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**ANNAMALAI UNIVERSITY**

222 - B.Sc. Artificial Intelligence

Programme Structure and Scheme of Examination (under CBCS)

(Applicable to the candidates admitted from the academic year 2023 -2024 onwards)

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| --- | --- | --- | --- | --- | --- | --- | --- |
| Course Code | Part | Study Components & Course Title | Credit | Hours/  Week | Maximum Marks | | |
| CIA | ESE | Total |
|  |  | SEMESTER – I |  |  |  |  |  |
| 23UTAML11/  23UHINL11/  23UFREL11 | I | Language– I:  பொது தமிழ்-I/  Hindi-I/  French-I | 3 | 6 | 25 | 75 | 100 |
| 23UENGL12 | II | General English – I | 3 | 6 | 25 | 75 | 100 |
| 23UAICC13 | III | Core – I : Programming for Problem Solving | 5 | 5 | 25 | 75 | 100 |
| 23UAICP14 | Core –II : Practical–I: Problem Solving using C Lab | 5 | 5 | 25 | 75 | 100 |
| 23UAICE15 | Elective –  Discrete Mathematics – I | 3 | 4 | 25 | 75 | 100 |
| 23UTAMB16  23UTAMA16 | IV | Skill Enhancement Course-1: (NME-I) /\*  Basic Tamil – I /  Advanced Tamil - I | 2 | 2 | 25 | 75 | 100 |
| 23UAIFC17 | Foundation Course : Office Automation | 2 | 2 | 25 | 75 | 100 |
|  |  | Total | 23 | 30 |  |  | 700 |
|  |  | SEMESTER – II |  |  |  |  |  |
| 23UTAML21/  23UHINL21/  23UFREL21 | I | Language– II:  பொது தமிழ் -II: தமிழிலக்கிய வரலாறு-2/  Hindi-II/  French-II | 3 | 6 | 25 | 75 | 100 |
| 23UENGL22 | II | General English – II: | 3 | 6 | 25 | 75 | 100 |
| 23UAICC23 | III | Core –III: Python Programming | 5 | 5 | 25 | 75 | 100 |
| 23UAICP24 | Core –IV: Practical-II:  Python Programming Lab | 5 | 5 | 25 | 75 | 100 |
| 23UAICE25 | Elective – II  Discrete Mathematics - II | 3 | 4 | 25 | 75 | 100 |
| 23UTAMB26  23UTAMA26 | IV | Skill Enhancement Course – 2 : (NME-II) /\*  Basic Tamil – II /  Advanced Tamil - II | 2 | 2 | 25 | 75 | 100 |
| 23USECG27 | Skill Enhancement Course – 3  Internet and its Applications (Common Paper) | 2 | 2 | 25 | 75 | 100 |
|  |  | Total | 23 | 30 |  |  | 700 |

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| List of Non – Major Elective Courses offered to other Departments. | | | | | | |
| 23UAIEN16 | Fundamentals of Information Technology | 2 | 2 | 25 | 75 | 100 |
| 23UAIEN26 | Introduction to HTML | 2 | 2 | 25 | 75 | 100 |

\* PART-IV: NME / Basic Tamil / Advanced Tamil (Any one)

Students who have not studied Tamil upto 12th Standardand have taken any Language other than Tamil in Part-I, must choose Basic Tamil-I in First Semester & Basic Tamil-II in Second Semester.

Students who have studied Tamil upto 10th & 12th Standardand have taken any Language other than Tamil in Part-I, must choose Advanced Tamil-I in First Semester and Advanced Tamil-II in Second Semester.

**FIRST YEAR – SEMESTER – I**

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| SEMESTER: I  PART: III  CORE: I | **23UAICC13 : PROGRAMMING FOR PROBLEM SOLVING** | CREDIT: 5  HOURS: 5/W |

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| **Learning Objectives** | | |
| **LO1** | recognize the need for programming languages and problem solving techniques | |
| **LO2** | apply memory management concepts and function based modularization | |
| **LO3** | Recognize the bugs in the C program | |
| **LO4** | Develop simple C programs to illustrate the applications of different data types such as arrays, pointers, functions. | |
| **LO5** | develop programming skills to solve real time computational problems | |
| **Unit** | **Contents** | **No. of Hours** |
| I | Introduction to Programming:Introduction to computers, Computer characteristics, Hardware vs software, Steps to develop a program, Software development life cycle, Structured programming, Types of programming languages, Introduction to c, Developing a c program, Console input and output functions, Error diagnostics, Debugging techniques. | **15** |
| II | Operators and Expressions:Identifiers and keywords, Data types, Constants, Variables, Declarations, Expressions, Statements, Arithmetic operators, Unary operators, Relational and logical operators, Assignment operators, Conditional operatorBranching, if-else statement, switch statement, goto statement, Looping, while statement, do- while statement, for statement, Nested control structures, break statement, continue statement. | **15** |
| III | Arrays andStrings:Defining an array, Processing an array, Multidimensional arrays, Searching algorithm, Linear search, Sorting algorithm, Bubble sort algorithm, Strings, Defining a string, Initialization of strings, Reading and writing a string, Processing the strings. | **15** |
| IV | Functions:Functions, Overview, Defining a function, Accessing a function, Function prototypes, Passing arguments to a function, Passing arrays to functions, Recursion. | **15** |
| V | Pointers andStructures:Fundamentals, Pointer declarations, Passing pointers to functions, Pointers and one dimensional arrays, Dynamic memory allocation, Operations on pointers, Defining a structure, Processing a structure, Array of structures, Structures and pointers, Self-referential structures. | **15** |
| **TOTAL** | | **75** |
| **CO** | **Course Outcomes** | |
| CO1 | The Student can understand the fundamentals of computer and program development process. | |
| CO2 | The Student can prepare innovative solution for the problem using branching and looping statements. | |
| CO3 | The Student can decompose a problem into functions and synthesize a complete program using divide and conquer approach. | |
| CO4 | The Student will be able toformulate algorithms and programs using arrays, pointers and structures | |
| CO5 | The Student will be able tocreate a new application software to solve real world problems. | |
| **Textbooks** | | |
| 1. | Byron Gottfried, “Schaum's Outline of Programming with C”, 3rd edition, 2016, McGraw Hill Education (India), ISBN: 9780070145900 | |
| 2. | Balagurusamy, E “Programming in ANSI C”, 7th edition, McGraw Higher Ed, 2016, ISBN: 9789339219666 | |
| **Reference Books** | | |
|  | Yashavant Kanetkar, “Let Us C”, 15th edition, 2016,  Bpb Publications, ISBN:9788183331630 | |
|  | Herbert Schildit, “The Complete Reference C”, 4th edition, 2017, McGraw Hill Education(India), 2017, ISBN:978007041183 | |
|  | Beulah Christalin Latha, Anuja Beatrice, Carolin Jeeva & Anita Sofia, Fundamentals of Computing and Programming, 1st edition, Pearson, 2018 | |
|  | Sumitabha Das, “Computer Fundamentals and C Programming”, 18th edition, 2018, McGraw Hill Education (India), ISBN:9789387886070 | |
|  | Stephen G. Kochan, “Programming in C”, 4th edition, 2015, ISBN: 9789332554665, | |

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| **MAPPING TABLE** | | | | | | |
| **CO/PSO** | **PSO 1** | **PSO 2** | **PSO 3** | **PSO 4** | **PSO 5** | **PSO 6** |
| **CO1** | **3** | **3** | **2** | **2** | **2** | **3** |
| **CO2** | **3** | **3** | **2** | **2** | **2** | **3** |
| **CO3** | **3** | **3** | **2** | **2** | **2** | **3** |
| **CO4** | **3** | **3** | **2** | **2** | **2** | **3** |
| **CO5** | **3** | **3** | **2** | **2** | **2** | **3** |
| **Weightageof coursecontributedtoeachPSO** | **15** | **15** | **10** | **10** | **10** | **15** |

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| SEMESTER: I  PART: III  PRACITCAL: I | **23UAICP14 : PROBLEM SOLVING USING C LAB** | CREDIT: 5  HOURS: 5/W |

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| **Learning Objectives** | | |
| **LO1** | understand the need for programming to solve computational problems. | |
| **LO2** | discover the basic programming constructs to prepare the program. | |
| **LO3** | Analyze and interpret data using array, functions and pointers | |
| **LO4** | Recognize the bugs in the C program. | |
| **LO5** | Apply problem-solving skills to real-world scenarios | |
| **List of Exercises** | | |
| 1. Implementation of Basic C programs 2. Simple computational problems using arithmetic expressions and operators 3. Problem solving using branching and logical expressions 4. Iterative problems using Loops, while and for loops 5. Implementation of linear searching, bubble sort, and Matrix Manipulation using Arrays 6. Implementation of Text Processing using Strings 7. Find Square Root, numerical differentiation, numerical integration using functions and recursion. 8. Implementation of basic file operations   **Software Essentials: Code Block** | | |
| **TOTAL** | | **75** |
| **CO** | **Course Outcomes** | |
| CO1 | translate given algorithms to a working and correct program | |
| CO2 | identify and correct logical errors encountered at run time | |
| CO3 | create iterative as well as recursive programs. | |
| CO4 | represent data in arrays, strings and structures and manipulate them through a program. | |
| CO5 | declare pointers of different types and use them in defining self-referential structures. | |

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| **MAPPING TABLE** | | | | | | |
| **CO/PSO** | **PSO1** | **PSO2** | **PSO3** | **PSO4** | **PSO5** | **PSO6** |
| **CO1** | **3** | **3** | **2** | **2** | **2** | **2** |
| **CO2** | **3** | **2** | **2** | **2** | **2** | **2** |
| **CO3** | **3** | **2** | **2** | **2** | **3** | **3** |
| **CO4** | **3** | **2** | **2** | **2** | **2** | **3** |
| **CO5** | **3** | **2** | **2** | **3** | **2** | **2** |
| **Weightageof course**  **contributedtoeachPSO** | **15** | **11** | **10** | **11** | **11** | **12** |

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| SEMESTER: I  PART: III  ELECTIVE – I | **23UAICE15 : DISCRETE MATHEMATICS – I** | CREDIT: 3  HOURS: 4/W |

**Unit-1: RECURRENCE RELATIONS AND GENERATING FUNCTIONS Hours:19.**

Recurrence – Polynomials and their Evaluations – Recurrence Relations-Solution of Finite Order Homogeneous [linear] Relations - Solutions of Non-homogeneous Relations.

**Unit-2: MATHEMATICAL LOGIC Hours: 18.**

TF Statements - Connectives – Atomic and Compound Statements – Well –formed [Statement Formulae] - Parsing - Truth Table of a Formula - Tautology – Tautological Implications and Equivalence of Formulae.

**Unit-3: MATHEMATICAL LOGIC Hours:18.**

Replacement process - Functionally complete sets of connectives and Duality law – Normal Forms-Principal Normal Forms.

**Unit-4: LATTICES Hours:18.**

Lattices [omit example 15 Pp No.10.6) - Some properties of Lattices - New Lattices (omitre mark Pp10.14)-Modular and Distributive Lattices (omit theorem10 and17,Example4 -Pp 10.23,Example11 -Pp 10.24)

**Unit-5: BOOLE ANALGEBRA Hours:18.**

Boolean Algebra – Boolean Polynomials –Karnaugh Maps

**Textbook:**

1.P.Duraipandian and S.Udayabaskaran, (1997) Allied Mathematics, Vol. I&II. Muhil Publishers, Chennai.

**Reference Books:**

1. P.Balasubramanian and K.G.Subramanian, (1997) *Ancillary Mathematics.* Vol.I&II. Tata McGraw Hill, New Delhi.

# S.P.Rajagopalan and R.Sattanathan, (2005) *Allied Mathematics*. Vol.I&II. Vikas Publications, NewDelhi.

1. P.R.Vittal (2003) *Allied Mathematics*. Marghan Publications, Chennai

# P.Kandasamy, K.Thilagavathy (2003) Allied Mathematics Vol-I,IIS. Chand & company Ltd., NewDelhi-55.

1. Isaac, Allied Mathematics. New Gamma Publishing House, Palayamkottai.

**Course Material:** website links, e-Books and e-journals

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| SEMESTER: I  PART: III  FOUNDATION COURSE – I | **23UAIFC17 : OFFICE AUTOMATION** | CREDIT: 2  HOURS: 2/W |

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| **Course Objective** | | | | |
| C1 | Understand the basics of computer systems and its components. | | | |
| C2 | Understand and apply the basic concepts of a word processing package. | | | |
| C3 | Understand and apply the basic concepts of electronic spreadsheet software. | | | |
| C4 | Understand and apply the basic concepts of database management system. | | | |
| C5 | Understand and create a presentation using PowerPoint tool. | | | |
| **UNIT** | **Details** | | | **No. of Hours** |
| I | **Introductory concepts:** Memory unit– CPU-Input Devices: Key board, Mouse and Scanner. Output devices: Monitor, Printer. Introduction to Operating systems & its features: DOS– UNIX– Windows. Introduction to Programming Languages. | | | 6 |
| II | **Word Processing:** Open, Save and close word document; Editing text – tools, formatting, bullets;SpellChecker - Document formatting – Paragraph alignment, indentation, headers and footers, numbering; printing Preview, options, merge. | | | 6 |
| III | **Spreadsheets:**Excel–opening, entering text and data,formatting, navigating; Formulas–entering, handling and copying;Charts– creating, formatting and printing,analysistables,preparationoffinancialstatements,introductiontodataanalytics. | | | 6 |
| IV | **Database Concepts:** The concept of data base management system; Data field, records, and files,Sorting and indexing data; Searching records. Designing queries, and reports; Linking of datafiles; Understanding Programming environment in DBMS; Developing menu drive applicationsinquerylanguage(MS–Access). | | | 6 |
| V | **Power point:** Introduction to Power point - Features – Understanding slide typecasting & viewingslides – creating slide shows. Applying special object – including objects & pictures – Slidetransition–Animationeffects,audioinclusion,timers. | | | 6 |
|  | **Total** | | | **30** |
| **Course Outcomes** | | | **Programme Outcomes** | |
| CO | | On completion of this course, students will |  | |
| 1 | | Possess the knowledge on the basics of computers and its components | PO1,PO2,PO3,PO6,PO8 | |
| 2 | | Gain knowledge on Creating Documents, spreadsheet and presentation. | PO1,PO2,PO3,PO6 | |
| 3 | | Learn the concepts of Database and implement the Query in Database. | PO3,PO5,PO7 | |
| 4 | | Demonstrate the understanding of different automation tools. | PO3,PO4,PO5,PO7 | |
| 5 | | Utilize the automation tools for documentation, calculation and presentation purpose. | PO4,PO6,PO7,PO8 | |
| **Text Book** | | | | |
| 1 | | PeterNorton,“IntroductiontoComputers”–TataMcGraw-Hill. | | |
| **Reference Books** | | | | |
| 1. | | Jennifer Ackerman Kettel, Guy Hat-Davis, Curt Simmons, “Microsoft 2003”, Tata McGrawHill. | | |
| **Web Resources** | | | | |
| 1. | | <https://www.udemy.com/course/office-automation-certificate-course/> | | |
| 2. | | <https://www.javatpoint.com/automation-tools> | | |

**Mapping with Programme Outcomes:**

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|  | **PO 1** | **PO 2** | **PO 3** | **PO 4** | **PO 5** | **PO 6** | **PO 7** | **PO 8** |
| **CO 1** | M | S | M |  |  | M |  | L |
| **CO 2** | S | M | S |  |  | M |  |  |
| **CO 3** |  | S | S |  | M |  | L |  |
| **CO 4** |  |  | S | L | M |  | M |  |
| **CO 5** |  |  |  | M |  | S | M | S |

**S-Strong M-Medium L-Low**

**FIRST YEAR – SEMESTER – II**

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| SEMESTER: II  PART: III  CORE: III | **23UAICC23 : PYTHON PROGRAMMING** | CREDIT: 5  HOURS: 5/W |

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| **Learning Objectives** | | |
| **LO1** | understand the most important libraries of Python, and its recommended programming styles and idioms. | |
| **LO2** | learn core Python scripting elements such as variables and flow control structures. | |
| **LO3** | develop applications using Python. | |
| **Unit** | **Contents** | **No. of Hours** |
| I | Python, Data Types, Expressions:  Python Programming - Running Code in the Interactive Shell, Input, Processing and Output, Editing, Saving and Running a Script - Data Types, String Literals, Escape Sequences, String Concatenation, Variables and the Assignment Statement - Numeric Data Typesand Character Sets - Integers and Long Integers, Floating-Point Numbers and Character Sets - Expressions - Arithmetic Expressions and Mixed-Mode Arithmetic and Type Conversions. | **15** |
| II | Functions, Modules and Control Statements:  Functions and Modules - Calling Functions, The math Module, The Main Module, Program Format and Structure and Running a Script from a Terminal Command Prompt - Iteration - for loop - Selection - Boolean Type, Comparisons, and Boolean Expressions, if-else Statements, One-Way Selection Statements, Multi-way if Statements, Logical Operators and Compound Boolean Expressions, Short-Circuit Evaluation and Testing Selection Statements - Conditional Iteration - while loop. | **15** |
| III | Strings and Text Files:Strings - Accessing Characters and Substrings in Strings, Strings and String Methods - Text Files - Text Files and Their Format, Writing Text to a File, Writing Numbers to a File, Reading Text from a File, Reading Numbers from a File and Accessing and Manipulating Files and Directories on Disk. | **15** |
| IV | Lists and Dictionaries:Lists - List Literals and Basic Operators, Replacing an Element in a List, List Methods for Inserting and Removing Elements, Searching and Sorting a List, Mutator Methods and the Value None, Aliasing and Side Effects, Equality and Tuples - Defining Simple Functions - Syntax, Parameters and Arguments, return Statement, Boolean Functions and main function, DICTIONARIES - Dictionary Literals, Adding Keys and Replacing Values, Accessing Values, Removing Keys and Traversing a Dictionary. | **15** |
| V | **Design with Functions and Design with Classes**  Design with Functions and Design with Classes - Functions as Abstraction Mechanisms, Problem Solving with Top-Down Design, Design with Recursive Functions and Managing a Program’s Namespace - DESIGN WITH CLASSES - Objects and Classes, Data Modeling and Structuring Classes with Inheritance and Polymorphism. | **15** |
| **TOTAL** | | **75** |
| **CO** | **Course Outcomes** | |
| CO1 | describe the datatypes, expressions and type conversions in Python | |
| CO2 | use functions, control statements, strings, lists and dictionaries in python programming. | |
| CO3 | demonstrate the concept of object, class inheritance and polymorphism in Python. | |
| CO4 | write user defined functions, classes in python. | |
| CO5 | develop programming skills to solve real time computational problems | |
| **Textbooks** | | |
|  | Kenneth A. Lambert, Martin Osborne, “Fundamentals of Python: From First Programs Through Data Structures”, Course Technology, Cengage Learning, 2010, ISBN-13: 978-1-4239-0218-8. | |
|  | Paul Barry, “Head First Python 2e”, O′Reilly, 2nd Revised edition, 2016, ISBN-13: 978-1491919538. | |
| **Reference Books** | | |
|  | Zed A. Shaw, “Learn Python the Hard Way”, Addison-Wesley, Third Edition, 2014, ISBN-13: 978-0-321-88491-6. | |
|  | Dave Kuhlman, “A Python Book: Beginning Python, Advanced Python, and Python Exercises”, 2013, ISBN: 9780984221233. | |
|  | Kent D Lee, “Python Programming Fundamentals”, Springer-Verlag London Limited, 2011, ISBN 978-1-84996-536-1. | |
| **NOTE: Latest Edition of Textbooks May be Used** | | |
| **Web Resources** | | |
|  | <http://docs.python.org/3/tutorial/index.html> | |
|  | <http://interactivepython.org/courselib/static/pythonds> | |

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| **MAPPING TABLE** | | | | | | |
| **CO/PSO** | **PSO1** | **PSO2** | **PSO3** | **PSO4** | **PSO5** | **PSO6** |
| **CO1** | **3** | **2** | **1** | **2** | **1** | **2** |
| **CO2** | **3** | **3** | **2** | **2** | **3** | **3** |
| **CO3** | **3** | **3** | **2** | **3** | **3** | **2** |
| **CO4** | **3** | **2** | **3** | **2** | **2** | **3** |
| **CO5** | **3** | **2** | **2** | **2** | **3** | **3** |
| **Weightage ofcoursecontributedto**  **eachPSO** | **15** | **12** | **10** | **11** | **12** | **13** |

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| SEMESTER: II  PART: III  PRACTICAL : II | **23UAICP24 : PYTHON PROGRAMMING LAB** | CREDIT: 5  HOURS: 5/W |

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| **Learning Objectives** | | |
| **LO1** | understand the basics of python programming concepts. | |
| **LO2** | understand the high-performance programs designed to build up the real proficiency | |
| **List of Exercises** | | |
| 1. Control Statements 2. Operators 3. Lists and List comprehensions 4. Set 5. Dictionary 6. Function 7. String 8. File 9. Polymorphism 10. Inheritance   **Software Essentials: Pycharm** | | |
| **TOTAL** | | **75** |
| **CO** | **Course Outcomes** | |
| CO1 | Describe the Control statement, String, List, and Dictionaries in Python. | |
| CO2 | Use functions and represent Compound data using Lists, Tuples and Dictionaries | |
| CO3 | Implement Conditionals and Loops for Python Programs | |
| CO4 | understand and summarize different types of function and File handling operations. | |
| CO5 | interpret Object programming in Python | |

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| **MAPPING TABLE** | | | | | | |
| **CO/PSO** | **PSO 1** | **PSO 2** | **PSO 3** | **PSO 4** | **PSO 5** | **PSO 6** |
| **CO1** | **3** | **2** | **2** | **3** | **3** | **2** |
| **CO2** | **3** | **3** | **2** | **3** | **3** | **2** |
| **CO3** | **3** | **3** | **3** | **3** | **3** | **2** |
| **CO4** | **3** | **3** | **2** | **3** | **3** | **2** |
| **CO5** | **3** | **3** | **2** | **3** | **3** | **2** |
| **Weightage ofcoursecontributedtoeachPSO** | **15** | **14** | **11** | **15** | **15** | **10** |

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| SEMESTER: II  PART: III  ELECTIVE – II | **23UAICE25 : DISCRETE MATHEMATICS – II** | CREDIT: 3  HOURS: 4/W |

**COURSE OBJECTIVES**

* Mathematical Logic
* Truth Table
* Relations and Ordering

**Unit-I**

**Algebraic Systems:** Examples and General Properties-Definition and Examples-Some Simple Algebraic Systems and General Properties.

**Semigroups and Monoids:** Definitions and Examples-Homomorphism of Semigroups and Monoids-Sub semigroups and Sub monoids

**Grammars and languages:** Discuss of Grammars-Formal definition of a Language-Notion of Syntax Analysis

(Chapter-3: Sections 3.1 to 3.3)

**Unit-II: Groups**

Definitions and Examples-Subgroups and homomorphisms-Cosets and Language’s Theorem-Normal Subgroups-Algebraic systems with Two Binary operations-T**he application of the residue arithmetic to computers:** Introduction to number system-residue arithmetic.

(Chapter 3: Sections 3.5(3.5.1 - 3.6.2)

**Unit-III: Latex and Boolean algebra**

Lattices as partially ordered sets-definition and examples-some properties of lattices-lattices as algebraic system-sublattices, Direct product, and homomorphism-some special lattices **-Boolean algebra-**definition and examples-subalgebra, direct product, and homomorphism.

(Chapter 4: Sections 4.1.1 to 4.2.2)

**Unit-IV: Boolean function**

Boolean forms and free Boolean algebras-values of Boolean expressions and Boolean functions-Representation and minimization of Boolean functions: representation of Boolean functions-minimization of Boolean functions(Chapter 4: Sections 4.3.1 to 4.4.2)

**Unit-V: Graph theory**

Basic concepts of graph theory-basic definitions-paths, reachability and connectedness-matrix representation of graphs-trees-storage representation and manipulation of graphs-Trees: their representation and operations-List: structures and graphs

(Chapter 5: Sections 5.1.1 to 5.2.2)

**Skills acquired from this course**

Knowledge, Problem Solving, Analytical ability.

**Textbooks:**

1. Discrete mathematics structures with application to computer science –J.P. Tremblay and R. Manohar

**Reference Books:**

1. Discrete Mathematics – Dr.S.P. Rajagopalan and Dr.R. Sattanathan
2. Discrete Mathematics – Dr.G.Balaji
3. Discrete Mathematics and its applications – Kenneth.H.Rosen.

**Non-Major Electives**

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| SEMESTER: I  PART: III  NME – I | **23UAIEN16 : FUNDAMENDALS OF INFORMATION TECHNOLOGY** | CREDIT: 2  HOURS: 2/W |

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| **Learning Objectives** | | |
| **LO1** | Understand basic concepts and terminology of information technology. | |
| **LO2** | Have a basic understanding of personal computers and their operation | |
| **LO3** | Be able to identify data storage and its usage | |
| **LO4** | Get great knowledge of software and its functionalities | |
| **LO5** | Understand about operating system and their uses | |
| **UNIT** | **Contents** | **No. Of. Hours** |
| I | **Introduction to Computers:**  Introduction, Definition, .Characteristics of computer, Evolution of Computer, Block Diagram Of a computer, Generations of Computer, Classification Of Computers, Applications of Computer, Capabilities and limitations of computer | **6** |
| II | **Basic Computer Organization:**  Role of I/O devices in a computer system. Input Units: Keyboard, Terminals and its types. Pointing Devices, Scanners and its types, Voice Recognition Systems, Vision Input System, Touch Screen, Output Units: Monitors and its types. Printers: Impact Printers and its types. Non Impact Printers and its types, Plotters, types of plotters, Sound cards, Speakers. | **6** |
| III | **Storage Fundamentals:**  Primary Vs Secondary Storage, Data storage & retrieval methods. Primary Storage: RAM ROM, PROM, EPROM, EEPROM. Secondary Storage: Magnetic Tapes, Magnetic Disks. Cartridge tape, hard disks, Floppy disks Optical Disks, Compact Disks, Zip Drive, Flash Drives | **6** |
| IV | **Software:**  Software and its needs, Types of S/W. System Software: Operating System, Utility Programs Programming Language: Machine Language, Assembly Language, High Level Language their advantages & disadvantages. Application S/W and its types: Word Processing, Spread Sheets Presentation, Graphics, DBMS s/w | **6** |
| V | **Operating System:**  Functions, Measuring System Performance, Assemblers, Compilers and Interpreters.Batch Processing, Multiprogramming, Multi Tasking, Multiprocessing, Time Sharing, DOS, Windows, Unix/Linux. | **6** |
| **TOTAL HOURS** | | **30** |

|  |  |  |
| --- | --- | --- |
| **Course Outcomes** | | **Programme Outcomes** |
| CO | On completion of this course, students will |  |
| CO1 | * Learn the basics of computer, Construct the structure of the required things in computer, learn how to use it. | PO1, PO2, PO3, PO4, PO5, PO6 |
| CO2 | * Develop organizational structure using for the devices present currently under input or output unit. | PO1, PO2, PO3, PO4, PO5, PO6 |
| CO3 | Concept of storing data in computer using two header namely RAM and ROM with different types of ROM with advancement in storage basis. | PO1, PO2, PO3, PO4, PO5, PO6 |
| CO4 | * Work with different software, Write program in the software and applications of software. | PO1, PO2, PO3, PO4, PO5, PO6 |
| CO5 | Usage of Operating system in information technology which really acts as a interpreter between software and hardware. | PO1, PO2, PO3, PO4, PO5, PO6 |
| **Textbooks** | | |
| 1 | Anoop Mathew, S. Kavitha Murugeshan (2009), “ Fundamental of Information Technology”, Majestic Books. | |
| 2 | Alexis Leon, Mathews Leon,” Fundamental of Information Technology”, 2nd Edition. | |
| 3 | S. K Bansal, “Fundamental of Information Technology”. | |
| **Reference Books** | | |
| 1. | Bhardwaj Sushil Puneet Kumar, “Fundamental of Information Technology” | |
| 2. | GG WILKINSON, “Fundamentals of Information Technology”, Wiley-Blackwell | |
| 3. | [A Ravichandran](https://www.bookganga.com/eBooks/Books?AID=5563813659127023211) , “Fundamentals of Information Technology”, Khanna Book Publishing | |
| **Web Resources** | | |
| 1. | https://testbook.com/learn/computer-fundamentals | |
| 2. | https://www.tutorialsmate.com/2020/04/computer-fundamentals-tutorial.html | |
| 3. | https://www.javatpoint.com/computer-fundamentals-tutorial | |
| 4. | https://www.tutorialspoint.com/computer\_fundamentals/index.htm | |
| 5. | https://www.nios.ac.in/media/documents/sec229new/Lesson1.pdf | |

**Mapping with Programme Outcomes:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CO/PSO** | **PSO 1** | **PSO 2** | **PSO 3** | **PSO 4** | **PSO 5** | **PSO 6** |
| **CO 1** | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO 2** | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO 3** | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO 4** | 3 | 3 | 3 | 3 | 2 | 3 |
| **CO 5** | 3 | 3 | 2 | 3 | 3 | 2 |
| **Weightage of course contributed to each PSO** | 15 | 15 | 14 | 15 | 14 | 14 |

**S-Strong-3 M-Medium-2 L-Low-1**

|  |  |  |
| --- | --- | --- |
| SEMESTER: II  PART: III  NME – II | **23UAIEN26 : INTRODUCTION To HTML** | CREDIT: 2  HOURS: 2/W |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Learning Objectives** | | | | | |
| LO1 | | | Insert a graphic within a web page. | | |
| LO2 | | | Create a link within a web page. | | |
| LO3 | | | Create a table within a web page. | | |
| LO4 | | | Insert heading levels within a web page. | | |
| LO5 | | | Insert ordered and unordered lists within a web page. Create a web page. | | |
| **UNIT** | | | **Contents** | | **No. Of. Hours** |
| I | | | Introduction :WebBasics: WhatisInternet–Webbrowsers–WhatisWebpage –HTMLBasics:Understandingtags. | | **6** |
| II | | | TagsforDocumentstructure(HTML,Head,BodyTag).Blockleveltextelements:Headingsparagraph(<p> tag)–Fontstyleelements:(bold,italic,font,small,strong,strike,bigtags) | | **6** |
| III | | | Lists:Typesoflists:Ordered,Unordered– NestingLists–Othertags:Marquee,HR,BR-UsingImages –CreatingHyperlinks. | | **6** |
| IV | | | Tables:CreatingbasicTable,Tableelements,Caption–Tableandcellalignment–Rowspan,Colspan–Cellpadding. | | **6** |
| V | | | Frames:Frameset–TargetedLinks–Noframe–Forms:Input, Textarea,Select,Option. | | **6** |
| **TOTAL HOURS** | | | | | **30** |
| **Course Outcomes** | | | | **Programme Outcomes** | |
| CO | | On completion of this course, students will | |  | |
| CO1 | | * Knows the basic concept in HTML   Concept of resources in HTML | | PO1, PO2, PO3, PO4, PO5, PO6 | |
| CO2 | | Knows Design concept.  Concept of Meta Data  Understand the concept of save the files. | | PO1, PO2, PO3, PO4, PO5, PO6 | |
| CO3 | | Understand the page formatting.  Concept of list | | PO1, PO2, PO3, PO4, PO5, PO6 | |
| CO4 | | Creating Links.  Know the concept of creating link to email address | | PO1, PO2, PO3, PO4, PO5, PO6 | |
| CO5 | | Concept of adding images  Understand the table creation. | | PO1, PO2, PO3, PO4, PO5, PO6 | |
| **Textbooks** | | | | | |
| 1 | “Mastering HTML5 and CSS3 Made Easy”, TeachUComp Inc., 2014. | | | | |
| 2 | Thomas Michaud, “Foundations of Web Design: Introduction to HTML & CSS” | | | | |
| **Web Resources** | | | | | |
| 1. | <https://www.teachucomp.com/samples/html/5/manuals/Mastering-HTML5-CSS3.pdf> | | | | |
| 2. | <https://www.w3schools.com/html/default.asp> | | | | |

**Mapping with Programme Outcomes:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **CO/PSO** | **PSO 1** | **PSO 2** | **PSO 3** | **PSO 4** | **PSO 5** | **PSO 6** |
| **CO 1** | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO 2** | 3 | 3 | 2 | 3 | 3 | 3 |
| **CO 3** | 2 | 3 | 3 | 3 | 3 | 3 |
| **CO 4** | 3 | 3 | 3 | 3 | 3 | 3 |
| **CO 5** | 3 | 3 | 3 | 2 | 3 | 3 |
| **Weightage of course contributed to each PSO** | 14 | 15 | 14 | 14 | 15 | 15 |

**S-Strong-3 M-Medium-2 L-Low-1**