



MAHARAJA KRISHNAKUMARSINHJI BHAVNAGAR UNIVERSITY
NAAC Accreditation Grade "B"
(With effect from Academic Year: 2016-17)

BACHELOR OF COMPUTER APPLICATIONS (B.C.A.)

Structure for B.C.A. – CBCS Programme

Semester-I(FY)

| COURSE NO. | COURSE TYPE | SUBJECT | CREDIT |
|------------|-------------|---|--------|
| BCA-EC-101 | ELECTIVE | Environmental Science - I | 02 |
| BCA-FC-102 | FOUNDATION | Introduction to English Language and Literature - I | 02 |
| BCA-CC-103 | CORE | Fundamental of Computer Organization | 03 |
| BCA-CC-104 | CORE | Introduction to Programming (C Language) | 03 |
| BCA-CC-105 | CORE | RDBMS-I | 03 |
| BCA-CC-106 | CORE | Mathematics | 03 |
| BCA-CC-107 | CORE | Practical (Based on BCA-CC-102 & BCA-CC-103) | 12 |
| TOTAL | | | 28 |

Internal Continuous Evaluation:

1. There will be Internal Continuous Evaluation in Theory papers of Core Course.
2. There will be 30 marks for Assignments in Course No: BCA-CC-101, BCA-CC-102, BCA-CC-103, BCA-CC-104



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|---|-----------------------------------|--------------------------|
| B.C.A. | Course: Environmental Science - I | Course No: BCA-EC-101 |
| Semester: 01 | Type of Course: Elective Course | |
| Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks | | |
| Credits: 02 | Theory Sessions per Week: 02 | Teaching Hours: 30 Hours |

| Unit | Detailed Syllabus | Teaching Hours | Marks/Weight |
|--------|--|----------------|--------------|
| Unit-1 | Natural resources | 06 | 20 |
| | <ul style="list-style-type: none"> – Introduction – Types of natural resources – a. Renewable b. non renewable resources – Natural resources and associated problems. – Renewable resources -1 : Forest <ul style="list-style-type: none"> Forest types in India Deforestation Forest functions Threats to the forest in India | | |
| Unit-2 | Renewable resources-2: Water | 06 | 20 |
| | <ul style="list-style-type: none"> – Over-utilization and pollution of surface and Undergroundwater. – Effect of Global climate change on water management. – Water for agriculture and power generation. – Sustainable water management. | | |
| Unit-3 | Renewable resources- 3: Energy | 06 | 20 |
| | <ul style="list-style-type: none"> – Hydroelectric power, Solar energy – Biomass energy, Wind power – Tidal and wave power – Nuclear power – Energy conservation | | |
| Unit-4 | Ecosystem | 06 | 20 |
| | <ul style="list-style-type: none"> – Producers consumers and decomposers – Foodchain food webs and ecological pyramids – Forest ecosystem – Desert ecosystem – Aquatic ecosystem – Fresh water and Marine ecosystem | | |
| Unit-5 | Biodiversity | 06 | 20 |
| | <ul style="list-style-type: none"> – Value of biodiversity – Consumptive use value – Productive use value – Social value – Ethical and moral values – Aesthetic value – Option value – India as a mega diversity nation – Threats to biodiversity | | |

Reference Book: Paryavaran Adhyayan – University Grants Commission Oriental longman private limited.



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|---|---|--------------------------|
| B.C.A. | Course: Introduction to English Language and Literature - I | Course No: BCA-FC-101 |
| Semester: 01 | Type of Course: Foundation Course | |
| Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks | | |
| Credits: 02 | Theory Sessions per Week: 02 | Teaching Hours: 30 Hours |

| Unit | Detailed Syllabus | Teaching Hours | Marks/Weight |
|--------|---|----------------|--------------|
| Unit-1 | Study of Short Stories | 06 | 20 |
| | The Cherry Tree - Ruskin Bond Of Studies- Francis Bacon Five Kinds of Workers- Row and Wren (Short notes 2/3 each in 500 words approximately) | | |
| Unit-2 | Study of Poetry | 06 | 20 |
| | Beauty – John Masefield Old Familiar Faces – Charles Lamb To the Cuckoo – William Wordsworth (Short notes 2/3 each in 500 words approximately) | | |
| Unit-3 | Parts of Speech | 06 | 20 |
| | Jupp and Milne Grammar Book Chapter 1 only | | |
| Unit-4 | Tenses | 06 | 20 |
| | Introduction of Tenses Giving Personal Information | | |
| Unit-5 | Vocabulary | 06 | 20 |
| | antonyms, synonyms, prefix, suffix, one word substitute | | |

Reference Books

1. Bond Ruskin, 'Treasury of Stories for Children', Puffin Books, New Delhi, 2001
2. Bacon, Francis, 'English Essayists', (Ed)Sinha, Susanta, OUP, 1987
3. Language Through Literature, OUP, 1969
4. Palgrave, F. T., 'The Golden Treasury', Rupa & Co, 2001
5. 'Prism', Ed: Board of Editors, Orient Blackswan, 2011
6. Green, David, 'Contemporary English Grammar Structures and Composition', Mac Millan, 1971
7. Issac, Anish, 'Amazing English', Anish Issac's Publishing House, Kerala, 2006
8. Jupp, and Milne, 'English Sentence Structure', ELBS, 1984.



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| | | |
|---|--|--------------------------|
| B.C.A. | Course: Fundamental of Computer Organization | Course No: BCA-CC-101 |
| Semester: 01 | Type of Course: Core Course | |
| Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks | | |
| Credits: 03 | Theory Sessions per Week: 03 | Teaching Hours: 45 Hours |

| Unit | Detailed Syllabus | Teaching Hours | Marks/Weight |
|--|---|----------------|--------------|
| Unit-1 | Basics of Computer | 09 | 14 |
| | Introduction: Block diagram of a computer, characteristics of computer Generation of computer: First, Second, Third, Fourth and Fifth Classification of Computer system: Mini Computers, Micro Computers, Mainframe computer, super computer. Uses and Application of Computer Basics of Windows: Desk top, file, folder, icon, Windows explorer, and Control panel, Recycle bin, etc. | | |
| Unit-2 | Input/ Output Devices and port | 09 | 14 |
| | Input Devices: Key board, mouse, and touch panel. Display Devices: LCD and LED Monitors, Touch Screens Printer and Scanner: Dot matrix, Line, Drum, Ink Jet, Laser, scanner. Port: Parallel Port, Serial Port, USB Port and SCSI Port | | |
| Unit-3 | Data Representation and Number Systems | 09 | 14 |
| | Representation: Representation of Number, Binary, Octal, Hexadecimal number and its arithmetic. Representation of Integers, Representation of Fractions, Representation of Character, Characters codes (ASCII, EBCDIC, UNICODE) Binary arithmetic's: Binary addition and subtraction. Binary Multiplication and Division with the help of long-hand method. Conversion of Numbers: Conversation of number in Decimal, Binary, Octal, Hexadecimal. | | |
| Unit-4 | Introduction to Storage Devices | 09 | 14 |
| | Magnetic storage & Hard Disk, Optical storage technology, CDs, DVDs. Flash memory, Memory stick (pen drive) | | |
| Unit-5 | Processors, Memory and Computer buses | 09 | 14 |
| | CPU organization: Registers, ALU, and Control Unit, execution of instruction Primary Memory: RAM, ROM, Types of RAM and ROM Cache Memory : L1 cache and L2 cache Introduction to buses, Read and write cycle, introduction to FSB, PCI Bus and USB. | | |
| Reference Books | | | |
| 1. Tanenbaum A. S.: Structured Computer Organization, Prentice-Hall of India Pvt. Ltd. 2. V. RajaRaman: Fundamentals of Computers 3. Alexis Leon, Mathews Leon: Information Technology | | | |



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| | | |
|---|--|--------------------------|
| B.C.A. | Course: Introduction to Programming (C Language) | Course No: BCA-CC-102 |
| Semester: 01 | Type of Course: Core Course | |
| Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks | | |
| Credits: 03 | Theory Sessions per Week: 03 | Teaching Hours: 45 Hours |

| Unit | Detailed Syllabus | Teaching Hours | Marks/Weight |
|--|--|----------------|--------------|
| Unit-1 | Programming Language Fundamentals | 09 | 14 |
| | Flowchart and Algorithm Introduction to programming language and types of programming language Concept of Editor, Compiler, Interpreter, Translator, Assembler Getting started with C:History, Structure of C program, Compilations & linking C program Character Set, Keywords, Identifier, Data Type, Variable and Constant | | |
| Unit-2 | Programming Constructs | 09 | 14 |
| | Formatted Input and output statements Operators Decision making and Branching (If, if-else, switch etc) Looping construct (While loop, Do..While loop, For loop etc) Break, Continue, go to and exit | | |
| Unit-3 | Array and sorting searching technique | 09 | 14 |
| | Introduction of array Declaration and initialization of 1-D and 2-D arrays Programming using 1-D and 2-D Array Sorting method(selection, bubble), Searching method (linear, Binary) | | |
| Unit-4 | Character, String Handling and Built-in Function | 09 | 14 |
| | Declaration and initialization of string and character data Character and string operation Character and String handling Function Built-in Function: math's, input output function etc | | |
| Unit-5 | Functions | 09 | 14 |
| | Concept of modular programming Elements of function, Type of Function Declaration, Calling, and Defining a function. Passing Array and string as function argument | | |
| Reference Books | | | |
| 1. Programming in ANSI 'C' – Balaguruswamy: TMH. 2. Let Us C By Yasvant Kanitkar 3. Mulish Cooper : The Spirit of C, Jaico Pub. House, 19th Edition-1999 | | | |



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|---|------------------------------|--------------------------|
| B.C.A. | Course: RDBMS-I | Course No: BCA-CC-103 |
| Semester: 01 | Type of Course: Core Course | |
| Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks | | |
| Credits: 03 | Theory Sessions per Week: 03 | Teaching Hours: 45 Hours |

| Unit | Detailed Syllabus | Teaching Hours | Marks/Weight |
|---|--|----------------|--------------|
| Unit 1 | Introduction to database | 09 | 14 |
| | Basic concepts – Data, Information, Database, DBMS Overview of RDBMS – Tables, records (rows) & fields (columns) Applications of RDBMS. Theoretical concepts – Entity, attribute, Tuple, Domain Set, Relationship between entities, E-R Diagrams, Normalization Dr. Codd's 12 rules | | |
| Unit 2 | Basic elements of database in open office | 09 | 14 |
| | Creating a table, various data types, other properties of field Creating form and report using single table Modifying form and report layout | | |
| Unit 3 | Detailed look on Queries in open office | 09 | 14 |
| | Select queries – By Design and SQL statement – on single table Select queries based on multiple tables (rigorous practical exercises to be covered) Insert, Update & Delete queries – Design, SQL statements, execution, How they differ from select query Advanced query building Automating Tasks using Macro | | |
| Unit 4 | Electronics Spreadsheet as database in open office | 09 | 14 |
| | Introduction to spreadsheet : Opening Spreadsheet, Menus - main menu, Toolbars, Spread sheet addressing - Rows, Columns & Cells, Referring Cells & Selecting Cells Entering the data in tabular form, inserting / deleting of rows and columns Using formula in columns Database operations: Sorting, Filtering, Consolidation, and Subtotal. | | |
| Unit 5 | Importing & Exporting Data in open office | 09 | 14 |
| | Importing Data from text file, XML file, Spreadsheet file Exporting Data to text file, XML file, Spreadsheet file Managing Database – Taking Backups & Repair Database | | |
| Reference / Text-Books / Additional Reading : | | | |
| 1. Desai Bipin C: Introduction to database Systems, West Publishing Co. | | | |
| 2. A conceptual guide to open office.org 3 R. Gabriel Gurely | | | |



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|---|------------------------------|--------------------------|
| B.C.A. | Course: Mathematics | Course No: BCA-CC-104 |
| Semester: 01 | Type of Course: Core Course | |
| Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks | | |
| Credits: 03 | Theory Sessions per Week: 03 | Teaching Hours: 45 Hours |

| Unit | Detailed Syllabus | Teaching Hours | Marks/Weight |
|--------|--|----------------|--------------|
| Unit-1 | Sets and Functions | 09 | 14 |
| | Sets Introduction to set theory, Methods of representation of a set, Operations on Set, Algebra of Sets, DE 'Morgan's Law and examples. Functions Function Definition, Domain, Range, One-to-One function, onto function. Composite function and Inverse of a function. | | |
| Unit-2 | Permutation & Combination | 09 | 14 |
| | Permutation Meaning of permutation, Formula of permutation, Permutation of n-different things, Permutation of similar things, Permutation of repeated things, Circular Permutation Combination Combination: Meaning of Combination, Formula of Combination. | | |
| Unit-3 | Vectors | 09 | 14 |
| | Definition of Vector, Addition and Subtraction of Vectors, Magnitude of a Vector, Unit Vectors, Dot Product and Cross Product. | | |
| Unit-4 | Matrices | 09 | 14 |
| | Definition of a Matrix, Equal matrices, Diagonal element of a matrix, Row matrix, Column Matrix, Symmetric Matrix, Skew-Symmetric Matrix, Orthogonal Matrix, Diagonal Matrix, Identity Matrix. Operation on a Matrix (Addition, Subtraction and Multiplication), Inverse of a Matrix. | | |
| Unit-5 | Graph Theory | 09 | 14 |
| | Introduction to Graph, Graph Definition, Vertices, Edges, Loops, Parallel Edges, Simple Graph, Finite Graph, Adjacent vertices, Incidence between vertex and edge, Degree of a vertex, Isolated Vertex, Pendent Vertex, Null Graph. Isomorphism, Labeled Graph, Unlabeled Graph. Walk, Closed Walk, Open Walk, Simple Path, Circuit, Connected Graph. Tree Definition, Rooted Tree, Binary tree and its properties, Uses of Binary Tree. Level of a tree. Note: Only Concepts and Simple Examples are included. Theorems are not included. | | |

Reference Books

1. D. C. Sancheti, V. K. Kapoor: Business Mathematics, Sultan Chand & sons.
2. Lipschutz & Marc Lipson: DISCRETE MATHEMATICS, Tata Mcgraw Hill
3. Narsingh Deo: Graph Theory with application to engineering and computer science, Prentice Hall of India Pvt. Ltd



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|--|---------------------------------|--------------------------|
| B.C.A. | Course: Practical | Course No: BCA-CC-105 |
| Semester: 01 | Type of Course: Core Course | |
| Marking Scheme: External Examination: 100 + Internal Examination: 00 = 100 Marks | | |
| Credits: 12 | Practical Sessions per Week: 12 | Teaching Hours:180 Hours |

| Unit | Detailed Syllabus | Marks/ Weight |
|--------|-----------------------------------|------------------|
| Unit-1 | Practical Problem from BCA-CC-102 | 50 |
| Unit-2 | Practical Problem from BCA-CC-103 | 50 |



Structure for B.C.A. – CBCS Programme

Semester-II (FY)

| COURSE NO. | COURSE TYPE | SUBJECT | CREDIT |
|--------------|-------------|--|-----------|
| BCA-EC-201 | ELECTIVE | Environmental Science – II | 02 |
| BCA-FC-202 | FOUNDATION | Introduction to English Language and Literature - II | 02 |
| BCA-CC-203 | CORE | Information Technology in Business | 03 |
| BCA-CC-204 | CORE | Web Designing | 03 |
| BCA-CC-205 | CORE | Advanced C Programming | 03 |
| BCA-CC-206 | CORE | Statistics | 03 |
| BCA-CC-207 | CORE | Practical (Based on BCA-CC-202 & BCA-CC-203) | 12 |
| TOTAL | | | 28 |

Internal Continuous Evaluation:

1. There will be Internal Continuous Evaluation in Theory papers of Core Course.
2. There will be 30 marks for Assignments in Course No: BCA-CC-201, BCA-CC-202, BCA-CC-203, BCA-CC-204



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|---|------------------------------------|--------------------------|
| B.C.A. | Course: Environmental Science – II | Course No: BCA-EC-201 |
| Semester: 02 | Type of Course: Elective Course | |
| Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks | | |
| Credits: 02 | Theory Sessions per Week: 02 | Teaching Hours: 30 Hours |

| Unit | Detailed Syllabus | Teaching Hours | Marks/Weight |
|--------|---|----------------|--------------|
| Unit-1 | Climate change | 06 | 20 |
| | <ul style="list-style-type: none"> – Global warming – Case study of globalwarming – Acid rain and Case study of Acid rain – Ozon layer depletion and Case study of Ozon layer depletion | | |
| Unit-2 | Pollution | 06 | 20 |
| | <ul style="list-style-type: none"> – Air pollution, Water pollution, Noise pollution – Pollution case study – Minamata disease – Ground water pollution, Pesticides pollution, River pollution in India. | | |
| Unit-3 | Disaster Management | 06 | 20 |
| | <ul style="list-style-type: none"> – Floods, Earthquake, Cyclones, Landslide | | |
| Unit-4 | Social issues and the environment | 06 | 20 |
| | <ul style="list-style-type: none"> – Unsustainable to sustainable development – Water conservation : – Rain water harvesting – Water shed management – The air (prevention and control of pollution) Act – The water (prevention and control of pollution) Act – The wildlife (protection) Act – Using an environmental calender of activities | | |
| Unit-5 | Population Growth and the Environment | 06 | 20 |
| | <ul style="list-style-type: none"> – Population growth variation among nation – Population explosion : family welfare programme – Methods of sterilisation – Urbanization – Urban poverty and environment – Environment and human health – Bhopal gas incident – Climate and health – Infectious disease – Globalization and Infectious disease – Water born disease – Water scarecity diseases – Diarrhea – Cancer and the environment | | |

Reference book: Paryavaran Adhyayan – University Grants Commission Oriental longman private limited.



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| | | |
|---|--|--------------------------|
| B.C.A. | Course: Introduction to English Language and Literature – II | Course No: BCA-FC-201 |
| Semester: 02 | Type of Course: Foundation Course | |
| Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks | | |
| Credits: 02 | Theory Sessions per Week: 02 | Teaching Hours: 30 Hours |

| Unit | Detailed Syllabus | Teaching Hours | Marks/Weight |
|--------|--|----------------|--------------|
| Unit-1 | Study Poems and Prose | 06 | 20 |
| | Daybreak – Henry Longfellow Beautiful Things – Ellen P. Allerton The Sun and the Planets – C. Jones (Short notes 2/3 each in 500 words approximately) | | |
| Unit-2 | Study Poems and Prose | 06 | 20 |
| | Climbing Everest – B. Mathur Gold Frame – R. K. Narayan The Tiger Smiled – Jim Corbet (Short notes 2/3 each in 500 words approximately) | | |
| Unit-3 | Improve Business English | 06 | 20 |
| | Use of Internet Chapter 1 only from 50 Ways to Improve Business English Using the Internet Introduction of email | | |
| Unit-4 | Professionalism | 06 | 20 |
| | personal and Food Etiquette Professions and occupations | | |
| Unit-5 | Grammar | 06 | 20 |
| | Introduction of Verb Forms Introduction of Modal Auxiliary Verbs | | |

Reference Books

1. Practical English Prose and Verse (Ed) G. E. B. Coe, Orient Longman, 1981
2. Learning English, A Rama Krishna Rao, Orient Blackswan, 2008
3. Hundred Poems, Lok Milap Publication, Bhavnagar, 1994
4. Palgrave, F. T., 'The Golden Treasury', Rupa & Co, 2001
5. Modern Short Stories, (Ed) Khan, M. Q, OUP, 1999
6. Green, David, 'Contemporary English Grammar Structures and Composition', Mac Millan, 1971
7. Issac, Anish, 'Amazing English', Anish Issac's Publishing House, Kerala, 2006
8. Poetry for Pleasure, (Ed)Maung Kaung, OUP, New Delhi, 2005



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| | | |
|---|--|--------------------------|
| B.C.A. | Course: Information Technology in Business | Course No: BCA-CC-201 |
| Semester: 02 | Type of Course: Core Course | |
| Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks | | |
| Credits: 03 | Theory Sessions per Week: 03 | Teaching Hours: 45 Hours |

| Unit | Detailed Syllabus | Teaching Hours | Marks/Weight |
|--------|--|----------------|--------------|
| Unit-1 | Information System | 09 | 14 |
| | <ul style="list-style-type: none"> - Information Systems and Technologies - Importance of Information Systems in Businesses - Components of an Information System - Information System Resources – people, hardware, software, data, network - Gaining strategic advantage through IT - Managerial Challenges of IT | | |
| Unit-2 | Functional Business System | 09 | 14 |
| | <ul style="list-style-type: none"> - Introduction to Information Systems: - Manufacturing, Marketing, Accounting, Human Resources Management, Financial Management, Inventory Management. - Introduction to Enterprise Resource Planning. - Enterprise Applications:-Enterprise Resource Planning, Supply Chain Management, Customer Relationship Management | | |
| Unit-3 | Introduction to E-Commerce | 09 | 14 |
| | <ul style="list-style-type: none"> - Definition, communication perspective, Business Process Perspective, Service Perspective - Classification by nature of transaction : B2B, B2C, C2C, C2B, Non Business EC, Intra-Business EC - Classification of EC Applications: Electronic Market, Inter Organizational System, Customer Services - Benefits to Organizations, Consumers and Society - Limitations of EC, Framework of EC, Future of EC | | |
| Unit-4 | E-Commerce Business and Electronic Market Places | 09 | 14 |
| | <ul style="list-style-type: none"> - Introduction, Eight Key Ingredients of a Business Model, Major B2C and B2B Business Models, Introduction to M-Commerce. - Market space Components, Types of Electronic Markets (Electronic Storefronts, Electronic Malls, Types of Stores and Malls) - Portals and their types, Role of Intermediaries in E-markets, E-market Success Factors, Competitive Factors, Impact of E-Market on Organizations (Marketing, HR, Manufacturing, Finance and Accounting) | | |
| Unit-5 | Customer Relationship Management (CRM) | 09 | 14 |
| | <ul style="list-style-type: none"> - CRM : Meaning, types of CRM, Benefits and Limitations of CRM, Issues in CRM Implementation, Classifications of CRM, Applications, One-to-One Marketing (Personalization, Collaborative Filtering, Customer Loyalty, Trust) | | |

Reference Books

1. O'Brien J. : Management Information Systems, Tata McGraw-Hill, 2004
2. Jessup L., Valacich J. : Information Systems Today – Why IS Matters, Pearson Education, 2006
3. Electronic Commerce: A managerial Perspective Efraim Turban, Jae Lee, David King, H Michael Chung (Pearson Education.)
4. E-Commerce – Business, Technology, Society Kenneth C Laudon, Carol Guercio Traver (Pearson Education)



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| | | |
|---|------------------------------|--------------------------|
| B.C.A. | Course: Web Designing | Course No: BCA-CC-202 |
| Semester: 02 | Type of Course: Core Course | |
| Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks | | |
| Credits: 03 | Theory Sessions per Week: 03 | Teaching Hours: 45 Hours |

| Unit | Detailed Syllabus | Teaching Hours | Marks/Weight |
|--------|---|----------------|--------------|
| Unit-1 | Internet Fundamental | 09 | 14 |
| | Basic concept of Internet, Intranet and Extranet, Internet Applications (WWW,E-mail, FTP & FTP Commands, IRC ,Web Chat, BBS, News Group, UseNet, NetMeeting) Email Protocol (SMTP, POP, IMAP) Introduction to TCP/IP, DNS, Search Engine and it's working. Overview of Internet Security (Firewall and SSL) | | |
| Unit-2 | HTML | 09 | 14 |
| | Introduction to HTML Formatting of Text Hyperlinks, working with images, Image Map, List, Tables and Frame Working with Form (GET-POST Methods) and Form Tags. Various Forms Controls | | |
| Unit-3 | DHTML | 09 | 14 |
| | Introduction to style sheet and <STYLE> Font Attributes, color Attributes, Text Attributes, Border Attributes, Margin Attributes, List Attributes Working with class, Implement external style sheet and <div> Tags | | |
| Unit-4 | JavaScript | 09 | 14 |
| | Introduction of JavaScript, Variable and data types of JavaScript Decision Making statements , Control structure , Operators of Java Script, Handling event by using Java Script, Message Box in Java Script(Confirm, Alert, Prompt) Validation using Java Script, Built in Objects (String, Math, and Date) | | |
| Unit-5 | CSS | 09 | 14 |
| | Introduction, Syntax structure, selectors, background, text, fonts, link, lists , tables, border, outline, margin, padding, align, navigation bar, image gallery, image opacity, etc | | |

Reference Books

1. Douglas Comer:- Internet - An Introduction Prentice-Hall of India Pvt. Ltd
2. Ivan Bayross:- WEB enabled Comm. Appli. Develop. using HTML, DHTML, JAVASCRIPT
3. Thomas A. Powell:- The Complete reference HTML and CSS
4. Danny GoodMan:- Java Script Bible



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| | | |
|---|--------------------------------|--------------------------|
| B.C.A. | Course: Advanced C Programming | Course No: BCA-CC-203 |
| Semester: 02 | Type of Course: Core Course | |
| Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks | | |
| Credits: 03 | Theory Sessions per Week: 03 | Teaching Hours: 45 Hours |

| Unit | Detailed Syllabus | Teaching Hours | Marks/Weight |
|--|--|----------------|--------------|
| Unit-1 | Structure and Union | 09 | 14 |
| | Structure Declaration and initialization Creating variable and accessing data members Array within structure and array of structure Structure within structure Union Passing structure and union as function argument | | |
| Unit-2 | Pointer | 09 | 14 |
| | Declaration, initialization and arithmetic of pointers Pointer to array and structures Pointers and strings Pointers as function arguments Functions returning pointers | | |
| Unit-3 | Dynamic memory allocation and introduction to linked list | 09 | 14 |
| | Introduction to dynamic memory allocation, malloc() and calloc() functions, Introduction to linked list, comparison with array, Creation of singly linked list Various operations on singly linked list Singly circular linked list | | |
| Unit-4 | File Management | 09 | 14 |
| | Introduction to files and its significance File pointer, declaring file pointer Opening and closing a file - fopen(), fclose() Modes to open a text file "w", "r", "a", "w+", "r+", "a+". I/O operations on files, I/O functions : fread(), fwrite(), fscanf(), fprintf(), fgetc(), fputc(), fgets(), fputs(), fseek(), ftell() | | |
| Unit-5 | Pre-processors and Bit-wise operators | 09 | 14 |
| | Introduction to pre-processors : #define, #include Bit-wise operators Applications of bit-wise operators | | |
| Reference Books | | | |
| 1. Programming In ANSI C By E. Balagurusamy, TMH Publication. 2. Understanding Pointers in C By Yashwant Kanitkar, BPB Publication 3. Programming with C, Schaums Series, TMH Publication. | | | |



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|---|------------------------------|--------------------------|
| B.C.A. | Course: Statistics | Course No: BCA-CC-204 |
| Semester: 02 | Type of Course: Core Course | |
| Marking Scheme: External Examination: 70 + Internal Examination: 30 = 100 Marks | | |
| Credits: 03 | Theory Sessions per Week: 03 | Teaching Hours: 45 Hours |

| Unit | Detailed Syllabus | Teaching Hours | Marks/Weight |
|---|---|----------------|--------------|
| Unit-1 | Measure of Central Tendency | 09 | 14 |
| | Definition, Ungrouped Data, Grouped Data (Discrete and Continuous Grouped data). Mean: Arithmetic Mean, Geometric Mean and Harmonic Mean for ungrouped data, Combined Mean and Weighted Mean. Median, Quartiles, Deciles, Percentiles and Mode. | | |
| Unit-2 | Measure of Dispersion | 09 | 14 |
| | Definition, Different measure of dispersion. Quartile Deviation, Mean Deviation, Standard Deviation, Combined Standard Deviation, Coefficient of Variation. | | |
| Unit-3 | Correlation and Regression | 09 | 14 |
| | Correlation:-Definition, Types of Correlation (positive and negative correlation), Correlation Coefficient. Karl Pearson's Method and Spearman Rank correlation coefficient method. Regression Regression: Linear regression, regression line of y on x and regression line of x on y. Difference between Correlation and Regression. | | |
| Unit-4 | Probability | 09 | 14 |
| | Probability:-Random Experiment, Sample Space, Event, Mutually exclusive event, Exhaustive event, Equally likely event and probability Classical definition. (Simple examples of Probability). | | |
| Unit-5 | Probability Distribution | 09 | 14 |
| | Binomial distribution Poisson Distribution Normal Distribution | | |
| Reference Books | | | |
| 1. Gupta and Gupta: Business Statistics, Sultan Chand and Sons. | | | |



MAHARAJA KRISHNAKUMARSINHJI BHAVNAGAR UNIVERSITY
NAAC Accreditation Grade "B"
(With effect from Academic Year: 2016-17)

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| B.C.A. | Course: Practical | Course No: BCA-CC-205 |
| Semester: 02 | Type of Course: Core Course | |
| Marking Scheme: External Examination: 100 + Internal Examination: 00 = 100 Marks | | |
| Credits: 12 | Practical Sessions per Week: 12 | Teaching Hours: 180 Hours |

| Unit | Detailed Syllabus | Marks/ Weight |
|--------|--|------------------|
| Unit-1 | Practical Problem from BCA-CC-202 | 50 |
| Unit-2 | Practical Problem from BCA-CC-203 | 50 |