

Wireless Networks Resource Management

Module 1 Introduction to Wireless Networks Resource Management

Introduction to wireless networks resource management

Wireless resource management architecture and protocols

Wireless resource management techniques and algorithms

Power management in wireless networks

Hands-on lab: Implementing power management techniques using open source tools.

Module 2 Spectrum Management in Wireless Networks

Spectrum management in wireless networks: spectrum allocation, sharing, and leasing

Dynamic spectrum access techniques: cognitive radio and spectrum sensing

Spectrum auctions and trading in wireless networks

Interference management techniques in wireless networks

Hands-on lab: Implementing interference management techniques using open source tools.

Module 3 Quality of Service (QoS) Management in Wireless Networks

Quality of Service (QoS) in wireless networks: QoS requirements, metrics, and parameters

QoS architectures and protocols in wireless networks

QoS management techniques in wireless networks: admission control, scheduling, and resource reservation

QoS management for multimedia applications in wireless networks

Hands-on lab: Implementing QoS management techniques using open source tools

Module 4 Cross-Layer Resource Management in Wireless Networks

Cross-layer resource management in wireless networks

Joint optimization of power and spectrum management in wireless networks

Cross-layer QoS management in wireless networks

Cross-layer resource management for multimedia applications in wireless networks

Hands-on lab: Implementing cross-layer resource management techniques using open source tools.

Module 5 Introduction to network slicing in wireless networks

Resource allocation techniques for network slicing

Introduction to cloud-based wireless networks

Resource management in cloud-based wireless networks

Practical exercise: Implementing a load balancing algorithm for a wireless network

Evaluating the performance of the load balancing algorithm

Practical exercise: Configuring QoS parameters in a wireless network

Evaluating the impact of QoS management on network performance