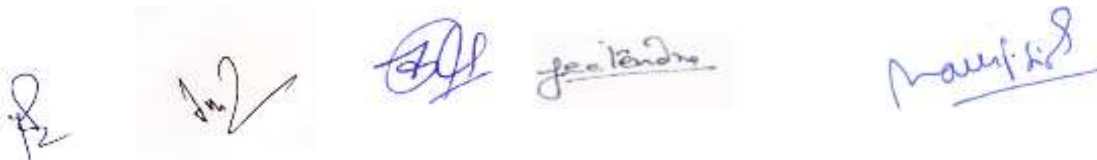# fProgramme Project Report (PPR)

(Diploma in Computer Applications)

a. **Programme's mission & objectives:** The objectives of the programme is to prepare students to excel in Computer Applications Diploma programme for immediate employment or to succeed in computing industry profession through quality education. It also provides students with a solid foundation in mathematical, scientific and engineering fundamentals required to solve computing and information technology problems. The programme also inculcate in students professional and ethical attitude, communication skills, team work skills, multi-disciplinary approach and an ability to relate computer engineering issues with social awareness. The program also serves as a bridge course for MCA learners with BSc/BA/B Com background.

b. **Relevance of the program with HEIs Mission and Goals:** One of the important aims of higher education is the training for leadership in the profession and public life. Diploma in Computer Applications (DCA) is a one year (two semesters) professional diploma in Computer Applications which is inclined more toward application development and thus has more emphasis on latest programming language and tools to develop better and faster applications. Conceptual grounding in computer usage as well as its practical business application will be provided making candidates suitable for IT sector entry level jobs.

c. **Nature of prospective target group of learners:** The students who wish to join DCA program must have completed 10+2.

d. **Appropriateness of programme to be conducted in Open and Distance Learning mode to acquire specific skills and competence**: The Open and Distance Learning (ODL) University system is more learner-oriented where of the instruction is imparted through distance mode with only a small component of face-to-face communication. The University follows the Credit System for its programmes. Each credit is worth 30 and the student has to be an active participant in the teaching-learning process. Most hours of student study time, comprising all the learning activities. Thus, a four-credit course involves 120 study hours. This helps the student to understand the academic effort one has to put into successfully complete a course. Completion of the programme requires successful completion of both assignments and the Term-End Examination of each course along with practical examination of practical oriented courses of the programme. The specially designed printed Self Learning Material for different subject along with other support material is provided to the learners through post/ study center. The study material can also be downloaded through the Universities' e- repository. The

University follows a multi-channel approach for the delivery of instruction. It comprises a suitable mix of:

- self-instructional printed material
- audio / video cassettes and CDs
- audio-video programmes transmitted through Hello Haldwani FM Radio and EduSat, and at study centre.
- face-to-face counselling at study centres by academic counselors
- reference library at study centre
- web based academic support
- assignments
- practical

The practical sessions are held in the computer centres / labs of the Study Centres. In these computer labs, the participants have the facility to use the computer and software packages relevant to the syllabus.

e. **Instructional Design:** Open and Distance learning (ODL) is an innovative approach of providing opportunity of learning through Self Learning Material (SLM) and certain other strategies in a flexible manner at the pace of learners. In this mode, the learner is also provided academic support in the form of counseling and audio/video material in addition to SLM. The University follows the Credit System for its programmes. The DCA programme is of 40 credits and each credit is worth 30 hours of student study time, comprising all the learning activities. Thus, a four-credit course involves 120 study hours. This helps the student to understand the academic effort one has to put into successfully complete a course.

f. **Procedure for admissions, curriculum transaction and evaluation:** Direct admission to DCA program is offered to the interested students. This programme has been designed with a semester approach in mind. The total numbers of courses in this DCA programme are 07 along with 2 laboratory courses & 1 project and the total number of credits is 40. Evaluation for each course covers two aspects:

- Continuous evaluation through Assignment with a weightage of 30%.
- Term-end examination with a weightage of 70%.

To fulfill the requirements for acquiring the DCA, a student may clear all the courses in a minimum of 1 year and a maximum of 2 years. In case the student is unable to pass all the courses of the DCA programme in 2 years, s/he can continue for another two years by seeking Re-admission to the courses which s/he is unable to successfully complete. Completion of the programme requires successful completion of both assignment component and the Term-end Examination component for each course in the programme.

The term-end examination of the practical courses consists of several sections. Each section is evaluated separately. The viva-voce for each section will also be separate. The 60% marks of the practical exam are for practical questions and remaining 40% for viva-voce. A student needs to obtain a minimum of 40% in each section of the term-end practical examination for successful completion of that particular section. In case a student does not secure the minimum passing marks in a section, s/he needs to appear for the term-end practical examination again for that section only.

g. **Requirement of the laboratory support and Library Resources:** The practical sessions are held in the computer centres / labs of the Study Centres. In these computer labs, the participants will have the facility to use the computer and software packages relevant to the syllabus. The SLM, supplementary text audio and video material of the various courses of the program is available through the e-repository of the University. The University also have a subscription of National Digital Library to provide the learners' with the ability to enhance access to information and knowledge of various courses of the programme.

h. **Cost estimate of the programme and the provisions:** Diploma in Information Technology programme is a one year program with consists of 6 courses and 2 laboratory courses. One course is of 4 credits which consists of approx. 16 units. Hence the total expenditure on the development of 6 four credit courses is:

S. No.	Item	Per unit Cost (Writing & Editing)	Total Cost(Rs.)
1	Total no. of units in 6 courses of 4 credits each= 96	9000	8,64,000
2	Expert Committee, BOS Meetings, etc.		1,00,000
		Total	9,64,000

Hence, Rs. 9,64,000/- are required for the development, implementation and maintenance of the programme.

i. **Quality assurance mechanism and expected programme outcomes:** The program structure is developed under the guidance of the expert committee and Board of studies of the School based on the model curriculum of the programme recommended by AICTE. The program structure and syllabus is approved by the Academic Council of the University. The course structure and syllabus is reviewed according to the needs of the IT Industry every five years. Upon completion of Diploma in Computer Applications programme, students will be able:

- Able to apply knowledge of mathematics, science, and in different streams of Engineering.
- Able to demonstrate skills to use modern engineering tools and software to analyze technical problems.
- Able to identify, formulate and solve engineering problems related to Information Technology.
- Able to develop logic and programming skills through immersion in the fundamental programming.
- Able to demonstrate knowledge of professional and ethical responsibilities.
- Able to demonstrate effective communication skills of computer subjects, in both oral and written forms.
- Able to demonstrated leadership and capability to participate in teamwork in an environment with different disciplines of engineering, science and business.
- Able to develop confidence for self-education, teamwork and ability for life-long learning.
- Able to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Appendix 1

Details of Diploma in Computer Applications

Title of Programme: Diploma in Information Technology

Programme Code: DCA-21

Programme Mode: Semester

Admission Cycle: Once every Year in July

Eligibility: 10+2 for direct entry. However, the learner who enroll for DCA programme to complete the MCA bridge course, the minimum qualification shall be same as for MCA programme .i.e. [Passed B.Sc./ B.Com./ B.A. with Mathematics at l0+2 Level or at Graduation Level. Candidate not having mathematics at 10+2 or graduation will have to pass one qualifying mathematic course during the course of the programme (Sr. Secondary Mathematics paper in SWAYAM portal by Dr. Rajendra Kumar Nayak, NIOS). The equivalent courses shall be identified from time to time and the details shall be provided in the University website.]
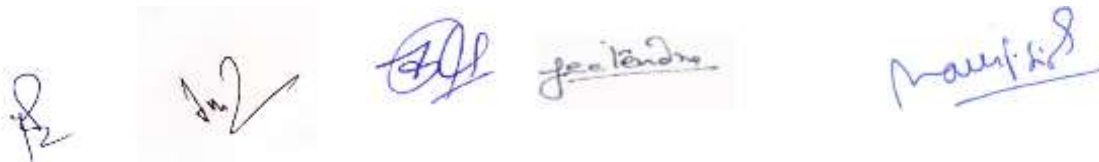
Duration: *Min:* 1 Years

   *Max***:** 2 Years

SLM Availability Medium : English   **Total Credit :**40

Programme Fee:

Semester	Programme Fee	Exam Fee	Project Fee	Practical Fee	Viva-voce	Total
First	2000	600	-	500	NA	2900
Second	2000	450	1000	500	NA	3950

* Note: Miscellaneous fees ₹150/- for Admission in New Programme/First Year/Semester, Degree Fee ₹300/- (Last Year/Semester)

Objective of the Program: The objective of this programme is to equip the learner with the latest tools and techniques of computing and informatics. The professionals who could develop solutions making use of computer applications is the crux of this programme. The programme,

therefore, aims at imparting comprehensive knowledge with equal emphasis on theory and practice.

Program Structure:

Course Code		Title of the Course	Credits	Theory/Practical/ Project Marks	Assignment
		First Semester			
DCA-101		Introduction to Programming using C	4	70[1]	30
DCA-102		Introduction to Computing	4	70	30
DCA-103		Technical English and Business Communication	4	70	30
DCA-104		Digital Electronics	4	70	30
DCA - BCP1		Practical	4	100	-
		Second Semester			
FCS		Fundamentals of Cyber Security	4	100	-
DCA -105		Data Structures & Program Methodology	4	70	30
DCA -106		Information System for Business	4	70	30
DCA - BCP2		Practical	4	100	-
DCA - BCProject		Project	4	100	-

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[1] Currently the distribution of theory and assignment marks is 70% and 30% respectively. However, it may change according the directions of the statutory /regulatory bodies.

SYLLABUS

Introduction to Programming using C

DCA -101

BLOCK I

Unit 1: Programming Building Blocks: Specification, Implementation**,** Hello, World! Example.

Unit 2: Variables, Expressions, and Statements: Variables, Operators, Expressions, Statements.

Unit 3: Functions: Passing by Value, Function Prototypes.

Unit 4: Variables: Up Scope, Storage Classes

BLOCK II

Unit 5: Pointers: Memory and Variables, Pointer Types, Dereferencing, Passing Pointers as Parameters.

Unit 6: Structures: Pointers to structs, Passing struct pointers to functions.

Unit 7: Arrays: Passing arrays to functions.

Unit 8: Strings

Unit 9: Dynamic Memory: malloc()**,** free(), realloc(), calloc().

BLOCK III

Unit 10 Advance Topics: Pointer Arithmetic, typedef, enum, More struct declarations, Command Line Arguments, Multidimensional Arrays, Casting and promotion, Incomplete types**,** void pointers, NULL pointers, More Static, Typical Multifile Projects**,** The Almighty C Preprocessor, Pointers to pointers, Pointers to Functions, Variable Argument Lists.

Unit 11. Standard I/O Library: fopen(), freopen(), fclose(), printf(), fprintf(), scanf(), fscanf(), gets(), fgets(), getc(), fgetc(), getchar(), puts(), fputs(), putc(), fputc(), putchar(), fseek(), rewind(), ftell(), fgetpos(), fsetpos(), ungetc(), fread(), fwrite(), feof(), ferror(), clearerr(), perror(), remove(), rename(), tmpfile(), tmpnam(), setbuf(), setvbuf(), fflush().
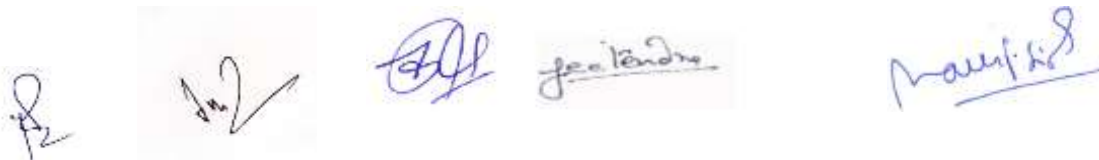
Unit 12. String Manipulation: strlen(), strcmp(), strncmp(), strcat(), strncat(), strchr(), strrchr(), strcpy(), strncpy(), strspn(), strcspn(), strstr(), strtok().

Unit 13: Mathematical Functions: sin(), sinf(), sinl(), cos(), cosf(), cosl(), tan(), tanf(), tanl(), asin(), asinf(), asinl(), acos(), acosf(), acosl(), atan(), atanf(), atanl(), atan2(), atan2f(), atan2l(), sqrt().

Unit 14: Complex Numbers

Suggested Readings:
1. Let us C-Yashwant Kanetkar.

2. Programming in C- Balguruswamy
3. The C programming Lang., Pearson Ecl – Dennis Ritchie
4. Structured programming approach using C-Forouzah & Ceilberg Thomson learning publication.
5. Pointers in C – Yashwant Kanetkar

Supplementary Course Material available at: http://www.freetechbooks.com/beejs-guide-to-c-programming-t986.html

Introduction to Computing
DCA-102

BLOCK I

Unit 1: Computing

Computing: Processes, Procedures, and Computers; Measuring Computing Power: Information, Representing Data, Growth of Computing Power; Science, Engineering, and the Liberal Arts, Summary and Roadmap.

Unit II: Defining Procedures

Language, Surface Forms and Meanings, Language Construction , Recursive Transition Networks, Replacement Grammars.

Unit III Programming

Problems with Natural Languages, Programming Languages, Scheme, Expressions: Primitives, Application Expressions; Definitions, Procedures: Making Procedures, Substitution Model of Evaluation; Decisions, Evaluation Rules.

BLOCK II

Unit IV: Problems and Procedures

Solving Problems, Composing Procedures: Procedures as Inputs and Outputs; Recursive Problem Solving, Evaluating Recursive Applications, Developing Complex Programs: Printing, Tracing .

Unit V: Data

Data Types, Pairs: Making Pairs, Triples to Octuples; Lists, List Procedures: Procedures that Examine Lists, Generic Accumulators, Procedures that Construct Lists; Lists of Lists, Data Abstraction.

Unit VI: Analyzing Procedures

Machines, History of Computing Machines, Mechanizing Logic: Implementing Logic, Composing Operations, Arithmetic; Modeling Computing: Turing Machines .
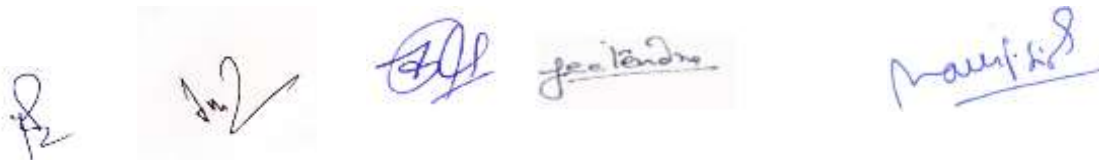
BLOCK III

Unit VII: Cost

Empirical Measurements, Orders of Growth: Big O, Omega Theta; Analyzing Procedures: Input Size, Running Time, Worst Case Input; Growth Rates: No Growth: Constant Time, Linear Growth, Quadratic Growth, Exponential Growth, Faster than Exponential Growth , Non-terminating Procedures

Unit VIII: Sorting and Searching

Sorting: Best-First Sort, Insertion Sort , Quicker Sorting, Binary Trees, Quicksort; Searching: Unstructured Search, Binary Search, Indexed Search;

Unit IX: Improving Expressiveness

Mutation, Assignment, Impact of Mutation: Names, Places, Frames, and Environments, Evaluation Rules with State; Mutable Pairs and Lists, Imperative Programming: List Mutators, Imperative Control Structures

BLOCK IV

Unit X: Objects

Packaging Procedures and State: Encapsulation, Messages, Object Terminology; Inheritance: Implementing Subclasses, Overriding Methods; Object-Oriented Programming.

Unit XI: Interpreters

Python: Python Programs, Data Types, Applications and Invocations, Control Statements; Parser, Evaluator: Primitives, If Expressions, Definitions and Names, Procedures , Application , Finishing the Interpreterl Lazy Evaluation: Lazy Interpreter, Lazy Programming.

Unit XII: The Limits of Computing

Computability, Mechanizing Reasoning: Godel's Incompleteness Theorem; The Halting Problem, Universality, Proving Non-Computability.

Supplementary Course Material available at: http://www.computingbook.org/FullText.pdf

Technical English and Business Communication
DCA-103

Block I

Unit I: Definition of Technical Vocabulary, Word Formation, Principles of word formation

Unit II: SUFFIX, NOUN to NOUN, VERBS TO NOUNS , NOUN TO VERBS, NOUN TO ADJECTIVE, ADJECTIVES TO NOUNS, VERBS TO ADJECTIVES, LESS COMMON SUFFIXES, COMPOUND ADJECTIVES

Unit III: ARTICLES, Conjunctions and Prepositions, Conjunctions, Prepositions , Use of prepositions

Unit IV: ACTIVE AND PASSIVE VOICE, Changing Active Voice into Passive Voice, Changing Passive Voice into Active

Block II

Unit V: NOTE MAKING: Reading strategy, How to make notes?, Indenting, Heading, Format, Methods of note making, Topicalising, Sequencing, How do you summarize?, Reading Text, Skimming, Skim the material .
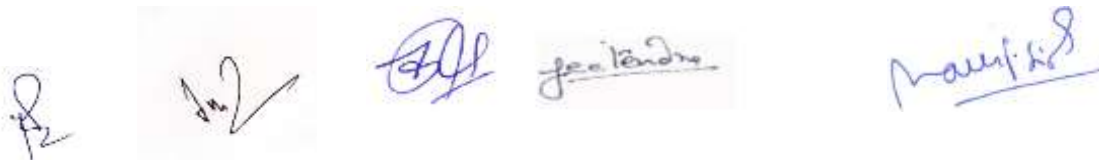
Unit VI: PARAGRAPH WRITING: Salient features , Unity, Coherence, Key points to remember. TRANSCODING : Role play, Conversational Techniques, Discussions, Oral Reporting, What is role play? Why use role play? How to use role playing? Ground rules for interactive exercises, Role play example, Roleplay - conversational Techniques discussions – Oral, Reporting.

Unit VII: Vocabulary Items, Prefix, Words with prefixes – 'multi- ' , Words with prefix 'under-', Asking and answering questions, YES / NO question Forms, Tag Questions, Information (or Question word) questions, Spelling and Punctuation, The full stop, The Question mark, The exclamation mark, The Comma, The Apostrophe ('), Semi – colon (;), The colon (:), Quotation Marks, The Hyphen, Capital letters, Parentheses ( ), Brackets [ ]

Unit VIII: Reading Comprehension, Scanning for Information, Two Levels of Reading, Steps for Scanning, Listening and Guided Note – taking, Levels of Listening, The Barriers to listening, Complex Inter personal relationship, Misread the non verbal cues, Rules of good listening, Note taking study skills, Listening for details. Paragraph writing: The structure of a Paragraph, Topic Sentence, Note making. Comparing and Contrasting using expressions of comparisons, Discussing creative ideas, Use of Modals verbs, Tips to understand the functioning of Modals

Block III

Unit IX: COMPOUND NOUNS- NEGATIVE PREFIXES: COMPOUND NOUNS, PREFIXES: Negative Prefixes. Antonym: List of Antonyms. Noun and verb compounds, Noun

and Gerunds, Gerund and Noun, Noun to noun, Noun and adjective   ,   Prepositions   and Noun, Making sentences using phrases.

Unit X: TENSES – SIMPLE PAST AND PRESENT PERFECT: Present Perfect Tense   ,

Present Perfect Tense in Affirmative sentences, Present Perfect Tense in Interrogative sentences, Negative Sentences. SIMPLE PAST TENSE: The Narrative Past, Reported Speech   :

Reporting verb in the past tense, Change of pronouns and possessive adjectives, Adverbs and adverbial phrases of time. Interrogative sentences, Exclamatory sentences, Imperative sentences, Reading and guessing meanings in context

Unit XI: LISTENING AND NOTE TAKING: Techniques of note taking while listening, Listening, Filtering, Paraphrasing, Note taking,   Channel Conversation from text to chart, Making Recommendations: Process for making recommendation. Discussion – Role play explaining and convincing, Expanding Nominal Compounds – Words with multiple meanings, Error Correction: Common Pronoun errors, Adverbial expressions, Confusion with prepositions & infinitives. Compound Adjectives.

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Block IV

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Unit XII: SIMPLE PAST AND PRESENT PERFECT TENSE
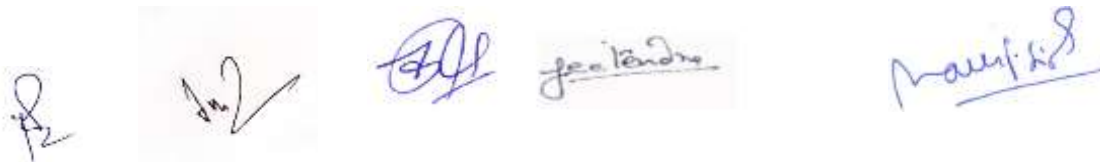
Unit XIII: Reading – Prediction of content, Understanding Advertisements, Drafting advertisements, Scanning the text and comprehension check. Listening for details – Listening Comprehension, Logical Connectors and Transitional Signals, Active Listening Quiz, Role play – Discussion speculating about future, Comparison, Contrast   ,   Conjunctions   and expressions to be used, Role play – Discussion speculating about future

Unit XIV: Formation of Nouns, Verbs and Adjective from Root Words, USEFUL PHRASES AND EXPRESSIONS, Gerunds: If conditional clauses – gerunds, Gerunds as passive forms , Perfect forms of gerunds, Reading for Comprehension – Intensive Reading. Accuracy in Listening – Listening to discussion on specific issues.

Unit XV: GROUP DISCUSSION AND WRITING FORMAL LETTERS

Supplementary Course Material is available at: http://nptel.ac.in/courses/109106066/2

and
http://nptel.ac.in/courses/109104030/

Digital Electronics
DCA-104

Block I
Unit I: Introduction Weighted-Position Number System, Number System Conversions, Representation of Negative Numbers: One's Complement Representation, Two's Complement Representation

Unit II: Binary Coded Decimal Codes, Unit Distance Codes, Alphanumeric Codes, Error Detection and Correcting Codes

Unit III: Boolean Algebra: Boolean Algebra and Huntington Postulates, Propositions from Huntington's Postulates, Boolean operators.

Unit IV: Logic Functions in Algebraic Form, Truth Table Description of Logic Function, Conversion of English Sentences to Logic Function, Minterms and Maxterms, Circuit Representation of Logic Functions

Block II
Unit V: Karnaugh-Map: Three-Variable Karnaugh Map, Four-variable Karnaugh Map, Five-variable Karnaugh Map, Boolean functions in POS form, Minimization with Karnaugh Map, Standard POS form from Karnaugh Map, Simplification of Incompletely Specified Functions.

Unit VI: Principle of Quine-McClusky Method, Generation of Prime Implicants, Determination of the Minimal Set of Prime Implicants, Simplification of Incompletely Specified functions

Unit VII: Logic Gates, Truth Table, AND Gate, OR-Gate, NOT Gate, NAND Gate, NOR Gate, X-OR Gate, X-NOR Gate

Unit VIII: Combinational Circuit, Multiplexer and Demultiplexer, Multiplexer, Demultiplexer, Encoder and Decoder, Encoder, Decoder, Half adder and Full adder.

Block III
Unit IX: Sequential Circuit: Flip Flops, RS Flip-Flop, D Flip-Flop, JK Flip-Flop, T Flip-Flop, Master-Slave Flip-Flop
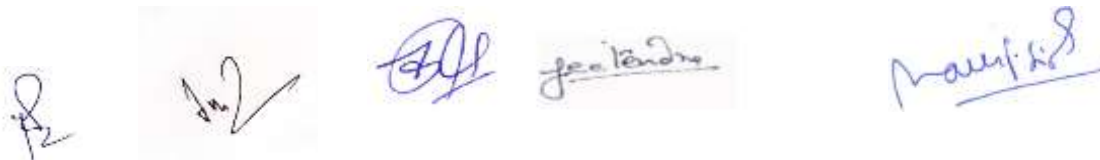
Unit X: Shift registers: Types of shift registers, Serial Input, Serial Output (SISO) Shift Register, Serial Input, Parallel Output (SIPO) Shift Register, Parallel Input, Serial Output (PISO) Shift Register, Parallel Input, Parallel Output (PIPO) Shift Register, Application of Shift register.

Unit XI: Asynchronous (ripple) counter, Synchronous counter, Working of a three-stage synchronous counter, Decade counter (MOD 10 Counter), Ring Counter, Johnson counter.

Unit XII: Introduction to Semiconductor Memories, Read Only Memory (ROM), ROM Size, Random Access Memory(RAM), SRAM vs DRAM, READ Operation in RAM, WRITE Operation in RAM, Flash Memory, Memory Expansion

Reference books:
1. Digital Design, M. Morris Mano
2. Maini, "Digital Electronics: Principles and Integrated Circuits", Wiley India
3. Digital Systems: Principles and Design, Raj Kamal, Pearson

4. Balbanian, Digital logic design, Wiley India
5. Switching Circuit & Logic Design, Hill & Peterson, Wiley

Data Structure and Program Methodology

DCA-105

Block I
Unit I: Introduction: What is Data Structure, Methods of Interpreting bit setting, Types of Data Structure.
Unit II: Introduction to Algorithms: Time Complexity, Recurrence.
Unit III: Linear Data Structure: Introduction to Stack, Introduction to Queue
Unit IV: Linked List : Inserting and Removing Nodes from a list, Linked Implemented of Stacks, Getnode and Freenode Operation, Linked Implemented of Queue, List Implementation of Priority Queue, Header Nodes, Circular Lists, Doubly linked list

Block II
Unit V: Sorting: Introduction to Sorting, Sink Sort, Selection Sort, Merge Sort, Quick Sort, Radix Sort.
Unit VI: Searching: Introduction to Searching, Linear Search, Binary Search.
Unit VII: Representation and Traversal: Representation and Traversal, Königsberg Bridge Problem.
Unit VIII: Basic Algorithms: Minimum Spanning Tree, Single Source Shortest Path.

Block III
Unit IX: Binary Tree: Array Representation of Binary Tree, Linked Representation of Binary Tree.
Unit X: Heap Sort
Unit XI: Search Tree: AVL-Tree, B-Tree
Unit XII: Tables: Hashing Techniques

Block IV
Unit XIII: Sets
Unit XIV: String Algorithm: String Copy, Pattern Matching.
Unit XV: Program Development: Life Cycle, Code Designing, Coding, Programming Style
Unit XVI: Program Testing and Verification: Testing Method, Verification Procedure
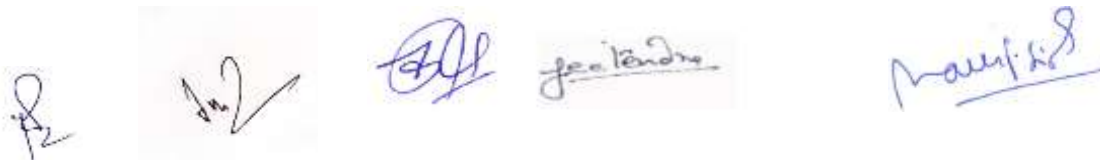
Reference Books:

1. Richard F. Gilberg and Behrouz A. Forouzan, Data Structures A Pseudocode approach with C, Thomson, 2005.
2. Robert Kruse & Bruce Leung, Data Structures & Program Design in C, Pearson Education, 2007.
3. Hubbard JR: Schaum's outline of Data Structures with C++, TMH.
4. E. Horowitz, Sahni and D. Mehta: Fundamentals of Data Structures in C++, Galgotia Publication.

5. Y. Langsam, M.J. Augenstein and A.M. Tanenbaum: Data Structures Using C and C++, Prentice Hall of India.
6. R.Kruse, C.L.Tonodo and B.Leung: Data Structures and Program Design in C, Pearson Education.
7. G.L. Heileman: Data Structutes, Algorithms and Object Oriented Programming, Tata McGraw Hill.

Information Systems for Business
DCA-106

Block I

Unit I: What Is an Information System?
Unit II: Hardware
Unit III: Software
Unit IV: Data and Databases

Block II

Unit V: Networking and Communication
Unit VI: Information Systems Security
Unit VII: Does IT Matter?
Unit VIII: Business Processes

Block III

Unit IX: The People in Information Systems
Unit X: Information Systems Development
Unit XI : Globalization and the Digital Divide
Unit XII: The Ethical and Legal Implications of Information Systems
Unit XIII: Future Trends in Information Systems
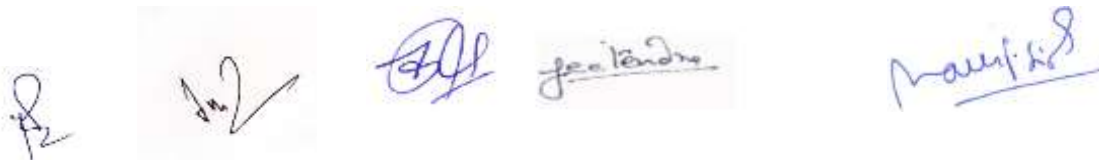
Reference Books:
1. Management Information Systems by Obrien, Marakas and Ramesh Behl,TMGH
2. Management Information Systems by Jawadekar, TMGH, 4th Edition
3. Management Information Systems by Jaiswal and Mittal, Oxford University Press
4. Decision Support Systems and Intelligent Systems by Turban and Aronson, Pearson Education Asia
5. Management Information Systems by C.S.V.Murthy

Programme Name & Abbreviation	Programme Code	Eligibility	Duration In Years		SLM	Mode of Exam (Annual/ Sem)	Year / Sem	Details of Fees (Rs.)							
			Min	Max				Programe	Project/ Lab Workshop	Exam	Practical	Viva-Voce	Miscellaneous	Degree Fee	Grand Total
Diploma in Computer Applications	DCA-21	Passed 10+2 with recognized boards. However, the learner who enroll for DCA programme to complete the MCA bridge course, the minimum qualification shall be same as for MCA programme .i.e. [Passed B.Sc./ B.Com./ B.A. with Mathematics at l0+2 Level or at Graduation Level. Candidate not having mathematics at 10+2 or graduation will have to pass one qualifying mathematic course during the course of the programme (Sr. Secondary Mathematics paper in SWAYAM portal by Dr. Rajendra Kumar Nayak, NIOS). The equivalent courses shall be identified from time to time and the details shall be provided in the University website.]	1	2	English	Sem	I	2000	-	600	500	-	150		3250
							II	2000	1000	450	500	-	-	300	4250

Guidelines to prepare Project

The student is expected to take up any industry oriented application and develop a project on this topic preferably on C, C++, VB. The implementation should involving all the phases of software development life-cycle i.e. problem formulation, design, implementation and testing phases. Below are the guidelines for structuring and formatting of the project report.

Qualification of Report Supervisor: The report supervisor can be any M.Tech./MCA/M.Sc.(CS) or equivalent qualified person from the industry or academia with sufficient experience in the respective field.

Font

1. Chapter Names - 16 TIMES NEW ROMAN (bold) all caps

2. Headings - 14 TIMES NEW ROMAN (bold) all caps

3. Subheadings - 14 TIMES NEW ROMAN (bold) Title case

4. Sub – sub headings - 12 TIMES NEW ROMAN (bold) Title case

5. Body of Project - 12 TIMES NEW ROMAN

6. Text in Diagrams - 12 TIMES NEW ROMAN (all lower case)

7. Diagrams / Table headings / Fig. Headings - 12' TIMES NEW ROMAN Title case

8. If any text 12' TIMES NEW ROMAN (Title case)

Spacing
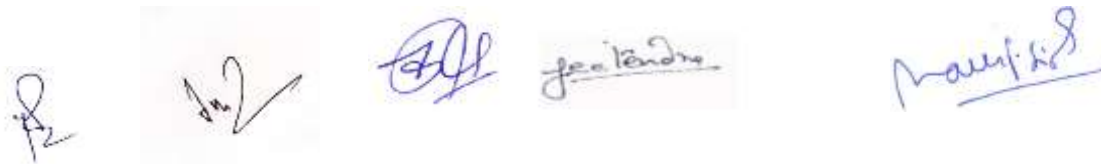
1. Two(2) line spacing between heading and body text.

2. 1.5 line spacing in body text.

3. New paragraphs start with single tab.

Margins

Left 1.5' Right 1.0' Top 1.0' Bottom 1.0'

Page numbers

position Bottom, Middle 1. Front Pages Small Roman Numbers (Excluding title page, Certificate page, Acknowledgement page) 2. Body pages

1,2,3 ………. 3. Annexure 1,2,3……….. (Separate for each Annexure) Pages : Size : A4 paper Color: White Documentation : Spiral Binding

Front Pages

Page 1 Title Page
Page 2 Certificate Page
3 Acknowledgement
Page 4 Contents
Page
5 Abstract
Page 6 List of Figures/ tables/ screens
Page 7 Symbols & Abbreviations

CONTENTS

Abstract List of Figures List of Tables List of Screens Symbols & Abbreviations

4.4 Conclusion

5. IMPLEMENTATION & RESULTS
5.1 Introduction
5.2 Explanation of Key functions
5.3 Method of Implementation

5.2.1 Forms 5.2.2 Output Screens 5.2.3 Result Analysis
5.4 Conclusion

6. TESTING & VALIDATION
6.1 Introduction
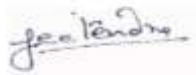6.2 Design of test cases and scenarios
6.3 Validation
6.4 Conclusion

7. CONCLUSION : First Paragraph - Project Conclusion

Second Paragraph - Future enhancement REFERENCES
1. Author Name, Title of Paper/ Book, Publisher's Name, Year of publication
2. Full URL Address

A Project report on

<<Title of the project>>

DIPLOMA IN COMPUTER APPLICATIONS

Submitted By

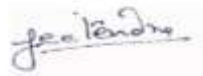**<< Name of the Student >>**

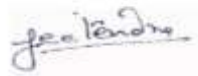**<< Enrolment No >>**

Under the Guidance of

<< Guide Name >>

<< Designation >>

<<Your Study Center Name in CAPS>>

<< University Logo >>

School of Computer Science and IT,

<<Year>>

<<**Your Centre Name in CAPS**>>

School of Computer Science and IT

CERTIFICATE

This is to certify that the project report titled << Project Title >> submitted by << Student Name >>, bearing <<Enrolment No>>, in DCA - <<Semester>> is a record bonafide work carried out by me. The results embodied in this report have not been submitted by me to any other University for the award of any degree.

<< Student Signature>>

<< Supervisor Signature >>   **<< Coordinator Signature>>**