# CVM UNIVERSITY
## Vallabh Vidyanagar
## Programme & Subject: B.Sc. (CA & IT) - M.Sc. (CA&IT) Dual Degree
## Semester – I

### UG01CIIT01: Introduction to Algorithm and Programming
### (Syllabus Effective from June 2020)

Credits: 4        External Marks: 60

Contact Hrs. for Week: 4        University Exam Duration: 3 Hrs.

All units carry equal weightage

| Unit | Description in Detail1 |
|------|------------------------|
| I | **Concept of Logic development and Language Fundamental**<br>- Problem Analysis and Needs of Algorithm and Flowchart<br>- Symbols used to draw flowchart<br>- Basic examples of Algorithm and Flowchart<br>- Generation of Computer languages<br>- High-level and low-level languages<br>- Translators and editors |
| II | **Basics of C Programming and Conditional Strategies**<br>- Basic Structure of 'C' Programs<br>- Variables, Constants, Tokens, Keywords and Identifiers<br>- Data Types and Declaration of Variables<br>- I/O Statements, Assignment Statement<br>- Operators and Expressions<br>- Precedence of Operators and Evaluation of Expressions<br>- Decision Making and Branching |
| III | **Looping Strategies and Complex Data Types**<br>- Looping Statements<br>- Jumps in Loops<br>- Arrays: Declaration and initialization of 1D and 2D Array<br>- I/O of Arrays<br>- Strings: Declaration and initialization of Character Array<br>- I/O of Strings, Operations on Strings<br>- String-handling Functions |
| IV | **Pointers and Dynamic Memory Allocation**<br>- What is Pointer, Declaration and Initialization Pointer Variables, Accessing a Variable using Pointer<br>- Chain of Pointers, Pointer Expressions, Pointer Increments and Scale Factor<br>- Arrays and Strings using Pointers, Arrays of Pointers<br>- Concept of Dynamic Memory Allocation<br>- Allocating Single and Multiple Block of Memory<br>- Altering the Size of a Block |

**Basic Text & Reference Books: -**

1. Balagurusami: Programming in ANSI C., Tata McGraw Hill Publication.
2. Kernighan B., Ritchie D.: The C Programming Language, Prentice Hall.
3. Cooper H. & Mullish H : The Sprit of C, Jaico Publication House, New Delhi.

# CVM UNIVERSITY
## Vallabh Vidyanagar
### Programme & Subject: B.Sc. (CA & IT) - M.Sc. (CA&IT) Dual Degree
### Semester – I
### UG01CIIT02: Introduction to Algorithm and Programming Lab
### (Syllabus Effective from June 2020)

Credits: 2

External Marks: 60

Contact Hrs. for Week: 3

University Exam Duration: 3 Hrs.

| Description in detail | Weightage (%) |
|---|---|
| **Practical based on** | |
| **Introduction to Algorithm and Programming** | **100%** |

# CVM UNIVERSITY
## Vallabh Vidyanagar
## Programme & Subject: B.Sc. (CA & IT) - M.Sc. (CA&IT) Dual Degree
## Semester – I
## UG01CIIT03: Programming on the Web Development- I
## (Syllabus Effective from June 2020)

Credits: 4

External Marks: 60

Contact Hrs. for Week: 4

University Exam Duration: 3 Hrs.

All units carry equal weightage

| Unit | Description in detail |
|---|---|
| I | **Introduction to Internet & HTML** <br><br> Introduction to the Internet, Services provided by the Internet, Some basic terminology and concepts (WWW, URL, webpage, web site, web servers, web browsers, search engines, domains, etc.) , An introduction to HTML, Structure of an HTML document, HTML basic tags, Text and paragraph formatting, Ordered and unordered lists, nested lists. |
| II | **Web Page Designing** <br> HTML tables, Hyperlinks, Images, Frames, framesets, nested framesets Designing HTML forms. |
| III | **Introduction Cascading Style Sheet** <br> Concept of CSS, Creating Cascading Style Sheet, CSS Properties   CSS Styling (Background, Text Format, Controlling Fonts), Way of specifying Style, CSS Color, Working with List and Tables. |
| IV | **Advanced Cascading Style Sheets** <br> Fonts, Color, Background, Text, Border, Lists, Layers, Margin, Links, Position |

**Basic Text & Reference Books: -**

1. Kogent Learning Solutions Inc. HTML 5 in simple steps Dreamtech Press
2. A beginner's guide to HTML NCSA,14th May,2003
3. Lynchburg Creating a Web Page and Web Site College Murray, Tom /,2002
4. Web Designing & Architecture-Educational Technology Centre University of Buffalo Steven M. Schafer HTML, XHTML, and CSS Bible, 5ed Wiley IndiaJohn Duckett
5. Beginning HTML, XHTML, CSS, and JavaScript Wiley India Ian Pouncey, Richard York
6. Beginning CSS: Cascading Style Sheets for Web Design Wiley India
7. Kogent Learning Web Technologies: HTML, Javascript Wiley India

# CVM UNIVERSITY
## Vallabh Vidyanagar
## Programme & Subject: B.Sc. (CA & IT) - M.Sc. (CA&IT) Dual Degree
## Semester – I
## UG01CIIT04: Programming on the Web Development- I Lab
## (Syllabus Effective from June 2020)

Credits: 2                                              External Marks: 60

Contact Hrs. for Week: 3                    University Exam Duration: 3 Hrs.

| Description in detail | Weightage (%) |
|---|---|
| **Practical based on** | |
| **Programming on the Web Development- I** | **100%** |

# CVM UNIVERSITY
**Vallabh Vidyanagar**
**Programme & Subject: B.Sc. (CA & IT) - M.Sc. (CA&IT) Dual Degree**
**Semester – I**
**UG01CIIT05: Fundamental of Computing System**
**(Syllabus Effective from June 2020)**

Credits: 4  External Marks: 60

Contact Hrs. for Week: 4  University Exam Duration: 3 Hrs.

All units carry equal weightage

| Unit | Description in detail |
|---|---|
| I | **Introduction to Computer Systems and Number Systems**<br>Block diagram of a simple computer and significance of different functional units,<br>Evolution of computers,<br>Definitions of the terms: hardware, software<br>Applications of computers, Binary, octal, decimal, and hexadecimal number systems<br>Conversion of numbers among binary, octal, decimal, and hexadecimal number systems<br>Addition and subtraction of binary numbers |
| II | **Representation of Information and Processor Organization**<br>Representation of integers<br>Character codes (ASCII, Unicode)<br>Error detection and correction codes<br>Instruction execution cycle<br>CPU organization |
| III | **Parallel Instruction Execution**<br>Memory Organization and Introduction to parallel instruction execution,<br>Array processors, Multiprocessors<br>Multiple functional units, Pipelining<br>Primary memory–Introduction to RAM, ROM, Cache, Registers<br>Secondary memory<br>Various types and organization of secondary storage devices such as magnetic disks, optical disks, flash memories. |
| IV | **Addressing Techniques and Basic Digital Logic Circuit**<br>Addressing techniques like Immediate, Direct, Indirect, Register, Indexing and Stack<br>Boolean Algebra, Logic Gates, Truth Table, Circuit Equivalent,<br>De – Morgan's Theorems, Half Adder and Full Adder |

**Basic Text & Reference Books: -**

1. TanenbaumA.S:StructuredComputerOrganization,Prentice-HallofIndiaPvtLtd5thedition
2. RajaramanV:ComputerFundamentals,Prentice-HallofIndiaPvtLtd(4thEdition)
3. ComputerFundamentals6thEdition P.K.Sinha,PritiSinha.
4. Malvino A.P. Digital Computer Electronics, 2nd Edition, Tata MacGraw, Hill Pub.Co. Ltd. New Delhi 1990.

# CVM UNIVERSITY
## Vallabh Vidyanagar
## Programme & Subject: B.Sc. (CA & IT) - M.Sc. (CA&IT) Dual Degree
## Semester – I
## UG01CIIT06: Fundamental of Computing System Lab
## (Syllabus Effective from June 2020)

Credits: 2

External Marks: 60

Contact Hrs. for Week: 3

University Exam Duration: 3 Hrs.

| Description in detail | Weightage (%) |
|---|---|
| **Practical based on** | |
| **Fundamental of Computing System** | **100%** |

# CVM UNIVERSITY
## Vallabh Vidyanagar
## Programme & Subject: B.Sc. (CA & IT) - M.Sc. (CA&IT) Dual Degree
## Semester – I
## UG01EIIT01: Environmental Studies
## (Syllabus Effective from June 2020)

Credits: 2                                                    External Marks: 60

Contact Hrs. for Week: 2                        University Exam Duration: 2 Hrs.

All units carry equal weightage

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

Suggested Readings:
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. Encyclopaedia 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
## Programme & Subject: B.Sc. (CA & IT) - M.Sc. (CA&IT) Dual Degree
## Semester – I
## UG01EIIT02: Mathematics - I
## (Syllabus Effective from June 2020)

Credits: 2                                                          External Marks: 60

Contact Hrs. for Week: 2                          University Exam Duration: 2 Hrs.

All units carry equal weightage

| Unit | Description in Detail1 |
|------|------------------------|
| I | **Set theory** <br> Sets and their representations; The empty set; finite and infinite sets; equal and equivalent sets; subsets; power set; universal set; Venn diagrams; complement of a set operation on sets; applications of sets. |
| II | **Mathematical Logic** <br> Basic Logical connections; Conjunction; Disjunction; Negation; Negation of Compound Statements; Truth tables. Tautologies; Logical Equivalence; Applications. |
| III | **Matrices and Determinants** <br> Definition of a matrix; Operations on matrices; Square Matrix and its inverse; determinants; properties of determinants; the inverse of a matrix; solution of equations using matrices and determinants; solving equations using determinants. |
| IV | **Probability** <br> Concept of probability; sample space and events; three approaches of probability; conditional probability and independence of events; bay's theorem. |

**Basic Text & Reference Books: -**

1. S. Lipschutz and Marc Lars Lipson: Discrete Mathematics, Schaum's series (International edition,1992)

# CVM UNIVERSITY
## Vallabh Vidyanagar
## Programme & Subject: B.Sc. (CA & IT) - M.Sc. (CA&IT) Dual Degree
## Semester – I
## UG01AIIT01: Communication Skills in English – I
## (Syllabus Effective from June 2020)

Credits: 2             External Marks: 60

Contact Hrs. for Week: 2             University Exam Duration: 2 Hrs.

All units carry equal weightage

**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- RanuVanikar (Orient Longman)
2. ChampaTickoo 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)