

## Vivekanand College, Kolhapur (Autonomous)

Department of Computer Science Entire

Academic Year: 2020-2021

### Annual Teaching Plan

Name of the teacher: Pallavi M Dessai


Programme B.Sc computer science entire Semester-I

Subject:- computer science Section II Course Title: Programming in C-I

Month :- May/June			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Programming Concepts	<ul style="list-style-type: none"> <li>• Program and programming, Programming languages, Algorithm: Definition, Examples</li> <li>• Characteristics of an algorithm, Notation of Algorithm, Pseudo code conventions</li> <li>• Flowcharts- Definition, Symbol, features.</li> </ul>
12		12		
Month :-July/August			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Introduction to C	<ul style="list-style-type: none"> <li>• History of 'C', Structure of 'C' program, Program execution phases,</li> <li>• Character set and keywords, Constant and its type, Variable and its Data types in 'C',</li> <li>• Operators- Arithmetic, logical, relational, bitwise, increment, decrement ,conditional, operator precedence Programming examples</li> </ul>
12		12		
Month:- September			Module/Unit:	Sub-units planned
12		12	Input-Output Statements Control Structures	<ul style="list-style-type: none"> <li>• Character input-output - getch(), getche(),getchar(),putc har()</li> <li>• String input-output - gets(), puts() , Formatted input-output - printf(), scanf()</li> <li>• Conditional Control Statements –if –if-else</li> </ul>



				-nested if-else -else-if ladder
Month:-October			Module/Unit:	Sub-units planned
12		12	Control Structures	Multiple Branching Control Statement -switch-case Loop Control Statements -while -do-while -for -Nested Loops Jump Control statements - break -continue -goto -exit

  
**Pallavi M. Dessai**  
 Name and sign of teacher

  
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Department of Computer Science Entire

Academic Year: 2020-2021

**Annual Teaching Plan**

Name of the teacher: Pallavi M Dessai  
 Programme B.Sc computer science entire Semester-II  
 Subject:- computer science Section II Course Title: Programming in C-II


Month:-December			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Arrays and strings	<ul style="list-style-type: none"> <li>• Array -One dimensional arrays -Declaration of 1D arrays -Initialization of 1D arrays -Accessing element of 1D arrays -Reading and displaying elements</li> <li>• Two dimensional arrays - Declaration of 2D arrays - Initialization of 2D arrays - Accessing element of 2D arrays -Reading and displaying elements</li> <li>• Initializing strings, Reading string , string handling functions (strcpy(), strcmp(), strcat(), strlen(), strrev())</li> </ul>
12		12		




Month : January			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Function Pointer, dynamic memory allocation and Structure</b>	<ul style="list-style-type: none"> <li>• What is function? Advantages of using functions, Function Prototype –Defining a function,</li> <li>• Calling a function ,Return statement ,Types of functions ,Recursion, Local and global variables</li> <li>• Def of Pointer, Declaration of Pointer Variables, Assigning Address to Pointer Variables ,De-referencing Pointer Variables,</li> </ul>
12		12		
Month : February			Module/Unit:	Sub-units planned
12		12	<b>Pointer, dynamic memory allocation and Structure</b>	<ul style="list-style-type: none"> <li>• Pointer Arithmetic –Pointer comparisons –De-reference and increment pointer – Null pointer , Parameter Passing Techniques – call by value, call by address, malloc() –calloc() – realloc() . –free()</li> <li>• Why is structure used? What is structure? Advantages of structures, Defining a Structure , Declaration of Structure Variables , Initialization of Structure Variables , Accessing Structure Members ,</li> <li>• Storage of Structures in Memory ,Size of Structures, Reading and Displaying Structure Variables , Assignment of Structure Variables , Pointers to structures, Array of structures , Arrays within structures , Nested structures</li> </ul>
Month : March			Module/Unit:	Sub-units planned



12		12	<b>File Handling</b>	<ul style="list-style-type: none"> <li>• Concept of File ,Text and binary files, Opening and closing files, File opening mode- read, write, append</li> <li>• character and integer handling ( getc(), putc() , getw() , putw() ), Formatted input- scanf(), sscanf(), fscanf(), fread(),</li> <li>• Formatted output- printf(), sprintf(), fprintf(), fwrite() Functions- fseek(), ftell(), fflush(), fclose(), fopen(), rewind()</li> </ul>
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Academic Year: 2020-2021

**Annual Teaching Plan**

Name of the teacher: Miss Pallavi M. Dessai

Programme B.Sc. computer science entire Semester-V

Subject: computer science Section-II

Course Title: Operating system

Month:-May/June			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Operating System overview</b>	<ul style="list-style-type: none"> <li>• Introduction and definition of operating system</li> </ul> Objectives and function <ul style="list-style-type: none"> <li>• Types of operating system ,Operating system services , Protection: input output, memory and CPU protection</li> <li>• System calls: types of system calls and system call implementation , System programs and application</li> </ul>
16		16		





				programs
Month:-July/August			Module/Unit:	
Lectures	Practical's	Total	<b>Process Management</b>	<ul style="list-style-type: none"> <li>• Process concept, Process states, Process control block (PCB)</li> <li>• Context switching , Threads, concept of multithreads, benefits of threads and types of threads</li> <li>• Process scheduling: scheduling objectives, types of schedulers, scheduling criteria, scheduling algorithms- Preemptive and non-preemptive.</li> <li>• FCFS, SJF, priority, round robin, multiple queue, multilevel feedback queue , Process synchronization, critical section problem, semaphores.</li> </ul>
16		16		
Month:September			Module/Unit:	
16		16	<b>Memory Management</b>	<ul style="list-style-type: none"> <li>• Sub-units planned</li> <li>• Logical and physical address map , Swapping</li> <li>• Memory allocation-contiguous memory allocation- fixed and variable partition, internal and external fragmentation and compaction.</li> </ul>



				<ul style="list-style-type: none"> <li>• Paging and virtual memory, demand paging, locality of reference, page fault, dirty page/ dirty bit, page replacement policies FIFO, optimal, LRU, MFU</li> <li>• Disk structure, Disk scheduling-FCFS, SSTF, SCAN, LOOK, CSCAN, CLOOK</li> </ul>
Month :-October		Module/Unit:		Sub-units planned
16		16	File management and Deadlocks	<ul style="list-style-type: none"> <li>• File concept, access methods- sequential and direct, file types and operations</li> <li>• Directory structure- single level, two level, tree structure, acyclic graph, general graph directory structure</li> <li>• Allocation method- contiguous, linked and indexed</li> <li>• Definition of deadlock, characteristics</li> <li>• Deadlock prevention, detection and recovery</li> </ul>

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**Billavi m. Dessai**  
 Name and sign of teacher

*Dessai*  
 HOD  
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# Vivekanand College, Kolhapur (Autonomous)

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Academic Year: 2020-2021

## Annual Teaching Plan

Name of the teacher: Pallavi M. Dessai

Programme: B.Sc computer science entire Semester-VI


Subject: computer science Section I


Course Title: Linux operating system

Month : December			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Linux Basics</b>	<ul style="list-style-type: none"> <li>• What is an OS? What is Linux, history of Linux, Linux distribution                             <ul style="list-style-type: none"> <li>• The shell, kernel, Linux file system, login, logout</li> <li>• Different general purpose utility commands (GPU)- cal, date, bc, who</li> <li>• Concept of directory, home directory, directory handling commands- PWD, cd, mkdir, rmdir, ls, relative and absolute path</li> <li>• Basic file attributes metacharacters.</li> <li>• Access permission chmod command</li> <li>• File handling commands-cat, cp, mv, rm, lp, man, pipe</li> </ul> </li> </ul>
16		16		
Month : January			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Basic filters</b>	<ul style="list-style-type: none"> <li>• What is a filter, head, tail, sort, grep, sed, awk</li> <li>• regular expressions and its types ,environment variables-PATH, USER, HOME, UID, TERM,</li> </ul>
16		16		



				SHELL <ul style="list-style-type: none"> <li>• concept of process, PID, PS, KILL, FREE</li> </ul>
Month : February		Module/Unit:		Sub-units planned
16		16	VI editor	<ul style="list-style-type: none"> <li>• What is the VI editor-command mode, insert mode, last line mode</li> <li>• VI editing commands, moving within a file, saving and closing the file</li> <li>• Command mode movement, command mode-making changes, repeating VI actions</li> </ul>
Month : March		Module/Unit:		Sub-units planned
16		16	Essential shell programming	<ul style="list-style-type: none"> <li>• Linux shells, shell scripting, running a shell script</li> <li>• Statements- read, echo, exit, expr</li> <li>• Conditional statements- test, if, case</li> <li>• Looping statements- while, until, for</li> <li>• Positional parameters- set, shift</li> </ul>

  
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Department of Computer Science Entire

Academic Year: 2020-2021

**Annual Teaching Plan**

Course Title: B.Sc. Computer Science Entire(BCS)

Name of the teacher: Mr.Rajesh R Mane

Programme BSc Semester-I

Subject: Introduction to Computer -I

Month May/ june			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Introduction to Computer and Basic Organization</b>	<ul style="list-style-type: none"> <li>• Introduction,History. Characteristics &amp; features of Computers.</li> <li>• Components of Computers.</li> <li>• Organization of Computer.</li> <li>• Generation of Computers .</li> <li>• Classification of Computers</li> <li>• Computer Languages</li> <li>• Types of Programming Languages</li> <li>• Machine Languages</li> <li>• Assembly Languages</li> <li>• High Level Languages</li> <li>• Assembler, Linker, Loader, Interpreter &amp; Compiler.</li> <li>• Introduction to Computer Virus, how does it spread? Symptoms of it, Types of Virus, Antivirus, Prevention from Virus.</li> </ul>
12	12	24		
Month July/August			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Input, Output Devices and Concept of Memory</b>	<ul style="list-style-type: none"> <li>• <b>Input Devices :</b> Touch screen , OMR, OCR, Light pen ,Scanners</li> <li>• <b>Output Devices :</b> Digitizers, Plotters, LCD, Plasma Display, Printers</li> <li>• <b>Types of Memory (Primary And Secondary)</b> RAM, ROM, PROM, EPROM Secondary Storage Devices ( FD, CD, HD, Pendrive, DVD, Tape Drive,USB )</li> </ul>
12	12	24		
Month September			Module/Unit:	Sub-units planned
12	12	24	<b>Operating System concepts</b>	<ul style="list-style-type: none"> <li>• Why Operating System</li> <li>• History of operating system</li> <li>• Functions of Operating System</li> </ul>



				<ul style="list-style-type: none"> <li>Types of Operating System Batch O.S.</li> </ul> <p>Multiprogramming O.S.</p> <p>O.S</p> <p>Computers O.S.</p> <p>Time Sharing</p> <p>Personal</p> <p>Network O.S.</p>
Month October			Module/Unit:	Sub-units planned
12	12	24	MS PowerPoint , MS Excel and MS Access	<p>MS-Power point - Introduction to PowerPoint, Creating a Presentation, PowerPoint views, Slide show, Formatting slides, Slide transition &amp; adding special effects, Inserting pictures, sound,chart.</p> <p>MS Excel- modes, Move/Copy text, Insert/Delete Rows and Columns, Formatting a Worksheet, Print the workbook, Charts, Naming Ranges, and Conditional Formatting ,Filtering the data from database ,Drawing toolbar, Freeze Panes, Splitting the worksheet.</p> <p>Goal Seek ,Pivot table and Hyperlinks.</p> <p>Functions: Date and Time function, Statistical, Math and Financial Functions.</p> <p>MS Access-Create Tables,data types, Field properties,Validation rules. Create Query,Create Forms, Create Reports.</p>

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Name and Signature of Teacher

Mr.Rajesh R Mane

*P. Dessai*

Name and Signature of HOD

Pallavi M Dessai

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Vivekanand College, Kolhapur (Autonomous)

Department of Computer Science Entire  
Academic Year: 2020-2021

**Annual Teaching Plan**

Name of the teacher: Mr.Rajesh R Mane

Programme BSc Semester-II

Subject:Introduction to Computer –II Course Title: B.Sc. Computer Science Entire(BCS)

Month December			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Computer Network Basic Concepts</b>	Basic elements of communication systems.- Sender,receiver and medium .  Data Transmission Modes- Simplex,Half Duplex,Full Duplex.  Data Transmission Media- Twisted pair,Coaxial cable,Microwave ayaten,satellite etc  Definition Networking,Features of Networking..  Types Of Networking,Network Topologies.
12	12	24		
Month January			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Introduction to HTML</b>	HTML Documents Basic structure of an HTML document Creating an HTML document Mark up Tags Heading-Paragraphs Line Breaks HTML Tags.
12	12	24		
Month Febuary/March			Module/Unit:	Sub-units planned
12	12	24	<b>Images, Tables Frames, Image Maps, Forms in HTML</b>	Introduction to elements of HTML Working with Text Working with Lists, Tables and Frames Working with



				Hyperlinks, Images and Multimedia Working with Forms and controls.
Month march/April			Module/Unit:	Sub-units planned
12	12	24	<b>Introduction to Cascading Style Sheets</b>	Concept of CSS Creating Style Sheet CSS Properties CSS Styling(Background, Text Format, Controlling Fonts) Working with block elements and objects Working with Lists and Tables CSS Id and Class Box Model(Introduction, Border properties, Padding Properties, Margin properties) CSS Advanced(Grouping, Dimension, Display, Positioning, Floating, Align,Pseudo class, Navigation Bar, Image Sprites, Attribute sector) CSS Color Creating page Layout and Site Designs.



Name and Signature of Teacher  
HOD

Mr.Rajesh R Mane





Name and Signature of

Pallavi M Dessai

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### Annual Teaching Plan

Name of the teacher: Mr. Rajesh R Mane

Programme BSc Semester-V

Subject: E-Commerce Course Title: B.Sc. Computer Science Entire(BCS)

Month June			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Introduction	History, Overview, Definition of E-commerce. Scope• & Goals of E-Commerce. Advantages and Disadvantage of E-commerce. Applications of E-commerce. Challenges of E-commerce. Roadmap of e-commerce in India. Traditional commerce Vs E-commerce.
16		16		
Month July /August			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Electronic Data Interchange (EDI)	Meaning of EDI. History of EDI. EDI Working Concept. EDI Model. EDI Standards. Implementation difficulties of EDI. Advantages and Disadvantage of EDI. E Commerce Business Models (B2B, B2C, C2C, C2B, B2G, G2G, G2C). E-commerce marketing and business strategies, Social networks and online communities. History and Development, Use of Internet. Domain Names. Internet Service provider. World Wide Web. Uniform Resource Locator. Web Browsers. Email, Voicemail, Web Search Engines.
16		16		
Month September			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	E-Payment Systems	Electronic Payment concept. Steps for Electronic Payment. Types of E-Payment Systems- Prepaid, Postpaid.
16		16		



				Electronic fund Transfer. Net Banking. • Case Study :• 1. List out the Web sites dealing with E- Commerce. 2. Survey of ATM Center. 3. Create a Website with minimum details. 4. Log on to trade Website and make a trial order for purchase of an item
Month October			Module/Unit:	Sub-units planned
16		16	E-Security Issues and Threats	Secure Transaction concept – Authentication & Authorization. Privacy on Internet. • Computer Crime Types and laws. Viruses - Types of Attacks. • Vulnerability of Internet Sites. Denial-of-Service attacks. • Cryptography- Encryption, Decryption. SSL –SET. • Firewall. • Digital Certificates. Digital signatures•

Name and Signature of Teacher

Mr.Rajesh R Mane

Name and Signature of HOD

Pallavi M Dessai



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**Annual Teaching Plan**

Name of the teacher: Mr.Rajesh R Mane

Programme BSc Semester-VI

Subject: Data warehouse and mining

Course Title: B.Sc. Computer Science Entire(BCS)

Month December			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Introduction to data warehousing	What is Data Warehousing? How Data

16		16		warehouse works?• Why a Data Warehouse is Separated from Operational Databases• Data Warehouse Applications• Types of Data Warehouse• Difference between Data Warehouse (OLAP) and Operational Database(OLTP)•
Month January			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Introduction to data mining	What is data mining? Process of knowledge discovery in databases (KDD)• Getting to Know Your Data• Data Objects and Attribute Types, What Is an Attribute, Nominal Attributes , Binary• Attributes, Ordinal Attributes, Numeric Attributes , Discrete versus Continuous Attributes
16		16		
Month February			Module/Unit:	Sub-units planned
16		16	Data preprocessing and association rule mining	Data Preprocessing: An Overview Data Quality: Why Preprocess the Data?• Major Tasks in Data Preprocessing, Data Cleaning (Missing Values, Noisy Data) , Data• integration, Data Transformation , Data reduction, Data Discretization, Association Rule Mining, Market basket analysis, Apriori algorithm•
Month March			Module/Unit:	Sub-units planned
16		16	Classification, prediction and clustering	Classification, Classification Requirements, Classification vs Prediction, Issues related to Classification and Prediction Decision tree• Prediction• Regression analysis• Clustering: What Is Cluster



				Analysis? Different Types of Clustering, K- means: The Basic • K- Means Algorithm
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Name and Signature of Teacher

Mr. Rajesh R Mane



Name and Signature of HOD

Pallavi M Dessai

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## Vivekanand College, Kolhapur (Autonomous)

Department of Computer Science Entire

Academic Year: 2020-2021

### Annual Teaching Plan


Name of the teacher: Mrs. Vaishali C. Dalvi

Programme BSc Entire (BCS)

Semester- V

Subject: computer science

Course Title: C#.Net programming

Month –Jun			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Introduction	<ul style="list-style-type: none"> <li>Event driven &amp; sequence driven programming</li> <li>Introduction to c#, .net framework architecture</li> <li>Assembly Namespace, Garbage collector JIT compilers</li> </ul>
16	16	32		
Month –July			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Data Types & Control Structure	<ul style="list-style-type: none"> <li>Variables, expressions, constants, Data Types , Operators, implicit &amp; explicit conversions</li> <li>Conditional statements</li> <li>Loop statements</li> <li>Unconditional statement</li> </ul>
16	16	32		
Month –August			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Working with Classes	<ul style="list-style-type: none"> <li>Class &amp; objects</li> <li>Constructors</li> <li>Inheritance</li> <li>Polymorphism</li> </ul>
16	16	32		
Month –September			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Developing GUI applications with Win Form	<ul style="list-style-type: none"> <li>Different controls in win form – Forms, textbox, labels, buttons, radio buttons, check box, combo box, list box, Date time picker</li> <li>Important properties of controls, Important events of each control</li> </ul>
16	16	32		
Month - October				Sub-units planned
Lectures	Practical's	Total		<ul style="list-style-type: none"> <li>Menus, built in dialog box – input box, message box, Mouse events – click, double click, enter, hover, leave, move, Keyboard events – key press, key down, key-up</li> </ul>
16	16	32		

Name and Signature of Teacher

*(Signature)*

Vaishali C. Dalvi

Name and Signature of HoD

Pallavi M. Dessai

*(Signature)*

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# Vivekanand College, Kolhapur (Autonomous)

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Academic Year: 2020-2021

## Annual Teaching Plan

Name of the teacher: Mrs Vaishali C. dalvi

Programme : B.Sc. Computer Science Entire(BCS ) Semester-VI

Subject: computer science

Course Title: ASP.Net Programming

Month –December			Module/Unit:	Sub-units Completed
Lectures	Practical's	Total	Exception Handlin	Errors-types of errors • Structured Exception – Try__Catch__End Try, finally, throw, • Unstructured Exception – On error GoTo, resume ,resume next. • Tracing Errors – Break Point, watch window, quick watch window, autos
16	16	32		
Month –January			Module/Unit:	Sub-units Completed
Lectures	Practical's	Total	Database Connectivity in C#	Database: Connections, command, Data adapters, and datasets • Connection to database using MS-Access, SQL Server • Data binding with controls like Text Boxes, List Boxes, Data grid etc. Data form wizard, • Data validation
16	16	32		
Month – February			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Using Crystal Report	Connection to Database, Table, Queries, Create and Modify Report, • Formatting Fields and inserting Header, Footer, Group
16	16	32		
Month - March			Model/Unit:	Sub-units completed
				• Details Working with formula fields, Parameter fields • Working with Multiple Tables Introduction to ASP. NET
Month –April			Module/Unit:	Sub-units Completed
Lectures	Practical's	Total	Introduction to ASP.Net with c#	• Working with web forms: Buttons, Text Boxes, Labels, Check Boxes, Radio Buttons, Tables, Panels, Images, Image Buttons, List Boxes, Drop-Down Lists, Hyperlinks and Link Buttons
16	16	32		

Name and Signature of Teacher

Vaishali C. Dalvi

Note: In the above format, for each month for each teacher.



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Pallavi M. Dessai

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## Annual Teaching Plan

Name of the Teacher: Miss Nita N . Bargale

Programme BSc Entire (BCS)

Semester- V

Subject: computer science

Course Title: core java

Month –may-june			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Introduction to java	<ul style="list-style-type: none"> <li>•A Short History of Java,</li> <li>• Features of Java,</li> <li>• Java tools-JDK, JRE.</li> <li>• structure of java program –compilation and execution of program</li> <li>• JVM, Types of Comments, Data Types, Final Variable</li> <li>• Type Conversions -implicit and explicit conversion</li> <li>• Accepting input from console (Using scanner class and command line arguments).</li> </ul>
16	16	32		
Month –july-aug			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	control statements, Classes and objects	<ul style="list-style-type: none"> <li>•Control statements, for-each loop, Varargs, Declaring 1D, 2D array</li> <li>• Defining Classes, objects and method - method overloading</li> <li>• Array of Objects, Constructor, Overloading Constructors and use of 'this' Keyword</li> <li>• static keyword,</li> <li>• methods (equals (), toString (), Wrapper Classes, finalize () Method</li> </ul>
16	16	32		
Month –September			Module/Unit:	Sub-units planned
16	16	32	Package, Inheritance and Interface	<ul style="list-style-type: none"> <li>•Package- Introduction to all predefined packages, User Defined Packages, Access Specifiers</li> <li>•Inheritance -Types of Inheritance-</li> <li>• Method Overriding</li> <li>• Super Keyword, final keyword</li> <li>• abstract class and abstract methods</li> <li>• Defining and Implementing Interfaces</li> </ul>
Month –October			Module/Unit:	Sub-units planned
16	16	32	Exception Handling and Multithreading	<p>Exception Handling- Concept, types, try and catch block, multiple catch, Try-catch –finally block, throw and throws clause, finally clause.</p> <ul style="list-style-type: none"> <li>• Multithreading- What are threads?, difference between process and thread, Life cycle of thread, methods of thread class, runnable interface, isAlive() and join() methods, Thread priorities , Running multiple threads ,Synchronization and interthread communication- wait() , notify(),notifyAll() methods.</li> </ul>



Name and Signature of Teacher  
Miss. Nita N.Bargale

Note: In the above format, for each month for each teacher.





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Miss Pallavi M. Dessai

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## Annual Teaching Plan

Name of the teacher: Miss Radhika M. Patil

Programme: B.Sc. Computer Science Entire (BCS) Semester-III

Subject: Computer Science      Course Title: Object Oriented Programming Using C++

Month May/June 20			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Introduction to C++ and Basics of Object Oriented programming Concepts</b>	<ul style="list-style-type: none"> <li>• Introduction to C++: Structure of C++ program, Input and output Streams,</li> <li>• Memory</li> <li>• management operators: new and delete, this pointer, Reference variables, Control Structures (looping and branching statements)</li> <li>• Functions: inline function, default argument, function overloading. OOP</li> <li>• Concepts: Data abstraction, Data Encapsulation, Inheritance, Polymorphism, Message Passing</li> </ul>
16	12	28		
Month July/August 20			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Class and Object</b>	<ul style="list-style-type: none"> <li>• Class declaration, Access modifiers: public, private, protected, defining member functions (inside the class and outside the class)</li> <li>• Static data members and member function, Array of object, friend function and friend class.</li> </ul>
16	12	28		
Month Sept 20			Module/Unit:	Sub-units planned





16	12	28	<b>Constructor, Destructor, Operator Overloading</b>	<ul style="list-style-type: none"> <li>• Constructor and Destructor: Definition and features of constructor, Types of constructor,</li> <li>• Definition, syntax and use of Destructor</li> <li>• Operator overloading :Concept, Rules for operator overloading, Unary and Binary Operator overloading</li> </ul>
Month Oct 20			Module/Unit:	Sub-units planned
16	12	28	<b>Inheritance and Polymorphism</b>	<ul style="list-style-type: none"> <li>• Inheritance: Concept, Definitions of base class and derived class, Types of inheritance (Single, Multiple, Multilevel, Hierarchical and Hybrid inheritance)</li> <li>• Polymorphism: Definition of polymorphism, Types of polymorphism, virtual function, pure virtual function, Abstract class..</li> </ul>

*Radhika*

Miss Radhika M. Patil

*Pallavi*

Name and Signature of HoD

(Miss Pallavi M.Dessai)

Note: In the above format, for each month for each teacher



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# Vivekanand College, Kolhapur (Autonomous)

Department of Computer Science Entire

Academic Year: 2020-2021

## Annual Teaching Plan

Name of the teacher: Miss Radhika M.Patil

Programme: B.Sc. Computer Science Entire (BCS) Semester-IV

Subject: Computer Science Course Title: Introduction to Data Structure Using C++

Month Dec 20			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Introduction to Data structure and Linear Data Structures (Array, Stack, Queue)	<ul style="list-style-type: none"> <li>• Introduction to Data Structure Definitions: Data types, Data Object, Data structure, Abstract Data Type (concept), Data Structure classification</li> <li>• Algorithm Efficiency: Complexity, Big O notation,</li> <li>• Array: Definition, Types of array (one dimensional and multidimensional), Sparse matrices.</li> </ul>
16	12	28		
Month Jan 21			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Stack and Queue	<ul style="list-style-type: none"> <li>• Stack: Definition of Stack, Operations on Stack, Static Implementation of stack</li> <li>• Applications of stack: Recursion, inter conversions between infix, prefix and postfix expressions.</li> <li>• Queue: Definition of Queue, Operations on Queue, Static Implementation of</li> <li>• Queue.Types of Queue: Linear, Circular and Priority queue</li> </ul>
16	12	28		



				<ul style="list-style-type: none"> <li>• Applications of Queue.</li> </ul>
Month Feb/March 21			Module/Unit:	Sub-units planned
16	12	28	<b>Linked List, Trees, Searching and Sorting algorithms</b>	<ul style="list-style-type: none"> <li>• Linked List: Concept of Linked List, Operations on Linked List, Implementation of Linear Linked List, Types of Linked List,</li> <li>• Implementation of stack and queue using linked list</li> <li>• Trees: Definition of tree, Tree terminologies, Types of Tree, Tree Traversal(inorder, preorder, postorder).</li> </ul>
Month March/April 21			Module/Unit:	Sub-units planned
16	12	28	<b>Searching and Sorting</b>	<ul style="list-style-type: none"> <li>• Searching: Linear search and binary search</li> <li>• Sorting: Bubble Sort, Selection Sort, Insertion sort, Merge Sort</li> </ul>

*Radhika*

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# Vivekanand College, Kolhapur (Autonomous)

Department of Computer Science Entire

Academic Year: 2020-2021

## Annual Teaching Plan

Name of the teacher: Miss Radhika M.Patil

Programme: B.Sc. Computer Science Entire (BCS) Semester-V

Subject: Computer Science Course Title: Data Communication

Month May/June 20			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Basics of Data communication</b>	<ul style="list-style-type: none"> <li>• Concept of data communication, Components: sender, receiver, message, Transmission media, Data Representation,</li> <li>• Data Flow- Simplex, Half-duplex, and Full-duplex.</li> <li>• Networks: Definition, Advantages and disadvantages.</li> <li>• Network Architecture: Client/Server and Peer to Peer</li> </ul>
16		16		
Month July/August 20			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Transmission media and modes</b>	<ul style="list-style-type: none"> <li>• Guided Media- Twisted-Pair Cable, Coaxial Cable and Fiber Optic Cable.</li> <li>• Unguided Media: Radio Waves, Microwaves, Infrared Waves.</li> <li>• Transmission Modes: Parallel, Serial-Asynchronous, Synchronous, Isochronous</li> </ul>
16		16		
Month Sept 20			Module/Unit:	Sub-units planned
16		16	<b>Multiplexing, Switching Techniques and Protocols and Standards</b>	<ul style="list-style-type: none"> <li>• Multiplexing: Frequency-Division Multiplexing, Wavelength-Division Multiplexing, Time Division Multiplexing.</li> <li>• Switching: Circuit switching- data gram and virtual circuit Switching,</li> </ul>





				Packet Switching and Message Switching. <ul style="list-style-type: none"> <li>• Protocols: concept, syntax, semantics, Timing</li> </ul>
Month Oct 20			Module/Unit:	Sub-units planned
16		16	<b>Physical Layer and Data Link Layer</b>	<ul style="list-style-type: none"> <li>• Physical layer: Digital-to-analog conversion: concept, Amplitude Shift Keying,</li> <li>• Frequency Shift Keying, Phase Shift Keying. Analog-to-digital conversion: Pulse Code</li> <li>• Modulation (PCM), Delta Modulation (DM).Data link layer: Design issues, Framing,</li> <li>• Error Detection and Correction.</li> </ul>

*Radhika*

Miss Radhika M. Patil

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Name and Signature of HoD

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# Vivekanand College, Kolhapur (Autonomous)

Department of Computer Science Entire

Academic Year: 2020-2021

## Annual Teaching Plan

Name of the teacher: Miss Radhika M. Patil

Programme: B.Sc. Computer Science Entire (BCS) Semester-VI

Subject: Computer Science Course Title: Computer Network

Month Dec 20			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Data Link Layer Protocols, Network Layer</b>	<ul style="list-style-type: none"><li>• Protocols- Sliding window protocol: one bit sliding window protocol, protocol using</li><li>• Go Back N, protocol using selective repeat.</li><li>• Network Layer: Design issues, Concept of Routing.</li></ul>
16		16		
Month Jan 21			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Network Layer and Transport Layer</b>	<ul style="list-style-type: none"><li>• Routing Algorithms (Shortest Path, Flooding, Distance Vector Routing).</li><li>• Congestion Control Algorithms: Leaky Bucket, Token Bucket .</li><li>• Transport Layer: Services: connection oriented and connection less services.</li><li>• Transport Layer Primitives: listen, connect, send, receive, disconnect. Protocols: TCP, UDP.</li></ul>
16		16		
Month Feb/ March 21			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	<b>Session and Presentation layer</b>	<ul style="list-style-type: none"><li>• Session layer: Services: dialog management, synchronization, activity</li><li>• Management, exception handling Remote procedure calls (RPC).</li></ul>
16		16		



				<ul style="list-style-type: none"> <li>• Presentation Layer: Services- Translation, compression, encryption</li> <li>• Cryptography- Concept, Symmetric key Cryptography (e.g. AES-128, AES-192, AES-256 and DES .Explain any one of them) and Asymmetric key Cryptography (RSA, Diffie-Hellman Algorithm, The Elliptical Wave theory Algorithm. Explain any one of them).</li> </ul>
Month	March/April 21		Module/Unit:	Sub-units planned
16		16	<b>Application layer</b>	<ul style="list-style-type: none"> <li>• Application layer: Function. Protocols- Domain name system (DNS), Hypertext</li> <li>• Transfer Protocol (HTTP), Simple Mail Transfer Protocol (SMTP), Telnet, File</li> <li>• Transfer Protocol (FTP).</li> </ul>

*Radhika*

Miss Radhika M. Patil

*Pallavi*

Name and Signature of HoD

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 Shri Swami Vivekanand Shikshan Sanstha"  
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**B. Sc. Part – II (Computer science Entire) CBCS Syllabus 2010-2021**  
**Semester: III Computer Science-II CC-CS-1304C**  
**Introduction to RDBMS using MySQL (20-21)**

Faculty Name: Miss. Nadiya D. Patel

Teaching Plan

Section – I

Paper - Introduction to RDBMS using MySQL

Month- July			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Unit I - Introduction to RDBMS using MySQL	Data Flow Diagram : concept of DFD, Symbols, Levels of DFDs, example.  Entity Relationship Diagram : Concept of Entity, Attributes, Symbols, Types of relations, examples. Normalization: Forms of Normalization – 1NF, 2NF, 3NF, BCNF.
04	00	16		
Month – August			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Unit II - Introduction to MySQL  Unit III - MySQL Sub-queries and Joins	what is MySQL, features of MySQL, Basic Data types in MySQL, Classification of Commands : DDL- Create, Alter, Drop, Truncate, Comment, Rename, DML- Insert, Update, Delete, Select. DCL- Grant, Revoke, TCL- Commit, Rollback, Savepoint Data Constraints : Primary Key, Foreign Key, Unique, NOT Null, Check, Default. Select statement with where, group by, order by clause. SQL Operators : Logical, Relational/Comparison, Special - In, Between, Like. SQL functions : Arithmetic, Conversion , Date and time, Aggregate Functions. Introduction to Sub Queries: Sub queries, Nested Sub query. Introduction to Joins: Simple/Inner Two tables Join, Left, Right, Outer join, Self join.
04	00	16		
Month- September			Module/Unit:	Sub-units planned
04	00	16	Unit III - MySQL Sub-queries and Joins.	Views, Indexes, Sequence. Stored Procedures definition and concept. Structure and Syntax of Stored Procedures block. Stored Procedures variables, parameters, modes: IN, OUT, INOUT. Flow Control structures : if, case statements, Loops- Simple loop, while, repeat until





			Unit IV - Introduction to MySQL Stored Procedures	Stored Procedures: Creating, Calling, Modifying, Deleting/Dropping procedures Introduction to Cursors, Trigger and its types.
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*[Signature]*  
Name and Signature of Teacher  
Miss. Nadiya Dara Patel

*[Signature]*  
Name and Signature of HOD  
Miss. Pallavi Desai

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**B. Sc. Part – II (Computer science Entire) CBCS Syllabus with effect from June, 2019**  
**Semester: IV Computer science -Paper- IV CC-CS-1304D 2019-2021**  
**Cyber Security Essentials 20-21**  
**Semester IV**  
**Section – II**

**Paper - Cyber Security Essentials**

Month- November			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Unit I: Introduction to Computer Network	Computer Network: Definition, Types of Network, Topologies, Network devices, Internet, Search Engines, Web Browsers, OSI Model, TCP IP Model, IP address scheme, switching techniques.
04	00	16		
Month-Dec			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Unit II: Introduction to Cyber security	Introduction to Cyber Security: Definition, Importance, Computer ethics, Hacker, Hacking phases, Hacker classes, Mobile Device Security, File Security, Password Security, Browser Security, Email Security, Encryption, Decryption, Digital Signature, Firewall, types of Firewall, spoofing.
04	00	16		
Month- January			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Unit III: Introduction to information security and threats	Security Threats: Definition, Types of Threats - Virus, Worms, Trojan Horse, Malware, Ransom ware, Identity theft etc, , Web application threats. Torrent and infected websites, Firewall, types of firewall Antivirus- Definition, Types, features, advantages, limitations, difference between Firewall and Antivirus. Definition of attack, Types of Attacks, DoS attack, phishing,
04	00	16		
Month- February			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	Unit IV: Access Control	Computer Forensics, Steganography, elements
04	00	16		



			and cyber security laws	of information security and Introduction to Kali linux Access Controls: Overview of Authentication and Authorization, Overview of Intrusion Detection Systems and Intrusion Prevention Systems. Wireless Network Security- Components of wireless networks, Security issues in wireless, Wi-Fi Security, Risk of Using Unsecured Wi-Fi, Bluetooth and its security Cyber Security Laws: Security Laws, Intellectual Property Rights, Security Audit. What is cyber crime and types of crime.
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*Nadiya*



*Pallavi*

Name and Signature of Teacher  
Miss. Nadiya Dara Patel

Name and Signature of HOD  
Miss. Pallavi M. Dessai

Note: In the above format, for each month for each teacher.

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# Vivekanand College, Kolhapur (Autonomous)

Department of Computer Science Entire

Academic Year: 2020-2021

## Annual Teaching Plan




Name of the teacher: Miss. Nadiya Dara Patel

Programme: B.Sc. Computer Science Entire(B.C.S) Semester-V

Subject: Computer Science Course Title: Software Engineering with UML

Month- July			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	1. Introduction to software engineering and process models Practicals : 2. Operating System III	Definition of software, definition of software engineering, characteristics of software, System Development Life Cycle (SDLC), phases of SDLC, Software process models: Traditional models- Waterfall model, Prototyping model, Spiral Model, Introduction to Agile software development- concept, advantages, types- scrums, extreme programming(XP).
16	20	36		
Month – August			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	2. Introduction to Requirements Analysis and specification and UML Practicals : 3. Operating System III	Requirement anticipation and investigation Fact finding methods- Interviews, Questionnaires, observation, record review. Software requirements specification (SRS)- need of SRS, characteristic of SRS, structure of SRS, Types of requirements - functional and non- functional Introduction to UML- concept of UML, advantages of UML, applications of UML.
16	20	36		
Month- October			Module/Unit:	Sub-units planned
16	20	36	3. UML Diagrams- I Practicals : Operating System III	Classification of UML diagrams, Use case diagrams-overview, identifying actors and use cases, communication and relationships, example. Class diagrams: classes and objects, association and links, multiplicity, inheritance, example. State machine diagram- overview
16	20	36		
			4.UML Diagrams- II and introduction to Software Testing	Interaction diagrams - overview, Sequence Diagram-concept, activation, example. Activity diagram-concept, activities, actions, decisions, control nodes, fork and join node, example. Software Testing overview - concept, Types of



		Practicals : Operating System III	testing –Unit testing, Acceptance testing ( $\alpha / \beta$ ), Integration testing, Black box testing, White box testing.
 Name and Signature of Teacher Miss. Nadiya Dara Patel			 Name and Signature of HOD Miss. Pallavi M. Dessai

Note: In the above format, for each month for each teacher.

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## Vivekanand College, Kolhapur (Autonomous)

Department of Computer Science Entire

Academic Year 2020-2021

### Annual Teaching Plan

Name of the teacher: Miss Nadiya Dara Patel

Programme: B.Sc Computer Science Entire(B.C.S) Semester-VI

Subject: Computer Science Course Title: Introduction to Artificial Intelligence and Expert Systems

Month- December			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	1.Introduction to Artificial Intelligence  Practicals : Operating System III	Definition of Artificial Intelligence, History of Artificial Intelligence, Goals of A.I. Contributors of A. I., Branches of A.I., Applications of A.I. Why Artificial Intelligence, Advantages of A.I., Disadvantages of A.I., Types of Artificial Intelligence: Type1, Type2.
16	20	36		
Month- January			Module/Unit:	Sub-units planned
Lectures	Practical's	Total	2.Introduction to Intelligent System  Practicals : Operating System III	What is intelligence, Types of Intelligence, Components of Intelligence-Reasoning, Learning, Problem Solving, Perception, Linguistic Intelligence. A.I. Agents and environment – concept, definition of agent, definition of environment, Structure of A.I. intelligent agent, Rules for A.I. agent, Rational Agent- PEAS representation (Case study of Self Driving Car) examples. Turing test.
16	20	36		
Month- February			Module/Unit:	Sub-units planned
16	20	36	3.Problem Solving in A.I.  Practicals : Operating System III	Concept, Search algorithm terminologies: i) Search- Search Space, Start State, Goal State. ii) Search Tree, iii) Actions, iv) Transition Model, v) Path Cost vi) Solution vii) Optimal Solution, viii) Problem and Problem Space. Types of Search Algorithms: Uninformed- Breadth First Search, Depth First Search, Informed: Heuristic Search – i) Generate and test method , ii) Hill Climbing Natural Language Processing: concept, definition, natural language processing and understanding, NLP analysis stages
16	20	36		
16	20	36		What are expert systems, Features of



# Vivekanand College, Kolhapur (Autonomous)

Department of B.Sc. Computer Science Entire

Academic Year: 2020-21

## Teaching Plan

Name of the Teacher: Mr. N. P. Mote

Programme: B.Sc. Computer Science Entire Part-I

Semester- I

Subject: Electronics

Course Title: GEC-1301 A Electronics Circuits and Digital Electronics-I

Month - October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Linear components in computer	Definition of active and passive elements Resistors: Classification, color code, specifications of resistors Types of resistors. Capacitors: Definition, Capacitance, capacitive reactance (XC), Charging and discharging of capacitor, Types of capacitors Inductors and Transformers
24	48	72		
Month - November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Linear components in computer	Switches, Relays. Basic laws: Ohm's law, Kirchoff's current and voltage law Network Theorems - Thevenin's Theorem, Norton's Theorem, superposition Theorem, Maximum power transfer Theorem.
24	48	72	DC circuit analysis	
Month - December			Module/Unit:	Sub-units planned
24	48	72	Semiconductor Diode	Formation of P-N junction, depletion layer, internal potential barrier, working and I-V characteristics of PN junction diode. Diode applications, zener diode, Photodiode and LED
Month - January			Module/Unit:	Sub-units planned
06	24	30	Bipolar Junction Transistor	Structure and working of bipolar junction transistor: CB, CC, CE configurations, CE mode characteristics, Relation between $\alpha$ and $\beta$ , DC load line and Q point, potential divider Biasing, Concept of transistor as an amplifier and transistor as a switch.

Mr. N. P. Mote



Miss P. M. Dessai

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# Vivekanand College, Kolhapur (Autonomous)

Department of B.Sc. Computer Science Entire

Academic Year: 2020-21

## Teaching Plan

Name of the Teacher: Mr. N. P. Mote

Programme: B.Sc. Computer Science Entire Part-I

Semester- II

Subject: Electronics

Course Title: GEC-1301 A Electronics Circuits and Digital Electronics-II

Month - October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Field Effect Transistor	Comparison between BJT and FET, classification of FETs, Structure and working of JFET, I-V characteristics and parameters (transconductance, drain resistance, amplification factor) concept of MOSFET
24	48	72		
Month - November			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Amplifiers and Oscillators	Formation of P-N junction, depletion layer, internal potential barrier, working and I-V characteristics of PN junction diode. Diode applications, zener diode, Photodiode and LED. Structure and working of bipolar junction transistor: CB, CC
24	48	72		
Month - December			Module/Unit:	Sub-units planned
24	48	72	Operational Amplifier	Concept of operational amplifier; ideal characteristics of Opamp; Different parameters of Op Amp, Virtual ground concept, Applications of Op-amp: Inverting amplifier, Noninverting amplifier, Unity gain amplifier, Buffer, Adder, Subtractor, Integrator and Differentiator, Comparator, Schmitt Trigger.
Month - January			Module/Unit:	Sub-units planned
			Power Supply	Working of rectifier (Half, Full, Bridge); different parameters of rectifiers; filter circuits; concept of Regulator; concept of load and line regulation; Zener diode As a regulator; concept of Three pin IC regulator(Block Diagram) positive and negative voltage regulator ICs; SMPS block diagram; UPS: online and offline (block diagram)



Mr. N. P. Mote




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# Vivekanand College, Kolhapur (Autonomous)

Department of B.Sc. Computer Science Entire

Academic Year: 2020-21

## Teaching Plan

Name of the Teacher: Mr. N. P. Mote

Programme: B.Sc. Computer Science Entire Part-II Semester- III

Subject: Electronics Course Title: Computer Instrumentation and Organization, Processor Programming

Month : November 2021			Module Unit:	Sub-units planned
Lectures	Practicals	Total	UNIT 1: Transducers and Sensors	Definition of sensors and transducers. Classification of sensors: Active and passive sensors. Specifications of sensor: (Accuracy, range, linearity, sensitivity, resolution, reproducibility). Temperature transducers: Resistance temperature detector (RTD), etc
16	48	64		
			Practicals: GROUP A : 1. Study of temperature sensor LM 35/AD 590 2. Instrumentation Amplifier using OP-AMP 3. 3 bit Flash ADC 4. R-2R ladder DAC	
Month: December 2021			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	UNIT 2: Signal Conditioning	Introduction to signal conditioning, Signal conditioning of passive sensors using bridge circuit:
16	48	64		
			UNIT 3: Data Converters	Digital to Analog Converter (DAC): Resistive divider, R-2R ladder. Parameters: (Linearity, resolution, accuracy)
			Practicals: 5. Filters 6. Differential amplifier. 7. Measurement displacement of LVDT 8. Study of Preamplifier using Op-amp.	
Month : January 2022			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	UNIT 4: Digital Instruments and Data Acquisition	Photodiode and LED, Current limiting resistor Analog to Digital Converter: Types of ADC: Flash, Successive approximation, Parameters of ADC (Linearity, resolution, conversion time, accuracy) Introduction, Digital Multimeters, Digital Frequency Meter, Digital Tachometer, Digital pH Meter, Digital Phase Meter, Generalized Data Acquisition System, Data Logger.
16	48	64		

Mr. N. P. Mote



  
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# Vivekanand College, Kolhapur (Autonomous)

Department of B.Sc. Computer Science Entire  
Academic Year: 2020-21

## Teaching Plan

Name of the Teacher: Mr. N. P. Mote

Programme: B.Sc. Computer Science Entire Part-II

Semester- IV

Subject: Electronics Course Title: Communications Principles and 8051 interfacing & Programming

Month : March2022			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	UNIT 1: Introduction to Electronic Communication	Importance of Communication, Elements of Communication system, Electromagnetic spectrum, types of communication, (serial and parallel), Concepts of communication system: Signal bandwidth, channel bandwidth, data rate, baud rate, Nyquist theorem, Signal to noise ratio, and channel capacity, error handling code- Hamming code, Shannon theorem
16	48	64		
			Practicals: GROUP B : 1. Study of Amplitude Modulation and Demodulation 2. Study of Frequency Modulation 3. Study of Amplitude Shift keying (ASK) 4. Study of Frequency Shift keying (FSK)	
Month: April 2021			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	UNIT 2: Modulation and Demodulation  UNIT 3: Multiplexing and Multiple Access Techniques	Basics of modulation and Demodulation Introduction to Modulation techniques: Analog Modulation (Amplitude, Frequency and Phase), Digital modulation, PAM, PCM, delta modulation, MODEM - concept of ASK, FSK, BPSK, QPSK and block diagram of MODEM using FSK.  Study of multiplexing and multiple access techniques: Space division multiplexing, Time division multiplexing, Frequency Division Multiplexing
16	48	64		
			Practicals: GROUP A : 5. Study of Pulse Amplitude Modulation (PAM) 6. Arithmetic operations using 8051 microcontroller (Using Simulator)	



			7. Logical operations using 8051 microcontroller (Use 8051 Simulator)	
			8. Time delay generation using timers of 8051 microcontroller	
Month : May 2022			Module/Unit.	Sub-units planned
Lectures	Practicals	Total	UNIT 4: Mobile communication	Code division multiplexing, spread spectrum techniques: DSSS, FHSS, Introduction to multiple access and corresponding access types: FDMA, TDMA, CDMA  Introduction to mobile communication, Cellular concept, Working of GSM, Hand over, Introduction to GPRS. Introduction to RFID, Zigbee, Bluetooth and Wi-Fi (Comparison based on range, data rate, frequency, Power).
16	48	64		
			Practicals: GROUP B: 9. To study the interfacing of Relay/LED/Optocoupler using microcontroller 11. To study the interfacing Stepper motor with 8051 12. To study waveform generator (square, triangular and saw tooth using DAC) with microcontroller. 13. Study of interfacing of 16 x 2 LCD. 14. To study the interfacing of ADC IC0804	



Mr. N. P. Mote



Miss P. M. Dessai

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**Vivekanand College, Kolhapur (Autonomous)**

Department of Computer Science (Entire)

Academic Year: 2020-21

**Annual Teaching Plan**

Name of the teacher: Dr. Milind S. Patil

Programme: B.Sc. Computer Science (Entire) II Semester- III

Subject: Electronics Course Title: **GEC-1301 C Section- II Computer Instrumentation  
And Organization, Processor Programming**

Month : October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Computer organization:	CPU organization: Different registers organization Memory organization: Characteristics of memory systems , Cache memory, Memory Hierarchy. memory management (Segmentation, Paging), I / O organization: Need of I / O interface, IO mapped IO, Memory mapped IO, DMA concept, Serial bus interface (RS 232, USB), Parallel port, PCI bus, PCMCIA bus.
16	48	64	Practicals: 1. Study of temperature sensor LM 35/AD 590 2. Instrumentation Amplifier using OP-AMP 3. 3 bit Flash ADC 4. R-2R ladder DAC	
Month: November			Module/Unit:	Sub-units planned
16	48	64	The Art of Assembly Language Programming:	Program development steps- Defining problem, Writing Algorithms, Flowchart Initialization checklist, Choosing instructions, Converting algorithms to assembly language programs. Assembly Language Programming Tools Editors, Assembler, Linker, Debugger Assembler directives and Operators.





			Instruction Set of 8086 microprocessor:	Machine language instruction format, Addressing modes. Instruction Set Group of instructions: Arithmetic instructions, Logical instructions, Data transfer instructions, Bit manipulations instructions, Program control transfer or branching instructions, Process control instructions.
			Practicals: 5. Filters (low pass and high pass) 6. Differential amplifier. 7. Measurement displacement of LVDT 8. Study of Preamplifier using Op-amp.	
Month : December			Module/Unit:	Sub-units planned
16	48	64	Assembly programming:	Introduction to assembler (NASM), Assembly directives, introduction to Programming (Flow chart, Algorithm, program), Assembly programs of Addition, subtraction, multiplication, division, code conversion, Array processing (Finding largest-smallest number, arranging elements in ascending - descending order).
			Practicals: 9. Write an ALP to find sum of series of numbers. 10. Write an ALP to multiply two 16 bit unsigned/ signed numbers. 11. Write an ALP to divide two unsigned/ signed numbers 12. Write an ALP to perform block transfer data using string instructions / without using string instructions.	

*Milind S. Patil*  
Dr. Milind S. Patil



*P.M. Desai*  
Miss P.M. Desai  
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VIVEKANAND COLLEGE, KOLHAPUR  
(AUTONOMOUS)



**Vivekanand College, Kolhapur (Autonomous)**

Department of Computer Science (Entrire)

Academic Year: 2020-21

**Annual Teaching Plan**

Name of the teacher: Dr. Milind S. Patil

Programme: B.Sc. Computer Science (Entrire) II Semester- IV

Subject: Electronics Course Title: GEC-1301 D Section- II Communication Principles And 8051 Microcontroller Interfacing, Programming

Month : Feb			Module/Unit:	Sub-units planned	
Lectures	Practicals	Total	Introduction To Microcontroller:	Comparison of Microcontroller & Microprocessor. Study of 8051 and its Family (89C51, DS5000, 8031, 8032, 8052, 8751, Phillips RD2, 89C51VRD2).Architecture of 8051: Internal Diagram of 8051 and Study of Internal Blocks, Reset and Clock, Registers, Flags and Internal Memory, SFR, I/O Ports.	
16	48	64	8051 Instruction Set:		Study of 8051 Instruction Set and Addressing Modes, Data transfer, Arithmetic, Logical, JUMP, Loops & CALL instructions, Bit manipulation Instructions.
			Practicals: 1. Data transfer programming using 8051 microcontroller 2.Arithmetic operations using 8051 microcontroller (Use 8051 Simulator) 3.Logical operations using 8051 microcontroller (Use 8051 Simulator) 4. Time delay generation using timers of 8051 microcontroller		
Month: March			Module/Unit:	Sub-units planned	
Lectures	Practicals	Total	Facilities In 8051:	Timer and Counter: Timer and Counters, Timer modes, Programming the timers in	



16	48	64		Mode 1 using assembly and C. Time delay generation. Serial Port: Serial port of 8051, RS-232 standard and IC MAX-232, Baud rate in 8051, programming for transmitting character through serial port using assembly and C.
			Practicals: 5. Counter programming using 8051 6. Code conversion programming using 8051 7. Interfacing of 7-segment display / thumb wheel switch with 8051 8. Study of parallel port of pc (port pin access using 'c')	
Month : April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Real World Interfacing:	Interfacing ADC, DAC, Stepper Motor, LCD, DC motor (PWM), Respective programming through embedded C. Study of advance microcontrollers (ARM & PIC): Features and applications.
16	48	64	Practicals: 9. Interfacing LCD with 8051 10. Interfacing of Relay/LED/Optocoupler using microcontroller 11. Interfacing Stepper motor with 8051 12. To study waveform generator (square, triangular and saw tooth using DAC) with microcontroller.	

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*P.M. Desai*

Miss P.M. Desai

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**VIVEKANAND COLLEGE, KOLHAPUR  
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**Vivekanand College, Kolhapur (Autonomous)**

Department of Computer Science (Entrire)

Academic Year: 2020-21

**Annual Teaching Plan**

Name of the teacher: Dr. Milind S. Patil

Programme: B.Sc. Computer Science (Entrire) I Semester- I

Subject: Electronics

Course Title: GEC-1301 A Section- I Electronics Paper – I (A2) Digital Electronics – I

Month : October			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Number System, Binary Codes and Binary Arithmetic:	Different types of number systems (Decimal, Binary, Octal, Hexadecimal Number system), Inter conversion from one number system to another. Binary Codes (BCD code. Gray code, Excess-3 code, ASCII code). Concept of Parity (Odd, Even), 1's complement and 2's complement of binary numbers, Binary arithmetic: addition, subtraction (using 1's complement and 2's complement), Signed and unsigned numbers.
12	48	60	Practicals: GROUP A Analog Electronics 1. Study of Positive & Negative Voltage regulators using three pin IC's. 2. Study of Kirchhoff's Laws. 3. To verify Thevenin, Norton theorem for a resistive circuit.	4. To verify Superposition, Maximum Power Transfer theorem for a resistive circuit. 5. Study of forward, reverse characteristic of rectifier diode.
Month: November			Module/Unit:	Sub-units planned
12	48	60	Logic Gates and Boolean Algebra:	Logic gates: AND, OR, NOT, NOR, NAND, EX-OR (Definition, Symbol, Expression and Truth Table). Universal gates (NAND and NOR). Boolean algebra: Rules and laws of Boolean algebra, De-





				Morgan's Theorems. Simplifications of logic Expressions using a) Boolean algebra, b) K-map.
			Combinational Circuits:	Concept of Combinational Circuits, Half adder, Full adder, half subtractor, Full Subtractor, 4-bit adder/subtractor, Multiplexer, Demultiplexer, Encoder (Decimal to BCD), Decoder (2: 4. 3:8. BCD to 7 segment decoder).
			Practicals: 6. Study of CRO. 7. Transistors as switch. 8. Study of full wave rectifier with & without filter.	9. Transistor characteristics (CE) configuration. 10. RC phase shift oscillator.
Month : December				
12	48	60	Module/Unit: Sequential Circuits:	Sub-units planned Concept of sequential circuits, Flip-flops: RS, Clocked RS, D, JK, Master Slave JK, T- Flip-flop, Counters Asynchronous (3 – bit, 4 – bit, Decade) Synchronous (3 – bit, 4 – bit) Ring Counter, Johnson counter (Truth tables and timing diagrams) Shift Registers: SISO (left shift, right shift), SIPO, PISO, and PIPO Registers (4-bit).
			Practicals: 11. Study of Hartley/ Colpitts Oscillator. 12. Study of Op Amp as adder and subtractor. 13. Study of Op Amp as Differentiator and Integrator.	14. Study of Characteristics of JFET. 15. Study of Zener Diode as a voltage regulator.

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**Vivekanand College, Kolhapur (Autonomous)**

Department of Computer Science (Entrire)

Academic Year: 2020-21

**Annual Teaching Plan**

Name of the teacher: Dr. Milind S. Patil

Programme: B.Sc. Computer Science (Entrire) I Semester- II

Subject: Electronics

Course Title: GEC-1301 B Section- I Electronics Paper – I (A4) Digital Electronics – II

Month : Feb			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Multivibrators:	Types of multivibrator, Block diagram of IC 555, Application of IC 555 as Astable and Monostable Multivibrator (Calculation of frequency and Pulse width).
12	48	60	Memory devices and memory Organization:	
			GROUP B Digital Electronics 1. Study of Basic gates. 2. Universal building block using NAND and NOR gates. 3. Verification of De-Morgan's Theorems. 4. Study of Flip-Flops (D & JK).	
Month: March			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Introduction to Microprocessor:	Introduction to microprocessors (8, 16, 32 Bits). Pin Diagram and Architecture of 8085. Pin Diagram, Architecture 8086.
12	48	60		



			Practicals: 5. Study of Half & full adder. 6. Study of Half & full subtractor. 7. Study of Flip Flop: RS, Clocked RS, D. 8. Study of Astable Multivibrator circuit using IC 555. 9. Study of Monostable Multivibrator circuit using IC 555.	
Month : April			Module/Unit:	Sub-units planned
Lectures	Practicals	Total	Instruction Set and Programming of 8085 Microprocessor:	Instruction Set of 8085, Assembly Language Programs (ALP) for Addition, Subtraction, Multiplication, Division, Data transfer, Block Transfer.
12	48	60	Practicals: 10. Study of Multiplexer and De-Multiplexer. 11. Arithmetic Operation using uP8085 – I. 12. Arithmetic Operation using uP8085 – II. 13. Block transfer using uP8085. 14. Block Exchange using uP8085. 15. Study of Encoder and Decoder.	

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Annual Teaching Plan Academic year 2020-2021

Semester 1 Department -Department of Computer Science Entire

Subject - Statistics

Title -DESCRIPTIVE STATISTICS -I

Section I- Descriptive Statistics I

Name of teacher - Mr.Pawar A.A.

Month: August			Module/Unit	Sub-units planned
Lectures 12	Practicals 16	Total 28	Unit-1 Introduction	1.1 Definition and concept Statistics, Population and Sample: Concept of statistical population with illustrations, concept of sample with illustrations. 1.2 Methods of sampling: Simple Random Sampling and Stratified Random Sampling (description only). 1.3 Data Condensation: Raw data, Attributes and variables, discrete and continuous variables, classification and construction frequency distribution.
Month- September				
Lectures 12	Practicals 20	Total 32	Unit-1 Introduction	1.4 Graphical Representation: Histogram, Frequency polygon, Frequency curve, Ogive curves and their uses. 1.5 Examples and Problems.
			Unit-2 Measure of Central Tendency	2.1 Concept of central tendency, Criteria for good measures of central tendency. 2.2 Arithmetic mean: Definition, computation for ungrouped and grouped data, combined mean, weighted mean, merits and demerits. 2.3 Median: Definition, computation for ungrouped and grouped data, graphical method, merits and demerits. 2.4 Mode: Definition, computation for ungrouped and grouped data, graphical method, merits and demerits. 2.5 Quartiles: Definition, computation for ungrouped and grouped data graphical method, Box Plot. 2.6 Numerical problems
Month- October-November				





Lectures 10	Practicals 12	Total 22	Unit-3 Measures of dispersion Unit-3	<p>3.1 Concept of dispersion and measures of dispersion, absolute and relative measures of dispersion.</p> <p>3.2 Range and Quartile Deviation: definition for ungrouped and grouped data, and their coefficients, merits and demerits.</p> <p>3.3 Mean Deviation: Definition for ungrouped and grouped data, minimal property (statement only).</p> <p>3.4 Standard deviation and Variance: definition for ungrouped and grouped data, coefficient of variation, combined variance and s. d. for two groups, merits and demerits.</p> <p>3.5 Numerical problems.</p>
Month: November- December				
Lectures 10	Practicals 12	Total 22	Unit-4 Moments, Skewness & Kurtosis	<p>4.1 Raw and central moments: definition for ungrouped and grouped data (only first four moments), relation between central and raw moments (statements only).</p> <p>4.2 Measures of skewness: Types of skewness. Pearson's and Bowley's coefficients of skewness. Measures of skewness based on moments.</p> <p>4.3 Measures of kurtosis: Types of kurtosis. Measures of kurtosis based on moments.</p> <p>4.4 Numerical problems.</p>

  
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Name and Signature of teacher

Mr.PawarA.A.



Annual Teaching Plan Academic year 2020-2021

Semester I Department -Department of Computer Science Entire

Subject - Statistics

Title - Probability and Discrete Probability Distributions-I

**Section I- Probability and Discrete Probability Distributions-I**

Name of teacher – Mr.Pawar A.A.

Month: August			Module/Unit	Sub-units planned
Lectures 12	Practicals 16	Total 28	Unit-1 Probability:	1.1 Idea of permutation and combination, concept of experiments and random experiments. 1.2 Definitions: sample space (finite and countably infinite), events, types of events, power set (sample space consisting at most 3 sample points). 1.3 Illustrative examples. 1.4 Classical (apriori) definition of probability of an event, equiprobable sample space, simple examples of probability of an events based on permutations and combinations, axiomatic definition of probability with reference to finite and countably infinite sample space.
Month- September				
Lectures 12	Practicals 20	Total 32	Unit-1 Probability:	1.5 Theorems on probability : i) $P(\Phi) = 0$ ii) $P(A') = 1 - P(A)$ iii) $P(A \cup B) = P(A) + P(B) - P(A \cap B)$ iv) If $A \subseteq B$ , $P(A) \leq P(B)$ v) $0 \leq P(A \cap B) \leq P(A) \leq P(A \cup B) \leq P(A) + P(B)$ 1.6 Illustrative examples.
			Unit-2 Conditional probability and independence of events:	2.1 Definition of conditional probability of an event, examples. 2.2 Partition of sample space, Baye's theorem (only statement) and examples. 2.3 Concept of independence of two events, examples. 2.4 Proof of the result that if A and B are independent events then i) A and B', ii) A' and B, iii) A' and B' are also independent. 2.5 Pairwise and complete independence of three events, examples. 2.6 Elementary examples.
Month- October-November				
Lectures 10	Practicals 12	Total 22	Unit-3 Univariate probability distributions	3.1 Definitions: discrete random variable, probability mass function (p.m.f.), cumulative distribution function (c.d.f.), properties of c.d.f., median, mode and examples. 3.2 Definition of expectation of a random variable, expectation of a function of random



				<p>variable.</p> <p>3.3 Results on expectation : i) <math>E(c) = c</math>, where <math>c</math> is constant. ii) <math>E(aX + b) = a E(X) + b</math>, where <math>a</math> and <math>b</math> are the constants.</p> <p>3.4 Definition of mean and variance of univariate distributions.</p> <p>3.5 Examples</p>
Month: November- December				
Lectures 10	Practicals 12	Total 22	Unit-4 Some standard discrete probability distributions:	<p>4.1 Discrete uniform distribution: p.m.f., mean and variance, examples.</p> <p>4.2 Binomial distribution: p.m.f., mean and variance, additive property of binomial variates, recurrence relation for probabilities, examples.</p> <p>4.3 Geometric distribution: p.m.f., mean and variance, additive property, recurrence relation for probabilities, examples.</p> <p>4.4 Poisson distribution: p.m.f., mean and variance, additive property, recurrence relation for probabilities, Poisson distribution as a limiting case of binomial distribution (without proof), examples.</p>

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Name and Signature of teacher

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Mr.PawarA.A.

Annual Teaching Plan Academic year 2020-2021

Semester I Department -Department of Computer Science Entire

Subject - Statistics

Title -DESCRIPTIVE STATISTICS -II

Section I- Descriptive Statistics II

Name of teacher – Mr.Pawar A.A.

Month: February- March			Module/Unit	Sub-units planned
Lectures 12	Practicals 16	Total 28	Unit-1 Correlation (for ungrouped data)	Correlation (for ungrouped data) (09) 1.1 Concept of bivariate data, scatter diagram. Concept of correlation, positive correlation, negative correlation, cause and effect relation. 1.2 Karl Pearson's coefficient of correlation, properties of correlation coefficient, interpretation of correlation coefficient. 1.3 Spearman's Rank Correlation coefficient (formula with and without ties). 1.4 Numerical problems.
Month- March- April-				
Lectures 12	Practicals 20	Total 32	Unit-2 Regression (for ungrouped data):	2.1 Concept of regression. Derivation of lines of regression by method of least squares. 2.2 Regression coefficients and their significance. Properties of regression coefficients. 2.3 Point of intersection and acute angle between regression lines (without proof). 2.4 Numerical problems.





Month- April-May				
Lectures 12	Practicals 16	Total 28	Unit-3 Multiple, partial Correlation & Regression (For Trivariate Data)	(10) 3.1 Concept of multiple regressions. Yule's Notations. 3.2 Residual: definition, order, properties, mean and variance of residual. 3.3 Fitting of multiple regression planes(without proof). Partial regression coefficients, interpretations. 3.4 Concept of multiple correlation. Definition of multiple correlation coefficient and its formula. 3.5 Properties of multiple correlation coefficient (statements only) 3.6 Interpretation of multiple correlation coefficient when it is equal zero and one. 3.7 Concept of partial correlation. Definition of partial correlation coefficient and its formula. 3.8 Properties of partial correlation coefficient. 3.9 Examples and problems
Month: May-June				
Lectures 12	Practicals 16	Total 28	Unit-4 Time Series	4.1 Definition and Uses of Time Series, Components of time series, 4.2 Methods of determination of trend. Method of Moving Averages, Method of Least Squares ( only for straight line). 4.3 Determination of Seasonal Variations by Simple Average Method.

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 Name and Signature of teacher

Mr.PawarA.A.



Annual Teaching Plan Academic year 2020-2021

Semester I Department -Department of Computer Science Entire

Subject - Statistics

Title - *Conti. Prob. dist<sup>n</sup> & Testing of Hypothesis*

Section I- *Conti. Prob. dist<sup>n</sup> & Testing of Hypothesis*

Name of teacher – Mr.Pawar A.A.

Month: February- March			Module/Unit	Sub-units planned
Lectures 12	Practicals 16	Total 28	Unit-1 Continuous Univariate Distributions	<p>1.1 Definitions: infinite sample space with illustrations, continuous random variable, probability density function (p.d.f.), cumulative distribution function (c.d.f.), properties of c.d.f.</p> <p>1.2 Expectation of random variable, expectation of function of a random variable, mean, variance and examples.</p> <p>1.3 Uniform distribution: p.d.f., c.d.f., mean, variance and examples.</p> <p>1.4 Exponential distribution: p.d.f., c.d.f., mean, variance, lack of memory property and examples.</p> <p>1.5 Normal distribution: p.d.f., standard normal distribution, properties of normal curve, distribution of <math>aX+bY</math>, where X and Y are independent normal variates, normal distribution as a limiting case of Binomial and Poisson distributions (without proof), examples.</p>
Month- March -April				
Lectures 12	Practicals 20	Total 32	Unit-2 Exact sampling distributions:	<p>2.1 Chi-square distribution: definition, chi-square variate as the sum of square of i.i.d. S.N.V., statement of p.d.f., mean, variance, additive property, approximation to normal distribution and examples.</p> <p>2.2 Student's t-distribution: definition, nature of probability curve, State mean and variance, approximation to normal, examples.</p> <p>2.3 Snedecor's F-distribution: definition, State mean and variance, inter-relationships between chi-square, t and F distributions, examples.</p>
Month- April-May				



Lectures 12	Practicals 16	Total 28	Unit-3 Testing of hypothesis	(10) 3.1 Definitions: random samples, parameter, statistic, standard error of a statistic. 3.2 Concept of null and alternative hypothesis, types of error, critical region, level of significance, one sided and two sided tests, general procedure of testing of hypothesis, 3.3 Large sample tests for: i) population mean, ii) Population proportion. 3.4 Small sample tests: i) Test for population variance, Chi-square test for goodness of fit and test for independence of attributes using 2×2 contingency table, ii) t-test for testing population mean. iii) F test for equality of two population variances. 3.5 Examples.
Month: May-June				
Lectures 8	Practicals 12	Total 19	Unit-4 Simulation:	4.1 Introduction to simulation, merits and demerits. 4.2 Pasedo-random number generator, model sampling from uniform and exponential distribution. 4.3 Model sampling from normal distribution using Box-Muller transformation. 4.4 Examples.

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