# Advanced Administration of Unified Communications Manager and Features (AAUCMF)

**Module 1: Unified Communications Review**
- Lesson 1: Review of Unified Communications Architecture
- Lesson 2: New/Changed Features in CUCM 8.5/8.6, 9.x and 10.x

**Module 2: Dial Plan Architecture**

Lesson 1: Signaling
- SIP/SCCP Phone Signaling Review
- SIP/H.323 GW Signaling and Dialpeer Basics
- How Call Parameters are Negotiated
- How CUCM determines if Media Resources are Required
- Feature Differences in SIP and SCCP Phones

Lesson 2: Outbound Call Routing in a Multisite Environment
- Analysis of Local Route Groups and Line/Device Approach
- Intersite Dialing with Overlapping DNs

Lesson 3: Inbound Calls Routing in a Multisite Environment
- Gateway/Trunk Inbound CSS for multiple sites
- Methods to reduce DIDs to desk numbers
- Methods to modify Caller-ID on inbound calls
- Call Handling/Call Blocking based on Caller-ID

Lesson 4: Implementing Survivable Remote Site Telephony
- Cisco Unified SRST Operation
- Dial Plan Requirements for Cisco Unified SRST Scenarios

Lesson 5: Implementing Cisco Unified SCCP SRST
- Cisco Unified Communications Manager SCCP SRST Configuration
- Cisco IOS Gateway SCCP SRST Configuration
- CUCM Dial Plan Configuration for SRST Support
- Cisco IOS Gateway Cisco Unified SRST Dial Plan Configuration
- Voice Translation Profiles
- Cisco Unified SRST Dial Plan Commands: COR

Lesson 6: Implementing SIP SRST

- Cisco Unified Communications Manager SIP SRST Configuration
- Cisco IOS Gateway SIP SRST Configuration

## Lesson 7: Implementing Communications Manager Express in SRST Mode

## Module 3: Intersite and Intercluster Calling Architecture and Features
## Lesson 1: Locations-Based Call Admission Control
- Locations and Regions Considerations and Configuration
- Understanding Deterministic Codec Selection
- Intercluster Call Admission Control Configuration
- Implementation of Locations-Based Call Admission Control
- Automated Alternate Routing Implementation (AAR)

## Lesson 2: Configuring Media Resources on a Router and in CUCM
- Transcoder and Conference Bridge Configuration on a Router
- Implementation of Transcoders and Conference Bridges in CUCM

## Lesson 3: Native Call Queuing in CUCM

## Lesson 4: Intercluster Communications
- Types of Intercluster Trunks
- Configuring Intercluster calls with PSTN backup using Local Route Groups
- Configuring Tail-End Hop Off (TEHO)

## Module 4: Mobility
## Lesson 1: User Accounts and LDAP Integration
- Implementing LDAP Synchronization and Authentication in CUCM
- Custom Attribute Mapping
- Managing LDAP and Local End User Accounts

## Lesson 2: Extension Mobility
- Extension Mobility Architecture and Considerations
- Implementing Extension Mobility
- Implementing Extension Mobility Cross-Cluster (EMCC)

## Lesson 3: Unified Mobility
- Unified Mobility Architecture and Considerations
- Implementing Mobile Connect (Single Number Reach – SNR)
- Implementing Mobile Voice Access

Lesson 4: Device Mobility
- Device Mobility Architecture and Considerations
- Implementing Device Mobility

**Module 5: Tools & Troubleshooting**
Lesson 1: BAT Tips and Tricks
- On-The-Fly Bulk Changes
- Migrating Phone Model
- Bulk Changes/Reboots

Lesson 2: Planning for Firmware Upgrades

Lesson 3: Reading RTMT Trace Files

- Call Setup and troubleshooting
- Media Resource Allocation
- SCCP vs. SIP
- Using the Voice Log Translator and Translator-X

Lesson 4: Reading GW debugs (H.323 and SIP) and relating to RTMT Trace Files

**Labs:**

**Module 2 Labs:**
Implementing Site-Specific Device Pools
Building SCCP and SIP Phones using a Universal Device Template
Implementing Basic Multisite Connections
Building Line/Device Class of Service
Implementing Call Routing in a Multisite Environment Using Site Codes
Configuring Inbound Calling in a Multisite Environment
Implementing SCCP and SIP SRST

**Module 3 Labs:**

Implementing CAC and AAR
Implementing Media Resources
Configuring Hunting with Native Call Queuing
Configure Intercluster Dialing over a SIP Intercluster Trunk
Configure Intercluster Enhanced Locations-Based Call Admission Control
Implementing Tail-End Hopoff (TEHO)

**Module 4 Labs:**

Configure LDAP Integration
Implementing Extension Mobility
Implementing Extension Mobility Cross-Cluster
Implementing Unified Mobility
Implementing Device Mobility

**Module 5 Labs:**

BAT Tips and Tricks
Planning for Firmware Upgrades
Reading RTMT Trace Files
Reading GW debugs (H.323 and SIP) and relating to RTMT Trace Files

**Optional Additional Labs:**

Implementing Extension Mobility Cross Cluster (EMCC)
Reporting using the Call Detail Record Analysis and Reporting Tool (CAR)