

Teaching Plan
2025-26
Even Semester

Govt. Shivalik College Naya Nangal

Teaching Plan Session 2025-2026

CLASS: BCA-I(Sem-II)

SUBJECT:Data Structures

NAME OF THE TEACHER:Mamta Devi

Sr. No.	Dates	Topics
1.	20-24 January	Introduction to Data Structure,Types of Data structure,Data structure operations.
2.	27-29 January	Algorithmic complexity,Mathematical notations and functions
3.	30-31 January	Big'o' Notation,Time and Space trade off
4.	2-4 February	Linear array,representation of array in memory
5.	5-7 February	Traversing,insertion and deletion in an array
6.	9-10 February	Two dimensional array,Row major and column major orders
7.	11-12 February	Sparse matrix and Revision of previous chapters
8.	13-14 February	Introduction to stacks,Linked and sequential representation of stacks in memory
9.	16-17 February	Operations on stacks,application s of stacks
10.	18-21 February	Introduction to queue,linked and sequential representation of queues in memory.
11.	23-24 February	Operations on queue:insertion in rear amd deletion from front
12.	25-28 February	Introduction to linked list
13.	2-March	Representation of linked list in static and dynamic data structures
14.	5-7 March	Searching in sorted linked list
15.	9-11 March	Insertion of a node in linked list
16.	12-14 March	Deletion of a node from linked list
17.	16-17 March	Definition and basic concepts of tree
18.	18-20 March	Linked representation and representation in contiguous storage
19.	24-25 March	Binary tree and binary tree traversal
20.	27-30 March	Binary search tree,searching in BST
21.	1 April	MST
22.	2 April	Insertion in BST
23.	4 April	Deletion in BST
24.	6-7 April	Introduction to Searching algorithms,Linear search algorithm
25.	9-10 April	Binary search tree algorithm
26.	11 April	Sorting algorithms:bubble sort,insertion sort
27.	13 April	Selection sort
28.	16-17 April	Quick sort,merge sort

Learning Outcomes:

After completing this course, students will be able to:

1. Understand different types of data structures and their applications.Choose appropriate data structures for real-world problems.Analyze time and space complexity of algorithms.
2. Implement arrays, stacks, queues, tree and linked lists.Perform insertion, deletion, traversal, and searching operations.
3. Implement and compare sorting and searching algorithmsEvaluate efficiency of different algorithms

Govt. Shivalik College Naya Nangal

Teaching Plan

Session 2025-2026

CLASS: BCA-III(Sem-IV)

SUBJECT:Python Programming

NAME OF THE TEACHER:Mamta Devi

Sr. No.	Dates	Topics
1.	20-24 January	History of python,strength and weakness,Different versions.
2.	27-30 January	Installing python,setting up in local environment,executing from file,command line from interactive mode
3.	2-4 January	Python identifiers and reserved keywords
4.	5 February	Variables,data type and data type conversion
5.	6-7 February	Operators and operators precedence
6.	9-10 February	Python decision making
7.	11-12 February	Python loops
8.	13-14 February	Break and continue
9.	16 February	Revision
10.	17-19 February	Introduction to python collections,number operations,array operations
	20- February	Introduction to String and String operations
	21- February	Introduction to list and list operations
11.	23- February	Introduction to tuple and Tuple operations
	24- February	Dictionary
	25 -February	Set and its operations
12.	26-28 February	Function introduction,User defined functions
13.	2-March	Scope of variables
14.	5-6 March	Functions with parameters,Keyword and optional parameters
15.	7- March	Anonymous function-Lambda,List comprehension
16.	9-March	In-built functions
17.	10-March	Introduction to module and types of modules
18.	11 March	Standard Modules(Sys,Math,Time)
19.	12-14 March	Import,from statement and dir() functions
20.	16-17 March	Revision
21.	18-20 March	Sending output to STDOUT using the print() method,Reading input with the input()method
22.	24-25 March	Creating file objects with open() method,closing file objects with close() method
23.	27-30 March	Working with File object attributes,File access modes
24.	1 April	Revision
25.	2 April	MST
26.	4 April	Reading file objects with read()
27.	6-8 April	readline() and readlines()method
28.	9-10 April	Writing to file objects with write(),writelines() method
29.	11 April	Using file processing functions from the OS Module
30.	13-17 April	Revision and class tests

Learning Outcomes:

By the end of this course, students will be able to:

1. Install and set up the Python environment and use tools like IDLE and command line.
2. Integrate all learned concepts to develop simple programs.
3. Write programs that interact with files and process data efficiently.

Govt. Shivalik College Naya Nangal**Teaching Plan
Session 2025-2026**

CLASS: PGDCA(Sem-II)

SUBJECT:Web technology

NAME OF THE TEACHER:Mamta Devi

Sr. No.	Dates	Topics
1.	20-24 January	Introduction to networks,types of networks,introduction to protocols
2.	27-29 January	TCP/IP protocol,OSI model
3.	30-31 January	Internet addresses
4.	2-4 February	Ports and sockets
5.	5-7 February	Name resolution,firewalls
6.	9-10 February	Protocol tunneling
7.	11-12 February	Proxy servers,internet standards
8.	13-14 February	HTTP,MIME,URL
9.	16-17 February	Overview of clients/servers web communication
10.	18-21 February	Comparison of web servers,CGI
11.	23-24 February	Introduction to HTML,List,table
12.	25-28 February	Images,frames and forms
13.	2-March	Introduction to CSS
14.	5-7 March	DTD,XML,XSLT
15.	9-11 March	DOM,XHTML
16.	12-14 March	Client side scripting,introduction to javascript:forms,functions
17.	16-17 March	Event and event handling
18.	18-20 March	Browsers and DOM
19.	24 March	Jquery,Syntax,selectors
20.	25 March	MST
21.	27-30 March	Events and AJAX methods
22.	1 April	PHP:introduction,syntax,data type
23.	2 April	variables,strings
24.	4 April	operators
25.	6-7 April	Control structures,switch
26.	9-10 April	Array,function,file handling
27.	11 April	Form
28.	13 April	Sending email,file upload
29.	16-18 April	session/state management,Error and exception
30.	20 April	PHP database for dynamic Web Pages
31.	21-22 April	Introduction to Servlet,Basic structure
32.	23-25 April	Servlet lifecycle,ervlet API
33.	27-28 April	Writing thread safe servlets
34.	29-30April	Setting cookies and session management with servlet API

Learning Outcomes:

After completing this course, students will be able to:

1. Understand internet fundamentals.Design and develop web pages.
2. Build dynamic web applications
3. Understand Java-based web technologies.

Govt. Shivalik College Naya Nangal
Teaching Plan
Session 2025-2026

CLASS: PGDCA-I(Sem-II)

SUBJECT:Python Programming

NAME OF THE TEACHER:Mamta Devi

Sr. No.	Dates	Topics
1.	20-21 January	History of python,strength and weakness,Different versions.
2.	27-28 January	Installing python,setting up in local environment,executing from file,command line from interactive mode
3.	2- February	Python identifiers and reserved keywords
	3-4February	Variables,data type and data type conversion
4.	9-10 February	Operators and operators precedence
5.	11-February	Python decision making
6.	16-17 February	Python loops
7.	18-February	Break and continue
8.	23-24 February	Revision
9.	25- February	Introduction to python collections,number operations,array operations
10.	2-March	Introduction to String and String operations
11.	9-11 March	Introduction to list and list operations
12.	16-17 March	Introduction to tuple and Tuple operations
13.	18-March	Dictionary
14.	23-25 March	Set and its operations
15.	30 March	Function introduction
16.	1 April	User defined functions
17.	6-7 April	Functions with parameters
18.	13 April	Keyword and optional parameters
19.	20 April	Scope of variables
20.	21-22 April	Anonymous function-Lambda
21.	27-28 April	In-built functions
22.	29-30April	List comprehension

Learning Outcomes:

After completing this course, students will be able to:

1. Understand Python basics, environment setup, syntax, data types, and operators.
2. Apply control structures, loops, and work with collections like lists, tuples, dictionaries, and sets.
3. Develop programs using functions, including user-defined, lambda functions, and variable scope concepts.

**Teaching Plan
2025-26
Odd Semester**

Govt. Shivalik College Naya Nangal

Teaching Plan Session 2025-2026

CLASS: BCA-I(Sem-I)

SUBJECT: Digital Electronics

NAME OF THE TEACHER: Mamta Devi

Sr. No.	Dates	Topics
1.	18-20 Sept.	Introduction to Analog and Digital systems, Digital signals, Basic Digital circuits
2.	23-24 Sept.	AND, OR, NOT, NAND, NOR, XOR and XNOR gates
3.	25-26 Sept.	Boolean Algebra theorems, Characteristics of Digital IC
4.	27 Sept.	Number system: Positional and Positional number system
5.	29-30 Sept.	Binary and Decimal number system
6.	01 Oct.	Octal and Hexadecimal Number system
7.	03-04 Oct.	Base Conversions
8.	08 Oct.	Binary arithmetic-Addition and Subtraction
9.	09 Oct.	1's and 2's Complement, subtraction using 1's complement and 2's Complement
10.	10-11 Oct.	Introduction to combinational circuit
11.	13-14 Oct.	SOP and POS representation of logic functions
12.	15-16 Oct.	K-map representation, K-map simplification upto 4 variable expressions, Don't care condition
13.	17 Oct.	Revision and test
14.	18 Oct.	Introduction to Multiplexers: 4X1, 8X1, 16X1
15.	21 Oct.	De-multiplexers: 1X4, 1X8, 1X16, BCD to Decimal decoder, Decimal to BCD decoder
16.	23 Oct.	Decimal to BCD decoder, Parity generator and checker
17.	24-25 Oct.	Design of Half Adder and Full Adder
18.	27-28 Oct.	Introduction to Flip-Flops: Latch, clocked FF, Preset and Reset signals, D-FF
19.	30-31 Oct.	Introduction to Flip-Flops: Latch, clocked FF, Preset and Reset signals, D-FF
20.	01 Nov	MST
21.	04-06 Nov.	J-K flip flop, the race around condition, master slave j-K flip flop
	07-08 Nov.	Excitation Tables of Flip-Flops, Edge triggered FF
22.	09-12 Nov.	Digital to Analog converters, Analog to digital converter
23.	13-15 Nov.	R-2R Ladder, Quantization and Encoding.
24.	17-18 Nov.	Parallel-Comparator and counting A/D Converter

Learning Outcomes:

After completing this course, students will be able to:

1. Students will be able to understand the fundamental concepts of digital electronics, including number systems, logic gates, and Boolean algebra.
2. They will develop the ability to analyze and design basic combinational and sequential circuits.
3. Learners will also gain skills in simplifying logic expressions and implementing them using digital components. Additionally, they will apply theoretical knowledge to solve practical problems in digital system design.

Govt. Shivalik College Naya Nangal**Teaching Plan
Session 2025-2026****CLASS: PGDCA-I(Sem-I)****SUBJECT:Windows operating system and office automation****NAME OF THE TEACHER:Mamta Devi**

Sr. No.	Dates	Topics
1.	18-20 Sept.	Features of operating system,history, hardware requirement and its installation SystemGraphics interface:benefits,screen attributes:icons and bars
2.	23-24 Sept.	Mouse vs. keyboard input,Features and accessories of the Windows program,objects and their properties
3.	25-26 Sept.	Working with files,Naming files,navigate to folders with Windows explorer
4.	27 Sept.	Copying and moving files,deleting files,managing folders
5.	29-30 Sept.	Creating,viewing,expanding and collapsing,backing up and restoring files
6.	01 Oct.	Components of windows:format of a window,moving window,resizing windows,minimizing and maximizing windows
7.	03-04 Oct.	Control panel:customizing screens,screen colors,patterns,,Spacing icons,selecting time/date,setting the sound
8.	08 Oct.	Concept of menu using help,creating shortcuts,basics of window Accessories
9.	09 Oct.	System restore,changing,adding,customizing mouse and keyboard use
10.	10-11 Oct.	Customizing printing,system properties and the device manager management tools
11.	13-14 Oct.	Safe mode install and uninstall applications,setup/troubleshooting issues
12.	15-16 Oct.	Disk cleanup,disk defragmenter,compressing and uncompressing folders and files,encrypting and decrypting folders and files
13.	17 Oct.	Introduction to MS word,font,character,paragraph formatting
14.	18 Oct.	Page setup:page border,header and footer,table and picture insertion
15.	21 Oct.	Introduction to MS excel:creating and editing worksheets and workbooks
16.	23 Oct.	Number formatting,cell range operations
17.	24- 25 Oct.	Formula and functions,sorting and filtering data
18.	27-28 Oct.	graphs and charts
19.	30 -31Oct.	Introduction to MS powerpoint
	01 Nov	creating and editing slides
21.	04-06 Nov.	inserting text from external sources
22.	07-08 Nov.	Working with text boxes
23.	09-12Nov.	customizing and creating layouts,printing slides
24.	13-15 Nov.	Understanding animationand transitions
25.	17-20Nov.	MS outlook:organizing messages,contents and time with outlook
26.	21-22 Nov.	Setting up email accounts,working the outlook folders
27.	25-26 Nov.	Setting options for an individual E mail message

Learning Outcomes:

After completing this course, students will be able to:

1. Understand Operating System and Windows Environment
2. Develop File and System Management Skills
3. Create and Format Professional Documents and Presentations

Govt. Shivalik College Naya Nangal

Teaching Plan

Session 2025-2026

CLASS: PGDCA-I(Sem-I)

SUBJECT: Introduction to information technology and E-Commerce

NAME OF THE TEACHER: Mamta Devi

Sr. No.	Dates	Topics
1.	18-20 Sept.	Computer languages: Machine language, assembly language, high level language, 4GL
2.	23-24 Sept.	Compiler, interpreter, assembler, system software and application software
3.	29-01 Oct.	Data network and communication: network type, transmission modes
4.	6 Oct.	Network topologies
5.	8 Oct.	Evolution of internet, E-mail
6.	13 Oct.	WWW, FTP
7.	14 Oct.	TELNET, IRC, video Conferencing
8.	15 Oct.	The scope of E-Commerce
9.	21 Oct.	Electronic market
10.	27-29 Oct.	Electronic data interchange
11.	3-5 Nov.	Inrernet commerce
12.	10 Nov	Benefits and limitations of E-commerce
13.	11-12 Nov.	Produce a generic framework for E-commerce
14.	17-18 Nov.-	Architectural framework of Electronic Commerce
15.	25-26 Nov.	Web based E-Commerce E-Commerce
16.	27-30 Nov.	Revision and tests

Learning Outcomes:

After completing this course, students will be able to:

1. Understand programming languages and translators
2. Students will gain knowledge of system software vs application software, types of data networks, transmission modes, and network topologies.
3. Students will be able to explain the scope, benefits, limitations, electronic markets, EDI, and architectural frameworks of web-based E-commerce systems.

Govt. Shivalik College Naya Nangal

Teaching Plan Session 2025-2026

CLASS: B.A.-II(Sem-III)

SUBJECT:Data handling using spreadsheets(SEC)

NAME OF THE TEACHER:Mamta Devi

Sr. No.	Dates	Topics
1.	18-20 Sept.	Introduction to excel:Overview of Microsoft excel,understanding the excel interface
2.	23-24 Sept.	Setting up the workspace and preferences,basic data entry and formatting
3.	25-26 Sept.	Understanding excel formulas and functions
4.	27 Sept.	Basic arithmetic functions:SUM,AVERAGE,MIN,MAX
5.	29-30 Sept.	Text functions:CONCATENATE,LEFT,RIGHT,MID,Logical functions:IF,AND,OR,NOT
6.	01 Oct.	Data cleaning and preparation:importing data from various sources
7.	03-04 Oct.	data cleaning techniques:removing duplicates,handling missing values,text functions for data cleaning
8.	08 Oct.	Data validation
9.	09 Oct.	Data manipulation and transformation:Sorting and filtering data
10.	10-11 Oct.	Using tables and structured references,using lookup functions(VLOOKUP,HLOOKUP,INDEX-MATCH)
11.	13-14 Oct.	Working with Pivot Tables for Data summarization
12.	15-16 Oct.	Descriptive statistics in Excel:mean,median,mode,standard deviation,variance,frequency distributions
13.	17 Oct.	Using Excel's data analysis tool pack
14.	18 Oct.	Data visualization,creating basic charts in Excel:bar charts,line charts,pie charts
15.	21 Oct.	Customizing charts for better clarity
16.	23 Oct.	Creating advanced charts:scatter plots,histograms,box plots
17.	24- 25 Oct.	Introduction to pivot charts,using sparklines for data trends,
18.	27-28 Oct.	Advanced Excel functions:SUMIF,COUNTIF,AVERAGEIF
19.	30 -31Oct.	Array formulas,performing scenario analysis and what-if analysis
20.	01 Nov	MST
21.	04-06 Nov.	Using solver for optimization problems
22.	07-08 Nov.	Working with macros
23.	09-12Nov.	Recording and running macros
24.	13-15 Nov.	Basic VBA programming for excel
25.	17-18 Nov.	Automating repetitive tasks

Learning Outcomes:

After completing this course, students will be able to:

1. **Understand and apply Excel fundamentals** including interface navigation, data entry, formatting, and basic formulas and functions.
2. **Perform data cleaning and manipulation** using sorting, filtering, validation techniques, and advanced functions like VLOOKUP, INDEX-MATCH, and PivotTables.
3. **Create meaningful data visualizations and automate tasks** using charts, advanced visualization techniques, and macros/VBA for improved decision-making and efficiency.

Govt. Shivalik College Naya Nangal

Teaching Plan Session 2025-2026

CLASS: BBA-I(Sem-I)

SUBJECT: Computer applications for business-I

NAME OF THE TEACHER: Mamta Devi

Sr. No.	Dates	Topics
1.	18-20 Sept.	Definition of computer, Components of computer system
2.	23-24 Sept.	Brief history of evolution of computers, generations of computers
3.	25-26 Sept.	RAM, ROM and its Types, Punched card, VDU, CRT
4.	27 Sept.	Input/Output/Memory storage devices
5.	29-30 Sept.	Difference between hardware and software, types of software: System and application software
6.	01 Oct.	Language translators
7.	03-04 Oct.	Introduction to operating system, Types of operating system on the basis of Processing
8.	08 Oct.	Windows and anatomy of window
9.	09 Oct.	DOS overview, working with Files and folders
10.	10-11 Oct.	Introduction to MS-Word: Creating, Saving and Opening, importing, exporting and inserting files.
11.	13-15 Oct.	formatting : Paragraphs, pages, sections, indents and outdents, creating list and numbering, heading and styles
12.	16-18 Oct.	Fonts, size editing, finding and replacing text, bookmarks, header and footer, printings
13.	21 Oct.	Worksheet overview, entering information
14.	23 Oct.	Opening and saving workbook
15.	24- 25 Oct.	Formatting number and text
16.	27-28 Oct.	Protecting cells, Producing charges and printing operations graphs
17.	30 -31 Oct.	Revision and test
18.	01 Nov	Presentation basics. menus and toolbars
19.	04-06 Nov.	Opening and saving existing presentation, use of auto content wizard
20.	07-08 Nov.	Design template blank presentation, the slides sorter view
21.	09-12 Nov.	Insert slides from another presentation
22.	13-15 Nov.	Inserting pictures and graphics
23.	17-18 Nov.	Slide show, printing slides

Learning Outcomes:

After completing this course, students will be able to:

1. **Understand computer fundamentals** including components, memory types, input/output devices, and the evolution of computers.
2. **Differentiate and apply operating system concepts**, including types of OS and basic operations in Windows such as file and folder management.
3. **Develop practical skills in MS Office tools** (MS Word, Excel, PowerPoint) for document creation, data handling, and presentation design.
4. **Apply computer applications effectively in business contexts**, enhancing productivity through formatting, data analysis, and professional presentations.