



iBwave CERTIFICATION COURSE SYLLABUS

LEVEL 3: CAPACITY PLANNING, MIMO, COMPLEX VENUES & WI-FI

Note: Course syllabus is subject to change

CAPACITY PLANNING

CAPACITY PLANNING THEORY

- ✓ Capacity background
- ✓ Grade of service / Quality of service
- ✓ User profiles
- ✓ Capacity limits
- ✓ Sample capacity calculations

CAPACITY PLANNING IN iBwave DESIGN ENTERPRISE

- ✓ Capacity planning process
- ✓ Capacity definition (template)
 - Market share
 - Usage profile
 - Subscriber service
- ✓ Capacity requirements (project-specific)
 - Requirements
 - Sector limits
 - Capacity zones
- ✓ Capacity map
- ✓ Capacity planning workshop

MIMO

MIMO THEORY

- ✓ MIMO background
- ✓ MIMO operation modes: Diversity vs. Multiplexing
- ✓ Open loop vs. closed loop
- ✓ MIMO gains compared to SISO systems
- ✓ Factors influencing MIMO performance
- ✓ MIMO DAS deployments

MIMO IN iBwave DESIGN ENTERPRISE

- ✓ MIMO calculations in iBwave Design
- ✓ Modeling MIMO in iBwave Design
- ✓ Creating a MIMO source
- ✓ MIMO gain configuration
- ✓ Creating and running output maps for MIMO systems
- ✓ MIMO workshop

COMPLEX VENUES

STADIUM MODELING AND DESIGN REQUIREMENTS

- ✓ Stadium modeling
- ✓ Stadium design methodology
- ✓ Key performance indicators (KPIs)
- ✓ Stadium modeling workshop
- ✓ Stadium design workshop activity 1

STADIUM DESIGN ISSUES

- ✓ Designing stadiums
- ✓ Case study: Design for an international football stadium
- ✓ Design for distribution system
- ✓ Business case considerations
- ✓ Stadium design workshop activity 2

STADIUM DESIGN ADVANCED TOPICS

- ✓ Radio measurements
- ✓ Handover planning
- ✓ Multi-sector systems in stadiums
- ✓ Installation constraints
- ✓ Design considerations
- ✓ Multi-sector stadium design workshop

TUNNEL MODELING AND DESIGN

- ✓ Tunnel modeling basics
- ✓ Target areas for IBS coverage
- ✓ Design requirements
- ✓ Best practices

FIBER MODELING THEORY

- ✓ Fiber optic cables
- ✓ Fiber optic connectors
- ✓ Types of fiber splicing
- ✓ Fiber distribution equipment

FIBER MODELING IN iBwave DESIGN ENTERPRISE

- ✓ Fiber distribution equipment
- ✓ Strand distribution
- ✓ Connector alerts
- ✓ High-rise design workshop activity 3

Wi-Fi

Wi-Fi TECHNOLOGY ISSUES

- ✓ Wi-Fi basics
- ✓ Radio issues
- ✓ Network issues
- ✓ Dimensioning (radio and network)
- ✓ Managing the Wi-Fi radio environment

Wi-Fi DESIGN EXAMPLE

- ✓ The challenge
- ✓ Coverage planning
- ✓ Capacity planning
- ✓ Additional challenges
- ✓ Wi-Fi in iBwave Design
- ✓ Wi-Fi workshop
- ✓ Wi-Fi survey
- ✓ Wi-Fi survey workshop

PRACTICE EXAM

Review exercise in class to prepare for final practical exam (1 hour)

CERTIFICATION EXAM

Done online through the Learning Center in the week following the training (3 hours)