

CCNA 2: Switching, Routing, and Wireless Essentials

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1.2.1 - Duplex Communication	K0443	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3.1	3A-CS-02; 3A-NI-04; 3A-NI-06; 3A-NI-07; 3A-NI-08;	
1.2.2 - Configure Switch Ports at the Physical Layer	S0170	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3.1	3A-CS-02; 3A-NI-04; 3A-NI-06; 3A-NI-07; 3A-NI-08;	
1.2.3 - Auto-MDIX	K0443	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3.1	3A-CS-02; 3A-NI-04; 3A-NI-06; 3A-NI-07; 3A-NI-08;	
1.2.4 - Switch Verification Commands	S0170	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3.1	3A-CS-02; 3A-NI-04; 3A-NI-06; 3A-NI-07; 3A-NI-08;	
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1.3.4 - Configure SSH	K0443	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-06; 3A-NI-07; 3A-NI-08;	4.8 Configure network devices for remote access using SSH
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1.4 - Basic Router Configuration						
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1.5.4 - Verify Interface Configuration	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.1	3A-CS-02; 3A-NI-04; 3A-NI-06; 3A-NI-07; 3A-NI-08;	
1.5.5 - Verify Routes	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.1	3A-CS-02; 3A-NI-04; 3A-NI-06; 3A-NI-07; 3A-NI-08;	
1.5.6 - Filter Show Command Output	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.1	3A-CS-02; 3A-NI-04; 3A-NI-06; 3A-NI-07; 3A-NI-08;	
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3.3.7 - Data and Voice VLAN Example	T0035	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.1 Configure and verify VLANs (normal range) spanning multiple switches 2.1.a Access ports (data and voice) 2.1.b Default VLAN 2.1.c Connectivity
3.3.8 - Verify VLAN Information	T0035	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.1 Configure and verify VLANs (normal range) spanning multiple switches 2.1.a Access ports (data and voice) 2.1.b Default VLAN 2.1.c Connectivity
3.3.9 - Change VLAN Port Membership	T0035	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.1 Configure and verify VLANs (normal range) spanning multiple switches 2.1.a Access ports (data and voice) 2.1.b Default VLAN 2.1.c Connectivity
3.3.10 - Delete VLANs	T0035	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.1 Configure and verify VLANs (normal range) spanning multiple switches 2.1.a Access ports (data and voice) 2.1.b Default VLAN 2.1.c Connectivity
3.3.11 - Syntax Checker - VLAN Configuration	T0035	HS-ETS1.3.	ITEA.2. ITEA.8.	CCR.ELA-Literacy.RST. 11-12.4.	3B-NI-03;	2.1 Configure and verify VLANs (normal range) spanning multiple switches 2.1.a Access ports (data and voice) 2.1.b Default VLAN 2.1.c Connectivity
3.3.12 - Packet Tracer - VLAN Configuration	T0035	HS-ETS1.4.	ITEA.2. ITEA.8.	IT-NET 3 CCR.ELA-Literacy.RST. 11-12.9.	3B-NI-03;	2.1 Configure and verify VLANs (normal range) spanning multiple switches 2.1.a Access ports (data and voice) 2.1.b Default VLAN 2.1.c Connectivity
3.4 - VLAN Trunks						
3.4.1 - Trunk Configuration Commands	S0168	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.2 Configure and verify interswitch connectivity 2.2.a Trunk ports

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						2.2.b 802.1Q 2.2.c Native VLAN
3.4.2 - Trunk Configuration Example	S0168	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.2 Configure and verify interswitch connectivity 2.2.a Trunk ports 2.2.b 802.1Q 2.2.c Native VLAN
3.4.3 - Verify Trunk Configuration	S0168	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.2 Configure and verify interswitch connectivity 2.2.a Trunk ports 2.2.b 802.1Q 2.2.c Native VLAN
3.4.4 - Reset the Trunk to the Default State	S0168	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.2 Configure and verify interswitch connectivity 2.2.a Trunk ports 2.2.b 802.1Q 2.2.c Native VLAN
3.4.5 - Packet Tracer - Configure Trunks	S0168	HS-ETS1.4.	ITEA.2. ITEA.8.	IT-NET 3 CCR.ELA-Literacy.RST.11-12.9.	3B-NI-03;	2.2 Configure and verify interswitch connectivity 2.2.a Trunk ports 2.2.b 802.1Q 2.2.c Native VLAN
3.4.6 - Lab - Configure VLANs and Trunking	S0168	HS-ETS1.2.	ITEA.2. ITEA.8.	CCR.ELA-Literacy.RST.11-12.3.	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.2 Configure and verify interswitch connectivity 2.2.a Trunk ports 2.2.b 802.1Q 2.2.c Native VLAN
3.5 - Dynamic Trunking Protocol						
3.5.1 - Introduction to DTP	T0035	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
3.5.2 - Negotiated Interface Modes	T0035	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
3.5.3 - Results of a DTP Configuration	T0035	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
3.5.4 - Verify DTP Mode	T0035	HS-ETS1	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	

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3.5.5 - Packet Tracer - Configure DTP	T0035	HS-ETS1.4.	ITEA.2. ITEA.8.	IT-NET 3 CCR.ELA- Literacy.RST. 11-12.9.	3B-NI-03;	
3.5.6 - Check Your Understanding - Dynamic Trunking Protocol	T0035	HS-ETS1.3.	ITEA.2. ITEA.8.	IT-NET 3 CCR.ELA- Literacy.RST. 11-12.7.	3A-NI-04; 3A- NI-05; 3A-NI- 06;	
3.6 - Module Practice and Quiz						
3.6.1 - Packet Tracer - Implement VLANs and Trunking	T0035	HS-ETS1.4.	ITEA.2. ITEA.8.	IT-NET 3 CCR.ELA- Literacy.RST. 11-12.9.	3B-NI-03;	
3.6.2 - Lab - Implement VLANs and Trunking	T0035	HS-ETS1.2.	ITEA.2. ITEA.8.	CCR.ELA- Literacy.RST. 11-12.3.	3A-NI-04; 3A- NI-05; 3A-NI- 06;	
3.6.3 - What did I learn in this module?						
3.6.4 - Module Quiz - VLANs						
4.0 - Introduction						
4.0 - Introduction						
4.0.2 - What will I learn to do in this module?						
4.1 - Inter-VLAN Routing Operation						
4.1.1 - What is Inter-VLAN Routing?	S0168	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A- NI-05; 3A-NI- 06;	
4.1.2 - Legacy Inter-VLAN Routing	S0168	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A- NI-05; 3A-NI- 06;	
4.1.3 - Router-on-a-Stick Inter-VLAN Routing	S0168	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A- NI-05; 3A-NI- 06;	
4.1.4 - Inter-VLAN Routing on a Layer 3 Switch	S0168	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A- NI-05; 3A-NI- 06;	
4.1.5 - Check Your Understanding - Inter-VLAN Routing Operation	S0168	HS-ETS1.3.	ITEA.2. ITEA.8.	CCR.ELA- Literacy.RST. 11-12.9.	3A-NI-04; 3A- NI-05; 3A-NI- 06;	
4.2 - Router-on-a-Stick Inter-VLAN Routing						

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
4.2.1 - Router-on-a-Stick Scenario	S0168	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.2.2 - S1 VLAN and Trunking Configuration	S0168	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.2.3 - S2 VLAN and Trunking Configuration	S0168	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.2.4 - R1 Subinterface Configuration	S0168	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.2.5 - Verify Connectivity Between PC1 and PC2	S0168	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.2.6 - Router-on-a-Stick Inter-VLAN Routing Verification	S0168	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.2.7 - Packet Tracer - Configure Router-on-a-Stick Inter-VLAN Routing	S0168	HS-ETS1.4.	ITEA.2. ITEA.8.	IT-NET 3 CCR.ELA-Literacy.RST.11-12.9.	3B-NI-03;	
4.2.8 - Lab - Configure Router-on-a-Stick Inter-VLAN Routing	S0168	HS-ETS1.2	ITEA.2. ITEA.8.	CCR.ELA-Literacy.RST.11-12.3.	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.3 - Inter-VLAN Routing using Layer 3 Switches						
4.3.1 - Layer 3 Switch Inter-VLAN Routing	K0011	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.3.2 - Layer 3 Switch Scenario	K0011	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.3.3 - Layer 3 Switch Configuration	K0011	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.3.4 - Layer 3 Switch Inter-VLAN Routing Verification	K0011	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	

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4.3.5 - Routing on a Layer 3 Switch	K0011	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.3.6 - Routing Scenario on a Layer 3 Switch	K0011	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.3.7 - Routing Configuration on a Layer 3 Switch	K0011	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.3.8 - Packet Tracer - Configure Layer 3 Switching and Inter-VLAN Routing	K0011	HS-ETS1.4.	ITEA.2. ITEA.8.	IT-NET 3 CCR.ELA-Literacy.RST.11-12.9.	3B-NI-03;	
4.4 - Troubleshoot Inter-VLAN Routing						
4.4.1 - Common Inter-VLAN Issues	K0011	HS-ETS1.	ITEA.10.	IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.4.2 - Troubleshoot Inter-VLAN Routing Scenario	K0011	HS-ETS1.	ITEA.10.	IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.4.3 - Missing VLANs	K0011	HS-ETS1.	ITEA.10.	IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.4.4 - Switch Trunk Port Issues	K0011	HS-ETS1.	ITEA.10.	IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.4.5 - Switch Access Port Issues	K0011	HS-ETS1.	ITEA.10.	IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.4.6 - Router Configuration Issues	K0011	HS-ETS1.	ITEA.10.	IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.4.7 - Check Your Understanding - Troubleshoot Inter-VLAN Routing	K0011	HS-ETS1.3.	ITEA.10.	IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.4.8 - Packet Tracer - Troubleshoot Inter-VLAN Routing	K0011	HS-ETS1.4.	ITEA.10.	IT-NET 3 CCR.ELA-Literacy.RST.11-12.9.	3B-NI-03;	

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4.4.9 - Lab - Troubleshoot Inter-VLAN Routing	K0011	HS-ETS1.2	ITEA.10.	CCR.ELA-Literacy.RST.11-12.3.	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.5 - Module Practice and Quiz						
4.5.1 - Packet Tracer - Inter-VLAN Routing Challenge	K0011	HS-ETS1.4.	ITEA.12.	IT-NET 3 CCR.ELA-Literacy.RST.11-12.9.	3B-NI-03;	
4.5.2 - Lab - Implement Inter-VLAN Routing	K0011	HS-ETS1.2	ITEA.12.	CCR.ELA-Literacy.RST.11-12.3.	3A-NI-04; 3A-NI-05; 3A-NI-06;	
4.5.3 - What did I learn in this module?						
4.5.4 - Module Quiz - Inter-VLAN Routing						
5.0 - Introduction						
5.0.1 - Why should I take this module?						
5.0.2 - What will I learn to do in this module?						
5.1 - Purpose of STP						
5.1.1 - Redundancy in Layer 2 Switched Networks	K0221	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations
5.1.2 - Spanning Tree Protocol	K0221	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations
5.1.3 - STP Recalculation	K0221	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations
5.1.4 - Issues with Redundant Switch Links	K0221	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations
5.1.5 - Layer 2 Loops	K0221	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations
5.1.6 - Broadcast Storm	K0221	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning

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					NI-05; 3A-NI-06;	Tree Protocol and identify basic operations
5.1.7 - The Spanning Tree Algorithm	K0011	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations
5.1.8 - Video - Observe STP Operation	K0011	HS-ETS1.	ITEA.2. ITEA.8.	CCR.ELA-Literacy.RST.11-12.7.	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations
5.1.9 - Packet Tracer - Investigate STP Loop Prevention	T0035	HS-ETS1.4.	ITEA.2. ITEA.8.	IT-NET 3 CCR.ELA-Literacy.RST.11-12.9.	3B-NI-03;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations
5.1.10 - Check Your Understanding - Purpose of STP	K0011	HS-ETS1.3.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations
5.2 - STP Operations						
5.2.1 - Steps to a Loop-Free Topology	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking)
5.2.2 - 1. Elect the Root Bridge	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking)
5.2.3 - Impact of Default BIDs	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking)
5.2.4 - Determine the Root Path Cost	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking)
5.2.5 - 2. Elect the Root Ports	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking)

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5.2.6 - 3. Elect Designated Ports	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking)
5.2.7 - 4. Elect Alternate (Blocked) Ports	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking)
5.2.8 - Elect a Root Port from Multiple Equal-Cost Paths	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking)
5.2.9 - STP Timers and Port States	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking)
5.2.10 - Operational Details of Each Port State	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking)
5.2.11 - Per-VLAN Spanning Tree	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking)
5.2.12 - Check Your Understanding - STP Operations	S0041	HS-ETS1.3.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking)
5.3 - Evolution of STP						
5.3.1 - Different Versions of STP	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations 2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking) 2.5.c Portfast benefits
5.3.2 - RSTP Concepts	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations

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						2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking) 2.5.c Portfast benefits
5.3.3 - RSTP Port States and Port Roles	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations 2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking) 2.5.c Portfast benefits
5.3.4 - PortFast and BPDU Guard	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations 2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking) 2.5.c Portfast benefits
5.3.5 - Alternatives to STP	S0041	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations 2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking) 2.5.c Portfast benefits
5.3.6 - Check Your Understanding - Evolution of STP	S0041	HS-ETS1.3.	ITEA.2. ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	2.5 Describe the need for and basic operations of Rapid PVST+ Spanning Tree Protocol and identify basic operations 2.5.a Root port, root bridge (primary/secondary), other port names 2.5.b Port states (forwarding/blocking) 2.5.c Portfast benefits
5.4 - Module Practice and Quiz						
5.4.1 - What did I learn in this module?						
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6.0.2 - What will I learn to do in this module?						
6.1 - EtherChannel Operation						
6.1.1 - Link Aggregation	K0011	HS-ETS1.	ITEA.2.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.1.2 - EtherChannel	K0011	HS-ETS1.	ITEA.2.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.1.3 - Advantages of EtherChannel	K0011	HS-ETS1.	ITEA.2.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.1.4 - Implementation Restrictions	K0011	HS-ETS1.	ITEA.2.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.1.5 - AutoNegotiation Protocols	K0011	HS-ETS1.	ITEA.2.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.1.6 - PAgP Operation	K0011	HS-ETS1.	ITEA.2.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.1.7 - PAgP Mode Settings Example	K0011	HS-ETS1.	ITEA.2.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.1.8 - LACP Operation	K0011	HS-ETS1.	ITEA.2.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.1.9 - LACP Mode Settings Example	K0011	HS-ETS1.	ITEA.2.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.1.10 - Check Your Understanding - EtherChannel Operation	K0011	HS-ETS1.3.	ITEA.2.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.2 - Configure EtherChannel						
6.2.1 - Configuration Guidelines	S0041	HS-ETS1.	ITEA.2.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.2.2 - LACP Configuration Example	S0041	HS-ETS1.	ITEA.2.	IT-NET 3	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)

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6.2.3 - Syntax Checker - Configure EtherChannel	S0041	HS-ETS1.3.	ITEA.2.	IT-NET 3	3B-NI-03;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.2.4 - Packet Tracer - Configure EtherChannel	T0035	HS-ETS1.4.	ITEA.2.	IT-NET 3 CCR.ELA-Literacy.RST. 11-12.9.	3B-NI-03;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.3 - Verify and Troubleshoot EtherChannel						
6.3.1 - Verify EtherChannel	S0041	HS-ETS1.	ITEA.10.	IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.3.2 - Common Issues with EtherChannel Configurations	S0041	HS-ETS1.	ITEA.10.	IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.3.3 - Troubleshoot EtherChannel Example	S0041	HS-ETS1.	ITEA.10.	IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.3.4 - Packet Tracer - Troubleshoot EtherChannel	T0035	HS-ETS1.4.	ITEA.10.	IT-NET 3 CCR.ELA-Literacy.RST. 11-12.9.	3B-NI-03;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.4 - Module Practice and Quiz						
6.4.1 - Packet Tracer - Implement EtherChannel	S0041	HS-ETS1.4.	ITEA.2.	IT-NET 5 CCR.ELA-Literacy.RST. 11-12.9.	3B-NI-03;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.4.2 - Lab - Implement EtherChannel	S0041	HS-ETS1.2.		CCR.ELA-Literacy.RST. 11-12.3.	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.4 Configure and verify (Layer 2/Layer 3) EtherChannel (LACP)
6.4.3 - What did I learn in this module?						
6.4.4 - Module Quiz - Etherchannel						
7.0 - Introduction						
7.0.1 - Why should I take this module?						
7.0.2 - What will I learn to do in this module?						
7.1 - DHCPv4 Concepts						
7.1.1 - DHCPv4 Server and Client	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network

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7.1.2 - DHCPv4 Operation	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
7.1.3 - Steps to Obtain a Lease	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
7.1.4 - Steps to Renew a Lease	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
7.1.5 - Check Your Understanding - DHCPv4 Concepts	K0452	HS-ETS1.3.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
7.2 - Configure a Cisco IOS DHCPv4 Server						
7.2.1 - Cisco IOS DHCPv4 Server	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.6 Configure and verify DHCP client and relay
7.2.2 - Steps to Configure a Cisco IOS DHCPv4 Server	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.6 Configure and verify DHCP client and relay
7.2.3 - Configuration Example	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.6 Configure and verify DHCP client and relay
7.2.4 - DHCPv4 Verification Commands	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.6 Configure and verify DHCP client and relay
7.2.5 - Verify DHCPv4 is Operational	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.6 Configure and verify DHCP client and relay
7.2.6 - Syntax Checker - Configure DHCPv4	K0452	HS-ETS1.3.	ITEA.2. ITEA.8.	CCR.ELA-Literacy.RST.11-12.4.	3B-NI-03;	4.6 Configure and verify DHCP client and relay
7.2.7 - Disable the Cisco IOS DHCPv4 Server	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.6 Configure and verify DHCP client and relay
7.2.8 - DHCPv4 Relay	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.6 Configure and verify DHCP client and relay
7.2.9 - Other Service Broadcasts Relayed	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.6 Configure and verify DHCP client and relay

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7.2.10 - Packet Tracer - Configure DHCPv4	K0452	HS-ETS1.4.	ITEA.2. ITEA.8.	IT-NET 3 CCR.ELA- Literacy.RST. 11-12.9.	3B-NI-03;	4.6 Configure and verify DHCP client and relay
7.3 - Configure a DHCPv4 Client						
7.3.1 - Cisco Router as a DHCPv4 Client	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5	3A-CS-02; 3A-NI-04; 3A- NI-05;	4.6 Configure and verify DHCP client and relay
7.3.2 - Configuration Example	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A- NI-05;	4.6 Configure and verify DHCP client and relay
7.3.3 - Home Router as a DHCPv4 Client	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A- NI-05;	4.6 Configure and verify DHCP client and relay
7.3.4 - Syntax Checker - Configure a Cisco Router as DHCP Client	K0452	HS-ETS1.3.	ITEA.2. ITEA.8.	CCR.ELA- Literacy.RST. 11-12.4.	3B-NI-03;	4.6 Configure and verify DHCP client and relay
7.4 - Module Practice and Quiz						
7.4.1 - Packet Tracer - Implement DHCPv4	K0452	HS-ETS1.4.	ITEA.2. ITEA.8.	IT-NET 3 CCR.ELA- Literacy.RST. 11-12.9.	3A-CS-02; 3A-NI-04; 3A- NI-05;	
7.4.2 - Lab - Implement DHCPv4	K0452	HS-ETS1.2.	ITEA.2. ITEA.8.	CCR.ELA- Literacy.RST. 11-12.3.	3A-CS-02; 3A-NI-04; 3A- NI-05;	
7.4.3 - What did I learn in this module?						
7.4.4 - Module Quiz - DHCPv4						
8.0 - Introduction						
8.0.1 - Welcome						
8.0.2 - What will I learn to do in this module?						
8.1 - IPv6 GUA Assignment						
8.1.1 - IPv6 Host Configuration	K0332	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A- NI-05;	1.8 Configure and verify IPv6 addressing and prefix 4.3 Explain the role of DHCP and DNS within the network
8.1.2 - IPv6 Host Link-Local Address	K0332	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A- NI-05;	1.8 Configure and verify IPv6 addressing and prefix 4.3 Explain the role of DHCP and DNS within the network

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8.1.3 - IPv6 GUA Assignment	K0332	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	1.8 Configure and verify IPv6 addressing and prefix 4.3 Explain the role of DHCP and DNS within the network
8.1.4 - Three RA Message Flags	K0332	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	1.8 Configure and verify IPv6 addressing and prefix 4.3 Explain the role of DHCP and DNS within the network
8.1.5 - Check Your Understanding - IPv6 GUA Assignment	K0332	HS-ETS1.3.	ITEA.2. ITEA.8.	CCR.ELA-Literacy.RST. 11-12.4.	3A-CS-02; 3A-NI-04; 3A-NI-05;	1.8 Configure and verify IPv6 addressing and prefix 4.3 Explain the role of DHCP and DNS within the network
8.2 - SLAAC						
8.2.1 - SLAAC Overview	K0332	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	1.8 Configure and verify IPv6 addressing and prefix
8.2.2 - Enabling SLAAC	K0332	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	1.8 Configure and verify IPv6 addressing and prefix
8.2.3 - SLAAC Only Method	K0332	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	1.8 Configure and verify IPv6 addressing and prefix
8.2.4 - ICMPv6 RS Messages	K0332	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	1.8 Configure and verify IPv6 addressing and prefix
8.2.5 - Host Process to Generate Interface ID	K0332	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	1.8 Configure and verify IPv6 addressing and prefix
8.2.6 - Duplicate Address Detection	K0332	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	1.8 Configure and verify IPv6 addressing and prefix
8.2.7 - Check Your Understanding - SLAAC	K0332	HS-ETS1.3.	ITEA.2. ITEA.8.	CCR.ELA-Literacy.RST. 11-12.4.	3A-CS-02; 3A-NI-04; 3A-NI-05;	1.8 Configure and verify IPv6 addressing and prefix
8.3 - DHCPv6						
8.3.1 - DHCPv6 Operation Steps	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.3.2 - Stateless DHCPv6 Operation	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network

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8.3.3 - Enable Stateless DHCPv6 on an Interface	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.3.4 - Stateful DHCPv6 Operation	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.3.5 - Enable Stateful DHCPv6 on an Interface	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.3.6 - Check Your Understanding - DHCPv6	K0452	HS-ETS1.3.	ITEA.2. ITEA.8.	CCR.ELA-Literacy.RST.11-12.4.	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.4 - Configure DHCPv6 Server						
8.4.1 - DHCPv6 Router Roles	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.4.2 - Configure a Stateless DHCPv6 Server	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.4.3 - Configure a Stateless DHCPv6 Client	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.4.4 - Configure a Stateful DHCPv6 Server	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.4.5 - Configure a Stateful DHCPv6 Client	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.4.6 - DHCPv6 Server Verification Commands	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.4.7 - Configure a DHCPv6 Relay Agent	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.4.8 - Verify the DHCPv6 Relay Agent	K0452	HS-ETS1.	ITEA.2. ITEA.8.	IT-NET 5.9	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.4.9 - Check Your Understanding - Configure DHCPv6 Server	K0452	HS-ETS1.3.	ITEA.2. ITEA.8.	CCR.ELA-Literacy.RST.11-12.4.	3A-CS-02; 3A-NI-04; 3A-NI-05;	4.3 Explain the role of DHCP and DNS within the network
8.5 - Module Practice and Quiz	K0452					

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8.5.1 - Lab - Configure DHCPv6	K0452	HS-ETS1.2.	ITEA.2. ITEA.8.	CCR.ELA-Literacy.RST.11-12.3.	3A-CS-02; 3A-NI-04; 3A-NI-05;	
8.5.2 - What did I learn in this module?						
8.5.3 - Module Quiz - SLAAC and DHCPv6						
9.0 - Introduction						
9.0.1 - Why should I take this module?						
9.0.2 - What will I learn to do in this module?						
9.1 - First Hop Redundancy Protocols						
9.1.1 - Default Gateway Limitations	K0174	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1 Interpret the components of routing table 3.1.g Gateway of last resort 3.5 Describe the purpose of first hop redundancy protocol (*HSRP, VRRP)
9.1.2 - Router Redundancy	K0174	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1 Interpret the components of routing table 3.1.g Gateway of last resort 3.5 Describe the purpose of first hop redundancy protocol (*HSRP, VRRP)
9.1.3 - Steps for Router Failover	K0174	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1 Interpret the components of routing table 3.1.g Gateway of last resort 3.5 Describe the purpose of first hop redundancy protocol (*HSRP, VRRP)
9.1.4 - FHRP Options	K0174	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1 Interpret the components of routing table 3.1.g Gateway of last resort 3.5 Describe the purpose of first hop redundancy protocol (*HSRP, VRRP)
9.1.5 - Check Your Understanding - First Hop Redundancy Protocols	K0174	HS-ETS1.3.	ITEA.2.	IT-NET 3 CCR.ELA-Literacy.RST.11-12.4.	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1 Interpret the components of routing table 3.1.g Gateway of last resort 3.5 Describe the purpose of first hop redundancy protocol (*HSRP, VRRP)
9.2 - HSRP						
9.2.1 - HSRP Overview	K0174	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.5 Describe the purpose of first hop redundancy protocol (*HSRP, VRRP)

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9.2.2 - HSRP Priority and Preemption	K0174	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.5 Describe the purpose of first hop redundancy protocol (*HSRP, VRRP)
9.2.3 - HSRP States and Timers	K0174	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.5 Describe the purpose of first hop redundancy protocol (*HSRP, VRRP)
9.2.4 - Check Your Understanding - HSRP	K0174	HS-ETS1.3.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.5 Describe the purpose of first hop redundancy protocol (*HSRP, VRRP)
9.3 - Module Practice and Quiz						
9.3.1 - What did I learn in this module?					3A-CS-02; 3A-NI-04; 3A-NI-05;	
9.3.2 - Module Quiz - FHRP Concepts					3A-CS-02; 3A-NI-04; 3A-NI-05;	
9.3.3 - Packet Tracer - HSRP Configuration Guide	K0174	HS-ETS1.4.	ITEA.2.	IT-NET 3 CCR.ELA-Literacy.RST.11-12.9.	3B-NI-03;	
9.3.4 - Packet Tracer - Data Center Exploration	K0175	HS-ETS1.4.	ITEA.2.	IT-NET 3 CCR.ELA-Literacy.RST.11-12.9.	3B-NI-03;	
10.0 - Introduction						
10.0.1 - Why should I take this module?						
10.0.2 - What will I learn in this module?						
10.1 - Endpoint Security						
10.1.1 - Network Attacks Today	K0488	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques)
10.1.2 - Network Security Devices	K0488	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques)
10.1.3 - Endpoint Protection	K0488	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques)

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					NI-05; 3A-NI-06;	
10.1.4 - Cisco Email Security Appliance	K0488	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques)
10.1.5 - Cisco Web Security Appliance	K0488	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques)
10.1.6 - Check Your Understanding - Endpoint Security	K0488	HS-ETS1.3.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques)
10.2 - Access Control						
10.2.1 - Authentication with a Local Password	K0033	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.8 Differentiate authentication, authorization, and accounting concepts (*External authentication resources, AAA and network device administration)
10.2.2 - AAA Components	K0033	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.8 Differentiate authentication, authorization, and accounting concepts (*External authentication resources, AAA and network device administration)
10.2.3 - Authentication	K0033	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.8 Differentiate authentication, authorization, and accounting concepts (*External authentication resources, AAA and network device administration)
10.2.4 - Authorization	K0033	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.8 Differentiate authentication, authorization, and accounting concepts (*External authentication resources, AAA and network device administration)
10.2.5 - Accounting	K0033	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.8 Differentiate authentication, authorization, and accounting concepts (*External authentication resources, AAA and network device administration)

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
10.2.6 - 802.1X	K0033	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.8 Differentiate authentication, authorization, and accounting concepts (*External authentication resources, AAA and network device administration)
10.2.7 - Check Your Understanding - Access Control	K0033	HS-ETS1.3.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.8 Differentiate authentication, authorization, and accounting concepts (*External authentication resources, AAA and network device administration)
10.3 - Layer 2 Security Threats						
10.3.1 - Layer 2 Vulnerabilities	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.3.2 - Switch Attack Categories	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.3.3 - Switch Attack Mitigation Techniques	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.3.4 - Check Your Understanding - Layer 2 Security Threats	K0296	HS-ETS1.3.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.4 - MAC Address Table Attack						5.7
10.4.1 - Switch Operation Review	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
10.4.2 - MAC Address Table Flooding	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.4.3 - MAC Address Table Attack Mitigation	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.4.4 - Check Your Understanding - MAC Address Table Attacks	K0296	HS-ETS1.3.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.5 - LAN Attacks						
10.5.1 - Video - VLAN and DHCP Attacks	K0296	HS-ETS1-2.	ITEA.9.	CCR.ELA-Literacy.RST.11-12.7. IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.5.2 - VLAN Hopping Attacks	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.5.3 - VLAN Double-Tagging Attack	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.5.4 - DHCP Messages	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.5.5 - DHCP Attacks	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
						features (DHCP snooping, dynamic ARP inspection and port security)
10.5.6 - Video - ARP Attacks, STP Attacks, and CDP Reconnaissance	K0296	HS-ETS1-2.	ITEA.9.	CCR.ELA-Literacy.RST.11-12.7. IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.5.7 - ARP Attacks	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.5.8 - Address Spoofing Attack	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.5.9 - STP Attack	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.5.10 - CDP Reconnaissance	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.5.11 - Check Your Understanding - LAN Attacks	K0296	HS-ETS1.3.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
10.6 - Module Practice and Quiz						
10.6.1 - What did I learn in this module?						

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
10.6.2 - Module Quiz - LAN Security Concepts						
11.0 - Introduction						
11.0.1 - Why should I take this module?						
11.0.2 - What will I learn in this module?						
11.1 - Implement Port Security						
11.1.1 - Secure Unused Ports	K0011	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.1.2 - Mitigate MAC Address Table Attacks	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.1.3 - Enable Port Security	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.1.4 - Limit and Learn MAC Addresses	K0011	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.1.5 - Port Security Aging	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.1.6 - Port Security Violation Modes	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.1.7 - Ports in error-disabled State	K0011	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.1.8 - Verify Port Security	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
11.1.9 - Syntax Checker - Implement Port Security	K0296	HS-ETS1-4.	ITEA.9.	CCR.ELA-Literacy.RST. 11-12.9. IT-NET 3.8	3B-NI-03;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.1.10 - Packet Tracer - Implement Port Security	K0296	HS-ETS1-4.	ITEA.9.	CCR.ELA-Literacy.RST. 11-12.9. IT-NET 3.8	3B-NI-03;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.2 - Mitigate VLAN Attacks						
11.2.1 - VLAN Attacks Review	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.2.2 - Steps to Mitigate VLAN Hopping Attacks	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.2.3 - Syntax Checker - Mitigate VLAN Hopping Attacks	K0296	HS-ETS1.3.	ITEA.9.	IT-NET 3.8	3B-NI-03;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.3 - Mitigate DHCP Attacks						
11.3.1 - DHCP Attack Review	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.3.2 - DHCP Snooping	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.3.3 - Steps to Implement DHCP Snooping	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.3.4 - DHCP Snooping Configuration Example	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.3.5 - Syntax Checker - Mitigate DHCP Attacks	K0296	HS-ETS1.3.	ITEA.9.	CCR.ELA-Literacy.RST. 11-12.9. IT-NET 3.8	3B-NI-03;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)

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11.4 - Mitigate ARP Attacks						
11.4.1 - Dynamic ARP Inspection	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.4.2 - DAI Implementation Guidelines	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.4.3 - DAI Configuration Example	K0296	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.4.4 - Syntax Checker - Mitigate ARP Attacks	K0296	HS-ETS1.3.	ITEA.9.	CCR.ELA-Literacy.RST. 11-12.9. IT-NET 3.8	3B-NI-03;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.5 - Mitigate STP Attacks						
11.5.1 - PortFast and BPDU Guard	T0035	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.5.2 - Configure PortFast	T0035	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.5.3 - Configure BPDU Guard	T0035	HS-ETS1-2.	ITEA.9.	IT-NET 3.8	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.5.4 - Syntax Checker - Mitigate STP Attacks	T0035	HS-ETS1.3.	ITEA.9.	CCR.ELA-Literacy.RST. 11-12.9. IT-NET 3.8	3B-NI-03;	5.7 Configure Layer 2 security features (DHCP snooping, dynamic ARP inspection and port security)
11.6 - Module Practice and Quiz						
11.6.1 - Packet Tracer - Switch Security Configuration	K0296	HS-ETS1-4.	ITEA.9.	CCR.ELA-Literacy.RST. 11-12.9. IT-NET 3.8	3B-NI-03;	
11.6.2 - Lab - Switch Security Configuration	K0296	HS-ETS1-2.	ITEA.9.	CCR.ELA-Literacy.RST.	3A-CS-02; 3A-NI-04; 3A-	

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				11-12.3. IT-NET 3.8	NI-05; 3A-NI-06;	
11.6.3 - What did I learn in this module?						
11.6.4 - Module Quiz - Switch Security Configuration						
12.0 - Introduction						
12.0.1 - Why should I take this module?						
12.0.2 - What will I learn in this module?						
12.1 - Introduction to Wireless						
12.1.1 - Benefits of Wireless	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.c RF
12.1.2 - Types of Wireless Networks	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.c RF
12.1.3 - Wireless Technologies	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.c RF
12.1.4 - 802.11 Standards	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.c RF
12.1.5 - Radio Frequencies	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.c RF
12.1.6 - Wireless Standards Organizations	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points

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						1.11 Describe wireless principles 1.11.c RF
12.1.7 - Check Your Understanding - Introduction to Wireless	K0614	HS-ETS1.3.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.c RF
12.2 - WLAN Components						
12.2.1 - Video - WLAN Components	K0614	HS-ETS1.	ITEA.8.	CCR.ELA-Literacy.RST.11-12.7.	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.1.e Controllers(Cisco DNA Center and WLC) 1.11 Describe wireless principles 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.2.2 - Wireless NICs	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.1.e Controllers(Cisco DNA Center and WLC) 1.11 Describe wireless principles 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.2.3 - Wireless Home Router	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.1.e Controllers(Cisco DNA Center and WLC) 1.11 Describe wireless principles 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)

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12.2.4 - Wireless Access Points	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.1.e Controllers(Cisco DNA Center and WLC) 1.11 Describe wireless principles 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.2.5 - AP Categories	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.1.e Controllers(Cisco DNA Center and WLC) 1.11 Describe wireless principles 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.2.6 - Wireless Antennas	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.1.e Controllers(Cisco DNA Center and WLC) 1.11 Describe wireless principles 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.2.7 - Check Your Understanding - WLAN Components	K0614	HS-ETS1.3.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.1.e Controllers(Cisco DNA Center and WLC) 1.11 Describe wireless principles 2.6 Compare Cisco Wireless Architectures and AP modes.

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
						2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.3 - WLAN Operation						
12.3.1 - Video - WLAN Operation	K0614	HS-ETS1.	ITEA.8.	CCR.ELA-Literacy.RST.11-12.7.	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.b SSID 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.3.2 - 802.11 Wireless Topology Modes	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.b SSID 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.3.3 - BSS and ESS	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.b SSID 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.3.4 - 802.11 Frame Structure	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.b SSID 2.6 Compare Cisco Wireless Architectures and AP modes.

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
						2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.3.5 - CSMA/CA	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.b SSID 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.3.6 - Wireless Client and AP Association	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.b SSID 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.3.7 - Passive and Active Discover Mode	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.b SSID 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.3.8 - Check Your Understanding - WLAN Operation	K0614	HS-ETS1.3.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.11 Describe wireless principles 1.11.b SSID 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
						connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.4 - CAPWAP Operation						
12.4.1 - Video - CAPWAP	K0614	HS-ETS1.	ITEA.8.	CCR.ELA-Literacy.RST.11-12.7.	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.1.e Controllers(Cisco DNA Center and WLC) 1.11 Describe wireless principles 1.11.d Encryption 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.4.2 - Introduction to CAPWAP	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.1.e Controllers(Cisco DNA Center and WLC) 1.11 Describe wireless principles 1.11.d Encryption 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.4.3 - Split MAC Architecture	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.1.e Controllers(Cisco DNA Center and WLC) 1.11 Describe wireless principles 1.11.d Encryption 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
12.4.4 - DTLS Encryption	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.1.e Controllers(Cisco DNA Center and WLC) 1.11 Describe wireless principles 1.11.d Encryption 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.4.5 - FlexConnect Aps	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.1.e Controllers(Cisco DNA Center and WLC) 1.11 Describe wireless principles 1.11.d Encryption 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.4.6 - Check Your Understanding - CAPWAP Operation	K0614	HS-ETS1.3.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1 Explain the role and function of network components 1.1.d Access points 1.1.e Controllers(Cisco DNA Center and WLC) 1.11 Describe wireless principles 1.11.d Encryption 2.6 Compare Cisco Wireless Architectures and AP modes. 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.5 - Channel Management						
12.5.1 - Frequency Channel Saturation	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.a Nonoverlapping Wi-Fi channels 1.11.c RF 2.7 Describe physical infrastructure

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
						connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.5.2 - Channel Selection	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.a Nonoverlapping Wi-Fi channels 1.11.c RF 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.5.3 - Plan a WLAN Deployment	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.a Nonoverlapping Wi-Fi channels 1.11.c RF 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.5.4 - Check Your Understanding - Channel Management	K0614	HS-ETS1.3.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.a Nonoverlapping Wi-Fi channels 1.11.c RF 2.7 Describe physical infrastructure connections of WLAN components (AP, WLC, access/trunk ports, LAG)
12.6 - WLAN Threats						
12.6.1 - Video - WLAN Threats	K0375	HS-ETS1.	ITEA.8.	CCR.ELA-Literacy.RST.11-12.7.	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.c RF 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques)
12.6.2 - Wireless Security Overview	K0375	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.c RF 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques)
12.6.3 - DoS Attacks	K0375	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.c RF 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques)

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
12.6.4 - Rogue Access Points	K0375	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.c RF 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques)
12.6.5 - Man-in-the-Middle Attack	K0375	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.c RF 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques)
12.6.6 - Check Your Understanding - WLAN Threats	K0375	HS-ETS1.3.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.c RF 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques)
12.7 - Secure WLANs						
12.7.1 - Video - Secure WLANs	K0428	HS-ETS1.	ITEA.8.	CCR.ELA-Literacy.RST.11-12.7.	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.8 Differentiate authentication, authorization, and accounting concepts 5.9 Describe wireless security protocols (WPA, WPA2, and WPA3)
12.7.2 - SSID Cloaking and MAC Address Filtering	K0428	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.8 Differentiate authentication, authorization, and accounting concepts 5.9 Describe wireless security protocols (WPA, WPA2, and WPA3)

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
12.7.3 - 802.11 Original Authentication Methods	K0428	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.8 Differentiate authentication, authorization, and accounting concepts 5.9 Describe wireless security protocols (WPA, WPA2, and WPA3)
12.7.4 - Shared Key Authentication Methods	K0428	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.8 Differentiate authentication, authorization, and accounting concepts 5.9 Describe wireless security protocols (WPA, WPA2, and WPA3)
12.7.5 - Authenticating a Home User	K0428	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.8 Differentiate authentication, authorization, and accounting concepts 5.9 Describe wireless security protocols (WPA, WPA2, and WPA3)
12.7.6 - Encryption Methods	K0428	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.8 Differentiate authentication, authorization, and accounting concepts 5.9 Describe wireless security protocols (WPA, WPA2, and WPA3)

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12.7.7 - Authentication in the Enterprise	K0428	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.8 Differentiate authentication, authorization, and accounting concepts 5.9 Describe wireless security protocols (WPA, WPA2, and WPA3)
12.7.8 - WPA3	K0428	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.8 Differentiate authentication, authorization, and accounting concepts 5.9 Describe wireless security protocols (WPA, WPA2, and WPA3)
12.7.9 - Check Your Understanding - Secure WLANs	K0428	HS-ETS1.3.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	1.11 Describe wireless principles 1.11.d Encryption 5.1 Define key security concepts (threats, vulnerabilities, exploits and mitigation techniques) 5.8 Differentiate authentication, authorization, and accounting concepts 5.9 Describe wireless security protocols (WPA, WPA2, and WPA3)
12.8 - Module Practice and Quiz						
12.8.1 - What did I learn in this module?						
12.8.2 - Module Quiz - WLAN Concepts						
13.0 - Introduction						
13.0.1 - Why should I take this module?						
13.0.2 - What will I learn to do in this module?						

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13.1 - Remote Site WLAN Configuration						
13.1.1 - Video - Configure a Wireless Network	K0614	HS-ETS1.	ITEA.8.	CCR.ELA-Literacy.RST.11-12.7.	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.8 Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, TACACS+/Radius) 2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings
13.1.2 - The Wireless Router	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.8 Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, TACACS+/Radius) 2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings
13.1.3 - Log in to the Wireless Router	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.8 Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, TACACS+/Radius) 2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings
13.1.4 - Basic Network Setup	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.8 Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, TACACS+/Radius) 2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings
13.1.5 - Basic Wireless Setup	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.8 Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console,

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
						TACACS+/Radius) 2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings
13.1.6 - Configure a Wireless Mesh Network	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.8 Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, TACACS+/Radius) 2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings
13.1.7 - NAT for IPv4	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.8 Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, TACACS+/Radius) 2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings
13.1.8 - Quality of Service	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.8 Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, TACACS+/Radius) 2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings
13.1.9 - Port Forwarding	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.8 Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, TACACS+/Radius) 2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
						WLAN creation, security settings, QoS profiles, and advanced WLAN settings
13.1.10 - Packet Tracer - Configure a Wireless Network	K0614	HS-ETS1.4.	ITEA.8.	IT-NET 3 CCR.ELA-Literacy.RST. 11-12.9.	3B-NI-03;	2.8 Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, TACACS+/Radius) 2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings
13.1.11 - Lab - Configure a Wireless Network	K0614	HS-ETS1.2.	ITEA.8.	CCR.ELA-Literacy.RST. 11-12.3.	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.8 Describe AP and WLC management access connections (Telnet, SSH, HTTP, HTTPS, console, TACACS+/Radius) 2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings
13.2 - Configure a Basic WLAN on the WLC						
13.2.1 - Video - Configure a Basic WLAN on the WLC	K0614	HS-ETS1.	ITEA.8.	CCR.ELA-Literacy.RST. 11-12.7.	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 5.10 Configure WLAN using WPA2 PSK using the GUI
13.2.2 - WLC Topology	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 5.10 Configure WLAN using WPA2 PSK using the GUI
13.2.3 - Log in to the WLC	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings

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						5.10 Configure WLAN using WPA2 PSK using the GUI
13.2.4 - View AP Information	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 5.10 Configure WLAN using WPA2 PSK using the GUI
13.2.5 - Advanced Settings	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 5.10 Configure WLAN using WPA2 PSK using the GUI
13.2.6 - Configure a WLAN	K0614	HS-ETS1.	ITEA.8.	IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 5.10 Configure WLAN using WPA2 PSK using the GUI
13.2.7 - Packet Tracer - Configure a Basic WLAN on the WLC	K0614	HS-ETS1.4.	ITEA.8.	IT-NET 3 CCR.ELA-Literacy.RST. 11-12.9.	3B-NI-03;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 5.10 Configure WLAN using WPA2 PSK using the GUI
13.3 - WLAN Configuration						
13.3.1 - Video - Define an SNMP and RADIUS Server on the WLC	K0452	HS-ETS1.	ITEA.8.	CCR.ELA-Literacy.RST. 11-12.7.	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 4.4 Explain the function of SNMP in network operations 5.8 Differentiate authentication, authorization, and accounting concepts

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
						5.10 Configure WLAN using WPA2 PSK using the GUI
13.3.2 - SNMP and RADIUS	K0452	HS-ETS1.	ITEA.8.	IT-NET 2.2 IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 4.4 Explain the function of SNMP in network operations 5.8 Differentiate authentication, authorization, and accounting concepts 5.10 Configure WLAN using WPA2 PSK using the GUI
13.3.3 - Configure SNMP Server Information	K0452	HS-ETS1.	ITEA.8.	IT-NET 2.2 IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 4.4 Explain the function of SNMP in network operations 5.8 Differentiate authentication, authorization, and accounting concepts 5.10 Configure WLAN using WPA2 PSK using the GUI
13.3.4 - Configure RADIUS Server Information	K0452	HS-ETS1.	ITEA.8.	IT-NET 2.2 IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 4.4 Explain the function of SNMP in network operations 5.8 Differentiate authentication, authorization, and accounting concepts 5.10 Configure WLAN using WPA2 PSK using the GUI
13.3.5 - Video - Configure a VLAN for a New WLAN	K0452	HS-ETS1.	ITEA.8.	CCR.ELA-Literacy.RST.11-12.7.	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
						WLAN creation, security settings, QoS profiles, and advanced WLAN settings 4.4 Explain the function of SNMP in network operations 5.8 Differentiate authentication, authorization, and accounting concepts 5.10 Configure WLAN using WPA2 PSK using the GUI
13.3.6 - Topology with VLAN 5 Addressing	K0452	HS-ETS1.	ITEA.8.	IT-NET 2.2 IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 4.4 Explain the function of SNMP in network operations 5.8 Differentiate authentication, authorization, and accounting concepts 5.10 Configure WLAN using WPA2 PSK using the GUI
13.3.7 - Configure a New Interface	K0452	HS-ETS1.	ITEA.8.	IT-NET 2.2 IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 4.4 Explain the function of SNMP in network operations 5.8 Differentiate authentication, authorization, and accounting concepts 5.10 Configure WLAN using WPA2 PSK using the GUI
13.3.8 - Video - Configure a DHCP Scope	K0452	HS-ETS1.	ITEA.8.	CCR.ELA-Literacy.RST.11-12.7.	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 4.4 Explain the function of SNMP in network operations 5.8 Differentiate authentication,

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
						authorization, and accounting concepts 5.10 Configure WLAN using WPA2 PSK using the GUI
13.3.9 - Configure a DHCP Scope	K0452	HS-ETS1.	ITEA.8.	IT-NET 2.2 IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 4.4 Explain the function of SNMP in network operations 5.8 Differentiate authentication, authorization, and accounting concepts 5.10 Configure WLAN using WPA2 PSK using the GUI
13.3.10 - Video - Configure a WPA2 Enterprise WLAN	K0452	HS-ETS1.	ITEA.8.	CCR.ELA-Literacy.RST.11-12.7.	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 4.4 Explain the function of SNMP in network operations 5.8 Differentiate authentication, authorization, and accounting concepts 5.10 Configure WLAN using WPA2 PSK using the GUI
13.3.11 - Configure a WPA2 Enterprise WLAN	K0452	HS-ETS1.	ITEA.8.	IT-NET 2.2 IT-NET 3.7	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 4.4 Explain the function of SNMP in network operations 5.8 Differentiate authentication, authorization, and accounting concepts 5.10 Configure WLAN using WPA2 PSK using the GUI

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13.3.12 - Packet Tracer - Configure a WPA2 Enterprise WLAN on the WLC	K0452	HS-ETS1.4.	ITEA.8.	IT-NET 3 CCR.ELA-Literacy.RST.11-12.9.	3B-NI-03;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 4.4 Explain the function of SNMP in network operations 5.8 Differentiate authentication, authorization, and accounting concepts 5.10 Configure WLAN using WPA2 PSK using the GUI
13.4 - Troubleshoot WLAN Issues						
13.4.1 - Troubleshooting Approaches	S0041	HS-ETS1.	ITEA.10.	IT-NET 3.7 IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 5.10 Configure WLAN using WPA2 PSK using the GUI
13.4.2 - Wireless Client Not Connecting	S0041	HS-ETS1.	ITEA.10.	IT-NET 3.7 IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 5.10 Configure WLAN using WPA2 PSK using the GUI
13.4.3 - Troubleshooting When the Network Is Slow	S0041	HS-ETS1.	ITEA.10.	IT-NET 3.7 IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 5.10 Configure WLAN using WPA2 PSK using the GUI
13.4.4 - Updating Firmware	S0041	HS-ETS1.	ITEA.10.	IT-NET 3.7 IT-NET 5	3A-NI-04; 3A-NI-05; 3A-NI-06;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 5.10 Configure WLAN using WPA2 PSK using the GUI

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13.4.5 - Packet Tracer - Troubleshoot WLAN Issues	S0041	HS-ETS1.4.	ITEA.10.	IT-NET 3 CCR.ELA-Literacy.RST. 11-12.9.	3B-NI-03;	2.9 Configure the components of a wireless LAN access for client connectivity using GUI only such as WLAN creation, security settings, QoS profiles, and advanced WLAN settings 5.10 Configure WLAN using WPA2 PSK using the GUI
13.5 - Module Practice and Summary						
13.5.1 - Packet Tracer - WLAN Configuration	S0041	HS-ETS1.4.	ITEA.8.	IT-NET 3 CCR.ELA-Literacy.RST. 11-12.9.	3B-NI-03;	
13.5.2 - Packet Tracer - Wireless Technology Exploration	S0042	HS-ETS1.4.	ITEA.8.	IT-NET 3 CCR.ELA-Literacy.RST. 11-12.9.	3B-NI-03;	
13.5.2 - What did I learn in this module?						
13.5.3 - Module Quiz - WLAN Configuration						
14.0 - Introduction						
14.0.1 - Why should I take this module?						
14.0.2 - What will I learn to do in this module?						
14.1 - Path Determination						
14.1.1 - Two Functions of Router	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1.a Routers 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.2.a Longest Match
14.1.2 - Router Functions Example	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1.a Routers 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.2.a Longest Match
14.1.3 - Best Path Equals Longest Match	S0178	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1.a Routers 3.1.a Routing protocol code 3.1.b Prefix

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						3.1.c Network Mask 3.2.a Longest Match
14.1.4 - IPv4 Address Longest Match Example	S0178	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1.a Routers 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.2.a Longest Match
14.1.5 - IPv6 Address Longest Match Example	S0178	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1.a Routers 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.2.a Longest Match
14.1.6 - Build the Routing Table	K0443	HS-ETS1.	ITEA.8.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1.a Routers 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.2.a Longest Match
14.1.7 - Check Your Understanding - Path Determination	K0443	HS-ETS1.3.		IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1.a Routers 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.2.a Longest Match
14.2 - Packet Forwarding						
14.2.1 - Packet Forwarding Decision Process	K0011	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1.a Routing protocol code 3.1.b Prefix 3.1.d Next Hop 3.1.g Gateway of last resort 3.2.a Longest Match
14.2.2 - End-to-End Packet Forwarding	K0011	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1.a Routing protocol code 3.1.b Prefix 3.1.d Next Hop 3.1.g Gateway of last resort 3.2.a Longest Match
14.2.3 - Packet Forwarding Mechanisms	K0011	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1.a Routing protocol code 3.1.b Prefix 3.1.d Next Hop 3.1.g Gateway of last resort 3.2.a Longest Match
14.2.4 - Check Your Understanding - Packet Forwarding	K0011	HS-ETS1.3.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-	3.1.a Routing protocol code 3.1.b Prefix 3.1.d Next Hop

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					NI-05; 3A-NI-06;	3.1.g Gateway of last resort 3.2.a Longest Match
14.3 - Basic Router Configuration Review						
14.3.1 - Topology	S0041	HS-ETS1.	ITEA.2.	CCR.ELA-Literacy.RST.11-12.3.	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1.a Routers
14.3.2 - Configuration Commands	S0041	HS-ETS1.	ITEA.2.	CCR.ELA-Literacy.RST.11-12.3.	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1.a Routers
14.3.3 - Verification Commands	S0041	HS-ETS1.	ITEA.2.	CCR.ELA-Literacy.RST.11-12.3.	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1.a Routers
14.3.4 - Filter Command Output	S0041	HS-ETS1.	ITEA.2.	CCR.ELA-Literacy.RST.11-12.3.	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	1.1.a Routers
14.3.5 - Packet Tracer - Basic Router Configuration Review	S0041	HS-ETS1.4.	ITEA.2.	IT-NET 3 CCR.ELA-Literacy.RST.11-12.9.	3B-NI-03;	1.1.a Routers
14.4 - IP Routing Table						
14.4.1 - Route Sources	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1 Interpret the components of routing table 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.1.d Next Hop 3.1.e Administrative distance 3.1.f Metric 3.1.g Gateway of last resort 3.2.a Longest Match 3.2.b Administrative distance
14.4.2 - Routing Table Principles	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1 Interpret the components of routing table 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask

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						3.1.d Next Hop 3.1.e Administrative distance 3.1.f Metric 3.1.g Gateway of last resort 3.2.a Longest Match 3.2.b Administrative distance
14.4.3 - Routing Table Entries	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1 Interpret the components of routing table 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.1.d Next Hop 3.1.e Administrative distance 3.1.f Metric 3.1.g Gateway of last resort 3.2.a Longest Match 3.2.b Administrative distance
14.4.4 - Directly Connected Networks	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1 Interpret the components of routing table 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.1.d Next Hop 3.1.e Administrative distance 3.1.f Metric 3.1.g Gateway of last resort 3.2.a Longest Match 3.2.b Administrative distance
14.4.5 - Static Routes	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1 Interpret the components of routing table 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.1.d Next Hop 3.1.e Administrative distance 3.1.f Metric 3.1.g Gateway of last resort 3.2.a Longest Match 3.2.b Administrative distance
14.4.6 - Static Routes in the IP Routing Table	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-	3.1 Interpret the components of routing table

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					NI-05; 3A-NI-06;	3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.1.d Next Hop 3.1.e Administrative distance 3.1.f Metric 3.1.g Gateway of last resort 3.2.a Longest Match 3.2.b Administrative distance
14.4.7 - Dynamic Routing Protocols	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1 Interpret the components of routing table 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.1.d Next Hop 3.1.e Administrative distance 3.1.f Metric 3.1.g Gateway of last resort 3.2.a Longest Match 3.2.b Administrative distance
14.4.8 - Dynamic Routes in the IP Routing Table	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1 Interpret the components of routing table 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.1.d Next Hop 3.1.e Administrative distance 3.1.f Metric 3.1.g Gateway of last resort 3.2.a Longest Match 3.2.b Administrative distance
14.4.9 - Default Route	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1 Interpret the components of routing table 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.1.d Next Hop 3.1.e Administrative distance 3.1.f Metric 3.1.g Gateway of last resort

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14.4.10 - Structure of an IPv4 Routing Table	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1 Interpret the components of routing table 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.1.d Next Hop 3.1.e Administrative distance 3.1.f Metric 3.1.g Gateway of last resort 3.2.a Longest Match 3.2.b Administrative distance
14.4.11 - Structure of an IPv6 Routing Table	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1 Interpret the components of routing table 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.1.d Next Hop 3.1.e Administrative distance 3.1.f Metric 3.1.g Gateway of last resort 3.2.a Longest Match 3.2.b Administrative distance
14.4.12 - Administrative Distance	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1 Interpret the components of routing table 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.1.d Next Hop 3.1.e Administrative distance 3.1.f Metric 3.1.g Gateway of last resort 3.2.a Longest Match 3.2.b Administrative distance
14.4.13 - Check Your Understanding - IP Routing Table	K0443	HS-ETS1.3.	ITEA.2.	CCR.ELA-Literacy.RST.11-12.4.	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1 Interpret the components of routing table 3.1.a Routing protocol code 3.1.b Prefix 3.1.c Network Mask 3.1.d Next Hop

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						3.1.e Administrative distance 3.1.f Metric 3.1.g Gateway of last resort 3.2.a Longest Match 3.2.b Administrative distance
14.5 - Static and Dynamic Routing						
14.5.1 - Static or Dynamic?	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1.f Metric 3.2.c Routing protocol metric
14.5.2 - Dynamic Routing Evolution	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1.f Metric 3.2.c Routing protocol metric
14.5.3 - Dynamic Routing Protocol Concepts	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1.f Metric 3.2.c Routing protocol metric
14.5.4 - Best Path	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1.f Metric 3.2.c Routing protocol metric
14.5.5 - Load Balancing	K0443	HS-ETS1.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1.f Metric 3.2.c Routing protocol metric
14.5.6 - Check Your Understanding - Dynamic and Static Routing	K0443	HS-ETS1.3.	ITEA.2.	IT-NET 3	3A-CS-02; 3A-NI-04; 3A-NI-05; 3A-NI-06;	3.1.f Metric 3.2.c Routing protocol metric
14.6 - Module Practice and Quiz						
14.6.1 - What did I learn in this module?						
14.6.2 - Module Quiz - Routing Concepts						
15.0 - Introduction						
15.0.1 - Why should I take this module?						
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15.1 - Static Routes						

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15.1.1 - Types of Static Routes	K0443	HS-ETS1.	ITEA.2.	IT-NET 3.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.3.a Default route 3.3.b Network route 3.3.c Host route 3.3.d Floating static
15.1.2 - Next-Hop Options	K0443	HS-ETS1.	ITEA.2.	IT-NET 3.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.3.a Default route 3.3.b Network route 3.3.c Host route 3.3.d Floating static
15.1.3 - IPv4 Static Route Command	K0443	HS-ETS1.	ITEA.9.	IT-NET 3.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.3.a Default route 3.3.b Network route 3.3.c Host route 3.3.d Floating static
15.1.4 - IPv6 Static Route Command	K0443	HS-ETS1.	ITEA.9.	IT-NET 3.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.3.a Default route 3.3.b Network route 3.3.c Host route 3.3.d Floating static
15.1.5 - Dual-Stack Topology	K0443	HS-ETS1.	ITEA.9.	IT-NET 3.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.3.a Default route 3.3.b Network route 3.3.c Host route 3.3.d Floating static
15.1.6 - IPv4 Starting Routing Tables	K0443	HS-ETS1.	ITEA.9.	IT-NET 3.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.3.a Default route 3.3.b Network route 3.3.c Host route 3.3.d Floating static
15.1.7 - IPv6 Starting Routing Tables	K0443	HS-ETS1.	ITEA.9.	IT-NET 3.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.3.a Default route 3.3.b Network route

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15.1.8 - Check Your Understanding - Static Routes	K0443	HS-ETS1.3.	ITEA.7.	CCR.ELA-Literacy.RST.11-12.4.	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.3.a Default route 3.3.b Network route 3.3.c Host route 3.3.d Floating static
15.2 - Configure IP Static Routes						
15.2.1 - IPv4 Next-Hop Static Route	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.b Network route
15.2.2 - IPv6 Next-Hop Static Route	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.b Network route
15.2.3 - IPv4 Directly Connected Static Route	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.b Network route
15.2.4 - IPv6 Directly Connected Static Route	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.b Network route
15.2.5 - IPv4 Fully Specified Static Route	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.b Network route
15.2.6 - IPv6 Fully Specified Static Route	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.b Network route
15.2.7 - Verify a Static Route	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.b Network route
15.2.8 - Syntax Checker - Configure Static Routes	S0170	HS-ETS1.3.	ITEA.2.	CCR.ELA-Literacy.RST.11-12.4.	3B-NI-03;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.b Network route

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15.3 - Configure IP Default Static Routes						
15.3.1 - Default Static Route	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.1.g Gateway of last resort 3.3.a Default route
15.3.2 - Configure a Default Static Route	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.1.g Gateway of last resort 3.3.a Default route
15.3.3 - Verify a Default Static Route	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.1.g Gateway of last resort 3.3.a Default route
15.3.4 - Syntax Checker - Configure Default Static Routes	S0170	HS-ETS1.3.	ITEA.2.	CCR.ELA-Literacy.RST.11-12.4.	3B-NI-03;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.1.g Gateway of last resort 3.3.a Default route
15.4 - Configure Floating Static Routes						
15.4.1 - Floating Static Routes	K0443	HS-ETS1.	ITEA.2.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.d Floating static
15.4.2 - Configure IPv4 and IPv6 Floating Static Routes	K0443	HS-ETS1.	ITEA.2.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.d Floating static
15.4.3 - Test the Floating Static Route	K0443	HS-ETS1.	ITEA.2.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.d Floating static
15.4.4 - Syntax Checker - Configure Floating Static Route	S0170	HS-ETS1.3.	ITEA.2.	CCR.ELA-Literacy.RST.11-12.4.	3B-NI-03;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.d Floating static
15.5 - Configure Static Host Routes						

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
15.5.1 - Host Routes	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.c Host route
15.5.2 - Automatically Installed Host Routes	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.c Host route
15.5.3 - Static Host Routes	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.c Host route
15.5.4 - Configure Static Host Routes	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.c Host route
15.5.5 - Verify Static Host Routes	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.c Host route
15.5.6 - Configure IPv6 Static Host Route with Link-Local Next-Hop	K0443	HS-ETS1.	ITEA.9.	IT-NET 4.1	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.c Host route
15.5.7 - Syntax Checker - Configure Static Host Routes	K0443	HS-ETS1.3.	ITEA.2.	CCR.ELA-Literacy.RST. 11-12.4.	3A-CS-02; 3A-NI-04; 3A-NI-05;	3.1.a Routing protocol code 3.1.d Next hop 3.1.e Administrative distance 3.3.c Host route
15.6 - Module Practice and Quiz						
15.6.1 - Packet Tracer - Configure IPv4 and IPv6 Static and Default Routes	S0170	HS-ETS1.4.	ITEA.9.	IT-NET 3 CCR.ELA-Literacy.RST. 11-12.9.	3B-NI-03;	
15.6.2 - Lab - Configure IPv4 and IPv6 Static and Default Routes	S0170	HS-ETS1.2.	ITEA.9.	CCR.ELA-Literacy.RST. 11-12.3.	3A-CS-02; 3A-NI-04; 3A-NI-05;	
15.6.3 - What did I learn in this module?						
15.6.4 - Module Quiz - IP Static Routing						
16.0 - Introduction						

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Page	NICE	NGSS	ITEA	DODEA	CSTA	Exam Objective
16.0.1 - Why should I take this module?						
16.0.2 - What will I learn to do in this module?						
16.1 - Packet Processing with Static Routes						
16.1.1 - Static Routes and Packet Forwarding	S0170	HS-ETS1.	ITEA.10.	IT-NET 5	3A-CS-02; 3A-NI-04; 3A-NI-05;	
16.1.2 - Check Your Understanding - Packet Processing with Static Routes	S0170	HS-ETS1.3.	ITEA.10.	CCR.ELA-Literacy.RST.11-12.4.	3A-CS-02; 3A-NI-04; 3A-NI-05;	
16.2 - Troubleshoot IPv4 Static and Default Route Configuration						
16.2.1 - Network Changes	S0170	HS-ETS1.	ITEA.10.	IT-NET 5	3A-CS-02; 3A-NI-04; 3A-NI-05;	
16.2.2 - Common Troubleshooting Commands	S0170	HS-ETS1.	ITEA.10.	IT-NET 5	3A-CS-02; 3A-NI-04; 3A-NI-05;	
16.2.3 - Solve a Connectivity Problem	S0170	HS-ETS1.	ITEA.10.	IT-NET 5	3A-CS-02; 3A-NI-04; 3A-NI-05;	
16.2.4 - Syntax Checker - Troubleshoot IPv4 Static and Default Routes	K0443	HS-ETS1.3.	ITEA.10.	CCR.ELA-Literacy.RST.11-12.4.	3A-CS-02; 3A-NI-04; 3A-NI-05;	
16.3 - Module Practice and Quiz						
16.3.1 - Packet Tracer - Troubleshoot Static and Default Routes	S0170	HS-ETS1.4	ITEA.10.	IT-NET 3 CCR.ELA-Literacy.RST.11-12.9.	3B-NI-03;	
16.3.2 - Lab - Troubleshoot Static and Default Routes	S0170	HS-ETS1.2	ITEA.10.	CCR.ELA-Literacy.RST.11-12.3.		
16.3.3 - What did I learn in this module?						
16.3.4 - Module Quiz - Troubleshoot Static and Default Routes						