



INTRODUCTION TO MOBILE NETWORKS & PERVASIVE COMPUTING

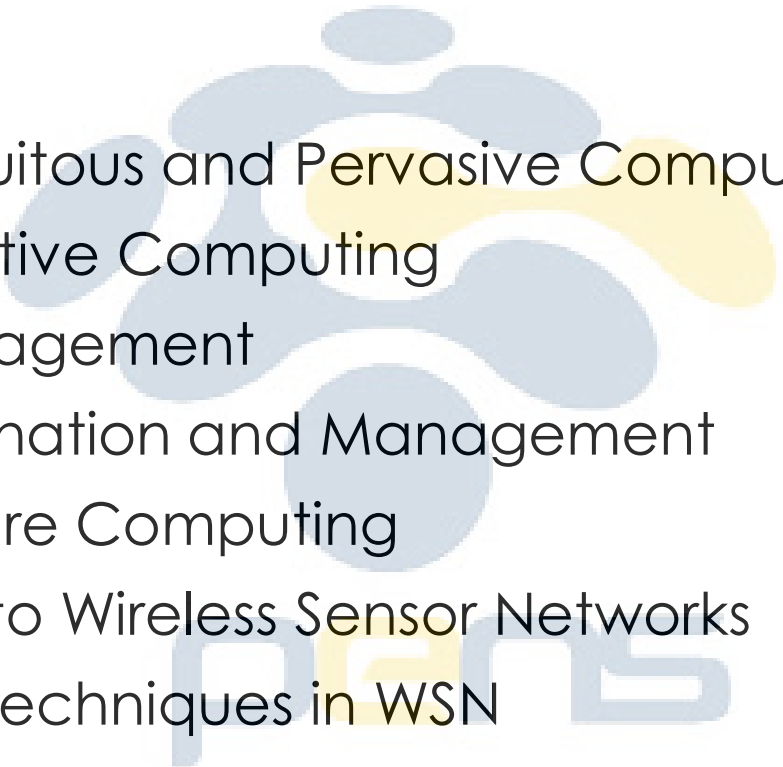
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OUTLINE

- Mobile, Ubiquitous and Pervasive Computing
 - Mobile Adaptive Computing
 - Mobility Management
 - Data Dissemination and Management
 - Context-Aware Computing
 - Introduction to Wireless Sensor Networks
 - Localization techniques in WSN
 - Tracking System
 - Energy Efficiency on Mobile Networks
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SILABUS(1/2)

- **Mobile, Ubiquitous and Pervasive Computing**
 - Mobile Computing, Ubiquitous Computing, Pervasive Computing, Wearable Computing, Context-aware Computing
- **Mobile Adaptive Computing**
 - Adaptability, Mekanisme Adaptasi, Kinerja mobile Adaptive Object, Membangun aplikasi Adaptive Mobile
- **Mobility Management**
 - Mobility pada jaringan nirkabel, Prinsip dan teknik Manajemen lokasi, Skema manajemen lokasi PCS, mobile IP
- **Data Dissemination and Management**
 - Alokasi bandwidth untuk transmisi, penjadwalan broadcasting, skema maintenance mobile caching, mobile web caching.
- **Context-aware Computing**
 - Definisi dan tipe context, core capabilities of context-awareness, jenis-jenis aplikasi context-awareness, developing aplikasi context-awareness, middleware support untuk context-awareness.

SILABUS(2/2)

- **Introduction to Wireless Sensor Networks**
 - karakteristik jaringan WSN vs ad hoc, taksonomi jaringan sensor nirkabel, mobile WSN, Aplikasi WSN, WSN di masa depan
- **Localization techniques on WSN**
 - Konsep LBS, Pengukuran Fisik, Teknik lokalisasi, Lokalisasi range-based, lokalisasi range-free, lokalisasi untuk mobile network, Batasan akurasi untuk wireless network.
- **Tracking System**
 - Beda tracking, lokalisasi dan navigasi, aplikasi tracking system, sistim tracking (Reader-based tracking, node-based tracking), single object tracking system, multi object tracking system, tracking system menggunakan Kalman Filter
- **Energy-Efficiency on Mobile Networks**
 - Pendekatan energy-conservation di jaringan nirkabel, energy-efficiency for duty-csheduling, topology control, power management.



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PROJECTS

1. Wireless Sensor Networks simulation on Matlab
2. Energy efficiency on Cluster-based WSN using NS-2
3. Localization Schemes in WSN using Matlab
4. Indoor Localization using Cricket Motes
5. Multi Object Tracking simulation using Matlab



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