

MANNAR THIRUMALAI NAICKER COLLEGE
PASUMALAI, MADURAI- 625 004

(An Autonomous Institution Affiliated to Madurai Kamaraj University)

(Re-accredited with 'A' Grade by NAAC)



B.Sc., Information Technology
SYLLABUS AND REGULATIONS

UNDER
CHOICE BASED CREDIT SYSTEM (CBCS)
(For those who joined during 2018-2019 and after)

Eligibility for Admission

Candidates should have passed the Higher Secondary Examination with 10+2 pattern conducted by the Board of Higher Secondary Education, Govt. of Tamil Nadu or any other examinations accepted by the Syndicate as equivalent there to and the candidate should have studied +2 level Mathematics in the 10+2 pattern.

Duration of the course

The duration of the course shall be three academic years comprising six semesters with two semesters in each academic year.

Subject of Study

Part I: Tamil

Part II: English

Part III:

1. Core Subjects
2. Allied Subjects
3. Electives

Part IV :

1. Non Major Electives
2. Skill Based Subjects
3. Environmental Studies
4. Value Education

Part V :

Extension activities

The scheme of Examination

The components for continuous internal assessment are:

Two tests and their average	--15 marks
Seminar /Group discussion	--5 marks
Assignment	--5 marks
Total	--25 marks

Pattern of the questions paper for the continuous Internal Assessment

(For Part I, Part II, Part III , NME & Skilled Paper in Part IV)

The components for continuous internal assessment are:

Part –A	
Six multiple choice questions (answer all)	6 x 01= 06 Marks
Part –B	
Two questions (‘either Or ‘type)	2 x 07=14 Marks
Part –C	
One question out of two	1 x 10 =10 Marks

Total	30 Marks

Pattern of the question paper for the Summative Examinations:

Note: Duration- 3 hours

Part –A	
Ten multiple choice questions	10 x 01 = 10 Marks
(No Unit shall be omitted; not more than two questions from each unit.)	
Part –B	
Five Paragraph questions (‘either Or ‘type)	5 x 07 = 35 Marks
(One question from each Unit)	
Part –C	
Three Essay questions out of five	3 x 10 =30 Marks
(One question from each Unit)	

Total	75 Marks

The Scheme of Examination (Environmental Studies and Value Education)

Two tests and their average	--15 marks
Project Report	--10 marks*
Total	<u>--25 marks</u>

** The students as Individual or Group must visit a local area to document environmental assets – river / forest / grassland / hill / mountain – visit a local polluted site – urban / rural / industrial / agricultural – study of common plants, insects, birds – study of simple ecosystem – pond, river, hill slopes, etc.

Question Paper Pattern

Pattern of the Question Paper for Environmental Studies & Value Education only) (Internal)

Part –A

(Answer is not less than 150 words)

Four questions (‘either Or ‘type) 4 x 05=20 Marks

Part –B

(Answer is not less than 400 words)

One question (‘either Or ‘type) 1 x 10=10 Marks

Total -----
30 Marks

Pattern of the Question Paper for Environmental Studies & Value Education only) (External)

Part –A

(Answer is not less than 150 words)

Five questions (either or type) 5 x 06 =30 Marks

(One question from each Unit)

Part –B

(Answer is not less than 400 words)

Three questions out of Five 3 x 15 = 45 Marks
each unit (One question from each Unit) -----

Total 75 Marks

Minimum Marks for a Pass

40% of the aggregate (Internal +Summative Examinations).

No separate pass minimum for the Internal Examinations.

27 marks out of 75 is the pass minimum for the Summative Examinations.

PROGRAMME SPECIFIC OUTCOMES

PSO1: To solve organization problems, individually and or in teams, using quantitative, Qualitative and technology enhance approaches.

PSO2: To illustrate the flowchart and design an algorithm for a given problem and to develop IC programs using operators

PSO3: To read, understand and trace the execution of programs written in C language. Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.

PSO4: To demonstrate knowledge of programming terminology and how applied using Visual Basic (e.g., variables, selection statements, repetition statements, etc.) . Develop a Graphical User Interface (GUI) based on problem description.

MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)
DEPARTMENT OF B.Sc (INFORMATION TECHNOLOGY)
(For those who joined in 2018-2019 and after)

COURSE PATTERN

STUDY COMPONENT	TITLE	Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI	Total Hours	Total Credits	No.of courses	Total Marks
Part - I	Tamil	6(3)	6(3)	6(3)	6(3)	-	-	24	12	4	400
Part - II	English	6(3)	6(3)	6(3)	6(3)	-	-	24	12	4	400
Part - III	Core Courses	4(4) 6(4)	4(4) 6(4)	5(5) 5(5)	5(4) 5(5)	6(4) 6(5) 6(5)	6(4) 6(5)	70	58	13	1300
	Core Project						6(5)	6	5	1	100
	Allied Courses	4(4)	4(4)	4(4)	4(4)	-	-	16	16	4	400
	Optional Courses Elective	-	-	-	-	5(4) 5(4)	5(4) 5(4)	20	16	4	400
Part - IV	Skill Based Subject	2(2)	2(2)	2(2)	2(2)	2(2)	2(2)	12	12	6	600
	NME	-	-	2(2)	2(2)	-	-	4	4	2	200
	VE/ EVS	2(2)	2(2)	-	-	-	-	4	4	2	200
Part - V	Extension Activities	-	-	-	0(1)	-	-	-	1	1	100
Total		30(22)	30(22)	30(24)	30(24)	30(24)	30(24)	180	140	41	4100

SEMESTER – III							
Subject Code	Subjects	No. of Courses	Hrs / Week	Credits	Maximum Marks		
					INT.	EXT.	TOT
18UTAG31	Part I :Tamil காப்பிய இலக்கியமும் நாடகமும்	1	6	3	25	75	100
18UENG31	Part II: English Exploring Language Through Literature-III	1	6	3	25	75	100
18UITC31	Part III: Core Subject Data Structures and C++ Programming	1	5	5	25	75	100
18UITCP3	Data Structures Using C++ - Lab	1	5	5	40	60	100
18UITA31	Part III: Allied Subject Operations Research	1	4	4	25	75	100
18UITSP3	Part IV :Skill Subject Web Technology - Lab	1	2	2	40	60	100
18UITN31	Part IV: Non Major Elective PC Software - Lab	1	2	2	40	60	100
	Total	7	30	24	220	480	700

SEMESTER – IV							
Subject Code	Title of the Paper	No. Of Courses	Hrs / Week	Credits	Maximum Marks		
					INT.	EXT.	TOT
18UTAG41	Part I : Tamil சங்க இலக்கியமும் உரைநடையும்	1	6	3	25	75	100
18UENG41	Part II : English Exploring Language Through Literature-IV	1	6	3	25	75	100
	Part III: Core Subject						
18UITC41	Java Programming	1	5	4	25	75	100
18UITCP4	Java Programming - Lab	1	5	5	40	60	100
	Part III: Allied Subject						
18UITA41	Digital Principles and Applications	1	4	4	25	75	100
	Part IV :Skill Subject						
18UITSP4	PHP with MYSQL - Lab	1	2	2	40	60	100
	Part IV: Non-Major Elective						
18UITN41	HTML Programming- Lab	1	2	2	40	60	100
18UEAG40- 18UEAG49	Part V : Extension Activities	1	0	1	-	100	100
	Total	8	30	24	220	580	800



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DEPARTMENT OF INFORMATION TECHNOLOGY
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Programme : UG	Part III	: Core
Semester : III	Hours per week	: 05
Sub. Code. : 18UITC31	Credit	: 05

DATA STRUCTURES AND C++ PROGRAMMING

Course Outcomes:

CO1: To know the concepts of object oriented programming.

CO2: To understand the abstract data types stack, queue, dequeue and list.

CO3: To be able to implement the ADTs stack, queue, and dequeue using C++.

CO4: To understand the performance of the implementations of basic linear data structures.

Unit-I Basic concepts of Object Oriented Programming

Object Oriented Programming - Benefits of OOP's - Application of OOP - Structure of C++ program - Control statements, inline function, function overloading - specifying a class - defining member function - nesting of member function-array of object - friend function-constructor-parameterized constructor-copy constructor-destructor.

Unit-II Operator overloading, Inheritance and Polymorphism

Defining operator overloading-overloading unary operator-overloading binary operator - rules for operator overloading - single inheritance-multilevel inheritance - multiple inheritance - hierarchical inheritance-hybrid inheritance - virtual base class- pointer - pointer to object - this pointer - polymorphism-virtual function - pure virtual function

Unit –III Arrays, Searching and Sorting

Arrays - Introduction – Linear Arrays – Representation of Linear arrays in memory – Traversing linear arrays – Inserting and Deleting – Linear Search – Binary Search – Multidimensional Array – Pointers – Records – Representation of records in memory - Matrices – Sparse Matrices– Insertion Sort – Selection Sort.

Unit-IV Linked list, Stacks and Queues

Linked List – Introduction – representation of linked list in memory – Traversing a linked list – searching a linked list – memory allocation – insertion and deletion in a linked list – Stacks – Array Representation of Stacks -Linked Representation of Stacks – Quicksort, an application of stack – Recursion – Queues – Linked representation of queues

Unit –V Trees

Introduction – Binary Trees – Representing Binary Trees in Memory – Traversing Binary Tree – Binary Search trees – Searching and Inserting in Binary Search trees.

Text Books:

1. Balagurusamy.E, **Object Oriented Programming with C++**, Tata McGraw Hill, Seventh Edition, 2018, New Delhi.
Unit I - Chapter 1 – Section : 1. 5, 1. 6, 1. 8
Chapter 2 – Section : 2. 6
Chapter 3 – Section : 3.25
Chapter 4 – Section : 4.6, 4.10
Chapter 5 – Section : 5.3,5.4, 5.7, 5. 13,5.15
Chapter 6 – Section : 6 2,6.3, 6.7,6.11
Unit II - Chapter 7 – Section : 7.2,7.3,7.4,7.8
Chapter 8 – Section : 8.3, 8.5 to 8.9
Chapter 9 – Section : 9.2 to 9.5, 9.7,9.8
2. Pai. G. A. V, Seymour Lipschutz, **Data Structures**, Tata McGraw Hill, 2nd Edition, 2006, New Delhi.
Unit III – Chapter 4 (Full), Chapter 9 – Section: 9.3,9.4
Unit IV – Chapter 5 – Section : 5. 1 to 5. 8
Chapter 6 – Section : 6. 2 to 6.4, 6. 6, 6.7, 6.10, 6.11
Unit V – Chapter 7 – Section : 7.1, 7. 2, 7.3, 7.4, 7.7, 7.8

Reference Books:

1. Chitra. A, Rajan.P.T, **Classical Data Structures**, Vijay Nicole Imprints, 1st Edition, 2006.
2. Samanta.D, **Classical Data Structures**, PHI Learning Private Limited, 2nd Edition, 2008, New Delhi.
3. Poornachandra Sarang, **Object-Oriented Programming With C++**, PHI Learning Private Limited, 2nd Edition, 2009, New Delhi.
4. Alok Kumar Jagadev, Amiya Kumar Rath and Satchidananda Dehuri, **Object-Oriented Programming Using C++**, Prentice-Hall of India Private Limited, 2007, New Delhi.

Reference Websites:

1. www.cplusplus.com/doc/tutorial/
2. www.tutorialspoint.com/cplusplus/
3. www.tutorialspoint.com/data_structures_algorithms/
4. www.studytonight.com/data-structures/



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Programme	: UG	Part III	: Core
Semester	: III	Hours per week	: 05
Sub. Code.	: 18UITCP3	Credit	: 05

DATA STRUCTURES USING C++ - LAB

Course Outcomes:

- CO1:** To develop knowledge of basic data structures for storage and retrieval of ordered or unordered data.
- CO2:** To develop knowledge of applications of data structures including the ability to implement algorithms for the creation, insertion, deletion, searching, and sorting of each data structure.
- CO3:** Demonstrate a familiarity with major algorithms and data structures.
- CO4:** Understand how to apply the major object-oriented concepts to implement object oriented programs in C++.

List of Programs:

1. To perform Area calculation using Function overloading (Min three functions).
2. To perform String manipulation (three different types) using function overloading.
3. To swap two values between two class objects using friend function.
4. To find minimum of two numbers between two class objects using friend function.
5. To overload unary minus operator which changes sign of given vector (3 elements)
6. To overload Binary + operator which adds two complex numbers.
7. To process students mark list using multiple inheritance
8. Process employee details using hierarchical inheritance
9. To process family details using hybrid inheritance
10. To process electricity billing using binary file.
11. To process mark listing using binary file.
12. To perform stack operations.
13. To perform queue operations.
14. To manipulate singly linked list
15. To perform tree traversal.
16. To perform Insertion Sort
17. To perform Selection Sort



MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)
DEPARTMENT OF MATHEMATICS WITH CA
(For those who joined in 2018-2019 and after)

Programme	: B.Sc(IT)	Part III	: Allied
Semester	: III	Hours per week	: 04
Sub. Code	: 18UITA31	Credit	: 04

OPERATIONS RESEARCH

Course Outcomes:

- CO1:** To develop skills in Mathematical formulation and Solving of LPP.
CO2: To solve specialized LPP like transportation and assignment problems.
CO3: To introduce about Network problems.
CO4: To develop skills in solving real life Network problems.

Unit-I:

Mathematical Formulation of a LPP: General form of a LPP – Summation notation – Matrix form – Canonical form – Standard form - Solution of LPP by Graphical Method.

Unit-II:

The Simplex Method – The Big M Method – Duality in LPP (Problems only).

Unit- III:

Transportation Problems: Mathematical Formulation of TP - Determining Initial Basic Feasible Solution (all methods) - Optimum solution of TP (MODI Method).

Unit -IV:

Assignment Problems: Mathematical formulation of Assignment Problems – Solution to Assignment Problems.

Unit -V:

Network Flow Problems – Minimal Spanning Tree Problem – Shortest Route Problems.

Text Books:

1. Dr. Arumugam. S, Thangapandi Isaac. A, **Topics in Operations Research – Linear Programming**, New Gamma Publishers Pvt. Ltd, March 2015, Palayamkottai, Tirunelveli.
2. KantiSwarup, P.K. Gupta, Man Mohan, **Operations Research**, 17th Edition, Sultan Chand and Sons, 2014, New Delhi.

Unit I :	Text Book 1: Chapter 3 - Sections: 3.2, 3.4.
Unit II :	Text Book 1: Chapter 3 – Sections: 3.5, 3.6, 3.9.
Unit III :	Text Book 1: Chapter 4 – Section: 4.1
Unit IV :	Text Book 1: Chapter 5 – Sections: 5.1,5.2
Unit V :	Text Book 2: Chapter 24 – Sections: 24.2, 24.3, 24.4.

Reference Books:

1. Rathindra P. Sen, **Operations Research Algorithms and Applications**, PHI, EEE, 2010, New Delhi.
2. PanneerSelvam.R, **Operations Research**, PHI, Second Edition, 2010, New Delhi.
3. Kalavathy. S, **Operations Research**, Vikas publishing house Pvt Ltd., 4th Edition, 2013, New Delhi.



MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)
DEPARTMENT OF INFORMATION TECHNOLOGY
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Programme	: UG	Part IV	: Skill
Semester	: III	Hours per week	: 02
Sub. Code.	: 18UITSP3	Credit	: 02

WEB TECHNOLOGY - LAB

Course Outcomes:

- CO1:** To demonstrate competency in the use of common HTML code.
- CO2:** To demonstrate proficiency in the use of a WYSIWYG design software.
- CO3:** To understand how CSS will affect web page creation.
- CO4:** To develop a dynamic webpage by the use of vbscript.

List of Programs:

1. Program to illustrate body and pre tags
2. Program to illustrate text Font tag
3. Program to illustrate comment,h1...h6, and div tag
4. Program to illustrate text formatting tags
5. Program to illustrate Order List tag
6. Program to illustrate Unorder List tag
7. Program to illustrate Nested and Definition tag
8. Program to illustrate Img tag
9. Program to illustrate Hyper Link tag (Anchor tag)
10. Program to illustrate Table tag
11. Program to illustrate Frame tag
12. Program to illustrate Form tag
13. Program to illustrate span tag
14. Program to illustrate CSS (cascading style sheet)
15. Program to illustrate Embedded Multimedia
16. Generate Date and Time using VbScript
17. Fibonacci Series Program using VbScript
18. Validation Program using VbScript
19. Program using Array Functions in VbScript
20. Program using String Functions in VbScript



MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)
DEPARTMENT OF INFORMATION TECHNOLOGY
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Programme	: UG	Part IV	: NME
Semester	: III	Hours	: 02
Sub.Code	: 18UITN31	Credit	: 02

PC SOFTWARE – LAB

Course Outcomes:

CO1: To create professional and academic documents.

CO2: To create personal, academic and business documents following current professional and/or industry standards.

CO3: To get knowledge about document maintenance and presentation which will be used in companies or offices.

CO4: To create presentations using custom animation and slide transition.

MICROSOFT WORD

1. Document using header, footer and border.
2. Insert Picture To Create Invitation
3. Mail Merge
4. Table Manipulation
5. Designing a College Application Form
6. Welcome Message Using Macros

MICROSOFT EXCEL

1. Student Mark Details With Chart
2. Electricity Bill Preparation
3. Company Budget Using MS Excel
4. Multiple Worksheet
5. Sorting and Subtotal

MICROSOFT POWERPOINT

1. Blank slide Preparation
2. Templates Presentation
3. Animation of Cars
4. Using Custom Animation and Slide Transition



MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)
DEPARTMENT OF INFORMATION TECHNOLOGY
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Programme	: UG	Part III	: Core
Semester	: IV	Hours per week	: 05
Sub. Code	: 18UITC41	Credit	: 04

JAVA PROGRAMMING

Course Outcomes:

CO1: To understand the concept of object oriented programming.

CO2: To understand the concept of multithreading, package and exception.

CO3: To acquire programming knowledge in Java

CO4: To read and make elementary modifications to Java programs that solve real-world problems.

UNIT I

Java Evolution: Java Features – Difference between Java and C - Difference between Java and C++ - Java and Internet –Hardware and Software Requirements – Java Support Systems – Java Environment.

Overview of Java Language: Simple Java Program – Java Program Structure – Java Tokens – Java Statements – Implementing a Java Program – Java Virtual Machine – Command Line Arguments – Constants, Variables – Giving Values to Variables – Scope of Variables – Symbolic Constants – Type Casting.

UNIT II

Decision Making and Branching: Decision Making with If Statement – Simple if Statement – If-Else Statement – Nesting of If-Else Statement – The Else If Ladder – Switch Statement-The Conditional Operator.

Looping Statement: The While Statement – The Do Statement – For Statement – Jumps in Loops.

Classes, Objects and Methods: Defining a Class – Fields Declaration – Methods Declaration – Creating Objects – Accessing Class Members – constructors- Methods Overloading – Static Members – Nesting of Methods – Inheritance – Overriding Methods.

UNIT III

Arrays, Strings and Vectors: One Dimensional Array – Creating an Array - Two Dimensional Arrays – Strings – Vectors – Wrapper Classes – Enumerated Types.

Interfaces: Defining Interfaces -Extending Interfaces- Implementing Interfaces – Accessing Interface Variables.

UNIT IV

Packages: Java API Packages - Using System Packages – Naming Conventions – Creating Packages – Accessing a Package – Using a Package – Adding a Class to a Package – Hiding Classes – Static Import.

Multithreaded Programming: Creating Threads – Extending The Thread Class – Stopping and Blocking a Thread – Life Cycle of a Thread – Using Thread Methods –Thread Exceptions – Thread Priority – Synchronization – Implement The Runnable Interface.

UNIT V

Managing Errors and Exception: Types of Errors – Exceptions – Syntax of Exception Handling Code – Multiple Catch Statements - Using Finally Statement – Throwing Our Own Exceptions – Using Exceptions for Debugging.

Applet Programming: How Applet Differ from Applications – Preparing to Write Applet – Building Applet Code – Applet Life Cycle – Creating an Executable Applet – Designing a Web Page – Applet Tag – Adding Applet to HTML – Running The Applet.

Servlets: The Life cycle of a Servlet – Using Tomcat for servlet development – A simple servlet.

Text Books:

1. Balagurusamy.E, **Programming with Java**, Tata McGraw Hill Private Limited, Fifth Edition, 2013, New Delhi.

UNITS CHAPTERS

Unit I: Chapters - 2 - Section 2.2 to 2.4,2.7 to 2.9
 Chapters - 3 - Section 3.2, 3.5 to 3.7, 3.9 to 3.11
 Chapters - 4- Section 4.2 , 4.3, 4.6 – 4.9

Unit II: Chapters - 6 - Section 6.2 - 6.8
 Chapters - 7 - Section 7.2 - 7.5

Unit III: Chapters - 8 - Section 8.2 -8.12
 Chapters - 9 - Section 9.2 - 9.8.
 Chapters - 10- Section 10.2 - 10.5

Unit IV: Chapters - 11 - Section 11.2 - 11.10
 Chapters - 12 - Section 12.2 – 12.10

Unit V: Chapters - 13 - Section 13.2 -13.7, 13.9
 Chapters - 14 - Section 14.2 to 14.10

2. Herbert Schildt, **Java 2: The Complete Reference**, Tata McGraw Hill Private Limited, Seventh Edition, 2009, New Delhi.

Unit V: Chapter 31 – Pages 907 to 911

Reference Books:

1.Radha Krishna.P, **Object Oriented Programming With Java**, University Press India Private Limited, 3rd Edition, 2008, Hyderabad.

2.Debasish Jana, **Java Object Oriented Programming Paradigm**, Prentice Hall of India Private Limited, 3rd Edition, 2008, New Delhi.

3. Radha Krishna. P, **Object Oriented programming through Java**, University Press, 2017

Reference Websites:

1. www.tutorialspoint.com/java
2. www.javatpoint.com/java-tutorial
3. www.w3schools.com/java



MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)
DEPARTMENT OF INFORMATION TECHNOLOGY
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Programme	: UG	Part III	: Core
Semester	: IV	Hours per week	: 05
Sub. Code	: 18UITCP4	Credit	: 05

JAVA PROGRAMMING - LAB

Course Outcomes:

- CO1:** To understand better the object-oriented approach in programming.
- CO2:** To be able to write computer programs to solve real world problems in Java
- CO3:** To learn and appreciate the importance and merits of proper comments in source code and API documentations
- CO4:** To write simple GUI interfaces for a computer program to interact with users, and to understand the event-based GUI handling principles.

List of Programs:

1. To find out the list odd and even numbers
2. To check for Vote programming
3. To find out the Week days
4. To check Print n values
5. To check Biggest among three numbers
6. To prepare the Student mark list
7. To check Factorial value
8. To check Armstrong number
9. To check Adam number
10. Generate the prime number
11. To check Palindrome
12. To find out Sum of array elements
13. To display the Minimum & maximum number.
14. To check Matrix multiplication
15. Student details using multilevel inheritance
16. Exception handling using throw
17. Key events
18. Displaying shapes using applet
19. Applet program using parameter tag
20. To count the number of characters ,words & lines in a file



MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)
DEPARTMENT OF ELECTRONICS AND COMMUNICATION
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Programme	: B.Sc.(IT)	Part III	: Allied
Semester	: IV	Hours per week	: 04
Subject Code	: 18UITA41	Credit	: 04

DIGITAL PRINCIPLES AND APPLICATIONS

Course Outcomes

CO1: To understand the concepts of binary, octal and hexadecimal conversions, digital logic gates and codes

CO2: To know about arithmetic, combinational logical circuits and data processing circuits

CO3: To get a strong idea in Flip-flops, counters and registers.

Unit-I

Number systems, Digital logic and Codes

Number systems:

Introduction – binary number system- binary to decimal conversion-decimal to binary conversion- octal numbers –Hexa decimal numbers.

Digital logic and Codes:

Basic Gates: NOT Gate-OR Gate- AND Gate-Universal Logic Gates: NOR and NAND Gate- Exclusive –OR Gate- ASCII code-Excess-3 code-Gray code.

Unit-II

Combinational Logic Circuits

Boolean Laws and Theorems-Sum of-Products Method-Truth table to Karnaugh Map-Pairs, Quads and octets – Karnaugh Map Simplification-Don't care Conditions- Product of Sum Method-Product of Sums Simplification.

Unit-III

Arithmetic Circuits and Data -Processing Circuits:

Arithmetic Circuits:

Binary Addition-Binary Subtraction-Unsigned Binary Numbers-Sign- magnitude Numbers-2's Complement representation-2's complement arithmetic-Arithmetic building blocks.

Data -Processing Circuits:

Multiplexer –Demultiplexer –1-of-16 decoder- BCD to decimal decoder- seven segment decoder-Encoder.

Unit-IV

Flip-flops:

Introduction- RS flip-flop Using NOR and NAND gates-Gated Flip- flops: Edge Triggered RS Flip-Flop –Edge Triggered D-Flip-flop –Edge Triggered JK flip flop- JK Master- Slave flip-flop.

Unit-V

Registers and Counters

Register:

Types of Registers- Serial In- Serial Out shift register – Serial In- Parallel Out shift register – Parallel In- Serial Out shift register – Parallel In- Parallel Out shift register.

Counters:

Ring counter-Asynchronous counter – Synchronous counter –UP/Down counter.

Text books:

1. Morris Mano. M, **Digital Logic and Computer Design**, Prentice Hall of India, 2002, New Delhi.
2. Salivahanan.S and Arivazhagan.S, **Digital Circuits and Design**, Vikas Publication House Private Ltd, Noida, 2nd edition,2009.

Reference Books:

1. Albert Paul Malvino and Donald P. Leach, **Digital principles and applications**, Tata McGraw Hill Publishing Company Ltd, 7th edition, 2005, New Delhi.
2. Stephen Brown Zvonko Vranesic, **Fundamentals of Digital Logic Design with VHDL**, special Indian Edition, TMH, 2006, New Delhi.
3. Saxena A.K. **Digital Electronics** CBS Publications, 2014.

Unit I: Chapter 5 Section: 5.1 to 5.8, Chapter 2 Section 2.1 to 2.2,

Chapter 4- Section 4.7

Unit II: Chapter 3 Section: 3.1 to 3.8

Unit III: Chapter 6 Section: 6.1 to 6.7, Chapter 4 Section: 4.1 to 4.6

Unit IV: Chapter 8 Section: 8.1 to 8.5, 8.8

Unit V: Chapter 9 Section: 9.1 to 9.5,

Chapter 8 Section: 8.1,8.2,8.7, Chapter 9 Section -9.4.1(Text Book no. 2)



MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)
DEPARTMENT OF INFORMATION TECHNOLOGY
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Programme	: UG	Part IV	: Skill
Semester	: IV	Hours per week	: 2
Sub. Code	: 18UITSP4	Credit	: 2

PHP WITH MYSQL –LAB

Course Outcomes:

CO1: To understand the basic program constructs such as if/else, switch, loops, arrays and functions and be able to use them in the PHP script.

CO2: To use built-in features of PHP such as data and string manipulation.

CO3: To test and debug PHP scripts while working with live data.

CO4: To Alter the content of a web page dynamically using the combination of data from the MySQL database and PHP methods such as the type of browser the user has, the date, and time.

List of Programs:

1. Program to display Text messages.
2. Program to print an array.
3. Program to print each element of an array using for each().
4. Program to sort elements in an array in ascending and descending order.
5. Program to find the sum of elements in an array.
6. Program to join the array elements into a string.
7. Program to merge two arrays into a new array.
8. Program to remove the duplicated values from an array.
9. Programs to create simple Login and Logout using sessions.
10. Program to connect to the server and selecting database.
11. Program to insert records to the table in Database.
12. Program to fetch records from the table in Database.
13. Program to Store an image in Database.
14. Program to Read image from Database.
15. Program to create a simple Registration form.



MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous)
DEPARTMENT OF INFORMATION TECHNOLOGY
(For those who joined in 2018-2019 and after)

Programme	: UG	Part IV	: NME
Semester	: IV	Hours per week	: 02
Sub. Code	: 18UITN41	Credit	: 02

HTML PROGRAMMING - LAB

Course Outcomes:

- CO1:** To demonstrate competency in the use of common HTML code.
- CO2:** To demonstrate proficiency in the use of a WYSIWYG design software.
- CO3:** To understand how CSS will affect web page creation.
- CO4:** To develop a webpage using tables and frames.

List of Programs:

1. Program to illustrate body and pre tags
2. Program to illustrate text Font tag
3. Program to illustrate comment, h1...h6, and div tag
4. Program to illustrate text formatting tags
5. Program to illustrate Ordered List tag
6. Program to illustrate Unordered List tag
7. Program to illustrate Nested and Definition tag
8. Program to illustrate Img tag
9. Program to illustrate Hyper Link tag (Anchor tag)
10. Program to illustrate Table tag
11. Program to illustrate Frame tag
12. Program to illustrate Form tag
13. Program to illustrate span tag
14. Program to create a web page using style sheet
15. Program to design a bio-data