B.Sc., COMPUTER SCIENCE

Syllabus

Program Code: UCS



MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS)

Re-accredited with "A" Grade by NAAC

PASUMALAI, MADURAI – 625 004

Eligibility for Admission

Candidates seeking admission to the B.Sc Degree course must have the Higher Secondary Education, (should have studied Computer Science and Mathematics in HSC) of the Government of Tamil Nadu or any other state or its equivalent qualification.

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 Part II	: Tamil : English	ACO
Dort III		() MMC ogv
Part III	1 Core Subjects	
	2 Allied Subjects	
	3 Electives	
Part IV		
	1. Non Major Electives (II Year)	
	2. Skill Based Subjects	
	3. Environmental Studies - Mandate	ory Subject
	4. Value Education - Mandatory Sul	bject
Part V	: Extension Activities	S
Pattern of th	e question pape <mark>r for th</mark> e Continuous	Internal Assessment
Note: Durat	on – 1 hour 30 minutes	
(For Part I,	Part II & Part III)	H ASY
The compone Part –A	ents for continuous internal assessment	are:
	1 ' (' 11)	
Four multiple Part –B	e choice questions (answer all)	4 x01= 04 Marks
Four multiple Part –B Three short a	nswers questions (answer all)	4 x01= 04 Marks 3 x02= 06 Marks
Four multiple Part –B Three short <i>a</i> Part –C	nswers questions (answer all)	4 x01= 04 Marks 3 x02= 06 Marks
Four multiple Part –B Three short a Part –C Two question Part –D	nswers questions (answer all) nswers questions (answer all) ns ('either or 'type)	4 x01= 04 Marks 3 x02= 06 Marks 2 x 05=10 Marks
Four multiple Part –B Three short a Part –C Two question Part –D Two question	nswers questions (answer all) nswers questions (answer all) is ('either or 'type) is out of three	4 x01= 04 Marks 3 x02= 06 Marks 2 x 05=10 Marks 2 x 10 =20 Marks

Academic Council Meeting Held on 29.04.2021

Volume II - Science Syllabus / 2021 - 2022 The scheme of Examination for Part-I, II & III The components for continuous internal assessment are: (40 Marks of two continuous internal assessments will be converted to 15 marks) Two tests and their average --15 marks Seminar /Group discussion --5 marks Assignment --5 marks _____ Total 25 Marks _____ Pattern of the question paper for the Summative Examinations: **Note: Duration- 3 hours** Part –A = 10 Marks Ten multiple choice questions 10 x01 No Unit shall be omitted: not more than two questions from each unit.) Part –B Short answer questions (one question from each unit) 5 x02 = 10 Marks Part –C Five Paragraph questions ('either or 'type) = 25 Marks 5 x 05 (One question from each Unit) Part –D Three Essay questions out of five 3 x 10 =30 Marks (One question from each Unit) Total 75 Marks

Part-IV- Skill Based Papers:

The Scheme of Examination for Skill Based Papers: (Except Practical Lab Subjects) Pattern of the questions paper for the continuous Internal Assessment

45 MCQs will be asked for two internal assessment tests (45 x 1=45 Marks) and converted for 15 marks

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

Summative Examination Pattern

Pattern of the Question Paper for Skill Based Papers (External)

75 Multiple choice questions will be asked from five units (75 x 1=75 Marks)

(15MCQ's from each unit)

Part-IV- Environmental Studies and Value Education

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

(Internal Assessment)

Pattern of the Question Paper for Environmental Studies & Value Education only) (Internal) 45 MCQs will be asked for two internal assessment tests (45 x 1=45 Marks) and converted for 15 marks

15 marks

10 marks

25 Marks

Two tests and their average Project

Summative Examination Pattern

Pattern of the Question Paper for Environmental Studies & Value Education only) (External) 75 Multiple choice questions will be asked from five units (75 x 1=75 Marks)

Total

(15MCQ's from each unit)

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.

VISION

To evolve as a center of excellence in the field of Computer Science for developing technically competent professional with ethical values to serve the needs of industry and society

MISSION

To provide quality education to meet the need of profession and society

The 12 Graduate Attributes*:

- 1. (KB) A knowledge base for engineering: Demonstrated competence in university level mathematics, natural sciences, engineering fundamentals, and specialized engineering knowledge appropriate to the program.
- 2. (PA) Problem analysis: An ability to use appropriate knowledge and skills to identify, formulate, analyze, and solve complex engineering problems in order to reach substantiated conclusions
- 3. (Inv.) Investigation: An ability to conduct investigations of complex problems by methods that include appropriate experiments, analysis and interpretation of data and synthesis of information in order to reach valid conclusions.
- 4. (Des.) Design: An ability to design solutions for complex, open-ended engineering problems and to design systems, components or processes that meet specified needs with appropriate attention to health and safety risks, applicable standards, and economic, environmental, cultural and societal considerations.
- 5. (Tools) Use of engineering tools: An ability to create, select, apply, adapt, and extend appropriate techniques, resources, and modern engineering tools to a range of engineering activities, from simple to complex, with an understanding of the associated limitations.
- 6. (Team) Individual and teamwork: An ability to work effectively as a member and leader in teams, preferably in a multi-disciplinary setting.
- 7. (Comm.) Communication skills: An ability to communicate complex engineering concepts within the profession and with society at large. Such ability includes reading, writing, speaking and listening, and the ability to comprehend and write effective reports and design documentation, and to give and effectively respond to clear instructions.
- 8. (Prof.) Professionalism: An understanding of the roles and responsibilities of the professional engineer in society, especially the primary role of protection of the public and the public interest.
- 9. (Impacts) Impact of engineering on society and the environment: An ability to analyze social and environmental aspects of engineering activities. Such ability includes an understanding of the interactions that engineering has with the economic, social, health, safety, legal, and cultural aspects of society, the uncertainties in the prediction of such interactions; and the concepts of sustainable design and development and environmental stewardship.
- 10. (Ethics) Ethics and equity: An ability to apply professional ethics, accountability, and equity.

- 11. (Econ.) Economics and project management: An ability to appropriately incorporate economics and business practices including project, risk, and change management into the practice of engineering and to understand their limitations.
- 12. (LL) Life-long learning: An ability to identify and to address their own educational needs in a changing world in ways sufficient to maintain their competence and to allow them to contribute to the advancement of knowledge

WA	Graduate Attributes	Caption as
WA1	A knowledge base for engineering: Demonstrated competence in	Knowledge Base
	university level mathematics, natural sciences, engineering fundamentals,	
WA 2	and specialized engineering knowledge appropriate to the program.	Duchlaur
WA2	An ability to use appropriate knowledge and skills to identify, formulate,	Problem
	substantiated conclusions	Analysis &
WA4	An ability to conduct investigations of complex problems by methods that	Investigation
****	include appropriate experiments, analysis and interpretation of data and	
	synthesis of information in order to reach valid conclusions.	
WA10	An ability to communicate complex engineering concepts within the	Communication
	profession and with society at large. Such ability includes reading,	Skills & Design
	writing, speaking and listening, and the ability to comprehend and write	
	effective reports and design documentation, and to give and effectively	
WA 2	respond to clear instructions.	
WA3	An ability to design solutions for complex, open-ended engineering	
	specified needs with appropriate attention to health and safety risks	
	applicable standards and economic environmental cultural and societal	
	considerations.	
WA9	An ability to work effectively as a member and leader in teams, preferably	Individual and
	in a multi-disciplinary setting.	Team Work
WA6	An understanding of the roles and responsibilities of the professional	Professionalism,
	engineer in society, especially the primary role of protection of the public	Ethics and equity
	and the public interest.	
WA8	An ability to apply professional ethics, accountability, and equity.	
WA12	(An ability to identify and to address their own educational needs in a	Life long
	changing world in ways sufficient to maintain their competence and to	learning
	anow mem to contribute to the advancement of knowledge	
WA5	An ability to create, select, apply, adapt, and extend appropriate	Use of Tools
	techniques, resources, and modern engineering tools to a range of	
	engineering activities, from simple to complex, with an understanding of the associated limitations.	
WA7	the associated limitations.	Impact on Society
WA/	activities Such ability includes an understanding of the interactions that	impact on Society
	engineering has with the economic social health safety legal and	
	cultural aspects of society, the uncertainties in the prediction of such	
	interactions; and the concepts of sustainable design and development and	

Academic Council Meeting Held on 29.04.2021

Page 263

		Volume II – Science S	Syllabus / 2021 -2022
		anvironmental starrondakin	
	7 4 1 1	environmental stewardsnip.	Economics and project
N	AII	including project, risk, and change management into the practice of	management
		engineering and to understand their limitations	

Bloom's Taxonomy



	PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)			
PEO1:	Graduates of the programme will be employed in the field Computer Science.			
PEO2:	Graduates of the programme will pursue higher studies.			
PEO3:	Graduates of the programme will apply new technologies in Computer Science to serve			
	the needs of industry, and society.			
PEO4:	Graduates of programme will have successful career in technology in Computer Science.			
PEO5:	Graduates of the programme will have skills to develop applications with innovation			

60

	PROGRAMME OUTCOMES (POs)
PO1 :	Knowledge and expertise in at least one procedure-oriented and object oriented programming language
PO2 :	Aware of the design principles of Operating Systems specializing on at least one popular Operating System
PO3 :	Use ICT tools in various learning situations, related information sources and have a wide perspective on software development including web based applications as well as graphic applications.
PO4 :	Employ critical and analytical thinking in understanding the concepts and ability to design and implement optimal databases using current technologies.
PO5 :	Able to design algorithms as per need by relating the data structure for various problems.
PO6:	Identify and describe the communication networks technologies in local area networks and the internet and countermeasures for security threats.

	PROGRAM SPECIFIC OUTCOMES (PSOs)
PSO1:	Students to have knowledge and expertise in atleast one procedure-oriented and object
	oriented programming language
PSO2 :	Students to have wide perspective on software development including web based
	applications as well as graphic applications.
PSO3:	Students will be aware of the design principles of Operating Systems specializing on at
	Least one popular operating System
PSO4:	Students to have the ability to design and implement optimal databases using current
	technologies.
PSO5 :	Students design algorithms as per need by relating the datastructure
PSO6	Students identify and describe the communication networks technologies
	In local are a networks and the internet and counter measures for security threats.



MANNAR THIRUMALAI NAICKER COLLEGE (Autonomous), Pasumalai B.Sc., COMPUTER SCIENCE, Curriculum

(For the student admitted during the academic year 2021-2022 onwards)

Course Code	Title of the Course	Hrs	Credits	Max	imum N	Marks
				Int	Ext	Total
	FIRST SEMESTER	I				
Part – I	Tamil / Alternative Course					
21UTAG11	இக்காலக் கவிதையும் நாடகமும்	6	3	25	75	100
Part – II	English					
21UENG11	Communicative English - I	6	3	25	75	100
Part - III	Core Courses					
21UCSC11	Programming in C	5	5	25	75	100
21UCSCP1	Programming in C Lab	4	4	40	60	100
Part III	Allied Course	1902	~			
21UMCA11	Mathematical Foundations	5	4	25	75	100
Part IV	Skill Based Course		3			
21UCSSP1	Office Automation Lab	2	2	40	60	100
Part IV	Mandatory Course		9			
21UEVG11	Environmental Studies	2	2	25	75	100
	Total	30	23	205	495	700
	SECOND SEMESTE	R				
Part – I	Tamil / Alternative Course					
21UTAG21	இடைக் <mark>கால இலக்</mark> கியமும் சிறுக <mark>தை</mark> யும்	6	3	25	75	100
Part – II	English		18			
21UENG21	Communicative English - II	6	3	25	75	100
Part - III	Core Co <mark>urses</mark>		LES I			
21UCSC21	Object Oriented Programming using C++	5	35	25	75	100
21UCSCP2	Object Oriented Programming using C++ Lab	4	4	40	60	100
Part III	Allied Course	12				
21UMCA21	Probability and Statistics	5	4	25	75	100
Part IV	Skill Based Course					
21UCSSP2	Multimedia Lab	2	2	40	60	100
21UVLG21	Value Education	2	2	25	75	100
	Total	30	23	205	495	700
	THIRD SEMESTER	2				
Part – I	Tamil / Alternative Course					
21UTAG31	காப்பிய இலக்கியமும் உரைநடையும்	6	3	25	75	100
Part – II	English					
21UENG31	Communicative English - III	6	3	25	75	100
Part - III	Core Courses	_	_		- -	
21UCSC31	Programming in Java	5	5	25	75	100
21UCSCP3	Programming in Java Lab	4	4	40	60	100

Academic Council Meeting Held on 29.04.2021

Page 267

Do ref. III	Alliad Course					
	Alled Course	5	1	25	75	100
210101CA31	Numerical Aputude	5	4	23	13	100
Part IV	Skill Based Course					
21UCSSP3	Data Structures Lab	2	2	40	60	100
Part IV	Non Major Elective Course					
21UCSN31	Desk Top Publishing & Animation Lab	2	2	40	60	100
	Total	30	23	220	480	700
	FOURTH SEMESTE	R				
Part – I	Tamil / Alternative Course					
21UTAG41	பண்டைய இலக்கியமும் புதினமும்	6	3	25	75	100
Part – II	English					
21UENG41	Communicative English - IV	6	3	25	75	100
Part - III	Core Courses	2				
21UCSC41	Relational Data Base Management System	5	4	25	75	100
21UCSCP4	Relational Data Base Management System Lab	4	4	40	60	100
Part III	Allied Course					
21UMCA41	Operations Research	5	4	25	75	100
Part IV	Skill Based Course	1	195			
21UCSSP4	Programming in PHP Lab	2	2	40	60	100
Part IV	Non Major Elective Course		5			
21UCSN41	Web D <mark>esign Lab</mark>	2	2	40	60	100
Part V	Extension Activities	T				
21UEAG40-	NSS, N <mark>CC, YRC</mark>		1	100	-	100
21UEAG49			6			
	Total	30	23	220	480	700
	FIFTH SEMESTER		1 9 1	_		
Part - III	Core Courses					
21UCSC51	Computer Networks	6	4	25	75	100
21UCSC52	Operating System	6	4	25	75	100
21UCSCP5	Linux and Android Programming Lab	6	4	40	60	100
Part III	Core Elective I	5° /				
21UCSE51	Data mining and Data warehousing	5	5	25	75	100
21UCSE52	Mobile Computing					
21UCSE53	Software Engineering					
	Core Elective II					
21UCSE54	Network Security	5	5	25	75	100
21UCSE55	Open Source Technologies					
21UCSE56	Object Oriented Analysis and Design	1				
Part IV	Skill Based Course					
21UCSSP5	Data Mining Lab	2	2	40	60	100
	Total	30	24	180	420	600

Academic Council Meeting Held on 29.04.2021

	SIXTH SEMESTER					
Part - III	Core Courses					
21UCSC61	.Net Technologies	6	4	25	75	100
21UCSCP6	.Net Technologies Lab	6	4	40	60	100
21UCSPR1	Project and Viva Voce	6	4	40	60	100
Part III	Core Elective III					
21UCSE61	Internet of Things	5	5	25	75	100
21UCSE62	Client Server Computing					
21UCSE63	E-Commerce Technologies					
	Core Elective IV					
21UCSE64	Computer Graphics	5	5	25	75	100
21UCSE65	Software Testing					
21UCSE66	Cloud Computing	9				
Part IV	Skill Based Course	3				
21UCSSP6	Python Programming Lab	2	2	40	60	100
	Total	30	24	195	405	600
	Grand Total	180	141	1325	2775	4100







MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS) DEPARTMENT OF COMPUTER SCIENCE (For those who joined in 2021-2022 and after)

Course Name PROGRAMMING IN C Course Code 21UCSC11 L Р С Core Category 5 5 SKILL ORIENTED NATURE OF COURSE: EMPLOYABILITY **ENTREPRENURSHIP Course objectives:** To introduce the concepts of computer basics & programming with particular attention to Engineering examples. To learn the fundamental programming concepts and methodologies which are essential to building good C programs. To practice the fundamental programming methodologies in the C programming language via laboratory experiences. To code, document, test, and implement a well-structured, robust computer program using the C programming language. To write reusable modules (collections of functions). 15 Hours Unit: I **Introduction**: Generation and Classification of Computers – Basic Organization of a Computer – Number System Binary – Decimal – Conversion – Problems. Need for Logical Analysis and Thinking – Algorithm Pseudo Code – Flowchart Unit: II | C Programming Basics : 15 Hours Problem Formulation – Problem Solving – Introduction to "C" Programming – Fundamentals Structure of a "C" Program – Compilation and Linking Processes – Constants, Variables – Data types - Expressions Using Operators in "C" – Managing Input and Output Operations – Decision Making and Branching – Looping statements – Solving Simple Scientific and Statistical Problems. 15 Hours **Unit: III** Arrays and Strings : Arrays – Initialization – Declaration – One Dimensional and Two Dimensional Arrays – String String Operations – String Arrays. Simple programs – Sorting – Searching – Matrix Operations **Functions and Pointers :** Unit: IV 15 Hours Function – Definition of function – Declaration of function – Pass by Value – Pass by Reference Recursion – Pointers – Definition – Initialization – Pointers and Arrays – Example Problems. Unit: V **Structures and Unions** 15 Hours Introduction – Need for Structure Data Type – Structure Definition – Structure Declaration – Structure within a Structure - Union – Program Using Structures and Unions – Storage Classes – Pre-processor Directives Total Lecture Hours 75 Hours **Books for Study:** 1. Anita Goel & Ajay Mittal, COMPUTER FUNDAMENTALS AND PROGRAMMING IN C, Pearson Noida, 2017

Unit I : Chapter 1 and 2,

Unit II : Chapter 2,3,4,and 5,

Academic Council Meeting Held on 29.04.2021

Page 271

		
Unit I	II: Chapter 6 and 7,	
Unit I	V : Chapter 6 and 8	
Unit V	: Chapter9 and 10	
Book	for References:	
1. E.	Balagurusamy, Programming in ANSI C, Tata McGraw Hill Education Private I	Limited, Sixth
E	dition, New Delhi, 2012	
2. Y	ashavant Kanetkar, Let Us C, BPB Publications, New Delhi, Tenth Edition, 2010.	
3. B	yron Gottfried, Programming with C, McGraw Hill Education (India) Private I	Limited, New
D	elhi, Third Edition, 2014.	
4. B	rain W.Kernigham & Dennis Ritchie, C Programming, Prentice Hall, Second Editic	on, 1988
Web	Resources:	
1. ht	ps://www.slideshare.net/AjitNayak20/computer-fundamentals-intro-to-c-programm	ning-module-
2. htt	ps://www.slideshare.net/avikdhupar/amazing-c	C
3. ht	tps://www.guru99.com/c-programming-tutorial.html	
COU	RSE OUTCOMES:	V I aval
At the	e end of the course <mark>the students</mark> will be able to	K Level
CO1	Use the concepts for solving scientific and mathematical problems	K3
CO2	Demonstrate an understanding of computer programming language concepts.	K3
CO3	Design and develop computer programs, analyses and interprets the concept of pointers, declarations, initialization, operations on pointers and their implementations.	K3
CO4	Define data types, use them in simple data processing applications and able to describe the concept of array of structures	K4
		77.4

CO & PO Mapping:

CO's/PO's	PO1	PO2	PO3	PO4	PO5	PO6
CO1	1	3	3	-	-	-
CO2	2		3	2	3	-
CO3	2	2	3	3	3	-
CO4	2	2	3	3	3	2
CO5	-	2	2	3	3	3

*3-AdvancedApplication;2-IntermediateDevelopment; 1-IntroductoryLevel

LESSON PLAN

UNIT	SUBJECT NAME	Hrs	Mode
Ι	Generation and Classification of Computers – Basic Organization of a	15	Chalk &
	Computer - Number System - Binary - Decimal - Conversion -		Talk, ICT
	Problems. Need for Logical Analysis and Thinking – Algorithm –		Kit
	Pseudo Code – Flowchart		
II	Problem Formulation – Problem Solving – Introduction to "C"	15	Chalk &
	Programming – Fundamentals – Structure of a "C" Program –		Talk, ICT
	Compilation and Linking Processes – Constants, Variables – Data types		Kit
	– Expressions Using Operators in "C" – Managing Input and Output		
	Operations – Decision Making and Branching – Looping statements –		
	Solving Simple Scientific and Statistical Problems.		
III	Arrays – Initialization – Declaration – One Dimensional and Two	15	Chalk &
	Dimensional Arrays – String – String Operations – String Arrays.		Talk, ICT
	Simple programs – Sorting – Searching – Matrix Operations.		Kit
IV	Function – Definition of function – Declaration of function – Pass by	15	Chalk &
	Value – Pass by Reference – Recursion – Pointers – Definition –		Talk, ICT
	Initialization – Pointers and Arrays – Example Problems.		Kit
V	Introduction – Need for Structure Data Type – Structure Definition –	15	Chalk &
	Structure Declaration – Structure within a Structure - Union – Program		Talk, ICT
	Using Structures and Unions – Storage Classes – Pre-processor		Kit
	Directives		

Course Designed by: Mrs. S. Amutha & Dr.G.Devika

	Learning Outcome Based Education & Assessment (LOBE)											
	Articulation Mapping – K Levels with Course Outcomes (COs)											
Inte	Cos	K Level	Section	n A 🥌	Section	1 B	Section C	Section D				
rnal			MCC)s	Short An	swers	Either or	Open				
		19	No. of.	К-	No. of.	К-	Choice	Choice				
			Questions	Level	Questions	Level						
CI	CO1	K3	2	K1,K2	1	K2	2(K3,K3)	2(K3)				
AI	CO2	K3	2	K1,K2	2	K2	2(K3,K3)	1(K3)				
CI	CO3	K3	2	K1,K2	1	K2	2(K3,K3)	1(K3)				
AII	CO4	K4	2	K1,K2	2	K2	2(K4,K4)	2(K4)				
Que	stion	No. of Questions	4	K1,K2	3	K2	4	3				
Pat	tern	to be asked										
CIA	I & II	No. of Questions	4	K1,K2	3	K2	2	2				
		to be answered										
		Marks for each	1	K1,K2	2	K2	5	20				
		question										
		Total Marks for	4	K1,K2	6	K2	10	20				
		each section										

	Distribution of Marks with K Level CIA I & CIA II										
	K Level	Section A (Multiple Choice Questions)	Section B (Short Answer Questions)	Section C (Either / Or Choice)	Section D (Open Choice)	Total Marks	% of (Marks without choice)	Consolidate of %			
	K1	2	2	-		4	6	17			
	K2	2	4	-	-	6	11				
CIA	K3	-	-	20	30	50	50	83			
I	K4	-	-	-	-	-	-	-			
	Marks	4	6	20	30	60	100	100			
	K1	2	2	-		4	6	17			
CIA II	K2	2	4	8 (3 (5)	200	6	11				
•••	K3	-		10	10	20	33.33	33			
	K4	_	19/1	10	20	30	50	50			
	Marks	4	6	20	30	60	100	100			

K1- Remembering and recalling facts with specific answers

K2- Basic understanding of facts and stating main ideas with general answers

K3- Application oriented- Solving Problems

K4- Examining, analyzing, presentation and make inferences with evidences

CO5 will be allotted for individual Assignment which carries five marks as part of CIA component.

S	Summativ	ve Ex <mark>amina</mark>	tion – Blue Pi	rint Articu Dutcomes	lation Maj	pping – K	Level with (Course		
S.No	COs	K -	MCC)s	Short A	nswers	Section C	Section D		
		Level	No. of	K –	No. of	K –	(Either /	(Open		
		12	Questions	Level	Questio	Level	or	Choice)		
		III	1	D.H.	ns		Choice)			
1	CO1	K3	2	K1,K2	1	K2	2(K3,K3)	1(K3)		
2	CO2	K3	2	K1,K2	- 1 -	K2	2(K3,K3)	1(K3)		
3	CO3	K3	2	K1,K2	-1	K2	2(K3,K3)	1(K3)		
4	CO4	K4	2	K1,K2	1	K2	2(K4,K4)	1(K4)		
5	CO5	K4	2	K1,K2	- 1	K2	2(K4,K4)	1(K4)		
No. of	Question	s to be	10	K1,K2	5	K2	10	5		
Asked				15 m 18	;51					
No.of	Questions	s to be	10	K1,K2	5	K2	5	3		
answei	red									
Marks	for each	question	1	K1,K2	2	K2	5	10		
Total I	Marks for	each	10	K1,K2	10	K2	25	30		
sectior	1									
	(Figures in parenthesis denotes, questions should be asked with the given K level)									

	Distribution of Marks with K Level										
K	Section A	Section B	Section C	Section D	Total	% of	Consolidated				
Level	(Multiple	(Short	(Either/ or	(Open	Marks	(Marks	%				
	Choice	Answer	Choice)	Choice)		without					
	Questions)	Questions)				choice)					
K1	5		-	-	5	4	16				
K2	5	10	-	-	15	12					
K3	-	-	30	30	60	50	50				
K4	-	-	20	20	40	34	34				
Marks	10	10	50	50	120	100	100				
NB: Hi	igher level of	performance	of the studen	ts is to be as	sessed by	attemptin	g higher level				

of K levels.

Summative Examinations - Question Paper – Format

	Section A (Multiple Choice Questions)									
	Answer All Questions (10x1=10 marks)									
Q.No	CO	K Level	Questions							
1	CO1	K1								
2	CO1	K2								
3	CO2	K1								
4	CO2	K2								
5	CO3	K1								
6	CO3	K2								
7	CO4	K1								
8	CO4	K2								
9	CO5	K1 📀								
10	CO5	K2								

	Section B (Short Answers)									
Answer All Questions (5x2=10 marks)										
Q.No	CO	K Level	CA TAPATA	Questions						
11	CO1	K2								
12	CO2	K2	0							
13	CO3	K2	200							
14	CO4	K2		IIII a a						
15	CO5	K2								
	Section C (Fither/Or Type)									

		Answer Al	l Questions	$(5 \times 5 = 25 \text{ marks})$	
Q.No	CO	K Level		Questions	
16) a	CO1	K3,K3			
16) b	CO1	K3,K3			
17) a	CO2	K3,K3			
17) b	CO2	K3,K3			
18) a	CO3	K3,K3			
18) b	CO3	K3,K3			

Academic Council Meeting Held on 29.04.2021

19) a	CO4	K4,K4								
19) b	CO4	K4,K4								
20) a	CO5	K4,K4								
20) b	CO5	K4,K4								
NB: H	NB: Higher level of performance of the students is to be assessed by attempting higher level									
			of K levels							
			Section D (Open Choice)							
		A	nswer Any Three questions (3x10=30 marks)							
Q.No	CO	K Level	Questions							
21	CO1	K3								
22	22 CO2 K3									
23	CO3	K4	5000							
24	CO4	K4								
25	CO5	K4								





MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS) **DEPARTMENT OF COMPUTER SCIENCE** (For those who joined in 2021-2022 and after)

PROGRAMMING IN CLAB Course Name Course Code 21UCSCP1 L Р С Core 4 4 Category EMPLOYABILITY ENTREPRENURSHIP SKILL ORIENTED Nature of course: **Course objectives:** To develop the basic knowledge of programming fundamentals of C language. • To apply the technique to solve problems through decision-making and looping statements. • To explain the arrays concepts. • To impart the concepts like functions, pointers, structure. • To experiment with file handling concepts. S. No. **List of Programs** Hours 1. Write a C program to find the roots of a Quadratic equation. 60 Write a C program to find the Addition and Multiplication of Matrices using 2. 3. arrays. Write a C program to generate Pascal's triangle. Write a C program to manipulate string in build functions. 4. 5. Write a C program to using recursion for swapping of two integers. 6. Write a C program to find given string is Palindrome or not. Write a C program to find given number is Prime or not 7. Write a C program to display student details like Register number, Name, 8. Marks, DOB, Aadhar number, Mobile using structure. 9. 10. Write a C program to display employee salary payroll using structure. 11. Write a C program to maintain an inventory of items in online store. .Write a C program using Pointers. 12. Write a C program using Union concepts 13. 14. Write C programs for time related functions. Write programs using C Preprocessor Directives. 15. Write a program to open, write, close the text file using files handling C 16 program. Write a C Program to implement error handling. 17. 18. Write a C program to read name and marks of n number of students and store them in a file. Write a C program which copies one file to another file using file handling. 19. 20. Write a C program to merge two files into a third file (i.e., the contents of the first file followed by those of the second are put in the third file). 60 **Total Hours** Academic Council Meeting Held on 29.04.2021

Web Resources: https://www.programiz.com/c-programming/index.htm https://www.tutorialspoint.com/cprogramming/index.htm https://www.w3schools.in/c-tutorial/ https://www.programiz.com/c-programming https://www.guru99.com/c-programming-tutorial.html

https://www.programiz.com/c-programming/c-file-examples

https://fresh2refresh.com/c-programming/c-file-handling/

COU	COURSE OUTCOMES:					
At the	At the end of the course the students will be able to					
CO1:	Develop solutions to simple computational problems using C programs.	К3				
CO2:	Solve problems using conditionals and loops in C.	K3				
CO3:	Understand the concepts of Arrays and structure.	K2				
CO4:	Develop C programs by defining functions and pointers	K3				
CO5:	Develop C programs using files.	K3				

CO & PO Mapping:

CO's/PO's	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	2	3	2	2	3
CO2	2	3	2	2	2	2
CO3	2	2	2	3	2	3
CO4	3	2	2	3	2	2
CO5	2	3	2	2	2	2

*3– Advanced Application; 2–Intermediate Development; 1-Introductory Level

LESSONPLAN

S. No.	List of Programs	Hrs	Mode
1	Write a C program to find the roots of a Quadratic equation		
1. 2	Write a C program to find the Addition and Multiplication of Matrices		
2. 2	while a C program to find the Addition and Multiplication of Matrices		
э.	using arrays.		
4	write a C program to generate Pascal's triangle.		
4.	write a C program to manipulate string in build functions.		
5.	Write a C program to using recursion for swapping of two integers.		
6.	Write a C program to find given string is Palindrome or not.		
7.	Write a C program to find given number is Prime or not		
8.	Write a C program to display student details like Register number, Name,		
9.	Marks, DOB, Aadhar number, Mobile using structure.		
10.	Write a C program to display employee salary payroll using structure.		Black Board, Lab
11.	Write a C program to maintain an inventory of items in online store.		Demonstration
12.	.Write a C program using Pointers.	60	and LCD
13.	Write a C program using Union concepts		
14.	Write C programs for time related functions.		Projector.
15.	Write programs using C Preprocessor Directives.		
16.	Write a program to open, write, close the text file using files handling C		
	program.		
17.	Write a C Program to implement error handling.		
18.	Write a C program to read name and marks of n number of students and		
	store them in a file.		
19.	Write a C program which copies one file to another file using file handling.		
20.	Write a C program to merge two files into a third file (i.e., the contents of		
	the first file followed by those of the second are put in the third file).		

Course Designed by: Mr. S.R. Mathu Sudhanan & Mrs. S.Amutha

an Lata



MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS) DEPARTMENT OF COMPUTER SCIENCE (For those who joined in 2021-2022 and after)

Course Nar	me	Mathematical Foundations									
Course Cod	Code21UMCA11LP										
Category		Allied 5									
Nature of course: EMPLOYABILITY & SKILL ORIENTED & ENTREPRENURSHIP											
Course Objectives:											
 To understand the rank of a matrix and apply it to solving system of linear equations. To analyze Eigen values and associated Eigen vectors of a matrix. To study the methods of reasoning, which includes algebra of propositions, such as compound propositions, truth tables, and tautologies To write and interpret mathematical notation and mathematical definitions To acquire a basic idea of graph, various terms associated and matrix representations of graphs, 											
Unit: I	nd th Mat	trix Algebra		15	5						
Introduction	1 - M	latrix operations – Inverse of a Square Matrix – Elementary operation	ns and	l Ran	k of						
a Matrix – Simultaneous Linear Equations.											
Unit: II	Ma	trix Algebra		15	5						
Inverse by F	Partit	tioning – Eigen values and Eigen vectors(Problems only)									
Unit: III	Log			15	5						
Introduction	1 —]	FF-statements – Connectives – Atomic and compound statements –	Wel	l For	med						
(Statement)	For	mulae – Tru <mark>th table</mark> of a Formula – Tautolo <mark>gy –</mark> Tautological Im	plicat	tions	and						
Equivalence	e of l	Formulae									
Unit: IV	Lat	tices and Boolean Algebra		15	5						
Lattices – S	Some	e properties of Lattices – New Lattices – Modular and Distributive La	ttices								
– Boolean A	Algeł	oras – Boolean Polynomials – Karnaugh Graphs (Problems only).									
Unit: V	Unit: V Graph Theory 15										
Basic conce	pts -	- Matrix Representation of Graphs – Trees – Spanning Trees – Shorte	est Pa	th							
Problem (Pr	roble	ems only).									
		Total Lecture Ho	ours	75 H	[rs						
I											

Books for Study:	
Dr. M.K. Venkataraman. N. Sridharan. and N. Chandrasekaran, "Discrete Math The National Publishing Company, Chennai, 2006.	ematics",
Unit I - Chapter 6: Pages : 6.1- 6.31	
Unit II - Chapter 6: Pages : 6.31- 6.44	
Unit III - Chapter 9: Pages : 9.1 – 9.34	
Unit IV - Chapter10: Pages :10.1 – 10.70	
Unit V - Chapter11: Pages : 11.1 – 11.81	
Books for References:	
1. Trembley. J.P. and Manohar.R., 2001, Discrete Mathematical Structures with Ap	plications to
Compute Science, Tata McGraw –Hill Publishing Company Ltd, New Delhi.	
2. Seymour Lipschutz and Marc Lars Lipson, 2002, Discrete Mathematics, Tata N	AcGraw Hill
Publishing Company Ltd. New Delhi.	
Web Resources:	
• <u>https://nptel.ac.in/courses/106/106/106106094/</u>	
• <u>https://nptel.ac.in/courses/111/107/111107058/</u>	
• <u>https://nptel.ac.in/courses/111/106/111106086/</u>	
• https://nptel.ac.in/noc/courses/noc18/SEM2/noc18-cs53/	
Course Outcomes	K Level
On the successful completion of the course, the students will be able to	
CO1: apply the matrix theory to study other branches of mathematics like algebra,	K1
vector analysis, cryptography, graph theory etc	
CO2: apply the matrix theory to analyze the quantitative and qualitative properties	K1
of solutions of mathematical models in biological, ecological systems and in	
engineering problems	
CO3: be conversant with the rules of logic to understand and reason with statements	K3
CO4: Formulate and interpret Boolean logic principles.	К3
CO5: have a strong background of graph theory	K3

CO & PO Mapping:

COS	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	2	3	2	3
CO 2	2	3	3	3	2
CO 3	3	2	2	2	3
CO 4	3	2	2	3	3
CO 5	3	2	3	3	3

*3 – Advanced Application; 2 – Intermediate Development; 1 - Introductory Level

LESSON PLAN

UNIT	SUBJECT NAME	Hrs	Mode
I	Introduction - Matrix operations – Inverse of a Square Matrix – Elementary operations and Rank of a Matrix – Simultaneous Linear Equations.	12	Chalk & Talk, LCD Projector
Π	Inverse by Partitioning – Eigen values and Eigen vectors (Problems only)	12	Chalk & Talk
ш	Introduction – TF-statements – Connectives – Atomic and compound statements – Well Formed (Statement) Formulae – Truth table of a Formula – Tautology – Tautological Implications and Equivalence of Formulae	12	Chalk & Talk
IV	Lattices – Some properties of Lattices – New Lattices – Modular and Distributive Lattices – Boolean Algebras – Boolean Polynomials – Karnaugh Graphs (Problems only).	12	Chalk & Talk, LCD Projector
v	Basic concepts – Matrix Representation of Graphs – Trees – Spanning Trees – Shortest Path Problem (Problems only).	12	Chalk & Talk, Assignment

Course Designed by: Mr. P. Palanikumar& Dr. S. Suriyakala

	Learning Outcome Based Education & Assessment (LOBE) Formative Examination - Blue Print											
	Articulation Mapping – K Levels with Course Outcomes (COs)											
Inte	Cos	K Level	Section	ı A	Section	n B	Section C	Section D				
rnal			MCQ	S	Short Ans	swers	Either or	Open				
			No. of.	K -	No. of.	K -	Choice	Choice				
			Questions	Level	Questions	Level						
CI	CO1	K2	2	K1	1	K2	5(k2)	10(k4)				
AI	CO2	K3	2	Up to	2	Up to	5(k2 &	20(k3 &				
				K2		K3	k3)	k4				
CI	CO3	K3	2	K1	1	K2	5(k3)	10(k4)				
AII	CO4	K3	2	K2	2	Up to	5(k3)	20(k3 &				
			625		6	K3		k4				
Que	stion	No. of	4	MAA	3		4	2				
Pat	tern	Questions to be		ALL	10							
CIA	I & II	asked	186	111.55		2						
		No. of	4		3	-94. V	2	2				
		Questions to be	(2011)	DAG	CONTRA STATE	(and)						
		answered		6		1.100						
		Marks fo <mark>r each</mark>	1	EP	2	G	5	10				
		question	64		1000							
		Total M <mark>arks for</mark>	4	R	6		10	20				
		each section		The	ant							
			NO. NO. NO.	T	Concession of the							

	Distribution of Marks with K Level CIA I & CIA II											
	K	Section A	Section B	Section C	Section D	Total	% of	Consolidate				
	Level	(Multiple	(Short	(Either /	(Open	Marks	(Marks	of %				
		Choice	Answer	Or	Choice)	1 20	without					
		Questions)	Questions)	Choice)		A S L	choice)					
	K1	2	2	144 - Lau		4	6.67					
	K2	2	4	10	10	26	43.33					
CIA	K3	-	5	10	10	20	33.33	100				
	K4	-		-	10	10	16.67					
	Marks	4	6	20	30	60	100					
	K1	2	2	50.5	51 -	4	6.67					
CIA	K2	2	4	10	10	26	43.33					
II	K3	-	-	10	10	20	33.33	100				
	K4	-	-	-	10	10	16.67					
	Marks	4	6	20	30	60	100					

K1- Remembering and recalling facts with specific answers

K2- Basic understanding of facts and stating main ideas with general answers

K3- Application oriented- Solving Problems

K4- Examining, analyzing, presentation and make inferences with evidences

CO5 will be allotted for individual Assignment which carries five marks as part of CIA component.

Academic Council Meeting Held on 29.04.2021

5	Summative Examination – Blue Print Articulation Mapping – K Level with Course Outcomes (COs)											
S.No	COs	K - Level	MCOs		Short An	swers	Section C	Section				
			No. of	K –	No. of	K –	(Either / or	D (Open				
			Questions	Level	Question	Level	Choice)	Choice)				
1	CO 1	K1	2	K1	1	K2	2 (K3& K3)	1 (K3)				
2	CO 2	K3	2	K1	1	K2	2 (K3 &K3)	1 (K3)				
3	CO 3	К3	2	K1& K2	1	K2	2 (K3 &K3)	1 (K3)				
4	CO 4	K4	2	K1& K2	1	K2	2 (K4 &K4)	1 (K4)				
5	CO 5	K4	2	K1& K2		K2	2 (K4 &K4)	1 (K4)				
No	of Quest. Aske	ions to be	10	$\mathbb{W}_{\mathcal{O}}$	5	191	5	5				
No.of Questions to be answered			10		5	90	5	3				
Marks for each question		1		2		5	10					
Total	Total Marks for each section			The start	10		25	30				
	(Figures	in parenthesi	<mark>is denotes</mark> , qu	iestions s	hould be as	ked with	<mark>1 th</mark> e given K le	evel)				
		201		ET.			8°					

	Distribution of Marks with K Level												
K	Section A	Section B	Section C	Section D	Total	% of	Consolidated						
Level	(Multiple	(Short	(Either/ or	(Open	Marks	(Marks	%						
	Choice	Answer	Choice)	Choice)		without							
	Questions)	Questions)			2 3	choice)							
K1	5	6	10		19	15.83	42						
K2	5	4	10	10	31	25.83	42						
K3	-	26	20	30	50	41.67	42						
K4	-	<u>-</u> 9	10	10	20	16.67	16						
Marks	10	10	50	50	120	100	100						
NB: Hi	NB: Higher level of performance of the students is to be assessed by attempting higher level												
			of K le	evels.									

	٨	nswer All (Section A (Multiple Choice Questions)
O No		K Level	<u>Ouestions</u>
1	CO1	K Level K1	Questions
2	CO1	K1	
3	CO2	K1	
4	CO^2	K1	
5	CO3	K3	
6	CO3	K3	
7	CO4	K3	S SNLD S ON
8	CO4	K3	61
9	CO5	K3	n MAM
10	CO5	K3	
			Section B (Short Answers)
	A	nswer All	Questions (5x2=10 marks)
<u>V.No</u>		K Level	Questions
12		KI V1	
12	C02	KI K2	
13	CO3	K3 0	
14	CO4	K3	
15	CO5	K3	
	Ans	wer All Qu	restions (5 x 5 = 25 marks)
Q.No	CO	K Level	Questions
16) a	CO1	K1	
16) b	CO1	K1	
17) a	CO2	K1	E Contraction of the second se
17) b	CO2	K1	
18) a	CO3	K3	
18) b	CO3	K3	
19) a	CO4	K3	
19) b	CO4	K3	100 C
20) a	CO5	K3	Tomu (AS)
20) b	CO5	K3	
NB: H	ligher l	evel of per	formance of the students is to be assessed by attempting higher level of K levels
			Section D (Open Choice)
	An	iswer Any '	Three questions (3x10=30 marks)
	CO	K Level	Questions
Q.No		1	-
Q.No 21	CO1	K1	
Q.No 21 22	CO1 CO2	K1 K1	
Q.No 21 22 23	CO1 CO2 CO3	K1 K1 K3	
Q.No 21 22 23 24	CO1 CO2 CO3 CO4	K1 K1 K3 K3	

Summative Examinations - Question Paper – Format

Academic Council Meeting Held on 29.04.2021

Page 285



MANNAR THIRUMALAI NAICKER COLLEGE(AUTONOMOUS) **DEPARTMENT OF COMPUTER SCIENCE**

(For those who joined in 2021 -2022 and after)

Course Cod	le 21UC	CSSP1			L	Р	С		
Category Skill						2	2		
Category	SKII					2			
Nature of c	ourse:	EMPLOYABILITY	SKILL ORIENTE	ED ✓ EN	TREPRE	NUR	SHIF		
Course obj	ectives:	ACC -	0 4 4 4						
• To fa	amiliarize	the students in preparatio	n of documents and pres	sentations	with offic	e			
auto	mation too	ol <u>9</u> Ala							
• To n	nake aware	e of <mark>Office automa</mark> tion us	ing MS-Office						
• To e	ducate MS	S-of <mark>fice system, in</mark> ternet o	perations, online, offlin	<mark>e w</mark> orking	areas				
• To the	ain them t	to w <mark>ork on the co</mark> mment b	based activities in MS-o	ffice system	m				
• To n	hake the pa	articipants to understand v	va <mark>r</mark> ious services based o	n online ai	nd offline	surfa	aces		
S. No.			st of Programs			H	Iours		
	MS-WO	ORD				10)		
1.	Text Ma	anipulations and Text For	matting						
2.	Usage of	of Numbering, Bullets, To	ols and Headers						
3.	Usage of	of Spell Check and Find ar	nd Replace						
4.	Picture I	Picture Insertion and Alignment							
5.	Creation of Documents Using Templates								
6.	Creation	n o <mark>f</mark> Templates							
7.	Mail Me	erg <mark>e</mark> Concept							
8.	Copying	g Text and Picture from E	xcel						
9.	Creation	n of Tables, Formatting Ta	ables						
10.	Splitting	g the Screen and Opening	Multiple Document, Ins	serting Syr	nbols in				
	Docume	ents							
	MS-EXO	CEL	T C II						
11.	Creation	n of Worksheet and Entern	ing Information						
12.	Aligning	g, Editing Data in Cell		· · · · · · 1 E					
13. 14	Excel Fl	unction (Date, 11me, Stat	Istical, Mathematical, F	Inancial F	f Column	\ \			
14. 15	Moving	ig of Columni which and I	Now Height (Column and Column	u Kalige O	Column)			
15.	Formatti	ing Numbers and Other N	Jumeric Formats	11115					
10. 17	Drawing	a Borders around Cells	unicite i ormais						
17.	Creation	n of Charts Raising Movir	ισ						
10.	Changin	ng Chart Type	Ъ						
20.	Controll	ling the Appearance of a (Chart						
	MS-POV	WER POINT –							
21.	Working	g with slides							
22.	Creating	g, saving, closing presenta	ation						
	C								

24.	Working fonts and bullets	
25.	Inserting Clipart	
26.	Working with Clipart	
27.	Applying Transition and animation effects	
28.	Add audio file to the slide.	
30	Run and Slide Show	
	Total Lecture Hours	30



COUR	SE OUTCOMES:	K Level
At the	end of the Course students will be able to	
CO1:	Acquire knowledge on editor, spreadsheet and presentation software	K2
CO2:	Understand and discuss about the use of Office Package in daily life	K2
CO3:	Give hands on training to the students to create and format documents using MSWord	K4
CO4:	Construct charts in MS-Excel	К3
CO5:	Design presentation with efficient slides	K4



S. No.	List of Programs	Hrs	Mode
	MS-WORD	30	Lab
1.	Text Manipulations and Text Formatting		demonstration
2.	Usage of Numbering, Bullets, Tools and Headers		
3.	Usage of Spell Check and Find and Replace		
4.	Picture Insertion and Alignment		
5.	Creation of Documents Using Templates		
6.	Creation of Templates		
7.	Mail Merge Concept		
8.	Copying Text and Picture from Excel		
9.	Creation of Tables, Formatting Tables		
10.	Splitting the Screen and Opening Multiple Document, Inserting		
	Symbols in Documents		
	MS-EXCEL		
11.	Creation of Worksheet and Entering Information		
12.	Aligning, Editing Data in Cell		
13.	Excel Function (Date, Time, Statistical, Mathematical, Financial		
	Functions)		
14.	Changing of Column Width and Row Height (Column and Range of		
	Column)		
15.	Moving, copying, Inserting and Deleting Rows and Columns		
16.	Formatting Numbers and Other Numeric Formats		
17.	Drawing Borders around Cells		
18.	Creation of Charts Raising Moving		
19.	Changing Chart Type		
20.	Controlling the Appearance of a Chart		
	MS-POWER POINT –		
21.	Working with slides		
22.	Creating, saving, closing presentation		
23	Changing slide layout		
24.	Working fonts and bullets		
25.	Inserting Clipart		
26.	working with Clipart		
27.	Applying Transition and animation effects		
28.	Add audio file to the slide.		
30	Kull and Shue Show		

LESSONPLAN

Course Designed by: Mrs. T.C. Sujitha & Mr. S. Veerapandi





MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS) DEPARTMENT OF COMPUTER SCIENCE (For those who joined in2021-2022 and after)

Course Name **OBJECT ORIENTED PROGRAMMING USING C++** $21UCS\overline{C21}$ **Course Code** С Р L Category Core 5 5 Nature of course: EMPLOYABILITY \checkmark SKILLORIENTED **ENTREPRENURSHIP Course objectives:** 1. To provide exposure to problem solving through programming 2. To practice the fundamental programming methodologies in the C/C++ programming language via laboratory experiences. To write C++ programs using decision making, branching, looping constructs 3. To learn the syntax and semantics of the C++ programming language. 4. To code, document, test, and implement a well-structured, robust computer program using the 5. C/C++ programming language. Unit: I Principles of Object Oriented Programming : 15 Basic concepts of Object-Oriented Programming-Benefits of OOP- Object - Oriented Languages -Applications of OOP Beginning with C++: What is C++? - Applications of C++ - A simple C++ Program – Structure of C++ Program – Compiling and linking- Tokens, Expressions and Control Structures: Tokens – Keywords – Identifiers and Constants - Basic Data Types – User Defined Data -Derived Data Types-Operators in C++-Scope Resolution Operator-Member Types Dereferencing Operator-Manipulators-Special Assignment Expressions - Control Structures Unit: II **Functions in C++:** 15

The Main Function – Function Prototyping – Call By Reference – Return By Reference – Inline Functions – Default Arguments – Recursion-Function Overloading – Friend and Virtual Functions– Math Library Functions Classes and Objects: Specifying a Class–Defining Member Functions – C ++ Program with Class – Making an Outside Function Inline – Nesting of Member Functions – Memory Allocation for Objects–Static Data Members – Static Member Functions–Arrays of Objects Constructors and Destructors: Constructors –Parameterized Constructors –Destructors

Unit: III Operator Overloading and Type Conversions:

15

15

Defining Operator Overloading – Overloading Unary Operators – Overloading Binary Operators – Rules for operator Overloading Inheritance : Extending Classes: Introduction –Defining Derived Classes–Single Inheritance–Making a Private Member Inheritable – Multilevel Inheritance – Multiple Inheritance –Hierarchical Inheritance–Hybrid Inheritance–Virtual Base Classes–Abstract Classes

Unit: IV Exception Handling:

Basics of Exception Handling–Exception Handling Mechanism – Throwing Mechanism – Catching Mechanism Manipulating Strings: Introduction–Creating(string) Objects–Manipulating

Academic Council Meeting Held on 29.04.2021



2. https://www.javatpoint.com/cpp-tutorial

Course	Outcome	K Level
CO1:	Learn the fundamental programming concepts and methodologies which are essential to building good C++ programs	K3
CO2:	Code, document, test, and implement a well-structured, robust computer program using the C++ programming language	K3
CO3:	Describe the object-oriented programming approach in connection with C++	К3
CO4:	Understand concepts like inheritance, polymorphism, pointers and virtual functions	K4
CO5:	Demonstrate the need of files and their operations	K4

CO & PO Mappings:

O & PO Map	pings:	670	00000	1 3		
CO's	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6
CO1	2	2 1	3	1.9	1	2
CO2	2	2	2	2	2	2
CO3	1 8	1	2	1	2	1
CO4	3	2	1	2	1	2
CO5	2	1	2	2	3	1

*3–AdvancedApplication; 2–IntermediateDevelopment; 1-IntroductoryLevel

LESSON PLAN

UNIT	Object Oriented Programming Using C++	Hrs	Mode
Ι	Principles of Object Oriented Programming-Beginning with C++: Tokens, Expressions and Control Structures-Operators in C++ - Control Structures	15	Chalk and Talk , ICT Tools
Π	Function in C++–Recursion- Function Overloading- Classes and Objects- Arrays of Objects Constructors and Destructors: Constructors –Parameterized Constructors–Destructors	15	Chalk and Talk , ICT Tools
III	OperatorOverloadingandTypeConversions- Inheritance:ExtendingClasses –Virtual Base Classes–Abstract Classes	15	Chalk and Talk , ICT Tools
IV	Exception Handling-Manipulating Strings	15	Chalk and Talk , ICT Tools
V	Pointers, Virtual Functions and Polymorphism -Working with Files – File Modes–Sequential Input and Output Operations– Command–Line Arguments	15	Chalk and Talk, ICT Tools

Course Designed by: Mrs. R. Vaitheswari & Dr. G. Devika

Academic Council Meeting Held on 29.04.2021

	Learning Outcome Based Education & Assessment (LOBE)								
			Formative E	xaminati	on - Blue Pr	int			
		Articulation N	Mapping – K	Levels v	vith Course (Outcome	s (COs)	-	
Inte	COs	K Level	Section	n A	Section	ı B	Section C	Section D	
rnal			MCC)s	Short An	swers	Either or	Open	
			No. of.	K -	No. of.	K -	Choice	Choice	
			Questions	Level	Questions	Level			
CI	CO1	K3	2	K1,K2	1	K2	2(K3,K3)	2(K3)	
AI	CO2	K3	2	K1,K2	2	K2	2(K3,K3)	1(K3)	
CI	CO3	K3	2	K1,K2	1	K2	2(K3,K3)	1(K3)	
AII	CO4	K4	2	K1,K2	2	K2	2(K4,K4)	2(K4)	
Que	stion	No. of Questions	4	K1,K2	3	K2	4	3	
Pat	tern	to be asked			- C				
CIA	I & II	No. of Questions	4	K1,K2	3	K2	2	2	
		to be answered	~~ / K	L.	LA V				
		Marks for each		K1,K2	2	K2	5	20	
		question	C CI			1091			
		Total Marks for	4 🧰	K1,K2	6	K2	10	20	
		each section	6	10					

	Distribution of Marks with K Level CIA I & CIA II							
	K Level	Section A (Multiple Choice Questions)	Section B (Short Answer Questions)	Section C (Either / Or Choice)	Section D (Open Choice)	Total Marks	% of (Marks without choice)	Consolidate of %
	K1	2 9.	2	19		4	6	17
	K2	2	4	47		6	11	
CIA	K3	TT -		-20	30	50	50	83
Ι	K4	-	T. STICON	1.00	-		-	-
	Marks	4	6	20	30	60	100	100
	K1	2	2		25/07/01	4	6	17
CIA II	K2	2	4			6	11	
	K3	-	5	10	10	20	33.33	33
	K4	-	3	10	20	30	50	50
	Marks	4	6	20	30	60	100	100

K1- Remembering and recalling facts with specific answers

K2- Basic understanding of facts and stating main ideas with general answers

from

K3- Application oriented- Solving Problems

K4- Examining, analyzing, presentation and make inferences with evidences

CO5 will be allotted for individual Assignment which carries five marks as part of CIA component.

S	Summative Examination – Blue Print Articulation Mapping – K Level with Course Outcomes (COs)							
S.No	COs	K -	MCQ)s	Short A	nswers	Section C	Section D
		Level	No. of	K –	No. of	K –	(Either /	(Open
			Questions	Level	Questio	Level	or	Choice)
			_		ns		Choice)	
1	CO1	K3	2	K1,K2	1	K2	2(K3,K3)	1(K3)
2	CO2	K3	2	K1,K2	1	K2	2(K3,K3)	1(K3)
3	CO3	K3	2	K1,K2	1	K2	2(K3,K3)	1(K3)
4	CO4	K4	2	K1,K2	1	K2	2(K4,K4)	1(K4)
5	CO5	K4	2	K1,K2	6 1	K2	2(K4,K4)	1(K4)
No. of	Question	s to be	10	K1,K2	5	K2	10	5
Asked				~~ ~	M .			
No.of	Questions	s to be	10	K1,K2	5	K2	5	3
answered		\circ / /	TALL	ALL N	8			
Marks for each question			K1,K2	2	K2	5	10	
Total Marks for each		10 🙋	K1,K2	10	K2	25	30	
section			10		1-191			
	(Figures in parenthesis denotes, questions should be asked with the given K level)							

	Distribution of Marks with K Level								
K	Section A	Section B	Section C	Section D	Total	% of	Consolidated		
Level	(Multiple	<mark>(Short</mark>	(Either/ or	(Open	Marks	(Marks	%		
	Choice	Answer	Choice)	Choice)		without			
	Questions)	Questions)				choice)			
K1	5				5 9	4	16		
K2	5	10	100 100	الميلات حالي	15	12			
K3	-	Con the	30	30	60	50	50		
K4	-	10	20	20	40	34	34		
Marks	10	10	50	- 50	120	100	100		
NB: Higher level of performance of the students is to be assessed by attempting higher level of K levels.									

		Sum	mative Examinations - Question Paper – Format				
			Section A (Multiple Choice Questions)				
	I	Answer All	Questions (10x1=10 marks)				
Q.No	CO	K Level	Questions				
1	CO1	K1					
2	CO1	K2					
3	CO2	K1					
4	CO2	K2					
5	CO3	K1					
6	CO3	K2					
7	CO4	K1					
8	CO4	K2	Land a min				
9	CO5	K1					
10	CO5	K2	D MAM 4 2				
		. =-	Section B (Short Answers)				
0.11	A	nswer All	Questions (5x2=10 marks)				
Q.No		K Level	Questions				
11		K2					
12	CO2	K2					
13	CO3	K2					
14	CO4	K2					
15	C05	K2					
		Amorrow Al	Section C (Either/Or Type)				
O No	CO	K L ovol	$(5 \times 5 = 25 \text{ marks})$				
$\frac{Q.100}{16}$	C01	K 2 K 3	Questions				
$\frac{10}{a}$	C01	K3,K3					
$\frac{10}{17}$ a	CO1	K3,K3					
$\frac{17}{17}$ h	C02	K3 K3					
17)0 18)a	C02	K3 K3	Sauther I diana dana				
$\frac{10}{18}$ h	CO3	K3 K3	Sector and the sector of the s				
10) 0 19) a	C04	K4 K4					
19) h	C04	K4 K4					
20) 9	C05	K4 K4	CON L				
20) h	C05	K4 K4					
<u>NB: F</u>	ligher l	evel of ner	formance of the students is to be assessed by attempting higher level				
		- · · · · Pol	of K levels				
			Section D (Open Choice)				
Answer Any Three questions (3x10=30 marks)							
Q.No	CO	K Level	Questions				
21	CO1	K3					
	CO^2	K3					
22	02						
22 23	CO2 CO3	K4					
22 23 24	CO2 CO3 CO4	K4 K4					

Academic Council Meeting Held on 29.04.2021



MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS) DEPARTMENT OF COMPUTER SCIENCE (For those who joined in 2021 -2022 and after)

Course Nan						
Course Cod	L	Р	С			
Category	Core	-	4	4		
Nature of co	Durse: EMPLOYABILITY - SKILL ORIENTED - ENTR	EPREN	JURS	SHIP		
Course obje	ectives:					
To Enha	nce programming skills of the students, using Object oriented program	ming c	oncep	ots.		
To provi	de in–depth cov <mark>erage of obj</mark> ect–oriented programming principles and t	echniq	ies.			
• To practi	ice the use of C++ classes and class libraries, arrays, vectors, inheritan	ce and f	ïle I/	0		
stream co	oncepts.					
• To devel	op classes f <mark>or simple appl</mark> ications and Execute well structured C++ pr	ograms				
• To use p	roblem solving and program design to generate effective applications.					
S. No.	List of Programs	Η	ours			
1.	Simple Programs.		60			
2.	Program using control structures.					
3.	Program using one dimensional Array					
4.	Program using two dimensional Arrays.					
5.	Program using class and Objects.					
6.	Program using Structure and Union.					
7.	Program using Constructor and overloading constructor.					
8.	Program using Inheritance (Different forms).					
9.	Program using Function Overloading.					
10	Program using Operator Overloading.					
11.	Program using Pointer Arithmetic.					
12.	Program using Virtual Functions.					
13.	13. Program using Friend Function and Inline function.					
14.	Program using Exception Handling.					
15.	Program using Stream (File) Operations.					
	Total Lecture Hours	60				

COURSE OUTCOMES: At the end of the Course the students will be able to				
CO1:	Learn how to design C++ classes for code reuse.	K1		
CO2:	Examine the types of inheritance	K2		
CO3:	Implement object oriented programming concepts in C++	K3		
CO4:	Describe the concept of function overloading ,operator overloading, polymorphism	K4		
CO5:	Apply the concepts of and principles of the programming language to the real– World problems and solve the problems	K4		

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CO & PO Mappings:

		I MILLING				
CO's/PO's	PO1	PO2	PO3	PO4	PO5	PO6
CO1		(million of	2	1	2	1
CO2			2	2	-	3
CO3	8 - (2		2	2
CO4	3	2	2	15	2	2
CO5	1	2	2	2	2	-

*3–AdvancedApplication; 2–IntermediateDevelopment; 1-IntroductoryLevel

LESSON PLAN

S. No	List of Programs	Hours	Mode
1.	Simple Programs.	60	Lab
2.	Program using control structures.		demonstration
3.	Program using one dimensional Array		
4.	Program using two dimensional Arrays.		
5.	Program using class and Objects.		
6.	Program using Structure and Union.		
7.	Program using Constructor and overloading constructor.		
8.	Program using Inheritance (Different forms).		
9.	Program using Function Overloading.		
10	Program using Operator Overloading.		
11.	Program using Pointer Arithmetic.		
12.	Program using Virtual Functions.		
13.	Program using Friend Function and Inline function.		
14.	Program using Exception Handling.		
15.	Program using Stream (File) Operations.		

Course Designed by: Mr.S.Veerapandi & Mrs. R.Vaitheswari

Academic Council Meeting Held on 29.04.2021



MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS) DEPARTMENT OF COMPUTER SCIENCE (For those who joined in 2021-2022 and after)

Course Na	ne Probability and Statistics						
Course Coo	le 21UMCA21	L	P	С			
Category	Allied	5	-	4			
Nature of co	ourse: EMPLOYABILITY 🖌 SKILL ORIENTED 🖌 ENTREP	RENURS	HIP	✓			
Course Obj	jectives:						
 To prov varied a compute To App 	ide students with the foundations of probabilistic and statistical anal pplications in engineering and science like disease modeling, climat er networks etc. ly laws of probability to concrete problems.	ysis mostly e predictio	y usec n and	l in			
Unit: I	Measures of Central Tendencies :		15	i			
Introduction Mean(probl	a – Arithme <mark>tic mean – Partition Values – Mode – Geometric Me</mark> an &	z Harmonio	:				
Unit: II	Measures of Dispersion		15				
Introduction	n – Measures of dispersion(problems only)						
Unit: III	Correlation and Regression		15	i			
Introduction	n – Correlation – Rank Correlation – Regression						
Unit: IV	Probability		15	í			
Probability-	Introduction -Conditional Probability – Mathematical Expectations	(Problems	only))			
Unit: V	Special Distributions		15				
Introduction	a – Binomial Distrib <mark>ution – P</mark> oisson Distribution -Normal Distribution	on.(Problem	ns on	ly)			
	Total Lectur	e Hours	75 H	rs			
Books for S	Study:						
Arumugam. Palayamkot	S. and Thangapandi Isaac. A., "Statistics", New Gamma ai, 2011.	Publishing	g Ho	use,			
	Unit I - Chapter 2: Sections : 2.0 – 2.4						
	Unit II - Chapter 3: Sections : 3.0 & 3.1(full)						
	Unit III - Chapter 6: Sections: 6.0-6.3						
	Unit IV - Chapter11: Sections: 11.0-11.2,						
	Chapter12 : Section: 12.4 Unit V Chapter12: Sections: 12.0 12.2						
	- Chapter 15. Sections: 15.0 – 15.5						

Academic Council Meeting Held on 29.04.2021

Books	for Reference:							
1. Vi	1. Vittal. P.R., Mathematical Statistics, Margham Publications, Chennai, 2013.							
2. Gu	pta. S.C. and Kapoor. V.K., "Fundamentals of Mathematical Statistics", Eleve	enth edition,						
Su	ltan Chand & sons, New Delhi, 2007.							
3. Gu	pta. S.C. and Kapoor. V.K., "Elements of Mathematical Statistics", Third Edit	tion, Sultan						
Ch	and & Sons, Educational Publishers, New Delhi, 2015.							
Web R	Resources:							
https://	nptel.ac.in/courses/111/105/111105041/							
https://	www.classcentral.com/course/swayam-probability-and-statistics-5228							
Course Outcomes								
On the	successful completion of the course, the students will be able to							
CO1:	Improve data handling skills and summarize statistical computations.	K3						
CO2:	Determine the relationship between quantitative variables and extend	K3						
	regression Analysis.							
CO3:	Recall and apply a comprehensive set of Probability ideas.	K1						
CO4:	Find, interpret and analyze the measure of central tendencies, Moment	K3						
	Generating function and Characteristic function of random variables.							
CO5:	Relate, Analyze and Demonstrate the knowledge of using various distributions	K2						
	for statistical analysis.							

CO & PO Mapping:

COS	PO 1	PO 2	PO 3	PO 4	PO 5
CO 1	3	2.44	2	3	3
CO 2	3	3	3	3	2
CO 3	3	3	- 3	3	2
CO 4	3		2	3	3
CO 5	3	2	3	3	3

*3 – Advanced Application; 2 – Intermediate Development; 1 - Introductory Level

LESSON PLAN

Unit	Course Name	Hrs	Pedagogy
Ι	Introduction –Measures of Central Tendencies(Proofs of the Theorems are not included – Problems only)	15	Chalk & Board
II	Introduction – Measures of Dispersion (Proofs of the Theorems are not included – Problems only)	15	Chalk & Board
III	Introduction – Correlation – Rank Correlation – Regression. Introduction-	15	Chalk & Board
IV	Probability- Conditional Probability – Mathematical Expectations (Proofs of the Theorems are not included – Problems only)	15	Chalk & Board
v	Introduction – Binomial Distribution – Poisson Distribution - Normal Distribution.(Proofs of the Theorems are not included – Problems only)	15	Chalk & Board

Course Designed by: Mrs. H. Sowmiyagowri

		GIL				Competence.						
		Learning	<mark>g Outcome Ba Formative Ex</mark>	ased Edu xaminati	ication <mark>& As</mark> on - Bl <mark>ue Pr</mark> i	sessmen int	t (LOBE)					
Articulation Mapping – K Levels with Course Outcomes (COs)												
Inte	COs	K L <mark>evel</mark>	Section	A	Section	n B	Section C	Section D				
rnal		DO	MCQ	s	Short An	swers	Either or	Open				
			No. of.	К -	No. of.	К -	Choice	Choice				
			Questions	Level	Questions	Level						
CI	CO1	CO1	K2	2	K1	16	K2	5(k2)				
AI	CO2	CO2	K3	2	Up to K2	2	Up to K3	5(k2 &				
		2		LIK		4 50		k3)				
CI	CO3	CO3	К3	2	K1	1	K2	5(k2)				
AII	CO4	CO4	K3	2	K2	2	Up to K3	5(k3)				
Que	stion	No. of 🧹	-4	The C	- 3	2	4	3				
Pat	tern	Questions to be			G C	1						
CIA	I & II	asked										
		No. of	4		3		2	2				
		Questions to be		11113	51							
		answered										
		Marks for each	1		2		5	10				
		question										
		Total Marks for	4		6		10	20				
		each section										

	Distribution of Marks with K Level CIA I & CIA II											
	K Level	Section A (Multiple Choice	Section B (Short	Section C (Either /	Section D (Open Choice)	Total Marks	% of (Marks without	Consolidate of %				
		Questions)	Questions)	Choice)	Choice)		choice)					
	K1	2	2	-	-	4	6.67	50				
	K2	2	4	10	10	26	43.33					
CIA	K3	-	-	10	10	20	33.33	33.33				
I	K4	-	-	-	10	10	16.67	16.67				
	Marks	4	6	20	30	60	100	100				
	K1	2	2	-	-	4	6.67	50				
CIA II	K2	2	4	10	10	26	43.33					
	K3	-		10	10	20	33.33	33.33				
	K4	-	/ ·/· /	A CUCRU	10	10	16.67	16.67				
	Marks	4	0 6	20	30	<u>60</u>	100	100				

K1- Remembering and recalling facts with specific answers

K2- Basic understanding of facts and stating main ideas with general answers

K3- Application oriented- Solving Problems

K4- Examining, analyzing, presentation and make inferences with evidences

CO5 will be allotted for individual Assignment which carries five marks as part of CIA component.

S	Summative Examination – Blue Print Articulation Mapping – K Level with Course											
S.No	COs	K - Level	MCQs		Short Answers		Section C	Section D				
		5	No. of	K –	No. of	K –	(Either /	(Open				
		3.	Questions	Level	Question	Level	or Choice)	Choice)				
1	CO 1	K1	2	K1	1	K1	2 (K3& K3)	1 (K2)				
2	CO 2	K3	".s. 2001.	K1	1	K1	2 (K3 &K3)	1 (K3)				
3	CO 3	К3 💛	_2	K1&K2	1111	K2	2 (K3 &K4)	1 (K3)				
4	CO 4	K4	2	K1&K2		K2	2 (K3 &K4)	1 (K3)				
5	CO 5	K4	20	K1&K2	1	K2	2 (K3 &K4)	1 (K4)				
No	of Quest	ions to be	10	SUITE	5		5	5				
	Aske	ed										
No.of Questions to be			10		5		5	3				
answered												
Marks for each question		1		2		5	10					
Total Marks for each section			10		10		25	30				
	(Figures in parenthesis denotes, questions should be asked with the given K level)											

	Distribution of Marks with K Level											
K	Section A	Section B	Section C	Section D	Total	% of	Consolidated					
Level	(Multiple	(Short	(Either/ or	(Open	Marks	(Marks	%					
	Choice	Answer	Choice)	Choice)		without						
	Questions)	Questions)				choice)						
K1	5	6	10	-	19	15.83	42					
K2	5	4	10	10	31	25.83						
K3	-	-	20	30	50	41.67	42					
K4	-	-	10	10	20	16.67	16					
Marks	10	10	50	50	120	100	100					
NB: H	igher level of	performance	of the studen	ts is to be as	sessed by	attemptin	g higher level					

of K levels.

Summative Examinations - Question Paper – Format

	Section A (Multiple Choice Questions)										
		Answe	· All Questions (10x1=10 marks)								
Q.No	CO	K	Questions								
		Level									
1	CO1	K1									
2	CO1	K2									
3	CO2	K1									
4	CO2	K2	5 b								
5	CO3	K1									
6	CO3	K2									
7	CO4	K1									
8	CO4	K2	3 1 10 10								
9	CO5	K1	Jan and the set of the								
10	CO5	K2									
			Section B (Short Answers)								
	1	Answe	r All Questions (5x2=10 marks)								
Q.No	CO	K	Questions								
		Level	IS THULLES HIN								
11	CO1	K1									
12	CO2	K1									
13	CO3	K2									
14	CO4	K2									
15	CO5	K2									
			Section C (Either/Or Type)								
		Answer A	All Questions (5 x 5 = 25 marks)								
Q.No	CO	K	Questions								
		Level									

16) a

16) b

CO1

K1

Academic Council Meeting Held on 29.04.2021

Page 302

			-	
17) a	CO1	K2		
17) b	CO2	K1		
18) a	CO2	K2		
18) b	CO3	K1		
19) a	CO3	K2		
19) b	CO4	K1		
20) a	CO4	K2		
20) b	CO5	K1		

NB: Higher level of performance of the students is to be assessed by attempting higher level of K levels

Section D (Open Choice)								
Answer Any Three questions (3x10=30 marks)								
Q.No	Q.No CO K Questions							
		Level						
21	CO1	K3		\$				
22	CO2	K3		1941)				
			CONTRA CITITA					
23	CO3	K3		1194				
24	CO4	K4						
25	CO5	K4		-				





MANNAR THIRUMALAI NAICKER COLLEGE (AUTONOMOUS) DEPARTMENT OF COMPUTER SCIENCE

(For those who joined in 2021 -2022 and after)

Course Name		ne M	ultimedia Lab								
Course Code		le 21	UCSSP2					L	Р	С	
Category		S	kill					-	2	2	
N	ature of C	ourse:	EMPLOYAB	ILITY 🗸	SKILLORIENT	ED 🗸	ENTREP	RENU	JRSI	HIP	\checkmark
C	ourse Obj	ectives	:	5	D 6 min						
•	To learn t	the hasi	cs and Fundame	ntals of N	Aultimedia animati	on					
	To introd	ne oasi nee Mu	ltimedia compo	nents and		on .					
•	To underst	tand ho	w Multimedia c	an be inc	orporated in real lit	e					
•	To develo	on vari	ous video and te	xt applica	ations.						
•	To Design	n and d	evelop various N	Aultimed	ia Systems applical	ole in re	eal time.				
	S. No.		201	1	List of Program	ns	194			Hou	urs
			19	2100.0							
	1.		Create an anim	ation to s	how a bouncing ba	ıll.			-	30	
	2.		Create an anim	ation to s	how a moving stic	k man.					
	3.	Create an animation to show a fainting banana.									
	4. Create an animation to show sunrise and sunset.										
	5. Create an animation to show a disappearing house.										
	6. 7		Create an anim	ation to s	show two boats sail	ing in i	iver				
	7. Create an animation to show a scene of cricket match.										
	ð. 0		Create an anim	ation to r	leip teach a poem o	or a son	g				
	9. Create an animation to show cartoon with a message										
	10 Create an animation on Single Perspective View										
	11. Create an animation for solar system										
	12.	12. Create an animation for cricket									
	15.		Create an anim	ation to	make a movie sho	wing S	nape I weenin	ıg.			
	14. 1 <i>5</i>	t. Create an animation to make a movie showing Motion Tweening.									
	15.	Create an animation to make a movie to a add sound and button to the									
							20				
						1	otal Lecture	Houl	S 2	00	

COURSE OUTCOMES:					
At the end of the course the students will be able to					
CO1:	Perform the operations of various multimedia techniques.	K2			
CO2:	Ability to know about techniques of image processing	K3			
CO3:	Understand the various designing process in multimedia animation	K4			
CO4 :	Develop an interactive multimedia presentation by using multimedia devices	K3			
CO5:	Identify practical aspects in designing latest multimedia applications	K4			

CO & PO Mappings:

CO's/PO's	PO1	PO2	PO3	PO4	PO5	PO6
CO1	3	(NGI)	3	2	-	3
CO2	3	3	2	2	3	3
CO3	GJ -	2		3	2	-
CO4	3	2 2		3	2	2
CO5	2	2	2	10	2	3

*3–AdvancedApplication;2–IntermediateDevelopment; 1-IntroductoryLevel

LESSONPLAN

S. No.	List of Programs	Hrs	Mode
1.	Create an animation to show a bouncing ball.	10	Lab
2.	Create an animation to show a moving stick man.	7	demonstration
3.	Create an animation to show a fainting banana.		
4.	Create an animation to show sunrise and sunset.		
5.	Create an animation to show a disappearing house.		
б.	Create an animation to show two boats sailing in river		
7.	Create an animation to show a scene of cricket match.		
8.	Create an animation to help teach a poem or a song		
9.	Create an animation to show cartoon with a message		
10	Create an animation on Single Perspective View		
11.	Create an animation for solar system		
12.	Create an animation for cricket		
13.	Create an animation to make a movie showing Shape		
	Tweening.		
14.	Create an animation to make a movie showing Motion		
	Tweening.		
15.	Create an animation to make a movie to a add sound and button to the movie		

Course Designed by: Mr.B.Johnson & Dr S.Shaik Parveen