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 x01= 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 x01 = 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	--25 marks

** 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 each unit (One question from each Unit) 3 x 15 = 45 Marks

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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 – I

Subject Code	Title of the Paper	No. Of Courses	Hrs / Week	Credits	Maximum Marks		
					INT.	EXT.	TOT
18UTAG11	பகுதி-Iதமிழ் தற்கால கவிதையும் உரைநடையும்	1	6	3	25	75	100
18UENG11	English-I: Exploring Language Through Literature-1	1	6	3	25	75	100
18UITC11	**Part III: Core Subject** Principles of Information Technology	1	4	4	25	75	100
18UITCP1	Office Automation – Lab	1	6	4	40	60	100
18UITA11	**Part III: AlliedSubject** Discrete Mathematics	1	4	4	25	75	100
18UITSP1	**Part IV : Skill Subject** Multimedia – Lab	1	2	2	40	60	100
18UEVG11	**Part IV : Mandatory** Environmental Studies	1	2	2	25	75	100
	Total	7	30	22	205	495	700

SEMESTER – II

Subject Code	Title of the Paper	No. Of Courses	Hrs / Week	Credits	Maximum Marks		
					INT.	EXT.	TOT
18UTAG21	பகுதி-I தமிழ் பக்தி இலக்கியமும் நாடகமும்	1	6	3	25	75	100
18UENG21	English-II: Exploring Language Through Literature-II	1	6	3	25	75	100
18UITC21	**Part III: Core Subject** Programming in C	1	4	4	25	75	100
18UITCP2	Programming in C –Lab	1	6	4	40	60	100
18UITA21	**Part III: AlliedSubject** Statistical and Numerical Methods	1	4	4	25	75	100
18UITSP2	**Part IV : Skill Subject** Visual Programming-Lab	1	2	2	40	60	100
18UVLG21	**Part IV : Mandatory** Value Education	1	2	2	25	75	100
	Total	**7**	**30**	**22**	**205**	**495**	**700**

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
18UITC41	**Part III: Core Subject** Java Programming	1	5	4	25	75	100
18UITCP4	Java Programming - Lab	1	5	5	40	60	100
18UITA41	**Part III: Allied Subject** Digital Principles and Applications	1	4	4	25	75	100
18UITSP4	**Part IV :Skill Subject** PHP with MYSQL - Lab	1	2	2	40	60	100
18UITN41	**Part IV: Non-Major Elective** 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**

SEMESTER – V

Subject Code	Title of the Paper	No. Of Courses	Hrs / Week	Credits	Maximum Marks		
					INT.	EXT.	TOT
18UITC51	**Part III: Core Subject** Relational Database Management System	1	6	4	25	75	100
18UITCP5	Relational Database Management System – Lab	1	6	5	40	60	100
18UITC52	Operating System	1	6	5	25	75	100
18UITE51 18UITE52 18UITE53	**Part III: Elective Subject** 1.Computer Networks 2.Biometrics 3. System Software	1	5	4	25	75	100
18UITE54 18UITE55 18UITE56	**Part III: Elective Subject** 1.Cryptography and Network Security 2.Software Engineering 3.Object Oriented Analysis and Design	1	5	4	25	75	100
18UITSP5	**Part IV: Skill Subject** Android Programming – Lab	1	2	2	40	60	100
	Total	**6**	**30**	**24**	**180**	**420**	**600**

SEMESTER – VI

Subject Code	Title of the Paper	No. Of Courses	Hrs / Week	Credits	Maximum Marks		
					INT.	EXT.	TOT
18UITC61	**Part III: Core Subject** .Net Programming	1	6	4	25	75	100
18UITCP7	.Net Programming Lab	1	6	5	40	60	100
18UITPR1	Project and Viva – voce	1	6	5	40	60	100
18UITE61 18UITE62 18UITE63	**Part III:** **Elective Subject** 1.E-Commerce 2.Mobile Computing 3.Artificial Intelligence	1	5	4	25	75	100
18UITE64 18UITE65 18UITE66	**Part III:** **Elective Subject** 1.Data Mining and Warehousing 2.Cloud Computing 3.Internet of Things	1	5	4	25	75	100
18UITS61	**Part IV :Skill Subject** Numerical Aptitude	1	2	2	25	75	100
	Total	6	30	24	180	420	600

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DEPARTMENT OF INFORMATION TECHNOLOGY
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Programme	**: B.Sc (IT)**	**Part III**	**: Core**
Semester	**: I**	**Hours**	**: 04**
Sub. Code	**: 18UITC11**	**Credits**	**: 04**

PRINCIPLES OF INFORMATION TECHNOLOGY

Course Outcomes:

CO1: Students can have the ability to use facts, concepts, principles and procedures in unfamiliar situations.

CO2: They can identify and recognize the relationships between the various components of Information Technology and their impact on society.

CO3: Students can recognize the limitations and assumptions of data gathered in an attempt to solve a problem.

CO4: Student understands the basic knowledge of the computer.

UNIT – I:

Introduction to Computer Systems: Introduction to Computers – Five Generations of Modern Computers – Classification of Digital Computer Systems– Anatomy of a Digital Computer-Central Processing Unit and Memory Units –Input Devices- Output Devices.

UNIT – II:

Computer Software & Software Development: Introduction to Computer Software – Introduction to Software Development –Programming Languages- Operating Systems.

UNIT – III:

Telecommunications: Introduction to Telecommunications – Computer Networks - Communications Systems- Distributed Data Processing. **Internet & Intranets:** Internet & World Wide Web – Overview of Electronic Mail- Introduction to Intranets – Introduction to E-Commerce and E-Business.

UNIT – IV:

Security: Introduction to Computer Security – Cryptography – Computer Viruses, Bombs and Worms. **Multimedia & Virtual Reality:** Introduction to Multimedia – Multimedia and Applications – Introduction to Virtual Reality.

UNIT – V:

Applications of Information Technology: Computers in Business and Industry –Computers at Home-Computers in Education in Training-Computers in Entertainment, Science, Medicine and Engineering- Mobile Computing and Business on the Internet.

TEXT BOOK:

1. Alexis Leon and Mathews Leon, Fundamentals of Information Technology, 2nd Edition, L and L Consultancy Services Pvt. Ltd., New Delhi, 1999.

UNIT – I:

Chapters:1 to 4, 7,9,10

UNIT – II:

Chapters: 11 to 14

UNIT – III:

Chapters: 20 to 27

UNIT – IV:

Chapters: 30 to 35

UNIT – V:

Chapters: 45 to 49

REFERENCE:

1. James A.O'Brien, Management Information System, 4th Edition, TATA McGraw–Hill, New Delhi, 1999.
2. C.Xavier, **World Wide Web Design with HTML**, Tata McGraw-Hill Publishing Company Limited, New Delhi, 2000.
3. Kathleen M. Austin and Lorraine N. Bergkvist, Principles of Information Technology, 1st edition,Goodheart-Wilcox Publisher,2015.

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Programme	**: B.Sc (IT)**	**Part III**	**: Core**
Semester	**: I**	**Hours**	**: 06**
Sub Code	**: 18UITCP1**	**Credits**	**:04**

OFFICE AUTOMATION – LAB

Course Outcomes:

CO1: Recognize when to use each of the Microsoft Office programs to create professional and academic documents.

CO2: Use Microsoft Office programs to create personal, academic and business documents following current professional and/or industry standards.

CO3: Apply skills and concepts for basic use of computer hardware, software, networks, and the Internet in the workplace.

CO4: Students can get the knowledge about the document maintenance and presentation which will be used in their companies or offices.

MICROSOFT WORD

1. Document using header , footer and border.
2. Insert Picture To Create Invitation
3. Mail Merge
4. Table Manipulation
5. To Create A College Application Form
6. Welcome Message Using Macros
7. Addition Operation Using Macros
8. Multiplication Operation Using Macros

MICROSOFT EXCEL

1. Student Mark Details With Chart
2. Electricity Bill Preparation
3. Company Budget Using Ms Excel
4. Multiple Worksheet

MICROSOFT POWERPOINT

1. Blank slide Preparation
2. Templates Presentation
3. Animation Of Cars

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Programme	**: B.Sc. (IT)**	**Part IV**	**: Allied**
Semester	**: I**	**Hours**	**: 04**
Sub Code	**: 18UITA11**	**Credits**	**: 04**

DISCRETE MATHEMATICS

CourseOutcomes:

CO1: To train the students with fundamental concepts of mathematics

CO2: To inculcate the essential mathematical concepts for computer applications.

CO3: To equip the students with logical thinking and analytical thinking on algebraic structures, graph theory with examples.

CO4: This course enable the students to use the problem solving skills in a wide variety of situations.

UNIT I

Set theory–Introduction – Sets – Venn - Euler diagrams – Operations on Sets –Verification of basic laws of algebra by Venn diagram – Principle of Duality.

Relations – Cartesian Product of Two Sets - Relations – Representation of Relations - Operation on relations – Equivalence relation – Closure and Warshall's Algorithm.

UNIT II

Functions - Functions and operators – One -To– One, Onto functions – Special type of functions – Invertible functions – Composition of functions

Mathematical Induction: Techniques of Proof – Mathematical Induction

UNIT III :Logic

Introduction – TF – Statements - Connectives – The Truth table of a Formula – Tautology – Tautological implications and equivalence of formulae.

UNIT IV :Matrix Algebra

Introduction – Operations – Inverse of a Square Matrix, Elementary Operations and Rank of matrix –Simultaneous linear equations – Eigen values & Eigen vectors.

UNIT V: Graph Theory:

Introduction – Definitions and examples – Degrees – Sub graphs- Trees: Introduction – Characterization of Trees – Centre of a Tree – Some Applications: Introduction – Connector problem – Shortest path problem.

Text Books:

1. M.Venkatraman, N.Sridharan and N.Chandrasekaran, **Discrete Mathematics,** The National Publishing Company, Chennai, Reprint, 2006.
2. S.Arumugam, S.Ramachandran, **Invitation toGraph Theory**, Scitech Publications India Pvt Ltd, Chennai, Reprint 2006.

Unit I	: Book 1	Chapter: 1	Sections: 1.1, 1.2, 1.5, 1.6, 1.8, 1.9
		Chapter: 2	Sections: 2.1 to 2.6
Unit II	: Book 1	Chapter: 3	Sections: 3.1 to 3.4
		Chapter: 4	Sections: 4.1, 4.2
Unit III:	Book 1	Chapter: 9	Sections: 9.1 to 9.3, 9.6 to 9.8.
Unit IV:	Book 1	Chapter: 6.	Sections: 6.1 to 6.5, 6.7
Unit V	: Book 2:	Chapter: 2	Sections 2.0 to 2.3.
		Chapter: 6	Sections 6.0 to 6.2.
		Chapter: 11	Sections 11.0 to 11.2.

REFERENCE BOOKS

1. SeymourLipchitz,**Discrete Mathematics,** Marc Lipson(Schaum's Outline Series)-Second Edition.
2. Dr S Arumugam&Issac SciTech, **Modern Algebra ,** Publishers (for Units 1,2,4).
3. T.VeeraRajan, **Discrete Mathematics with Graph Theory and Combinations,** Tata McGraw Hill Publishing Company Ltd.

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Programme	**: B.Sc (IT)**	**Part IV**	**: Skill**
Semester	**: I**	**Hours**	**: 02**
Subject Code	**:18UITSP1**	**Credits**	**: 02**

MULTIMEDIA LAB

CourseOutcomes:

CO1: To understand the basic usage of flash
CO2: To understand the masking in flash
CO3: To understand about the Photoshop
CO4: provides employability for students in animation field.

Using flash:

1. Text masking using flash

2. Text blur using flash

3. Photo masking using flash.

4. Animation frame by frame using flash

5. Vector drawing using flash

6. Rotating ball using button using flash

7. Bouncing ball using flash

8. Four functions calculator using flash

Using Photoshop:

1. Radiation effect using Photoshop
2. 3D text using Photoshop
3. Glow effect using Photoshop
4. Realistic clouds using Photoshop
5. Digital background using Photoshop

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Programme	**: B.Sc (IT)**	**Part IV**	**: Mandatory**
Semester	**: I**	**Hours**	**: 02**
Subject Code	**:18UEVG11**	**Credits**	**: 02**

ENVIRONMENTAL STUDIES

COURSE OUTCOMES

CO1: To gain knowledge on the importance of environmental education and ecosystem.

CO2: To acquire knowledge about environmental pollution- sources, effects and control measuresof environmental pollution

CO3:To understand the various energy sources, exploitation and need of alternate energy resources. Disaster management To acquire knowledge with respect to biodiversity, its threats and its conservation and appreciate the concept of interdependence

CO4: To make the student to understand the various pollution problems control mechanisms.

UNIT I	:	**Environment and Earth:** Environment – Meaning – Definition - Components of Environment – Types of Environment. Interference of man with the Environment. Need for Environmental Education. Earth – Formation and Evolution of Earth– Structure of Earth and its components – Atmosphere, Lithosphere, Hydrosphere and Biosphere. **Natural Resources:** Renewable Resources and Non-Renewable Resources. Natural Resources and Associated Problems. Use and Exploitation of Forest, Water, Mineral, Food, Land and Energy Resources.
UNIT II	:	**Ecology and Ecosystems:** Ecology – Meaning - Definition – Scope – Objectives – Subdivisions of Ecology. **Ecosystem**–Concept - Structure - Functions – Energy Flow – Food Chain and Food Web – Examples of Ecosystems (Forest, Grassland, Desert, Aquatic).
UNIT III	:	**Biodiversity:** Definition – Biodiversity at Global, National and Local Level. Values of Biodiversity – Threats to Biodiversity – Conservation of Biodiversity. **Biodiversity of India:**Biogeographical Distribution – Hotspots of Indian Biodiversity – National Biodiversity Conservation Board and Its functions. Endangered and Endemic Species of India
UNIT IV	:	**Pollution Issues:** Definition – Causes – Effects and Control Measures of Air, Water, Soil, Marine, Noise, Thermal and Nuclear Pollutions. **Global Issues:** Global Warming and Ozone Layer Depletion. Future plans of Global Environmental Protection Organisations.
UNIT V	:	**Sustainable Development:**Key aspects of Sustainable Development – Strategies for Sustainable Development - Agriculture – Organic farming – Irrigation – Water Harvesting – Water Recycling – Cyber Waste and Management. **Disaster Management:**Meaning – Types of Disasters - Flood and Drought – Earth quake and Tsunami – Landslides and Avalanches – Cyclones and Hurricanes – Preventions and Consequences. Management of Disasters -

Text Book:

Study Material for **Environmental Studies**, Mannar Thirumalai Naicker College, Pasumalai, Madurai – 625 004.

Reference Books:

1. Study Material for **Environmental Studies**, Publications Division, Madurai Kamaraj University, Madurai – 625 021.
2. R.C. Sharma and Gurbir Sangha,**Environmental Studies**, Kalyani Publishers, 1, Mahalakshmi Street, T.Nagar, Chennai – 600 017.
3. Radha,**Environmental Studiesfor Undergraduate Courses of all Branches of Higher Education, (Based on UGC Syllabus),** Prasanna Publishers & Distributors, Old No. 20, Krishnappa Street, (Near Santhosh Mahal), Chepak, Chennai – 600 005.
4. S.N.Tripathy and Sunakar Panda,**Fundamentals of Environmental Studies**, Vrinda Publications (P) Ltd. B-5, Ashish Complex, (opp. To Ahicon Public School), MayurVihar, Phase-1, Delhi– 110 091.
5. G.Rajah,**Environmental Studies** for All UG Courses, (Based on UGC Syllabus), Margham Publications, 24, Rameswaram Road, T.Nagar, Chennai – 600 017.

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Programme	**: B.Sc (IT)**	**Part III**	**: Core**
Semester	**: II**	**Hours**	**:04**
Sub.Code	**: 18UITC21**	**Credits**	**: 04**

PROGRAMMING IN C

Course Outcomes:

CO1: To understand and apply advanced programming concepts.

CO2: To understand the concept like pointers, structures, files and link list.

CO3: To exercise user defined functions to solve real time problems.
CO4: To develop programming skills for students.

UNIT I:

Overview of C: History of C – Importance of C – Basic Structure of C Programs – Programming Style – **Constants, Variables and Data Types:** Character Set – C Tokens – Keywords and Identifiers – Constants - Variables - Data Types – Declaration of Variables – Defining Symbolic Constants – Declaring a variable as a constant – overflow and underflow of data – **Operators and Expressions:** Arithmetic Operators- Relational Operators- Logical Operators- Assignment operators – Increment and Decrement Operators- Conditional Operators -Bitwise Operators- Special Operators – Arithmetic Expressions- Evaluation of Expressions – Precedence of Arithmetic Operators – Type Conversions in Expressions – Operator Precedence and Associativity – Mathematical functions.

UNIT II:

Managing Input and Output Operations: Introduction-Reading a Character-Writing a Character – Formatted Input – Formatted Output – **Decision Making and Branching:**Introduction- Decision making with If Statement–Simple if Statement – The If…..Else statement - Nesting of If…. Else Statements –The Else If Ladder – The Switch statement – The ?: Operator –The Goto Statement –

Decision Making and Looping: Introduction -The While Statement – The do Statement – The for statement – Jumps in Loops.

UNIT III:

Arrays: Introduction- One-Dimensional Arrays – Declaration of One-Dimensional Arrays, Initialization of One-Dimensional Arrays – Two-Dimensional Arrays – Initializing Two-Dimensional Arrays - Multi-Dimensional Arrays – Dynamic Arrays - **Character Arrays and Strings:** Introduction- Declaring and Initializing String Variables – Reading Strings from Terminal - Writing Strings to Screen – String Handling Functions.

UNIT IV:

User-Defined Functions: Introduction- Need for User-Defined Functions– A Multi-function program – Elements of User-Defined Functions –Definition of Functions – Return Values and Their Types – Function Calls – Function Declaration– Category of Functions – No Arguments and No Return Values –Arguments but No Return Values - Arguments with Return Values –No Arguments but Returns a Value –Functions that Return Multiple Value - Nesting of Functions – Recursion – Passing Arrays to Functions - Passing Strings to Functions – The Scope, Visibility and Lifetime of Variables -**Structures and Unions:** Introduction- Defining a Structure– Declaring Structure variables – Accessing Structure Members – Structure Initialization – Copying and Comparing Structure Variables – Operations on Individual Members – Arrays of Structures – Arrays within Structures – Structures within Structures – Structures and Functions – Unions – Size of Structures – Bit Fields.

UNIT V:

Pointers: Introduction –Understanding Pointers-Accessing the Address of a Variable – Declaring Pointer Variables - Initialization of Pointer Variables – Accessing a Variable through its Pointer – Chain of Pointers – Pointer Increments and Scale Factors – Pointers and Character Strings – Pointers as Function Arguments – Pointers and Structures. **File Management in C:**Introduction – Defining and Opening a File - Closing a File – Input / Output Operations on Files – Error Handling During I/O Operations – Command Line Arguments.

Text Book:

Programming in ANSI C, E.Balagurusamy, 6th Edition, Tata McGraw Hill Publishing Company, 2012.

Unit I: Chapter 1 (Except 1.3-1.7, 1.10-1.12),

Chapter 2 (Except 2.9, 2.13),

Chapter 3 (Except 3.13)

Unit II: Chapters 4 – 6

Unit III: Chapter 7,

Chapter 8 (Except 8.5, 8.6, 8.7, 8.9, 8.10)

Unit IV: Chapter 9 (Except 9.20),

Chapter 10

Unit V: Chapter 11 (Except 11.8, 11.10, 11.12, 11.14, 11.15, 11.17),

Chapter 12 (Except 12.6)

Reference Books:

1. Programming with C,Schaum's Outline Series, Gottfried, Tata McGraw Hill, 2006

2. Programming with ANSI and Turbo C ,Ashok N.Kamthane , Pearson Education, 2006

3. H. Schildt, C: The Complete Reference, 4th Edition, TMH Edition, 2000.

4. Kanetkar Y., Let us C, BPB Pub., New Delhi, 1999.

5. WEBSITE **:**https://www.spoken-tutorial.org

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

Programme	**: B.Sc. (IT)**	**Part III**	**: Core**
Semester	**: II**	**Hours**	**: 06**
Sub Code	**:18UITCP2**	**Credits**	**: 04**

PROGRAMMING IN C – LAB

CourseOutcomes:

CO1: To understand the basic structure of the C-Programming, declaration and usage of variables.
CO2: To exercise conditional and iterative statements to write C programs.
CO3: To implement file operations in C programming for a given application.
CO4: Students will be able to get an in-depth knowledge in programming and technical skills.

1. Display the current date and time
2. Find the biggest number
3. Check for voting age
4. Student marks details
5. Perform Arithmetic operations
6. Display the Multidimensional array
7. Perform Matrix multiplication
8. Display Prime Numbers between 1 to 100
9. Perform Armstrong number checking
10. Find Factorial number
11. Display the Fibonacci series
12. Convert Decimal to binary
13. Perform sum of sine series
14. Perform sum of exponential series
15. Display the reverse of given number
16. Perform String handling functions
17. Check the Positive, negative and zero
18. Perform Swapping using pointer
19. Perform Sorting using structure
20. Display Floyds triangle
21. Merging the numbers
22. Display Pascal triangle
23. Identifying Vowels using file concept

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

Programme	**: B.Sc (IT)**	**Part III**	**: Allied**
Semester	**: II**	**Hours**	**: 04**
Subject Code	**:18UITA21**	**Credits**	**: 04**

STATISTICAL AND NUMERICAL METHODS

Course Outcomes:

CO1:To make the students understand the Statistical and Numerical Methods concepts.

CO2:To design and conduct experiments as well as to analyze and interpret data.

CO3:To Identify formulate and solve the problems.

CO4: This course enable the students to use the problem solving skills in a wide variety of situations.

Unit- I

Measures of averages - Measures of dispersion – Skewness based on moments

Unit – II

Correlation and regression- Rank correlation coefficient.

Unit – III

Index numbersandCurvefitting (all types of curves)

Unit - IV

Errors in Numerical Computation – Iteration method – Bisection method – Regulafalsi method – Newton Raphson method.

Unit - V

Interpolation: Newton's Interpolation formulae – Central Difference Interpolation formulae(Gauss forward and backward formulae only) – Lagrange's Interpolation formula – Inverse Interpolation.

Textbook:

1. Dr.S.Arumugam& Isaac, **Statistics**, New Gamma Publications, Reprint 2012.

2.S.Arumugamand A.ThangaPandi Isaac, A.SomaSundaram, **Numerical Methods**, Scitech Publication, Third Edition, 2007.

Unit I: Chapters 2, 3, 4

Unit II: Chapter 6

Unit III: Chapters 5 and 9

Unit IV: Chapter 3 – Section 3.1 – 3.5.

Unit V: Chapter 7 – Section 7.1, 7.2, 7.3, 7.6.

Reference Books:

1. S.C. Gupta,V.K.Kapoor, **Elements of Mathematical Statistics,** Sultan Chand & Sons Publications, New Delhi, 2001.
2. T.Veerarajan and T.Ramachandran, **Numerical Methods,** Tata McGraw Hill, Second Edition, New Delhi, 2006.
3. S.S.Sastry, **Introductory Methods of Numerical Analysis**, Prentice Hall India Private Limited, Fourth Edition, New Delhi, 2008.

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Programme	**: B.Sc (IT)**	**Part IV**	**: Skill**
Semester	**: II**	**Hours**	**: 02**
Sub. Code	**: 18UITSP2**	**Credits**	**: 02**

VISUAL PROGRAMMING – LAB

CourseOutcomes:

CO1: To design, create, build, and debug Visual Basic applications.
CO2: To explore Visual Basic's Integrated Development Environment (IDE).
CO3: To write Visual Basic programs using object-oriented programming techniques including classes, objects, methods, instance variables, composition, and inheritance, and polymorphism.
CO4: It helps to get knowledge about the windows based application.
CO5: It provides the employability for the students in an IT company.

List of Programs:

1. Adam number
2. Add or Remove number
3. Arithmetic operation
4. Armstrong number
5. Ascending & Descending order
6. Average number
7. Car animation
8. Circle using random method
9. Count a number of digits
10. Currency exchange value
11. Display time & date
12. Factorial value
13. Fibonacci series
14. Generate the colors
15. Maximum of value
16. Multiplication table
17. Pass by reference
18. Pass by value

19. Positive, negative or zero
20. Prime number
21. Program using select case
22. Rectangle using random method
23. Reverse the given number
24. Simple interest
25. String function
26. Sum of columns
27. Sum of rows
28. Swapping the number
29. Types of lines

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DEPARTMENT OF INFORMATION TECHNOLOGY
(For those who joined in 2018-2019 and after)

Programme	**: B.Sc (IT)**	**Part IV**	**: Mandatory**
Semester	**: II**	**Hours**	**: 02**
Sub. Code	**: 18UVLG21**	**Credits**	**: 02**

VALUE EDUCATION

COURSE OUTCOMES		
CO1: Clarifying the meaning and concept of value - value education. **CO2**: To inspire **students** to develop their personality and social **values** based on the principles of human **values.** **CO3:** Developing sense of Love, Peace and Brotherhood at Local, national and international levels. **CO4**:To enable the students to understand the social realities and to inculcate an essential value system towards building a health society		
UNIT I	**:**	**Values and The Individual:** Values – Meaning – Definition – Importance – Classification of Values, Value Education – Meaning – Need for Value Education. Values and the Individual – Self-Discipline – Meaning – Tips to Improve Self-Discipline. Self-Confidence – Meaning - Tips to Improve Self-Confidence. Empathy – Meaning – Role of Empathy in motivating Values. Compassion – Role of Compassion in motivating Values. Forgiveness – Meaning - Role of Forgiveness in motivating Values. Honesty – Meaning – Role of Honesty in motivating Values. Courage – Meaning – Role of Courage in motivating Values.
UNIT II	**:**	**Religions and Communal Harmony:** Religions – Meaning **–** Major Religions in India - Hinduism – Values in Hinduism. Christianity – Values in Christianity. Islam – Values in Islam. Buddhism – Values in Buddhism. Jainism – Values in Jainism. Sikhism – Values in Sikhism. Need for Religious Harmony in India. Caste System in India – Need for Communal Harmony in India. Social Justice – Meaning – Factors Responsible for Social Justice.
UNIT III	**:**	**Society and Social Issues:** Society – Meaning – Values in Indian Society. Democracy – Meaning – Values in Indian Democracy. Secularism – Meaning – Values in Indian Secularism. Socialism – meaning – Values in Socialism. Social Issues – Alcoholism – Drugs – Poverty – Unemployment.

UNIT IV	:	**Human Rights and Marginalised People:** Human Rights – Meaning – Problem of Violation of Human Rights in India – Authorities available under the Protection of Human Rights Act in India. Marginalised People like Women, Children, Dalits, Minorities, Physically Challenged – Concept – Rights – Challenges. Transgender – Meaning – Issues.
UNIT V	:	**Social Institutions in Value Formation:** Social Institutions – Meaning – Important Social Institutions. Family – Meaning – Role of Families in Value Formation. Role of Press & Mass Media in Value Formation – Role of Social Activists – Meaning Contribution to Society – Challenges.

Text Book:

Text Module for **Value Education**, Mannar Thirumalai Naicker College, Pasumalai, Madurai – 625 004

Reference Books:

1. Text Module for **Value Education**, Publications Division, Madurai Kamaraj University, Madurai – 625 021.
2. N.S.Raghunathan, **Value Education**, Margham Publications, 24, Rameswaram Road, T.Ngar, Chennai – 600 017.
3. Dr.P.Saravanan, and P.Andichamy, **Value Education**, Merit India Publications, (Educational Publishers), 5, Pudumandapam, Madurai-625001.