Teaching Plan Academic Year 2019-2020

Name of Teacher: Mrs K. M. Pradhan

Class: M.Sc FY **Semester:** II

Course Title: Numerical Methods **Course Code: P-NUM-126**

Unit	Topics To be Covered	Date	No. of Lectures
Unit I	**Unit-I : Computer Arithmetic & Solution of Algebraic equations** • Computer Arithmetic • .Floating Point representation of Numbers, • Arithmetic operation with Normalized floating point, • Solution of algebraic equations, Bisection method, • Method of false position, • Newton-Raphson Method	**Total**	**18**
		09.12.2019 To 10.12.2019	02
		12.12.2019 To 20.12.2019	07
		21.12.2019 To 23.12.2019	02
		24.12.2019 To 26.12.2019	02
		27.12.2019 To 28.12.2019	02
		30.12.2019 To 31.12.2019	03
Unit II	**Unit-II: Interpolation and Numerical Differentiation & Integration** • Finite differences [forward & backward] • Lagrange interpolation , • Difference tables • Numerical differentiation & • numerical integration, Trapezoidal rule, • Simpson's 1/3 Rule, Simpson's 3/8 Rule	**Total**	**17**
		02.01.2020 To 04.01.2020	02
		06.01.2020 To 07.01.2020	02
		08.01.2020 To 10.01.2020	03
		11.01.2020 To 14.01.2020	03
		16.01.2020 To 18.01.2020	03
		20.01.2020 To 24.01.2020	04

Unit III	**Unit-III: Matrices & Linear system of equations** • Introduction, • Solution of linear system, • Matrix inversion method, • problems • Gaussian elimination method, • Modification of gauss method to compute the inverse	**Total**	**18**
		25.01.2020 To 28.01.2020	03
		29.01.2020 To 31.01.2020	03
		01.02.2020 To 04.02.2020	03
		06.02.2020 To 08.02.2020	04
		10.02.2020 To 14.02.2020	01
		15.02.2020 To 24.02.2020	04
Unit IV	Unit-IV: **Curve Fitting** • Least square Curve fitting, • Fitting a straight line • Problems • Non linear curve fitting: • problems • polynomial of nth degree • problems	**Total**	**17**
		06.03.2020 To 09.03.2020	02
		10.03.2020 To 14.03.2020	03
		16.03.2020 To 19.03.2020	02
		20.03.2020 To 23.03.2020	03
		24.03.2020 To 26.03.2020	02
		27.03.2020 To 28.03.2020	03
		30.03.2020 To 31.03.2020	02

Name of Teacher: Mrs K. M. Pradhan
Class: M.Sc SY **Semester:** IV
Course Title: Soft Computing **Course Code: P-SFC-428**

Unit	Topics To be Covered	Date	No. of Lectures
Unit I	**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.	**Total**	**15**
		09.12.2019 To 10.12.2019	02
		12.12.2019 To 20.12.2019	05
		21.12.2019 To 25.12.2019	04
		26.12.2019 To 28.12.2019	02
		27.12.2019 To 28.12.2019	02
Unit II	**Unit –II: Operations on fuzzy sets & Introduction to Neural Networks** • 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 and Difference	**Total**	**17**
		02.01.2020 To 04.01.2020	02
		06.01.2020 To 07.01.2020	02
		08.01.2020 To 14.01.2020	03
		15.01.2020 To 18.01.2020	03
		20.01.2020 To 24.01.2020	04
		25.01.2020 To 27.01.2020	03

Unit III	**Unit- III: Introduction to Neural Networks, Multilayer Feed forward Network** • Learning Rules-Supervised Learning-Unsupervised Learning • Perceptron Learning-Reinforcement Learning- • Delta Learning Rule **Multilayer Feed forward Network** • Generalized Delta Learning, • Back propagations training algorithm and derivation of weight, Variant in Back propagations, • Radial Basis Function (RBF), Application of BP and RBF N/W	**Total**	**20**
		25.01.2020 To 28.01.2020	03
		29.01.2020 To 31.01.2020	03
		01.02.2020 To 04.02.2020	03
		06.02.2020 To 10.02.2020	05
		11.02.2020 To 15.02.2020	02
		16.02.2020 To 25.02.2020	04
Unit IV	**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, Iris Recognitions, Application in Expert System	**Total**	**18**
		06.03.2020 To 09.03.2020	03
		10.03.2020 To 14.03.2020	04
		16.03.2020 To 19.03.2020	03
		20.03.2020 To 23.03.2020	03
		24.03.2020 To 26.03.2020	02
		27.03.2020 To 28.03.2020	03

Name of Teacher: Mrs K. M. Pradhan
Class: M.Sc FY **Semester:** II
Course Title: Internet of Things **Course Code: P-IOT-128**

Unit	Topics To be Covered	Date	No. of Lectures
Unit I	**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	**Total**	**18**
		09.12.2019 To 10.12.201	02
		12.12.2019 To 20.12.2019	07
		21.12.2019 To 23.12.2019	02
		24.12.2019 To 26.12.2019	02
		27.12.2019 To 28.12.2019	02
		30.12.2019 To 31.12.2019	03
Unit II	• IoT Levels and deployment templates- IoT Level1 to IoT Level6 **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	**Total**	**17**
		02.01.2020 To 04.01.2020	02
		06.01.2020 To 07.01.2020	02
		08.01.2020 To 10.01.2020	03
		11.01.2020 To 14.01.2020	03
		16.01.2020 To 18.01.2020	03
		20.01.2020 To 24.01.2020	04

Unit III	**Unit-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	**Total**	**18**
		25.01.2020 To 28.01.2020	03
		29.01.2020 To 31.01.2020	03
		01.02.2020 To 04.02.2020	03
		06.02.2020 To 08.02.2020	04
		10.02.2020 To 14.02.2020	01
		15.02.2020 To 24.02.2020	04
Unit IV	**Unit-IV: IoT Design Methodology** • Purpose and requirement specification, • Process specification, • Domain model specification Information model specification, • Service specification, • IoT level specification, • Functional View specification, Operational View specification Device and component integration, • Application Development with Python	**Total**	**17**
		06.03.2020 To 09.03.2020	02
		10.03.2020 To 14.03.2020	03
		16.03.2020 To 19.03.2020	02
		20.03.2020 To 23.03.2020	03
		24.03.2020 To 26.03.2020	02
		27.03.2020 To 28.03.2020	03
		30.03.2020 To 31.03.2020	02