

C P PATEL AND F H SHAH COMMERCE (AUTONOMOUS) COLLEGE, ANAND
(Managed by SARDAR PATEL EDUCATION TRUST, ANAND)

AFFILIATED TO SARDAR PATEL UNIVERSITY, V V NAGAR

An ISO 9001 2015 Certified / An ISO 14001-2015 Certified / An ISO 21001-2018 Certified
 GUJARAT INSTITUTIONAL RATING FRAMEWORK (4 STAR)

AAA Reaccredited CGPA 3.56 – GRADE **A⁺** KCG-Dept of Edu. Govt of Gujarat-April 2017

NAAC Reaccredited - CGPA 3.30 - GRADE **'A⁺'** UGC – MHRD, Govt of India – June 2022

Syllabus as per NEP 2020 with effect from the Academic Year 2023-2024

With Effective from June 2023

Programme Outcome(PO) -For PGDCA Programme	The objective of the PGDCA programme is to prepare students for a career in IT support as well as software development by training them in the core and emerging areas of computer applications to satisfy the needs of the society, industry, academic institutions and government.
Programme Specific Outcome (PSO)-For PGDCA Semester- I	The objective of the PGDCA programme is to prepare students for a career in IT support as well as software development by training them in the core and emerging areas of computer applications to satisfy the needs of the society, industry, academic institutions and government.

To Pass	1. Atleast 40% Marks in the University Examination in each paper and 2. Atleast 40% Marks in the individual lead of passing or 33% marks in aggregate at the internal tests conducted by the Department /PG Centre.
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Course Type	Course Code	Name Of Course	Theory/ Practical	Credit	Exam Duration on Inhrs	Component of Marks		
						Int	Ext	Total
						Total	Total	Total
Core Course	PGDCA01C01	PC Software	T	4	3	30/12	70/28	100
	PGDCA01C02	Python Programming	T	4	3	30/12	70/28	100
	PGDCA01C03	Logical Organization of Computer	T	4	3	30/12	70/28	100
	PGDCA01C04	Database Management Systems	T	4	3	30/12	70/28	100
	PGDCA01C05	Foundation of Software Development	T	4	3	30/12	70/28	100
	PGDCA01C06	Practicals	P	5	3	30/12	70/28	100

With Effective from June 2023

PGDCA (Post Graduate Diploma in Computer Applications)**PGDCA Semester-I**

Course Code	PGDCA01C01	Title of the Course	PC Software
Total Credits Of the Course	4	Hours per Week	4

Course Objectives:	1. To introduce students to <ul style="list-style-type: none">• Computer fundamentals• Features of word processing, presentation tool and spreadsheets.
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Course Content		
Unit	Description	Weightage*(%)
1.	Computer Fundamentals & Word processing <ul style="list-style-type: none">- Definition, Functions, Block diagram, components of computer, input and output devices, types of computers and characteristics.- Introduction to Word Processing software, benefits of Word Processing software, examples of word processors- Working with documents–basic operations, formatting text & paragraphs- Using tables, shapes, inserting pictures- Mail merge facility	25
2.	Presentation tool <ul style="list-style-type: none">- Presentation tool– Introduction and basic features- Working with presentation slide–creating, editing, formatting and previewing- Inserting picture, clipart, shapes and chart- Adding header, footer, animations and slide transitions- Printing slide content	25

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3.	Spreadsheet–I <ul style="list-style-type: none"> - Introduction to Spreadsheet and Spreadsheet packages - Building Spreadsheets using formulas, conditional calculations - Built in functions - Database Utilities: sorting, filtering, extracting - Creating charts 	25
4.	Spreadsheet–II <ul style="list-style-type: none"> - Working with External data - Data analysis using What if analysis, Goal seek and scenario 	25
	<ul style="list-style-type: none"> - Pivot table and Pivot chart - Macro facility 	

Teaching-Learning Methodology	Blended learning approach in incorporating traditional classroom teaching and online / ICT - based teaching practices.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	To understand computer fundamentals
2.	To understand features of word processing, presentation tool and spreadsheets.

Suggested References:

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Sr. No.	References
1.	Manuals of PC software.
2.	Taxali R K : PC Software made simple for Windows, Tata McGraw-Hill Publishing Co.Ltd., 2000.

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PGDCA (Post Graduate Diploma in Computer Applications)

PGDCA Semester-I

Course Code	PGDCA01C02	Title of the Course	Python Programming
Total Credits Of the Course	4	Hours per Week	4

Course Objectives:	1. To learn the basics of Python programming language, expressions, control structures 2. To learn the concepts of functions and methods, lists, dictionaries and strings.
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Course Content		
Unit	Description	Weightage*(%)
1.	Introduction to Computer Programming <ul style="list-style-type: none">– Introduction to computers and computer programming– Problem analysis, flow charts, algorithms– Introduction to the Python programming language and development environment– Variables, literals, data types, Assignment, Input and output, comments	25
2.	Expressions and Control Structures <ul style="list-style-type: none">– Operators, evaluation of expressions– The range type– The if statement, The while loop, The for loop– The break and continue statements	25
3.	Functions and Methods <ul style="list-style-type: none">– Concept of functions and methods– Built-in functions– Operations on strings	25

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4.	Lists and Dictionaries <ul style="list-style-type: none">– Introduction to lists– Operations on lists– Introduction to dictionaries– Operations on dictionaries– Operations on strings	25
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Teaching-Learning Methodology	Blended learning approach in incorporating traditional classroom teaching and online / ICT - based teaching practices.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Understand basics of Python computer programming language.
2.	Understand expressions and control structures.
3.	Understand functions and methods.
4.	Understand lists, dictionaries and strings.

Suggested References:	
Sr. No.	References
1.	Downey Allen: Think Python, O'Reilly, 2012.

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2.	Lutz Mark: Learning Python, 4 th Edition, O'Reilly, 2009.
3.	Het land Magnus: Beginning Python– From Novice to Professional, Apress, 2005.
4.	Lutz Mark: Python–Pocket Reference, 4th Edition, O'Reilly, 2009.
5.	Python documentation.

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PGDCA (Post Graduate Diploma in Computer Applications)

PGDCA Semester-I

Course Code	PGDCA01C03	Title of the Course	Logical organization of Computer
Total Credits Of the Course	4	Hours per Week	4

Course Objectives:	<ol style="list-style-type: none">1. To provide basic understanding of logical organization and architecture of a computer.2. To impart fundamental knowledge on processors, memory, input / output, instructions and flow of control.3. To introduce fundamental concepts related to gates and logic circuits used in a digital computer.
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Course Content		
Unit	Description	Weightage*(%)
1.	Introduction to Computer Organization <ul style="list-style-type: none">– Block Diagram of a simple computer and its different functional units.– Representation of Information– Number Systems and arithmetic-Introduction of Number System, Conversion, Addition of(B,H,O,D)– Integer & Floating Point representation– Character codes (ASCII & EBCDIC), Error detection and correction codes.	25
2.	Processors, Memory and Input / Output <ul style="list-style-type: none">– Instruction Execution– CPU organization– Parallel Instruction Execution– Memory : Main memory, Secondary memory, Types & Organization– Input / Output: Common types of I/O devices, Controllers	25

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3.	Instructions and Flow of Control, Gates and Boolean Algebra <ul style="list-style-type: none"> – Instruction formats – Addressing, Instruction types – Traps & Interrupt – Gates, Boolean Algebra, Truth Tables – Circuit Equivalence, DeMorgan's Theorems 	25
4.	Basic Digital Logic Circuits, Memory Elements & Counters <ul style="list-style-type: none"> – Arithmetic Circuits- Multiplexer, Encoder, Decoder – Half Adder, Full Adder, Binary Adder, 2's complement adder/subtractor – Flip flops(RS,D) – Registers, Counters 	25

Teaching-Learning Methodology	Blended learning approach in incorporating traditional classroom teaching and online / ICT - based teaching practices.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Understand the fundamental concepts related to organization of a computer system.
2.	Develop the fundamental knowledge on processors, memory, input/output, instructions and flow of control.

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3.	Understand the fundamental concepts related to gates and logic circuits used in a digital computer.
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Suggested References:

Sr. No.	References
1.	V.Rajaraman: Fundamentals of Computers, Prentice Hall Of India Pvt. Ltd.
2.	Tanenbauma.S.Structured Computer Organization, Prentice Hall Of IndiaPvt. Ltd.
3.	Malvino A.P.:Digital Computer Electronics,Tata Mcgraw Hill Publication Co. Ltd.

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PGDCA (Post Graduate Diploma in Computer Applications)

PGDCA Semester-I

Course Code	PGDCA01C04	Title of the Course	Database Management Systems
Total Credits Of the Course	4	Hours per Week	4

Course Objectives:	<ol style="list-style-type: none">1. To introduce students to relational model, E-R diagram, normalization.2. To introduce students to database transaction, concurrent access and database locking mechanism.3. To introduce students to SQL and PL/SQL.
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Course Content		
Unit	Description	Weightage*(%)
1.	Relational model <ul style="list-style-type: none">– Relational model concept– E-R diagram and its conversion to relations– Normalization– Introduction to transactions– Concurrent access to database and related problems– Introduction of Locking techniques	25
2.	SQL <ul style="list-style-type: none">– Datadefinition,queries,groupingandordering– Insert,Delete,Update– Constraints:Primarykeyand Foreign key– Built-infunctions	25
3.	Procedural Language-I <ul style="list-style-type: none">– Data types, variables and constants, assignment– Conditional control, iterative control and display messages	25

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4.	Procedural Language-II <ul style="list-style-type: none">– Introduction of Implicit and explicit cursors and its attributes– Exceptional handling– Procedures– Functions– Introduction to Triggers	25
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Teaching-Learning Methodology	Blended learning approach in incorporating traditional classroom teaching and online / ICT - based teaching practices.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Understand relational model, E-R diagram, normalization.
2.	Understand database transaction, concurrent access and database locking mechanism.
3.	Understand SQL and PL / SQL.

Suggested References:	
Sr. No.	References
1.	Elmasri And Navathe: Fundamentals of Database Systems, Addison-Wesley Publishing Co. 1994.

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2.	John G. Hughes: Database Technology A Software Engineering Approach, Prentice Hall International Series1993.
3.	Ivan Bayross: SQL, PL/SQL BPB Publications.
4.	System Manuals.

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PGDCA (Post Graduate Diploma in Computer Applications)

PGDCA Semester-I

Course Code	PGDCA01C05	Title of the Course	Foundation of Software Development
Total Credits Of the Course	4	Hours per Week	4

Course Objectives:	<ol style="list-style-type: none">1. To introduce students to basics of data structures.2. To introduce students to fundamentals of Operating Systems.3. To introduce students to basics of Systems Analysis and Design.4. To introduce students to basics of Software Engineering.
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Course Content		
Unit	Description	Weightage*(%)
1.	Basics of Data Structures <ul style="list-style-type: none">– Introduction to Data Structures, Applications, Operations– Primitive and Non- primitive Data Structures– Linear and Non-linear Structures– Introduction to Array, Stack, Queue, Linked List, Trees and Graphs	25
2.	Fundamentals of Operating Systems <ul style="list-style-type: none">– Operating System- definition, examples– Services provided by an Operating System– The concept of a process, process scheduling– Queuing diagram representation of process scheduling– Memory management: Paging, Virtual Memory	25

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3.	System Analysis and Design <ul style="list-style-type: none">– The concept of a System, Basic Components– Phases of the Classical Systems Development Life Cycle (SDLC) Method– The Prototype methods– The structured development approach using Functional Decomposition Diagram (FDD), Data Flow Diagram (DFD)	25
4.	Software Engineering <ul style="list-style-type: none">– Software– meaning, general characteristics and applications– Software Engineering– meaning, goal and needs– Software Development Process Models–Waterfall, Iterative, Spiral, etc.– Software Testing– introduction, needs and levels	25

Teaching-Learning Methodology	Blended learning approach in incorporating traditional classroom teaching and online / ICT - based teaching practices.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the learner will be able to	
1.	Understand basics of data structures.
2.	Understand fundamentals of Operating Systems.
3.	Understand basics of Systems Analysis and Design.

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4.	Understand basics of Software Engineering.
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Suggested References:	
Sr. No.	References
1.	Singh Bhagat & Naps Thomas: Introduction to Data Structures, Tata McGraw-Hill Publishing Co.Ltd., 1985.
2.	Tanenbaum A.S.:Modern Operating Systems, 3 rd edition, Prentice-Hall,2008.
3.	Sajja, P.S. “Essence of Systems Analysis and Design: A Workbook Approach”, Springer International Publishing, Singapore, 2017.
4.	Jalote Pankaj: Integrated Approach to Software Engineering, 3 rd Edition, Narosa Publishing House, 2005 (ISBN978-81-7319-702-4).

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PGDCA (Post Graduate Diploma in Computer Applications)

PGDCA Semester-I

Course Code	PGDCA01C06	Title of the Course	Practicals
Total Credits Of the Course	5	Hours per Week	10

Course Objectives:	<ol style="list-style-type: none">1. To enable students to apply knowledge of word processing, and presentation tools.2. To enable students to apply knowledge of Python language.3. To enable students to apply knowledge of SQL and PL/ SQL.
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Course Content	
Description	Weightage*(%)
Part-1: Practical based on PGDCA01C01	30
Part-2: Practical based on PGDCA01C02	35
Part-3: Practical based on PGDCA01C04	35

Teaching-Learning Methodology	Hands on training and programming using computer.
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance	15%
3.	University Examination	70%

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Course Outcomes: Having completed this course, the learner will be able to	
1.	Create documentation, presentation and work with spreadsheet packages.
2.	Work with SQL and PL / SQL.
3.	Develop program using Python programming.
