Rajarshi Shahu Mahavidyalaya (Autonomous), Latur

Department of Computer Science

Teaching Plan (Semester-I)

(June 2019 -Oct 2020)

1. **Details of Classes to be taught**

Sr. No.	Class	Name of the Teacher	Subject	Course	Total Lectures:
1	M.Sc. CS F Y	Mrs. K. M. Pradhan	Computer Science	P-DAA -125 Design Analysis and Algorithm	60

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 A simple example of design using insertion sort, pseudo code for insertion sort,time complexity. Performance Analysis – Space complexity and Time complexity (posteriori testing and priory approach), Asymptotic Notations (O, Ω, Θ), Examples on Asymptotic Notations, Polynomial vs. Exponential Algorithms .Average,Best and Worst case complexity.	15	25.06.2019 to 29.07.2019	PPT representation	--
2	**UNIT II: Divide and Conquer Algorithms, Greedy Algorithms** Introduction to Divide and Conquer Algorithms, Finding the Maximum and Minimum, Quick sort (Derivation of Average caseanalysis and Worst case analysis), Binary Search (Derivation of average case analysis), and Strassen'sMatrix Multiplication. Introduction to Greedy Algorithms – Fractional Knapsack problem, Minimum cost spanning trees, Kruskal's and Prim's Algorithms, Optimal Merge patterns and Single-Source ShortestPaths.	15	30.07.2019 to 16.08.2019	Quiz	Activity based Unit Test-I 14.09.2019 to 30.09.2019

3	**UNIT III:Dynamic Programming, Back Tracking and Branch & Bound Algorithms** Dynamic Programming Definition - All-pairs shortest paths, Traveling salesman problemand optimal parameterization for product of sequence of matrices. Back tracking and Branch and Bound Algorithms Introduction – Nqueens Problem, Sum of Subsets problem usingBack tracking algorithms. Traveling Salesman problem using branch and bound method.	15	17.08.2019 To 05.09.2019	PPT Presentation	- Unit Test II (MCQ) 15.09.2019 to 25.09.2019
4	UNIT IV: Graphs and Heaps & Lower bound Theory Graphs andHeaps Definitions – Adjacency Matrix, Adjacency Lists. Breadth First Search and Traversal, Depth First Search and Traversal. Priority Queues using Heap and Design of Heapsort using. Seminar and Revision	15	06.09.2019 To 24.09.2019 26.09.2019 To 25.10.2019	--	

Rajarshi Shahu Mahavidyalaya (Autonomous), Latur

Department of Computer Science

Teaching Plan (Semester-III)

(June 2019 -Oct 2020)

1. **Details of Classes to be taught**

Sr. No.	Class	Name of the Teacher	Subject	Course	Total Lectures:
1	M.Sc. CS SY	Mrs. K. M. Pradhan	Computer Science	P-LIN-302 Linux O.S.	60

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 Linux and Linux Files and Directories Introducing Linux, Installing Red Hat Linux, Features of Linux, Basic Architecture of Linux system, features of Kernel and Shell. Linux File System -Boot block, Super block and Data blocks, how Unix/Linux kernel access files. The shell Scripts, Linux standard file system, Structure of file system,Essential Linux commands Listing, Displaying, and Printing Files Displaying Files: cat, less and more, Printing Files: lpr, lpq, and lprmManaging Directories: mkdir, rmdir, ls, cd, and pwd File and Directory Operations: find, cp, mv, rm,andln Archiving and compressing files Filters and pipes: head, tail, wc, pr, cut, paste, sort, uniq, grep, egrep, fgrep, tee.	15	25.06.2019 to 13.07.2019	PPT representation	-- Activity based Unit Test-I 14.09.2019 to 30.09.2019

2	Unit-II: Managing Users and File system User Accounts, Managing Groups, Managing Users, Managing Passwords,Getting System Administrator Privileges to Regular Users , The User LoginProcess, Creating Users with the GUI tools, Disk Quotas, Communicating with users, The chroot command. File System Hierarchy standard: Root Directory, System Directories, ProgramDirectories, Mounting File Systems automatically: /etc/fstab Mounting File Systems Manually: mount and unmount Converting anexisting ext2 Filesystem to ext3 Creating a File systems: mkfs, mke2fs, mkswap, parted and fdisk, Relocatinga File System.	15	15.07.2019 to 31.07.2019	PPT Presentation	
3	Unit-III: Backing Up, Recovery and Printing with Linux Choosing a Backup Strategy, Choosing a Backup Hardware and Media, UsingBackup Software, Copying Files, deleting Files, System Recovery Overview of Linux Printing, Configuring and Managing Print Services,Creating and Configuring Local Printers, Creating Network Printers, Console Print Control, Using the Common UNIX Printing System (CUPS) GUI	15	01.08.2019 To 17.08.2019	PPT Presentation	Unit Test II (MCQ) 25.10.2019 to 05.11.2019
4	UNIT IV Network Connectivity and Managing DNS Networking with TCP/IP , Network Organization, Hardware Devices forNetworking , Using Network Configuration Tools , Dynamic Host Configuration Protocol , Using the Network File System, Putting Samba to work Managing DNSConfiguring DNS, Essential DNS concept , Overview of DNS Tools, Configuring Name servers with BIND, providing DNSfor Real Domain. Seminar and Revision	15	19.08.2019 To 6.09.2019 1.10.2019 To 25.10.2019	--	

Rajarshi Shahu Mahavidyalaya (Autonomous), Latur

Department of Computer Science

Teaching Plan (Semester-V)

(June 2019 -Oct 2019)

1. Details of Classes to be taught

Sr. No.	Class	Name of the Teacher	Subject	Course	Total Lectures:
1	B.Sc. CS TY	Mrs. K. M. Pradhan	Computer Science	U-COS-541 RDBMS	45

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 Database and Elements of DBMS Definition of DBMS, File processing Vs DBMS Advantages and disadvantages of DBMS Users of DBMS, DBMS Structure ,DBMSLanguages: DDL, DML, DCL Terms: Entity, Entity set, attributes, Keys: Primary, secondary, foreign, composite.	10	27.06.2019 to 25.07.2019	PPT representation	Activity based

2	UNIT II: Data Models andRelational Algebra and Calculus Introduction, Object based logical model, Record based logical model (RDB, NDB ,HDB) ,E-R model, E-R diagram, Introduction Relation, Schemes, Domain,Tuples,Cardinality degree , Algebraic operation . Fundamental operation: Select, product, union Set difference : Natural join, Cartesian product, rename Relational calculus: Tuple and domain relational calculus	13	26.07.2019 to 24.08.2019	PPT Presentation	Unit Test-I 14.09.2019 to 30.09.2019
3	UNIT III: Relational Database Design and SQL Normalization:INF, 2NF, 3NF, BCNF, Class diagrams and E-R tables Functional dependency, Data types, Table Creation, Modify ,Selecting, Deletingrecords , Simple queries , Oracle constraints	12	29.08.2019 To 28.09.2019	PPT Presentation	-- Unit Test II
4	UNIT IV: Use of Operators and Advance in SQL Comparisonoperators: Between, In, Not In, Like, Null Logical operators: AND, OR, NOT SQL function, Joins Sub-queries, Views	10	03.10.2019 To 25.10.2019	--	(MCQ)15.09.2019 to 24.09.2019

Mrs K. M. Pradhan
Name & Signature of Teacher

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Department Computer Science

Teaching Plan (Semester-IV)

(Dec 2019 -March 2020)

1. **Details of Classes to be taught**

Sr. No.	Class	Name of the Teacher	Subject	Course	Total Lectures:
1	M.Sc. CS SY	Mrs. K. M. Pradhan	Computer Science	P-SFC-408 Soft Computing	60

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 Fuzzy Logic** Crisp Sets: an Overview , Fuzzy Sets: Basic Types, Fuzzy Sets: Basic Concepts, Fuzzy Sets Vs Crisp Sets, Additional Properties of alpha cuts,Presentation of fuzzy sets, Extension principle for fuzzy sets.	15	10.12.2019 to 26.12.2019	PPT representation	--
2	**Unit –II: Operations on fuzzy sets & Introduction to NeuralNetworks** Fuzzy complements, Fuzzy Union, Fuzzy Intersections,Crisp & Fuzzy Relation , Binary Fuzzy Relation, Binary Relation on single set, Fuzzy Equivalence Relations, Fuzzy Compatibility Relation. Introduction to Neural Networks andDifference	15	27.12.2019 to 15.01.2020	PPT Presentation	Activity based Unit Test-I 18.02.2020 to 27.02.2020

3	**Unit- III: Introduction to Neural Networks, Multilayer Feed forwardNetwork** Learning Rules-Supervised Learning-Unsupervised LearningPerceptron Learning-Reinforcement Learning- Delta Learning Rule **Multilayer Feed forward Network** Generalized Delta Learning, Back propagations training algorithm and derivation of weight, Variant inBack propagations, Radial Basis Function (RBF), Application of BP and RBF N/W	15	16.01.2020 To 03.02.2020	PPT Presentation	Unit Test II (MCQ) 07.03.2020 to 22.03.2020
4	**Unit-IV : Recurrent Network and Unsupervised Learning, Fuzzy System,Neuro Fuzzy System and Applications** Hopfield Network, Counter propagation networks,Boltzmann Machine, Adaptive Resonance theory(ART). **Fuzzy System, Neuro Fuzzy System and Applications** Fuzzy neurons, Fuzzy Neural Network, Fuzzy associative memory, Application in Pattern Recognition, Character, Face, Finger, Palm, IrisRecognitions, Application in Expert System Seminar and Revision	15	04.02.2020 To 03.03.2020 04.03.2020 to 30.03.2020	--	

Rajarshi Shahu Mahavidyalaya (Autonomous), Latur

Department of Computer Science

Teaching Plan (Semester-II)

(Dec 2019 -March 2020)

1. Details of Classes to be taught

Sr. No.	Class	Name of the Teacher	Subject	Course	Total Lectures:
1	M.Sc. CS FY	Mrs. K. M. Pradhan	Computer Science	Internet of Things P-INT-228	60

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 and concepts Definition and characteristics of IoT Physical Design of IoT, Things in IoT, IoT Protocols Logical Design of IoT- IoT functional blocks,IoT communication models IoT enabling Technologies-Wireless sensor networks, cloud computing,big data analytics, communication protocols, embedded systems IoT Levels and deployment templates-IoT Level1 to IoT Level6.	15	10.12.2019 to 26.12.2019	PPT representation	--

2	Unit-II: Domain Specific IoTs Introduction Home automation- Smart lighting, smart appliances, intrusion detection, smoke or gas detectors Cities-Smart parking, smart lighting, smart roads, structural help monitoring, surveillance, emergency response Environment-Weather monitoring, Air pollution monitoring, forest fire detection, river flood detection Retail- Inventory management, smart payments, smart vending machines Logistics- Route generation and scheduling, fleet tracking, ship monitoring, remote vehicle diagnostic Agriculture- smart irrigation, green house control Industry-machine diagnostic, prognosis, indoor air quality monitoring Health and Lifestyle Unit-	15	27.12.2019 to 15.01.2020	PPT Presentation	Activity basedUnit Test-I 18.02.2020 to 27.02.2020
3	III: IoT Vs M2M and Developing IoTs M2M, Difference between IoT and M2M, Difference between SDN and NFV for IoT- software defined networking and network function virtualization, IoT Code generator	15	16.01.2020 To 03.02.2020	PPT Presentation	Unit Test II (MCQ) 07.03.2020 to 22.03.2020
4	Unit-IV: IoT Design Methodology Purpose and requirement specification, Process specification, Domain model specification Informationmodel specification, Service specification, IoT level specification, Functional View specification, Operational View specification Device and component integration, Application Development with Python Seminar and Revision	15	04.02.2020 To 05.03.2020 06.03.2020 To 25.03.2020	--	

Rajarshi Shahu Mahavidyalaya (Autonomous), Latur

Department of Computer Science

Teaching Plan (Semester-II)

(Dec 2019 -March 2020)

1. Details of Classes to be taught

Sr. No.	Class	Name of the Teacher	Subject	Course	Total Lectures:
1	M.Sc. CS FY	Mrs. K. M. Pradhan	Computer Science	P-NUM-126 Numerical Methods	60

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 Fuzzy Logic** Crisp Sets: an Overview , Fuzzy Sets: Basic Types, Fuzzy Sets: Basic Concepts, Fuzzy Sets Vs Crisp Sets, Additional Properties of alpha cuts, Presentation of fuzzy sets, Extension principle for fuzzy sets.	15	10.12.2019 to 26.12.2019	PPT representation	--
2	**Unit –II: Operations on fuzzy sets & Introduction to NeuralNetworks** Fuzzy complements, Fuzzy Union, Fuzzy Intersections, Crisp & Fuzzy Relation , Binary Fuzzy Relation, Binary Relation onsingle set, Fuzzy Equivalence Relations, Fuzzy Compatibility Relation. Introduction to Neural Networksand Difference	15	27.12.2019 to 15.01.2020	PPT Presentation	Activity based Unit Test-I 18.02.2020 to 27.02.2020

3	**Unit- III: Introduction to Neural Networks, Multilayer Feed forwardNetwork** Learning Rules-Supervised Learning-Unsupervised Learning Perceptron Learning-Reinforcement Learning-Delta Learning Rule **Multilayer Feed forward Network** Generalized Delta Learning, Back propagations training algorithmand derivation of weight, Variant in Back propagations, Radial Basis Function (RBF), Application of BP and RBF N/W	15	16.01.2020 To 03.02.2020	PPT Presentation	--
4	**Unit-IV : Recurrent Network and Unsupervised Learning, FuzzySystem, Neuro Fuzzy System and Applications** Hopfield Network, Counter propagation networks, Boltzmann Machine, Adaptive Resonance theory(ART). **Fuzzy System, Neuro Fuzzy System and Applications** Fuzzy neurons, Fuzzy Neural Network, Fuzzy associative memory, Application in Pattern Recognition, Character, Face, Finger, Palm, IrisRecognitions, Application in Expert System Seminar and Revision	15	04.02.2020 To 05.03.2020 6.03.2020 To 25.03.2020	--	Unit Test II (MCQ) 07.03.2020 to 22.03.2020

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