



# Sh. L. N. Hindu College, Rohtak (Haryana)

## Course Plan

Department of Computer Science and Applications

Program: BCA

Management Information System (BCA-301)

### SCHEME

Course Name	Management Information System(MIS)	Course Type	Theory
Course Code	BCA-301	Class	BCA VI Sem.
Instruction Delivery	Per week Lectures: 4, Tutorial:1, Practical: 1 Total No. Classes Per Sem: 60(L), 15(T) Assessment in Weightage: Sessional (20%), End Term Exams (80%)		
Course Coordinator	Mrs. Preeti	Course Instructors	Theory: Mrs. Preeti, Mrs. Kirti Dhingra

### COURSE OVERVIEW

MIS is the study of people, technology, organizations, and the relationships among them. MIS professionals help firms realize maximum benefit from investment in personnel, equipment, and business processes. MIS is a people oriented field with emphasis on service through technology.

### PREREQUISITE

Knowledge of computer, Data Analysis, Risk Analysis.

### COURSE OBJECTIVE

The objective of this course is to describe the need, purpose and role of MIS in an information organization. This also describes types of information system, problems solved by MIS, advantages and disadvantages of management information system.

### COURSE OUTCOMES (COs)

After the completion of the course, the student will be able to:

CO No.	Course Outcomes
1	Understand the basic concept of information and technologies used in the field of management.
2	Have the knowledge of the different types of management Information System.
3	Understand the processes of developing and implementing Management Information System.
4	Be aware of E-business system, E-commerce technologies and applications.



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## Course Plan

### COURSE CONTENT

Content
<b>UNIT-I</b> Introduction to system and Basic System Concepts, Types of Systems, The Systems Approach, Information System: Definition & Characteristics, Types of information, Role of Information in Decision-Making, Sub-Systems of an Information system: EDP and MIS management levels, EDP/MIS/DSS.
<b>UNIT-II</b> An overview of Management Information System: Definition & Characteristics, Components of MIS, Frame Work for Understanding MIS: Information requirements & Levels of Management, Simon's Model of decision-Making, Structured Vs Un-structured decisions, Formal vs. Informal systems.
<b>UNIT-III</b> Developing Information Systems: Analysis & Design of Information Systems: Implementation & Evaluation, Pitfalls in MIS Development.
<b>UNIT-IV</b> Functional MIS: A Study of Personnel, Financial and production MIS, Introduction to e- business systems, ecommerce – technologies, applications, Decision support systems – support systems for planning, control and decision-making

### LESSON PLAN (THEORY AND TUTORIAL CLASSES)

L. No	Topic to be Delivered	Tutorial Plan	Unit
1	Introduction to system and Basic System Concepts,	a) Discussion about data and Information.  b) What is System and its types?	1
2	Types of Systems		
3	The Systems Approach		
4	Information System: Definition & Characteristics		
5	Types of information		
6	Role of Information in Decision-Making	Questions related EDP/MIS/DSS	1
7	Sub-Systems of an Information system		
8	EDP and MIS management levels, EDP/MIS/DSS.		



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9	An overview of Management Information System: Definition & Characteristics		
10	Components of MIS, Frame Work for Understanding MIS		



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11	Information requirements & Levels of Management	Discussion on Simon's Model	2
12	Simon's Model of decision-Making		
13	Structured Vs Un-structured decisions, Formal vs. Informal systems.		
14	Developing Information Systems		
15	Analysis of Information Systems		
16	Design of information System	Discussion on implementation of MIS	3
17	Implementation of MIS		
18	Evaluation of MIS		
19	Pitfalls in MIS Development.		
20	Functional MIS: A Study of Personnel		
21	Financial and production MIS	a) E-commerce technologies b) Decision Support System	4
22	Introduction to e- business systems		
23	E-commerce – technologies		
24	Applications of E-commerce		
25	Decision support systems		
26	Support systems for planning	Discussion on control and decision making in DSS	4
27	Control and decision-making in DSS		

### Text Book

Dr. Sushil Goel, Management Information System

### Reference Books

1. James A.O 'Brien, "Management Information Systems", Tata McGraw-Hill.
2. James A.Senn, "Analysis & Design of Information Systems", Second edition, McGraw Hill.
3. Robert G.Murdick & Joel E.Ross & James R.Claggett, "Information Systems for Modern Management", PHI.
4. Lucas, "Analysis, Design & Implementation of Information System", McGrawHill.

### Web/Links for e-content

<https://www.geeksforgeeks.org/c-programming-language>



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## Course Plan

### PRACTICE QUESTIONS (QUESTION BANK)

S No	Problem
<b>UNIT I</b>	
1	What is System and its concepts?
2	Explain the difference between data and information.
3	Explain types of System.
4	What is Information System? Explain definition and characteristics of Information System.
5	Explain different type of Information.
6	What is the role of information in decision making ?
7	Describe Sub-system of an information System.
8	What is EDP? Explain in detail.
9	What is MIS?
10	What is Decision Support System?
11	Explain different level of MIS.
<b>UNIT-II</b>	
12	What is MIS? Explain definition and characteristics of MIS.
13	Explain components of MIS.
14	Describe framework for understanding MIS.
15	What is Information requirement?
16	What is management? Explain level of management.
17	Explain Simon's Model of decision-making.
18	What is structured and un-structured decision?
19	Difference between structured and un-structured decision.
20	What is formal and Informal system?
21	Write down difference between formal and Informal system.
22	Explain different types of management information system.
<b>UNIT- III</b>	
23	How to develop Information System?
24	Explain designing of information system?
25	Describe analysis of information system.



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26	How to implement information system?
27	How to evaluate information system?
28	Explain pitfalls of information system.
29	What are the applications of information system?
30	Explain types of information system in detail.
31	How to collect information?
32	Describe various information gathering tools.
<b>UNIT-IV</b>	
33	Use an example and develop Financial based management Information system in detail.
34	What is e-business system? What are the applications of e-commerce?
33	What type of planning used in Decision Support System?
34	What are the technologies of e-commerce?
35	Give a complete description about decision support system?
36	Describe production MIS.
37	Describe Financial MIS.
38	Explain difference between production MIS and financial MIS.
39	Explain various applications of E-commerce.
40	Explain different type of e-commerce.



# Sh. L. N. Hindu College, Rohtak (Haryana)

## Course Plan

Department of Computer Science and Applications

Program: BCA

COMPUTER GRAPHICS (BCA-302)

### SCHEME

Course Name	Computer Graphics	Course Type	Theory
Course Code	BCA-302	Class	BCA V Sem.
Instruction Delivery	Per week Lectures: 4, Tutorial:1 Total No. Classes Per Sem: 60(L), 15(T) Assessment in Weightage: Sessional (20%), End Term Exams (80%)		
Course Coordinator	Ms.Madhu	Course Instructors	Theory: Ms.Madhu and Ms. Ankita

### COURSE OVERVIEW

This course provides an introduction to computer graphics and some line and circle drawing algorithms. It is designed to familiarize students with matrix representation of 2-D, 3-D transformations and various Illumination Models.

### PREREQUISITE

- Basic knowledge about graphics.
- Familiarity with matrix representation and Algorithms.
- Knowledge about Input and Output Devices.

### COURSE OBJECTIVE

The main objective of this is to introduce to the students the concepts of computer graphics. It starts with an overview of interactive computer graphics, two dimensional system and mapping, then it presents the most important line drawing and circle drawing algorithms, two and three dimensional transformations, Clipping, Filling and an introduction to 3-D graphics.

### COURSE OUTCOMES (COs)

After the completion of the course, the student will be able to:

CO No.	Course Outcomes
1	Understand the various applications of graphics and interactive input and output devices.
2	Design and implement the algorithms to draw the line, circle and ellipse.
3	Apply different geometrical transformations such as Translation, Rotation, Scaling, Reflection and Shearing in 2D and 3D.
4	Understand 2D Coordinate transformations, viewing functions and various clipping algorithms.
5	Understand the various display methods, geometrical and coordinate transformations in 3D.



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## Course Plan

### COURSE CONTENT

Content
<p style="text-align: center;"><b>UNIT-I</b></p> <p><b>Graphics Primitives:</b> Introduction to computer graphics, Basics of Graphics systems, Application areas of Computer Graphics, overview of graphics systems, video-display devices, and raster-scan systems, random scan systems, graphics monitors and workstations and input devices.</p> <p><b>Output Primitives:</b> Points and lines, line drawing algorithms, mid-point circle and ellipse algorithms. Filled area primitives: Scan line polygon fill algorithm, boundary fill and flood fill algorithms .</p>
<p style="text-align: center;"><b>UNIT-II</b></p> <p><b>2-D Geometrical Transforms:</b> Translation, scaling, rotation, reflection and shear transformations, matrix representations and homogeneous coordinates, composite transforms, transformations between coordinate systems.</p> <p><b>2-D Viewing:</b> The viewing pipeline, viewing coordinate reference frame, window to viewport coordinate transformation, viewing functions, Cohen-Sutherland and Cyrus-beck line clipping algorithms, Sutherland – Hodgeman polygon clipping algorithm.</p>
<p style="text-align: center;"><b>UNIT-III</b></p> <p><b>3-D Object Representation:</b> Polygon surfaces, quadric surfaces, spline representation, Hermite curve, Bezier curve and B-Spline curves, Bezier and B-Spline surfaces. Basic illumination models, polygon-rendering methods.</p>
<p style="text-align: center;"><b>UNIT-IV</b></p> <p><b>3-D Geometric Transformations:</b> Translation, rotation, scaling, reflection and shear transformations, composite transformations.</p> <p><b>3-D Viewing:</b> Viewing pipeline, viewing coordinates, view volume and general projection transforms and clipping.</p>

### LESSON PLAN (THEORY AND TUTORIAL CLASSES)

L. No	Topic to be Delivered	Tutorial Plan	Unit
1	Introduction to Computer Graphics	Discussion on Computer Graphics	1
2	Basics of Computer Graphics		
3	Types of Computer Graphics		
4	Uses of Computer Graphics		
5	Application areas of Computer Graphics.	Doubt Session on Raster and Random Scan System	1
6	Overview of Graphics System.		
7	Raster Scan system		
8	Random Scan System		
9	Flat Panel Displays		





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10	Color CRT Monitors.	Architecture of Raster and Random Scan System.	1
11	Graphic Monitors and Workstations.		
12	Architecture		
13	Input and Output Devices.		
14	Introduction to Transformations	Questions on Transformations.	2
15	Basic Transformations		
16	Other Transformations		
17	Composite Transformations		
18	Introduction to Output Primitives	Practice of Algorithms	1
19	Line drawing algorithm-1		
20	Line drawing algorithm-2		
21	Mid-Point Circle algorithm		
22	Ellipse algorithm	Practice of Algorithms.	1
23	Scan Line Polygon fill Algorithm		
24	Boundary fill algorithm		
25	Flood fill algorithm		
26	Viewing Pipeline	Discussion on 2-D Viewing	2
27	Viewing coordinate reference frame		
28	Window to Viewport transformations		
29	Viewing Functions		
30	Cohen-Sutherland Algorithm		
31	Cyrus-beck Algorithm	Revision of 2D Viewing	2
32	Sutherland-Hodgeman Polygon Clipping algorithm-1		
33	Sutherland-Hodgeman Polygon Clipping algorithm-1		



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34	Introduction to 3D Transformation	Practice Questions of Transformations	4
35	Basic Transformation(Translation, Rotation, Scaling)		
36	Other Transformations		
37	Composite Transformations.		
38	Polygon and Quadratic Surfaces.	Revision of Unit-3	3
39	Spline Representation		
40	Hermite, Bezier and B-Spline Curves.		
41	Bezier and B-Spline Surfaces		
42	Basic illumination models-1	Explain various Illumination Models of Computer Graphics.	3
43	Basic illumination models-2		
44	Polygon Rendering methods-1		
45	Polygon Rendering methods-1		
46	Viewing Pipeline and Coordinates	Revision of Unit-4	4
47	View volume and general projection transforms and clipping-1		
48	View volume and general projection transforms and clipping-2		
49	Revision		
50	.		

### Text Book

Donald Hearn and M. Pauline Baker : Computer Graphics, PHI Publications

### Reference Books

- Plastock : Theory & Problem of Computer Graphics, Schaum Series.
- Foley & Van Dam : Fundamentals of Interactive Computer Graphics, Addison-Wesley
- Tosijasu, L.K. : Computer Graphics, Springer-Verleg.
- Newman : Principles of Interactive Computer Graphics, McGraw Hill.

### Web/Links for e-content

- <https://www.javatpoint.com/computer-graphics>
- <https://www.geeksforgeeks.org/window-to-viewport-transformation-in-computer-graphics-with-implementation/>
- <https://www.gatevidyalay.com/mid-point-circle-drawing-algorithm/>
- <https://studyresearch.in/2019/12/28/cohensutherlandexample/>



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## Course Plan

### PRACTICE QUESTIONS (QUESTION BANK)

S No	Problem
<b>UNIT I</b>	
1	Explain Computer Graphics.
2	Explain Interactive and Non-Interactive Computer Graphics.
3	Explain Raster Scan Display.
4	Explain Random Scan Display.
5	Difference between Raster and Random Scan Display.
6	Define Video Display Devices.
7	What is Computer Graphics? Indicate the importance of this discipline in Computer Science by giving suitable examples.
8	Explain Application Areas of Computer Graphics.
9	Explain Ellipse Algorithm.
10	Explain Plasma Displays.
11	Explain various Circle drawing algorithms.
<b>UNIT-II</b>	
12	Explain 2-D Basic Transformations.
13	Give a complete description about Sutherland-Hodgeman Polygon Clipping Algorithm.
14	What is Cyrus-beck Line Clipping Algorithm? Illustrate through a suitable example.
15	What is meant by coordinate system transformations?
16	Explain how transformations are represented in matrix?
17	Explain Cohen-Sutherland Algorithm.
18	Explain Window to Viewport Coordinate Transformation.
<b>UNIT- III</b>	
19	Write short note on Hermite Curve.
20	Explain Bezier and B-Spline Surfaces.
21	Define the various Polygon-rendering Methods.



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22	Explain Polygon-rendering methods. Which method is most popular?
23	Explain various Illumination Models.
24	Explain B-Spline Curve.
25	Explain Quadratic Surface.
26	What is Spline Representation.
<b>UNIT-IV</b>	
27	Explain 3-D viewing pipeline.
28	Explain Projection Transformation.
29	Explain Composite Transformation.
30	What is meant by Viewing Pipeline? Illustrate.
31	Explain 3D Reflection.
32	How viewing operation is performed in 3-D geometry?
33	What is General Projection transform? How is it significant? Illustrate.
34	Explain various 3D Transformations.
35	How 3D transformations produce effects to the graphics objects.



# Sh. L.N. Hindu College, Rohtak (Haryana)

## Course Plan

### Department of computer Science Program: BCA Data Communication and Networking

Course Name	Data Communication and Networking	CourseType	Theoryc
Course Code	BCA-303	Class	BCA 3 <sup>rd</sup> sem
Instruction Delivery	Per week Lectures: 4, Tutorial: 1, Practical:- Total No. Classes Per Sem: 60(L), 15(T), -(P) Assessment in Weightage: Sessional (20%), EndTermExams (80%)		
Course Coordinator	Dr.Reena Katyal	Course Instructors	Theory:Dr. Reena Katyal & Mrs. Kirti Dhingra Practical:--

### COURSE OVERVIEW

This course describes describe communication protocols and layered network architectures and also explain convention computer system interfacing standards and peer to peer data link communication protocols It also design basis network systems and analyze data communication technology.

### PREREQUISITE

Basic knowledge of Data, Networking and Network Devices.

### COURSE OBJECTIVE

The objective of this course is learning about various types of computer networks. To demonstrate the TCP/IP and OSI models with merits and demerits and also explore the various layers of OSI Model.

### COURSE OUTCOMES (COs)

After the completion of the course, the student will be able to:

CO No.	Course Outcomes
1	Students learn about the basic concepts Networking and its types.
2	Students gain a basic understanding about OSI Model And TCP/IP Model.
3	Students know about Network Devices like Bridges, Routers ,Gateways, Hub etc.
4	Students know about Routing Algorithms .



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### COURSE CONTENT

Content
<b>UNIT – I</b> Introduction to Computer Communications and Networking Technologies; Uses of Computer Networks; Network Devices, Nodes, and Hosts; Types of Computer Networks and their Topologies; Network Software: Network Design issues and Protocols; Connection-Oriented and Connectionless Services; Network Applications and Application Protocols; Computer Communications and Networking Models: Decentralized and Centralized Systems, Distributed Systems, Client/Server Model, Peer-to-Peer Model, Web Based Model, Network Architecture and the OSI Reference Model, TCP/IP reference model, Example Networks: The Internet, X.25, Frame Relay, ATM.
<b>UNIT – II</b> Analog and Digital Communications Concepts: Concept of data, signal, channel, bit-rate, maximum data-rate of channel, Representing Data as Analog Signals, Representing Data as Digital Signals, Data Rate and Bandwidth, Capacity, Baud Rate; Asynchronous and Synchronous transmission, data encoding techniques, Modulation techniques, Digital Carrier Systems; Guided and Wireless Transmission Media; Communication Satellites; Switching and Multiplexing; Dialup Networking; Analog Modem Concepts; DSL Service.
<b>UNIT - III</b> Data Link Layer: Framing, Flow Control, Error Control; Error Detection and Correction; Sliding Window Protocols; Media Access Control: Random Access Protocols, Token Passing Protocols; Token Ring; Introduction to LAN technologies: Ethernet, switched Ethernet, VLAN, fast Ethernet, gigabit Ethernet, token ring, FDDI, Wireless LANs; Bluetooth; Network Hardware Components: Connectors, Transceivers, Repeaters, Hubs, Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways.
<b>UNIT – IV</b> Network Layer and Routing Concepts: Virtual Circuits and Datagrams; Routing Algorithms: Flooding, Shortest Path Routing, Distance Vector Routing; Link State Routing, Hierarchical Routing; Congestion Control Algorithms; Internetworking; Network Security Issues: Security threats; Encryption Methods; Authentication; Symmetric – Key Algorithms; Public-Key Algorithms.



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## Course Plan

### LESSON PLAN(THEORY AND TUTORIAL CLASSES)

L.No	Topic to be Delivered	Tutorial Plan	Unit
1	Introduction to Computer Communications and Networking Technologies	Discussion of Communication and Networking	1
2	Uses of Computer Networks		
3	Network Devices, Nodes, and Hosts		
4	Types of Computer Networks and their Topologies		
5	Network Software: Network Design issues and Protocols		



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6	Connection-Oriented and Connectionless Services	Discussion on various types of Models	1
7	Network Applications and Application Protocols		
8	Computer Communications and Networking Models		
9	Decentralized and Centralized Systems, Distributed Systems, Client/Server Model, Peer-to-Peer Model		
10	Web Based Model, Network Architecture		
11	OSI Reference Model, TCP/IP reference model		
12	Example Networks: The Internet, X.25, Frame Relay, ATM.		
13	Analog and Digital Communications Concepts	Discussion on Analog and Digital Signals	2
14	Concept of data, signal, channel, bit-rate		
15	maximum data-rate of channel, Representing Data as Analog Signals		
16	Representing Data as Digital Signals		
17	Data Rate and Bandwidth, Capacity		
18	Baud Rate; Asynchronous and Synchronous transmission	Discussion on Data Encoding Techniques	
19	Data encoding techniques		
20	Modulation techniques, Digital Carrier Systems		
21	Guided and Wireless Transmission Media	Discussion on various type of Switching and Multiplexing	
22	Communication Satellites		
23	Switching and Multiplexing		
24	Dialup Networking; Analog Modem Concepts		
25	DSL Service		
26	Data Link Layer: Framing	Framing and Flow Control	3
27	Flow Control, Error Control		





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## Course Plan

28	Error Detection and Correction	
29	Sliding Window Protocols; Media Access Control	
30	Random Access Protocols, Token Passing Protocols	



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31	Token Ring; Introduction to LAN technologies: Ethernet,	LAN, VLAN and Ethernet	3
32	switched Ethernet, VLAN, fast Ethernet, gigabit Ethernet		
33	Token ring, FDDI, Wireless LANs		
34	Bluetooth		
35	Network Hardware Components	Network Devices	
36	Connectors, Transceivers, Repeaters, Hubs,		
37	Network Interface Cards and PC Cards, Bridges, Switches, Routers, Gateways		
38	Network Layer and Routing Concepts: Virtual Circuits and Datagrams	Routing Algorithms	4
39	Routing Algorithms: Flooding, Shortest Path Routing		
40	Distance Vector Routing		
41	Link State Routing, Hierarchical Routing;		
42	Congestion Control Algorithms; Internetworking;		
43	Network Security Issues: Security threats;		
44	Encryption Methods, Authentication		
45	Symmetric – Key Algorithms;		
46	Public-Key Algorithms.	Cryptography	

### Text Book

1. Data Communications and Networking, Behrouz A. Forouzan , Fourth Edition TMH,2006.
2. Computer Networks, Andrew S Tanenbaum, 4th Edition. Pearson Education, PHI

### Reference Books

1. Data communications and Computer Networks, P.C .Gupta, PHI.
2. An Engineering Approach to Computer Networks, S. Keshav, 2nd Edition, Pearson Education.
3. Understanding communications and Networks, 3rd Edition, W.A. Shay, Cengage Learning.
4. Computer Networking: A Top-Down Approach Featuring the Internet. James F.Kurose & Keith W. Ross, 3<sup>rd</sup> Edition, Pearson Education.
5. Data and Computer Communication, William Stallings, Sixth Edition, Pearson Education, 2000.

### Web/Links for e-content

- [https://www.tutorialspoint.com/data\\_communication\\_computer\\_network/computer\\_network\\_types.htm](https://www.tutorialspoint.com/data_communication_computer_network/computer_network_types.htm)  
[https://byjusexamprep.com/liveData/f/2021/12/data\\_communication\\_88.pdf](https://byjusexamprep.com/liveData/f/2021/12/data_communication_88.pdf)



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### PRACTICE QUESTIONS(QUESTION BANK)

1	What is Computer Communication and what are the uses of Computer /network?
2	What is Topology and also explain the types of Topologies?
3	Explain Network Devices.
4	Explain Decentralized and Centralized System.
5	What is the difference between OSI and TCP/IP Reference Model?
6	What is DBMS and components of DBMS environment?
7	Define : X.25 , Frame Relay, ATM
8	Explain Data Signals, Bid Rate.
9	How to represent data as a Dgital Signals?
10	Difference between Asynchronous and Synchronous transmission.
11	Explain Guided and Unguided Media.
12	Define Digital Carrier System.
13	Explain Switching and Multiplexing.
14	What do you mean by Communication Satellite?
15	Explain DSL service.
16	What do you mean by Data Link Layer?
17	Explain Flow Control and Error Control.
18	Define Sliding Window Protocol.
19	Define Random Access Protocol.
20	Define: Bridges, Switches, Routers, Gateways.
21	What do you mean by FDDI and VLAN



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22	What do you mean by Virtual Circuit and Datagram?
23	Explain Routing Algorithms in detail.
24	What do you understand by Congestion Control Algorithms
25	Explain Encryption Method.
26	Explain Symmetric and Public key Algorithm.



# Sh. L. N. Hindu College, Rohtak (Haryana)

## Course Plan

Department of Computer Science and Applications

Program: BCA

VISUAL BASIC (BCA-304)

### SCHEME

Course Name	Visual Basic	Course Type	Theory and Practical
Course Code	BCA-304	Class	BCA V Sem.
Instruction Delivery	Per week Lectures: 5, Practical: 6 Total No. Classes Per Sem: 60(L) Assessment in Weightage: Sessional (20%), End Term Exams (80%)		
Course Coordinator	Dr. Pooja Chawla	Course Instructors	Theory: Dr. Pooja Chawla and Ms. Ankita

### COURSE OVERVIEW

Visual Basic is a programming language developed by Microsoft for creating applications, including desktop apps, mobile apps, and web services. It's an object-oriented language that's known for being approachable and easy to learn, especially for beginners.

### PREREQUISITE

- Basic knowledge about Programming Languages.
- Familiarity with Concepts of Class and Objects.
- Knowledge about Variables and Data Types.

### COURSE OBJECTIVE

The main objective of this is to introduce the students to the concepts of Visual Basic. Familiarize with the Integrated Development Environment (IDE). To create and implement user interfaces using forms and various controls (Text boxes, Label, Command Button) and develop skills in identifying, diagnosing and fixing errors in VB programs.

### COURSE OUTCOMES (COs)

After the completion of the course, the student will be able to:

CO No.	Course Outcomes
1	Understand the fundamentals of programming using VB.
2	Develop problem solving skills using VB.
3	Understand object-oriented programming concepts in VB.
4	Develop skills in debugging and error handling in VB.
5	Develop a project that demonstrate proficiency in VB programming.



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## Course Plan

### COURSE CONTENT

Content
<b>UNIT-I</b> Introduction to VB: Visual & non-visual programming, Procedural, Object-oriented and eventdriven programming languages, The VB environment: Menu bar, Toolbar, Project explorer, Toolbox, Properties window, Form designer, Form layout, Immediate window. Visual Development and Event Driven programming.
<b>UNIT-II</b> Basics of Programming: Variables: Declaring variables, Types of variables, Converting variables types, User-defined data types, Forcing variable declaration, Scope & lifetime of variables. Constants: Named & intrinsic. Operators: Arithmetic, Relational & Logical operators. I/O in VB: Various controls for I/O in VB, Message box, Input Box, Print statement.
<b>UNIT-III</b> Programming with VB: Decisions and conditions: If statement, If-then-else, Select-case. Looping statements: Do-loops, For-next, While-wend, Exit statement. Nested control structures. Arrays: Declaring and using arrays, one-dimensional and multi-dimensional arrays, Static & dynamic arrays, Arrays of array. Collections: Adding, Removing, Counting, Returning items in a collection, Processing a collection.
<b>UNIT-IV</b> Programming with VB: Procedures: General & event procedures, Subroutines, Functions, Calling procedures, Arguments- passing mechanisms, Optional arguments, Named arguments, Functions returning custom data types, Functions returning arrays. Working with forms and menus : Adding multiple forms in VB, Hiding & showing forms, Load & unload statements, creating menu, submenu, popup menus, Activate & deactivate events, Form-load event, menu designing in VB Simple programs in VB.

### LESSON PLAN (THEORY AND TUTORIAL CLASSES)

L. No	Topic to be Delivered	Unit
1	Introduction to Visual Basic	1
2	Features of VB	
3	Object-Oriented Language and Procedural	
4	Visual and Non-Visual Programming	
5	VB Environment-1	
6	VB Environment-2, Command Button	1
7	Event Driven Programming Language.	
8	Message Box	
9	End Statement	
10	Revision of Unit-1	



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## Course Plan

11	Label and Textbox	2
12	Print Statement	
13	Datatypes	
14	Variables and Declaration	
15	Scope and Lifetime of Variables	
16	Constants and types	2
17	Arithmetic Operators	
18	Relational Operators	
19	Concatenation and Logical Operators	
20	Revision of Operators, Comment Statement	
21	Introduction to Control Structure	3
22	Decision Statement	
23	Select case Statement	
24	Do while loop and do loop while	
25	Do until loop and do loop until,while wend	
26	For loop and Revision	2
27	Exit Statement and With Statement	
28	Introduction to Controls in VB	
29	Label and Textbox	
30	Command Button	
31	Checkbox and Radio Button	2
32	Line and Shape Control	
33	Listbox, Combo Box	
34	Timer Control, Scroll Bar Control	
35	Frame Control	
36	Image and Picture Box Control	2
37	File System Control	
38	Control Array	
39	Revision of Controls-1	
40	Practice Questions	



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41	Arrays, Declaration and Using Arrays.	3
42	One Dimensional Array	
43	Multi-Dimensional Array	
44	Static and Dynamic Arrays	
45	Array of Array	3
46	Introduction to Collection	
47	Adding and Removing Items	
48	Counting, Returning Items	
49	Processing a Collection	4
50	Revision	
51	General and Event Procedures	
52	Subroutines, Functions	
53	Calling Procedures	4
54	Arguments, Functions returning arrays.	
55	Adding Multiple Forms in VB	
56	Hiding and Showing Forms	
57	Load and Unload, Creating menu and sub-menu	4
58	Pop-up Menu, Activate and De-activate Events	
59	Form Load event	
60	Menu Designing in VB	
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### Text Book

Sushil Goel : Visual Basic, Natraj Publishing House

Mandeep. S. Bhatia : Visual Basic 6, Khanna Book Publishing

### Reference Books

- Steven Holzner, “Visual Basic 6 Programming: Black Book”, Dreamtech Press
- Michael Halvorson, “Step by Step Microsoft Visual Basic 6.0 Professional”, PHI
- Scott Warner, “Teach Yourself Visual basic 6”, Tata McGraw-Hill Edition
- “Visual basic 6 Complete”, BPB Publications

### Web/Links for e-content

- <https://www.techtarget.com/whatis/definition/Visual-Basic-VB>
- [https://www.tutorialspoint.com/vb.net/vb.net\\_operators.htm](https://www.tutorialspoint.com/vb.net/vb.net_operators.htm)
- [https://www.tutorialspoint.com/vb.net/vb.net\\_basic\\_controls.htm](https://www.tutorialspoint.com/vb.net/vb.net_basic_controls.htm)
- [https://link.springer.com/content/pdf/10.1007/978-1-4471-3417-6\\_2](https://link.springer.com/content/pdf/10.1007/978-1-4471-3417-6_2)





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## Course Plan

### PRACTICE QUESTIONS (QUESTION BANK)

S No	Problem
<b>UNIT I</b>	
1	Explain difference between Visual and Non-Visual _Programming.
2	Explain difference between Procedural and Object-Oriented Programming Language.
3	What do you mean by VB Environment?
4	Why Visual Basic is called event driven programming language?
5	Write short note on Properties Window.
6	Discuss immediate window and code window in detail.
7	Discuss about Menu Bar and Tool Bar in detail.
8	What is an Event? Discuss some of the event supported by VB object. Also explain the role of event processor in detail.
9	Discuss the elements in the VB environment.
10	Explain form layout.
<b>UNIT-II</b>	
11	Explain Variables.
12	Explain scope and lifetime of Variables.
13	What do you mean by Constant?
14	Explain Data Types in detail.
15	Explain Arithmetic and Relational Operators in detail.
16	Explain I/O in VB.
17	Discuss the use of Message Box and Input Box in detail.
18	Explain various controls of VB in detail.
<b>UNIT- III</b>	
19	Explain Collection in VB.
20	Explain Array in detail.
21	What is Array of Array?



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22	Explain various decision statements with example in VB.
23	Explain various looping statements in detail.
24	Differentiate between Do-While Loop and Do Loop While.
25	Differentiate between Array and Collection.
26	Explain with and Exit Statement.
<b>UNIT-IV</b>	
27	What do you mean by Procedures? Discuss various types of procedures available in VB.
28	Explain Load and Unload Statement.
29	Describe the methodology to create a menu using Visual Basic.
30	What is function? Explain the concept of function returning data types and function returning arrays in VB.
31	Explain Hiding and Showing Forms.
32	What is Pop-Up menu? How to create Popup Menu? Explain.
33	What is Sub menu? How to create Sub menu.
34	What is the difference between Procedure and Function ?
35	How to add multiple forms in VB? Explain with example.



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## Course Plan

### PRACTICE QUESTIONS (QUESTION BANK)

S.No	Important Questions Practical
1.	Program to Display a message.
2.	Program of End Statement
3.	Program to find Sum of Two numbers.
4.	Program to implement Arithmetic operators.
5.	Program to implement Relational operators.
6.	Program to implement Logical operators.
7.	Program to implement Concatenation operators.
8.	Program to find Simple interest by taking values in a textbox.
9.	Program to find larger number from two numbers using Input box.
10.	Program to find greatest of three numbers.
11.	Program to implement select case statement to find the grade according to the marks.
12.	Program to find sum of 10 natural numbers using Do-While loop and Do-loop while.
13.	Program to find sum of 10 natural numbers using Do-Until loop and Do-loop until.
14.	Program to find whether a given number is odd or even.
15.	Program to find whether a given number is positive or negative.
16.	Program to find odd numbers upto 10 using for loop.
17.	Design an login form.
18.	Program to display table of 2 and 3 using for loop.
19.	Program to implement checkbox and radio button.
20.	Program to implement Line Control and Shape Control.
21.	Program of List box and Combo box.
22.	Program of Timer Control.
23.	Program of Scroll Bar Control.
24.	Program to implement Image Control and Picture Box Control.
25.	Program of File System Control.
26.	Program of Frame Control.
27.	Design a Calculator using Control Array.
28.	Program to calculate average of n numbers.
29.	Program to find sum of two metrices.
30.	Program to implement linear sort.
31.	Program to find whether a particular number is present within the given list of 100 numbers.
32.	Program to add items to a collection.



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33.	Program to access multiple forms.
34.	Program to find factorial of a number using function.
35.	Program to find HCF of three numbers using functions.
36.	Program of Pop-Up menu.
37.	Program to calculate simple interest and invoke this procedure in other procedure.
38.	Program that receives two numbers and prints whether the first one is divisible by second one or not and invoke it to another procedure.
39.	Program of Function returning array.
40.	Program of Passing an Array to a Procedure.