RAFFLES UNIVERSITY

Japanese Zone, NH-48, Neemrana-301705

Ph.D. Course Work Syllabus

Paper-II COMPUTER SCIENCE AND COMPUTER ENGINEERING
Paper Code-(Ph.D-102)

Contact Hours: 4 Hrs/ week   **Continuous Assessment: 40 Marks**
Credit: 4   **End Term Exam: 60 Marks**

UNIT-I
DATA MINING AND DATA WAREHOUSING Advanced Database Technologies Fundamentals of data warehousing and data mining Data Warehousing Architectures Data mining Techniques

UNIT-II
WEB TECHNOLOGIES AND SERVICES Web Application Architectures E-Payments Gateways and Mechanism E-Governance Systems E-Learning Systems

UNIT-III
SOFTWARE TECHNOLOGIES Programming Paradigms and Platforms Service Oriented Architectures Software Quality Assurance Software Testing Knowledge Management and Intelligent Systems Enterprise Application Integration: ERP Applications

UNIT-IV
HARDWARE AND NETWORKING TECHNOLOGIES Processor Architectures Operating Systems Embedded Systems Networking Technologies Next Generation Heterogeneous Networks

UNIT-V
COMPUTATION THEORY Regular languages and finite automata, Context free languages and Push-down automata, Recursively enumerable sets and Turing machines, Undecidability. Compiler Design: Lexical analysis, Parsing, Syntax directed translation, Runtime environments, Intermediate and target code generation, Basics of code optimization.

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Ph.D. Course Work Syllabus

Paper-II COMPUTER SCIENCE AND COMPUTER ENGINEERING (Neural Network) Paper Code-(Ph.D-102)

Contact Hours: 4 Hrs/ week	**Continuous Assessment: 40 Marks**
Credit: 4	**End Term Exam: 60 Marks**

Unit- I

Introduction of Artificial Neural Networks, Basic concepts in neural computing, Biological and cognitive Aspects, Artificial Neural Networks Application. Characteristics of Artificial Networks overview of ANN learning Methods. Neural Network Texonomies.

Unit-II

Early Neural Networks Architectures; Simple Perceptions, Basic Perception, Learning Algorithms Perceptions Convergence Theorem ADALINE, Neural units, Widrow –Hoff Learning Algorithms ADALINE Applications.

Unit-III

MADALINE Networks. Training Algorithms for MADALINE, MADLINE Application. Associative Memory networks; Learning Algorithms for Associative Memories, Feedforward Heteroassociative Memory Networks, Feedforward Auto associative memory networks.

Unit-IV

Hopfield Networks, Energy function characterization, Cohen-Grossberg Theorem, Brain state in Box. Bidirectional Associative Memory, Multilayer Feedforward neural network and Back propagation.

Text Books:

1. James A. Anderson "An introduction to Neural Network" Prentice-Hall of India (P) Ltd
2. Laurence Fausett "Fundamental of Neural Networks Architectures, Algorithms and application" Pearson Education, Low Price Edition