CDA 6508 Ad Hoc Networks

● **Course Description**
Ad Hoc Networks. Credit 3. A comprehensive approach to fundamentals of ad hoc networks including media access protocols, routing protocols, implementation and communication performance. Prerequisite: Discrete Mathematics, MAD 2104 and Introduction to Data Communications, CDA 4500.

● **Textbook:**

Classnotes and handouts

● **Reference:**


● **Instructor:**
Jie Wu, Professor of Computer Science and Engineering, Florida Atlantic University.

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● **Goals:**
An understanding of basic of the ad hoc wireless networking. Covers media access, routing, data management, power optimization, transport protocol, and much more. Current and future developments in the field.

● **Prerequisites by Topic:**

1. Basic graph theory
2. Fundamentals of computer networks
Topics:

1. Introduction to Wireless Networks
2. Ad Hoc Wireless Networks and Their Origins
3. Topics in Infrastructured Networks (cellular architecture)
   - Handoffs
   - Location Management (Mobile IP)
   - Channel Assignment
4. Topics in Infrastructurless Networks (MANETs)
   - Wireless Media Access Protocols
   - Ad Hoc Routing Protocols
   - Multicasting and Broadcasting
   - Reliability and QoS
   - Power Optimization
   - Security
5. Applications
   - Sensor Networks and Indoor Wireless Environments
   - Pervasive Computing
6. Sample On-going Projects

Course Implementations

- Each student will have a copy of CD-ROM lectures offered at a regular semester (over 45 hours).
- Distance learning via Blackboard.
- All Homework assignments, tests (including sample tests), and a list of projects will be posted on Blackboard.

Bio

Dr. Jie Wu is a Professor at Department of Computer Science and Engineering, Florida Atlantic University. He has published over 150 papers in various journal and conference proceedings. His research interests are in the area of mobile computing, routing protocols, fault-tolerant computing, and interconnection networks. Dr. Wu served as a program vice chair for 2000 International Conference on Parallel Processing (ICPP) and a program vice chair for 2001 IEEE International Conference on Distributed Computing Systems (ICDCS). He is a program co-chair of the 12th ISCA International Conference on Parallel and Distributed Computing Systems in 1999. He is also a co-guest-editor of a special issue in IEEE Transactions on Parallel and Distributed Systems on "Challenges in Designing Fault-Tolerant Routing in Networks" and a co-guest-editor of a special issue in Journal of Parallel and Distributing Computing on "Routing in Computer and Communication Networks". He is the author of the text "Distributed System Design" published by the CRC press. Currently, Dr. Wu serves as an Associated Editor in IEEE Transactions on Parallel and Distributed
Systems and three other international journals. Dr. Wu a recipient of the 1996–97 and 2001–2002 Researcher of the Year Award at Florida Atlantic University. He is also a recipient of the 1998 Outstanding Achievements Award from IASTED. He served as an IEEE Computer Society Distinguished Visitor. Dr. Wu is a Member of ACM and a Senior Member of IEEE.