CVM UNIVERSITY
Vallabh Vidyanagar
Program & Subject : BCA
Semester - I
(Syllabus effective from June 2020)

Paper Code : UG01CBCA01
Title : Programming Fundamental and Logic Development

Credit : 3	**External Marks: 60**
Contact Hrs/Week : 3	**University Examinations Hrs:3**

All units carry equal weightage

Unit	Description in detail
I	**Concept of Algorithm, Flowchart and Languages, Basics of Programming** Concept of an algorithm and a flowchart, need and definition, Symbols used to draw a flowchart, Typical(primitive)examples of flowcharts and algorithms, High-levelandlow-levellanguages, Identifiers and Keywords, Variables, Constant, Usageofheaderfiles, Types of Errors, Program Structure, Comments, Datatypes,TYPEDEF, Literals.
II	**Programming Concepts , Conditional and Interactive Flow Control** Operators , Expressions &Type Conversion, Input/Output statements, Conditional flow control and Selection based flow statements, Loopstatements, breakand continue statements, exit function.
III	**Arrays , Strings and Structure** Arrays – One , Two , Multidimensional Array. Strings and String related Library Functions. Working with Structures.
IV	**Standard Library Functions , User-DefinedFunctions** Standard Library Functions - Operations on Characters, String and Mathematical operations. Introduction to Functions, Function Declaration , Function Call and Function Definition, Return statement, Scope and Visibility of variables in Functions. Types of User-Definedfunctions, Actual and Formal arguments, Recursive functions.

Basic Text & Reference Books:-
1. Programming with C++, D Ravichandran, McGraw-Hill Education Private Ltd.
2. Object Oriented Programming in C++,E Balagurusamy, Tata McGraw-Hill Publishing Co. Ltd.
3. Object Oriented Programming in Turbo C++,Robert Lafore, Galgotia Pub.(P)Ltd.
4. Object Oriented Programming with ANSI and Turbo C++, Ashok Kamthane, Pearson
5. C++ : The Complete Reference, Herbert Schildt , McGraw Hill Education

CVM UNIVERSITY
Vallabh Vidyanagar
Program & Subject : BCA
Semester - I
(Syllabus effective from June 2020)
Paper Code : UG01CBCA02
Title : Programming Fundamental and Logic Development Lab

Credit : 2   **External Marks: 60**

Contact Hrs/Week : 3   **University Examinations Hrs:3**

Description in detail	Weightage (%)
Practical based on Programming Fundamental and Logic Development	**100%**

CVM UNIVERSITY
Vallabh Vidyanagar
Program & Subject : BCA
Semester - I
(Syllabus effective from June 2020)

Paper Code : UG01CBCA03
Title : Computer Organization and Digital Electronics

Credit : 3	**External Marks: 60**
Contact Hrs/Week : 3	**University Examinations Hrs:3**

All units carry equal weightage

Unit	Description
I	**Introduction to Computer Systems and Number Systems** Block diagram of a simple computer and significance of different functional units, evolution of computers, Application of computers, Number System: Binary, Octal, Decimal & Hexadecimal and their inter-conversions , Character Representation - Data Representation: positive, negative, maximum and minimum number representation (related to 8 bit number) - Real number representation - Binary arithmetic: Binary Addition, binary subtraction using 1's and 2's compliment
II	**Representation of Information and Processor Organization** Representation of integers, character codes (ASCII, Unicode), Error detection and correction codes, Instruction Execution Cycle, Categories Of Parallel Machines, Array Processors, Multifunctional Units, Pipeline Machines, Multiprocessors, CPU organization, DataPath
III	**Overview of I/O and Memory Devices** Overview Of I/O Devices: Hard Disk, Floppy Disk, CD-ROM (Introduction, Advantages, Disadvantages), Introduction To RAM, ROM, PROM, EEPROM, Printers (Line, Dot Matrix, Inkjet, Laser), VDU, Mouse, Keyboard, Scanners, Plotters, OCR (MICR, BARCODE READER)
IV	**Gates, Digital Logic Circuit and Boolean Algebra** Gates, Boolean algebra, Truth tables, Circuit equivalence, De Morgan's theorems, Usage of Karnaugh maps, Encoders, decoders, comparators, multiplexers, Demultiplexers

Basic Text & Reference Books:
1. Tanenbaum A S: Structured Computer Organization Prentice – Hall of India Pvt. Ltd.
2. Malvino Brown: Digital Computer Electronics, 3rd Edition.
3. Malvino and leach: Digital Principles and Applications, 4th Edition.
4. Rajaraman V: Computer Fundamentals Prentice-Hall of India Pvt. Ltd.
5. Sinha. P K: Computer Fundamentals BPB Publication.(Second Edition)
6. S.K. Basandra : Computer Today Galgotia Publication.
7. Peter Norton: Introduction to Computers TMH
8. William H. Gothmann: Digital Electronics – An Introduction to Theory and Practice , 2nd
9. Hall Douglas V.: Microprocessors and Interfacing - Programming and Hardware., McGraw Hill Book Company, 1986.
10. M.M. Mano : Computer System Architecture, 3rd Edition, Pearson Education, 2000.

CVM UNIVERSITY
Vallabh Vidyanagar
Program & Subject : BCA
Semester - I
(Syllabus effective from June 2020)

Paper Code : UG01CBCA04
Title : Computer Organization and Digital Electronics Lab

Credit : 2   **External Marks: 60**
Contact Hrs/Week : 3   **University Examinations Hrs:3**

Description in detail	Weightage (%)
Practical based on	**100%**
Computer Organization and Digital Electronics	

CVM UNIVERSITY
Vallabh Vidyanagar
Program & Subject : BCA
Semester - I
(Syllabus effective from June 2020)

Paper Code : UG01CBCA05
Title : Design and Implementation of Web Technology- I

Credit : 3   **External Marks: 60**
Contact Hrs/Week : 3   **University Examinations Hrs:3**

All units carry equal weightage

Unit	Description in detail
I	**Web Page Designing - I** An introduction to HTML, HTML tags, Structure of an HTML document, Text and paragraph formatting, Ordered and unordered lists - nested lists, Hyperlinks, Images, Tables
II	**Web Page Designing – II** Frames, Framesets - Nested framesets, Designing HTML forms, Multimedia tags, Introduction to Cascading Style Sheets (CSS), Ways of specifying style – inline, internal, external
III	**Style Sheet** Basic syntaxes, ID and CLASS selectors, SPAN, DIV, Font, Color, Background, Text, Border, Margin, List, Layer, Position, Box, Column
IV	**XML** XML overview, Features of XML, Applications of XML, Syntax, Elements and Attributes, Namespaces, Schema, XSLT overview, Syntax

Basic Text & Reference Books:-
1. Ivan Bayross, "Web Enabled Commercial Applications Development using HTML, DHTML, Javascript, Perl CGI", BPB, 2004.
2. Douglas E Comer: The Internet, PHI, Second Edition, May 2000.
3. Xavier C: World Wide Web Design with HTML, Tata McGraw Hill Publication, 2000.
4. Eric Meyer: Cascading Style Sheets – The Definitive Guide, O'Reilly – SPD, First Edition, 2000.
5. Deitel, Nieto, Lin, Sadhu: "XML How to program", Pearson Education, 2005.
6. H.M Deital, T.R Nieto: "Internet & World Wide Web How to Program", Fifth Edition, PHI
7. Manuals of suitable packages / Online resources

CVM UNIVERSITY
Vallabh Vidyanagar
Program & Subject : BCA
Semester - I
(Syllabus effective from June 2020)

Paper Code : UG01CBCA06
Title : Design and Implementation of Web Technology- I Lab

Credit : 2   **External Marks: 60**
Contact Hrs/Week : 3   **University Examinations Hrs:3**

Description in detail	Weightage (%)
Practical based on	**100%**
Design and Implementation of Web Technology- I(HTML & CSS)	

Paper Code : UG01SBCA01
Title : Environmental Science

Credit : 2	External Marks: 60
Contact Hrs/Week : 2	University Examinations Hrs:2

Unit	Description in detail
I	**Introduction to Environmental Studies** Definition, Scope and importance of Environmental Studies Multidisciplinary nature of environmental studies Component of Environment: Atmosphere, Hydrosphere, Lithosphere, Biosphere Biogeochemical cycles : Carbon cycle and Nitrogen cycle Concept of sustainability and sustainable development.
II	**Ecosystems** Definition, Structure of ecosystem – Abiotic and Biotic components (Producers, Consumers and Decomposers) Functions of Ecosystem :Energy flow in an ecosystem , Food chains, Food webs with examples. Types of Ecosystem; Forest ecosystem ,Lake / Pond ecosystem, Desert ecosystem
III	**Natural Resources** Classification -Renewable & Non-renewable Resources and types Land resources & Land degradation, Soil erosion & Conservation Forest Resources - Forest wealth, Deforestation: Causes and impacts Water Resources- Use and over-exploitation of surface and ground water, floods and droughts Energy resources- use of alternate energy sources, growing energy needs Conservation of Natural resources
IV	**Biotic Interactions** Positive Interactions with suitable examples Mutualism , Commensalism , Proto-cooperation Negative Interactions with suitable examples Exploitation, Competition , Antibiosis

Basic Text & Reference Books:
1. Ecology and Environment by P.D. Sharma
2. Fundamentals of Ecology by E.P.Odum
3. Ecology by Mohan P. Arora
4. Fundamentals of Ecology by M.C. Dash
5. Environmental Science by S.C.Santra
6. An Introduction to Environmental Engineering & Science by Gilbert N Master
7. Encyclopedia of Environmental Pollution and Control by R. K. Trivedi
8. Ecology and Sustainable development by P.S. Ramkrishana
9. Environmental Conservation; Fundamentals of Forestry Vol 5 by S.S. Negi, Bishen Singh, Mahendra Pal Singh

CVM UNIVERSITY
Vallabh Vidyanagar
Program & Subject : BCA
Semester - I
(Syllabus effective from June 2020)

Paper Code : UG01ABCA01
Title : Communication Skills in English-I

Credit : 2	**External Marks: 60**
Contact Hrs/Week : 2	**University Examinations Hrs:2**

Course objectives:

The objectives of this course are to enable students to…
  a) Introduce themselves, describe person, place or situation,
  b) Use subject-verb agreement appropriate
  c) Read for information news features, articles, newspapers and texts
  d) Read to get the overall idea, and comprehend the passage.
  e) Use tenses correctly for communicative purpose
  f) Write leave application, apology and request letters
  g) Write paragraphs by developing points
  h) listen and understand short lectures, descriptions, and narrations

Topics to be covered in journal

1. Self-Introduction, Describing Objects / Scene / People
2. Tenses
3. Concord or Subject-Verb Agreement
4. Wh- Questions
5. Modal Auxiliaries
6. Active and Passive Voice
7. Letter of request and apology, Leave Application
8. Letter of Invitation / Accepting the Invitation / Declining the Invitation
9. Reading Comprehension
10. Listening Comprehension ('Look Ahead' – BBC Course)

❖ **Books / Audio-Visual Courses recommended**

1. **Corridors to Communication** by- Ranu Vanikar (Orient Longman)
2. Champa Tickoo and Jaya Sasikumar (2000). '**Writing with a Purpose'** ,Chennai, OUP
3. David Jolly (1988). **Writing Tasks:An Authentic Task Approach to Individual Writing Needs** (Cambridge University Press)
4. **Look Ahead –** (Audio-Visual BBC Course)
5. **Spoken English**—D Sasikumar and PV Dhamija. (Tata McGraw Hill Publication Ltd, New Delhi) (Units 1-13)
6. Grant Taylor. **English Conversation Practice**. (Tata McGraw Hill, New Delhi)
7. R P Bhatnagar and R T Bell (1999) **Communication in English,** (Orient Longman, Hyderabad)

CVM UNIVERSITY
Vallabh Vidyanagar
Program & Subject : BCA
Semester - I
(Syllabus effective from June 2020)

Paper Code : UG01CBCA07
Title : Statistics

Credit : 3	**External Marks: 60**
Contact Hrs/Week : 3	**University Examinations Hrs:3**

All units carry equal weightage

Unit	Description in detail
I	**Introduction to Statistics** Terminology: Population, sample, Parameter and Statistics Concept: (i) Primary and Second Data, (ii) qualitative and quantitative data (iii) discrete and continuous data Types of scales - nominal, ordinal, ratio and interval. Frequency Distribution :(i) Discrete (ii) Continuous Cumulative frequency distribution Diagrammatic and graphical representation: (i) Line chart (ii) Bar chart (iii) Pie chart (iii) Histogram

II	**Measures of central tendency and dispersion**
	Measures of central tendency:
	   (i) Mean (ii) Median (iii) Mode (iv) Quartiles (all for grouped and
	   ungrouped data). Combined mean.
	Measures of Dispersion:
	   (i) Range (ii) Quartile Deviation (iii) Standard Deviation (all for
	   grouped and ungrouped data) (iv) Coefficient of Variation (C.V).

III	**Correlation and Regression**
	Correlation
	Introduction, Meaning and Definition of Correlation, Types of correlation
	Correlation coefficient & its properties (without proof)
	Methods of studying correlation (Examples based on only observations)
	         (i) Scattered Diagram
	         (ii) Karl Pearson's product moment method
	         (iii) Spearman's rank method
	Regression
	Introduction, Meaning, Definition of regression
	Regression coefficients and their Properties (without proof)
	Examples of regression Coefficient & regression lines (only for observations)

IV	**Analysis of Time Series**: Definition, meaning, Application, Components of Time Series. Methods of finding Trend Moving Average Method (with period 3, 4 & 5 years) Least Squares method (only Linear trend) Computation of seasonal indices by simple average method.

Basic Text & Reference Books:
1. S.C. Gupta: Fundamental of Statistics. Himalaya Publishing House.
2. N. D. Vohra, Business Statistics, Tata McGraw-Hill Education
3.   Richard Levin and David Rubin (1997) Statistics for Management, Pearson.

CVM UNIVERSITY
Vallabh Vidyanagar
Program & Subject : BCA
Semester - I
(Syllabus effective from June 2020)

Paper Code : UG01CBCA08
Title : Statistics Lab

Credit : 2   **External Marks: 60**
Contact Hrs/Week : 3   **University Examinations Hrs:3**

Description in detail	Weightage (%)
Practical based on	**100%**
Statistics	