Rayat Shikshan Sanstha's

Sadguru Gadage Maharaj College, Karad

(An Autonomous College)

Affiliated to Shivaji University, Kolhapur.

Department of Computer Science

Bachelor of Computer Application Syllabus

B.C.A. Part-II

Implemented from June, 2020

Rayat Shikshan Sanstha's

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Affiliated to Shivaji University, Kolhapur.

B.C.A. Part-II, Semester-III & IV
STRUCTURE OF COURSE

- **TITLE** : B.C.A. (Bachelor of Computer Application)
- **YEAR OF IMPLEMENTATION** : 2020-21

PREAMBLE:

There are bright career prospects for computer application professionals or software professionals in recent scenario. With the opening of huge software and IT companies in India, the job opportunities for trained professionals have increased considerably. India is known to be a leader in software and IT sector.
Computer application graduates pass outs find job opportunities in a variety of environments in academia, research, industry, government, private, business organizations, banking sector and so on.
They are involved in analyzing problems for solutions, formulating and testing, using advanced communications or multimedia equipment, or working in teams for product development.
The software and IT companies are the major employers of computer science and application graduates. They offer the best packages to the young graduates which are unmatched with other branches of science.

GENERAL OBJECTIVES OF THE COURSE :

- The content of the syllabus have been framed as per UGC norms of CBCS Pattern.
- The students are expected to understand the fundamentals, principles, recent commerce and IT concepts and recent developments in the subject area.
- The practical course is in relevance to the theory courses to improve the understanding of the concepts.
- It is expected to inspire and boost interest of the students towards Computer application with respect to commerce as the main subject.
- To develop the power of appreciations, the achievements in Computer and role in nature and society.
- To enhance student sense of enthusiasm towards IT and to involve them in an intellectually stimulating experience of learning in a supportive environment.

DURATION : 3 YEAR
PATTERN : SEMESTER
MEDIUM OF INSTRUCTION : ENGLISH
ELIGIBILITY OF THE COURSE: The students who had passed 10+2.

BCA–II (CBCS) PATTERN W.E.F. 2020-21

The following shall be the courses of the studies under

S E M E S T E R – III (Duration – 6 Months)																		
Sr. No	**Course Title**	**Teaching Scheme**						**Examination Scheme**										
								Theory								**Practical**		
		Theory			**Practical**			**Theory**			**Internal**			**Total**		**Total**		
		No. of lectures	Hours	Credits	No. of Lectures	Hours	Credits	Max.	Min.	Hours	Max.	Min.	Hours	Max.	Min.	Max.	Min.	Hours.
1	**20-371**	4	3.2	4	-	-	-	60	24	3	40	16	2	100	40	-	-	-
2	**20-372**	4	3.2	4	-	-	-	60	24	3	40	16	2	100	40	-	-	-
3	**20-373**	4	3.2	4	-	-	-	60	24	3	40	16	2	100	40	-	-	-
4	**20-374**	4	3.2	4	-	-	-	60	24	3	40	16	2	100	40	-	-	-
5	**20-375**	4	3.2	4	-	-	-	60	24	3	40	16	2	100	40	-	-	-
6	**20-376**	-	-	-	2	3.2	2	-	-	-	-	-	-	-	-	50	20	3
7	**20-377**	-	-	-	2	3.2	2	-	-	-	-	-	-	500	-	50	20	3
Total		**20**	**16**	**20**	4	**6.4**	**4**	**300**	-	-	**-**	-	-	**500**	-	**-**	-	-
S E M E S T E R – IV (Duration 6 Months)																		
1	**20-471**	4	3.2	4	-	-	-	60	24	3	40	16	2	100	40	-	-	-
2	**20-472**	4	3.2	4	-	-	-	60	24	3	40	16	2	100	40	-	-	-
3	**20-473**	4	3.2	4	-	-	-	60	24	3	40	16	2	100	40	-	-	-
4	**20-474**	4	3.2	4	-	-	-	60	24	3	40	16	2	100	40	-	-	-
5	**20-475**	4	3.2	4	-	-	-	60	24	3	40	16	2	100	40	-	-	-
6	**20-476**	-	-	-	2	3.2	2	-	-	-	-	-	-	-	-	50	20	3
7	**20-477**	-	-	-	2	3.2	2	-	-	-	-	-	-	-	-	50	20	3
Total		**20**	**16**	**20**	4	6.4	**4**	**300**	-	-	**-**	-	-	**500**	-	**-**	**-**	**-**
Grand Total		40	32	**40**	8	12.8	**8**	**600**	-	-	**-**	-	-	**1000**	-	-	-	-

- Student contact hours per week : **19.2** Hours (Min.)
- Total Marks for BCA.-II : **1200**
- Theory Lectures : 48 Minutes Each
- Total Credits for BCA.-II (Semester III & IV) :**48**
- Course list as per enclosed Annexure. : Practical Examination is semester wise.
- ***Separate passing is mandatory for Theory, Internal, and Practical.***

BCA Part-II (Semester- III and IV) 2020-21

Code	Course	Course Title
SEMESTER – III		
20-371	Computer Application Paper-XV	Cost Accounting
20-372	Computer Application Paper-XVI	Human Resource Management
20-373	Computer Application Paper-XVII	System Analysis & Design
20-374	Computer Application Paper-XVIII	Object Oriented Programming with C++
20-375	Computer Application Paper-XIX	Computer Statistical Methods Oriented
20-376	Computer Application Paper-XX	Lab Course on Object Oriented Programming with C++
20-377	Computer Application Paper-XXI	Lab Course on Computer Statistical Methods Oriented (using MS-Excel)
SEMESTER – IV		
20-471	Computer Application Paper-XXII	Entrepreneurship Development
20-472	Computer Application Paper-XXIII	Organizational Behavior
20-473	Computer Application Paper-XXIV	Database Management System
20-474	Computer Application Paper-XXV	Web Technology
20-475	Computer Application Paper-XXVI	Computer Mathematics
20-476	Computer Application Paper-XXVII	Lab Course on Database Management System and Web Technology
20-477	Computer Application Paper-XXVIII	Mini Project

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Name of the Progarmme : B.C.A. Part-II		**Semester – III**	
Name of the Course (Subject): (20-371) -Cost Accounting			
Semester End Exam (SEE) 60 Marks	**Continuous Comprehensive Evaluation (CCE) 40**	**Total Marks 100**	**Credit Assigned - 04 Workload – 4 Hrs Per Week**

Objectives: To gain the understanding of costing concepts and procedure in cost accounting system.

Unit No.	Name & Contents of Unit	No. of Lectures	Teaching Methods
01	**Introduction to Cost Accounting** Meaning of cost, cost unit, cost centre, cost accounting, objectives, advantages and limitations of cost accounting, difference between financial and cost accounting.	**10**	- Lecture - PPT - Videos
02	**Elements of Cost** Material, Labor and Overheads and preparation of cost sheet, tenders and quotations.	**20**	- Lecture - PPT - Videos - Practical Work
03	**Pricing of Materials** Methods of pricing material issues – LIFO, FIFO, Simple Average, Weighted Average Method.	**15**	- Lecture - PPT - Videos - Practical Work
04	**Reconciliation of Cost and Financial Accounts.**	**15**	- Lecture - PPT - Videos - Practical Work

Reference Books -

1. Jawahar Lal - Cost Accounting
2. M. N.Arora - Cost Accounting - Principles and Practice
3. D.K. Mittal and Luv Mittal - Cost Accounting
4. Ravi M. Kishore - Cost Accounting
5. B.M. Lall Nigam and I.C.Jain - Cost Accounting, Principles, Methods and Techniques

Websites:-

1. www.accountingcoach,com

2. www.accountingtools.com

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Name of the Progarmme : B.C.A Part-II			Semester – III	
Name of the Course (Subject):(20-372) - Human Resource Management				
Semester End Exam (SEE)	Continuous Comprehensive Evaluation	Total Marks	Credit Assigned - 04	
60 Marks	(CCE) 40	100	Workload – 4 Hrs Per Week	
	Introduced from June 2020			

Objectives:

1) To acquaint the students with the basic functions of Human Resource Management.
2) To acquaint the students with the HR Planning, Development & Stress Management.

Sr. No.	Content	Learning Out Comes	Teaching Methods	No. of Lectures
Unit I	**Introduction to Human Resource Management (HRM):** 1.1 Definition & concept 1.2 Importance & Functions of Human Resource Management. 1.3 Organization of HRM 1.4 Recent trends in I.T. Industry. 1.5 Challenges before HRM in I.T. Industry.	Useful for Introduction & basic Knowledge of Management	Lecture, ICT Based, Interactive sessions	**15**
Unit II	**Human Resource Planning & Development:** 2.1 Meaning and concept. 2.2 Process of HRP in I.T. Industry 2.3 Concept of Recruitment and its sources 2.4 Scientific selection procedure. 2.5 Methods of Training & Development in IT industry.	Awareness of Human Resources Process in IT industries	Lecture, ICT Based, Interactive sessions	**15**
Unit III	**Administrative practices& Stress Management:** 3.1 Administrative Practices in I.T. industry 3.2 Virtual organization 3.3 Human Resource Information System, 3.4 Stress Management- meaning, concept &types of stress,Causes and strategies to cope up with stress.	Awareness about administrative practices&Stress Management	Lecture, ICT Based, Interactive sessions	**15**

Unit IV	**Employee Separation:** 4.1 Employee Separation practices in I.T. industry 4.2 Exit interview 4.3 External mobility 4.4 Retrenchment 4.5 Lay off.	Awareness about Employee Separation	Lecture, ICT Based, Interactive sessions ICT Based	**15**

Reference Books:

1. Personnel Management- Dale S. Beach.
2. HRM-D'Cenzo Robinson
3. Geometry if HR -Sadri S. Jayashree S, &Ajagaonkar
4. HRM-K .Ashwathappa
5. HRM- V.S.P.Rao
6. HRM-Patnaik
7. Essentials of HRM- IndranilMutsuddi 8- Personnel & HRM – PSuhbaRao 9- HRM-Gary Dessler.

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Name of the Progarmme : B.C.A Part-II			**Semester – III**				
Name of the Course (Subject):(20-373) - System Analysis & Design							
Semester End Exam (SEE)		**Continuous Comprehensive Evaluation**	**Total Marks**		**Credit Assigned - 04**		
	60 Marks	**(CCE) 40**	**100**		**Workload – 4 Hrs Per Week**		
		Introduced from June 2020					

Objectives:

1. To learn basic concept of system
2. To understand how to apply software engineering perspective through software design and construction in SDLC
3. To learn concept of Software Requirement Specification

Sr. No.	Unit wise Content	Teaching Methods	Teaching Hours
Unit I	**Introduction to System** 1.1 System Concept, elements, types of System, Characteristics of System 1.2 Program, Software System 1.3 Computer based System 1.4 Need for Software engineering 1.5 Software Characteristics 1.6 Software quality 1.7 SDLC(System Development Life Cycle)	Lecture, ICT Based, Interactive	15
Unit II	**Requirement Analysis** 2.1 Roles of System Analyst 2.2 Fact Finding –Sampling of existing documents, Observation, Questionnaire, and Interview 2.3 User Transaction Requirement 2.4 User Decision Requirement 2.5 Software Requirement Specification 2.6 Characteristics of Software Requirement Specification	Lecture, ICT Based, Interactive	15
Unit III	**Analysis and Design**	Lecture, ICT Based,	15

	3.1 Introduction to Analysis and Design 3.2 DFD ,ERD,FDD 3.3 Introduction to UML 3.4 Input design - Guidelines for designing data entry screens , Data entry methods 3.5 Output design - Guidelines, Formatting reports, report types, 3.6 File design - Sequential access files, indexed files, direct access files	Interactive	
Unit IV	**Testing and Maintenance -** 4.1 Introduction to Software testing strategies 4.2 Validation testing - Unit Testing, Integration Testing, System Testing ,User Acceptance Testing , debugging , Testing Tools Introduction to Testing Tools 4.3 Maintenance - Problems with maintenance, Structured and unstructured maintenance 4.4 Organizing for maintenance 4.5 Maintenance side effects 4.6 Case Studies	Lecture, ICT Based, Interactive	15

REFERENCE BOOKS:

1) System analysis and design - Perry Edwards McGuraw Hill international Education.

2) Software Engineering - A practitioners approach - Roqerr pressman (McGraw Hill Series)

3) System Analysis and Design - Elias M. Awad

4) Engineering MIS for Strategic Business Process - ArpitaGopal

5) Analysis and Design of Information System - James A Sen.

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Name of the Progarmme : B.C.A Part-II			**Semester – III**		
Name of the Course (Subject):(20-374) - Computer Oriented Statistical MethodS					
Semester End Exam (SEE)	**Continuous Comprehensive Evaluation**	**Total Marks**		**Credit Assigned - 04**	
60 Marks	**(CCE) 40**	**100**		**Workload – 4 Hrs Per Week**	
	Introduced from June 2020				

Course Objectives:

1. To explain the scope of statistics in business, perform classification and tabulation; also represent the data by graphs.
2. To aquent the students with the concept in Statistics and its applications in Technology, explain and apply sampling techniques in real life.
3. To develop the ability to summarize the data by means of measures of central tendency and dispersion.
4. To perform analysis of bivariate data using correlation and regression.
5. To measure the trend and seasonal variations in time series data.

Unit No	Name & Contents of Units	No .of Lectures.	Teaching Method/Aids
1	**Unit-I Introduction to Statistics:** **1.1.** Meaning and scope of statistics. **1.2.** Primary and secondary data, Qualitative and Quantitative data, Discrete and continuous variables, terms in classification, Frequency and Frequency Distribution **1.3.** Graphical representation : Histogram, Ogive curves, simple examples, Use of graphs to find median and mode **Sampling Techniques:** **1.4.** Need and meaning of sampling techniques, Definitions of Population, Sample, Sampling and Census method. **1.5.** Methods of Sampling: Simple random sampling with and without replacement, Stratified random sampling, Systematic sampling (Concept only).	15	1. PPT 2. Problem Solving. 3. Videos
2	**Unit- II : Measures of Central Tendency and Dispersion** **Measures of Central Tendency:** **2.1** Concept of central tendency (Averages),	15	1. PPT 2. Problem

	Requirements of good statistical average **2.2**. Definition, Merits and demerits of Mean, Median and Mode, Quartiles. Empirical relation between mean, median and mode. **Measures of Dispersion:** **2.3**Concept of dispersion, Requirements of good measures of dispersion, Absolute and relative measures of dispersion **2.4** Definition of Range, Quartile Deviation Standard Deviation and their relative measures, Merits and Demerits of S.D., Coefficient of variation and its uses, Combined S.D. for two groups **2.5** Computation of all the measures of central tendency and dispersion mentioned above.		Solving 3. Videos
3	**UNIT-IV: Analysis of Bivariate Data:** **Correlation:** **3.1** Concept of bivariate data and correlation, types of correlation (Positive, Negative, Linear and Non-linear). **3.2** Methods of studying correlation: Scatter Diagram, Karl Pearson's coefficient of correlation (r) , Spearman's Rank correlation coefficient (R), Interpretation of correlation coefficient (r), Computation of r and computation of R (with and without tie) for ungrouped data. **Regression:** **3.3** Concept of regression, Lines of regression, Regression coefficients. **3.4** Relation between Correlation coefficient and Regression coefficients, properties of regression coefficient, Interpretation of Regression coefficient. **3.5** Numerical examples on ungrouped data.	15	1. PPT 2. Problem Solving 3. Videos
4	**Unit II: Time Series:** **4.1.** Definition and uses of Time series **4.2.** Components of time series, Additive and Multiplicative models. **4.3.**Methods of determination of trend by (i) Method of Moving Averages (ii) Method of Least Squares (only for straight line) **4.4.**Measurement of Seasonal variations using Simple Average method 4.5.Numerical Examples and real life situations.	15	1. PPT 2. Problem Solving 3. Videos

References :

1. G. V. Kumbhojkar, Business Statistics for B.Com. Part-II, Sem-III and Sem-IV, PhadkePrakashan
2. S. S. Desai, Business Statistics, for B.Com. Part-II, Sem-III and Sem-IV,
3. Business Statistics –SIM-Shivaji University, Kolhapur
4. B. M. Agrawal, Essentials of Business Statistics, Ane Books Pvt. Ltd.
5. B. M. Agrawal, Business Mathematics and Business Statistics, Ane Books Pvt. Ltd.
6. R.S.N. Pillai and Bagavathi, Practical Statistics , S. Chand Publications
7. Dr.S.P.Gupta, Statistical Methods,
8. C.B.Gupta, Introduction to Statistics
9. H.C.Saxena and J.N.Kapur, Mathematical Statistics
10. Kapur and Gupta, Applied Statistics

Lab Assignments

20-377	Computer Application Paper-XXI	Lab Course on Computer Statistical Methods Oriented (using MS-Excel)

1. Formation of frequency distribution
2. Graphical representation
3. Measures of central tendency –I (for Ungrouped data)
4. Measures of central tendency –II (for Grouped data)
5. Measures of Dispersion – I (for Ungrouped data)
6. Measures of Dispersion – I (for Grouped data)
7. Correlation (for Ungrouped data)
8. Regression (for Ungrouped data)
9. Time Series – I
10. Time Series – II

(Note- i. Provide required data for each practical Assignment
ii. Practical using only MS-Excel
iii. Verification of examples using in built function)

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Name of the Progarmme : B.C.A Part-II		**Semester – III**	
Name of the Course (Subject):(20-375) - Object Oriented Programming with C++			
Semester End Exam (SEE) 60 Marks	**Continuous Comprehensive Evaluation (CCE) 40**	**Total Marks 100**	**Credit Assigned - 04 Workload – 4 Hrs Per Week**
Introduced from June 2020			

Objectives:

1. To understand the difference between procedure oriented programming and object oriented programming.
2. To enable students to understand Object Oriented Concepts through C++.
3. To learn the concept of polymorphism and inheritance.

Sr. No.	Unit wise Content	Teaching Methods	Teaching Hours
Unit I	**Programming with C++** 1.1 Difference between POP & OOP 1.2 Introduction 1.3 Data types 1.4 Constants & variables 1.5 Arrays 1.6 Operators 1.7 Operator precedence 1.8 Control structures (selective and iterative) 1.9 Function & Pointer	Lecture, ICT Based, Interactive	15
Unit II	**Introduction to object oriented programming** 2.1 Basic concept of OOP 2.2 Benefits and futures 2.3 Class-Definition, Syntax 2.4 Member functions and data members 2.5 Access specifiers, static data member & static member functions 2.6 Array of object friend function 2.7 Object as function argument friend class.	Lecture, ICT Based, Interactive	15
Unit III	**Constructor, Destructors** 3.1 Constructor- Definition, syntax, rules 3.2 Types of Constructors- decant, parameterized, copy 3.3 Destructor- definition, syntax, rules 3.4 Function Overloading & Inline Function – Definition, syntax, rules	Lecture, ICT Based, Interactive	15
Unit IV	**Polymorphism and Inheritance** 4.1 Polymorphism: Meaning, compile Time and Run time	Lecture, ICT Based,	15

	4.2 Virtual functions and Pure virtual function 4.3 Inheritance: meaning, types- single, multilevel, multiple.	Interactive	

REFERENCE BOOKS

1) Object oriented programming with C++ - by E Balagurusamy
2) Object Oriented Programming with C++ by Robert Lafore
3) Object Oriented Programming in C++ by Dr. G. T. Thampi, Dr. S. S. Mantha, DreamTech Press
4) Practical Programming in C++ by Steve Oualline, O'Reilly
5) The C++ Code book by D. Ryan Stephens, Christopher Diggins, Jonathan Turkanis, and Jeff Cogswell, O'Reilly
6) The C++ Programming Language (3rd Edition) by Bjarne Stroustrup
7) C++ the Complete Reference 5th Edition Herbert Schildt, McGraw-Hill
8) Jumping into C++ by Alex Allain
9) Programming with C++, Third Edition by D Ravichandran
10) Mastering C++ by Venugopal, McGraw Hill Education

Lab Course Based on Object Oriented Programming with C++

20-376	Computer Application Paper-XX	Lab Course on Object Oriented Programming with C++

Unit 1: Simple C++ Programs without Class.

a) Using Control structures
b) Illustrating function and

Unit 2: Programs based on Class

a) Defining class & creating an object
b) Using various accesses specifies
c) Using static data members.
d) Creating array of object
e) Friend class and friend function.

Unit 3: Programs based on Constructor, Destructor

a) Creating constructor, parameterized, copy, multiple constructors
b) Program using destructor.

Unit 4: Programs on Polymorphism,Inheritance& File handling

a) Programs based on following concepts
    i) Compile Time
    ii) Run Time
    iii) Virtual Function
b) Inheritance - Simple, Multiple, multilevel.
c) Function overloading and Operator overloading
d) File handling – Creating file, Reading data, Writing new data, Closing a file

Note: All programs are to be written in C++ Language and **minimum 16 assignments** to be covered during practical.

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Name of the Progarmme : B.C.A Part-II		Semester – IV	
Name of the Course (Subject):(20-471) -Entrepreneurship Development			
Semester End Exam (SEE) 60 Marks	**Continuous Comprehensive Evaluation (CCE) 40**	**Total Marks 100**	**Credit Assigned - 04 Workload – 4 Hrs Per Week**
Introduced from June 2020			

Objective:-

1. To impart theoretical knowledge of Entrepreneurship to the students.
2. To develop Entrepreneurial qualities and skills among the students.

Sr. No.	Contents	Learning Out Comes	Teaching Methods	No. of Lectures
Unit I	**Entrepreneur:** 1.1 Concept and meaning, 1.2 Qualities of successful Entrepreneur. 1.3 Classification of Entrepreneurs 1.4 Functions of Entrepreneur 1.5 Concept of Intra-preneur and Net-preneur 1.6 Challenges before Entrepreneurs in modern Era.	Useful for Introduction & basic Knowledge of Entrepreneurship	Lecture, ICT Based, Interactive	15
Unit II	**Entrepreneurship:** 2.1 Concept &Importance 2.2 Theories of Entrepreneurship- a) Joseph Schumpeter's Innovation Theory, b) McClelland's Theory of need achievement 2.3 Factors stimulating Entrepreneurship 2.4 Obstacles in Entrepreneurship Growth. 2.5 Entrepreneurship in service Industry.	Acquaintance with theory of Entrepreneurship	Lecture, ICT Based, Interactive	15

Unit III	**Entrepreneurship Development:** 3.1 Concept &objectives 3.2 Process of ED 3.3 problems and measures in Entrepreneurship Development 3.4 Institutional support for Entrepreneurship development a) Entrepreneurship Development Instituteof India (EDII), Ahmedabad b) National Institute for Entrepreneurship and Small Business Development,(NIESBUD) New Delhi, c) District Industry Centre (DIC) 3.5 Government Initiatives- Start up India, Stand up India.	Development of Entrepreneurship Institution	Lecture, ICT Based, Interactive	15
Unit IV	**Project Management:** 4.1 Concept of project 4.2 Classification of project 4.3 Stages of Project Management 4.4 Reasons for failure for project report 4.5 Project for call Center, Internet Café, Computer Training Centre, Online shop, E-Retailing Unit. 4.6 Franchising- Concept &Nature, Process of franchising.	Awareness about practical work of project Management	Lecture, ICT Based, Interactive ICT Based	15

Reference Books:

1-Dynamics of Entrepreneurship Development –By Vasant Desai
2- Entrepreneurship Development in India- By C.B.Gupta and N.P.Srinivasan
3- Entrepreneurship Development- By S.S. Khanka
4- Entrepreneurship Development-By Godron E and Natarajan .
5-Udyojakata- By Prabhakar Deshmukh
6- Project Preparation, Appraisal & Implementation –By Prasanna Chandra
7- Entrepreneurship Development –By S.L.Gupta&Arun Mittal

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Name of the Progarmme : B.C.A Part-II		Semester – IV	
Name of the Course (Subject):(20-472) -Organizational Behavior			
Semester End Exam (SEE) 60 Marks	**Continuous Comprehensive Evaluation (CCE) 40**	**Total Marks 100**	**Credit Assigned - 04 Workload – 4 Hrs Per Week**
Introduced from June 2020			

Objectives:-

1. To understand individual and group behaviour within the organization.
2. To identify the required behavioural model in the Organization.

Sr. No.	Contents	Learning Out Comes	Teaching Methods	No. of Lectures
Unit I	**Fundamentals of Organizational Behaviour:** 1.1 Definition & Nature 1.2 Scope of Organizational Behavior 1.3 Evolution of Organizational Behavior. 1.4 Elements of organizational Behavior 1.5 Disciplines continuing to Organizational Behavior.	Useful for Introduction & basic Knowledge of Organizational Behaviour	Lecture, ICT Based, Interactive Sessions	15
Unit II	**Attitude, Values and Motivation:** **2.1 Attitude-** Concept, Functionsof attitudes, components of Attitude, **2.2 Values:** Concept,Personal and organizational Values. **2.3 Motivation:**Concepts,Natureand Importance of Motivation, **Theories of Motivation**- Maslow's Need Hierarchy Theory. Herzberg's Two Factor Theory, McGregor's X and Y Theory.	Awareness of Attitude, Values and Motivation	Lecture, ICT Based, Interactive	15
Unit III	**Personality and Work Stress:** **3.1 Personality**- Definition of personality, Determinants of personality, Theories of personality: - Trait Theory, Myers Time big five model. **3.2 Work Stress-** Meaning and detection of stress, Sources of stress- Individual & Organizational level, Type A and Type B	Development of Personality and Work Stress Management.	Lecture, ICT Based, Interactive	15

	personality,Types of stress.			
Unit IV	**Group Behaviour and Conflict:** **4.1 Group Behavior-** Nature of Group, Types of Groups, Team Building and Effective team works, Stages of group formation. **4.2 Conflict**- Concept of conflict, Interpersonal Conflict, Intrapersonal Conflict, Intergroup Conflict &organizational Conflict, Johari window, strategies for managing conflict.	Awareness about Group Behaviour and Conflict,	Lecture, ICT Based, Interactive ICT Based	15

REFERENCE BOOKS

1. Organizational Behaviour Text, Course and Games- By K.Aswathappa. HimalayapublishingHouse, Mumbai.
2. Organizational Behaviour- By Final Luthans McGraw-Hill
3. Organizational Behaviour through Indian Philosophy- By M.N. Mishra, Himalaya PublicationHouse.
4. Organizational Behaviour- By Steplen Robbins, Timotly Judge, SeemaSangliPeason Prentice Hall

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Name of the Progarmme : B.C.A Part-II		**Semester – IV**	
Name of the Course (Subject):(20-473) -Database Management System			
Semester End Exam (SEE) 60 Marks	**Continuous Comprehensive Evaluation (CCE) 40**	**Total Marks 100**	**Credit Assigned - 04 Workload – 4 Hrs Per Week**
Introduced from June 2020			

Objectives:

1. To learn the basic concepts of Database Management System.
2. To understand the different types of Models in DBMS.
3. To enable the students to create different types of SQL Commands**.**

Sr. No.	**Unit wise Content**	**Teaching Methods**	**Teaching Hours**
Unit I	**Introduction of Database** 1.1 Definition of Database, Needs, features Database Management Systems (DBMS): Definition 1.2 components, file system, comparison of file processing system with DBMS, functions of DBMS 1.3 advantages, disadvantages of DBMS, Structure of DBMS, Services provided by DBMS, schema, subschema, data abstraction, data independence, architecture of database system, data dictionary 1.4 database administration, database manager 1.5 Primary Domain Controller and Backup Domain Controller 1.6 ACID Properties	Lecture, ICT Based, Interactive	15
Unit II	**FileOrganization of Database System** 2.1 Introduction of file- (Field, Record) 2.1.1 file types 2.2 File Organization- 2.2.1 Heap / Pile file organization, 2.2.2 Serial file organization,	Lecture, ICT Based, Interactive	10

	2.2.3 Sequential file 2.2.4 Indexed sequential file, 2.2.5 Random access file (Direct access file) 2.3 Types of Database System: 2.3.1 Centralized database system 2.3.2 Client-server system 2.3.2 Distributed database system		
Unit III	**Data Models** 3.1 Introduction, definition, features of data models, Object based data models- Entity Relationship 3.2 Model, cardinality, Record based models- Relational Model, Network Model, Hierarchical Model, Physical Data Models 3.3 Keys: Primary key, foreign key, candidate key, super key, unique key 3.4 Normalization: Concept of normalization, advantages, First NF, Second NF, Third NF, examples of normalizations 3.5 Introduction to Database Security	Lecture, ICT Based, Interactive	15
Unit IV	**Introduction to MS-Access and SQL** 4.1 Database Management through MS-Access: Introduction of MS-Access, features, database creation, table creation, insert records, queries 4.1.1 Forms and report creation, introduction to latest versions of MS-Access. 4.1.2 Case Study: Design Database System for- Library management system, Inventory management system 4.2 SQL (StructuredQuery Language): 4.2.1 Introduction 4.2.2 History OfSQL 4.2.3 BasicStructure**,** 4.2.4 DDLCommand, 4.2.5 DMLCommands 4.2.6 SimpleQueries 4.2.7 NestedQueries 4.2.8 Aggregate Functions	Lecture, ICT Based, Interactive	20

Reference Books:

1. Database System Concept – Silberschatz, Korth
2. Fundamentals of Database System- RamezElmasri,Shamkant B. Navathe(Pearson)
3. Database Management System- Raghu Ramkrishnan,Gehrke (McGraw Hill)
4. Database Management System- R.Panneerselvam
5. Ms-Office Complete reference
6. Structured Query Language- by Osbome
7. Database system concept 5th Edition -Henry F.Korth ,Publisher: McGraw-Hill Book Company

RayatShikshanSanstha's

SadguruGadageMaharaj College, Karad

(Autonomous)

Affiliated to Shivaji University, Kolhapur

Name of the Progarmme : B.C.A Part-II		Semester – IV	
Name of the Course (Subject):(20-474) -Web Technology			
Semester End Exam (SEE) 60 Marks	Continuous Comprehensive Evaluation (CCE) 40	Total Marks 100	Credit Assigned - 04 Workload – 4 Hrs Per Week
Introduced from June 2020			

Objectives:

1. To enable students to understand concept of Internet programming .
2. To learn to develop web based applications using HTML, CSS, Java Script.
3. To learn and understand ASP.

Sr. No.	Unit wise Content	Teaching Methods	Teaching Hours
Unit I	**Internet and WWW** 1.1 Introduction to internet and its applications, browsers, web servers 1.2 Web Development- introduction, features, steps in web development, limitations 1.3 HTML: Introduction, HTML tag and attributes, heading tags, text formatting tags, paragraph tags, and font tag 1.4 List Tags-Ordered and Unordered 1.5 Tags: , <HR>,<Marquee>, Hyperlink <A> 1.6 Image and Image maps, <IMG>, <MAP>, <AREA> 1.7 Tables: table tags, aligning entire table, alignment of row, cell and contents, table attributes, background color setting, width, adding a border, spacing within a cell, spacing between the cells, rowspan and colspan, Table Sections and column properties 1.8 Insert audio and video files-<BGSOUND><EMBED><IMG DYNSRC> 1.9 Frames: Introduction to Frames, the <FRAMESET> tag, nesting <FRAMESET> tag, placing content in frames with the <FRAME> tag, targeting named frames, creating floating frames <IFRAME> 1.10 Introduction to HTML 5 Tags Features of HTML5, HTML5 DocType, New Structure Tags, New Media Tags- Audio Tag, Video Tag, Introduction to HTML5 Forms, New Attributes, New types	Lecture, ICT Based, Interactive	20

Unit II	**Style Sheets** 2.1 Introduction of CSS 2.2 Types -Inline, Internal and External Style Sheet 2.3 CSS selector- element, id, class, group 2.4 Cross Browser Testing 2.5 Forms : Creating Forms, The <FORM> tag, form attributes, named input fields 2.6 <INPUT> Tag-Drop Down and List boxes, Hidden, Text area, Password, Button, Image, Radio, Checkbox. 2.7 Action buttons- Submit, Reset 2.8 <INPUT> 2.9 Limitations of HTML	Lecture, ICT Based, Interactive	10
Unit III	**Unit-III- Java Script** 3.1 Introduction to Java script 3.2 Difference in Client-Side and Server-Side Script 3.3 Features 3.4 Keywords, Data Types, Control Statements (if-else, looping) with examples 3.5 Objects in Java. 3.6 Events and Event Handlers, 3.7 Dialogue boxes 3.8 Built-in functions 3.9 Validations	Lecture, ICT Based, Interactive	15
Unit IV	**Introduction to Server-Side scripting** 1.1 **ASP** – Advantages and limitations 1.2 Server set-up for ASP (PWS/IIS) 1.3 Built in ASP objects 1.4 Loop Structure, Control Structure (If-Else-Then) 1.5 Methods to get data from Clients – (GET and POST), difference between GET and POST 1.6 Database handling, connections and record set object 1.7 Database Connectivity Case Studies: Online Shopping Website, University Website	Lecture, ICT Based, Interactive	15

REFERENCE BOOKS

1. HTML, JavaScript, DHTML and PHP, Ivan Bayross, BPB publications, 2010 Edition
2. HTML Black Book, Steven Holzner, DreamTech Press, 2009 Edition
3. Web Technologies Black Book, Kogent Learning Solutions Inc., Dreamtech press, 2011 Edition
4. ASP.NET 4.0 Black Book, Kogent Learning Solutions Inc., Dreamtech press, 2012 Edition
5. ASP.NET 4.0 Programming, JoydipKanjilal, TATA McGraw-Hill Education Private Ltd., 2010 Edition

RayatShikshanSanstha's

SadguruGadageMaharaj College, Karad

(Autonomous)

Affiliated to Shivaji University, Kolhapur

Name of the Progarmme : B.C.A Part-II		**Semester – IV**	
Name of the Course (Subject):(20-475) -Computer Mathematics			
Semester End Exam (SEE) 60 Marks	**Continuous Comprehensive Evaluation (CCE) 40**	**Total Marks 100**	**Credit Assigned - 04 Workload – 4 Hrs Per Week**
Introduced from June 2020			

Course Objectives:

1. The student will be able understand the concepts involved in the set theory and also solve the practical problems involved in set theory.
2. Be able to communicate mathematical/logical ideas in writing also use this concepts for the computer programming
3. To use matrices to represent a system of equations
4. To Study of graphs, which are mathematical structures used to model pairwise relations between objects

Unit No	Name & Contents of Units	No .of Lectures.	Teaching Method/Aids
1	**Unit-I: Set Theory** **1.1** Meaning and definition of a set, Methods of describing a set : Tabular form, Set builder form **1.2** Types of a set : Finite set, Cardinality of set, Infinite set, Empty set, Subset, Universal set, cardinality of set, Equal sets, Disjoint sets, Complementary set, Venn diagram. **1.3** Operation on Sets: Union of sets, Intersection of sets Difference of sets. **1.4** De Morgan's Laws (without proof), Idempotent laws, Identity laws, Commutative Laws, Associative laws, Distributive laws, Inverse laws, Domination Laws, Absorption laws, Involution laws **1.5** Cartesian product of two sets, Duality, Relation : Reflexive, symmetric, transitive, Real life applications of set **1.6** Examples.	15	1. PPT 2. Problem Solving. 3. Videos
2	**Unit-II: Mathematical Logic**.	15	

	2.1. Logic: Introduction, Meaning of Statement (Proposition): Simple and compound statements, Truth values of a statement, Logical connectivity's. **2.2.** Logical Operations: Negation, Conjunction, Disjunction, Implication, Double Implication, Equivalence of Logical statements. **2.3.** Truth Tables and construction of truth tables. Converse, Inverse and Contra positive, Statement forms: Tautology, Contradiction, and Contingency. **2.4.** Duality, Laws of logic: Idempotent laws, Commutative laws, Associative laws, Identity laws, Involution laws, Distributive laws, Complement laws, De Morgan's laws. **2.5.** Argument: Valid and Invalid arguments. **2.6.** Numerical Examples.		1. PPT 2. Problem Solving 3. Videos
3	**Unit – III: Matrices and Determinants** **3.1** Introduction of a matrix. **3.2** Types of matrices : Row matrix, Column matrix, Null matrix, Unit matrix, Square Matrix, Diagonal matrix, Scalar matrix, Symmetric matrix, Skew - symmetric matrix, Transpose of a matrix. **3.3** Definition of Determinants of order 2 & 3 and their evaluation, Properties of Determinants (without proof) Singular and Non-Singular Matrices **3.4** Algebra of Matrices: Equality of matrices, Scalar Multiplication of matrix, Addition of matrices, Subtraction of matrices, Multiplication of matrices **3.5** Minor, Cofactor, Adjoint of a matrix, and Inverse of square matrix (by Adjoint method), Inverse of Matrix bytransformations. **3.6** Examples based on above.	15	1. PPT 2. Problem Solving 3. Videos
4	**Unit – IV: Graph Theory** **4.1.** Introduction of Graph. Simple, Multi and Pseudo Graph, Loops, Digraph and Weighted Graph. **4.2.** Degree of Vertex, Isolated Vertex, Pedant vertex, Path, Cycle, A-Cycle, Handshaking theorem with examples **4.3.** Types of Graph: Complete, Regular, Bi-Partite, CompleteBi-partite, Isomorphism of Graph, Connected graph. **4.4.** Matrix Representation of Graph: Adjacency and Incidence matrix with examples	15	1. PPT 2. Problem Solving 3. Videos

	4.5. Operations on Graph: Union, Intersection, Complement, Product of Graphs, Fusion of Graphs **4.6.** Examples. **Note: Use of nonprogrammable calculator is allowed.**		

References :

1. PadmalochanHazarika – A Textbook of Business Mathematics\
2. Veena G.R.-Business Mathematics (New age international publishers, New Delhi)
3. V.K.Kapoor , Business Mathematics (Himalaya Publications, New Delhi)
4. J. K Sharma – Business Mathematics Theory and Applications
5. Shantinarayan-Text book of matrices, (S. Chand and Sons , New Delhi)
6. J.P Singh – For BBA Business Mathematics
7. B. M Aggarwal - Business Mathematics and Statistic, Ane books Pvt. Ltd.
8. Kumbhojkar G.V-Business Mathematics (PhadakePrakashan, Kolhapur.)
9. J.P Singh –Business Mathematics For BCA
10. Schaum's Outlines, Graph TheoryS.K Yadav, Discrete Mathematics with Graph Theory, Ane Books Pvt. Ltd.

Lab course based on Database Management System and Web Technology

20-476	Computer Application Paper-XXVII	Lab Course on Database Management System and Web Technology

I]Lab course based on Database Management System

1) Practical's on MS-Access (Take sample tables)

1. Write procedure for creating database in Ms-Access.
2. Generate form in Ms-Access and write steps in detail.
3. Establish relationship between tables and write steps for it.
4. Create reports using different queries based on multiple tables and write steps in detail for it.

I. Library system:

1. Create database for library system
2. Establish essential relationship between tables
3. Design form for above library system
4. Generate following reports for library system.
    a. List of book with accession numbers
    b. List of books according to author
    c. List of books issued to student
    d. Demand books report of students

II. Design Database System for Payroll management system:

1. Draw ER diagram
2. Create database- contains 1. At least 5 tables 2. At least 3 fields with proper data type
3. Set primary key wherever required
4. Create relationship structure
5. Create form for each table
6. Insert at least 5 records in each table
7. Create different query using query wizard
8. Create at least 3 reports using report wizard (at least 5 records)

III. Design Database System for Hospital management system

1. Draw ER diagram
2. Create database- contains 1. At least 5 tables 2. At least 3 fields with proper data type
3. Set primary key wherever required
4. Create relationship structure
5. Create form for each table
6. Insert at least 5 records in each table
7. Create different query using query wizard
8. Create at least 3 reports using report wizard (at least 5 records)

2) Practical Based on SQL:

1. SQL queries on DDL statements.
2. SQL queries on DML statements.
3. SQL queries on Operators-relational, Logical, Like, Between, IN operator
4. SQL queries

II)Lab Course Based on Web Technology

Unit-I

1. Programs based on singular and paired tags, formatting tags, list tags,
2. Programs based on marquee, hyperlink, image maps
3. Program based on frame tags

Unit-II

4. Programs based on CSS, cross browser testing
5. Programs based on creating forms, inputting values
6. Programs based on drop down and list box, text area, password
7. Program based on action buttons, radio, checkbox

Unit-III

8. Programs based on control statements
9. Programs based on event handling and built in functions
10. Program based on validations

Unit-IV

11. Programs based on control statements (branching and looping)
12. Programs based on GET and POST method
13. Programs based on database handling
14. Design and develop interactive website using different HTML tags, ASP, Java Script and database handling.
15. Database Connectivity

Note : Minimum **16 assignments** to be covered during practical.

Mini Project

20-477	Computer Application Paper-XXVIII	Mini Project

A group of maximum four students prepare a mini project under the guidance ofinternal teacher.

Guidelines for Mini Project:

Number of Copies: The student should submit **two spiral copies** of the ProjectReport.

Acceptance/Rejection of Project Report: The student must submit an outline of the project report to the college for approval.The college holds the right to accept the project or suggest modifications for resubmission. Only on acceptance of draft project report, the student should make thefinal copies.

Format of the Project Report:

The student must adhere strictly to the following format for the submission of theProject Report.

a. Paper:

The Report shall be typed on white paper, A4 size, for the final submission. TheReport to be submitted to the must be original and subsequent copies may bephotocopied on any paper.

b. Typing:

The typing shall be of standard letter size, 1.5 spaced and on one side of the paperonly. (Normal text should have Arial Font size 11 or 12. Headings can have biggersize)

c. Margins:

The typing must be done in the following margins:

Left -----1.5 inch, Right ----- 1 inch

Top ----- 1 inch, Bottom ----- 1 inch

d. Front Cover:

The front cover should contain the following details:

TOP: The title in block capitals of 6mm to 15mm letters.

CENTRE: Full name in block capitals of 6mm to 10mm letters.

BOTTOM: Name of the Affiliating University and College, Course, Year of submission -all in block capitalsof 6mm to 10mm letters on separate lines with proper spacing and centering.

f. Blank Sheets:

At the beginning and end of the report, two white black bound papers should beprovided, one for the purpose of binding and other to be left blank.

Documentation Format

a) Cover Page

b) Institute/College Recommendation
c) Guide Certificate
d) Declaration
e) Acknowledgement
f) Index
g) Chapter Scheme

1) Introduction to Project
-Introduction
-Existing System
-Need and scope of Computer System
-Organization Profile

2) Proposed System
-Objectives
-Requirement Engineering
• Requirement Gathering
• SRS

3) System Analysis
System Diagram
• DFD
• ERD
• UML(if applicable)

4) System Design
• Database Design
• Input Design
• Output Design

5) Implementation
- System Requirement
- Hardware
- Software
- Installation process
- User Guideline

6) Output (with valid Data)
(Minimum 6 reports)

7) Conclusion and Suggestions
• Conclusion
• Limitations
• Suggestion

8) References:-
i. Books:-
ii. Journals:-
iii. Periodicals and Newspapers:-
iv. Web
v. Questioner/Schedule(if used)
vi. Source code(Include Main Logic source code)

BCA-II Semester –III and IV

Evaluation Pattern from June2020

- **Semester End Examination(SEE) -60**
- **Continuous Comprehensive Evaluaton (CIE) -40**

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Semester End Examination SEE (60Marks)

Total Mark – 60 Duration – 2 Hours

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Q.1 Broad Question (A or B)	12marks.
Q.2 Broad Question (A or B)	12marks.
Q.3 Broad Question (A or B)	12marks.
Q.4 Broad Question (A or B)	12marks.
Q.5 Write short notes (Any Two out of Four)	12marks.

Continuous Comprehensive Evaluation CCE (40 Marks)

1) Active Participation in Classroom and Academic Events - 05 Marks
2) Project Work / Practical / Lab Work / On-the Job Training etc - 20 Marks
3) Assignment / Interview/ Group discussion/ Study Tour Field visit etc - 15Marks

Criteria of Passing-(separate heads of passing)

1) 16 Marks out of 40 Marks for Internal Evaluation.
2) 24 Marks out of 60 Marks for Theory Examination.
3) Overall Minimum 40 Marks out of 100 Marks