Department of Computer Science Pavanatma College, Murickassery Idukki-685604

Curriculum Framework



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Course - I

Semester - I

COMPUTER FUNDAMENTALS

1	Course	Vocational			
2	Course Type	Theory			
3	Course Code	CA1VOT01			
4	Credit	2			
5	Duration of External Examination	3 hours			
6	External Assessment	80			
7	Internal Assessment	20			
8	Total hours	36			
9	Hours per Week	2			
10	Number of Modules 4				
	Distribution of Inter	rnal Marks			
11	Attendance	5			
12	Assignment/Seminar	5			
13	Assessment Test	$10 (2 \times 5 = 10)$			

Module	Module Title	Delivery Methods	Total hours
1	Fundamentals of Computers	Chalk and talk, ICT	10
2	Basic Computer organization and number systems	Chalk and talk	6
3	Components of Computer	Chalk and talk	10
4	Software components and computer languages	Chalk and talk	10

1.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type			
1	Assessment tests	Internal Assessment			
2 Assignments		Internal Assessment			
3	Seminar	Internal Assessment			
4	University Examination	External Assessment			

1.4 Course Outcome

CO-1	Understand HTML commands and able to design WEB pages
CO-2	Control and manage structured programming like PHP.

1.5 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	0	3	0	2	0	0	0	0	0	3
CO-2	0	3	0	2	0	0	0	0	0	3

CO	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO-1	0	0	0	0	3
CO-2	0	0	0	1	0

Course - II

Semester - I

COMPUTER NETWORK AND INTERNET

TECHNOLOGIES

1	Course	Vocational						
2	Course Type	Theory						
3	Course Code	CA1VOT02						
4	Credit	2						
5	Duration of External Examination	3 hours						
6	External Assessment	60						
7	Internal Assessment	15						
8	Total hours	36						
9	Hours per Week	2						
10	Number of Modules	4						
Distribution of Internal Marks								
11	Attendance	5						
12	Assignment/Seminar	2						
13	Assessment Test	8 (2 × 4 = 8)						

Module	Module Title	Dolizzawy Mothoda	Total
Module	Module Title	Delivery Methods	hours
1	Computer Networks	Chalk and talk, ICT	8
2	Transmission media	Chalk and talk	10
3	Network Model	Chalk and talk	11
4	Internet	Chalk and talk	7

2.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

2.4 Course Outcome

CO-1	Understand Object oriented concept
CO-2	Control and manage object oriented programming like C++.

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	0	3	0	2	0	0	0	0	0	3
CO-2	0	0	0	2	0	0	0	0	0	3

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6
CO-1	0	0	0	2	0	1
CO-2	0	0	0	3	0	0

Course - III

Semester - III

Database Management systems

1	Course	Vocational
2	Course Type	Theory
3	Course Code	CA1VOT03
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	90
9	Hours per Week	6
10	Number of Modules	5
	Distribution of Inter	rnal Marks
11	Attendance	5
12	Assignment/Seminar	5
13	Assessment Test	$10 (2 \times 5 = 10)$

Module	Module Title	Dolizzawy Mothoda	Total
Module	Module Title	Delivery Methods	hours
1	Basic concepts	Chalk and talk, ICT	15
2	Data Models	Chalk and talk	15
3	Relational algebra modification of database	Chalk and talk,	20
4	Object oriented database	Chalk and talk,ICT	25
5	Query Processing	Chalk and talk,ICT	15

3.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

3.4 Course Outcome

GO 1	identifyÂăthe basic concepts and various data model used in					
CO-1	database design and architecture use					
	ApplyÂărelational database theory and be able					
CO-2	toÂădescribeÂărelational algebra expression, tuple and					
	domain relation expression fro queries.					
CO-3	Understand the use of SQL queries and the design of SQL					
CO-3	queries					
	RecognizeÂăandÂăidentifyÂăthe use of indexing and					
	hashing technique used in database design and the purpose					
CO-4	of query processing and optimization and also demonstrate					
	the basic of query evaluation and understanding of different					
	network types					

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	0	3	0	2	0	0	0	0	0	3
CO-2	0	3	0	2	0	0	0	0	0	3
CO-3	0	2	0	0	0	0	0	0	0	3
CO-4	0	2	0	2	0	0	0	0	0	3

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO-1	0	0	0 0		3
CO-2	0	0 0		0	3
CO-3	0	0	A 0	0	3
CO-4	0	0	0	0	3

Course - IV

Semester - IV

Operating systems

1	Course	Vocational			
2	Course Type	Theory			
3	Course Code	CA1VOT04			
4	Credit	4			
5	Duration of External Examination	3 hours			
6	External Assessment	80			
7	Internal Assessment	20			
8	Total hours	90			
9	Hours per Week	6			
10	Number of Modules	5			
	Distribution of Inter	rnal Marks			
11	Attendance	5			
12	Assignment/Seminar	5			
13	Assessment Test	$10 (2 \times 5 = 10)$			

Module	Module Title	Delivery Methods	Total hours
1	Introduction to operating systems	Chalk and talk	15
2	Process management and CPU scheduling	Chalk and talk ICT	25
3	Memory management basics	Chalk and talk,ICT	15
4	File systems	Chalk and talk	15
5	Protection and security	Chalk and talk ICT	20

4.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

4.4 Course Outcome

CO-1	Understand functions, structures and history of operating systems and understanding of design issues associated with operating systems
CO-2	Master various process management concepts including scheduling, synchronization, deadlocks
CO-3	Be familiar with multithreading and master concepts of memory management including virtual memory
CO-4	Understand the concept of system resources sharing among the users and analyse issues related to file system interface and implementation, disk management and understand protection and security mechanisms related to operating systems

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	0	3	0	2	0	0	0	0	0	3
CO-2	0	0	0	2	0	0	0	0	0	3
CO-3	0	2	0	0	0	0	0	0	0	3
CO-4	0	0 /	0	2	0	0	0	0	0	3

СО	PSO-1	1 PSO-2 PSO-3		PSO-4	PSO-5
CO-1	0	0	0	0	3
CO-2	0	0 0		0	3
CO-3	0	0	A 0	0	3
CO-4	0	0	0	0	3

Course - I

Semester - I

COMPUTER FUNDAMENTALS

1	Course	Vocational			
2	Course Type	Theory			
3	Course Code	CA1VOT01			
4	Credit	2			
5	Duration of External Examination	3 hours			
6	External Assessment	80			
7	Internal Assessment	20			
8	Total hours	36			
9	Hours per Week	2			
10	Number of Modules	4			
	Distribution of Inter	rnal Marks			
11	Attendance	5			
12	Assignment/Seminar	5			
13	Assessment Test	$10 (2 \times 5 = 10)$			

Module	Module Title	Delivery Methods	Total hours
1	Fundamentals of Computers	Chalk and talk, ICT	10
2	Basic Computer organization and number systems	Chalk and talk	6
3	Components of Computer	Chalk and talk	10
4	Software components and computer languages	Chalk and talk	10

5.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

5.4 Course Outcome

CO-1	Understand HTML commands and able to design WEB pages
CO-2	Control and manage structured programming like PHP.

5.5 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	0	3	0	2	0	0	0	0	0	3
CO-2	0	3	0	2	0	0	0	0	0	3

CO	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO-1	0	0	0	0	3
CO-2	0	0	0	1	0

Course - II

Semester – I

COMPUTER NETWORK AND INTERNET

TECHNOLOGIES

1	Course	Vocational
2	Course Type	Theory
3	Course Code	CA1VOT02
4	Credit	2
5	Duration of External Examination	3 hours
6	External Assessment	60
7	Internal Assessment	15
8	Total hours	36
9	Hours per Week	2
10	Number of Modules	4
	Distribution of Inter	nal Marks
11	Attendance	5
12	Assignment/Seminar	2
13	Assessment Test	8 (2 × 4 = 8)

Module	Module Title	Dolizzawy Mothoda	Total
Module	Module Title	Delivery Methods	hours
1	Computer Networks	Chalk and talk, ICT	8
2	Transmission media	Chalk and talk	10
3	Network Model	Chalk and talk	11
4	Internet	Chalk and talk	7

6.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

6.4 Course Outcome

CO-1	Understand Object oriented concept
CO-2	Control and manage object oriented programming like C++.

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	0	3	0	2	0	0	0	0	0	3
CO-2	0	0	0	2	0	0	0	0	0	3

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6
CO-1	0	0	0	2	0	1
CO-2	0	0	0	3	0	0

Course - III

Semester - II

WORD AND DATA PROCESSING PACK-

AGES

1	Course	Vocational
2	Course Type	Theory
3	Course Code	CA2VOT03
4	Credit	2
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	36
9	Hours per Week	2
10	Number of Modules	3
	Distribution of Inter	rnal Marks
11	Attendance	5
12	Assignment/Seminar	5
13	Assessment Test	$10 (2 \times 5 = 10)$

Module	Module Title	Dolizzary Mothoda	Total
Module	Module Title	Delivery Methods	hours
1	Word processing packages	Chalk and talk, ICT	12
2	Page Maker	Chalk and talk	12
3	MS-Excel	Chalk and talk	12

7.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

7.4 Course Outcome

CO-1	Understand SQL commands and able to handle SQL queries
CO-2	Control and manage programming SQL

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	0	3	0	2	0	0	0	0	0	3
CO-2	0	0	0	2	0	0	0	0	0	3

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6
CO-1	0	2	0	3	0	3
CO-2	0	2	0	3	0	3

Course - IV

Semester - II

PROGRAMMING IN ANSI C

1	Course	Vocational
2	Course Type	Theory
3	Course Code	CA2VOT04
4	Credit	2
5	Duration of External Examination	3 hours
6	External Assessment	60
7	Internal Assessment	15
8	Total hours	36
9	Hours per Week	2
10	Number of Modules	4
	Distribution of Inter	rnal Marks
11	Attendance	5
12	Assignment/Seminar	2
13	Assessment Test	$8 (2 \times 4 = 8)$

Module	Module Title	Delivery Methods	Total
Wioduic	Module Title	Denvery Methods	hours
1	Basic concept of Chalk and talk, ICT programming		8
2	Decision making and Branching	Chalk and talk	
3	Arrays and strings Chalk and talk,		8
4	User defined functions	Chalk and talk,ICT	10

8.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

8.4 Course Outcome

	Organization of science learning activities is necessary to
CO-1	rely on various methods of organization of learning and to be
	appropriate to learners.
	Applies the PM processes to initiate, plan, execute, monitor
CO-2	and control, and close projects and to coordinate all the
	elements of the project

8.5 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	3	2	0	2	0	0	0	0	0	3
CO-2	3	0	0	0	0	0	0	0	0	3

CO	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6
CO-1	0	2	0	3	0	3
CO-2	0	2	0	3	0	3

Course - V

Semester - III

CONCEPTS OF OBJECT ORIENTED PRO-

GRAMMING

1	Course	Vocational				
2	Course Type	Theory				
3	Course Code	CA3VOT05				
4	Credit	4				
5	Duration of External Examination	3 hours				
6	External Assessment	60				
7	Internal Assessment	15				
8	Total hours	54				
9	Hours per Week	3				
10	Number of Modules	4				
	Distribution of Internal Marks					
11	Attendance	5				
12	Assignment/Seminar	2				
13	Assessment Test	8 (2 × 4 = 8)				

Module	Module Title	Delivery Methods	Total hours
1	Basic concept of object oriented languages	Chalk and talk	
2	Classes and objects	Chalk and talk	12
3	constructor and destructor	Chalk and talk,ICT	10
4	Inheritance and operator overloading	Chalk and talk	23

9.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

9.4 Course Outcome

	Bridge the fundamental concepts of computers with the
CO-1	present level of knowledge of the students. Also understand
	different number systems and their conversions.
CO 9	Understand hardware components of a digital computer with
CO-2	input and output, peripheral devices
GO 0	Can able to understand computer software and computer
CO-3	languages.

9.5 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	1	0	0	2	0	2	0	0	0	0
CO-2	0	0	0	3	0	1	2	0	0	2
CO-3	0	0	0	1	0	0	0	0	0	0

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6
CO-1	0	2	0	3	0	3
CO-2	0	2	0	3	0	3
CO-3	0	2	0	3	0	3

Course - VI

Semester - III

OPERATING SYSTEMS

1	Course	Vocational	
2	Course Type	Theory	
3	Course Code	CA3VOT06	
4	Credit	3	
5	Duration of External Examination	3 hours	
6	External Assessment	60	
7	Internal Assessment	15	
8	Total hours	54	
9	Hours per Week	4	
10	Number of Modules	4	
	Distribution of Inter	rnal Marks	
11	Attendance	5	
12	Assignment/Seminar	2	
13	Assessment Test	$8 (2 \times 4 = 8)$	

10.2 Curriculum Structure

Module	Module Title	Delivery Methods	Total hours
1	Introduction to operating systems	Chalk and talk, ICT	10
2	Process management	Chalk and talk ICT	8
3	CPU scheduling	Chalk and talk	18
4	Memory management basics	Chalk and talk	18

10.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

10.4 Course Outcome

00.1	Apply organizational structure and select the most
CO-1	appropriate networking architecture and technologies
CO-2	Understand the transmission Media and LAN Topologies
CO-3	Understand the OSI and TCP-IP Reference Models.
CO-4	Working knowledge of internet and Internet protocols.

10.5 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	3	0	3	2	0	0	1	0	0	2
CO-2	3	0	2	1	0	0	0	0	0	3
CO-3	3	0	2	1	0	0	0	0	0	2
CO-4	3	0	3	1	0	0	0	0	0	2

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6
CO-1	0	2	0	3	0	3
CO-2	0	2	0	3	0	3
CO-3	0	2	0	3	0	3
CO-4	0	2	0	3	0	3

Course - VII

Semester – IV

VISUAL BASIC PROGRAMMING

1	Course	Vocational
2	Course Type	Theory
3	Course Code	CA4VOT07
4	Credit	4
5	Duration of External Examination	3 hours
6	External Assessment	60
7	Internal Assessment	15
8	Total hours	54
9	Hours per Week	5
10	Number of Modules	4
	Distribution of Inter	rnal Marks
11	Attendance	5
12	Assignment/Seminar	2
13 Assessment Test		$8 (2 \times 4 = 8)$

11.2 Curriculum Structure

Module	Module Title	Dolizzary Mothodo	Total
Module	Module Title	Delivery Methods	hours
1	Introduction	Chalk and talk	22
2	methos, properties and events	Chalk and talk	14
3	Function and file handling	Chalk and talk	8
4	File handling	Chalk and talk ICT	10

11.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

11.4 Course Outcome

CO-1	To improve and enhance written materials and build			
CO-1	compelling documents with confidence			
CO-2	Handle adobe PageMaker more effectively and efficiently.			
CO 2	Handle all the tools necessary to create and use basic			
CO-3	spreadsheets.			

11.5 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	3	0	3	2	0	0	1	0	0	2
CO-2	3	0	2	1	0	0	0	0	0	3
CO-3	3	0	2	1	0	0	0	0	0	4

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6
CO-1	0	0	0	2	0	1
CO-2	0	0	0	3	0	3
CO-3	0	0	0	3	0	3

Course - VIII

Semester – IV

WEB DEVELOPMENT AND PHP PROGRAM

MING

1	Course	Vocational				
2	Course Type	Theory				
3	Course Code	CA4VOT08				
4	Credit	3				
5	Duration of External Examination	3 hours				
6	External Assessment	60				
7	Internal Assessment	15				
8	Total hours	54				
9	Hours per Week	3				
10	Number of Modules	4				
	Distribution of Internal Marks					
11	Attendance	5				
12	Assignment/Seminar	2				
13	Assessment Test	$8 (2 \times 4 = 8)$				

12.2 Curriculum Structure

Module	Module Title	Dolizzawy Mothoda	Total
Module	Module Title	Delivery Methods	hours
1	HTML and CSS	Chalk and talk, ICT	18
2	Javascript	Chalk and talk	12
3	PHP And Mysql	Chalk and talk,	15
4	implementing MySQL	Challe and talle ICT	9
4	using PHP	Chalk and talk,ICT	9

12.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

12.4 Course Outcome

CO-1	Illustrate the flowchart and algorithm for given problem and
00-1	understand the fundamentals of c programming
CO-2	Develop conditional and iterative statements to write C
00-2	programs
CO 2	Develop conditional and iterative statements to write C
CO-3	programs
CO-4	Understand functions.

12.5 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	3	0	3	2	0	0	1	0	0	2
CO-2	3	0	2	1	0	0	0	0	0	3
CO-3	3	0	2	1	0	0	0	0	0	2
CO-4	3	0	3	1	0	0	0	0	0	2

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6
CO-1	0	2	0	3	0	3
CO-2	0	2	0	3	0	3
CO-3	0	2	0	3	0	3
CO-4	0	2	0	3	0	3

Course - I

Semester - I

Computer Fundamentals

1	Course	Complementary
2	Course Type	Theory
3	Course Code	CA1CMT01
4	Credit	2
5	Duration of External Examination	3 hours
6	External Assessment	60
7	Internal Assessment	10
8	Total hours	36
9	Hours per Week	2
10	Number of Modules	5
	Distribution of Inter	rnal Marks
11	Attendance	0
12	Assignment/Seminar	0
13	Assessment Test	$0 (0 \times 0 = 0)$

13.2 Curriculum Structure

Module	Module Title	Delivery Methods	Total hours
1	Fundamentals of Computers	Chalk and talk, ICT	10
2	Number systems	Chalk and talk	6
3	Boolean Algebra and Logic circuits	Chalk and talk	8
4	Computer Software and Languages	Chalk and talk	6
5	Operating system	Chalk and talk, ICT	6

13.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

13.4 Course Outcome

CO-1	Know about basics concepts of object oriented programming.
CO-2	Handle importantant concepts likeclass, object and
CO-2	constructor
CO 2	Know about oops concepts like inheritance, overloading and
CO-3	polymorphism.

13.5 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	0	0	0	0	0	0	1	0	0	0
CO-2	1	0	1	0	0	0	1	0	0	1
CO-3	1	0	1	0	0	0	1	0	0	1

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6
CO-1	0	2	0	3	0	3
CO-2	0	2	0	3	0	3
CO-3	0	2	0	3	0	3

Course - II

Semester – II

Progarmming In C Language

1	Course	Complementary	
2	Course Type	Theory	
3	Course Code	CA2CMT02	
4	Credit	3	
5	Duration of External Examination	3 hours	
6	External Assessment	60	
7	Internal Assessment	10	
8	Total hours	36	
9	Hours per Week	2	
10	Number of Modules	5	
	Distribution of Inter	rnal Marks	
11	Attendance	0	
12	Assignment/Seminar	0	
13	Assessment Test	$0 (0 \times 0 = 0)$	

14.2 Curriculum Structure

Module	Module Title	Delivery Methods	Total hours
1	Basic concepts of programming	Chalk and talk	6
2	Decision making and Branching	Chalk and talk	10
3	Arrays	Chalk and talk	8
4	User defined functions	Chalk and talk	8
5	Structure	Chalk and talk	4

14.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

14.4 Course Outcome

CO-1	Understand functions, structures and history of operating systems and understanding of design issues associated with
	operating systems
CO	Master various process management concepts including
CO-2	scheduling, synchronization, deadlocks
GO 9	Understanding the concept of scheduling and method of
CO-3	process scheduling
	Be familiar with multithreading and master concepts of
CO-4	memory management including virtual memory and file
	handling in operating systems

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	3	0	3	2	0	0	1	0	0	2
CO-2	3	0	2	1	0	0	0	0	0	3
CO-3	3	0	2	1	0	0	0	0	0	3
CO-4	3	0	3	1	0	0	0	0	0	2

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6
CO-1	0	2	0	3	0	3
CO-2	0	0	0	2	0	1
CO-3	0	0	0	2	0	2
CO-4	0	0	0	2	0	1

Course - III

Semester - III

Web Technology and Programming

1	Course	Complementary	
2	Course Type	Theory	
3	Course Code	CA3CMT03	
4	Credit	2	
5	Duration of External Examination	3 hours	
6	External Assessment	60	
7	Internal Assessment	10	
8	Total hours	36	
9	Hours per Week	2	
10	Number of Modules	5	
	Distribution of Inter	rnal Marks	
11	Attendance	0	
12	Assignment/Seminar	0	
13	Assessment Test	$0 (0 \times 0 = 0)$	

15.2 Curriculum Structure

Module	Module Title	Delivery Methods	Total
			hours
1	Computer networks	Chalk and talk, ICT	6
2	Concept of ISP	Chalk and talk	6
3	Web server	Chalk and talk,	8
4	The art of creating the website	Chalk and talk,ICT	10
5	Introduction web browsers	Chalk and talk, ICT	6

15.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

15.4 Course Outcome

CO-1	Understand the basic concept of event-driven program and
	intrinsic controls in Visual Basic programming
GO 9	Use a modern IDE to visually and programmatically create
CO-2	programs with GUIâĂŹs
CO-3	Understand additional Visual Basic controls
CO-4	Understand the file handling methods.

15.5 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	3	0	3	2	0	0	1	0	0	2
CO-2	3	0	2	1	0	0	0	0	0	3
CO-3	3	0	2	1	0	0	0	0	0	3
CO-4	3	0	3	1	0	0	0	0	0	3

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6
CO-1	0	2	0	2	0	2
CO-2	0	2	0	2	0	2
CO-3	0	2	0	3	0	3
CO-4	0	2	0	3	0	3

Course - IV

Semester - IV

Visual Programming Techniques

1	Course	Complementary			
2	Course Type	Theory			
3	Course Code	CA4CMT04			
4	Credit	2			
5	Duration of External Examination	3 hours			
6	External Assessment	60			
7	Internal Assessment	10			
8	Total hours	36			
9	Hours per Week	2			
10	Number of Modules	5			
	Distribution of Inter	rnal Marks			
11	Attendance	0			
12	Assignment/Seminar	0			
13	Assessment Test	$0 (0 \times 0 = 0)$			

16.2 Curriculum Structure

Module	Module Title	Delivery Methods	Total hours
1	Data Base Management System	Chalk and talk	4
2	Visual Basic - Basic Concepts	Chalk and talk	10
3	Designing the User Interface	Chalk and talk,ICT	8
4	Controls	Chalk and talk	8
5	Mastering Menus and Toolbars	Chalk and talk	6

16.3 Evaluation Methods

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Assignments	Internal Assessment
3	Seminar	Internal Assessment
4	University Examination	External Assessment

16.4 Course Outcome

CO-1	Know how to create web pages using HTML with the help of
	CSS.
CO-2	Handle client side scripting language like JavaScript.
	Create web pages with a server side scripting language and
CO-3	can able to create web pages with database connectivity with
	the help of MySql.

16.5 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	2	0	0	1	0	1	2	0	0	0
CO-2	0	0	0	2	0	0	1	0	0	0
CO-3	2	0	0	3	0	0	1	0	1	0

CO	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5	PSO-6
CO-1	0	2	0	3	0	3
CO-2	0	2	0	3	0	3
CO-3	0	(0)	0	0	3	0

Course - I

Semester - I & II

Software Lab I (P)

1	Course	Vocational						
2	Course Type	Practical						
3	Course Code	CA1VOP01						
4	Credit	3						
5	Duration of External Examination	3 hours						
6	External Assessment	80						
7	Internal Assessment	20						
8	Total hours	144						
9	Hours per Week	4						
10	Number of Experiments	15						
11	Total Week to complete	21						
	Distribution of Internal Marks							
12	Attendance	2						
13	Record	4						
14	Assessment Test	$4 (1 \times 4 = 1)$						

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Practical Record	Internal Assessment
3	Exprimental Skill	Internal Assessment
4	University Examination	External Assessment

17.3 Course Outcome

CO-1	Handle DOS commands and can able to deal with batch files.
CO-2	Control and manage structured programming like C.

17.4 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	3	0	3	2	0	0	1	0	0	2
CO-2	3	0	2	1	0	0	0	0	0	3

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO-1	0	0	KASS	0	3
CO-2	0	0	0	0	3

Course - II

Semester - I & II

Software Lab II(P)

1	Course	Vocational
2	Course Type	Practical
3	Course Code	CA2VOP02
4	Credit	3
5	Duration of External Examination	3 hours
6	External Assessment	80
7	Internal Assessment	20
8	Total hours	144
9	Hours per Week	4
10	Number of Experiments	15
11	Total Week to complete	21
	Distribution of Inter	nal Marks
12	Attendance	2
13	Record	4
14	Assessment Test	4 (1 × 4 = 1)

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Practical Record	Internal Assessment
3	Exprimental Skill	Internal Assessment
4	University Examination	External Assessment

18.3 Course Outcome

CO-1	Create word document and excel sheets with a commanding		
CO-1	knowledge.		
CO-2 To develop visual basic IDE applications			

18.4 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	3	3	0	2	0	0	1	0	0	2
CO-2	3	2	0	1	0	0	1	0	0	3

CO	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO-1	0	0	0	0	3
CO-2	0	0	0	0	3

Course - III

Semester – II & III

Software Lab III(P)

1	Course	Vocational		
2	Course Type	Practical		
3	Course Code	CA3VOP03		
4	Credit	3		
5	Duration of External Examination	3 hours		
6	External Assessment	80		
7	Internal Assessment	20		
8	Total hours	180		
9	Hours per Week	6		
10	Number of Experiments	15		
11	Total Week to complete	18		
	Distribution of Inter	nal Marks		
12	Attendance	2		
13	Record	4		
14	Assessment Test	4 (1 × 4 = 1)		

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Practical Record	Internal Assessment
3	Exprimental Skill	Internal Assessment
4	University Examination	External Assessment

19.3 Course Outcome

CO-1	Develop programs in C++ with Object Oriented Concepts
CO-2	Develop web pages with client side scripting capabilities.

19.4 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	3	0	3	2	0	0	1	0	0	2
CO-2	3	0	3	1	0	0	0	0	0	3

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO-1	0	0	KASS	0	3
CO-2	0	0	0	0	3

Software Lab IV Project(P)

Course	Vocational				
Course Type	Practical				
Course Code	CA4VOP04				
Credit	3				
Duration of External Examination	3 hours				
External Assessment	80				
Internal Assessment	20				
Total hours	180				
Hours per Week	6				
Number of Experiments	15				
Total Week to complete	18				
Distribution of Internal Marks					
Attendance	2				
Record	4				
Assessment Test	4 (1 × 4 = 1)				
	Course Type Course Code Credit Duration of External Examination External Assessment Internal Assessment Total hours Hours per Week Number of Experiments Total Week to complete Distribution of Internal Attendance Record				

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Practical Record	Internal Assessment
3	Exprimental Skill	Internal Assessment
4	University Examination	External Assessment

20.3 Course Outcome

CO-1	Bridge the fundamental concepts of computers with the
	present level of knowledge of the students.
CO-2	Understand binary, hexadecimal and octal number systems
CO-2	and their conversions.
CO-3	Understand hardware components of a digital computer with
	input and output, peripheral devices

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	0	2	2	2	0	0	2	0	0	0
CO-2	2	0	0	2	0		0	0	0	0
CO-3	0	0	0		0	0	3	0	0	3

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO-1	0	0	0	0	3
CO-2	0	0	0	0	3
CO-3	0	0		0	3

Course - I

Semester - I & II

Introduction to Computers and ANSI C Programming(P)

1	Course	Vocational				
2	Course Type	Practical				
3	Course Code	CA2VOP01				
4	Credit	2				
5	Duration of External Examination	3 hours				
6	External Assessment	40				
7	Internal Assessment	10				
8	Total hours	72				
9	Hours per Week	2				
10	Number of Experiments	15				
11	Total Week to complete	21				
	Distribution of Internal Marks					
12	Attendance	2				
13	Record	4				
14	Assessment Test	4 (1 × 4 = 1)				

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Practical Record	Internal Assessment
3	Exprimental Skill	Internal Assessment
4	University Examination	External Assessment

21.3 Course Outcome

CO-1	Illustrate the flowchart and algorithm for given problem and
CO-1	understand the fundamentals of c programming
CO-2	Develop conditional and iterative statements to write C
00-2	programs
CO-3	Develop conditional and iterative statements to write C
CO-3	programs
CO-4	Understand functions.

CO	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	2	0	0	2	0	0	0	0	0	3
CO-2	0	2	0	2	0	0	3	0	0	3
CO-3	0	3	0	3	0	0	3	0	0	2
CO-4	0	0	0	1	0	0	3	0	0	3

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO-1	0	0	0	0	3
CO-2	0	0	0	0	3
CO-3	0	0		0	3
CO-4	0	0	0	0	3

Semester – III & IV

Data Processing Packages, Operating System and Visual Basic Programming(P)

1	Course	Vocational				
2	Course Type	Practical				
3	Course Code	CA4VOP02				
4	Credit	2				
5	Duration of External Examination	3 hours				
6	External Assessment	40				
7	Internal Assessment	10				
8	Total hours	72				
9	Hours per Week	2				
10	Number of Experiments	15				
11	Total Week to complete	21				
	Distribution of Internal Marks					
12	Attendance	2				
13	Record	4				
14	Assessment Test	4 (1 × 4 = 1)				

No.	Assessment Methods	Evaluation Type
1	Assessment tests	Internal Assessment
2	Practical Record	Internal Assessment
3	Exprimental Skill	Internal Assessment
4	University Examination	External Assessment

22.3 Course Outcome

CO-1	Apply organizational structure and select the most
CO-1	appropriate networking architecture and technologies
CO-2	Understand the transmission Media and LAN Topologies
CO-3	Understand the OSI and TCP-IP Reference Models.
CO-4	Working knowledge of internet and Internet protocols.

CO	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	2	0	0	2	0	0	0	0	0	3
CO-2	0	3	0	2	0	0	0	0	0	3
CO-3	0	3	0	2	0	0	0	0	0	3
CO-4	0	2	0	0	0	0	0	0	0	3

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO-1	0	0	0	0	3
CO-2	0	0	0	0	3
CO-3	0	0		0	3
CO-4	0	0	0	0	3

Semester – III & IV

C++ Programming and Web Development(P)

1	Course	Vocational		
2	Course Type	Practical		
3	Course Code	CA4VOP03		
4	Credit	2		
5	Duration of External Examination	3 hours		
6	External Assessment	40		
7	Internal Assessment	10		
8	Total hours	72 2		
9	Hours per Week			
10	Number of Experiments	15		
11	Total Week to complete	21		
	Distribution of Inter	nal Marks		
12	Attendance	2		
13	Record	4		
14	Assessment Test	4 (1 × 4 = 1)		

No.	Assessment Methods	Evaluation Type		
1	Assessment tests	Internal Assessment		
2	Practical Record	Internal Assessment		
3	Exprimental Skill	Internal Assessment		
4	University Examination	External Assessment		

23.3 Course Outcome

CO 1	Understand the basic concept of event-driven program and					
CO-1	intrinsic controls in Visual Basic programming					
CO 9	Use a modern IDE to visually and programmatically create					
CO-2	programs with GUIâĂŹs					
CO-3	Understand additional Visual Basic controls					

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	0	2	0	2	0	0	0	0	0	3
CO-2	0	3	0	2	0	0	0	0	0	3
CO-3	0	0	0	2	0	0	0	0	0	3

СО	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO-1	0	0	0	0	3
CO-2	0	0	0	0	3
CO-3	0	0		0	3

Course - I

Semester - I & II

Software Lab I (P)

1	Course	Complementary		
2	Course Type	Practical		
3	Course Code	CA2CMP01		
4	Credit	2		
5	Duration of External Examination	3 hours		
6	External Assessment	40		
7	Internal Assessment	20		
8	Total hours	144		
9	Hours per Week	2		
10	Number of Experiments	15		
11	Total Week to complete	39		
	Distribution of Inter	nal Marks		
12	Attendance	2		
13	Record	4		
14	Assessment Test	$4 (1 \times 4 = 1)$		

No.	Assessment Methods	Evaluation Type	
1	Assessment tests	Internal Assessment	
2	Practical Record	Internal Assessment	
3	Exprimental Skill	Internal Assessment	
4	University Examination	External Assessment	

24.3 Course Outcome

CO-1	Control and manage structured programming like C.
CO	Create word document and excel sheets with a commanding
CO-2	knowledge.

24.4 CO - PO Mapping

СО	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	3	3	0	2	0	0	1	0	0	2
CO-2	3	2	0	1	0	0	1	0	0	3

CO	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO-1	0	0	0	0	3
CO-2	0	0	0	0	3

Course - II

Semester – III & IV

Software Lab II(P)

1 Course Complementary 2 Course Type Practical 3 Course Code CA2CMP02 4 Credit 2 5 Duration of External Examination 3 hours 6 External Assessment 40 7 Internal Assessment 20 8 Total hours 144							
3 Course Code CA2CMP02 4 Credit 2 5 Duration of External Examination 3 hours 6 External Assessment 40 7 Internal Assessment 20							
4 Credit 2 5 Duration of External Examination 3 hours 6 External Assessment 40 7 Internal Assessment 20							
5 Duration of External Examination 3 hours 6 External Assessment 40 7 Internal Assessment 20							
6 External Assessment 40 7 Internal Assessment 20							
7 Internal Assessment 20							
8 Total hours 144							
9 Hours per Week 2							
10 Number of Experiments 15							
11 Total Week to complete 39							
Distribution of Internal Marks							
12 Attendance 2							
13 Record 4							
14 Assessment Test $4 (1 \times 4 = 1)$							

No.	Assessment Methods	Evaluation Type		
1	Assessment tests	Internal Assessment		
2	Practical Record	Internal Assessment		
3	Exprimental Skill	Internal Assessment		
4	University Examination	External Assessment		

25.3 Course Outcome

CO-1	To develop visual basic IDE applications
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25.4 CO - PO Mapping

CO	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10
CO-1	3	0	3	2	0	0	1	0	0	2

CO	PSO-1	PSO-2	PSO-3	PSO-4	PSO-5
CO-1	0	0	0	0	3

