Rajarshi Shahu Mahavidyalaya(Autonomous), Latur

Department of Computer Science

Teaching Plan (Semester-I, III, V)

(June-2018 to Oct-2018)

1. Details of Classes to be taught

Sr. No.	Class	Subject	Course Code and Title	Total Lecturers
1	B. Sc. FY	Computer Science	U-COS-144 Basics of Computer Programming	45 (Credit 02)
2	B. Sc. SY	Computer Science	U-COS-344 Computer Networks	45 (Credit 02)
3	M. Sc. SY	Computer Science	Digital Image Processing	60 (Credit 04)

2. Summary of Lesson Plan

Course: Basics of Computer Programming

Sr. No.	Unit and Chapter to be covered	Expected No. of Lectures	Duration	
			From	To
1	**Unit I** Algorithm – Definition, Characteristics, Space Complexity, Time Complexity Problem Solving and Write A Simple Algorithm Flow Chart and Its Symbol Problem Solving with Flowchart, Computer Languages Compilers Interpreters	5 5 2	05-07-2018 11-07-2018 22-07-2018	10-07-2018 21-07-2018 25-07-2018

2	**Unit II** History, Compilers and Interpreters, Keywords, Identifiers, Variables Constants – Character, Integer, Float, String, Escape Sequences Data Types – Built-In and User Defined Operators and Expressions, Operator Types (Arithmetic, Relational, Logical, Assignment, Bitwise, Conditional, Other Operators), Simple Programs Using Printf ( ) And Scanf( )	4 4 5	26-07-2018 05-08-2018 16-08-2018	04-08-2018 14-08-2018 27-08-2018
3	**Unit III** Selection Statements: If Statement, If _ Else Statement, Conditional / Ternary Operator Statement (? :) Switch Statement Loop Control Structures: While, Do-While, For, Nested Structures Break and Continue	5 2 6	28-08-2018 09-09-2018 14-09-2018	08-09-2018 13-09-2018 24-09-2018
4	**Unit IV** Linear Search Binary Search Bubble Sort Insertion Sort Selection Sort	10	25-09-2018	06-10-2018

Course: Computer Networks

Sr. No.	Unit and Chapter to be covered	Expected No. of Lectures	Duration	
			From	To
1	**Unit I** Computer Networks and Uses of Computer Networks Network Hardware and types Network Software Connection Oriented Vs Connectionless Services **Reference Models** OSI Reference Model The TCP/IP Reference Model **Examples of Networks** The internet ARPANET NSFNET Architecture of the Internet Third Generation and Fourth Generation Mobile Phone Networks Wireless LANs: 802.11 RFID and Sensor Networks	4 4 4	26-06-2018 05-07-2018 14-07-2018	04-07-2018 13-07-2018 22-07-2018
2	**Unit II** The Basis for Data Communication **Transmission Media** Magnetic Media Twisted Pairs Coaxial Cable Power Lines Fiber Optics Fiber Cables Wireless Transmission Communication Satellites Digital Modulation and Multiplexing	5 8	23-07-2018 05-08-2018	4-08-2018 20-08-2018
3	**Unit III** Data Link Layer Design Issues Error Control and Flow Control			

	Error Detection and Correction Sliding window Protocols A Protocol Using Go-Back-N A Protocol Using Selective Repeat Network Layer Design Issues Implementation of Connection Oriented Routing Algorithms Naming and Internet Addressing IP Addresses and IPV6	5 5	22-08-2018 04-09-2018	3-09-2018 14-09-2018
4	**Unit IV** Transport Service Elements of Transport Protocols Addressing, Connection Establishment, Connection Release Error Control and Flow Control Multiplexing Congestion Control The Domain Name system Electronic Mail FTP, HTTP, SMTP	3 3 4	15-09-2018 23-09-2018 30-09-2018	22-09-2018 29-09-2018 06-10-2018

Course: Digital Image Processing

Sr. No.	Unit and Chapters to be covered	Expected No. of Lectures	Duration	
			From	To
1	**Unit I** What is digital image processing? Applications of digital image processing, fundamental stapes in digital image processing, Components of digital image processing Elements of visual perception, Light and Electromagnetic Spectrum Image sensing and acquisition devices, a simple image formation model, image sampling and quantization, representing digital images	6 4 5	26-06-2018 05-07-2018 12-07-2018	4-07-2018 11-7-2018 19-7-2018

2	Unit II Digital Image Representation: Coordinate Conventions, Images as Matrices, Reading Images, Displaying Images, Writing Images, Data Classes, Image Types, Intensity Images, Binary Images	5	20-07-2018	27-7-2018
	A Note on Terminology, converting between Data Classes and Image Types, converting between Data Classes, Converting between Image Classes and Types,	5	28-07-2018	4-8-2018
	Array Indexing: Vector Indexing, Matrix Indexing, Selecting Array Dimensions,	5	5-8-2018	13-8-2018
	Introduction to M- Function Programming: M-Files, Operators, Flow Control, Code Optimization, Interactive I/O.	5	14-08-2018	21-8-2018
3	**Unit III** Transformation Functions: Function imadjust, Logarithmic and Contrast-Stretching Transformations, Histogram Processing and Function Plotting: Generating and Plotting Image Histograms, Histogram Equalization, Histogram Matching (Specification),	7	22-08-2018	1-9-2018
	Spatial Filtering, Linear Spatial Filtering, Nonlinear Spatial Filtering,	7	02-09-2018	10-9-2018

	Frequency Domain Processing: The 2-D Discrete Fourier Transform, Computing and Visualizing the 2-D DFT in MATLA, Filtering in the Frequency Domain, Basic Steps in DFT Filtering.	8	11-09-2018	19-9-2018
4	**Unit IV** A Model of the Image Degradation/Restoration Process, Noise Models Geometric Transformations and Image Registration: Geometric Spatial Transformations, Applying Spatial Transformations to Images, Image Registration Color Image Representation in MATLAB: RGB Images, Indexed Images, IPT Functions for Manipulating RGB and Indexed Images, Converting to Other Color Spaces: NTSC Color Space, The YCbCr Color Space, The HSV Color Space, The CMY and CMYK Color Spaces, The HSI Color Space, The Basics of Color Image Processing	5 6 8	20-09-2018 26-09-2018 3-10-2018	25-9-2018 1-10-2018 10-10-2018

Dr Renuka Londhe
Name & Signature of Teacher

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Teaching Plan (Semester-II)

(Dec – 2018 to March-2019)

3. Details of Classes to be taught

Sr. No.	Class	Name of Asst. Prof.	Subject	Paper	Total Lectures:
1	B. Sc. FY	Dr R. R. Londhe	Computer Science	U-COS-243 Data structure	45

4. Summary of Lesson Plan

Sr. No.	Unit and Chapter to be covered	Expected No. of Lectures	Date	Academic activities to be organized	No. of Test / Assignment with topic and date
1	**Unit -1: Introduction to Data structures and Arrays** Definition and Basic Terminology Classification of data structure: primitive and non primitive. Operations of data structures Introduction of Array Representation of array in computers memory Array Operations: Traversing Insertion Deletion	5 5	29.11.2018 to 11.12.2018 15.12.2018 to 23.12.2018	PPT representation for array operations	--
2	**Unit II Linked List** Definition and Components of linked list,				

	Representation of linked list in computers memory Advantages and disadvantages of linked list Types of linked list: Singly linked list, Doubly linked list, Circular linked list and Circular doubly linked list. Operations on singly linked list: creation, insertion, deletion, search and display	6 7	27.12.2018 to 09.01.2019 10.01.2019 to 22.01.2019	PPT Presentation on Operations of Linked List	Activity based Unit Test-I 22.01.2019 to 28.01.2019
3	**Unit III Stack and Queues** Definition and Array representation of stack Operations on stack- PUSH and POP Applications of Stack Definition of Queue Types of queue: Simple queue, circular queue, double ended queue (deque) priority queue Operations on Queue- Insertion and Deletion	5 5	24.01.2019 To 02.02.2019 07.02.2019 to 20.02.2019	PPT Presentation on Operations of STACK and Queue	--
4	**Unit IV Trees and Graph** Definition: Tree, Binary tree, complete binary tree, Binary search tree,	6	21.02.2019 To 2.03.2019	--	

	Traversal of Binary Tree: Preorde, Inorder and Postorder. Graphs - terminology Representation of Graph Graph traversals (DFS and BFS)	7	03.03.2019 To 16.03.2019		Unit Test II (MCQ) 22.03.2019 to 30.03.2019

Rajarshi Shahu Mahavidyalaya (Autonomous), Latur

Teaching Plan (Semester-IV)

(Dec – 2018 to March-2019)

1. Details of Classes to be taught

Sr. No.	Class	Name of Asst. Prof.	Subject	Paper	Total Lectures:
1	B. Sc. SY	Dr R. R. Londhe	Computer Science	U-COS-444 Programming in JAVA	45 (Credit 2)

2. Summary of Lesson Plan

Sr. No.	Unit and Chapter to be covered	Expected No. of Lectures	Date	Academic activities to be organized	No. of Test / Assignment with topic and date
1	**UNIT- I: An Introduction to Java** A Short History of Java Features of Java, Difference between Java and C++, Java virtual machine (JVM) Java program structure, Java statement.	05	03.12.2018 to 13.12.2018	Registration for NPTEL Course	--

	Types of Comments, Keywords, Data Types., Variables and Constants, Operators Output using println() method Simple Java Program, Command Line Arguments.	05	15.12.2018 to 24.12.2018		
2	**Unit – II: Decision Making, Branching, Looping and Classes, Object and Methods** Decision making with if statement, Simple if statement, if…else statement, Nesting of if…else Switch statement, while statement, do statement, for statement. Introduction, defining a class, adding variables, Adding Methods, Accessing Class Members Constructors and Method Overloading Static Member Inheritance: Extending a class, Overriding Method	08 05	25.12.2018 to 11.01.2019 12.01.2019 to 22.01.2019	--	Activity based Unit Test-I 22.01.2019 to 28.01.2019
3	Unit –III: Arrays. Strings, Vectors and Creating and Using Packages				--

	Introduction, One-dimensional Arrays, Creating an one dimensional array, Two-dimensional Arrays, Creating an two dimensional array, String Arrays, String Method Introduction, Java API package, Using system packages, Naming Conventions, Creating Packages, Accessing a package, Using a Package, Adding a class to a package.	06 06	24.01.2019 To 02.02.2019 07.02.2019 to 20.02.2019		
4	**Unit – IV: Exception Handling and Applet Programming** Dealing Errors, catching exception and exception handling, creating user defined exception. Applet Life Cycle, Applet HTML Tags, passing parameters to Applet, Repaint () and Update () method	05 05	20.02.2019 To 02.03.2019 03.03.2019 To 18.03.2019	--	Unit Test II (MCQ) 22.03.2019 to 30.03.2019

Rajarshi Shahu Mahavidyalaya (Autonomous), Latur

Teaching Plan (Semester-II)

(Dec – 2018 to March-2019)

1. Details of Classes to be taught

Sr. No.	Class	Name of Asst. Prof.	Subject	Paper	Total Lectures:
1	M. Sc. FY	Dr R. R. Londhe	Computer Science	P-CD-205 Compiler Design	60 (Credit 4)

2. Summary of Lesson Plan

Sr. No.	Unit and Chapter to be covered	Expected No. of Lectures	Date	Academic activities to be organized	No. of Test / Assignment with topic and date
1	**UNIT I: Introduction to Compilers and Programming Languages:** Compilers and translators, The structure of compiler, Compiler writing tools, Definition of P.L., High level Programming Languages., Lexical and syntactic structure of a language, Data structures, Operators, Statements, Lexical Analysis: Introduction to Lexical analysis, Role of a Lexical analyzer, A simple approach to the design of lexical analyzer, Regular expressions	10 10	29.11.2018 to 12.12.2018 13.12.2018 to 27.12.2018	Registration for NPTEL Course	--
2	**UNIT II: Syntax analysis and basic parsing techniques** Finite automata, minimizing number of states of a DFA, Implementation of a lexical analyzer Context free grammars, Introduction to parsers, Shift reduce parsing, Top-down	10	28.12.2018 to 12.01.2019	--	Activity based Unit Test-I 22.01.2019 to 28.01.2019

	parsing, Operator Precedence parsing, Predictive parsers	10	13.01.2019 to 27.01.2019		
3	**UNIT III: Syntax Directed Translation and symbol table** Introduction to Syntax directed Schemes, Implementation of Syntax directed translators, Intermediate code, Postfix notation and evaluation of postfix expressions, Parse trees and syntax trees, The contents of a symbol table, Data structures for a symbol table.	05 12	28.01.2019 to 02.02.2019 03.02.2019 to 20.02.2019	PPT presentation on implementation of algorithm	--
4	**UNIT IV: Error detection and recovery, Introduction to Code Optimization** Introduction to Errors, Lexical phase errors, Syntactic phase errors, Semantic errors, Sources of optimization, Loop optimization	7 8	21.02.2019 to 02.03.2019 04.03.2019 to 19.03.2019	--	Unit Test II (MCQ) 22.03.2019 to 30.03.2019

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