COURSE

MikroTik

Certified Routing Engineer

(MTCRE)

hotelinking | 10 YEARS



Carlos Otín
Senior Network Engineer
at Hotelinking

Trainer

Technical Engineer in Telecommunications, CCNP (Cisco Certified Network Professional), **UEWA** (Ubiquiti Enterprise Wireless Admin), **UBRSS** (Ubiquiti Broadband Router and Switching Specialist), **MTCWE** (MikroTik Certified Wireless Engineer), **MTCSE** (MikroTik Certified Security Engineer), **MikroTik Trainer....**

Certification

MikroTik MTCRE

Duration

2 days (16 hours)

Dates

December 15 and 16, 2026

Price

€500

Eligible for training grants
(for more information: admin@hotelinking.com)

Venue and schedule

Held at **Parc Bit – Centre Empresarial Son Espanyol**, Palma, from **9:00 to 18:00**, with a one-hour lunch break.

General overview

The course leads to the MikroTik Certified Routing Engineer (MTCRE) certification, with an official online exam at the end of the course. By the end, students will be able to plan, implement and troubleshoot routed network configurations (static and dynamic) using RouterOS v7, combining theory and hands-on labs with real MikroTik hardware.

Target audience

Network engineers and technicians who deploy and maintain networks with static and dynamic routing.

Prerequisites

MikroTik MTCNA certificate, current or expired.

Title	Objective
Module 1 **Introduction**	• Review of the IPv4 header and the Protocol field • Lab environment: access and upgrade to RouterOS v7 • TTL (Time to Live): operation and modification • **Module 1 lab**: Device setup, LAN network and TTL modification
Module 2 **Static routing**	• Routes and selection criteria: the most specific route and the default route • Route distance • Blackhole routes • Gateway reachability check (check-gateway) • How to force the gateway through a specific interface • Recursive next hop: scope and target-scope • Differences between RouterOS v6 and v7 • ECMP (Equal-Cost Multi-Path) and failover • Policy Based Routing: routing tables, routing rules and routing marks with firewall mangle • **Module 2 lab**: Static routing, ECMP and failover, policy based routing

Title	Objective

Module 3
Dynamic routing
	• Dynamic routing protocols: IGP and EGP
	• RIP (Routing Information Protocol)
	• OSPF (Open Shortest Path First):
	  • How the protocol works and the link-state concept
	  • Instance, Router ID and areas
	  • Network and interface types (broadcast, NBMA, point-to-point)
	  • Hello protocol, neighbor establishment and neighbor states
	  • Static neighbors
	  • LSDB synchronization and LSA types
	  • DR and BDR election
	  • Interface cost and SPT tree calculation
	  • Inter-area routing, router types and route summarization (area ranges)
	  • Virtual links: use and limitations
	  • External route distribution (type 1 and type 2)
	  • Special areas: stub, totally stub, NSSA and totally NSSA
	  • Passive interface and authentication
	• IS-IS: introduction and comparison with OSPF
	• **Module 3 lab**: RIP, OSPF neighbors, DR and costs, LSA and RIB, inter-area, external routes, IS-IS

Module 4 **Route filtering**	• Routing filters in RouterOS v7 • Common examples of OSPF inbound and outbound filters • Limitations of filters • Best practices

Title	Objective
Module 5 **VPN and tunnels**	• What a VPN is and types of VPN • Site-to-site connections with tunnels • VLAN 802.1Q and Q-in-Q • IP-IP and GRE tunnels • EoIP (Ethernet over IP) • WireGuard • PPPoE: IP pool, PPP profiles, secrets, server and client • Point-to-point addressing • BCP (Bridge Control Protocol) • VXLAN • VRRP (Virtual Router Redundancy Protocol) • **Module 5 lab**: VLAN, IP tunnel, OSPF over IP tunnel, EoIP tunnel, PPPoE over EoIP, PPPoE over VXLAN, VRRP

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