



Dr. M.G.R.
EDUCATIONAL AND RESEARCH INSTITUTE
(Deemed to be University)
Maduravoyal, Chennai - 600 095, Tamilnadu, India.
(An ISO 9001 : 2015 Certified Institution)



DEPARTMENT OF COMPUTER APPLICATIONS

BCA

Computer Applications
Curriculum Enrichment



C. B. Palaniappan

REGISTRAR
Dr. M.G.R.
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DEPARTMENT OF COMPUTER APPLICATIONS

Course Code	Name of the Course	year	Activities/Content with direct bearing on Employability/ Entrepreneurship/ Skill development
HBMG14G01	ENTERPRENEURSHIP DEVELOPMENT	2014	Entrepreneurship
HBCA17E04	SOFTWARE PROJECT MANAGEMENT	2017	Employability
HBCA17E09	OPEN SOURCE PROGRAMMING	2017	Skill development
HBCA17E05	MANAGEMENT INFORMATION SYSTEMS	2017	Skill development
HBCA17E03	PROFESSIONAL ETHICS	2017	Entrepreneurship
HBMG17L02	SOFT SKILL II	2014	Skill Development
HBMG17L01	SOFT-SKILL I	2013	Employability
HBCA14L11	Main project (BCA)	2014	Employability
HBCA17G03	Financial Accounting	2014	Employability
HBEN14001	English – I	2014	Skill Development
HBEN17002	English – II	2014	Employability
HBCA17E02	Information Security	2017	Skill development
HBCA17E07	Image Processing	2017	Employability
HBCA17G04	Programming in C	2017	skill development
HBCA17L04	Web Page Designing Laboratory	2017	Employability
HBCA17L05	Programming in C++ Laboratory	2017	Employability
HBCA17L07	Programming in Java Laboratory	2017	Skill development
HBCA17L08	Visual Programming Laboratory	2017	Employability
HBCA17L09	Linux Laboratory	2017	Skill development
HBCA17L10	PROJECT WORK	2017	Employability
HBCA20G**	INTRODUCTION TO RDBMS	2020	Skill development
HBCA20G**	Programming in Python	2020	Employability



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DEPARTMENT OF COMPUTER APPLICATIONS

HBMG14G01 ENTREPRENEURSHIP DEVELOPMENT 3 0 0 3

OBJECTIVES:

- Understand the process and procedure involved in setting up a small enterprise.
- Acquire the necessary managerial skills required to run a small-scale industry.
- Know the pros and cons in becoming an entrepreneur.

UNIT I

9 Hrs

Entrepreneur –Meaning – Definition – Characteristics – Functions – Role of Entrepreneurs in the economic development – Classification of entrepreneurs – Factors affecting entrepreneurial growth.

UNIT II

9 Hrs

Entrepreneurship – Concept – Distinction between Entrepreneur and Entrepreneurship - Entrepreneurship Development Programmes – Objectives - Stages in EDP- Pre-training Stage – Training phase – Post Training – Evaluation and Feedback of EDP.

UNIT III

9 Hrs

Project Identification - Sources of ideas – Preliminary evaluation and testing of ideas – Constraints - Project formulation – Stages- Feasibility study and Feasibility Report – Selection Criteria.

UNIT IV

9 Hrs

Project Report - Project Appraisal – Technical – commercial appraisal –Financial appraisal– Sources of finance – Steps to star an industrial unit.

UNIT V

9 Hrs

Incentives and subsidies of State and Central Govt. – Aims – Backward areas – Industrial Estates –Role of DIC,SISI, TCO in entrepreneurial growth.

Total No of Hrs : 45

TEXT BOOK:

1. Singh,P,N(1986) *Developing Entrepreneurship for Economic Growth*.

REFERENCE:

1. *Guide to Entrepreneurs – Industrial Development* – Govt. of Tamil Nadu – SIPCOT
2. Thierry Burger Helmchen(2012), *Entrepreneurship Born, Made and Educated*, Marina Jozipovic.
3. Thierry Burger Helmchen(2012), *Entrepreneurship Creativity and Innovative Business Models*, Marina Jozipovic.



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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA17E04

SOFTWARE PROJECT MANAGEMENT

3 1 0 4

OBJECTIVES:

- To know of how to do project planning for the software process.
- To learn the cost estimation techniques during the analysis of the project.
- To understand the quality concepts for ensuring the functionality of the software.

UNIT I

12 Hrs

Introduction to Software Projects : An Overview of Project Planning – Project Management and Evaluation.

UNIT II

12 Hrs

Selection of an appropriate Project approach : Software effort Estimation -Activity Planning :- Project Schedules – Sequencing and Scheduling Projects – Network Planning Model – forward and backward pass-Identifying the Critical path-Activity float-Shortening Project Duration – Identifying Critical Activities-precedence networks.

UNIT III

12 Hrs

Software quality assurance plan & Risk Management : Resource Allocation – Monitoring and Control, Reviews and Audits – Management.

UNIT IV

12 Hrs

Models : ISO 9000 model, CMM model – Comparisons - ISO 9000 weaknesses - Managing People and Organizing Teams – Software Quality -Planning for Small Projects.

UNIT V

12 Hrs

Case Study – PRINCE Project Management, BS 6079:1996

Total No of Hrs : 60

TEXT BOOK:

1. Mike Cotterell, Bob Hughes , “Software Project Management”, Inclination/Thomas Computer Press, 4th Edition, 2004. Chapters : 1-13.

REFERENCES:

1. Darrel Ince, H.Sharp and M.Woodman,” Introduction to Software Project Management and Quality Assurance”, Tata McGraw Hill, 1995.
2. Philip.B.Crosby, Quality is Free: The Art of Making Quality Certain, Mass Market, 1992.



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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA17E09

OPEN SOURCE PROGRAMMING

3 1 0 4

Objectives:

- Understand concepts, strategies, and methodologies related to open source software development.
- Understand the business, economy, societal and intellectual property issues of open source software.
- Be familiar with open source software products and development tools currently available on the market.

UNIT I

12 Hrs

Introduction to Open Source: Definition, Open Source History, Initiatives, Free Software, Free Software vs. Open Source software, Public Domain Software, FOSS does not mean no cost. History: BSD, The Free Software Foundation and Open Source GNU Project.

UNIT II

12

Hrs Principle and methodologies: Philosophy: Software Freedom, Open Source Development Model Licences and Patents: What Is A License, Important FOSS Licenses (Apache, BSD, GPL, LGPL), copyrights and copyleft, Patents Economics of FOSS: Zero Marginal Cost, Income-generation opportunities.

UNIT III

12

Hrs

Case Studies: Apache, BSD, Linux, Mozilla (Firefox), Wikipedia, Joomla, GCC, Open Office. Starting and Maintaining an Open Source Project, Open Source Hardware, Open Source Design, Open source Teaching. and Open source media.

UNIT IV

12

Hrs

IoT: Definitions - overview, applications, potential & challenges, and architecture. IoT examples: Case studies, e.g. sensor body-area-network and control of a smart home.

UNIT V

12

Hrs

INTRODUCTION TO BIG DATA: Distributed file system – Big Data and its importance, Four Vs, Drivers for Big data, Big data analytics, Big data applications. Algorithms using map reduce, Matrix-Vector Multiplication by Map Reduce.

Total No of Hrs : 60

TEXT BOOK:

1. https://tavaana.org/sites/default/files/introduction_to_opensource.pdf
2. Chris Eaton, Dirk deRoos et al.(2012), “*Understanding Big data*”, McGraw Hill.

REFERENCES:

1. **Greg Elmer, Ganaele Langlois, Dr. Joanna Redden(2015)**, “ *Compromised Data: From Social Media to Big Data*”, Bloomsbury Academic Publishing.



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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA17E05

MANAGEMENT INFORMATION SYSTEM

3 1 0 4

OBJECTIVES:

- To know about basics of information system and MIS.
- To understand about database storage.
- To design the system for problem identifying and solving.
- To understand the conceptual and detailed system design.

UNIT I

12

Hrs

Foundation of Information System : Introduction to Information System and MIS – Decision support and decision making systems - systems approach - the systems view of business - MIS organization within company - Management information and the systems approach.

UNIT II

12

Hrs

Information Technology : A manager's overview - managerial overviews - computer hardware and software - DBMS - RDBMS – Telecommunication.

UNIT III

12

Hrs

Conceptual system design: Define the problems - set systems objective - establish system – constraints - determine information needs determine information sources - develop alternative conceptual design and select one document the system concept - prepare the conceptual design report.

UNIT IV

12

Hrs

Detailed system design : Inform and involve the organization - aim of detailed design - project management of MIS detailed design - identify dominant and trade of criteria - define the sub systems - sketch the detailed operating sub systems and information flow - determine the degree of automation of each operation - inform and involve the organization again - inputs outputs and processing - early system testing – software - hardware and tools propose an organization to operate the system - document the detailed design - revisit the manager user.

UNIT V

12

Hrs

Implementation evaluation and maintenance of the MIS : Plan the implementation - acquire floor space and plan space layouts - organize for implementation - develop procedures for implementation - train the operating personnel - computer related acquisitions - develop forms for data collection and information dissemination - develop the files test the system - cut-over - document the system - evaluate the MIS control and maintain the system - Pitfalls in MIS development.

**Total no. of
Hrs : 60**

TEXT BOOK:

1. W. S. Jawadekar(2002), *Management Information System*, Tata McGraw Hill.

REFERENCES:

2. Robert G. Murdick, Loel E. Ross & James R. Claggett, *Information System for Modern Management* (3rd Ed), PHI.
3. Brian, O, *Management Information System*, TMH.
4. Davis Olson, *Management Information System*, McGraw Hill.



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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA17E03

PROFESSIONAL ETHICS

3 1 0 4

UNIT I

12 Hrs

ENGINEERING ETHICS : Senses of 'engineering ethics' – variety of moral issues – types of inquiry – moral dilemmas – moral autonomy – Kohlberg's theory – Gilligan's theory – consensus and controversy – professions and professionalism – professional ideals and virtues – theories about right action – self-interest – customs and religion – uses of ethical theories.

UNIT II

12 Hrs

ENGINEERING AS SOCIAL EXPERIMENTATION: Engineering as experimentation – engineers as responsible experimenters – codes of ethics – a balanced outlook on law – the Challenger case study.

UNIT III

12 Hrs

ENGINEER'S RESPONSIBILITY FOR SAFETY: Safety and risk – assessment of safety and risk – risk benefit analysis – reducing risk – the Three Mile Island and Chernobyl case studies.

UNIT IV

12 Hrs

RESPONSIBILITIES AND RIGHTS : Collegiality and loyalty – respect for authority – collective bargaining – confidentiality – conflicts of interest – occupational crime – professional rights – employee rights – intellectual property rights (IPR) – discrimination

UNIT V

12 Hrs

GLOBAL ISSUES : Multinational corporations – environmental ethics – computer ethics – weapons development – engineers as managers – consulting engineers – engineers as expert witnesses and advisors – moral leadership – sample code of conduct

Total No of Hrs : 60

TEXT BOOK:

1. Mike Martin and Roland Schinzinger(1996), "*Ethics in Engineering*", McGraw Hill, New York.

REFERENCES:

1. Charles D Fleddermann(1999), "*Engineering Ethics*", Prentice Hall, New Mexico.
2. Laura Schlesinger(1996), "*How Could You Do That: The Abdication of Character, Courage, and Conscience*", Harper Collins, New York.
3. Stephen Carter(1996), "*Integrity*", Basic Books, New York.
4. Tom Rusk(1993), "*The Power of Ethical Persuasion: From Conflict to Partnership at Work and in Private Life*", Viking, New York.



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DEPARTMENT OF COMPUTER APPLICATIONS

HBMG17L02

SOFT SKILL-II

0 1 1 2

OBJECTIVES:

- To strengthen the students with the needed vocabulary.
- To infer information from the given passage through reasoning.
- To train them in attending group discussion.
- To face the technical and hr interview of the corporate.
- To raise communication proficiency to global standards

UNIT-I

6

hours

Preparation of resume- functional resume with objective according to different advts- how to have interview file- how to send it by email- concept of writing email- practise through BEC method (questions and answer)

UNIT-II

6

hours

Writing secretarial letters like intra-mail and inter-mail, agenda, memo and business reports- introducing GD through video-conduct of GD on a topic and also case studies

UNIT-III

6

hours

Body language-grooming- Interview skill- Dos and Dents- mock interview- exchange of interviewee practical session

UNIT-IV (Department of Mathematics)6 hours

Number system- H.C.F & L.C.M- Problems on ages – Percentage- Profit & Loss- Ratio & Proportion- Partnership.

UNIT-V

6

hours

Time& work-Time& Distance- Clocks – Permutation & Combinations- Heights & Distances- Odd man out and Series.

Total:

30

Periods

Text Book

1. Soft Skill for Everyone-Jeff Butterfield,Part-1; Unit-D&E
2. EFA (English For All)- Dr. PadmasanniKannan, Libin Roy Thomas
3. English for Competitive Exam- R.P. Bhatnagar,RajulBhargava
4. Placement Interview- S.Anandamurugan,Chapter-2&3
5. Alex K, Soft Skills; S. Chand& Company Pvt Ltd,2009
- 6.Rizvi Ashraf M, Effective Technical Communication; Tata McGraw-Hill; 2005
7. Thorpe, Edgar, Course in Mental Ability and Quantitative Aptitude Tata McGraw- Hill,2003
- 8.Agarwal, R.S, A Modern Approach to Verbal and Non-Verbal Reasoning, S. Chand& Co;2004
9. R.S.Agarwal, Quantitative Aptitude for Competitive Examinations,S. Chand& Co., (2017)

Reference Books:

1. Jobsearch.about.com
2. www.exsearch.in/interview.html



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DEPARTMENT OF COMPUTER APPLICATIONS

HBMG17L01

SOFT SKILL-I

0 1 1 2

OBJECTIVES:

- To diagnose the strength and weakness of the student in Functional English.
- To develop the functional grammar.
- To prepare them to use Functional English through LSRW.
- To make them learn through practice and activity.
- To use English Language as a life skill.

Prelude

Diagnostic Test- Articles, Forms of 'be' verbs, Tense, Preposition, Gerund & Infinitives, Reported Speech, Active & Passive Voice, Letter Writing.

UNIT-I

6

hours

Job and Career-three types-Govt., pvt and public sector-Bank, govt.offices, navy, defense, govt.institutions-IT and, BPO and corporate-semi govt like ISRO etc- requirements-adv-t-skills needed(download the details)

Delivery Audio and Video cassettes.

UNIT-II

6 hours

Technical skill-Communication skill especially in English-strengthening communicative English-Listening, Reading, Speaking and Writing-Listening-sounds of vowels and consonants and writing them-functional English-difference between functional and theoretical English.

UNIT-III

6

hours

Listening and Writing

Activity based exercise on articles, modals, preposition and infinitives.

The above topics are chosen as we don't find equivalents' in L1.

UNIT-IV

6

hours

Reading and Writing

Vocabulary-synonyms, antonyms,collocations, confused words, homonym, odd man out , words with correct spelling, avoid redundancy-Inferential comprehension (based on BEC and Blog on Soft Skills BY me)

UNIT-V

6

hours

Speaking

Introducing yourself (giving questions)-collecting information in pairs and presenting it for 2 minute-story telling through picture- interpretation of psychometric pictures through question and answer- PPT preparation and presentation- developing the story in pairs as game.

Total:

30

Periods

Text Book

1. Soft Skill for Everyone-Jeff Butterfield,Part-1; Unit-D&E
2. EFA (English For All)- Dr. PadmasanniKannan, Libin Roy Thomas
3. English for Competitive Exam- R.P. Bhatnagar,RajulBhargava

Reference Books:

1. Soft Skill Blog
2. Jobsearch.about.com
3. www.exsearch.in/interview.html



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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA14L11

PROJECT WORK

0 0 10 10

OBJECTIVES:

1. Students will be able to develop an application in specific domains. Students are expected to carry out the following:
 - i. Implementing the technologies or its combinations
 - ii. Analysing and modeling the concepts of system engineering
 - iii. Generate Database Models
 - iv. Develop an executable application
 - v. Prepare project report



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DEPARTMENT OF COMPUTER APPLICATIONS

HBEN17001

ENGLISH - I

3 0 0 3

COURSE OBJECTIVES:

- To prepare students for attaining a comprehensive knowledge of the communication skills.
- To make them understand the nuances of the language and use its vocabulary in appropriate contexts.
- To develop in students a knowledge of the various techniques in language use.
- To develop in them analytical and interpretative skills.
- To train learners in organized academic and business writing.

Unit I-PROSE- For Detailed Study

- | | |
|-------------------------------|-----------------|
| 1. On Running After One's Hat | G.K. Chesterton |
| 2. The Unexpected | Robert Lynd |
| 3. How to be a Doctor | Stephen Leacock |

Unit II- POETRY- For Detailed Study

- | | |
|------------------------------------|---------------------|
| 1. Ulysses | Lord Tennyson |
| 2. If | Rudyard Kipling |
| 3. Leave this Chanting and Singing | Rabindranath Tagore |

Unit III- SHORT STORY

- | | |
|----------------------------|--------------|
| 1. A Retrieved Reformation | O'Henry |
| 2. Engine Trouble | R.K. Narayan |

Unit IV – GLIMPSES FROM GREAT MINDS

- | | |
|------------------------|---------------------|
| 1. I lived with words | R.L. Stevenson |
| 2. My Vision for India | Dr. APJ Abdul Kalam |

Unit V - FUNCTIONAL ENGLISH

Enhancing LSRW Skills through Tasks

Note: Each lesson to be followed by text-based Vocabulary, Grammar, and Usage Exercises

Synonyms, Antonyms- Affixes (prefixes & Suffixes)-Noun- Adjectives, Verb, Tense, Adverb, Preposition, 'if' clause, Articles, discourse markers, Reported and Direct speech- Voice, Degrees of comparison, Interrogatives

Comprehension, Précis writing

Text Books, Reference Books and Web Resources

1. Quest: A Textbook of Communication Skills, Orient Blackswan,
2. Pushkala R, P.A.Sarada, El Dorado: A Textbook of Communication Skills, Orient Blackswan, 2014
3. Padmasani Kannan.S., Pushkala.R. : Functional English
4. <https://learnenglish.britishcouncil.org>
5. www.englishpage.com
6. www.writingcentre.uottawa.ca/hypergrammar/preposit.html

Total No of Hrs : 45

HBEN17002

ENGLISH - II

3 0 0 3



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DEPARTMENT OF COMPUTER APPLICATIONS

COURSE OBJECTIVES:

- To prepare students to attain a comprehensive knowledge of the communication skills.
- To make them understand the nuances of the English language and use the vocabulary in appropriate contexts.
- To develop in students a knowledge of the various techniques in language usage.
- To develop in them analytical and interpretative skills.
- To train learners in organized, academic and business writing.

Unit I- PROSE- For Detailed Study

1. The Spoon Fed Age
2. Disaster Management
3. If You are Wrong Admit it

W.R. Inge
B.M. Hegde
Dale Carnegie

Unit II – POETRY- For Detailed Study

1. A Psalm of Life
2. Anthem for Doomed Youth
3. Street Cries

H.W. Longfellow
Wilfred Owen
Sarojini Naidu

Unit III – SHORT STORY

1. How Much Land does a Man Need?
2. Uncle Podger Hangs the Picture

Leo Tolstoy
Jerome K. Jerome

Unit IV - DRAMA

1. Excerpts from The Merchant of Venice
2. The Monkey's Paw

William Shakespeare
W.W. Jacob

Unit V – FUNCTIONAL ENGLISH

Enhancing LSRW Skills through Tasks

Text Books, Reference Books and Web Resources

1. Quest: A Textbook of Communication Skills, Orient Blackswan,
2. Pushkala R, P.A.Sarada, El Dorado: A Textbook of Communication Skills, Orient Blackswan, 2014
3. Padmasani Kannan.S., Pushkala.R. : Functional English
4. <https://learnenglish.britishcouncil.org>
5. www.englishpage.com
www.writingcentre.uottawa.ca/hypergrammar/preposit.html

Total
No of Hrs :45



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DEPARTMENT OF COMPUTER APPLICATIONS

UNIT I

12 Hrs

Introduction: History, What is Information Security? Critical Characteristics of Information - NSTISSC Security Model - Components of an Information System - Securing the Components - Balancing Security and Access - The SDLC - The Security SDLC

UNIT II

12 Hrs

Security Investigation: Need for Security - Business Needs, Threats, Attacks, Legal, Ethical and Professional Issues

UNIT III

12 Hrs

Security Analysis : Risk Management: Identifying and Assessing Risk, Assessing and Controlling Risk

UNIT IV

12 Hrs

Logical Design: Blueprint for Security - Information Security Policy - Standards and Practices - ISO 17799/BS 7799 - NIST Models - VISA International Security Model - Design of Security Architecture - Planning for Continuity

UNIT V

12 Hrs

Physical Design : Security Technology – IDS - Scanning and Analysis Tools – Cryptography - Access Control Devices - Physical Security - Security and Personnel

Total No of Hrs : 60

TEXT BOOK:

1. Michael E Whitman and Herbert J Mattord(2003) , “*Principles of Information Security*”, Vikas Publishing House, New Delhi.

REFERENCES:

1. Micki Krause, Harold F. Tipton(2004), “ *Handbook of Information Security Management*”, Vol 1-3 CRC Press LLC.
2. Stuart Mc Clure, Joel Scrambray, George Kurtz(2003), “*Hacking Exposed*”, Tata McGraw-Hill. Matt Bishop(2002), “ *Computer Security Art and Science*”, Pearson/PHI.



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Objectives :

- To gain knowledge about the fundamentals of digital image processing
- To understand the techniques in digital image processing
- To know the methods of image restoration techniques, Image compression and Segmentation

UNIT I

12 Hrs

DIGITAL IMAGE FUNDAMENTALS AND TRANSFORMS: Elements of visual perception – Image sampling and quantization Basic relationship between pixels – Basic geometric transformations- Introduction to Fourier Transform and DFT – Properties of 2D Fourier Transform – FFT.

UNIT II

12 Hrs

IMAGE ENHANCEMENT TECHNIQUES: Spatial Domain methods: Basic grey level transformation – Histogram equalization – Image subtraction – Image averaging –Spatial filtering: Smoothing, sharpening filters – Laplacian filters.

UNIT III

12 Hrs

IMAGE RESTORATION: Model of Image Degradation/restoration process – Noise models – Inverse filtering - Least mean square filtering – Constrained least mean square filtering – Blind image restoration.

UNIT IV

12 Hrs

IMAGE COMPRESSION: Lossless compression: Variable length coding – LZW coding – Bit plane coding predictive coding-DPCM. Lossy Compression: Transform coding – Wavelet coding – Basics of Image compression standards.

UNIT V

12 Hrs

IMAGE SEGMENTATION AND REPRESENTATION: Edge detection – Thresholding - Region Based segmentation – Boundary representation: chain codes- Polygonal approximation –Boundary segments –boundary descriptors: Simple descriptors-Fourier descriptors - Regional descriptors.

Total No of Hrs : 60

TEXT BOOK:

1. Rafael C Gonzalez, Richard E Woods(2003), “*Digital Image Processing*”(2nd. ed.), Pearson Education.

REFERENCES:

1. William K Pratt(2001), “*Digital Image Processing*”, John Willey (2001) .



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UNIT I	12 Hrs
C fundamentals: Character set - keywords and Identifiers - constants - Variables – Declarations of variables –Data types – Expressions - Operators: Arithmetic-Relational-logical- Assignment- Increment and Decrement- Conditional – Bitwise - Special operators - Mathematical functions.	
UNIT II	12 Hrs
Decision making, Looping and Arrays: Decision making : Simple if- if...else- nested if..else- switch case - goto statement - Looping: while, do- while, for loop. One dimensional array-two dimensional array - Character arrays – Strings - String handling functions.	
UNIT III	12 Hrs
Functions: Definition –function declaration- function call - Passing arguments – Recursion - Storage Classes: Automatic, External, Static and Register Variables.	
UNIT IV	12 Hrs
Structures and Pointers : Defining and declaration of structures - Accessing structure members – Unions - Pointers - Declarations – Accessing a variable through its pointer-Pointer and Arrays	
UNIT V	12 Hrs
Files: Types of files - Opening and closing a file - Input/ Output operations on files.	

Total No of Hrs: 60

TEXT BOOK:

1. Balaguruswamy, E(2012), *Programming in C(6th ed.)*, Tata McGraw-Hill Publishing Company Limited.

REFERENCES:

1. Byron Gottfried & Jitender Chhabra(2010), *Programming with C* (Schaum's Outlines Series), McGraw Hill Education.
2. K N King(2008), *C Programming(2nd ed.)*, W. Norton & Company



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DEPARTMENT OF COMPUTER APPLICATIONS

List of experiments

1. Program to illustrate Text Formatting tags.
2. Create a web page using ordered list and unordered list.
3. A program to illustrate Hyperlink tag(Anchor tag) .
4. Create a webpage which contains table with its Attributes.
5. Create a Web Page using frame tag with its attributes.
6. Create a webpage using img tag..
7. Create a web page using form tag.
8. Use Cascading Style Sheet to create web page.
9. Write a PHP program for Login Validation.
10. Finding page hit count and setting page expiry using PHP.

Total No of Hrs needed to complete the Lab : 30



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List of experiments:

1. To find GCD of two numbers using recursion.
2. To implement matrix multiplication.
3. To implement Class.
4. To implement Constructor.
5. Using Friend Function.
6. To demonstrate Inheritance.
7. To implement Virtual Function.
8. To Prepare bio data using file Operations.
9. To overload << Operator.
10. To add two complex numbers using Operator Overloading.

Total no. of Hrs needed to complete the Lab: 30



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DEPARTMENT OF COMPUTER APPLICATIONS

List of experiments:

1. Write a Java program to calculate Area and perimeter of a circle.
2. Write a Java Program to Check if the given number is Prime or not.
3. Write a simple Java program to Display Month of year using Calendar class.
4. Write a java program to sort a given set of numbers.
5. Write a java program for handling string Functions a) Reverse b) Replace c) Concat d) Compare.
6. Create New Thread Using Runnable interface in java.
7. Read File Using Java BufferedInputStream class.
8. Draw Oval, Circle, Rectangle & Square using Applets.
9. Write an applet Program for flowlayout.
10. Create AWT controls for button,combobox,checkbox,Textfield using java applet.

Total no. of Hrs needed to complete the Lab : 30



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DEPARTMENT OF COMPUTER APPLICATIONS

HBCA17L08 VISUAL PROGRAMMING LABORATORY 0 0 2 2

List of experimemnts:

1. Building simple application using form object.
2. Working with intrinsic controls.
3. Application with menus.
4. Application with MDI.
5. Create a simple Calculator using windows common controls.
6. Block for factorial using Function.
7. Pay -roll system.
8. Inventory Processing System
9. Railway / Airway Reservation System.
10. Library Management System.

Total no. of Hrs. needed to complete the Lab : 30

HBCA17L09 LINUX LABORATORY 0 0 2 2



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DEPARTMENT OF COMPUTER APPLICATIONS

List of experiments:

1. Prime test.
2. Palindrome test.
3. Fibonacci series generation.
4. Armstrong No test.
5. Solving Quadratic Equation.
6. Sorting: Ascending & Descending - Menu Driven Shell Script.
7. Usage of Case Structures.
8. Process Scheduling: FCFS.
9. Process Scheduling: Round Robin.
10. Using Pipes to calculate nCr.

Total no. of Hrs. needed to complete the Lab : 30



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DEPARTMENT OF COMPUTER APPLICATIONS

OBJECTIVES:

2. Students will be able to develop an application in specific domains. Students are expected to carry out the following:
 - vi. Implementing the technologies or its combinations
 - vii. Analysing and modeling the concepts of system engineering
 - viii. Generate Database Models
 - ix. Develop an executable application
 - x. Prepare project report



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DEPARTMENT OF COMPUTER APPLICATIONS

UNIT I

9 Hrs

Introduction and Basic Concepts: Structure of DBMS - Advantages and Disadvantages of DBMS - Relational Database: attributes & domains, tuples, relations and their schemes - Integrity rules - Relational Algebra: basic operations.

UNIT II

9 Hrs

SQL Language Basics : Oracle & Client-Server Technology - types of SQL Declarations – DDL - DML - SELECT command - data types - Expressions and Operators- Types of Operators - Precedence of Operators-.

UNIT III

9 Hrs

More on SQL: Data Integrity : types of integrity , integrity constraints , NOT NULL, UNIQUE, Primary KEY, CHECK Constraints - Oracle Dual Table - Oracle Built in Function - Union, Intersect, Minus,

UNIT IV

9 Hrs

SQL Performance Tuning: Indexes : creating indexes, changing an index, eliminating an Index –Views : properties and privileges of view, creating view, deleting a view – Sequences : creating, changing, deleting sequence, synonyms : creating, renaming, removing a synonyms

UNIT V

9 Hrs

Introduction to PL/SQL:Introduction -The Generic PL/SQL Block - How PL/SQL works-control structures, Stored Procedures and Functions - Database Triggers- types of triggers - creating, modifying and deleting a trigger - Introduction to Cursor

Total No of Hrs : 45

TEXT BOOK:

Jose A Ramalho(2000), *Oracle 8i*, BPB Publications

REFERENCES:

1. Bipin C. Desai (1997), *An Introduction To Database Systems*, West Publishing Company.
2. Ivan Bayross Sql, *Pl/Sql The Programming Language Of Oracle*(2nd ed.) , Bpb Publications



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DEPARTMENT OF COMPUTER APPLICATIONS

UNIT I

9 Hrs

Parts of Python Programming Language, Identifiers, Keywords, Statements and Expressions, Variables, Operators, Precedence and Associativity, Data Types, Indentation, Comments, Reading Input, Print Output, Type Conversions, The type() Function and Is Operator, Dynamic and Strongly Typed Language, **Control Flow Statements**, The if statement, The if...else Statement, The if...elif...else Statement, Nested if Statement, The while Loop, The for Loop, The continue and break Statements, Catching Exceptions Using try and except Statement,

UNIT II

9 Hrs

Functions, Built-In Functions, Commonly Used Modules, Function Definition and Calling the Function, The return Statement and void Function, Scope and Lifetime of Variables, Default Parameters, Keyword Arguments, *args and **kwargs, Command Line Arguments. **Strings**, Creating and Storing Strings, Basic String Operations, Accessing Characters in String by Index Number, String Slicing and Joining, String Methods, Formatting Strings, **Lists**, Creating Lists, Basic List Operations, Indexing and Slicing in Lists, Built-In Functions Used on Lists, List Methods, The del Statement.

UNIT III

9 Hrs

Dictionaries, Creating Dictionary, Accessing and Modifying key:value Pairs in Dictionaries, Built-In Functions Used on Dictionaries, Dictionary Methods, The del Statement, **Tuples and Sets**, Creating Tuples, Basic Tuple Operations, Indexing and Slicing in Tuples, Built-In Functions Used on Tuples, Relation between Tuples and Lists, Relation between Tuples and Dictionaries, Tuple Methods, Using zip() Function, Sets, Set Methods, Traversing of Sets, Frozenset.

UNIT IV

9 Hrs

Files, Types of Files, Creating and Reading Text Data, File Methods to Read and Write Data, Reading and Writing Binary Files, The Pickle Module, Reading and Writing CSV Files, Python os and os.path Modules, **Regular Expression Operations**, Using Special Characters, Regular Expression Methods, Named Groups in Python Regular Expressions, Regular Expression with glob Module.

UNIT V

9 Hrs

Object-Oriented Programming, Classes and Objects, Creating Classes in Python, Creating Objects in Python, The Constructor Method, Classes with Multiple Objects, Class Attributes versus Data Attributes, Encapsulation, Inheritance, The Polymorphism

Total No of Hrs : 45

T BOOK

1. Gowrishankar S, Veena A, **“Introduction to Python Programming”**, 1st Edition, CRC Press/Taylor & Francis, 2018. ISBN-13: 978-0815394372



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