Department of Computer Science

Pavanatma College, Murickassery

Idukki-685604

Curriculum Framework

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Course – I Semester – I

COMPUTER FUNDAMENTALS

1.1 Course Overview

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 Internal Marks		
11	Attendance	5
12	Assignment/Seminar	5
13	Assessment Test	10 ($2 \times 5 = 10$)

1.2 Curriculum Structure

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

CO	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

1.6 CO – PSO Mapping

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

2.1 Course Overview

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)

2.2 Curriculum Structure

Module	Module Title	Delivery Methods	Total 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++.

2.5 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	0	3	0	2	0	0	0	0	0	3
CO-2	0	0	0	2	0	0	0	0	0	3

2.6 CO – PSO Mapping

CO	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

3.1 Course Overview

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 Internal Marks		
11	Attendance	5
12	Assignment/Seminar	5
13	Assessment Test	10 (2 × 5 = 10)

3.2 Curriculum Structure

Module	Module Title	Delivery Methods	Total 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

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

3.5 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	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

3.6 CO – PSO Mapping

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
CO-3	0	0	0	0	3
CO-4	0	0	0	0	3

Course – IV Semester – IV

Operating systems

4.1 Course Overview

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 Internal Marks		
11	Attendance	5
12	Assignment/Seminar	5
13	Assessment Test	10 (2 × 5 = 10)

4.2 Curriculum Structure

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

4.5 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	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

4.6 CO – PSO Mapping

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
CO-3	0	0	0	0	3
CO-4	0	0	0	0	3

Course – I Semester – I

COMPUTER FUNDAMENTALS

5.1 Course Overview

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 Internal Marks		
11	Attendance	5
12	Assignment/Seminar	5
13	Assessment Test	10 (2 × 5 = 10)

5.2 Curriculum Structure

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

CO	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

5.6 CO – PSO Mapping

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

6.1 Course Overview

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)

6.2 Curriculum Structure

Module	Module Title	Delivery Methods	Total 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++.

6.5 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	0	3	0	2	0	0	0	0	0	3
CO-2	0	0	0	2	0	0	0	0	0	3

6.6 CO – PSO Mapping

CO	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 PACKAGES

7.1 Course Overview

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 Internal Marks		
11	Attendance	5
12	Assignment/Seminar	5
13	Assessment Test	10 (2 × 5 = 10)

7.2 Curriculum Structure

Module	Module Title	Delivery Methods	Total 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

7.5 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	0	3	0	2	0	0	0	0	0	3
CO-2	0	0	0	2	0	0	0	0	0	3

7.6 CO – PSO Mapping

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 – IV Semester – II

PROGRAMMING IN ANSI C

8.1 Course Overview

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 Internal Marks		
11	Attendance	5
12	Assignment/Seminar	2
13	Assessment Test	8 ($2 \times 4 = 8$)

8.2 Curriculum Structure

Module	Module Title	Delivery Methods	Total hours
1	Basic concept of programming	Chalk and talk, ICT	8
2	Decision making and Branching	Chalk and talk	10
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

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

8.5 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	2	0	2	0	0	0	0	0	3
CO-2	3	0	0	0	0	0	0	0	0	3

8.6 CO – PSO Mapping

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 PROGRAMMING

9.1 Course Overview

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)

9.2 Curriculum Structure

Module	Module Title	Delivery Methods	Total hours
1	Basic concept of object oriented languages	Chalk and talk	9
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

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

9.5 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	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

9.6 CO – PSO Mapping

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	2	0	3	0	3

Course – VI Semester – III

OPERATING SYSTEMS

10.1 Course Overview

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 Internal Marks		
11	Attendance	5
12	Assignment/Seminar	2
13	Assessment Test	8 (2 × 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

CO-1	Apply organizational structure and select the most 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

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-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

10.6 CO – PSO Mapping

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	2	0	3	0	3
CO-4	0	2	0	3	0	3

Course – VII Semester – IV

VISUAL BASIC PROGRAMMING

11.1 Course Overview

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 Internal Marks		
11	Attendance	5
12	Assignment/Seminar	2
13	Assessment Test	8 (2 × 4 = 8)

11.2 Curriculum Structure

Module	Module Title	Delivery Methods	Total 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 compelling documents with confidence
CO-2	Handle adobe PageMaker more effectively and efficiently.
CO-3	Handle all the tools necessary to create and use basic spreadsheets.

11.5 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-2	3	0	2	1	0	0	0	0	0	3
CO-3	3	0	2	1	0	0	0	0	0	4

11.6 CO – PSO Mapping

CO	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 PROGRAMMING

12.1 Course Overview

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 × 4 = 8)

12.2 Curriculum Structure

Module	Module Title	Delivery Methods	Total 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 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 understand the fundamentals of c programming
CO-2	Develop conditional and iterative statements to write C programs
CO-3	Develop conditional and iterative statements to write C programs
CO-4	Understand functions.

12.5 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-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

12.6 CO – PSO Mapping

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	2	0	3	0	3
CO-4	0	2	0	3	0	3

Course – I Semester – I

Computer Fundamentals

13.1 Course Overview

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 Internal Marks		
11	Attendance	0
12	Assignment/Seminar	0
13	Assessment Test	0 (0 × 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 constructor
CO-3	Know about oops concepts like inheritance, overloading and polymorphism.

13.5 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	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

13.6 CO – PSO Mapping

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	2	0	3	0	3

Course – II Semester – II

Progarmming In C Language

14.1 Course Overview

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 Internal Marks		
11	Attendance	0
12	Assignment/Seminar	0
13	Assessment Test	0 (0 × 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-2	Master various process management concepts including scheduling, synchronization, deadlocks
CO-3	Understanding the concept of scheduling and method of process scheduling
CO-4	Be familiar with multithreading and master concepts of memory management including virtual memory and file handling in operating systems

14.5 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-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

14.6 CO – PSO Mapping

CO	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

15.1 Course Overview

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 Internal Marks		
11	Attendance	0
12	Assignment/Seminar	0
13	Assessment Test	0 (0 × 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
CO-2	Use a modern IDE to visually and programmatically create programs with GUIâĂŹs
CO-3	Understand additional Visual Basic controls
CO-4	Understand the file handling methods.

15.5 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-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

15.6 CO – PSO Mapping

CO	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

16.1 Course Overview

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 Internal Marks		
11	Attendance	0
12	Assignment/Seminar	0
13	Assessment Test	0 (0 × 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.
CO-3	Create web pages with a server side scripting language and can able to create web pages with database connectivity with the help of MySql.

16.5 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	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

16.6 CO – PSO Mapping

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)

17.1 Course Overview

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 × 4 = 1)

17.2 Evaluation Methods

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

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-2	3	0	2	1	0	0	0	0	0	3

17.5 CO – PSO Mapping

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 – I & II

Software Lab II(P)

18.1 Course Overview

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 Internal Marks		
12	Attendance	2
13	Record	4
14	Assessment Test	4 (1 × 4 = 1)

18.2 Evaluation Methods

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 knowledge.
CO-2	To develop visual basic IDE applications

18.4 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	3	0	2	0	0	1	0	0	2
CO-2	3	2	0	1	0	0	1	0	0	3

18.5 CO – PSO Mapping

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)

19.1 Course Overview

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 Internal Marks		
12	Attendance	2
13	Record	4
14	Assessment Test	4 (1 × 4 = 1)

19.2 Evaluation Methods

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

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-2	3	0	3	1	0	0	0	0	0	3

19.5 CO – PSO Mapping

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 – IV Semester – III & IV

Software Lab IV Project(P)

20.1 Course Overview

1	Course	Vocational
2	Course Type	Practical
3	Course Code	CA4VOP04
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 Internal Marks		
12	Attendance	2
13	Record	4
14	Assessment Test	4 (1 × 4 = 1)

20.2 Evaluation Methods

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 and their conversions.
CO-3	Understand hardware components of a digital computer with input and output, peripheral devices

20.4 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	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	1	0	0	3	0	0	3

20.5 CO – PSO Mapping

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
CO-3	0	0	0	0	3

Course – I Semester – I & II

Introduction to Computers and ANSI C Programming(P)

21.1 Course Overview

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)

21.2 Evaluation Methods

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 understand the fundamentals of c programming
CO-2	Develop conditional and iterative statements to write C programs
CO-3	Develop conditional and iterative statements to write C programs
CO-4	Understand functions.

21.4 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	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

21.5 CO – PSO Mapping

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
CO-3	0	0	0	0	3
CO-4	0	0	0	0	3

Course – II Semester – III & IV

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

22.1 Course Overview

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)

22.2 Evaluation Methods

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 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.

22.4 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	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

22.5 CO – PSO Mapping

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
CO-3	0	0	0	0	3
CO-4	0	0	0	0	3

Course – III Semester – III & IV

C++ Programming and Web Development(P)

23.1 Course Overview

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
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)

23.2 Evaluation Methods

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 intrinsic controls in Visual Basic programming
CO-2	Use a modern IDE to visually and programmatically create programs with GUIâĂŹs
CO-3	Understand additional Visual Basic controls

23.4 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	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

23.5 CO – PSO Mapping

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
CO-3	0	0	0	0	3

Course – I Semester – I & II

Software Lab I (P)

24.1 Course Overview

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 Internal Marks		
12	Attendance	2
13	Record	4
14	Assessment Test	4 (1 × 4 = 1)

24.2 Evaluation Methods

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-2	Create word document and excel sheets with a commanding knowledge.

24.4 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	3	0	2	0	0	1	0	0	2
CO-2	3	2	0	1	0	0	1	0	0	3

24.5 CO – PSO Mapping

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)

25.1 Course Overview

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
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 × 4 = 1)

25.2 Evaluation Methods

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

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

25.5 CO – PSO Mapping

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

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