internet service providers, domain name server, internet address, World Wide Web, uniform resource locator (URL), browsers – internet explorer, Netscape navigator etc. search engine, web saver – Apache, proxy server, HTTP protocols.	Module I Introduction: Introduction to internet and its applications, E-mail, telnet, FTP, E-commerce, video conferencing, e-business. Internet service providers, domain name server, internet address, World Wide Web, uniform resource locator (URL), browsers – internet explorer, Netscape navigator etc. search engine, web saver – Apache, proxy server, HTTP protocols		
		Module II 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, List Tags, Ordered and Unordered Tags, Hyperlink, <hr/> <marquee> Tags, Image Tag with all attributes, Image and Image map. <table></table> tag with all attributes .<form> tag, Examples and case studies based on all tags.</form></marquee>	Module II 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, List Tags, Ordered and Unordered Tags, Hyperlink, <hr/> <marquee> Tags, Image Tag with all attributes, Image and Image map. <table></table> tag with all attributes .<form> tag, Examples and case studies based on all tags</form></marquee>		

	T	NAC 3 3 TEST	74 7 7 777			
		Module III	Module III		76 - Ē	9. v
		Basic of CSS Introduction to CSS CSS Paging Symtom / Pulls of	Basic of CSS Introduction to CSS CSS Design Symtom / Bulg of		i w	4
		Introduction to CSS, CSS Basics, Syntax / Rule of	Introduction to CSS, CSS Basics, Syntax / Rule of		í ~	
		CSS, Selectors, properties and values,	CSS, Selectors, properties and values, Applying	V.57	I	
		Applying CSS to HTML tags, Types: Internal,	CSS to HTML tags, Types: Internal, Inline,	*****	l	
		Inline, External CSS, CSS Colors, Background and	External CSS,CSS Colors, Background and color,		ĺ	
		color, CSS Box Model, CSS Margins, Padding,	CSS Box Model, CSS Margins, Padding, Borders		l	
		Borders CSS Text and Font Properties	CSS Text and Font Properties		l .	
*		7	26 2 27		<u> </u>	
		Module IV	Module IV		ĺ	
		CSS - Page Layout	CSS - Page Layout		1	
		Classes IDs DIVs Spans, The Box, Styling Page	Classes IDs DIVs Spans, The Box, Styling Page		l	
		Divisions, Paragraph Formatting. Nav Bars: Adding a Navigation Bar, Customizing a	Divisions, Paragraph Formatting.		i	
			Nav Bars: Adding a Navigation Bar, Customizing a		I	
		Navigation Bar.	Navigation Bar.		I	
		Case Study: Select any topic of your interest and	Case Study: Select any topic of your interest and		I	
		Design Project using above technologies which suit	Design Project using above technologies which suit		i	
	g .	for Desktop and Laptop computer screen only.	for Desktop and Laptop computer screen only.			
B.C.A- I	Operating	Module-I: Introduction of Operating System	Module-I: Introduction of Operating System		-	
Sem-II	System	Definition, Objectives, Functions, Generations	Definition, Objectives, Functions, Generations		I	
		of OS, Types of OS (Batch, Multiprogramming,	of OS, Types of OS (Batch, Multiprogramming,		i	
		Time Sharing, Real time, Distributed, Personal,	Time Sharing, Real time, Distributed, Personal,		I	
		Mobile). OS Structure (Monolithic, Layered,	Mobile). OS Structure (Monolithic, Layered,		i	
		Microkernel,	Microkernel,		I	
	1	Exokernel, Client-Server).	Exokernel, Client-Server).		I	
		Module II: Process Management	Module II : Process Management		I	
		Process Management- Introduction to Processes,	Process Management- Introduction to Processes,		I	
1]	Process Model, Process creation, Process	Process Model, Process creation, Process		1	
		termination, Process hierarchy, Process states.	termination, Process hierarchy, Process states.		I	
		Module III: Memory Management	Module III: Memory Management			
		Memory Management- Introduction to	Memory Management- Introduction to		1	
100	OLLEG	memory management, Requirements	memory management, Requirements		I	
1 3 E	STD	(Relocation, Protection, Sharing, Logical	(Relocation, Protection, Sharing, Logical		I	
LINEKAN	UNE 14	organization, Physical organization). Memory	organization, Physical organization). Memory			
(三)	1964 / 5/	partitioning-Fixed partitioning, Dynamic	partitioning-Fixed partitioning, Dynamic		I	
	200	partitioning, Paging, Segmentation. Concept of	partitioning, Paging, Segmentation. Concept of			
*(Au	Onomous !	partitioning, raging, segmentation. Concept of	partitioning, raging, degineritation. Concept of	,		
*(Au	onomous	Virtual memory.	Virtual memory.			
*(Au	onomous					

		Module – IV File System Files & File system, File structure, File types, File access, File attributes, Basic file operations. Directories- Single-level & Hierarchical directory systems, Path names & Directory operations. Differentiate between Windows and Linux OS.	Module – IV File System Files & File system, File structure, File types, File access, File attributes, Basic file operations. Directories – Single-level & Hierarchical directory systems, Path names & Directory operations. Differentiate between Windows and Linux OS.		N at S
B.C.A II Sem-IV	RDBMS Using ORACLE	Module I Relational Database Management System: 1.1 Concept of RDBMS, Difference between DBMS and RDBMS, Features of RDBMS. 1.2 Introduction of Oracle, Role and responsibilities of DBA. 1.3 RDBMS Terminology- Relation, Tuple, Cardinality, Attribute, Degree, Primary Key, Domain, Codd's Rules 1.4 Relational Model, Functional Dependencies, Normalization and its types.	Module I Relational Database Management System: 1.1 Concept of RDBMS, Difference between DBMS and RDBMS, Features of RDBMS. 1.2 Introduction of Oracle, Role and responsibilities of DBA. 1.3 RDBMS Terminology- Relation, Tuple, Cardinality, Attribute, Degree, Primary Key, Domain, Codd's Rules 1.4 Relational Model, Functional Dependencies, Normalization and its types.		9
INEKANAN	STD UNE 1964	Module II INTRODUCTION TO SQL: 2.1 Features of SQL, Data types, 2.2 Classification of SQL Commands — DDL (create, alter, drop), DML (insert, Update, delete), DCL (grant, revoke), TCL (rollback, commit). 2.3 SQL Integrity Constraints-(Primary key, Foreign key, unique key, not null, default, check) 2.4 Select statement with group by and order by clause 2.5 SQL Operators-arithmetic, relational, Logical, Like, Between, IN operator 2.6 SQL Functions- Arithmetic functions, Conversion Functions, Date function, Aggregate functions, String functions.	Module II INTRODUCTION TO SQL: 2.1 Features of SQL, Data types, 2.2 Classification of SQL Commands – DDL (create, alter, drop), DML (insert, Update, delete), DCL (grant, revoke), TCL (rollback, commit). 2.3 SQL Integrity Constraints-(Primary key, Foreign key, unique key, not null, default, check) 2.4 Select statement with group by and order by clause 2.5 SQL Operators-arithmetic, relational, Logical, Like, Between, IN operator 2.6 SQL Functions- Arithmetic functions, Conversion Functions, Date function, Aggregate functions, String functions.	***	

Module III	Module III		
JOIN AND SUB QUERIES:	JOIN AND SUB QUERIES:		
3.1 Join types - Inner Join, Outer Join, Cross	3.1 Join types - Inner Join, Outer Join, Cross		
Join and self-Join	Join and self-Join		
3.2 Sub-queries, Multiple sub queries, nesting	3.2 Sub-queries, Multiple sub queries, nesting	34.1	
of sub queries, sub queries in	of sub queries, sub queries in	•••••	
DML commands.	DML commands.		
3.3 Correlated queries, Indexes, Sequences.	3.3 Correlated queries, Indexes, Sequences.		
Views-Create View, Drop, View and	Views-Create View, Drop, View and		
its Advantages., Denial of service (DoS), Firewall	its Advantages., Denial of service (DoS), Firewall		
and proxy server.	and proxy server.		
Module IV	Module IV		
INTRODUCTION TO PL/SQL:	INTRODUCTION TO PL/SQL:		
4.1 Introduction to PL/SQL, Block Structure	4.1 Introduction to PL/SQL, Block Structure		
4.2 Data types in PL-SQL	4.2 Data types in PL-SQL		
4.3 Control Structures-Branching statements,	4.3 Control Structures-Branching statements,		å
Iterative Control statements.	Iterative Control statements.	******	
4.4 Cursors –Concept, Types- Implicit,	4.4 Cursors –Concept, Types- Implicit,		
Explicit, Procedure to create explicit	Explicit, Procedure to create explicit		
cursors, Cursor Attributes.	cursors, Cursor Attributes.	11	
4.5 TRIGGERS: Concept and types.	4.5 TRIGGERS: Concept and types.		

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DEPARTMENT OF B. C. A.

VINEKANAND COLLEGE, KOLHA?

(AUTONOMOUS)

VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS) STATEMENT OF SYLLABUS COVERED Term- IInd

Year- 2022-23

Name of teacher- Mr. RajuShivajiSawant

Department-BCA

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A- III Sem-VI	Java Programming	Module IIntroduction To Java 1.1 History and features of Java Programming 1.2 Difference between Java & C++ 1.3 Java Environment 1.4 Java tokens, constants, variables, data types, type casting 1.5 Operators and Expressions 1.6 Implementing Java Program 1.7 Branching and looping statements 1.8 Class, objects, methods 1.9 Constructors and destructor	Module IIntroduction To Java 1.1 History and features of Java Programming 1.2 Difference between Java & C++ 1.3 Java Environment 1.4 Java tokens, constants, variables, data types, type casting 1.5 Operators and Expressions 1.6 Implementing Java Program 1.7 Branching and looping statements 1.8 Class, objects, methods 1.9 Constructors and destructor	*****	
		Module II Inheritance and Packages 2.1 Defining sub class, subclass constructor 2.2 Inheritance-Multiple and hierarchical 2.3 Defining packages, system packages 2.4 Creating & accessing packages 2.5 Adding a class to package 2.6 Polymorphism- function overloading and over ridding, its difference	Module II Inheritance and Packages 2.1 Defining sub class, subclass constructor 2.2 Inheritance-Multiple and hierarchical 2.3 Defining packages, system packages 2.4 Creating & accessing packages 2.5 Adding a class to package 2.6 Polymorphism- function overloading and over ridding, its difference.	•••••	



		Module III Multithreading and Exception Handling 3.1 Creating threads, extending a thread class-declaring the class, run() method 3.2 Stopping and blocking threads 3.3 Life cycle of thread 3.4 Using thread method 3.5 Thread priority 3.6 Introduction to exception 3.7 Syntax of exception handling code 3.8 Multiple catch statement 3.9 Using finally statement 3.10 Throwing exception Files.	Module III Multithreading and Exception Handling 3.1 Creating threads, extending a thread class-declaring the class, run() method 3.2 Stopping and blocking threads 3.3 Life cycle of thread 3.4 Using thread method 3.5 Thread priority 3.6 Introduction to exception 3.7 Syntax of exception handling code 3.8 Multiple catch statement 3.9 Using finally statement 3.10 Throwing exception	••••
		Module IV Applets Programming & Introduction to AWT 4.1 Introduction to applets 4.2 Building applet code 4.3 Applet life cycle 4.4 Adding applet code to HTML file 4.5 Introduction to Abstract Window Toolkit (AWT)	Module IV Applets Programming & Introduction to AWT 4.1 Introduction to applets 4.2 Building applet code 4.3 Applet life cycle 4.4 Adding applet code to HTML file 4.5 Introduction to Abstract Window Toolkit (AWT)	
B.C.A II Sem-IV	Web Technology	Module I: Internet and WWW: 1.1 Network, Client, Server, 1.2 What is Internet & Applications, WWW 1.3 URL, DNS, Bbrowsers, Web Development: 2.1: Introduction, features, steps in web development, . 2.2 Scripting Languages 2.3 HTML, structure 2.4 Basic Tags 2.5 Formatting tags, examples	Module I: Internet and WWW: 1.1 Network, Client, Server, 1.2 What is Internet & Applications, WWW 1.3 URL, DNS, Bbrowsers, Web Development: 2.1:Introduction, features, steps in web development, 2.2 Scripting Languages 2.3 HTML, structure 2.4 Basic Tags 2.5 Formatting tags, examples	******
EK A	ESTD JUNE 1964	Module II HTML tags: 3.1 Heading and paragraph tags, font tag. tag 3.2 List Tags-ordered and unordered list tags:	Module II HTML tags: 3.1 Heading and paragraph tags, font tag. tag 3.2 List Tags-ordered and unordered list tags: , <hr/> ., <marquee></marquee>	

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3.3 : Hyperlink, <a> Image and Image maps,	3.3 : Hyperlink, <a> Image and Image maps,	,
<form> tag, form controls to design UI</form>	<form> tag, form controls to design UI</form>	
Module IIIJAVA SCRIPT:	Module III JAVA SCRIPT:	
4.1 Introduction, Difference in Client-Side and Server-Side Script, features, introduction to Java script 4.2 keywords, data types, control statements (ifelse, looping) with examples 4.3 objects in java. Events and Event Handlers, 4.4 Dialogue boxes, Built-in functions and Validations	4.1 Introduction, Difference in Client-Side and Server-Side Script, features, introduction to Java script 4.2 keywords, data types, control statements (if-else, looping) with examples 4.3 objects in java. Events and Event Handlers, 4.4 Dialogue boxes, Built-in functions and Validations	
Module IV Introduction to Server-Side scripting 5.1 ASP – Advantages and limitations, server set-up for ASP (PWS/IIS), built in ASP objects 5.2 loop Structure, control structure (If-Else-Then), methods to get data from 5.3 Clients – (GET and POST), difference between GET and POST 5.4,database handling, connections and record set object. 5.5Case Studies: On line Shopping Website, University Website 4.3.8 Aggregate Functions 4.3.9 Clauses	Module Introduction to Server-Side scripting 5.1 ASP – Advantages and limitations, server set-up for ASP (PWS/IIS), built in ASP objects 5.2 loop Structure, control structure (If-Else- Then), methods to get data from 5.3 Clients – (GET and POST), difference between GET and POST 5.4,database handling, connections and record set object. 5.5Case Studies: On line Shopping Website, University Website 4.3.8 Aggregate Functions 4.3.9 Clauses	

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HEAD
DEPARTMENT OF B. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(AUTONOMOUS)



VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS)

STATEMENT OF SYLLABUS COVERED

Year- 2022-23

Term- I

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A I Sem-I	Programming in C (part-I)	Module I Problem Solving Methods: Problem definition, Steps in Problem Solving (Define Problem, Analyze Problem, Explore Solution). ALGORITHM: Definition, notations, characteristics of algorithm, examples on algorithm. FLOWCHARTS: Definition, features of flowcharts, symbols, examples, coding, running, debugging-types of errors (syntax, logical, runtime errors.)	Module I Problem Solving Methods: Problem definition, Steps in Problem Solving (Define Problem, Analyze Problem, Explore Solution). ALGORITHM: Definition, notations, characteristics of algorithm, examples on algorithm. FLOWCHARTS: Definition, features of flowcharts, symbols, examples, coding, running, debugging-types of errors (syntax, logical, runtime errors.)	•••••	
ii.		Module II Introduction to c:History, features of c language, Character set, Identifiers: variables, constants, symbolic constants, keywords. Data types, Operators: Arithmetic, relational, logical, assignment, bitwise, increment/decrement and special operators, Concept of operator Precedence & Associatively. Comments-types of comments, Use of Comments, Header Files (conio,stdio,string,math). Structure of C Program, Input and Output unctions.	Module II Introduction to c: History, features of c language, Character set, Identifiers: variables, constants, symbolic constants, keywords. Data types, Operators: Arithmetic, relational, logical, assignment, bitwise, increment/decrement and special operators, Concept of operator Precedence & Associatively. Comments-types of comments, Use of Comments, Header Files (conio,stdio,string,math). Structure of C Program, Input and Output Functions.		
	COLLEGE TO HAPPY JUNE 1964	Module III Control Structures: Conditional statements: if, If-else nested if-else, switch statement. Loops: while, for, doWhile loop, Unconditional statements: Break, continue, exit, goto statements.	Module III Control Structures: Conditional statements: if, If-else nested if-else, switch statement. Loops: while, for, doWhile loop, Unconditional statements: Break, continue, exit, goto statements.	•••••	
	1964	Module IV Arrays and Strings: Arrays- Meaning and definition, Declaration, Initialization and types	Module IV Arrays and Strings: Arrays- Meaning and definition, Declaration, Initialization and types	*****	

		of arrays (single and multidimensional arrays). Strings: Meaning and definition, Declaration,	of arrays (single and multidimensional arrays). Strings: Meaning and definition, Declaration,		10
		Initialization String functions strlen(), strrev(),	Initialization String functions strlen(), strrev(),		9
		strlwr(), strupr(), strcat(), strcmp(), strcpy().	strlwr(), strupr(), strcat(), strcmp(), strcpy().		
		Handling of character array.OS.	Handling of character array.		
B.C.A	Software	Module I	Module -I		
II	Engineering	Introduction: Software Engineering approach,	Introduction: Software Engineering approach,		
Sem-		Need of engineering aspect for Software	Need of engineering aspect for Software		
III		Design, SDLC, Software Crisis, Software	Design, SDLC, Software Crisis, Software		
		Process, Process models (Classical Waterfall	Process, Process models (Classical Waterfall		
		Model, Build-n- Fix Model, Iterative Waterfall	Model, Build-n- Fix Model, Iterative Waterfall		
		Model, Prototyping Model, Evolutionary Model	Model, Prototyping Model, Evolutionary		
		and Spiral Model)	Model and Spiral Model)		
		Module II	Module II		
		Software Requirement Analysis and	Software Requirement Analysis and	-	
		Specifications: Software Requirement	Specifications: Software Requirement		
		Specifications, Need of SRS, Steps for	Specifications, Need of SRS, Steps for	•••••	
		constructing good SRS, Behavioral and Non-	constructing good SRS, Behavioral and Non-		
		Behavioral requirements, Analysis Model	Behavioral requirements, Analysis Model		
		Module III	Module III	7.	
		Software Design: Design Concepts & Principle,	Software Design: Design Concepts &		
		problem partitioning, abstraction, and top down	Principle, problem partitioning, abstraction,		
		and bottom up-design, Cohesion & Coupling,	and top down and bottom up-design, Cohesion		
		How to measure degree of Cohesion and	& Coupling, How to measure degree of	*****	
		Coupling, Function Oriented Design, DFDs,	Cohesion and Coupling, Function Oriented		
		Structure Chart, Object Oriented Design.	Design, DFDs, Structure Chart, Object		
			Oriented Design.		
		Module IV	Module IV		
		Software Testing: Validation and Verification,	Software Testing: Validation and Verification,		
		Black Box testing approach, White Box testing	Black Box testing approach, White Box testing		
		approach, Levels of testing: Unit Testing,	approach, Levels of testing: Unit Testing,	*****	
		Integration Testing, Validation testing, System	Integration Testing, Validation testing, System		
		testing and debugging. Software Maintenance	testing and debugging. Software Maintenance:		
	L V	Software Maintenance Process and its types COLLE	Software Maintenance Process and its types.		
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	(Signature	of the Head of Department) EST JUN 196		eacher)	
	SAACTOHIAMIA	TONOMOUS)	/* ·	,	
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VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS)

STATEMENT OF SYLLABUS COVERED

Year- 2022-23

Term- II

Name of teacher- Mrs. Kishori Abhijeet Sawardekar (Budhale)

Department- BCA

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabu not to Covere
B.C.A I Sem- II	Programmi ng in C (part-II)	Module I User defined functions: Need, multi functioned program, form of a c function, return value and their type, calling a function, category of a functions, Actual and Formal arguments, functions with array, Storage classes: auto, external, static and register. Command line argument. Preprocessors-Introduction, types of Preprocessor.	Module I User defined functions: Need, multi functioned program, form of a c function, return value and their type, calling a function, category of a functions, Actual and Formal arguments, functions with array, Storage classes: auto, external, static and register. Command line argument. Preprocessors-Introduction, types of Preprocessor.	•••••
		Module IIPointers: 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().	Module 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().	
		Module 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.	Module 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.	
		Module 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().	Module 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().	101
B.C.A I Sem- II	Operating System	Module I Introduction of Operating System- Definition, Objectives, Functions, Generations of OS, Types of OS (Batch, Multiprogramming, Time Sharing,	Module I Introduction of Operating System- Definition, Objectives, Functions, Generations of OS, Types of OS (Batch, Multiprogramming, Time	SFS .

		Real time, Distributed, Personal, Mobile). OS Structure (Monolithic, Layered, Microkernel, Exokernel, Client-Server).	Sharing, Real time, Distributed, Personal, Mobile). OS Structure (Monolithic, Layered, Microkernel, Exokernel, Client-Server).	***
		Module II Process Management – Process Management – Introduction to Processes, Process Model, Process creation, Process termination, Process hierarchy, Process states.	Module II Process Management – Process Management- Introduction to Processes, Process Model, Process creation, Process termination, Process hierarchy, Process states.	
		Module III Memory Management- Memory Management- Introduction to memory management, Requirements (Relocation, Protection, Sharing, Logical organization, Physical organization). Memory partitioning- Fixed partitioning, Dynamic partitioning, Paging, Segmentation. Concept of Virtual memory.	Module III Memory Management- Memory Management- Introduction to memory management, Requirements (Relocation, Protection, Sharing, Logical organization, Physical organization). Memory partitioning- Fixed partitioning, Dynamic partitioning, Paging, Segmentation. Concept of Virtual memory.	
		Module IV File System- Files & File system, File structure, File types, File access, File attributes, Basic file operations. Directories- Single- level & Hierarchical directory systems, Path names & Directory operations. Differentiate between Windows and Linux OS.	Module IV File System- Files & File system, File structure, File types, File access, File attributes, Basic file operations. Directories- Single- level & Hierarchical directory systems, Path names & Directory operations. Differentiate between Windows and Linux OS.	
B.C.A II Sem IV	Advance Web Technology	Module I HTML Forms: - Overview of HTML5 and Revisions on FORMS ,CSS,InsertingImage,Creatingwebsites,Hyperlinks, <div></div>	Module I HTML Forms:- Overview of HTML5 and Revisions on FORMS ,CSS,InsertingImage,Creatingwebsites,Hyperlinks, <div>tag</div>	
		Module II Java Script: Overview, Client-Side JavaScript, Advantages of JavaScript, Limitations of JavaScript, Syntax:- First JavaScript Code, Internal File, External File, Java Script Variables:- Data types, Variables, Operators:- Reserve words, Control statements, Loops, Function:- Function Definition.	Module II Java Script: Overview, Client-Side JavaScript, Advantages of JavaScript, Limitations of JavaScript, Syntax:- First JavaScript Code, Internal File, External File, Java Script Variables:- Data types, Variables, Operators:- Reserve words, Control statements, Loops, Function:- Function Definition.	
		Module 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, JAVA Script Objects:- Object Properties, Object Methods, User Defined Objects, Defining Methods for an Object DOM	Module 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, JAVA Script Objects:- Object Properties, Object Methods, User	

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(Document Object Model), Array, String, Form	Defined Objects, Defining Methods for an Object DOM
Validation:- Basic Form Validation.	(Document Object Model), Array, String, Form
	Validation:- Basic Form Validation.
Module IV	Module IV
Introduction to PHP: History, WebServer, WAMP	Introduction to PHP: History, WebServer, WAMP
server, Basic Programming Concepts of PHP: Syntax	x, server, Basic Programming Concepts of PHP: Syntax,
Operators, Variables, Constants, Control statement lo	oops Operators, Variables, Constants, Control statement loops
,Language construct and functions, Function –Syntax	
Arguments, Variables, References, Returns and Varia	able Arguments, Variables, References, Returns and Variable
Scope.	Scope.

(Signature of the Head of Department)

DEPARTMENT OF B. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(AUTONOMOUS)



VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS) STATEMENT OF SYLLABUS COVERED

Year- 2022-23

Term- I

Name of teacher- Miss Renuka.S.Satpute

Department-BCA

Subject : Principles of management

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A I Sem-I	Principles of management	Introduction to Management: Definition of Management, nature and importance of management, Functions of Management, Levels of management, Role of Manager in Organization, Contribution of F.W. Taylor, Henry Fayol and Max Weber, Peter Drucker to management theory.	Introduction to Management: Definition of Management, nature and importance of management, Functions of Management, Levels of management, Role of Manager in Organization, Contribution of F.W. Taylor, Henry Fayol and Max Weber, Peter Drucker to management theory.		
	×	Planning. Organizing and Staffing: Planning: Meaning, Definition & Nature, Steps in Planning Organizing: Meaning, Definition & Classification. (Formal & Informal organization, Virtual organization.), Staffing: Meaning Definition & Functions.	Planning, Organizing and Staffing: Planning: Meaning, Definition & Nature, Steps in Planning Organizing: Meaning, Definition & Classification. (Formal & Informal organization, Virtual organization.), Staffing: Meaning Definition & Functions.		
	COLLEGE TO	Directing: Leadership: Meaning & Definition, Theories of Leadership, Qualities of Leadership & Types of Leaders Motivation: Meaning, definition & importance of motivation, Theories of motivation—Maslow's Hierarchy Theory, Herzberg's theory & Theory X & Y. Communication-Types, Problems	<u>Directing</u> : Leadership: Meaning & Definition, Theories of Leadership, Qualities of Leadership & Types of Leaders Motivation: Meaning, definition & importance of motivation, Theories of motivation –Maslow's Hierarchy Theory, Herzberg's theory & Theory X & Y. Communication-Types, Problems	******	
w.	JUNE 1964 1964	Controlling and Trends in Management Management Information System: Meaning, Definition & Types of Information	Controlling and Trends in Management Management Information System: Meaning, Definition & Types of Information Management of Change: Meaning Definition & Forms or Types of Changes, Corporate	******	e:

		Management of Change: Meaning Definition & Forms or Types of Changes, Corporate Social Responsibilities. Controlling: Meaning, Importance, Steps in Control Process, Types of control-Feed forward control, Concurrent control & feedback control, Techniques of control. Recent trend in Management, Contemporary issues in management.	Social Responsibilities. Controlling: Meaning, Importance, Steps in Control Process, Types of control- Feed forward control, Concurrent control & feedback control, Techniques of control. Recent trend in Management, Contemporary issues in management.		30.
Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A II Sem- V	E-Commerce	Introduction to E-Commerce: Defining Commerce; Main Activities of Electronic Commerce; Benefits of E-Commerce; Broad Goals of Electronic Commerce; Main Components of E-Commerce; Functions of Electronic Commerce — Communication, Process Management, Service Management, Transaction Capabilities; Limitations, Challenges and opportunities, Process of E-Commerce; Types of E-Commerce; Role of Internet and Web in E-Commerce; Technologies Used; E-Commerce Systems; Pre-requisites of E-Commerce; Scope of E-Commerce; E-Business Models. EDI- Concept, Components, working mechanism of EDI, Advantages and disadvantages of EDI. Difference between E-Business and E-Commerce,Introduction to M-Commerce.	Introduction to E-Commerce: Defining Commerce; Main Activities of Electronic Commerce; Benefits of E-Commerce; Broad Goals of Electronic Commerce; Main Components of E-Commerce; Functions of Electronic Commerce – Communication, Process Management, Service Management, Transaction Capabilities; Limitations, Challenges and opportunities, Process of E-Commerce; Types of E-Commerce; Role of Internet and Web in E-Commerce; Role of Internet and Web in E-Commerce Systems; Pre-requisites of E-Commerce; Scope of E-Commerce; E-Business Models. EDI-Concept, Components, working mechanism of EDI, Advantages and disadvantages of EDI. Difference between E-Business and E-Commerce,Introduction to M-Commerce.	enter 1	
	ESTD JUNE 1964 1964	Electronic payment System Concept of e-payment, Difference between traditional and electronics payment system, UPI, NCPI, Digital cash, Credit and Debit card system, Smart Card, E Wallet, Prepaid, post paid and	Electronic payment System Concept of e-payment, Difference between traditional and electronics payment system, UPI, NCPI, Digital cash, Credit and Debit card system, Smart Card, E Wallet, Prepaid, post paid and instant payment system,	******	

	instant payment system, Electronic funds	Electronic funds transfer, Concept of e-		
	transfer, Concept of e-banking.	banking.		
	E-Security	E-Security		
	Concept of E-security, Security threats-	Concept of E-security, Security threats-		-
	concept and types, Malicious code,	concept and types, Malicious code, Phishing		
	Phishing and identity theft, Hacking and	and identity theft, Hacking and cyber		
	cyber vandalism, Credit card fraud/Theft,	vandalism, Credit card fraud/Theft, Spoofing,)	
	Spoofing, Denial of service (DoS),	Denial of service (DoS), Firewall and proxy		
	Firewall and proxy server.	server.		
	Security Solutions	Security Solutions		
	Concept of encryption and decryption,	Concept of encryption and decryption,		
	Symmetric and asymmetric key	Symmetric and asymmetric key encryption,		
	encryption, Cipher text, Digital	Cipher text, Digital Envelopes, Digital	•••••	
	Envelopes, Digital certificates, Security	certificates, Security socket layer (SSL),		
1	socket layer (SSL), Limitations of	Limitations of encryption solutions.		
	encryption solutions.	* 4		

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DEPARTMENT OF B. C. A.
VIVEKANAND COLLEGE, KOLHAPUR
(AUTONOMOUS)



VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS)

STATEMENT OF SYLLABUS COVERED

Year- 2022-23

Term-II

Name of teacher- Miss Renuka. S. Satpute

Department-BCA

Subject : E-Commerce

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A	E-Commerce	Introduction to E-Commerce:	Introduction to E-Commerce:		
II		Defining Commerce; Main Activities of	Defining Commerce; Main Activities of		
Sem-		Electronic Commerce; Benefits of E-Commerce;	Electronic Commerce; Benefits of E-		
IV		Broad Goals of Electronic Commerce; Main	Commerce; Broad Goals of Electronic		
		Components of E-Commerce; Functions of	Commerce; Main Components of E-Commerce;		
		Electronic Commerce – Communication,	Functions of Electronic Commerce –		
		Process Management, Service Management,	Communication, Process Management, Service		
		Transaction Capabilities; Limitations, Challenges	Management, Transaction Capabilities;		
		and opportunities, Process of E-Commerce; Types	Limitations, Challenges and opportunities, Process		
		of E-Commerce; Role of Internet and Web in	of E-Commerce; Types of E-Commerce; Role	•••••	
		E-Commerce; Technologies Used; E-	of Internet and Web in E-Commerce;		
		Commerce Systems; Pre-requisites of E-	Technologies Used; E-Commerce Systems;		
		Commerce; Scope of E-Commerce; E-Business	Pre-requisites of E-Commerce; Scope of E-		
		Models. EDI- Concept, Components, working	Commerce; E-Business Models. EDI- Concept,		
		mechanism of EDI, Advantages and disadvantages	Components, working mechanism of EDI,		
		of EDI. Difference between E-Business and E-	Advantages and disadvantages of EDI. Difference		
	2	Commerce, Introduction to M-Commerce.	between E-Business and E-		
		a a	Commerce, Introduction to M-Commerce.		
		Electronic payment System	Electronic payment System		
		Concept of e-payment, Difference between	Concept of e-payment, Difference between		
	COLLEG	traditional and electronics payment system, UPI,	traditional and electronics payment system, UPI,		
	30 COLLEGE TO	NCPI, Digital cash, Credit and Debit card system,	NCPI, Digital cash, Credit and Debit card system,		
	ESTD JUNE JUNE 1964	Smart Card, E Wallet, Prepaid, post paid and instant	Smart Card, E Wallet, Prepaid, post paid and		
	JUNE 1964	payment system, Electronic funds transfer, Concept	instant payment system, Electronic funds transfer,		
	1964 -5	of e-banking.	Concept of e-banking.		
	Autonomous	E-Security	E-Security		
		Concept of E-security, Security threats- concept and	Concept of E-security, Security threats- concept and	******	
		types, Malicious code, Phishing and identity theft,	types, Malicious code, Phishing and identity theft,		-

		Hacking and cyber vandalism, Credit card fraud/Theft, Spoofing, Denial of service (DoS), Firewall and proxy server. Security Solutions Concept of encryption and decryption, Symmetric and asymmetric key encryption, Cipher text, Digital	Hacking and cyber vandalism, Credit card fraud/Theft, Spoofing, Denial of service (DoS), Firewall and proxy server. Security Solutions Concept of encryption and decryption, Symmetric and asymmetric key encryption, Cipher text, Digital	-
		Envelopes, Digital certificates, Security socket layer (SSL), Limitations of encryption solutions.	Envelopes, Digital certificates, Security socket layer (SSL), Limitations of encryption solutions.	
B.C.A	Human	Introduction to HRM:	Introduction to HRM:	
I	Resource	Introduction, Concept, Definition, HRD, Functions	Introduction, Concept, Definition, HRD, Functions	
Sem-	Management	of HRM, Organization of HR, Role HRM,	of HRM, Organization of HR, Role HRM,	
II	Management	Qualities of HR Manager, Limitations & challenges	Qualities of HR Manager, Limitations & challenges	
		of HRM.	of HRM.	
		Human resource Planning & Development:	Human resource Planning & Development:	
		Meaning and need of HRP, Process of HRP in I.T.	Meaning and need of HRP, Process of HRP in I.T.	
		Industry, Factors affecting HRP , Job Analysis , Job	Industry, Factors affecting HRP , Job Analysis , Job	
		Description, Recruitment and Selection procedures	Description, Recruitment and Selection procedures	
		in I.T. Industry. Training and Development methods	in I.T. Industry. Training and Development methods	
		followed in I.T. Industry.	followed in I.T. Industry.	
		Employee Separation	Employee Separation	
		Employee Separation practices in I.T. industry,	Employee Separation practices in I.T. industry,	
		Voluntary Retirement Schemes, Resignation-	Voluntary Retirement Schemes, Resignation-	
		Discharge-Dismissal-Suspension-Layoff, Exit	Discharge-Dismissal-Suspension-Layoff, Exit	
		interview.	interview.	
		Compensation Management: Components of	Compensation Management: Components of	
		remuneration, factors effecting wage and salary	remuneration, factors effecting wage and salary	
		levels, variable compensation, incentive schemes.	levels, variable compensation, incentive schemes.	

HEAD
DEPARTMENT OF B. C. A.
VIVEKANAND COLLEGE, KOLHABUR
(Signature of the Head of Department)



VIVEKANAND COLLEGE, KOLHAPUR (AUTONOMOUS) STATEMENT OF SYLLABUS COVERED Term- IInd

Year- 2022-23

Name of teacher- Mr. Sumedrao Manikrao Gaikwad

Department-BCA

Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Rema rk
B.C.A- I Sem-II	Basics of Web Technology	Module I Introduction: Introduction to internet and its applications, E-mail, telnet, FTP, E-commerce, video conferencing, e-business. Internet service providers, domain name server, internet address, World Wide Web, uniform resource locator (URL), browsers – internet explorer, Netscape navigator etc. search engine, web saver – Apache, proxy server, HTTP protocols.	Module I Introduction: Introduction to internet and its applications, E-mail, telnet, FTP, E-commerce, video conferencing, e-business. Internet service providers, domain name server, internet address, World Wide Web, uniform resource locator (URL), browsers – internet explorer, Netscape navigator etc. search engine, web saver – Apache, proxy server, HTTP protocols	•••••	+
70	*OCOLLE	Module II 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, List Tags, Ordered and Unordered Tags, Hyperlink, <hr/> <marquee> Tags, Image Tag with all attributes, Image and Image map. <table></table> tag with all attributes .<form> tag, Examples and case studies based on all tags.</form></marquee>	Module II 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, List Tags, Ordered and Unordered Tags, Hyperlink, <hr/> <marquee> Tags, Image Tag with all attributes, Image and Image map. <table></table> tag with all attributes .<form> tag, Examples and case studies based on all tags</form></marquee>		

	X	Module 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, CSS Colors, Background and color, CSS Box Model, CSS Margins, Padding, Borders CSS Text and Font Properties	Module 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,CSS Colors, Background and color, CSS Box Model, CSS Margins, Padding, Borders CSS Text and Font Properties	******	, <u>,</u> 4
		Module IV CSS – Page Layout Classes IDs DIVs Spans, The Box, Styling Page Divisions, Paragraph Formatting. Nav Bars: Adding a Navigation Bar, Customizing a Navigation Bar. Case Study: Select any topic of your interest and Design Project using above technologies which suit for Desktop and Laptop computer screen only.	Module IV CSS – Page Layout Classes IDs DIVs Spans, The Box, Styling Page Divisions, Paragraph Formatting. Nav Bars: Adding a Navigation Bar, Customizing a Navigation Bar. Case Study: Select any topic of your interest and Design Project using above technologies which suit for Desktop and Laptop computer screen only.	*****	
B.C.A- I Sem-II	Operating System	Module-I: Introduction of Operating System Definition, Objectives, Functions, Generations of OS, Types of OS (Batch, Multiprogramming, Time Sharing, Real time, Distributed, Personal, Mobile). OS Structure (Monolithic, Layered, Microkernel, Exokernel, Client-Server).	Module-I: Introduction of Operating System Definition, Objectives, Functions, Generations of OS, Types of OS (Batch, Multiprogramming, Time Sharing, Real time, Distributed, Personal, Mobile). OS Structure (Monolithic, Layered, Microkernel, Exokernel, Client-Server).		
		Module II: Process Management Process Management- Introduction to Processes, Process Model, Process creation, Process termination, Process hierarchy, Process states.	Module II: Process Management Process Management- Introduction to Processes, Process Model, Process creation, Process termination, Process hierarchy, Process states.		
	ESTD JUNE 1964	Module III: Memory Management Memory Management- Introduction to memory management, Requirements (Relocation, Protection, Sharing, Logical organization, Physical organization). Memory partitioning-Fixed partitioning, Dynamic partitioning, Paging, Segmentation. Concept of Virtual memory.	Module III: Memory Management Memory Management- Introduction to memory management, Requirements (Relocation, Protection, Sharing, Logical organization, Physical organization). Memory partitioning-Fixed partitioning, Dynamic partitioning, Paging, Segmentation. Concept of Virtual memory.	5,	

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		Module – IV File System Files & File system, File structure, File types, File access, File attributes, Basic file operations. Directories – Single-level & Hierarchical directory systems, Path names & Directory operations. Differentiate between Windows and Linux OS.	Module – IV File System Files & File system, File structure, File types, File access, File attributes, Basic file operations. Directories- Single-level & Hierarchical directory systems, Path names & Directory operations. Differentiate between Windows and Linux OS.		:= a ⁽¹⁾
B.C.A II	Data	Module I	Module I Introduction to data structures		
Sem-IV	Structure	Introduction to data structures	Introduction to Array,		
	Using C++	Introduction to Array,	Introduction to Data Structures,		
		Introduction to Data Structures,	Concept of Abstract Data types,	•••••	
		Concept of Abstract Data types,	Array as ADT,		
		Array as ADT,	Data structures and its types,	9	
		Data structures and its types,	Data structures operations		
		Data structures operations			
		Module II	Module II		
		Searching and Sorting and Methods	Searching and Sorting and Methods		
		Introduction to Searching and Sorting,	Introduction to Searching and Sorting,		
		Searching: Linear search, Binary search and	Searching: Linear search, Binary search and		
		hashing,	hashing,		
		Sorting: Bubble Sort, Insertion sort, Selection sort,	Sorting: Bubble Sort, Insertion sort, Selection sort,		
		Merge sort,	Merge sort,		
		Module III	Module III		
		Stacks and Queues	Stacks and Queues		
		Introduction to stack,	Introduction to stack,		
		Primitive Stack operations: Push & Pop, Array and	Primitive Stack operations: Push & Pop, Array and Linked Implementation of Stack in C++,		
		Linked Implementation of Stack in C++, Application of stack:	Application of stack:		
		Prefix and Postfix Expressions Evaluation,	Prefix and Postfix Expressions Evaluation,	•••••	
		Definition of queue,	Definition of queue,		
		Operations on queue,	Operations on queue,		
1	O COLLEGE	Types of queue-Linear, Circular, Applications of	Types of queue-Linear, Circular, Applications of		
AMA	ESTD 5	queue	queue		
EKA	JUNE E	Madala XX	Module IV		
1 3	1964	Module IV Linked Lists and Trees	Linked Lists and Trees		
	(Ionomous)	Introduction to Pointer,	Introduction to Pointer,		
		Introduction to linked lists,	Introduction to linked lists,		
		Implementation of Linked list,	Implementation of Linked list,		

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	CI'I II'	Types of Linked List:	
	Types of Linked List:		4.4
	Singly, Doubly and Circular,	Singly, Doubly and Circular,	
	Operations on linear linked list: Traversal,	Operations on linear linked list: Traversal,	*
	Insertion, Deletion, Searching	Insertion, Deletion, Searching	
		Trees: definition, terminologies, representation,	
1	types, Tree Traversal- (Preorder, Inorder,	types, Tree Traversal- (Preorder, Inorder,	
	Postorder)	Postorder)	

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DEPARTMENT OF B. C. A.

VIVEKANAND COLLEGE, KOLHAPUR

(AUTONOMOUS)



VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS) STATEMENT OF SYLLABUS COVERED

Year- 2022-23

Term- I

Name of teacher-Miss. Shivani Subhhash Kagale

Department-BCA

			De	partment-	BCA
Class	Subject	Syllabus assigned	Syllabus Covered	Syllabus not to Covered	Remark
B.C.A I Sem-I	Programming in C (part-I)	Module I Problem Solving Methods: Problem definition, Steps in Problem Solving (Define Problem, Analyze Problem, Explore Solution). ALGORITHM: Definition, notations, characteristics of algorithm, examples on algorithm. FLOWCHARTS: Definition, features of flowcharts, symbols, examples, coding, running, debugging-types of errors (syntax, logical, runtime errors.)	definition, Steps in Problem Solving (Define Problem, Analyze Problem, Explore Solution). ALGORITHM: Definition, notations, characteristics of algorithm, examples on algorithm. FLOWCHARTS: Definition, features of flowcharts, symbols, examples, coding, running, debugging-types of errors (syntax, logical, runtime errors.)	•••••	
		Module II Introduction to c:History, features of c language, Character set, Identifiers: variables, constants, symbolic constants, keywords. Data types, Operators: Arithmetic, relational, logical, assignment, bitwise, increment/decrement and special operators, Concept of operator Precedence & Associatively. Comments-types of comments, Use of Comments, Header Files (conio,stdio,string,math). Structure of C Program, Input and Output unctions.	Module II Introduction to c: History, features of c language, Character set, Identifiers: variables, constants, symbolic constants, keywords. Data types, Operators: Arithmetic, relational, logical, assignment, bitwise, increment/decrement and special operators, Concept of operator Precedence & Associatively. Comments-types of comments, Use of Comments, Header Files (conio,stdio,string,math). Structure of C Program, Input and Output Functions.	•••••	
	х	Module III Control Structures: Conditional statements: if, If-else nested if-else, switch statement. Loops: while, for, doWhile loop, Unconditional statements: Break, continue, exit, goto statements.	Module III Control Structures: Conditional statements: if, If-else nested if-else, switch statement. Loops: while, for, doWhile loop, Unconditional statements: Break, continue,	•••••	
		Arrays and Strings: Arrays- Meaning and definition, Declaration, Initialization and types	Module IV LANgays and Strings: Arrays- Meaning and definition, Declaration, Initialization and types	•••••	

		of arrays (single and multidimensional arrays).	of orrove (single and 12'1'		
		Strings: Meaning and definition, Declaration,	5 (B		
		Initialization String functions strlen(), strrev(),	g de l'alla	1 1	
		strlwr(), strupr(), strcat(), strcmp(), strcpy().		1	
		Handling of character array.OS.	strlwr(), strupr(), streat(), stremp(), strepy().	1	
B.C.A	Fundamental of	Module I Introduction to computer:	Handling of character array. Introduction to computer Computer		
I	Computers	Computer Characteristics, Concept of	To an partie Computer		
Sem-I	-	Hardware, Software, Evolution of computer	The state of the s		
		and Generations, Types of computer – Analog	The state of the s		
		& Digital computers, Hybrid computers,	Tallet of the Digital		
		General purpose & Special Purpose Computer,			
		Limitations of Computer, Applications of	- I SECURATE TOTAL OF THE PROPERTY OF THE PROP		
		Computer in Various fields. Structure and	i i i i i i i i i i i i i i i i i i i	•••••	
		Working of Computer: Functional Block	Various fields. Structure and Working of	1	
		diagram of computer. CPU, ALU, Memory			
1	1	Unit, Bus structure of Digital Computer -	computer. CPU, ALU, Memory Unit, Bus		
		Address, data and control bus.	structure of Digital Computer - Address, data and control bus.		
		Module II Input /Output Devices: Input			
		device – Keyboard, Mouse, Scanner, MICR,	Module II Input /Output Devices: Input		
		OMR.	device – Keyboard, Mouse, Scanner, MICR, OMR.	-	
		Output devices – VDU, Printers – Dot Matrix,			
- 1		Daisy-wheel, Inkjet, Laser, Line printers and	Output devices – VDU, Printers – Dot Matrix,		
		Plotters. Computer Memory: Memory Concept	Daisy-wheel, Inkjet, Laser, Line printers and		
		, Memory cell, memory organization,	Plotters. Computer Memory : Memory Concept , Memory cell, memory organization,		
		Semiconductor memory- RAM, ROM,	Semiconductor memory- RAM, ROM,	333333	
		PROM,EPROM,	PROM, EPROM,		
		Secondary Storage devices - Magnetic			
		tape, Magnetic Disk (floppy disk & Hard	Secondary Storage devices - Magnetic tape,		
		disk.), Compact Disk.	Magnetic Disk (floppy disk & Hard disk.), Compact Disk.		
		Module III Computer Language and			
		Software: Number System - Decimal, Binary,	Module III Computer Language and		
		Octal & Hexadecimal, Conversion from One	Software: Number System - Decimal, Binary, Octal & Hexadecimal, Conversion from One		
		base to another base. Computer Codes -: BCD,	base to another base. Computer Codes - : BCD,		
		EBCDIC, ASCII, Machine Language, Assembly	EBCDIC, ASCII, Machine Language,		
			Assembly language, High Level language,		
	1	Compiler, Interpreter, Characteristics of good	Assembler Compiler Intermedia		
		Language. Software - System and application	paracteristics of good I anguage Software		
		software	Steem and application software		
		Language. Software - System and application couls software	DIE and application software		
		Module IV Operating System: Operating	VIOGULE IV Operating System: Operating		
		system, Evolution of operating system. Function	Cyclinian of System. Operating		

	of operating system. Types of operating systems. Detailed study of Windows Operating System. Introduction and Features of LINUX OS. Function of operating system. Types of operating systems. Detailed study of Windows Operating System. Introduction and Features of LINUX OS.	
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(Signature of the Head of Department)

HEAD

DEPARTMENT OF B. C. A.

VIVEKANAND COLLEGE, KOLHAPUR

(AUTONOMOUS)



VIVEKANAND COLLEGE, KOLHAPUR(AUTONOMOUS) STATEMENT OF SYLLABUS COVERED

Year- 2022-23 Name of teacher- Miss.Shivani Subhash K

Term- II

Department-BCA

Class	Subject	Syllabus assigned	Syllabus Covered	Syllab not to
B.C.A I Sem- II	Programmi ng in C (part-II)	Module I User defined functions: Need, multi functioned program, form of a c function, return value and their type, calling a function, category of a functions, Actual and Formal arguments, functions with array, Storage classes: auto, external, static and register. Command line argument. Preprocessors-Introduction, types of Preprocessor.	Module I User defined functions: Need, multi functioned program, form of a c function, return value and their type, calling a function, category of a functions, Actual and Formal arguments, functions with array, Storage classes: auto, external, static and register. Command line argument. Preprocessors-Introduction, types of Preprocessor.	Covere
		Module IIPointers: 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().	Module 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().	
		union.	Module 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.	
		operations on the gete(), pute(), getw(), putw(), fprintf(),	Module 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(), scanf(), ftell(), fseek(), rewind().	
B.C.A I Sem- II	Operating System	77, 130	Plottile I Perfection of Operating System- Definition, Objectives, Functions, Generations of OS,	

		Types of OS (Batch, Multiprogramming, Time Sharing, Real time, Distributed, Personal, Mobile). OS Structure (Monolithic, Layered, Microkernel, Exokernel, Client-Server).	Types of OS (Batch, Multiprogramming, Time Sharing, Real time, Distributed, Personal, Mobile). OS Structure (Monolithic, Layered, Microkernel, Exokernel, Client-Server).	
		Module II Process Management — Process Management- Introduction to Processes, Process Model, Process creation, Process termination, Process hierarchy, Process states.	Module II Process Management – Process Management- Introduction to Processes, Process Model, Process creation, Process termination, Process hierarchy, Process states.	
		Module III Memory Management- Memory Management- Introduction to memory management, Requirements (Relocation, Protection, Sharing, Logical organization, Physical organization). Memory partitioning- Fixed partitioning, Dynamic partitioning, Paging, Segmentation. Concept of Virtual memory.	Module III Memory Management- Memory Management- Introduction to memory management, Requirements (Relocation, Protection, Sharing, Logical organization, Physical organization). Memory partitioning- Fixed partitioning, Dynamic partitioning, Paging, Segmentation. Concept of Virtual memory.	
D. G.		Module IV File System- Files & File system, File structure, File types, File access, File attributes, Basic file operations. Directories- Single- level & Hierarchical directory systems, Path names & Directory operations. Differentiate between Windows and Linux OS.	Module IV File System- Files & File system, File structure, File types, File access, File attributes, Basic file operations. Directories- Single- level & Hierarchical directory systems, Path names & Directory operations. Differentiate between Windows and Linux OS.	••••
B.C.A II Sem IV	Advance Web Technology	Module I HTML Forms: - Overview of HTML5 and Revisions on FORMS ,CSS,InsertingImage,Creatingwebsites,Hyperlinks, <div>tag</div>	Module I HTML Forms:- Overview of HTML5 and Revisions on FORMS ,CSS,InsertingImage,Creatingwebsites,Hyperlinks, <div>tag</div>	
		Module II Java Script: Overview, Client-Side JavaScript, Advantages of JavaScript, Limitations of JavaScript, Syntax:- First JavaScript Code, Internal File, External File, Java Script Variables:- Data types, Variables, Operators:- Reserve words, Control statements, Loops, Function:- Function Definition.	Module II Java Script: Overview, Client-Side JavaScript, Advantages of JavaScript, Limitations of JavaScript, Syntax:- First JavaScript Code, Internal File, External File, Java Script Variables:- Data types. Variables, Operators:- Reserve words, Control statements, Loops, Exection:- Function Definition.	
		Events in JavaScript & DOM: What is an Event?, one cless Event Type, onsubmit Event Type, onmouseover and onmouseout, Standard Events, Dialog Box:- Alert Dialog 1	Module III Hevers in JavaScript & DOM: What is an Event?, Notelick Event Type, onsubmit Event Type, onmouseover and commouseout, Standard Events, Dialog Box:- Alert	••••

		Box, Confirmation Dialog Box, Prompt Dialog Box, JAVA	Diolog Doy Confirmation Did D. D. D.	
		Script Objects:- Object Properties, Object Methods, User	Dialog Box, Confirmation Dialog Box, Prompt Dialog	
		Defined Objects, Defining Methods for an Object DOM	Box, JAVA Script Objects:- Object Properties, Object Methods, User	A.
		(Document Object Model), Array, String, Form		
		Validation: - Basic Form Validation.	Defined Objects, Defining Methods for an Object DOM	
		, andation. Basic Form vandation.	(Document Object Model), Array, String, Form	-
		Module IV	Validation: Basic Form Validation.	
		Introduction to PHP: History, WebServer, WAMP	Module IV	
		server, Basic Programming Concepts of PHP: Syntax,	Introduction to PHP: History, WebServer, WAMP	
		Operators Variables Constants Control at the state of the	server, Basic Programming Concepts of PHP: Syntax,	
		Operators, Variables, Constants, Control statement loops	Operators, Variables, Constants, Control statement loops	
		,Language construct and functions, Function –Syntax,	,Language construct and functions, Function -Syntax,	
		Arguments, Variables, References, Returns and Variable Scope.	Arguments, Variables, References, Returns and Variable	
B.C.A	DBMS	Module I Introduction of Database	Scope.	
- I	DDMS	1.1 Introduction	Module I Introduction of Database	
Sem-			1.1 Introduction	
II		1.2 Definition of DBMS	1.2 Definition of DBMS	
**		1.3 file processing system Vs DBMS	1.3 file processing system Vs DBMS	
		1.3.1 Limitation of file processing system	1.3.1 Limitation of file processing system	
1		1.3.2 Comparison of File processing system and	1.3.2 Comparison of File processing system and	
		DBMS	DBMS	
1		1.4 Advantages and Disadvantages of DBMS	1.4 Advantages and Disadvantages of DBMS	
1		1.5 Users of DBMS	1.5 Users of DBMS	
		1.5.1 Database Designers	1.5.1 Database Designers	
		1.5.2 Application programmer	1.5.2 Application programmer	130334
		1.5.3 Sophisticated Users	1.5.3 Sophisticated Users	l l
		1.5.4 End Users	1.5.4 End Users	
		1.6 Capabilities of good DBMS	1.6 Capabilities of good DBMS	
	N.	1.7 Types of Database System:	1.7 Types of Database System:	
		1.7.1 Centralized database system	1.7.1 Centralized database system	
		1.7.2 client-server system	1.7.2 client-server system	
		1.7.3 Distributed database system.	1.7.3 Distributed database system.	-80
		34 11 110		
		Module II Organization of Database System	Module II Organization of Database System	
		2.1 Introduction	2.1 Introduction	
		2.2. Logical and Physical Files	2.2. Logical and Physical Files	
		2.2.1 Logical and Physical Files Definitions	2.2.1 Logical and Physical Files Definitions	
-		2.2.2 File Structure	2.2.2 File Structure	
		2.3 Basic File Operations	Basic File Operations 2.3.1 Opening Files 2.3.2 Closing Files 2.3.3 Reading and Writing	
		2.3.1 Opening Files	2.3.1 Opening Files	
		2.3.1 Opening Files 2.3.2 Closing Files 2.3.3 Reading and Writing ESTD JUNE 1964	2.3.2 Closing Files	1
	I	2.3.3 Reading and Writing 1964	/S/ 2.2.2 Deading and W/44	
		2.5.5 Rodding and Willing \(\frac{2}{2}\)\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	2.3.3 Reading and Writing	I

		2.3.4 Seeking	2.3.4 Seeking	
		2.4 File Organization	2.4 File Organization	
		2.4.1 Field and Record structure in file	2.4.1 Field and Record structure in file	
		2.4.2 Record Types		
		2.5 Types of file organization	2.4.2 Record Types	
		2.5.1 Files of Unordered Records (Heap Files)	2.5 Types of file organization	
		2.5.2 File of Ordered Records (Sorted Files)	2.5.1 Files of Unordered Records (Heap Files)	
		2.5.3 Hash Files	2.5.2 File of Ordered Records (Sorted Files) 2.5.3 Hash Files	
		2.5.4 Indexed file	2.5.4 Indexed file	1
		Module III Data Models	Module III Data Models	
		3.1 Introduction	3.1 Introduction	
		3.2 Data Models	3.2 Data Models	
		3.2.1 Object Based Logical Model		
		3.2.2 Record Base Logical Model	3.2.1 Object Based Logical Model 3.2.2 Record Base Logical Model	
		a. Relational Model	a. Relational Model	
		b. Network Model	b. Network Model	
		c. Hierarchical Model	c. Hierarchical Model	
		3.3 Entity Relationship Model		
		3.3.1 Entity Set	3.3 Entity Relationship Model 3.3.1 Entity Set	
		3.3.2 Attribute	3.3.2 Attribute	
		3.3.3 Relationship Set	3.3.3 Relationship Set	
		3.4 E-R Model terms Introduction	3.4 E-R Model terms Introduction	
		a. Relation	a. Relation	
		b. Tuple	b. Tuple	
		c. Attribute	c. Attribute	
		d. Cardinality	d. Cardinality	
		e. Degree	e. Degree	
	15	f. Domain	f. Domain	
		3.5 Keys	3.5 Keys	
		3.5.1 Super Key	3.5.1 Super Key	
1 1		3.5.2 Candidate Key	3.5.2 Candidate Key	27
1 1		3.5.3 Primary Key	3.5.3 Primary Key	
		3.5.4 Foreign Key	3.5.4 Foreign Key	
1 1		3.6. Relational Database Design	3.6. Relational Database Design	
		3.6.1 Introduction	3.6.1 Introduction	1
	:	3.6.2Normalization	3.6.2Normalization	
		3.6.3 Normal Form	3.6.3 Normal Form	1
		3.6.1 1 NF	3.6.1 1 NF	
		3.6.2 2 NF	3.6.2 2 NF	
		3.6.2 2 NF 3.6.3 3 NF	3.6.3 3 NF	
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		Autonomo	US	

Module IV Relational algebra

- 4.1 Introduction
- 4.2 Operations
 - a. Select
 - b. Project
 - c. Union
 - d. Difference
 - e. Intersection
 - f. Cartesian Product
 - g. Natural Join
- 4.3. SQL (Structured Query Language)
 - 4.3.1 Introduction
 - 4.3.2 History of SQL
 - 4.3.3 Basic Structure
 - 4.3.4 DDL Commands
 - 4.3.5 DML Commands
 - 4.3.6 Simple Queries
 - 4.3.7 Nested Queries
 - 4.3.8 Aggregate Functions
- 4.3.9 Clauses

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