

FACULTY OF COMPUTER SCIENCE & IT

SYLLABUS

of

**Bachelor of Arts / Bachelor of Science (Computer Science) /
Bachelor of Science (Economics)
(Semester V-VI)**

**(Under Continuous Evaluation System)
(12+3 System of Education)**

Session: 2025-26



The Heritage Institution

**KANYA MAHA VIDYALAYA
JALANDHAR
(Autonomous)**

Kanya Maha Vidyalaya, Jalandhar (Autonomous)

SCHEME AND CURRICULUM OF EXAMINATIONS OF THREE YEAR DEGREE PROGRAMME

**Bachelor of Arts / Bachelor of Science (Computer Science) /
Bachelor of Science (Economics)**

Session 2025-26

Bachelor of Arts / Bachelor of Science (Computer Science) / Bachelor of Science (Economics)Semester - V											
Program Name	Course Code	Course Title	Course Type	Hours per week	Credit		Marks				Examination Time (in Hours)
				L-T-P	L-T-P	Total	Total	Ext.		C A	
								L	P		
Bachelor of Arts Semester V/	BARM-5134	Computer Science (Database Management System)	E	3-0-2	3-0-1	4	100	50	30	20	3+3
Bachelor of Science (Computer Science) Semester V /	BCSM-5134		C								
Bachelor of Science (Economics) Semester V	BECM-5134		E								

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) - Semester–V

Session 2025-26

COURSE CODE: BARM-5134

BCSM-5134

BECM-5134

COMPUTER SCIENCE

(DATA BASE MANAGEMENT SYSTEM)

Course Outcomes:

After passing course the student will be able to:

CO1: Understand data, database and database models.

CO2: Gain knowledge of normalization, security and recovery of database.

CO3: Create, manage and access database using SQL.

CO4: Comprehend the application of programming language constructs in database access.

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) - Semester–V

Session 2025-26

COURSE CODE: BARM-5134

BCSM-5134

BECM-5134

COMPUTER SCIENCE

(DATA BASE MANAGEMENT SYSTEM)

(THEORY)

Examination Time: 3 Hrs.

Max. Marks: 100

Theory: 50

L-T-P: 3-0-1

Practical: 30

Credits: 4

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

UNIT–I

DBMS: Introduction to database management system, Components of DBMS, Three Level Database System Architecture, ER. Diagrams. Data Models, Hierarchical Model, Network Model and Relational Model, Relational Databases, Relational Algebra and Calculus.

UNIT–II

Normalization: Introduction, Normal Forms: 1NF, 2NF, 3NF, BCNF, 4NF, 5NF.

Database Security: Protection, Integrity.

Recovery: Introduction, Recovery Techniques: Log Based Recovery and Shadow Paging.

Concurrency Control: Introduction, Concurrency control with locking methods, Two Phase locking, Precedence graph, Concurrency control based on timestamp ordering, Concurrency control based on optimistic scheduling.

UNIT–III

SQL * PLUS: Introduction to Oracle , Features of Oracle .

SQL Statements: DDL, DML, DCL, TCL, constraints, Join methods & Sub query, Union, Intersection, Built in Functions, View, and Security amongst users, Sequences, indexing object

UNIT–IV

PL/SQL: Introduction to PL/SQL. Cursors – Implicit & Explicit. Procedures, Functions & Packages, Database Triggers.

References/Textbooks:

1. C. J. Date, An Introduction to Database Systems, Pearson Education 2000.
2. F. Korth & Silverschatz, A., Database System Concepts, Tata McGraw Hill, 2010.
3. Elmasri & Navathe, Fundamentals of Database Systems, Addison-Wesley, 2011.
4. B.C.Desai, An Introduction to Database Management System, Galgotia Publication, 1991.
5. Ivan Bayross, SQL, PL/SQL - The Programming Language of Oracle, BPB Publications, 2010.
6. Gurvinder Singh, Parteek Bhatia, Simplified Approach to DBMS, Kalyani Publishers, 2016.
7. Anshuman Sharma, Fundamentals of DBMS, Lakhanpal Publications, 4th Edition.

Note: The latest editions of the books should be followed.

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) - Semester–V

Session 2025-26

COURSE CODE: BARM-5134

BCSM-5134

BECM-5134

COMPUTER SCIENCE

(DATA BASE MANAGEMENT SYSTEM)

(PRACTICAL)

Examination Time: 3 Hrs.

Max. Marks: 100

L-T-P: 3-0-1

Theory: 50

Credits: 4

Practical: 30

CA: 20

Lab on database management system.

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) - Semester–VI

(Session 2025-26)

COURSE CODE: BARM-6134

BCSM-6134

BECM-6134

COMPUTER SCIENCE

(INFORMATION TECHNOLOGY)

Course Outcomes:

After passing course the student will be able to:

CO1: Identify usage of various communication media and internet.

CO2: Acquaint with the usage of various information systems.

CO3: Comprehend digital marketing concepts and content.

CO4: Create and manage YouTube channel and blog.

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) Semester–VI

(Session 2025-26)

COURSE CODE: BARM-6134

BCSM-6134

BECM-6134

COMPUTER SCIENCE

(INFORMATION TECHNOLOGY)

(Theory)

Examination Time: 3 Hrs.

Max. Marks: 100

Theory: 50

L-T-P: 3-0-1

Practical: 30

Credits: 4

CA: 20

Instructions for Paper Setter -

Eight questions of equal marks (10 marks each) are to be set, two in each of the four sections (A-D). Questions of Sections A-D should be set from Units I-IV of the syllabus respectively. Questions may be divided into parts (not exceeding four). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. The students can use only Non-programmable & Non-storage type calculator

UNIT-I

Data and Network Communication: Communication media: Twisted pair, Coaxial, Fiber optics, Wireless (Line of Sight and Satellite), Network Advantages, Types and Topologies, Communication using Network protocol/Network Interface card (NP/NIC), Transmission & Communication protocol/protocol (TCP/IP)

Internet: Internet basics, its uses and applications. System Development Process and System development Tools.

UNIT-II

Information Technology: Introduction to IT and its components, Information systems, Components of Computer based information systems. Types of Information systems- TPS, MIS, and DSS.

UNIT-III

Introduction to Digital Marketing: Digital Strategy and Planning, Website marketing tools, Digital content – website, blogs, email, webinars, videos, podcasts, e-zines, PPC advertising.

Social Media and Social Bookmarking: Facebook, Twitter, Pinterest, Instagram,

Search Engine Marketing: Meaning, Working and Search Engine Optimization,

UNIT-IV

YouTube Studio: Navigating studio, Uploading videos, Edit Video settings, Analytics, Copyright and Monetization.

Blog Writing: Blog Domain, choice of CMS, Register a domain or subdomain with a website host.

References/Textbooks:

1. Peter Norton, Introduction to Computers, McGraw Hill (2017), 7th edition.
2. Patrick, G.Mckeown, Living with the Computers, Harcourt College Pub (1990) 3rd edition.
3. Hussain & Hussain, Computer: Technology, Applications & Social Implications, PHI Learning (2006)
4. Behrouz A. Forouzan, Data Communications & Networking, McGraw-Hill Education (2012), 5th edition.
5. Andrew S. Tanenbaum, Computer Network, Prentice Hall (2010), 5th edition.
6. Abraham Silberschatz, Greg Gagne, Peter B. Galvin, Operating System Concepts, Wiley Publishers (2018), 10th edition.
7. Yashavant Kanetkar, Unix Shell Programming, BPB Publications (2003), 1st edition.

Bachelor of Arts / Bachelor of Science (Computer Science) /

Bachelor of Science (Economics) - Semester–VI

Session 2025-26

COURSE CODE: BARM-6134

BCSM-6134

BECM-6134

COMPUTER SCIENCE

(INFORMATION TECHNOLOGY)

(PRACTICAL)

Examination Time: 3 Hrs.

Max. Marks: 100

L-T-P: 3-0-1

Theory: 50

Credits: 4

Practical: 30

CA: 20

Lab on Information Technology.