

INT418:MOBILE COMPUTING

L:3 T:0 P:0 Credits:3

Course Outcomes: Through this course students should be able to

- Evaluate sensor and adhoc networks to develop mobile computing environment
- Understand the working of software mobile agents over long distances and under different network conditions
- Understand the security aspects in mobile and wireless networks

Unit I

Adaptive computing and management : Mobile computing and adaptability, Mechanism for adaptation, Adaptation in applications, Mobility management, Location management, Signals and Antennas, Modulation and Multiplexing

Unit II

Data dissemination and Context-aware : Wireless signal propagation and channel capacity, Data dissemination, Mobile data caching, Mobile cache maintenance scheme and mobile web caching, Definitions and Types of Contexts, Context-Aware Computing, Applications and middleware support

Unit III

Mobile Middleware : Introduction to Mobile Middleware, Middleware for Application Development, Adaptation and Agents, Service Discovery Middleware, Finding Needed Services

Unit IV

Pervasive Computing : Introduction to AdHoc and Sensor Networks, Challenges, Protocols

Unit V

Pervasive approaches and solutions : Deployment and configuration, Routing - Event driven, periodic, directional, group communication and synchronization, Fault Tolerance, reliability and energy efficiency, Adhoc Routing and routing algorithm, TinyOS

Unit VI

Wireless Security : Wireless Security, Approaches to Security, Security in Wireless Personal Area Networks, Security in Wireless Local Area Networks, Security in Wireless Metropolitan Area Networks (802.16), Security in Wide Area Networks

Text Books:

1. FUNDAMENTALS OF MOBILE AND PERVASIVE COMPUTING by FRANK ADELSTEIN, SANDEEP KS GUPTA, GOLDEN RICHARD III AND LOREN SCHWIEBERT, MCGRAW HILL EDUCATION

References:

1. MOBILE COMPUTING by ASOKE K. TALUKDAR, HASAN AHMED, ROOPA R YAVAGAL, MCGRAW HILL EDUCATION

2. MOBILE COMPUTING by RAJ KAMAL, OXFORD UNIVERSITY PRESS