M.L. Dahanukar College of Commerce
Teaching Plan: 2023 - 2024
Department: I.T. Class: F.Y.B.Sc.(I.T.) Semester: II
Subject: Object Oriented Programming With C++
Name of the Faculty: Snehal S. Borlikar

Month	Topics to be Covered	Internal Assessment	Number of Lectures
November	Unit 1: Introduction to object oriented design		4
December	Unit 1: Introduction to object oriented design Unit 2:Functions in C++		11
January	Unit 2: classes and objects		10
February	Unit 3: working with inheritance Unit 4: template programming		20
March	Unit 4: exception handling Unit 5:introduction to standard template library		15

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M.L. Dahanukar College of Commerce

Teaching Plan: 2023 - 24

Department: I.T. Class: F.Y.B.Sc.(I.T.) Semester: II

Subject: Object Oriented Programming with C++

Name of the Faculty: Pranali Chindarkar

Month	Topics to be Covered	Internal Assessment	Number of Lectures
November	**Unit 1 -INTRODUCTION OF OBJECT-ORIENTED DESIGN :** Introduction, Objects, Class and Instance, Polymorphism, Inheritance, ObjectOriented Analysis , Finding the Objects ,Conceptual Modeling Requirements Model , Analysis Model, The Design Model, The Implementation Model , Test Model, Object-Oriented Analysis and Design, The Evolution of Object Model, Object-Oriented Programming, Object-Oriented Design, Object-Oriented Analysis, Elements of Object Model ,The Role of OOAD in the Software Life Cycle, OOAD Methodologies, Grady Booch Approach		**04**
December	**STARTING WITH C++:** C++ Overview, C++ Character Set, C++ Tokens, Variables, Counting Tokens, Data Types, Qualifiers, Range of Data Types, Your First C++ Program, Structure of a C++ Program, Styles of, Writing C++ Programs, Programming Examples **FEATURES OF C++:** Introduction, Operators and Expressions, Declaring Constants, Type Conversion, Decision Making: An Introduction, Unconditional Branching Using Goto , Introduction to Looping **OPERATORS AND REFERENCES IN C++:** Introduction, Scope Resolution Operator, Reference Variables, The Bool Data Type, The Operator New and Delete, Malloc Vs. New ,Pointer Member Operators **Unit 2 - FUNCTION IN C++:** Introduction ,Function Declaration/Prototyping , The Main Function in C++,Recursion ,Call by Reference ,Call by Reference Vs Call by Address , Return by Reference , Inline Function ,Function Overloading ,Function with Default Arguments		**16**
January	**CLASS AND OBJECTS IN C++ :** Working with Class, Structure in C++ , Accessing Private Data Passing and Returning Object ,Array of Object ,Friend Function ,Static Class Members ,Constant Member Function **WORKING WITH CONSTRUCTOR AND DESTRUCTOR:** Introduction, Constructor with Parameters, Implicit and Explicit Call to Constructor, Copy Constructor, Dynamic Initialization of Objects, Dynamic Constructor, Destructor		**15**

	WORKING WITH OPERATOR OVERLOADING: Unary Operators, Overloading Using Friend Function, Rules of Operator Overloading, Type Conversion **Unit 3 - WORKING WITH INHERITANCE IN C++:** Introduction, Types of Inheritance, Public, Private and Protected Inheritance, Multiple Inheritance, Hierarchical Inheritance, Virtual Base Class, Constructor and Destructor in Inheritance, Containership		
February	**POINTERS TO OBJECTS AND VIRTUAL FUNCTIONS:** Pointer to Objects, This Pointer, What is Binding in C++? , Virtual Functions ,Working of a Virtual Function ,Rules for Virtual Function ,Pure Virtual Function and Abstract Class ,Object Slicing ,Some Facts about Virtual Function ,Virtual Destructor **INPUT-OUTPUT AND MANIPULATORS IN C++:** Introduction, C++ Stream Classes, Unformatted Input/Output, Formatted Input /Output Operations, Manipulators **Unit 4- FILE HANDLING IN C++:** Introduction, File Streams, Opening and Closing a File, File Opening Modes Checking End of File, Random Access in File, Command Line Arguments, Working with Binary Mode Error Handling **TEMPLATE PROGRAMMING:** Introduction , Function Template , Class Template **EXCEPTION HANDLING IN C++ :** Introduction , Basics of Exception Handling, ,Exception Handling Mechanism, Programming Examples ,Exception Handling with Class Catching all Exceptions, Specifying Exception for a Function.		**15**
March	**Unit 5- INTRODUCTION TO THE STANDARD TEMPLATE LIBRARY :** Introduction , Components of STL , Containers , Algorithms , Iterators ,Application of Container Classes Function Objects **MANIPULATING STRINGS:** Introduction , Creating (string) Objects , Manipulating String Objects , Relational Operations, String Characteristics, Accessing Characters in Strings , Comparing and Swapping **NEW FEATURES OF ANSI C++ STANDARD :** Introduction ,New Data Types, New Operators , Class Implementation , Namespace Scope , Operator Keywords, New Keywords, New Headers		**10**

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M.L. Dahanukar College of Commerce
Teaching Plan: 2023 - 24
Department: I.T. Class: F.Y.B.Sc.(I.T.) Semester:II
Subject: Fundamentals of Microprocessor and Microcontroller
Name of the Faculty: Ms.Shruti Save

Month	Topics to be Covered	Internal Assessment	Number of Lectures
November	**Unit I:** **Microprocessor, microcomputers, and Assembly Language:** Microprocessor, Microprocessor Instruction Set and Computer Languages, From Large Computers to Single-Chip Microcontrollers, Applications.		04
December	**Unit I:** **Microprocessor Architecture and Microcomputer System:** Microprocessor Architecture and its operation's, Memory, I/O Devices,, Logic Devices and Interfacing **8085 Microprocessor Architecture and Memory Interface**: Introduction, 8085 Microprocessor unit, 8085-Based Microcomputer, **Unit II:** **Introduction to 8085 Assembly Language Programming**: The 8085 Programming Model, Instruction Classification, Instruction, Data and Storage, Writing assembling and Execution of a simple program, Overview of 8085 Instruction Set, Writing and Assembling Program. **Introduction to 8085 Instructions:** Data Transfer Operations, Arithmetic Operations, Logic Operation, Branch Operation, Writing Assembly Languages Programs, Debugging a Program.		16
January	**Unit III:** **Programming Techniques With Additional Instructions:** Programming Techniques: Looping, Counting and Indexing, Additional Data Transfer and 16-Bit Arithmetic Instructions, Arithmetic Instruction Related to Memory, Logic Operations: Rotate, Logics Operations: Compare, Dynamic Debugging. Counters and Time Delays: Counters and Time Delays, Illustrative Program: Programs. **Stacks and Sub-Routines**: Stack, Subroutine, Restart,		24

	Conditional Call, Return Instructions, Advanced Subroutine concepts. Interrupts: The 8085 Interrupt, 8085 Vectored and Non vectored Interrupts, Restart as S/W Instructions **Unit IV :** Micro Controllers: Embedded Systems and general purpose computer systems, classifications, applications and purpose of embedded systems. Embedded Hardware: Memory map, i/o map, interrupt map, processor family, external peripherals, memory – RAM , ROM, types of RAM and ROM ,Flash memory.		
February	**Unit IV :** **The 8051 Microcontrollers:** Microcontrollers and Embedded processors, Overview of 8051 family.8051 Microcontroller hardware, Input/output pins, Ports, and Circuits, External Memory. 8051 Programming in C: Data Types and time delay in 8051 C, I/O Programming, Logic operations, Data conversion Programs. **Unit V:** **Designing Embedded System with 8051 Microcontroller**: Factors to be considered in selecting a controller, why 8051 Microcontroller, Designing with 8051. Programming embedded systems: infinite loop, compiling, linking and debugging. Designand Development: Embedded system, development Environment – IDE, types of file generated on cross compilation, Embedded Product Development cycle.		16

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M.L.Dhanukar College of Commerce

Teaching Plan: 2023 - 24

Department: BScIT **Semester: II**

Class: F.Y.BScIT Div: A

Subject: Fundamentals of Micro Processor and Microcontrollers

Name of the Faculty: Mrs. Snehal Borade

Month	Topics to be Covered	Internal Assessment	Number of Lectures
November	**Unit 1:-** **Microprocessor, microcomputers, and Assembly Language:** Microprocessor,Microprocessor Instruction Set and Computer Languages, From Large Computers to Single-Chip Microcontrollers, Applications.		04
December	**Microprocessor, microcomputers, and Assembly Language:** Microprocessor,Microprocessor Instruction Set and Computer Languages, From Large Computers to Single-Chip Microcontrollers, Applications. **8085 Microprocessor Architecture and Memory Interface:** Introduction, 8085 Microprocessor unit, 8085-Based Microcomputer, Memory Interfacing,Interfacing the8085 Memory Segment. **Unit 2:-Interfacing of I/O Devices** Basic Interfacing concepts, Interfacing Output Displays, Interfacing Input Devices, Memory Mapped I/O, Testing and Troubleshooting I/O Interfacing Circuits. **Introduction to 8085 Assembly Language Programming:** The 8085 Programming Model, Instruction Classification, Instruction, Data and Storage, Writing assembling and Execution of a simple program, Overview of 8085 Instruction Set, Writing and Assembling Program. **Introduction to 8085 Instructions:** Data Transfer Operations, Arithmetic Operations, Logic Operation, Branch Operation, Writing Assembly Languages Programs, Debugging a Program.		08

January	**Unit :-3 Programming Techniques With Additional Instructions:** Programming Techniques: Looping, Counting and Indexing, Additional Data Transfer and 16-Bit Arithmetic Instructions, Arithmetic Instruction Related to Memory, Logic Operations: Rotate, Logics Operations: Compare, Dynamic Debugging. **Counters and Time Delays:** Counters and Time Delays, Illustrative Program: Hexadecimal Counter, Illustrative Program: zero-to-nine (Modulo Ten) Counter, Generating Pulse Waveforms, Debugging Counter and Time-Delay Programs. **Stacks and Sub-Routines:** Stack, Subroutine, Restart, Conditional Call, Return Instructions, Advanced Subroutine concepts. Interrupts: The 8085 Interrupt, 8085 Vectored and Non vectored Interrupts, Restart as S/W Instructions.		16
February	**Unit 4:-Micro Controllers:** Embedded Systems and general purpose computer systems, history, classifications, applications and purpose of embedded systems. **Embedded Hardware:** Memory map, i/o map, interrupt map, processor family, external peripherals, memory – RAM , ROM, types of RAM and ROM, memory testing, CRC ,Flash memory. **Peripherals:** Control and Status Registers, Device Driver, Timer watch Timer **The 8051 Microcontrollers:** Microcontrollers and Embedded processors, Overview of 8051 family.8051 Microcontroller hardware, Input/output pins, Ports, and Circuits, External Memory. **8051 Programming in C:** Data Types and time delay in 8051 C, I/O Programming, Logic operations, Data conversion Programs.		16
March	**Unit 5:-Designing Embedded System with 8051 Microcontroller:** Factors to be considered in selecting a controller, why 8051 Microcontroller, Designing with 8051. **Programming embedded systems:** structure of embedded program, infinite loop, compiling, linking and debugging. **Design and Development:** Embedded system, development Environment – IDE, types of file generated on cross compilation, Embedded Product Development cycle and Trends in embedded Industry		12

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M.L.Dhanukar College of Commerce
Teaching Plan: 2023 - 24

Department**: Information Technology** **Semester: II**
Class**: F.Y.B.Sc.I.T.**
Subject**: Web Application Development**
Name of the Faculty**: Archana Talekar**

Month	Topics to be Covered	Internal Assessment	Number of Lectures
November	**Unit I** • Introduction to HTML		04
December	**Unit I** • HTML Lists • Hyperlinks, Bookmarks and Metadata • Style Sheets, CSS **Unit II** • Page Layout and Navigation • Tables, Forms and Media		16
January	**Unit III** • JavaScript - Introduction • Operators • Statements • Core JavaScript • Document and its Associated Objects • Events and Event Handlers		20
February	**Unit IV** • PHP **Unit V** • Advanced PHP and MySQL **Unit I** • Internet and WWW		20

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M.L. Dahanukar College of Commerce

Teaching Plan: 2022 - 23

Department: I.T. Class: F.Y.B.Sc.(I.T.) Semester: II

Subject: NUMERICAL METHODS

Name of the Faculty: Mrs. Manisha Warekar

Month	Topics to be Covered	Internal Assessment	Number of Lectures
November	Interpolation		4
December	Interpolation System of linear equations Numerical Integration Numerical Differentiation Linear programming		2 6 6 6 4
January	Linear programming least square regression Numerical solution of first & second order Differential equations Numerical solution of Partial Differential Equations		2 8 6 8
February	Errors , Types of Errors Approximation & Rounding off Errors Truncation errors & Taylor's series		2 2 4
March			

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M.L. Dahanukar College of Commerce

Teaching Plan: 2023 - 24

Department: I.T. Class: B.Sc.(I.T.) Semester: II

Subject: Green IT (GIT)

Name of the Faculty: Farhan M. Shaikh

Month	Topics to be Covered	Internal Assessment	Number of Lectures
November	**Overview to Green IT:** Problems: Toxins, Power Consumption, Equipment Disposal, Company's Carbon Footprint: Measuring, Details, reasons to bother, Plan for the Future, Cost Savings: Hardware, Power.		2
December	**Regulating Green IT: Laws, Standards and Protocols** Introduction, The Regulatory Environment and IT Manufacturers RoHS, REACh, WEEE, Legislating for GHG Emissions and Energy Use of IT Equipment. Nonregulatory Government Initiatives, Industry Associations and Standards Bodies, Green Building Standards, Green Data Centres , Social Movements and Greenpeace. **Minimizing Power Usage:** Power Problems, Monitoring Power Usage, Servers, Low-CostOptions, Reducing Power Use, Data De-Duplication, Virtualization, Management, Bigger Drives, Involving the Utility Company, LowPower Computers, PCs, Linux, Components, Servers, ComputerSettings, Storage, Monitors, Power Supplies, Wireless Devices, Software.		18
January	**Cooling:** Cooling Costs, Power Cost, Causes of Cost, Calculating CoolingNeeds, Reducing Cooling Costs, Economizers, On-Demand Cooling, HP's Solution, Optimizing Airflow, Hot Aisle/Cold Aisle, Raised, Floors, Cable Management, Vapour Seal, Prevent Recirculation of Equipment Exhaust, Supply Air Directly to Heat Sources, Fans, Humidity, Adding Cooling, Fluid Considerations, System Design, Datacentre Design, Centralized Control, Design for Your Needs, Put Everything Together. **Greening IT:** Green PCs, Notebooks and Servers, Green Data Centres , Green Cloud Computing, Green Data Storage , Green Software, Green Networking and Communications. **Changing the Way of Work:** Old Behaviours, starting at the Top, Process Reengineering with Green in Mind, Analysing the Global Impact of Local Actions, Steps: Water, Recycling, Energy, Pollutants, Teleworkers and Outsourcing, Telecommuting, Outsourcing, how to Outsource. **Going Paperless:** Paper Problems, The Environment, Costs: Paper and Office, Practicality, Storage, Destruction, Going		20

	Paperless, Organizational Realities, Changing Over, Paperless Billing, Handheld Computers vs. the Clipboard, Unified Communications, Intranets, What to Include, Building an Intranet, Microsoft Office SharePoint Server 2007, Electronic Data Interchange (EDI), Nuts and Bolts, Value Added Networks, Advantages, Obstacles.		
February	**Recycling:** Means of Disposal, Recycling, Refurbishing, Make the Decision, Life Cycle, from beginning to end, Life, Cost, Green Design, Recycling Companies, Finding the Best One, Checklist, Certifications, Hard Drive Recycling, Consequences, cleaning a Hard Drive, Pros and cons of each method, CDs and DVDs, good and bad about CD and DVDs disposal, Change the mind-set, David vs. America Online. **Hardware Considerations:** Certification Programs, EPEAT, RoHS, Energy Star, Computers, Monitors, Printers, Scanners, All-in-Ones, Thin Clients, Servers, Blade Servers, Consolidation, Products, Hardware Considerations, Planned Obsolescence, Packaging, Toxins, Other Factors, Remote Desktop, Using Remote Desktop, Establishing a Connection. **Greening Your Information Systems:** Initial Improvement Calculations, Selecting Metrics, Tracking Progress, Change Business Processes, Customer Interaction, Paper Reduction, Green Supply Chain, Improve Technology Infrastructure, Reduce PCs and Servers, Shared Services, Hardware Costs, Cooling. **Staying Green:** Organizational Check-ups, Chief Green Officer, Evolution, Sell the CEO, SMART Goals, Equipment Check-ups, Gather Data, Tracking the data, Baseline Data, Benchmarking, Analyse Data, Conduct Audits, Certifications, Benefits, Realities, Helpful Organizations.		18
March	Revision and Doubt solving		2

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