

## **DEPARTMENT OF COMPUTER SCIENCE**

### **EVENING COURSES (2021 - 2024)**

We are in the Modern era. Technology affects us in Waves. So we have to update our Knowledge every now and then. We are in need of witnessing a remarkable growth and development of Computer technology and applications in every field. The Department of computer science provides the following courses, which will enable the students with job opportunities.

#### **a) POST GRADUATE DIPLOMA IN COMPUTER APPLICATION (PGDCA)**

This course provides an overall knowledge in Computer Applications to beginners in IT World. A student can take this course in addition to her P.G. degree.

**Eligibility:** A Candidate should possess a Bachelor's Degree of any university to get admission to do this course (**part - time**).

**Duration:** It is divided into two Semesters of One Year duration.

#### **b) DIPLOMA IN COMPUTER APPLICATION (DCA)**

This Course helps a student to gain more knowledge in the World of Computers by providing the necessary skills to operate and maintain a Personal Computer and knowledge on Office Automation and Web Designing. A student can take this course in addition to her degree course. Students can earn 3 credits by doing this course.

**Eligibility:** A candidate should have passed her Higher Secondary or Equivalent.

**Duration:** Students shall undergo this course of study for a period of one year.

#### **c) DIPLOMA IN DESK TOP PUBLISHING (DTP)**

The Certificate course in Desk Top publishing helps a student, to obtain necessary skills to operate and maintain a personal computer and provides knowledge on office automation with Adobe Page Maker and InDesign. Also Photoshop and CorelDraw aims to enable the student to produce a broad range of documents including newsletters, product leaflets, adverts, posters and sales material for either internal use or for commercial printing. With the help of this course, students can be web developer who can create web pages, publishers who will create brilliant vector graphics and full potential graphic designer. They will examine how to create, modify, print, and save illustrations containing graphics and text. It will be very useful to get a job in companies and Offsets. Students can earn 2 credits by doing this course.

**Eligibility:** A candidate should have passed her Higher Secondary or Equivalent.

**Duration:** Students shall undergo this course of study for a period of one year.

#### **d) SKILL DEVELOPMENT PROGRAMS**

**Eligibility:** A candidate should have passed her Higher Secondary or equivalent. A candidate enrolled in any degree in the college can also earn more credits by doing this course along with her regular degree.

##### **i. Computer Maintenance Hardware and Networking**

Computer hardware is an intriguing field of computer science and candidates who seek application careers in this field will have to pursue hardware and networking courses. This Skill Development Program in Computer Maintenance Hardware and Networking comprises of various courses related to computer organization, electrical and electronics circuits. Candidates pursuing this Skill Development Program also learn about the different parts of computers and how they function. The course enables them to figure out and fix hardware and network issues related to computers and other such devices. JAC Computer Science department offers a Skill Development Program in Computer Maintenance Hardware and Networking. Students can earn 2 credits by doing this course.

##### **ii. Open Source Web Development With LAMP**

The most important thing about LAMP is that it is entirely open-source. Its components are freely available to anyone who might wish to use them - allowing webmasters to easily avoid vendor lock-in and develop for the web without having to put a large portion of their budget towards said development. It enables the students to take up a suitable career in the Computer Industry and related areas of computer applications or pursue higher education. Students can earn 2 credits by doing this course.

#### **PATTERN OF EVALUATION FOR PGDCA**

For each paper, there will be continuous internal assessment (CIA) and Semester Examination (External). The Weightage ratio is

<b>Paper</b>	<b>Internal</b>	<b>External</b>	<b>Total</b>
Theory	25	75	100
Practical	40	60	100

**Components for the Continuous Internal Assessment (CIA) Theory:**

Component	Marks	Marks
Internal test I	40	Converted to 25
Internal test II	40	
Seminar	10	
E-Material Preparation (PPT)	5	
Attendance	5	
<b>Total</b>	<b>100</b>	<b>25</b>

**The Internal Components are:**

Practical	
Internal Test(2)	15
Lab Work	10
Record	10
Attendance	05
<b>Total</b>	<b>40</b>

**Passing Minimum**

Semester Examination	
Theory	50% out of 75 Marks (i.e. 37.5 Marks)
Practical	50% out of 60 Marks (i.e. 30 Marks)

**PATTERN OF EVALUATION FOR UG DIPLOMA AND SKILL DEVELOPMENT PROGRAM**

For each paper there will be continuous internal assessment (CIA) and Semester Examination (External). The Weightage ratio is

Paper	Internal	External	Total
Theory	25	75	<b>100</b>
Practical	40	60	<b>100</b>

### Components for Continuous Internal Assessment (CIA) - Theory

Component	Marks	Marks
Internal test I	40	Converted to 25
Internal test II	40	
Online Quiz	10	
Assignment	5	
Attendance	5	
<b>Total</b>	<b>100</b>	<b>25</b>

### Components for Continuous Internal Assessment (CIA) - Practical

Component	Mark
Internal Test (2)	15
Lab Work	10
Record	10
Attendance	05
<b>Total</b>	<b>40</b>

#### Passing Minimum

Semester Examination	
Theory	40% out of 75 Marks (i.e. 30 Marks)
Practical	40% out of 60 Marks (i.e. 24 Marks)

### Question Patterns for PGDCA

#### Internal Question Pattern

**Time: 2 Hours**

**Maximum Mark: 40**

#### Part - A

10 Questions × 1Mark = 10 Marks

#### Part - B

2 Questions × 5 Marks = 10 Marks

(Internal Choice and One Question from Each Unit)

#### Part - C

2 Questions × 10 Marks = 20 Marks

(Open Choice, Two Questions out of Three)

### **External Question Pattern**

**Time: 3 Hours**

**Maximum Mark: 75**

#### **Part - A**

10 Questions × 1Mark = 10 Marks  
(Two Questions from each Unit)

#### **Part - B**

5 Questions × 5 Marks = 25 Marks  
(Internal Choice and one set of Question from each Unit)

#### **Part - C**

5 Questions × 8 Marks = 40 Marks  
(Open, Five Questions out of Seven - At least One Question from each Unit)

### **Question Patterns for UG Diploma and Skill Development Program**

#### **Internal Question Pattern**

**Time: 2 Hours**

**Maximum Mark: 40**

#### **Part - A**

10 Questions × 1Mark = 10 Marks

#### **Part - B**

2 Questions × 5 Marks = 10 Marks (Internal Choice)

#### **Part - C**

2 Questions × 10 Marks = 20 Marks (2 Questions out of 3)  
(Open Choice and at least one Question from allotted Units)

### **External Question Pattern**

**Time: 3 Hours**

**Maximum Mark: 75**

#### **Part - A**

10 Questions × 1Mark = 10 Marks  
(Two Questions from each Unit)

#### **Part - B**

5 Questions × 5 Marks = 25 Marks  
(Internal Choice and one set of Question from each Unit)

#### **Part - C**

4 Questions × 10 Marks = 40 Marks (4 Questions out of 6)  
(Open Choice and at least one Question from each Unit)

## PGDCA COURSE PATTERN

(Affiliated to Mother Teresa University, Kodaikanal)

Sem.	Code	Title of the Paper	Hours	Credits
I	20PGDCA01	Problem Solving in C	4	4
	20PGDCA02	Principles of IT	3	2
	20PGDCA03	Operating Systems	3	3
	20PGDCAP1	Programming in C - Lab	4	2
	20PGDCAP2	Office Automation - Lab	2	1
			<b>16</b>	<b>12</b>
II	20PGDCA04	Visual Programming	4	4
	20PGDCA05	Computer Organization	3	3
	20PGDCA06	Web Programming	3	2
	20PGDCAP3	Visual Programming - Lab	4	2
	20PGDCAP4	Web Development - Lab	2	1
			<b>16</b>	<b>12</b>
<b>TOTAL</b> 15 weeks x 2 x 16 = 480 hours			<b>32</b>	<b>24</b>

## PROBLEM SOLVING IN C

Semester: I

Hours: 4

Code : 20PGDCA01

Credits: 4

### COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Acquire the basic knowledge of C	PSO - 1	K
CO - 2	Discuss the control statements and function to develop simple programs	PSO - 2	AP
CO - 3	Design and develop programs using arrays and pointers	PSO - 4	AP
CO - 4	Analyze the usage of files in C for data manipulation	PSO - 4	AN
CO - 5	Discuss storage allocation and deep knowledge to develop C programs	PSO - 4	AP

### RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: I		PROBLEM SOLVING IN C										Hours: 4
Code : 20PGDCA01												Credits: 4
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	2	2	2	3	3	2	5	5	2	4	4	3.09
CO - 2	2	2	2	2	2	2	5	5	3	4	4	3
CO - 3	2	2	2	2	2	2	4	4	3	3	4	2.73
CO - 4	4	2	2	3	2	2	4	5	2	4	4	3.09
CO - 5	4	3	4	2	2	2	4	3	4	3	4	3.18
<b>Overall Mean Score</b>											<b>3.02</b>	

**Result:** The score for this course is **3.02** (High Relationship)

#### Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

#### Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
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## UNIT I

**Introduction to C** - Character set - Identifier & Keywords - data types - constants - variables-declarations - expressions - statements - Arithmetic Operators - Unary operators - Relational operators - Logical Operators - Assignment operators - Conditional operators - Library functions. **(12 Hours)**

## UNIT II

Data input / output functions - Simple C programs - Flow of control. **Control Structures** - Conditional control statements - Unconditional statements - comma operator. **Functions:** Defining a Function - Accessing Function - Function prototypes - Passing argument to a function - Recursion - Storage classes. **(12 Hours)**

## UNIT III

**Arrays** - Defining an array - processing an array - Passing Arrays to Functions- Multidimensional Arrays - Arrays and Strings - Structures - passing Structures to functions - Self Referential Structures - Union - **Pointers** - Pointer Declaration- Passing Pointer to function - Operation in Pointer-Pointers and Arrays - Arrays of Pointers - Structures and Pointers. **(12 Hours)**

## UNIT IV

**Files** - Bit wise Operators - The Preprocessor - command line arguments- Typedef - enumerated data types - Memory Allocation - Bit fields - Random Access Files - Function Types. **(12 Hours)**

## UNIT V

Size of Structures - Control Characters - declaration of Storage Classes - Type Conversion - Precedence and Associativity - More about functions - More about Pointers - Jumps in Loops - More about files **(12 Hours)**

## BOOK FOR STUDY:

- **“C Programming Made Easy”**, T. Prabu, Kanthimathi Publications, First Edition, 2009.

UNIT I : Chapter : 1

UNIT II: Chapters : 2, 3

UNIT III: Chapters : 4, 5

UNIT IV: Chapters : 5 (5.8 - 5.9), 6

UNIT V: Chapters : 7 (7.1 -7.9)



**BOOKS FOR REFERENCE:**

1. **“Programming in ANSI C”**, E. Balagurusamy, Tata McGraw Hill Private Limited, New Delhi, Sixth Edition, 2012.
2. **“Programming with C”** - Byron S. Gottfried, Second Edition, Schaum’s Outlines, Tata McGraw Hill Publishing Company Limited, 1998.

## PRINCIPLES OF IT

Semester: I

Hours: 3

Code : 20PGDCA02

Credits: 2

### COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Acquire the basic knowledge about computers	PSO - 1	K
CO - 2	Compare the types of memory and discuss input and output devices	PSO - 3	C
CO - 3	Explain the present scenario of IT and its impact in industry	PSO - 5	K
CO - 4	Identify the usages of Multimedia and relate it to internet applications	PSO - 1	E
CO - 5	Discuss the future trends in IT and the usage of Internet Tools	PSO - 5	E

### RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: I		PRINCIPLES OF IT										Hours: 3
Code : 20PGDCA02												Credits: 2
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	2	2	4	3	3	2	5	5	2	4	4	3.27
CO - 2	2	2	2	2	2	2	5	5	3	5	4	3.09
CO - 3	2	3	2	2	2	2	4	4	3	3	5	2.91
CO - 4	4	2	2	3	2	2	4	5	2	4	4	3.09
CO - 5	4	3	4	2	2	2	4	3	4	3	5	3.27
<b>Overall Mean Score</b>												<b>3.13</b>

**Result:** The score for this course is **3.13** (High Relationship)

**Note:**

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

**Values Scaling:**

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
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## UNIT I

**COMPUTER BASICS:** Introduction - Evolution of Computers - Generations of Computers - Classification of Computers - The Computer System. **Computer Organization and Architecture:** Introduction -Central Processing Unit. **(9 Hours)**

## UNIT II

**Computer Memory and Storage:** Introduction-Memory Hierarchy - Random Access Memory - Read Only Memory - RAM, ROM and CPU Interaction -Types of Secondary Storage Devices. **Input Output Media:** Introduction-Types of Input Devices - Types of Output Devices . **(9 Hours)**

## UNIT III

**Information Technology Basics:** Introduction - Information - Technology - Information Technology - Present Scenario - Role of Information Technology - Information Technology and the Internet - Careers in the IT Industry. **(9 Hours)**

## UNIT IV

**Multimedia Essentials:** Introduction - Multimedia: Definition - Building Blocks of Multimedia - Multimedia System - Multimedia Applications - Virtual Reality. **The Internet:** Introduction - Evaluation of Internet - Basic Internet Terms - Getting Connected to the Internet -Internet Applications. **(9 Hours)**

## UNIT V

**Internet Tools:** Introduction - Web Browser - Browsing Internet Using Internet Explorer - Electronic Mail - Search Engines. **Current and Future Trends In IT:** Introduction - Electronic Commerce (E-Commerce). **(9 Hours)**

## BOOK FOR STUDY:

“**Introduction to Information Technology**”, edited by Jennifer Sargunar, Dorling Kindersley (India) Pvt. Ltd, 2011

<b>UNIT I</b>	: Chapters	:	1.1-1.5, 2.1, 2.2
<b>UNIT II</b>	: Chapters	:	3.1-3.6, 4.1-4.3
<b>UNIT III</b>	: Chapter	:	8.1-8.8
<b>UNIT IV</b>	: Chapters	:	9.1-9.6, 17.1-17.5
<b>UNIT V</b>	: Chapters	:	18.1-18.4,18.6, 23.1, 23.2

**BOOKS FOR REFERENCE:**

1. **“Fundamentals of Information Technology”**, A. Ravichandran, Khanna Book Publishing Co. Pvt. Ltd., 2010, First Edition.
2. **“Information Technology - The Breaking Wave”**, Dennis P.Curtin, Kim Foley, Kunal Sen, Cathleen Morin, Tata McGraw -Hill Publishing Company Limited, New Delhi, 1998.

## OPERATING SYSTEMS

Semester: I

Hours: 3

Code : 20PGDCA03

Credits: 3

### COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Acquire the basics of Operating System and classify it.	PSO - 1	K
CO - 2	Discuss DOS commands and its usages	PSO - 1	C
CO - 3	Compare UNIX and LINUX operating systems and its commands	PSO - 3	AN
CO - 4	Acquire the knowledge of running programs in window environment	PSO - 2	AP
CO - 5	Handle documents with various file operations	PSO - 5	E

### RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: I		OPERATING SYSTEMS										Hours: 3
Code : 20PGDCA03												Credits: 3
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	2	2	4	3	3	2	5	5	2	5	4	3.36
CO - 2	2	2	2	2	2	2	4	5	3	4	4	2.91
CO - 3	2	3	2	2	2	2	5	4	3	3	5	3
CO - 4	4	2	2	3	2	2	4	5	4	4	4	3.27
CO - 5	4	3	4	2	2	2	5	3	4	3	5	3.36
<b>Overall Mean Score</b>											<b>3.18</b>	

**Result:** The score for this course is **3.18** (High Relationship)

#### Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

#### Values Scaling:

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
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## UNIT I

**Operating System:** simple batch systems - Multi-programmed Batched system time sharing systems - Personal-Computer systems - Parallel systems - distributed systems - Real-time systems. **(9 Hours)**

## UNIT II

**Disk Operating System(DOS)** - Additional Dos Commands. **(9 Hours)**

## UNIT III

**The Computing Environment:** History of Linux and Unix -**Unix and Linux Design Organization:** The Kernal and shell - Files - Technical Basics How to get Linux. Getting started: Using UNIX -logging Out - Commands - communication with other users - files - input and Output. **(9 Hours)**

## UNIT IV

**Windows:** Basic components of windows - starting windows - moving a window - Resize a window - shutdown windows - Restarting windows - Help and support in windows - change the screen saver - Change the screen Appearance - Change date and time. **(9 Hours)**

## UNIT V

**Working with Windows: File and Folder :**my documents - my computer - change view of files & folders - sorting files and folders - grouping files and folders - windows explorer - opening a file - Renaming a file - deleting a file - Restoring a deleted file - Moving a file - copying a file - Creating a file - Creating a folder - searching for files and folders-printing a file. **(9 Hours)**

## BOOKS FOR STUDY:

1. **“Operating System Concepts”**- Abraham Silberschatz & Peter Baer Calvin, Fifth Edition, 1998.  
**UNIT I** : Chapter : 1
2. **“PC Software for Windows 98 Made Simple”**-R.K.Taxali,Tata McGraw Hill, 2001  
**UNIT II** : Chapters : 2, 3
3. **“Introducing UNIX and LINUX”**, Mike Joy, Stephen Jarvis, & Michael Luck, Printed and bound in Brijbasi Art Press Ltd., India, 2009.  
**UNIT III** : Chapters : 1, 2
4. **“Dynamic Memory Computer Course”** - Memory Guru Biswaroop Roy Chowdhury, Fusion Books Publication, Edition-2007.  
**UNIT IV &V** : Chapter : 6

## **BOOKS FOR REFERENCE:**

1. **“Operating Systems Concepts and Design”** - Milan Milankovic, Tata McGraw Hill, Second Edition, 1997.
2. **“The Complete Reference Linux”** Richard Petersen, Tata McGraw-Hill Publishers, Sixth Edition-2008.

**PROGRAMMING IN C - LAB**

Semester: I

Hours: 4

Code : 20PGDCAP1

Credits: 2

**COURSE OUTCOMES:**

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Implement the basic C comments in windows environment	PSO - 1	K
CO - 2	Create programs using array and string concepts of C	PSO - 2	AP
CO - 3	Acquire sufficient skill through writing programs using functions	PSO - 2	AP
CO - 4	Employ various techniques for sorting numbers and names	PSO - 2	AP
CO - 5	Enhance the analytical skills by developing programs using files	PSO - 4	E

**RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES**

Semester: I		PROGRAMMING IN C - LAB										Hours: 4
Code : 20PGDCAP1												Credits: 2
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	2	2	5	3	3	2	5	5	4	4	5	3.64
CO - 2	4	2	2	2	2	2	4	5	3	4	4	3.09
CO - 3	2	3	2	2	2	2	5	4	3	3	5	3
CO - 4	4	2	2	3	2	2	4	5	4	4	4	3.27
CO - 5	4	3	4	2	2	2	5	3	4	3	5	3.36
<b>Overall Mean Score</b>											<b>3.27</b>	

**Result:** The score for this course is **3.27** (High Relationship)

**Note:**

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

**Values Scaling:**

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
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1. Sum Average, Product among three given numbers
2. Largest and Smallest among given numbers(Using conditional operators)
3. Sum of the digits and Reverse of the given number.
4. Number checking(Odd or Even, Prime or not, Perfect or not, Palindrome or not)
5. Fibonacci Series
6. List the Armstrong Numbers
7. Factorial of the given integer using recursion
8. Number Sorting (Ascending Order, Descending Order)
9. String Manipulation
10. Matrix Operations
11. Inventory using files

**OFFICE AUTOMATION - LAB**

Semester: I

Hours: 2

Code : 20PGDCAP2

Credit: 1

**COURSE OUTCOMES:**

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Working with files and folders in window environment	PSO - 1	K
CO - 2	Design document using formatting tools in MS Word	PSO - 2	AP
CO - 3	Analyze the basic mathematical and statistical functions in Excel	PSO - 2	AP
CO - 4	Enhance the student's skill through effective PowerPoint presentation	PSO - 2	AP
CO - 5	Design the Advertisement and cards using drawing tools.	PSO - 2	AP

**RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES**

Semester: I		OFFICE AUTOMATION - LAB										Hours: 2
Code : 20PGDCAP2												Credit: 1
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	2	2	5	3	3	2	5	5	4	4	5	3.64
CO - 2	4	2	2	2	2	2	4	5	3	4	4	3.09
CO - 3	2	3	2	2	2	2	5	4	3	3	5	3
CO - 4	4	2	2	3	2	2	4	5	4	4	4	3.27
CO - 5	4	3	4	2	2	2	5	3	4	3	5	3.36
<b>Overall Mean Score</b>											<b>3.27</b>	

**Result:** The score for this course is **3.27** (High Relationship)

**Note:**

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

**Values Scaling:**

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
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## **WINDOWS**

1. Working with Folders (Creating, Deleting, Renaming)
2. Reading and Writing from the removable disk
3. Exploring the content of Windows, Copying and Moving files from Folders

## **MS WORD**

1. Resume Preparation with Text Formatting
2. Table Creation and Manipulation.
3. Mail Merge.
4. Preparation of Advertisement using drawing tools.

## **MS EXCEL**

5. Excel Functions ( Statistical, Math & Trigonometry, Date and Time Functions)
6. Data filtering and Sorting
7. Mark Sheet , Pay-bill Preparations
8. Data Analysis using Chart

## **MS POWERPOINT**

9. Theme-based presentation with Animation Effects

## VISUAL PROGRAMMING

Semester: II

Hours: 4

Code : 20PGDCA04

Credits: 4

### COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Comprehend the basic concepts of .NET features	PSO - 1	C
CO - 2	Summarize the various controls and control statements in .NET framework	PSO - 2	C
CO - 3	Compare types of methods and arrays	PSO - 3	C
CO - 4	Explore different controls in VB .NET	PSO - 2	AP
CO - 5	Design and analyze the real time problems using data management	PSO - 5	AP

### RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: II												Hours: 4
Code : 20PGDCA04												Credits: 4
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	2	2	2	3	3	2	5	5	2	4	4	3.09
CO - 2	2	2	2	2	2	2	5	5	3	4	4	3
CO - 3	2	2	2	2	2	2	4	4	3	3	4	2.73
CO - 4	4	2	2	3	2	2	4	5	2	4	4	3.09
CO - 5	4	3	4	2	2	2	4	3	4	3	4	3.18
<b>Overall Mean Score</b>											<b>3.02</b>	

**Result:** The score for this course is **3.02** (High Relationship)

**Note:**

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

**Values Scaling:**

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
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## UNIT I

**.Net Framework and Vb.Net:** Introduction - Evolution of the .NET Framework - Overview of the .Net Framework - VB.NET - Development of a Simple VB .Net Program. **Features in VB.NET, Variables, Constants and Expressions:** Introduction - Value Types and Reference Types - Variable Declarations and Initializations - Value Data Types - Reference Data Types - Boxing and Unboxing - Arithmetic Operators - Textbox Control - Label Control - Button Control.

(12 Hours)

## UNIT II

**Control Statements:** Introduction - If Statements - Radio Button Control - Check Box Control - Group Box Control - Listbox Control - Checked List Box Control - Combo box Control - Select Case Statement - While Statement - Do Statement - For Statement.

(12 Hours)

## UNIT III

**Methods and Arrays:** Introduction - **Types** of Methods - Arrays - One Dimensional Array - Multi Dimensional Arrays.

(12 Hours)

## UNIT IV

**Additional Windows Controls:** Introduction - Docking Control - Timer Control - Progress Bar Control - Link Label Control - Track Bar Control - Panel Control - TreeView Control - Menu Control - SDI and MDI - Dialog Boxes - ToolBar Control - StatusBar Control.

(12 Hours)

## UNIT V

**Database Connectivity:** Introduction - Advantages Of ADO.NET - Managed Data Providers - Developing a Simple ADO.NET Based Application - Creation of Data Table - Retrieving Data From Tables - Table Updating.

(12 Hours)

## BOOK FOR STUDY:

”**Visual Basic.NET**”- C. Muthu, Vijay Nicole Imprints Pvt. Ltd., 2nd Reprint, 2008.

<b>UNIT I</b>	: Chapters	: 1.1 - 1.6, 2, 3.1 - 3.10
<b>UNIT II</b>	: Chapter	: 4.1 - 4.12
<b>UNIT III</b>	: Chapter	: 5.1, 5.5
<b>UNIT IV</b>	: Chapter	: 14.1, 14.14
<b>UNIT V</b>	: Chapter	: 15.1, 15.7

## BOOKS FOR REFERENCE:

1. “**Visual Basic .NET Programming**”, New Black Book, Steven Holzner, Paraglyph Press Inc., 2013.
2. “**Mastering Microsoft Visual Basic 2008**”, Evangelos Petroustos, Mark Ridgeway, Willey India Pvt. Ltd., 2010.

## COMPUTER ORGANIZATION

Semester: II

Hours: 3

Code : 20PGDCA05

Credits: 3

### COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Evaluate fundamental knowledge on computers and its components	PSO - 1	K
CO - 2	Acquire the basic concepts of addressing modes, input-output operations, Stack and Queue techniques	PSO - 1	K
CO - 3	Analyze the processing unit of a computer and understand the functions and components of it.	PSO - 3	AN
CO - 4	Explain Devices, Buses and interfaces of a computer	PSO - 3	U
CO - 5	Compare different types of memory	PSO - 1	AN

### RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: II		COMPUTER ORGANIZATION										Hours: 3
Code : 20PGDCA05												Credits: 3
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	2	2	4	3	3	2	5	5	2	5	4	3.36
CO - 2	2	2	2	2	2	2	4	5	3	4	4	2.91
CO - 3	2	3	2	2	2	2	5	4	3	3	5	3
CO - 4	4	2	2	3	2	2	4	5	4	4	4	3.27
CO - 5	4	3	4	2	2	2	5	3	4	3	5	3.36
<b>Overall Mean Score</b>											<b>3.18</b>	

**Result:** The score for this course is **3.18** (High Relationship)

**Note:**

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

**Values Scaling:**

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
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## UNIT I

**Basic Structure of Computers:** Computer Types - Functional Units - Basic Operational Concepts - Bus Structures. **Machine Instructions And Programs:** Numbers, Arithmetic Operations and Characters - Number Representation - Addition of Positive numbers - Addition and Subtraction of Signed Numbers.

(9 Hours)

## UNIT II

**Basic Concepts:** Addressing Modes - Assembly Language - Basic Input/ Output Operations - Stacks and Queues - Subroutines.

(9 Hours)

## UNIT III

**Basic Processing Unit:** Some fundamental concepts - Hardwired Control - Micro programmed Control.

(9 Hours)

## UNIT IV

**Input-Output Organization:** Accessing I/O Devices - Direct Memory Access - Buses - Standard I/O Interfaces.

(9 Hours)

## UNIT V

**The Memory System:** Some Basic Concepts - Read Only Memories - Cache Memories - Virtual Memories - Memory Management Requirements.

(9 Hours)

## BOOK FOR STUDY

**“Computer Organization”** - Carl Hamacher, Zvonko Vranestic, Safwat Zaky, Fifth Edition, McGraw-Hill International Edition, 2002.

**UNIT I** : Chapters : 1.1 - 1.4, 2.1.1 - 2.1.3

**UNIT II** : Chapter : 2.5 - 2.9

**UNIT III** : Chapter : 7.1, 7.4, 7.5

**UNIT IV** : Chapter : 4.1, 4.4, 4.5, 4.7

**UNIT V** : Chapter : 5.1, 5.3, 5.5, 5.7, 5.8

## BOOKS FOR REFERENCE:

1. **“COMPUTER SYSTEM ARCHITECTURE”**, M. Morris Mano, Prentice Hall of India Pvt. Ltd., New Delhi, Third Edition, 2015.
2. **“Computer Architecture and Organization”**, John P. Hayes, McGraw Hill International Edition, Third Edition, 2012.

## WEB PROGRAMMING

Semester: II

Hours: 3

Code : 20PGDCA06

Credits: 2

### COURSE OUTCOMES:

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Understand the basic concepts in HTML	PSO - 1	U
CO - 2	Use various Tools like Tables and Frames for designing web pages	PSO - 2	AP
CO - 3	Explain JavaScript features for designing web pages	PSO - 3	U
CO - 4	Develop the programming skill by creating interactive website using JavaScript	PSO - 5	AP
CO - 5	Create applications using style sheets	PSO - 4	AP

### RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES

Semester: II		WEB PROGRAMMING										Hours: 3
Code : 20PGDCA06												Credits: 2
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	2	2	4	3	3	2	5	3	3	5	4	3.27
CO - 2	2	4	2	2	2	2	4	5	3	4	4	3.09
CO - 3	2	3	2	2	2	2	5	4	4	5	5	3.27
CO - 4	4	2	2	3	2	2	4	5	4	4	4	3.27
CO - 5	4	3	4	2	2	2	5	3	4	3	5	3.36
<b>Overall Mean Score</b>											<b>3.25</b>	

**Result:** The score for this course is **3.25** (High Relationship)

#### Note:

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

#### Values Scaling:

$\text{Mean Score of Cos} = \frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	$\text{Mean Overall Score for Cos} = \frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
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## UNIT I

**INTRODUCTION TO HTML:** Hyper Text Markup Language (HTML) - Commonly Used HTML Commands - Titles and Footers - Other Text Effects - Text Formatting - Emphasizing Material in a Web Page - Text Styles. **LISTS:** Types of Lists.

(9 Hours)

## UNIT II

**TABLES:** Introduction - Using the Width and Border Attribute - Using the Cellpadding Attribute - Using the Cell spacing Attribute - Using the Bgcolor Attribute - Using the Colspan and Rowspan Attributes. **LINKING DOCUMENTS:** Links - Images as Hyper links. **FRAMES:** Introduction to Frames.

(9 Hours)

## UNIT III

**Introduction to Java Script:** Java Script in Web Pages - Java Script - Writing Java script into HTML - Basic Programming Techniques - Type Casting - Creating Variables. Operators and Expressions in Java Script - Java Script Programming Constructs Conditional Checking - Super Controlled Endless Loops - Functions in Java Script - User Defined Functions - Placing Text in a Browser Dialog Boxes.

(9 Hours)

## UNIT IV

**Forms Used by a Web Site:** The Form Object - Other Built-in Objects in Java Script - User Defined Objects - Cookies.

(9 Hours)

## UNIT V

**Dynamic HTML:** Cascading Style Sheets - CLASS - Using the <SPAN> ... </SPAN> Tag - External Style Sheets - Working with Java Script Style Sheets using the <DIV> ...</DIV> Tag - Layers - To move Forward.

(9 Hours)

## BOOK FOR STUDY:

- **“Web Enabled Commercial Application Development Using HTML, DHTML, JavaScript, Perl CGI”** - Ivan Bayross, 3<sup>rd</sup> Revised Edition, BPB Publications, New Delhi, 2009.

<b>UNIT I</b>	:	Chapters	:	2, 3
<b>UNIT II</b>	:	Chapters	:	5, 6, 7
<b>UNIT III</b>	:	Chapter	:	8
<b>UNIT IV</b>	:	Chapter	:	10
<b>UNIT V</b>	:	Chapter	:	12

**BOOKS FOR REFERENCE:**

1. **“HTML - The complete Reference”**, Thomas A. Powell, Tata McGraw- Hill Publishing Limited, New Delhi, Third Edition, 2002.
2. **“The Complete Reference HTML & XHTML”**, Thomas A. Powell, Tata McGraw-Hill Publishing Company Limited, New Delhi, Edition, 4<sup>th</sup> Edition, 2004.

**VISUAL PROGRAMMING - LAB**

Semester: II

Hours: 4

Code : 20PGDCAP3

Credits: 2

**COURSE OUTCOMES:**

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Design programs using basic controls in VB.NET	PSO - 1	K
CO - 2	Utilize functions and Arrays to develop effective applications	PSO - 2	AP
CO - 3	Employ various techniques for arranging values and characters	PSO - 2	AP
CO - 4	Create Applications using MDI	PSO - 4	AP
CO - 5	Enhance programming skill using Database Control in .NET	PSO - 5	E

**RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES**

Semester: II		VISUAL PROGRAMMING - LAB										Hours: 4
Code : 20PGDCAP3												Credits: 2
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	2	3	5	3	3	2	5	5	4	5	5	3.82
CO - 2	4	2	2	2	2	2	4	5	3	4	4	3.09
CO - 3	2	3	2	2	3	2	5	4	3	3	5	3.09
CO - 4	4	4	2	3	2	2	4	5	4	4	4	3.45
CO - 5	4	3	4	2	2	2	5	3	4	3	5	3.36
<b>Overall Mean Score</b>												<b>3.36</b>

**Result:** The score for this course is **3.36** (High Relationship)

**Note:**

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

**Values Scaling:**

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
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1. **NUMBER CHECKING**

- a. Prime Number
- b. Perfect Number

2. **NUMBER SERIES GENERATION**

- a. Sum of Series,
- b. Fibonacci Series

3. String Manipulation

4. Date and Time Function

5. Design a Scientific Calculator program using Control Array.

6. **SORTING PROGRAMS**

- a. Number Sorting
- b. String Sorting

7. Simple program using Mouse Control

8. Traffic control signal using Timer Control

9. Design a Text Editor Program.

10. Application using Menu Editor and MDI.

11. Design a Program for Electricity Bill Preparation.

12. Design a program for CIA Record Preparation.

13. Payroll processing using DAO Control.

14. Microsoft Report Creation.

**WEB DEVELOPMENT - LAB**

Semester: II

Hours: 2

Code : 20PGDCAP4

Credit: 1

**COURSE OUTCOMES:**

CO. NO.	UPON COMPLETION OF THIS COURSE THE STUDENTS WILL BE ABLE TO	PSO ADDRESSED	COGNITIVE LEVEL
CO - 1	Develop web programs using conditional and looping statements.	PSO - 2	K
CO - 2	Demonstrate text formatting for web designing.	PSO - 1	AP
CO - 3	Enhance skill to create website using scripting Language	PSO - 2	AP
CO - 4	Create web pages to implement the tables and frames.	PSO - 4	AP
CO - 5	Create web pages to implement the validation techniques.	PSO - 4	E

**RELATIONSHIP MATRIX FOR COURSE OUTCOMES, PROGRAMME OUTCOMES AND PROGRAMME SPECIFIC OUTCOMES**

Semester: II		WEB DEVELOPMENT - LAB										Hours: 2
Code : 20PGDCAP4												Credit: 1
Course Outcomes	Programme Outcomes (PO)						Programme Specific Outcomes (PSO)					Mean Score of CO's
	1	2	3	4	5	6	1	2	3	4	5	
CO - 1	2	3	5	3	3	2	3	5	4	4	4	3.45
CO - 2	2	2	2	2	2	2	4	5	3	4	4	2.91
CO - 3	2	3	2	2	3	2	4	4	3	3	5	3.00
CO - 4	4	4	2	3	2	2	4	4	4	4	4	3.36
CO - 5	4	3	4	2	2	2	5	3	4	3	4	3.27
<b>Overall Mean Score</b>											<b>3.2</b>	

**Result:** The score for this course is **3.2** (High Relationship)

**Note:**

Mapping	1-20%	21 - 40%	41 - 60%	61 - 80%	81 - 100%
Scale	1	2	3	4	5
Relation	0.0 - 1.0	1.1 - 2.0	2.1 - 3.0	3.1 - 4.0	4.1 - 5.0
Quality	Very Poor	Poor	Moderate	High	Very High

**Values Scaling:**

Mean Score of Cos = $\frac{\text{Total of Values}}{\text{Total No. of Pos \& PSOs}}$	Mean Overall Score for Cos = $\frac{\text{Total of Mean Scores}}{\text{Total No. of Cos}}$
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1. Working with Internet (Id Creation, Searching)
2. Simple Web Page for Text Formatting
3. Working with colors
4. Web Page with Hyper Links
5. Web Page with Image
6. Web Page with Lists
7. Web Page with Table
8. Web Page with Frames
9. Application Form - Resume Preparation using images
10. Website Creation with necessary validation using scripting language
11. Website for College and Department