

Sadakathullah Appa College

(Autonomous)

(Reaccredited by NAAC at an 'A' Grade. An ISO 9001:2015 Certified Institution)

**Rahmath Nagar, Tirunelveli- 11.
Tamil Nadu**

DEPARTMENT OF INFORMATION TECHNOLOGY

Syllabus For

Information Technology

(Applicable for students admitted in June 2021 and onwards)

(Submitted before the Commerce UG Board of Studies Meeting to be held on 15-03-2021)

Department of Information Technology

Programme : B.Sc

Programme Learning Outcomes

PLO	Upon completion of B.Sc Degree Programmes, the graduates will be able to:
PLO 1	Disciplinary Knowledge <ul style="list-style-type: none">• Acquire scientific knowledge and the understanding of major concepts and theoretical principles.
PLO 2	Creative Thinking and Practical Skills / Problem Solving Skills <ul style="list-style-type: none">• Enrich skills of observation / research related skills to draw logical inferences from scientific experiments/ programming and skills of creative thinking to develop novel ideas.• Hone problem solving skills in theoretical, experimental and computational areas and to apply them in research fields and in real life situations.
PLO 3	Sense of inquiry and Skilled Communicator <ul style="list-style-type: none">• Develop the capability for raising appropriate questions relating to the current/emerging issues encountered in the scientific field and to plan, execute and express the results of experiments / investigations through technical writings as well as through oral presentations.
PLO 4	Ethical Awareness / Team Work / Environmental Conservation and Sustainability <ul style="list-style-type: none">• Equip them for conducting work as an individual / as a member, or as a leader in diverse teams upholding values such as honesty and precision and thus preventing unethical behaviours such as fabrication, falsification, misrepresentation of data, plagiarism etc. to ensure academic integrity.• Realise that environment and humans are dependent on one another and to know about the responsible management of our ecosystem for survival, and for the well-being of the future generation as well.
PLO 5	Usage of ICT/ Lifelong Learning / Self-Directed Learning <ul style="list-style-type: none">• Inculcate the habit of learning continuously through the effective adoption of ICT to update knowledge in the emerging areas in Sciences for inventions/discoveries and also to engage in remote / independent learning.

Programme Specific Outcomes

PSO	Upon completion of B.Sc Degree Programme, the students will be able to:	PLOs Mapped
PSO-1	Understand the basic concepts, working process of hardware, software and networking aspects of computer system besides analyzing the principles and methodologies to implement the software system for real time problems.	1,3,4
PSO-2	Analyze and develop solution based programs in the areas related to Operating System, Mobile applications and software projects using programming environment such as Python, Java, C, C++, C#, UNIX by applying the principles and strategies of software engineering.	1,2,5
PSO-3	Apply the basic concepts of computer components, software, data structures, designing tools that include HTML, CSS, Java script and PHP to analyze the recent trends such as Virtual Reality, Data Mining, and Internet of Things.	1,2,3
PSO-4	Design software, documents, photo edit, graphics using applications and tools.	1,2,3,5
PSO-5	Analyze the networking, operating system and memory management operations besides applying the programming concepts.	1,2,3,4

CBCS Syllabus – B.Sc. Information Technology (2021-22 onwards)

SEM	Part	P	Title of the paper	S. Code	H/W	L*	T*	P*	C	Marks		
										I	E	T
I	I	I L-I	இக்காலத்தமிழ்	21ULTA11	6				3			
			Grammar and Translation - I	21ULAR11								
	II	II L-I	Communicative English -I	21ULEN11	6				3			
	III	DSC-I	Programming in C	21UCIT11	4				4			
	III	DSC-II	Computer and its Applications	21UCIT12	4				4			
	III	P-I	Programming in C Practicals	21UCIT1P1	2				1			
	III	A-I/1	Office Tools	21UAIT11	4				3			
	III	A-I/1P	Office Tools Practicals	21UAIT1P1	2				1			
IV	AECC-I	Value Education-I	21USVE1A	2				2				
		Value Education-II	21USVE1B									

Semester – I

Course Title	PROGRAMMING IN C
Total Hrs.	60
Hrs./Week	4
Sub.Code	21UCIT11
Course Type	DSC
Credits	4
Marks	100

General Objective:

Train the students in C Programming language and its basic concepts to provide exposure to problem-solving through hands-on experience.

Course Objectives: The learners will be able to:

CO No.	Course Objectives
CO-1	Understand the fundamentals of C programming.
CO-2	Develop programming code, compile and test C programs.
CO-3	Sketch reusable modules such as function, structure and union.
CO-4	Analyze various ways to solve the real-time problems through programming.
CO-5	Persuade them to pursue advanced C programming concepts.

UNIT I

Overview of C Language History Of C- C Fundamental: Constants-Variable- Data Types - Character Set – C Tokens – Identifiers - Keywords - Data Types - Operators & Expressions - Managing Input & Output Operations.

UNIT II

Decision Making & Branching: Introduction– IF statement - IF-ELSE- Nesting of IF ELSE – ELSE IF LADDER – Switch- Conditional Operator – GOTO Statement

Decision Making & Looping: Introduction – WHILE Statement – DO – FOR – Jumps In Loops

UNIT III

Arrays: Introduction –One Dimensional Arrays- Declaration-Initialization-Two Dimensional Arrays -Initialization –Multi Dimensional Arrays.-**Functions** : Introduction – Need for User Defined Functions –A Multi Function Program – Elements of User Defined Functions – Defintions of Functions – Category of Functions.

UNIT IV

Structures &Unions : Introduction – Defining a structures – Declaring Structure variables – Accessing Structure Members – Structure Initialization – Unions - **Pointers** :Introduction – Understanding Pointers – Accessing address of the variable – Declaring Pointer Variable - Initialization of pointer Variables – Pointers & Arrays.

UNIT V

File Management in C:Introduction - Defining & Opening a File – Closing a File – Input / Output Operations & files– Random Access to File – Command Line arguments.

TEXT BOOK

E.Balagurusamy - “Programming IN ANSI C”, McGraw Hill Publications, 4thEdifiton, 2007

REFERENCE BOOK

C Ravichandran -“Programming With C”, New Age International (P) Limited Publishers, 1st Edition, 2006

Course Outcomes

Course Outcomes: The learners will be able to:

CO No.	Course Outcomes	PSO Addressed	Cognitive Level
CO-1	Classify the different types of operators and expressions to bring out the essentials of decision making.	1,2	Understanding
CO-2	Apply their knowledge to design and develop the concept of pointers and functions.	1,2	Applying
CO-3	Apply an object-oriented approach to develop applications in various complications.	1,2	Applying
CO-4	Analyze structures and unions in C programming.	1,2	Analyzing
CO-5	Evaluate tasks where the numerical techniques are applicable and write programs to solve the problems concerned.	1,2	Evaluating

Relationship Matrix

Semester	Course Code	Title of the Course	Hours	Credit						
I	21UCIT11	PROGRAMMING IN C	60	4						
Course Outcomes (COs)	Programme Learning Outcomes (PLOs)					Programme Specific Outcomes (PSOs)				
	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5
CO-1	✓	✓	✓	✓	✓	✓	✓			
CO-2	✓	✓	✓	✓	✓	✓	✓			
CO-3	✓	✓	✓	✓	✓	✓	✓			
CO-4	✓	✓	✓	✓	✓	✓	✓			
CO-5	✓	✓	✓	✓	✓	✓	✓			
	Number of matches (✓) = 35 Relationship = Medium									

Prepared by

Checked by

Name : M.Sheik Mansoor

Head of the Department

Signature :

Semester – I

Course Title	Computer and its Applications
Total Hrs.	60
Hrs./Week	4
Sub. Code	21UCIT12
Course Type	DSC
Credits	4
Marks	100

General Objective:

To understand the fundamentals of computer system, networking, operating system and multimedia concepts.

Course Objectives: The learners will be able to:

CO	Course Objectives
CO-1	Understand the anatomy and architecture of digital computer.
CO-2	Comprehend number systems, Boolean algebra and memory units.
CO-3	Identify the types of input, output devices and operating system.
CO-4	Examine the various security issues in peripheral communications.
CO-5	Analyze the latest concepts of multimedia and Virtual Reality.

UNIT I

Computers an Overview: Introduction to computers – Five Generations of modern computers- Classification of Digital computer Systems.- **Inside the computer:** Anatomy of digital computer – Computer Architecture.

UNIT II

Number system & Boolean Algebra: Number system – Boolean algebra and logic circuits.
Memory: Memory units – Auxiliary Storage Devices – Primary Storage Devices.

UNIT III

Input / Output: Input devices - Output Devices – **Computer Software & Software Development:** Introduction to computer software - Operating systems - Programming languages.

UNIT IV

Data processing and Networking: Data processing – Computer networks – Distributed data processing. **Telecommunications:** Introduction to Telecommunications. **Security:** Introduction to computer security – Cryptography - Computer Viruses, Bombs and worms.

UNIT V

Internet and Intranet: Internet and world wide web – Introduction to Intranets. **Multimedia and virtual reality:** Introduction to Multimedia - Multimedia tools - Introduction to virtual reality.

TEXT BOOK :

“Introduction to Computers” by Alexis Leon and Mathews Leon, 1st Edition, 1999, VIKAS publishing house Pvt Ltd.

REFERENCE BOOK:

“Computer Fundamentals and Applications” by Ashok Arora, 1st Edition, 2015, VIKAS publishing house Pvt Ltd.

Course Outcomes

CO No.	Course Outcomes	PSOs Addressed	Cognitive Level
CO-1	Classify the various generations of computers.	1	Understanding
CO-2	Choose the various storage devices for collecting data.	1,5	Applying
CO-3	Explain the concepts of operating system.	1,5	Analyzing
CO-4	Inspect the various issues related to security to protect communication systems.	1,5	Analyzing
CO-5	Summarize the nuances of multimedia tools to understand Virtual Reality.	1,4,5	Evaluating

Relationship Matrix

Semester	Code	Title of the course	Hours	Credit						
I	21UCIT12	COMPUTER AND ITS APPLICATIONS	60	4						
Course Outcomes (COS)	Programme Out Come (POS)					Programme Specific Outcomes (PSOs)				
	PO 1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO-1	✓		✓	✓		✓				
CO-2	✓		✓	✓		✓				✓
CO-3	✓		✓	✓		✓				✓
CO-4	✓		✓	✓		✓				✓
CO-5	✓	✓	✓	✓	✓	✓			✓	✓
Number of matches (✓) = 27 Relationship = MEDIUM										

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Semester – I

Course Title	PROGRAMMING IN C PRACTICALS
Total Hrs.	30
Hrs./Week	2
Sub. Code	21UCIT1P1
Course Type	P I
Credit	1
Marks	

General Objective:

Train the students to develop code in C Programming language by exposing them to solve real-time problems.

Course Objectives: The learners will be able to:

CO	Course Objectives
CO-1	Show the use of if, while and do-while statements in C.
CO-2	Identify the uses of switch and for statement in C.
CO-3	Examine the storage structures of arrays in C.
CO-4	Analyze reusable modules of functions and recursions in C.
CO-5	Explain the predefined functions of strings, storage concepts of structure and files in C programs.

1. Program using If statement.
2. Program using while & do – while statement.
3. Program using switch statement.
4. Program using for statement.
5. Program using one dimensional array.
6. Program using two dimensional arrays.
7. Program using Functions.

8. Programs using Recursions.
9. Program using strings.
10. Program using Structure.
11. Program using file concepts.

Course Outcomes

Upon Completion of this course, the students will be able to :

Co No	Course Outcomes	PSO Addressed	Cognitive level
Co- 1	Apply the different ways to implement if, while and do-while statements in C.	1,2	Applying
Co- 2	Choose the proper statements in writing the program to find the solution using decision making and looping.	1,2	Applying
Co- 3	Differentiate the various types of arrays in C.	1,2	Analyzing
Co- 4	Develop programs using functions and recursions.	1,2	Creating
Co- 5	Build knowledge to construct the user defined data types in C.	1,2	Creating

Relationship Matrix

Semester	Code	Title of the course	Hours	Credit						
I	21UCIT1P1	Programming in C Practicals	30	1						
Course Outcomes (COS)	Programme Out Come (POS)					Programme Specific Outcomes (PSOs)				
	PO 1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO-1	✓	✓	✓	✓	✓	✓	✓			
CO-2	✓	✓	✓	✓	✓	✓	✓			
CO-3	✓	✓	✓	✓	✓	✓	✓			
CO-4	✓	✓	✓	✓	✓	✓	✓			
CO-5	✓	✓	✓	✓	✓	✓	✓			
Number of matches (✓) = 35 Relationship = Medium										

Prepared by

Checked by

Name : M.Sheik Mansoor

Head of the Department

Signature :

Semester – I

Course Title	OFFICE TOOLS
Total Hrs.	60
Hrs./Week	4
Sub.Code	21UAIT11
Course Type	Allied
Credits	3
Marks	100

General Objective:

To learn and create documentation, do mathematical calculation, design the presentations and access the database.

Course Objectives: The learners will be able to:

CO	Course Objectives
CO-1	Understand the concepts of Word documentation.
CO-2	Explain the advanced features of Word.
CO-3	Apply the functions and mathematical calculations in Excel.
CO-4	Develop knowledge to create presentations with animation effects.
CO-5	Analyze the various queries in database.

UNIT I

Documentation Using Word :Introduction to Office Automation, Creating & Editing Document, Formatting Document, Auto-text, Autocorrect, Spelling and Grammar Tool, Document Dictionary, Page Formatting, Bookmark.

UNIT II

Advance concepts in Word :Advance Features of MS-Word [Mail Merge, Macros], Tables, File Management, Printing, Styles, linking and embedding object, Template.

UNIT III

Electronic Spread Sheet using Excel: Introduction to MS-Excel, Creating & Editing Worksheet, Formatting and Essential Operations, Formulas and Functions, Charts, **Advance features of MS-Excel:** Pivot table & Pivot Chart, Linking and Consolidation, Database Management using Excel- Sorting, Filtering, Table, Validation, Goal Seek, and Scenario, Macros

UNIT IV

Presentation using PowerPoint: Presentations, Creating, Manipulating & Enhancing Slides, Word Art, Layering art Objects, Animations and Sounds, Inserting Animated Pictures or Accessing through Object, Inserting Recorded Sound Effect or In-Built Sound Effect.

UNIT V

Database concepts using ACCESS: Introduction to Databases-Defining a Database- Understanding RDBMS- Objects of a Relational Database- Macros- Functions of a DBMS-Starting Microsoft Access- Creating Tables- Understanding Database-Creating Database - Creating a table - Working a Tables- Saving the Table-Defining Primary Key-Closing the Table –Closing the Database Window and Quitting Access

TEXT BOOK :

Microsoft Office – Complete Reference – BPB Publication

REFERENCE BOOK :

Learn Microsoft Office – Russell A. Stultz – BPB Publication

CO. No.	Course Outcomes	PSOs Addressed	Cognitive level
CO-1	Summarize the methods to create documents in Word.	1,2,4	Understanding
CO-2	Apply the concepts of mail-merge, templates and linking in Word.	1,2,4	Applying
CO-3	Sketch the design of workbook, charts in Excel.	1,2,4	Applying
CO-4	Organize the slides using animations in PowerPoint presentations.	1,2,4	Analyzing
CO-5	Evaluate the queries for report generation in database.	1,2,4	Evaluating

Relationship Matrix

Semester	Code	Title of the course	Hours	Credit						
I	21UAIT11	OFFICE TOOLS	60	3						
Course Outcomes (COS)	Programme Out Come (POS)					Programme Specific Outcomes (PSOs)				
	PO 1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO-1	✓	✓	✓	✓	✓	✓	✓		✓	
CO-2	✓	✓	✓	✓	✓	✓	✓		✓	
CO-3	✓	✓	✓	✓	✓	✓	✓		✓	
CO-4	✓	✓	✓	✓	✓	✓	✓		✓	
CO-5	✓	✓	✓	✓	✓	✓	✓		✓	
	Number of matches (✓) = 40 Relationship = High									

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SEMESTER - I

Course Title	Office Tools Practical
Total Hrs.	30
Hrs./Week	2
Sub.Code	21UAIT1P1
Course Type	Allied Practicals
Credits	1
Marks	100

General Objective:

1. Ability to create the documentation, Mathematical calculation, presentations and database management access.
2. Capacity to build their own document creation and data base tables.

Course Objectives: The learners will be able to:

CO	Course Objectives
CO-1	Create the documentation with advanced tools
CO-2	Formatting and designing
CO-3	Create excel functions and charts for financial reports
CO-4	Present a well effective presentations
CO-5	Create table with data base access.

WORD 2007

1. Typing letters and editing and printing.
2. Using Spell Check and Thesaurus.
3. Designing a cover page with word art.
4. Using Header, Footer, Bookmark, Foot notes.

5. Mail merge a letter to an address file.
6. Typing 5 pages of Mathematical equations and symbols.

EXCEL 2007

1. Entering spread sheets with formula
2. Entering spreadsheet and doing statistical calculations
3. Printing Of Graphs and charts for the given data.
4. Creating and using macros.

POWER POINT 2007

1. Creation of presentation with different styles on a given topic of current interest.
2. Preparing Presentation for a topic in the study of all course.

ACCESS 2007

1. Create an employee database
2. Create student database and set a primary key
3. Create a salary list preparation
4. Create a report
5. Create mailing labels

CO. No.	Course Outcomes	PSOs Addressed	Cognitive level
CO-1	Familiar to create Documents	1,2,4	E
CO-2	Understand the concepts of formatting and editing in word	1,2,4	U, An
CO-3	Understand the concepts of Excel workbook	1,2,4	U, An
CO-4	Understand the concepts of Charts	1,2,4	An
CO-5	Understand the concepts of powerpoint presentations and animation and database access	1,2,4	An

Relationship Matrix

Semester	Code	Title of the course	Hours	Credit						
I		OFFICE TOOLS PRACTICALS	4	4						
Course Outcomes (COS)	Programme Out Come (POS)					Programme Specific Outcomes (PSOs)				
	PO 1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO-1	✓	✓	✓	✓	✓	✓	✓		✓	
CO-2	✓	✓	✓	✓	✓	✓	✓		✓	
CO-3	✓	✓	✓	✓	✓	✓	✓		✓	
CO-4	✓	✓	✓	✓	✓	✓	✓		✓	
CO-5	✓	✓	✓	✓	✓	✓	✓		✓	
	Number of matches (✓) = 40 Relationship = High									

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