(2015 -Scheme)

M. Tech. DEGREE PROGRAMME IN NETWORK COMPUTING

SEMESTER- I

06NC6011- Mathematical Foundations of Computer Science

Course Objectives

1. To understand different types of graphs

2. To identify the problems of congruence relation

3. To solve problems of linear congruence relation using different methods

4. To illustrate different algorithms

5. To apply linear programming in graph theory

6. To describe different types of codes

06NC6021 Advanced Database Management System

Course Objectives

1. To introduce the concept of Parallel And Distributed Databases with System Architectures

2. To familiarize I/O Parallelism, Query and operation Parallelism ,Three Tier Client Server Architecture.

3. To illustrate Object And Object Relational Databases Operations – Complex Objects – Object Database Standards, Languages and Design: ODMG Model and Relational Systems

4. To explain and classify.Enhanced Data Models, Different types of databases and Genome Data Management.

5. To analyze Mobile Databases, Effect of Mobility on Data Management and Mobile Transaction Models.

06NC6031 Computer Networks

Course Objectives

1. To build an understanding of the fundamental concepts of computer networking.

2. To familiarize the student with the basic taxonomy and terminology of the computer networking area.

3. To introduce the student to advanced networking concepts, preparing the student for entry in computer networking post graduate basics.

4. To analyze the services and features of the various layers of data networks.

5. To design, calculate, and apply subnet masks and addresses to fulfill networking requirements.

6. To analyze the features and operations of various application layer protocols.

06NC6041- Parallel and Distributed Computing

Course Objectives

1. To understand Parallel processing concepts and different levels of parallelism

2. To exploit different memory hierarchies and the issues related to it.

3. To apply parallelism in hardware level and use it for faster computing

4. To explore thread level parallelism and programming based on it.

5. To understand distributed systems and design algorithms for distributed computing.

6. To understand resource security and protection methods.

06NC6051 Advanced Data Mining

Course Objectives

1. To introduce the concept of Data Mining and its purpose, types of learning, Data Warehouses, Multi dimensional data bases, Data Preprocessing and the different applications of data mining.

2. To familiarize Association rules mining, Classification and Prediction, and its issues.

3. To illustrate Cluster Analysis, categorization of Major Clustering Methods and Outlier Analysis.

4. To explain and classify Mining Streams, Time Series and Sequence Data: Mining Data Streams, outline Mining Sequence Patterns in Biological Data, and Graph Mining.

5. To analyze NoSQL databases and the big data platform, construct a survey of various NoSQL data bases, demonstrate Map reduce concepts and Hadoop architecture and examine Neo4j and its application in Social Network data Analysis.

06NC6061 Research methodology

Course Objectives

1. To understand the overview of research methodologies

2. To do statistical analysis on research data

3. To know the research ethics

4. To know how to write a research thesis and the analysis measures.

Semester II

MNWCP 201 Modern Operating Systems

Course Objectives

1. To understand the basics of operating system

2. To understand the working of distributed operating system

3. To understand the operations of database OS

4. To understand the operations of multiprocessor OS

5. To understand the working of real time OS

6. To understand the operations of mobile OS

MNWCP 202 Cryptography and Network Security

Course Objectives

1. To understand OSI security architecture .

2. To classify classic Encryption Techniques

3. To implement different symmetric key and asymmetric key algorithms

4. To construct protocols for various security aims with cryptographic tools

5. To estimate and evaluate strength of cryptographic functions

6. To Describe the principles of Message authentication Code ,hash functions and digital signature

7. To Illustrate different types of Key distribution Methods

8. To Design Different user authentication Protocols

MNWCP 203 Wireless and Mobile Computing

Course Objectives

1. To introduce the concept of Wireless Transmission, FAMA, DAMA,MAC

2. To familiarize Cellular Wireless Networks, GSM, Architecture,and Protocols,

3. To illustrate Wireless LAN-IEEE 802.11 Standard-Architecture, Services, Bluetooth

4. To explain and classify Mobile IP, DHCP, TCP over Adhoc Networks

5. To analyze WAP-Architecture-WWW Programming Models

MNWCP 204-3 Ethical Hacking and Computer Forensics

Course Objectives

1. To understand the vulnerabilities associated with system and application software.

2. To familiarize with the various methods used to hacking and protecting Computer and its Contents

3. To introduce the student to the various cyber attack methods and prevention policies

4. To familiarize the student with the basics of computer Forensic Technologies

5. To understand digital evidence collection, and evidentiary reporting in forensic acquisition.

MNWCP 205-2 Wireless Sensor Networks

Course Objectives

1. To introduce the concept of Mobile ad hoc networking, its characteristics and applications in real world.

2. To familiarize Sensor Network Deployment & Configuration, Localization and Topology control.

3. To distinguish the Wireless Communications, identify the Link quality characteristics.

4. To explain Medium Access, random access MAC, S MAC, outline Energy efficient communication in adhoc networks and classify Power save protocols.

5. To analyze Data Gathering, Tree construction algorithms with Lifetime optimization formulations

6. To summarize Routing and Querying, categorize routing approaches as Proactive and reactive protocols, etc. Security aware routing, Maximum life time routing.

7. To justify Collaborative Signal Processing, and address related problems.

8. To characterize network traffic, QOS classification, Statistical analysis of non - real time traffic and real - time services.

9. To examine security issues, attacks and countermeasures, security considerations in adhoc sensor networks.

Semester III

MNWCP 301-2 Web Technologies

Course Objectives

1. To understand the basics of web page design

2. To do scripting using JavaScript

3. To know XML schema and transformation

4. To design dynamic web pages using PHP and JSP

MNWCP 302-1 Software Defined Networking

Course Objectives

1. To know the basics of switching techniques

2. To understand the evolution of networking

3. To know open flow systems

4. To understand SDN in data centres