

## Program Of HUAWEI (2/1/ 2017 – 15/6/2017)

<b>IP Technology Training</b>		<b>Date</b>
<b>1</b>	<p><b>IP Network Technologies Fundamental Training</b> This course will introduce basic concepts of data communication &amp; IP networking, describe basic concepts of data traffic, identify basic concepts of networking and the internet, list the common organizations for standardization, identify components of a typical IP network.</p>	<p><b>26/2 – 2/3</b> <b>21/5 – 25/5</b> <b>(1 week)</b></p>
<b>2</b>	<p><b>IP Switching Technologies (with experimental lab.)</b> In this course you will know the differentiate between various types of LAN technologies, describe how the Ethernet works, explain the need of VLAN, Demonstrate the Spanning Tree Protocol (STP), Explain how WLAN (Wi-Fi) works.</p>	<p><b>2/1 – 12/1</b> <b>26/3 – 6/4</b> <b>(2 week)</b></p>
<b>3</b>	<p><b>IP Routing Technology (with experimental lab.)</b> In this course understand packet routing in IP networks, Identify and differentiate various routing-related terminologies, Describe static and dynamic routing protocols, Explain RIPv1, RIPv2, and OSPF routing protocols, Perform route summarization for efficient routing, Understand concepts related to IPv6</p>	<p><b>15/1 -26/1</b> <b>9/4 – 20/4</b> <b>(2 week)</b></p>
<b>Wireless Technology Training</b>		
<b>4</b>	<p><b>GSM GPRS System Fundamental and Principle:</b> Global System for Mobile Communication (<b>GSM</b>): Grasp the basic idea &amp; the structure of GSM and the protocol used. General Packet Radio Service (<b>GPRS</b>): Describe the GPRS system structure important interface channel structures and wireless subsystem.</p>	<p><b>2/1 – 12/1</b> <b>26/3 – 6/4</b> <b>(2 week)</b></p>
<b>5</b>	<p><b>WCDMA RAN System Overview</b> Wide band-Code Division Multiple Access (<b>WCDMA</b>): this course describe the development of (3G), the advantage of CDMA principle, characterize code sequence, the fundamental of RAN and Describe feature of wireless propagation.</p>	<p><b>15/1 -26/1</b> <b>9/4 – 20/4</b> <b>(2 week)</b></p>
<b>6</b>	<p><b>LTE (FDD/TDD) System Overview</b> Long Term Evolution (<b>LTE</b>) (4G): Describe the LTE development and features, outline LTE network architecture, explain LTE Key Technology, describe LTE Protocol and channel, and Describe LTE deployment.</p>	<p><b>5/3 – 9/3</b> <b>28/5 – 1/6</b> <b>(1 week)</b></p>
<b>Transmission Network Technology Training</b>		
<b>7</b>	<p><b>SDH Fundamental Training</b> Synchronous Digital Hierarchy (<b>SDH</b>): Explain the basic of SDH multiplexing standard know the features, applications and advantages of SDH based equipment.</p>	<p><b>12/2 – 16/2</b> <b>7/5 – 11/5</b> <b>(1 week)</b></p>
<b>8</b>	<p><b>WDM Fundamental Training:</b> Wavelength Division Multiplexing (<b>WDM</b>): With the development of telecommunication, the requirements of the transmission capacity and service categories are becoming bigger and bigger, under this background, WDM technology emerged.</p>	<p><b>19/2 – 23/2</b> <b>14/5 – 18/5</b> <b>(1 week)</b></p>

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**WAN Technology**

9	<p><b><u>Wide Area Network (WAN):</u></b>  it describe various WAN technologies:  <b>-HDLC Principle and Configuration</b>  High-level Data Link Control (<b>HDLC</b>): is an ISO based Data Link Layer protocol standard. It is used to encapsulate data on over serial links.  <b>- PPP Principle and Configuration</b>  Point-to-Point Protocol (<b>PPP</b>): provides a standard method for transporting multi-protocol datagram over point to point links. It is a widely used point-to-point data link layer based communication protocol.  <b>-FR Principle and Configuration</b>  Frame relay (<b>FR</b>): is a connection-oriented technology operating at the data link layer. It is used for LAN and WAN connection over public or private networks.</p>	<p><b>12/3 - 16/3</b>  <b>4/6 – 8/6</b>  <b>(1 week)</b></p>
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**Access Network Technology Training**

10	<p><b><u>Broadband&amp; Narrowband Fundamentals Training</u></b>  Understand basic concepts of V5 interface, understand V5 interface sub protocol category and function, master the normal calling flow, and you can deal with some trouble through tracing V5 signaling.  Explain the : Basic Characteristic of ATM, ATM Network and interface, the differentiation between VP Switch and VC Switch, ATM Service Classification.</p>	<p><b>26/2 – 2/3</b>  <b>21/5 – 25/5</b>  <b>(1 week)</b></p>
11	<p><b><u>xDSL Fundamental</u></b>  Digital Subscriber Line (<b>DSL</b>): is the most popular technology in broadband network. Now the Broadband Access Service is widely used in the metro network.</p>	<p><b>19/3 – 23/3</b>  <b>11/6 – 15/6</b>  <b>(1 week)</b></p>
12	<p><b><u>FTTx Network Overview Training &amp; GPON Fundamental Training (with experimental lab.)</u></b>  Fiber to the x (<b>FTTx</b>): is a generic term for any broadband network architecture using optical fiber.  The gigabit passive optical network (<b>GPON</b>) is a network architecture that brings fiber cabling and signals to the home with higher bandwidth and higher efficient using larger, variable-length packets.</p>	<p><b>12/3 - 16/3</b>  <b>4/6 – 8/6</b>  <b>(1 week)</b></p>
13	<p><b><u>Broadband Service Protocols &amp; MPLS/PWE3 Fundamentals Training</u></b>  Multiprotocol Label Switching (<b>MPLS</b>): is a mechanism in high-performance telecommunication networks.  Pseudowire Emulation Edge to Edge(<b>PWE3</b>): specifies the encapsulation, transport, control, management, internetworking and security of services emulated over IETF specified PSNs.</p>	<p><b>5/3 – 9/3</b>  <b>28/5 – 1/6</b>  <b>(1 week)</b></p>

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<b>14</b>	<p><b><u>IP Multicast Technologies &amp; Voice Service Protocols</u></b>            IP multicast technology realizes the high-efficient Point to multipoint data transfer in IP networks, effectively saves the network bandwidth and reduces the network load. It is widely applied in such fields as real-time data transfer, multimedia conference, data copy, game and simulation.</p>	<p><b>19/3 – 23/3</b>  <b>11/6 – 15/6</b>  <b>(1 week)</b></p>
<b>Network Security</b>		
<b>15</b>	<p><b><u>Firewall Product Basics &amp; Eudemon Basics Functions and Configuration: (with experimental lab.)</u></b>            Gain knowledge of the development history of firewall technology. Acquire knowledge of the capability and features architecture and performance of the Eudemon series firewall. Knowledge the modes of operation for the Eudemon firewall as well as security area concepts, access control lists, network address, translation etc, used to enhance the defense capability of the firewall.</p>	<p><b>29/1 – 9/2</b>  <b>23/4 – 4/5</b>  <b>(2 week)</b></p>
<b>Switching Technology</b>		
<b>16</b>	<p><b><u>VLAN Principles and Configuration and VLAN Routing &amp; Ethernet Overview, Device Principles and Port Technology (with experimental lab.)</u></b>            VLAN technology provides flexible control for Ethernet and is applied widely.            A VLAN effectively isolates broadcasts, but also restricts communication between different VLANs. THE ability to enable communication across these VLAN boundaries becomes an issue.            VLAN routing resolves this problem to allow successful communication between selected VLAN boundaries.            Ethernet Device: relies on the operation of devise such as the hub and switch to provide lower layer operation. The principle characteristics of such devices is crucial to fully understanding the behavior surrounding frame transmission.            Ethernet Port: explains the behavior and features commonly associated with Ethernet port technology, as well as configuration that assists engineers in managing and optimizing Ethernet</p>	<p><b>29/1 – 9/2</b>  <b>23/4 – 4/5</b>  <b>(2 week)</b></p>
<b>17</b>	<p><b><u>STP and VRRP Principles &amp; Configuration (with experimental lab.)</u></b>            Spanning Tree Protocol (<b>STP</b>): in this course understand the purpose and the basic principles of STP and build configuration skills for managing STP behavior.            Virtual Router Redundancy Protocol (<b>VRRP</b>): describes a protocol that supports dynamic gateway election, through election of a master frame a group of (VRRP) routers, the master will associate with a virtual router and be identified as redundant gateway for a network.</p>	<p><b>12/2 – 23/2</b>  <b>7/5 – 18/5</b>  <b>(2 week)</b></p>

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