

## **TCS2025 MOBILE COMPUTING**

### **Module 1**

**Mobile Computing Architecture:** Internet – The ubiquitous network; Schematic representation of mobile computing environment; The Three-Tier mobile computing architecture; Design considerations for mobile computing; Mobile computing through Internet; Making existing applications mobile-enabled.

### **Module 2**

**Mobile Communications:** Introduction; The GSM architecture; Call routing in GSM; Network aspects in GSM; GSM frequency allocation; Authentication and security; GPRS system architecture and routing.

### **Module 3**

**Mobility Management:** Mobility management; Location Management Principles and Techniques; Location Management Case studies: PCS, Mobile IP.

### **Module 4**

**Data Dissemination and Management:** Challenges; Data Dissemination; Mobile Data Caching; Mobile Cache Maintenance Schemes; Mobile Web Caching; Case studies.

### **Module 5**

**Mobile Middleware:** Introduction; Adaption: The spectrum of adaption, Resource monitoring, Characterizing adaption strategies, Odyssey-An application aware adaption architecture, Sample Odyssey application; Mobile Agents: Agent architectures, Migration strategies, Communication strategies.

### **Module 6**

**Service Discovery Middleware:** Middleware services: Universally unique identifiers, Standardization, Textual Descriptions, Interfaces for standardization; Discovery and Advertisement Protocols: Unicast discovery, Multicast discovery and advertisement, Service catalogs; Garbage collection: Leasing, Advertised expirations; Eventing; Security: Jini, Service location protocol, Ninja; Interoperability.

### **Module 7**

**Device Operating System:** Introduction to Symbian Operating System; Symbian OS architecture; Applications for Symbian; Special feature:- Event Driven Multitasking using Active objects; Client-Server framework model on Symbian OS.

### **Text Books:**

#### **1. [Modules: 1, 2, and 7]**

Asoke K Talukder and Roopa R. Yavagal; Mobile Computing – Technology, Applications and Service Creation; TMH Publication, New Delhi, 2006

#### **2. [Modules: 3, 4, 5, and 6]**

Frank Adelstein et.al.; Fundamentals of Mobile and Pervasive Computing; TMH Publication, New Delhi, 2005