Government of Pakistan

National Vocational and Technical Training Commission

Prime Minister's Hunarmand Pakistan Program

"Skills for All"

Course Contents / Lesson Plan

Course Title: Networking & Cloud Computing

Duration: 3 Months

Course Title	Networking & Cloud Computing
Objectives and Expectations	**Employable skills and hands-on practice for Networking and Cloud Computing** Networking has become one of the most attractive career profiles among candidates. From the basics of Routing and Switching to Cloud Networking, the advancements happening in the networking domain are beyond one's imagination. Cloud computing powers modern-day industry through seamless provision of servers, storage, networking, software and analytics. Study cloud computing to develop in-demand skills and expertise in virtualization, cloud infrastructure, app development and security. This is a special course designed to address unemployment in the youth. The course aims to achieve the above objective through hands on practical training delivery by a team of dedicated professionals having rich market/work experience. This course is therefore not just for developing a theoretical understanding/back ground of the trainees. Contrary to that it is primarily aimed at equipping the trainees to perform commercially in a market space in independent capacity or as a member of a team. The course therefore is designed to impart not only technical skills but also soft skills (i.e interpersonal/communication skills; personal grooming of the trainees etc) as well as entrepreneurial skills (i.e. marketing skills; free lancing etc.). The course also seeks to inculcate work ethics to foster better citizenship in general and improve the image of Pakistani work force in particular **<u>Main Expectations</u>:** In short, the course under reference should be delivered by professional instructors in such a robust hands-on manner that the trainees are comfortably able to employ their skills for earning money (through wage/self-employment) at its conclusion. This course thus clearly goes beyond the domain of the traditional training practices in vogue and underscores an expectation that a market-centric approach will be adopted as the main driving force while delivering it. The instructors should therefore be experienced enough to be able to identify the training needs for the possible market roles available out there. Moreover, they should also know the strengths and weaknesses of each trainee to prepare them for such market roles during/after the training. i. Specially designed practical tasks to be performed by the trainees have been included in the Annexure-I to this document. The record of all tasks performed individually or in groups must be preserved by the management of the training Institute clearly labeling name, trade, session, etc so that these are ready to be physically inspected/verified through monitoring visits from time to time. The weekly distribution of tasks has also been indicated in the weekly lesson plan given in this document. ii. To materialize the main expectations, a special module on **<u>Job Search & Entrepreneurial Skills</u>** has been included in the latter part of this course (3rd month) through which, the trainees will be made aware of the Job search techniques in the local as well as international job markets (Gulf countries). Awareness around the visa process and immigration laws of the most favored

labor destination countries also form a part of this module. Moreover, the trainees would also be encouraged to venture into self-employment and exposed to the main requirements in this regard. It is also expected that a sense of civic duties/roles and responsibilities will also be inculcated in the trainees to make them responsible citizens of the country.

iii. A module on **Work Place Ethics** has also been included to highlight the importance of good and positive behavior in the workplace in the line with the best practices elsewhere in the world. An outline of such qualities has been given in the Appendix to this document. Its importance should be conveyed in a format that is attractive and interesting for the trainees such as through PPT slides +short video documentaries. Needless to say, that if the training provider puts his heart and soul into these otherwise non-technical components, the image of the Pakistani workforce would undergo a positive transformation in the local as well as international job markets.

To maintain interest and motivation of the trainees throughout the course, modern techniques such as:

- Motivational Lectures
- Success Stories
- Case Studies

These techniques would be employed as an additional training tool wherever possible (these are explained in the subsequent section on Training Methodology).

Lastly, evaluation of the competencies acquired by the trainees will be done objectively at various stages of the training and a proper record of the same will be maintained. Suffice to say that for such evaluations, practical tasks would be designed by the training providers to gauge the problem-solving abilities of the trainees.

(i)   Motivational Lectures

The proposed methodology for the training under reference employs motivation as a tool. Hence besides the purely technical content, a trainer is required to include elements of motivation in his/her lecture. To inspire the trainees to utilize the training opportunity to the full and strive towards professional excellence. Motivational lectures may also include general topics such as the importance of moral values and civic role & responsibilities as a Pakistani. A motivational lecture should be delivered with enough zeal to produce a deep impact on the trainees. It may comprise of the following:

Clear Purpose to convey the message to trainees effectively.
Personal Story to quote as an example to follow.
Trainees Fit so that the situation is actionable by trainees and not represent a just idealism.
Ending Points to persuade the trainees on changing themselves.
A good motivational lecture should help drive creativity, curiosity, and spark
the desire needed for trainees to want to learn more.
The impact of a successful motivational strategy is amongst others commonly visible
in increased class participation ratios. It increases the trainees' willingness to be engaged on the practical tasks for a longer time without boredom and loss of interest because they can see in their mind's eye where their hard work would take them in short (1-3 years); medium (3 -10 years) and long term (more than 10 years).

As this tool is expected that the training providers would make arrangements for regular well planned motivational lectures as part of a coordinated strategy interspersed throughout the training period as suggested in the weekly lesson plans in this document.

Course-related motivational lectures online link is available in **Annexure-II**.

(ii) Success Stories

Another effective way of motivating the trainees is using Success Stories. Its inclusion in the weekly lesson plan at regular intervals has been recommended till the end of the training.

A success story may be disseminated orally, through a presentation, or using a video/documentary of someone that has risen to fortune, acclaim, or brilliant achievement. A success story shows how a person achieved his goal through hard work, dedication, and devotion. An inspiring success story contains compelling and significant facts articulated clearly and easily comprehendible words. Moreover, it is helpful if it is assumed that the reader/listener knows nothing of what is being revealed. The optimum impact is created when the

story is revealed in the form of: -

Directly in person (At least 2-3 cases must be arranged by the training institute)

Through an audio/ videotaped message (2-3 high-quality videos must be arranged by the training institute)

It is expected that the training provider would collect relevant high-quality success stories for inclusion in the training as suggested in the weekly lesson plan given in this document.

Suggestive structure and sequence of a sample success story and its various shapes can be seen in **Annexure III**.

(iii) Case Studies

Where a situation allows, case studies can also be presented to the trainees to widen their understanding of the real-life specific problem/situation and to explore the solutions.

In simple terms, the case study method of teaching uses a real-life case example/a typical case to demonstrate a phenomenon in action and explain theoretical as well as practical aspects of the knowledge related to the same. It is an effective way to help the trainees comprehend in depth both the theoretical and practical aspects of the complex phenomenon in depth with ease. Case teaching can also stimulate the trainees to participate in discussions and thereby boost their confidence. It also makes the classroom atmosphere interesting thus maintaining the trainee interest in training till the end of the course.

Depending on suitability to the trade, the weekly lesson plan in this document

may suggest case studies be presented to the trainees. The trainer may adopt a PowerPoint presentation or video format for such case studies whichever is deemed suitable but only those cases must be selected that are relevant and of a learning value.

The Trainees should be required and supervised to carefully analyze the cases.

For this purpose, they must be encouraged to inquire and collect specific information/data, actively participate in the discussions, and intended solutions to the problem/situation.

Case studies can be implemented in the following ways: -

      i.   A good quality trade-specific documentary (At least 2-3 documentaries must be arranged by the training

	institute)
	ii. Health &Safety case studies (2 cases regarding safety and industrial accidents must be arranged by the training institute)
	Field visits (At least one visit to a trade-specific major industry/ site must be arranged by the training institute)
Trainees Entry-level	**Beginner to Intermediate**
Learning Outcomes of the course	By the end of this course, the trainees should gain the following competencies: Understanding of Networking techniques Campus Design & Enterprise Network Configuration of IP Connectivity Configuration of Advance Routing and Routing Protocols Management of Network Security of Network Problems Solving Skills Troubleshooting Skills Network Monitoring Skills Network Designing High Availability of Network Remote Site Management Secure and Encrypted traffic b/w branches Implementation of Network Policies Programmability and Automation Understanding of Cloud Computing Architecture Distinguish between traditional and cloud computing models in terms of business value. Learn fundamental concepts of cloud computing. Identify technical challenges and mitigation measures involved in cloud computing. Understand latest digitization trends associated with cloud computing. Design and build enterprise-to-carrier grade private and public cloud. Learning focus would be on following: - Understand various types of virtualizations (compute, storage and network) Identify leading hypervisor manufacturers. Learn the fundamentals concepts and deployment of vSphere virtual infrastructure. Security threats and challenges in private and public cloud buildup. Understand design principles in securing your cloud. Security management in cloud including identity and access management, next generation security protection and application programming interface (API) based security. Learn about advanced load balancing architecture in cloud.

	Identify common cloud attack vectors and remediating controls. Learn Off the Shelf Cloud Solutions like Microsoft Azure and Amazon Web Services (AWS) Detailed understanding of Microsoft Azure Cloud. Cover the fundamentals of AWS architectural principles and services. Deep dive into individual elements like IAM, S3, Cloud front, Storage Gateway, Snowball, EC2, Cloud watch, CLI, Lambda, Route 53, RDS, Dynamo DB, Redshift, Elastic Cache, Aurora, VPC, SQS, SNS, Elastic Transcoder, Kinesis, API Gateway etc.
Course Execution Plan	The total duration of the course: 3 months Theory: 20% Practical: 80%
Companies offering jobs in the respective trade / Job Opportunities	There are thousands of Job opportunities in the field of networking. Few of them are mentioned below: **PTCL (Pakistan Telecommunication Company Limited)** **Jazz (Mobilink)** **Telenor Pakistan** **Zong (China Mobile Pakistan)** **National Data Consultants (NDC Tech)** **Systems Limited** **Inbox Business Technologies** **WorldCall Telecom Limited** **Vision Telecom Pvt Ltd** **COMSATS Internet Services** **Nokia Siemens Networks** **Motorola** **NSC Global** **Siemens** **Saif Telecom** **Descon Engineering** **Descon Mirani** **Presson Descon** **Olayan Descon** **JGC- Descon / DIP** **Etimaad** **IAEL** **ABB Automation** **SPEC Group Pakistan** **About Us** **Callmate Telips** **Lahore Gymkhana** **Royal Palm** **Serena Hotel Islamabad** **Sinaco Engineers** **Novatax Limited** **Hascom Business** **Excicom** **SB&B Advertising** **Polaris Values** **Raaziq International Pvt Ltd** **OOCL Pakistan** **Exel Pakistan** **DHL Pakistan** **Yaseen Shipping**

	Karachi International Terminal Ltd Intertek Pakistan WWF Pakistan ESBI Merlin International Pakistan Arbor Tech Hyperstar Expereo Pak Oasis Industries Pvt. Ltd. OMV Exploration GmbH M3 Tech Allcom
Instructional Resources	**Video Links:** https://www.youtube.com/@iptrainers https://www.youtube.com/@corvitsystemslahore https://www.cisco.com/c/en/us/training-events/training-certifications.html https://www.netacad.com/ https://skillsforall.com/ https://e.huawei.com/en/talent/portal/#/ https://learningcontent.cisco.com/games/binary/index.html https://www.deakin.edu.au/courses/find-a-course/information-technology/cloud-computing-and-networking **The daily lectures for the class will be recorded and made available on OneDrive, and the link to access them will be shared with the students.** **The whiteboard activities from each day will be converted to PDF format and shared with students via a OneDrive link.**
Modules	**Weekly (Hourly) plan is given below.**

Scheduled Weeks	Module Title	Learning Units	Home Assignments / Tasks
Week1	Introduction	Trainer's Introduction General Guidelines Course Introduction Course Scope Cloud Computing Concept, History, and Definitions Advantages of Cloud Business Model Differentiating types of clouds: public, private and hybrid Categorizing service types Basic Networking Terms Evaluation TCP/IP & OSI Model	**Class Quiz will be conducted**
Day1	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Trainer's Introduction General Guidelines Evaluation Course Introduction Course Scope Evaluation	
Day2	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Cloud Computing Concept, History, and Definitions Advantages of Cloud Business Model Evaluation	
Day3	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Differentiating types of clouds: public, private and hybrid Categorizing service types	
Day4	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Trainer's Introduction General Guidelines Evaluation Course Introduction Course Scope Basic Networking Terms Evaluation TCP/IP & OSI Model Evaluation	
Day5	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Introduction to Network Devices History of IPv4 Addressing Format of IPv4 Addressing Classification of IPv4 Addressing Calculating Number of networks in classes Calculation number of hosts per network Introduction to Decimal, Binary and Hexa-Decimal Numbers Evaluation	
Week2	IPv4 & IPv6 Addressing	Concept of Network-id and Broadcast-id Subnet Mask and Wildcard Mask Concept of Default Gateway Routed & Non-Routed Ports Rules of IP addressing for Routed Ports	**Class Quiz will be conducted and MCQs will be given to solve to practice Subnetting.**

		Classless IP addressing: Subnetting and Super netting **IPv6 Addressing:** History of IPv6 Addressing Format of IPv6 addressing Network Prefix and Interface ID **MAC Addressing:** Format of MAC addresses Types of MAC addresses LAN and WAN cables Practice & Evaluation Physical Overview of Routers and Switches LAN switching operations Link Aggregation application and configuration. Define the files and components of virtual machines Hypervisor: Role and Purpose in Virtualization and Various Hypervisor Types Virtualization: Terminologies and the different Types of Virtualizations Overview of vSphere virtual infrastructure	
Day1	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Concept of Network-id and Broadcast-id Subnet Mask and Wildcard Mask Concept of Default Gateway Routed & Non-Routed Ports Rules of IP addressing for Routed Ports Classless IP addressing: Subnetting and Super netting	
Day2	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	**IPv6 Addressing:** History of IPv6 Addressing Format of IPv6 addressing Network Prefix and Interface ID Types of IPv6 Addresses: Global Unicast Addresses Unique Local Addresses Link Local Addresses Multicast Addresses **MAC Addressing:** Format of MAC addresses Types of MAC addresses	
Day3	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	**Revision & Motivational Talk** Basic Lab Setup with Cisco and Huawei Devices LAN and WAN cables Practice & Evaluation Physical Overview of Routers and Switches. How to access network devices locally. Difference between local and remote access.	

		Introduction to terminal applications such as Putty, Hyper terminal and Secure CRT etc. LAN switching operations Link Aggregation application and configuration. VLAN principle, application and configuration	
Day4	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Creation of public accounts Managing cloud users Practice and Evaluation Managing groups and Teams Creation of groups and teams	
Day5	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Define the files and components of virtual machines Hypervisor: Role and Purpose in Virtualization and Various Hypervisor Types Virtualization: Terminologies and the different Types of Virtualizations Overview of vSphere virtual infrastructure	
Week3	Lab Setup with Cisco & Huawei Devices	**Revision & Motivational Talk** **Basic Lab Setup with Cisco and Huawei Devices** LAN and WAN cables Physical Overview of Routers and Switches. How to access network devices locally. Difference between local and remote access. Introduction to terminal applications such as Putty, Hyper terminal and Secure CRT etc. Introduction to Cisco IOS and CLI. Initial Configuration of Cisco IOS. Introduction of different modes of Cisco IOS. Configure and verify clock Configure and verify hostname. Configure and verify user access verification or login password Configure and verify enable password Configure and verify enable secret Learn how to modify, copy, write and erase configuration. Verify running-config and startup-config Create username, password and their privileges Configure banners: motd login exec	**Lab Task will be assigned to individual candidate and outputs will be checked by instructor and TA's.**

		Practice above configuration of Cisco Packet Tracer, GNS3 and eNSP	
Day1	09:00AM – 09:45AM	Virtualization: Benefits, Challenges, Risks, and Suitability to Organizations	
	09:45AM – 11:00AM 11:00AM – 11:45AM	Describe the benefits of using virtual machines Explain the similarities and differences between physical architectures and virtual	
	11:45AM – 01:00PM	Define the purpose of vCenter Server	
Day2	09:00AM – 09:45AM	Define the purpose of ESXi	
	09:45AM – 11:00AM	Installation of ESXi	
	11:00AM – 11:45AM	Configuring ESXi services Introduction to Compute Virtualization	
	11:45AM – 01:00PM	& Identify the files that make up a virtual machine	
Day3	09:00AM – 09:45AM	Discuss the latest virtual machine hardware and its features	
	09:45AM – 11:00AM	Describe virtual machine CPU, memory,	
	11:00AM – 11:45AM	disk, and network resource usage Explain the importance of VMware	
	11:45AM – 01:00PM	Tools™	
Day4	09:00AM – 09:45AM	Introduction to Cisco IOS and CLI. Initial Configuration of Cisco IOS. Introduction of different modes of Cisco IOS.	
	09:45AM – 11:00AM 11:00AM – 11:45AM	Configure and verify clock Configure and verify hostname.	
	11:45AM – 01:00PM	Configure and verify user access verification or login password Configure and verify enable password Configure and verify enable secret Learn how to modify, copy, write and erase configuration. Verify running-config and startup-config	
Day5	09:00AM – 09:45AM	Create username, password and their privileges Create username, password and their privileges in Huawei VRP	
	09:45AM – 11:00AM	How to configure and troubleshoot Ethernet and Serial interfaces.	
	11:00AM – 11:45AM	Configure description on interfaces.	
	11:45AM – 01:00PM	Configure ipv4 and ipv6 addresses on interfaces. Configure Keepalive, clock rate and encapsulation on interfaces.	
Week4	Advanced Configurations Of Cisco IOS and Huawei VRP	**Revision & Motivational Talk** **Introduction to LAN and WAN interfaces** How**.** to configure and troubleshoot Ethernet and Serial interfaces. Configure description on interfaces.	**Lab Task will be assigned to individual candidate and outputs will be checked by instructor and TA's.**

		Configure ipv4 and ipv6 addresses on interfaces. Configure Keepalive, clock rate and encapsulation on interfaces. How to make admin up and down interfaces. Verify connectivity with test traffic. Introduce ICMP-echo and echo-reply. Use of ping command and understand output. Impact of round-trip time. Remote-access with TELNET and SSH. Introduction of DNS. Configure DNS. Introduction to DHCP. How to configure DHCP on Cisco IOS and Huawei VRP	
Day1	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Remote-access with TELNET and SSH. Introduction to DHCP. How to configure DHCP on Cisco IOS Understand next hop. Practice & Evaluation How to configure next hop with: Outgoing interface Next Hop IP address Practice & Evaluation	
Day2	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Revision & Motivational Talk Introduction to Routing for reachability. Understand static routing. Configure and verify static routing for IPv4 Introduction to Dynamic Routing Types of routing protocols Evaluation Define IGP & EGP Evaluation	
Day3	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Interior gateway protocols: RIP: Routing Information Protocol OSPF: Open Shortest Path First IS-IS: Intermediate System to Intermediate System Evaluation Exterior Gateway protocols: BGP: Border Gateway Protocol **Evaluation** Administrative Distance or preference of routing methods. Configure and verify Default Routing.	
Day4	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Storage Architecture for Virtualization Physical Disk Types and Related Techniques Centralized Storage vs. Distributed Storage Virtualized Storage vs. Non-Virtualized Storage	

		Introduction to VM Disks	
Day5	09:00AM – 09:45AM	Introduce storage protocols and storage device types	
	09:45AM – 11:00AM	Discuss ESXi hosts using iSCSI, NFS, and Fiber Channel storage	
		Create and manage VMFS and NFS datastores	
	11:00AM – 11:45AM	Network Functions Virtualization (NFV)	
	11:45AM – 01:00PM	Bring Your Own Device (BYOD) and MDM	
Week5	Basic Routing	**Revision & Motivational Talk** **Introduction to Routing for reachability.** Understand next hop. How to configure next hop with: Outgoing interface Next Hop IP address Understand static routing. Configure and verify static routing for IPv4 Introduction to Dynamic Routing Types of routing protocols Interior gateway protocols: RIP: Routing Information Protocol OSPF: Open Shortest Path First IS-IS: Intermediate System to Intermediate System Exterior Gateway protocols: BGP: Border Gateway Protocol Administrative Distance or preference of routing methods. Configure and verify Default Routing. Configure and verify DHCP Relay Agent.	**Lab Task will be assigned to individual candidate and outputs will be checked by instructor and TA's.**
Day1	09:00AM – 09:45AM	NoSQL databases characteristics	
	09:45AM – 11:00AM 11:00AM – 11:45AM	NoSQL databases types **Practice & Evaluation** Integration of cloud computing	
	11:45AM – 01:00PM	**Practice & Evaluation**	
Day2	09:00AM – 09:45AM	Deploy and configure vCenter Server Use vSphere Web Client	
	09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Backup and restore vCenter Server vCenter Server permissions and roles vSphere HA architectures and features	
Day3	09:00AM – 09:45AM	vSphere authentication Manage vCenter Server inventory objects and licenses	
	09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Access and navigate the new vSphere clients **Practice & Evaluation**	
Day4	09:00AM – 09:45AM	Configure and verify CDP **Evaluation**	
	09:45AM – 11:00AM	Configure and verify NTP: Network Time Protocol **Evaluation**	
	11:00AM – 11:45AM	Password Recovery **Evaluation**	

	11:45AM – 01:00PM		
Day5	09:00AM – 09:45AM	Introduction to Access Control List	
		Evaluation	
		Configure and verify standard ACL	
	09:45AM – 11:00AM	Configure and verify extended ACL	
	11:00AM – 11:45AM	**Evaluation**	
		Contiguous and dis-contiguous wildcard mask	
	11:45AM – 01:00PM	Implement named and numbered ACL	
Week6	**Mid Term Exam** Network Services and IOS Features	**Revision & Motivational Talk** Configure and verify CDP Configure and verify LLDP Configure and verify NTP: Network Time Protocol Password Recovery Configure and verify Embedded Event Manager: EEM Configure KRON Scheduler Configure and verify SYSLO	**Lab Task will be assigned to individual candidate and outputs will be checked by instructor and TA's.**
Day1	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Introduction to public and private IP addresses **Evaluation** Introduction to NAT and PAT. Configure and verify network address translation **Evaluation** Configure and verify PAT/NAT-overloading	
Day2	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	OSPF: Open Shortest Path First Link State Algorithm **Evaluation** OSPF Process-id. OSPF Router-id. Configure Loopback Interfaces OSPF Area-id. OSPF contiguous wildcard mask OSPF Metric: cost OSPF Tables: **Evaluation** Configure and verify single area OSPF	
Day3	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Design and implement multiple area OSPF. Regular and transit area. **Evaluation** Define Internal Router, Backbone Router, Backbone Internal Router, Area Border Router and ASBR. **Practice & Evaluation** Introduce and configure redistribution. Define seed/external metric. Type 1 and Type 2 seed metric. **Evaluation** Static routes with null-0 for testing. **Practice & Evaluation**	
Day4	09:00AM – 09:45AM	Perform vSphere vMotion and vSphere Storage vMotion migrations	

	09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Create and manage virtual machine snapshots Create, clone, and export vApps Introduce the types of content libraries and how to deploy and use them Security and Compliance in Cloud Physical Security and Cloud Computing Practice & Evaluation	
Day5	09:00AM – 01:00PM	**Mid Term Exam**	
Week7	IP Traffic Management & Security On Cisco & Huawei	**Revision & Motivational Talk** Introduction to Access Control List Configure and verify standard ACL Configure and verify extended ACL Contiguous and dis-contiguous wildcard mask Implement named and numbered ACL Introduction to public and private IP addresses Introduction to NAT and PAT. Configure and verify network address translation Configure and verify PAT/NAT-overloading	**Lab Task will be assigned to individual candidate and outputs will be checked by instructor and TA's.**
Day1	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Describe cloud security reference architecture Understand design principles of secure cloud computing Creating and managing virtual machines **Practice & Evaluation**	
Day2	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Explain the vSphere HA architecture Configure and manage a vSphere HA cluster Use vSphere HA advanced parameters Define cluster-wide restart ordering capabilities Enforce infrastructural or intra-app dependencies during failover Describe vSphere HA heartbeat networks and data store heartbeats Introduce vSphere Fault Tolerance Enable vSphere Fault Tolerance on virtual machines Examine enhanced consolidation of vSphere Fault Tolerance virtual machines Introduce vSphere Replication Use vSphere Data Protection to back up and restore data **Practice & Evaluation**	
Day3	09:00AM – 09:45AM	Introduction to DHCP.	

	09:45AM – 11:00AM	How to configure DHCP	
	11:00AM – 11:45AM 11:45AM – 01:00PM	How to configure DHCP **Practice & Evaluation**	
Day4	09:00AM – 09:45AM	**Revision & Motivational Talk** Introduction to PBR tools:	
	09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Route-map IP prefix-list Distribute-list ACL OSPF neighbor states	
Day5	09:00AM – 09:45AM	OSPF over multi-access networks DR, BDR and DRO roles in multi-access	
	09:45AM – 11:00AM 11:00AM – 11:45AM	networks Evaluation Introducing OSPF LSA types 1 to 7.	
	11:45AM – 01:00PM	**Practice & Evaluation**	
Week8	**Job Search & Entrepreneurial Skills (Search Jobs in at least two labor marketplace countries)** Deep Dive into Dynamic Routing	**Revision & Motivational Talk** Job Search & Entrepreneurial Skills (Search Jobs in at least two labor marketplace countries) Understand and Implement Routing Information Protocol. OSPF: Open Shortest Path First Link State Algorithm OSPF Process-id. OSPF Router-id. Configure Loopback Interfaces OSPF Area-id. OSPF contiguous wildcard mask OSPF Metric: cost OSPF Tables: Configure and verify single area OSPF. Design and implement multiple area OSPF. Regular and transit area. Define Internal Router, Backbone Router, Backbone Internal Router, Area Border Router and ASBR. Introduce and configure redistribution. Define seed/external metric. Type 1 and Type 2 seed metric. Static routes with null-0 for testing.	**Lab Task will be assigned to individual candidate and outputs will be checked by instructor and TA's.**
Day1	09:00AM – 09:45AM	Regular area types: Stub Area	
	09:45AM – 11:00AM 11:00AM – 11:45AM	Totally Stubby area **Evaluation** NSSA: Not So Stubby Area Totally NSSA	
	11:45AM – 01:00PM	Configure and verify OSPF Virtual Links. Practice and Evaluation	
Day2	09:00AM – 09:45AM	Configure and verify OSPF Virtual Links.	
	09:45AM – 11:00AM	Practice and Evaluation Continuous and discontinuous OSPF	
	11:00AM – 11:45AM 11:45AM – 01:00PM	backbones. **Practice and Evaluation**	

Day3	09:00AM – 09:45AM	OSPF filters: IP prefix-lists	
	09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	**Evaluation** Area filters Evaluation Passive interface **Evaluation** Route summarization Evaluation authentication	
Day4	09:00AM – 09:45AM	Data and Analytics	
	09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Enterprise Integration Security and Identity Monitoring and Management	
Day5	09:00AM – 09:45AM	Introduction	
	09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Virtual Machines Scale Sets App Service	
Week9	OSPF & Policy Based Routing	**Revision & Motivational Talk** Introduction to PBR tools: Route-map IP prefix-list Distribute-list ACL Example1: Industry Scenario-1 to implement PBR Example2: Industry Scenario-2 to implement PBR OSPF Packet types OSPF neighbor states OSPF over multi-access networks DR, BDR and DRO roles in multi-access networks. Introducing OSPF LSA types 1 to 7. Regular area types: Stub Area Totally Stubby area NSSA: Not So Stubby Area Totally NSSA Introduction to Microsoft Azure Cloud Basic Statistics Operations/ Network Security Management in Cloud/ Azure Architecture	**Lab Task will be assigned to individual candidate and outputs will be checked by instructor and TA's.**
Day1	09:00AM – 09:45AM	Introduction to Microsoft Azure Cloud Azure Foundations Azure Marketplace Azure Portal Creating a Free Azure Account	
	09:45AM – 11:00AM	Footprint and Structure Azure Services	
	11:00AM – 11:45AM	Compute	
	11:45AM – 01:00PM	Networking	

		Storage Web and Mobile Databases **Motivational Talk**	
Day2	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Introduction Regions and Availability Zones Resource Groups and Azure Resource Manager Creating Azure Resources Virtual Machines	
Day3	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Introduction to the Azure Network Creating VNETWORK Setting up address ranges Subnets Managing azure firewall security Bastions DDOS Firewall LAB Practice	
Day4	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	**Revision & Motivational Talk** Introduction to EGP **Evaluation** Historical Background Introduction to Multihoming **Evaluation** BGP fundamentals. Internal and External BGP. **Evaluation** BGP attributes: Weight **Practice & Evaluation**	
Day5	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Local preference **Evaluation** As-path **Evaluation** Router-id BGP route-summarization PBR with BGP attributes and PBR tools **Evaluation** Full Mesh i-BGP Route-reflector configuration BGP configuration best practices **Evaluation** BGP authentication	
Week10	**Introduction to AWS** AWS Design constraints and Managing	Introduction to AWS Introduction to the AWS products Regions and Availability Zones Signing up for AWS AWS Free usage tier Introduction AWS Management console EC2 Instance Understanding AMI Launching your first AWS instance On-demand Instance pricing	**Lab Task will be assigned to individual candidate and outputs will be checked by instructor and TA's.**

		Reserved Instance pricing	
		Spot instance pricing	
		Setting up security	
		Security groups	
		Public, Private & Elastic IP's	
		Deploying a new instance from	
		The created AMI	
		Key Pairs	
		Hybrid Connectivity Options	
		Routes and VNET Peering	
		Routing and Peering	
		Hybrid Scenarios	
		Introduction	
		Identity Services	
		Azure Active Directory	
		Multi-Factor Authentication	
		Lab: Azure Active Directory	
		Create Azure AD Tenant	
		Demo: Create Users and Groups	
		Self-Service Password Reset	
Day1	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	AWS Platform Introduction to AWS Elastic computing Introduction to the AWS products Regions and Availability Zones Signing up for AWS AWS Free usage tier Introduction AWS management Console	
Day2	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	EC2 Instance Understanding AMI Launching your first AWS instance On-demand Instance pricing Reserved Instance pricing Spot instance pricing Setting up security Security groups **Evaluation**	
Day3	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Choosing & creating a new AMI Public, Private & Elastic IP's Deploying a new instance from the created AMI	
Day4	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Hybrid Connectivity Options Routes and VNET Peering Routing and Peering Hybrid Scenarios	
Day5	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Azure Active Directory Multi-Factor Authentication Introduction Identity Services Azure Active Directory Multi-Factor Authentication Lab: Azure Active Directory	

		Demo: Create Azure AD Tenant Demo: Create Users and Groups Demo: Self-Service Password Reset	
Week11	Storage – Azure AWS Operations	**Revision & Motivational Talk** Storage – Azure Introduction Creating azure storage account Manage Azure VM Storage Storage Overview Blob Disk File AWS Operations Load Balancing Introduction to Scaling ELB (Elastic Load Balancer) Components and types of load balancing Auto-scaling Get Started with Auto Scaling Using the Console Maintain a Fixed Number of Running EC2 Instances Dynamic Scaling The lifecycle of autoscaling Policies of autoscaling	**Lab Task will be assigned to individual candidate and outputs will be checked by instructor and TA's.**
Day1	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Introduction Blob Disk File Archive Lab: Creating a Storage Account	
Day2	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Introduction Manage Azure VM Storage VM Storage Overview Demo: Add Disk Manage disks Practice & Evaluation	
Day3	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Private DNS Public DNS Name resolution in DNS services Static Private and Public IP Azure multiple subnetting	
Day4	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Load Balancing Introduction to Scaling ELB (Elastic Load Balancer) Components and types of load balancing Auto-scaling Get Started with Auto Scaling Using the Console **Evaluation**	
Day5	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Maintain a Fixed Number of Running EC2 Instances Dynamic Scaling The lifecycle of autoscaling Policies of autoscaling	

Week12	AWS Storage AWS Basic Security	EBS (Elastic Block Storage) Create EBS volumes Delete EBS Volumes Attach and detach EBS volumes Mounting and unmounting EBS volume Creating and deleting snapshots Creating volumes from snapshots S3(Simple Storage Service) Storage in Cloud S3 durability and redundancy S3 Buckets S3 Uploading Downloading S3 Permissions S3 Object Versioning S3 Lifecycle Policies Storage Gateway Import Export S3 Transfer Acceleration Intro to Accounts and Subscriptions Route53 Creating Zones Hosting a website Understanding routing policies Weighted simple and failover policies Identity Access Management (IAM) Creating Users and Groups Applying policies Password Policy	**Lab Task will be assigned to individual candidate and outputs will be checked by instructor and TA's.**
Day1	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	EBS (Elastic Block Storage) Create EBS volumes Delete EBS Volumes Attach and detach EBS volumes **LAB & Evaluation**	
Day2	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Mounting and unmounting EBS volume Creating and deleting snapshots Creating volumes from snapshots S3(Simple Storage Service) Storage in Cloud S3 durability and redundancy	
Day3	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	S3 Buckets S3 Uploading Downloading S3 Permissions S3 Object Versioning S3 Lifecycle Policies Storage Gateway **Evaluation**	
Day4	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Cloud Front Use of cloud front Creating a cloud front distribution Hosting a website of cloud front distribution Implementing restrictions	

		Configuring origins and behaviors	
Day5	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Route53 Creating Zones Hosting a website Understanding routing policies Weighted simple and failover policies Identity Access Management (IAM) Creating Users and Groups Applying policies Password Policy	
Week13	AWS Basic Security AWS VPC and DATABASE	***Revision & Motivational Talk*** Roles AWS Security Management Security Practices for Cloud Deployment AWS Responsibilities and Securities Cloud Trail Trust advisor Amazon Virtual Private Cloud (VPC) Introduction to Amazon Virtual Private Cloud (VPC) VPC Advantages Default and Non-default VPC Components of VPC Direct Connect Describe, create, and manage Amazon Virtual Private Cloud Amazon VPC, Private Subnet, and Public Subnet AWS Networking, Security Groups, and Network ACLs Configuration and management of VPN connectivity Subnet and Subnet Mask Relational Database Service (RDS) Introduction to RDS Different database services of AWS: Amazon RDS, Dynamo DB, Redshift etc. Configuring the database Configuring backups Configuring the maintenance windows Connecting to the database Dynamo DB Creating a dynamo dB Configuring alarms Adding data manually	**Lab Task will be assigned to individual candidate and outputs will be checked by instructor and TA's.**
Day1	09:00AM – 09:45AM	Success stories Roles	

	09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	AWS Security Management Security Practices for Cloud Deployment AWS Responsibilities and Securities Cloud Trail Trust advisor	
Day2	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Amazon Virtual Private Cloud (VPC) Introduction to Amazon Virtual Private Cloud (VPC) VPC Advantages Default and Non-default VPC Components of VPC Direct Connect	
Day3	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	**Revision & Motivational Talk** Describe, create, and manage Amazon Virtual Private Cloud Amazon VPC, Private Subnet, and Public Subnet AWS Networking, Security Groups, and Network ACLs Configuration and management of VPN connectivity **Evaluation**	
Day4	09:00AM – 09:45AM 09:45AM – 11:00AM 11:00AM – 11:45AM 11:45AM – 01:00PM	Subnet and Subnet Mask Relational Database Service (RDS) Introduction to RDS Different database services of AWS: Amazon RDS, Dynamo DB, Redshift etc. Configuring the database Configuring backups Configuring the maintenance windows Connecting to the database Dynamo DB Creating a dynamo dB Configuring alarms Adding data manually	
Day5	09:00AM – 01:00PM		

<div align="right">

Annexure I

</div>

Task No.	Task title	Description	Week
1 **2**	**Cisco Binary Game** **Link is given on Page4.** **Revise OSI and TCP/IP Models** **Cloud subscriptions**		**1**

Preparation for cloud subscriptions

3 4 5	**Solve IPv4 Addressing MCQs** **IPv6 Question will be given to identify their types** **Candidates are required to identify types of MAC addresses in the class** **Creation of public accounts** **Managing cloud users**	PDF file will be given in the class containing 20 questions to practice IP addressing. Creation of public accounts Managing cloud users Installation & Virtualization and Various Hypervisor Types	2
6 7 8 9 10 11 12 13	**Basic Configuration** **Installation of ESXi** **Configuring ESXi services**	Configure and verify clock Configure and verify hostname. Configure and verify user access verification or login password Configure and verify enable password Configure and verify enable secret Learn how to modify, copy, write and erase configuration. Verify running-config and startup-config Create username, password and their privileges Configure banners: motd login exec Installation of ESXi Configuring ESXi services	3
14 15 16 17 18 19 20 21 22 23	**Advanced Configurations** **Of Cisco IOS and Huawei VRP** **Create Centralized Storage vs. Distributed Storage**	configure and troubleshoot Ethernet and Serial interfaces. Configure description on interfaces. Configure ipv4 and ipv6 addresses on interfaces. Configure Keepalive, clock rate and encapsulation on interfaces. Verify connectivity with test traffic. Use of ping command and understand output. Impact of round-trip time. Remote-access with TELNET and SSH. Configure DNS. Configure DHCP on Cisco IOS and Huawei VRP Creat Centralized Storage vs. Distributed Storage	4
24 25 26 27	**Basic Routing** **Create Backup and restore Backup**	Configure next hop with: Outgoing interface Next Hop IP address Configure and verify static routing for IPv4 Configure and verify Default Routing. Configure and verify DHCP Relay Agent.	5

		Create Backup and restore backup	
28 29 30 31 32 33 34 35	**Network Services and IOS Features** **Creating virtual machine, Clone & templates**	IOS and Configuration Backup with TFTP Configure and verify CDP Configure and verify LLDP Configure and verify NTP: Network Time Protocol Password Recovery Configure and verify Embedded Event Manager: EEM Configure KRON Scheduler Configure and verify SYSLOG Creating virtual machine, Clone & templates	6
36 37 38 39 40	**IP Traffic Management & Security On Cisco & Huawei** **Describe vSphere architecture & vSphere cluster**	Configure and verify standard ACL Configure and verify extended ACL Implement named and numbered ACL Configure and verify network address translation Configure and verify PAT/NAT-overloading Describe vSphere architecture & vSphere cluster	7
41 42 43 44 45 46	**Deep Dive into Dynamic Routing** **Creating & Managing Virtual Machine in Azure Portal**	Configure and verify single area OSPF. Design and implement multiple area OSPF. Introduce and configure redistribution. Configure seed/external metric. Configure Type 1 and Type 2 seed metric. Configure Static routes with null-0 for testing. Creating & Managing Virtual Machine in Azure Portal	8
47 48	**OSPF & Policy Based Routing** **Create azure firewall**	Industry Scenario-1 to implement PBR Industry Scenario-2 to implement PBR Create azure firewall	9
49 50 51 52 53	**AWS login and feature explore** **AWS** **Operation on Portal** **Project**	Create free login on AWS Web Portal Explore EC2 instance Explore EC2 Load Balancing on Amazon Web portal Dynamic scaling and policies of autoscaling Implement a Project as per instructor	10
54 55 56 57 58 59 60 61 62	**AWS** **Storage Management** **AWS Basic Security Features** **Create VPC and Database management**	Explore how to create, delete, Mounting and unmounting EBS volume. Practices on AWS Storage management. Protect the cloud by implementing the different techniques, like Identity Access Management (IAM) Creating Users and Groups, Applying policies, Password Policy, Roles, AWS Security Management, Security Practices for Cloud Deployment and AWS Responsibilities and Securities.	11

			Crete VPC Cloud on AWS and implement the all technique of database	
63 64 65 66 67 68 69	**AWS Managerial tools Disaster Management Policies**		Explore all management tools on by one in AWS Implement the different disaster management policies like How to manage Disaster Recovery and Backups, DR and Backups, AWS High Availability Design	**12**
70 71 72 73 74 75	**Final project**		Final project Assessment	**13**

SUGGESTIVE FORMAT AND SEQUENCE ORDER OF MOTIVATIONAL LECTURE.

Mentor

Mentors are provided an observation checklist form to evaluate and share their observational feedback on how students within each team engage and collaborate in a learning environment. The checklist is provided at two different points: Once towards the end of the course. The checklists are an opportunity for mentors to share their unique perspective on group dynamics based on various team activities, gameplay sessions, pitch preparation, and other sessions, giving insights on the nature of communication and teamwork taking place and how both learning outcomes and the student experience can be improved in the future.

Session- 1 (Communication):

Please find below an overview of the activities taking place Session plan that will support your delivery and an overview of this session's activity.

Session- 1 OVERVIEW
Aims and Objectives:
- To introduce the communication skills and how it will work   - Get to know mentor and team - build rapport and develop a strong sense of a team   - Provide an introduction to communication skills   - Team to collaborate on an activity sheet developing their communication, teamwork, and problem-solving   - Gain an understanding of participants' own communication skills rating at the start of the program

Activity:	Participant Time	Teacher Time	Mentor Time
Intro Attend and contribute to the scheduled.			

Understand good communication skills and how it works.			
Understand what good communication skills mean			
Understand what skills are important for good communication skills			
Key learning outcomes:	**Resources:**		**Enterprise skills developed:**
Understand the communication skills and how it works. Understand what communication skills mean Understand what skills are important for communication skills	Podium Projector Computer Flip Chart Marker		Communication Self Confidence Teamwork

Schedule	Mentor Should do
Welcome: **5 min**	Short welcome and ask the **Mentor** to introduce him/herself. Provide a brief welcome to the qualification for the class. Note for Instructor: Throughout this session, please monitor the session to ensure nothing inappropriate is being happened.
Icebreaker: **10 min**	Start your session by delivering an icebreaker, this will enable you and your team to start to build rapport and create a team presentation for the tasks ahead. The icebreaker below should work well at introductions and encouraging communication, but feel free to use others if you think they are more appropriate. It is important to encourage young people to get to know each other and build strong team links during the first hour; this will help to increase their motivation and communication throughout the sessions.
Introduction & Onboarding: **20mins**	Provide a brief introduction of the qualification to the class and play the "Onboarding Video or Presentation". In your introduction cover the following: 1. Explanation of the program and structure. (Kamyab jawan Program) 2. How you will use your communication skills in your professional life. 3. Key contacts and key information – e.g. role of teacher, mentor, and SEED. Policies and procedures (user agreements and "contact us" section). Everyone to go to the Group Rules tab at the top of their screen, read out the rules, and ask everyone to verbally agree.

	Ensure that the consequences are clear for using the platform outside of hours. (9am-8pm)
	4. What is up next for the next 2 weeks ahead so young people know what to expect (see pages 5-7 for an overview of the challenge). Allow young people to ask any questions about the session topic.
Team Activity Planning: **30 minutes**	MENTOR: Explain to the whole team that you will now be planning how to collaborate for the first and second collaborative Team Activities that will take place outside of the session. There will not be another session until the next session so this step is required because communicating and making decisions outside of a session requires a different strategy that must be agreed upon so that everyone knows what they are doing for this activity and how. "IDENTIFY ENTREPRENEURS" TEAM ACTIVITY "BRAINSTORMING SOCIAL PROBLEMS" TEAM ACTIVITY" *As a team, collaborate on a creative brainstorm on social problems in your community. Vote on the areas you feel most passionate about as a team, then write down what change you would like to see happen.* Make sure the teams have the opportunity to talk about how they want to work as a team through the activities e.g. when they want to complete the activities, how to communicate, the role of the project manager, etc. Make sure you allocate each young person a specific week that they are the project manager for the weekly activities and make a note of this. Type up notes for their strategy if this is helpful - it can be included underneath the Team Contract.
Session Close: **5 minutes**	**MENTOR:** Close the session with the opportunity for anyone to ask any remaining questions. **Instructor:** Facilitate the wrap-up of the session. A quick reminder of what is coming up next and when the next session will be.

MOTIVATIONAL LECTURES LINKS:

TOPIC	SPEAKER	LINK
Senior Network Engineer Salary Interview Job Description Career	**Ben Lovegrove**	**https://www.youtube.com/watch?v=ibju0yMiaQ0**
Network Engineers	**NetworkChuck**	**https://www.youtube.com/watch?v=443TT26w1LE**
Meet Network	**LifeAtGoogle**	**https://www.youtube.com/watch?v=pNyaPRFJ8lQ**

Engineers at Google		
How to Face Problems In Life	**Qasim Ali Shah**	**https://www.youtube.com/watch?v=OrQte08Ml90**
Just Control Your Emotions	**Qasim Ali Shah**	**https://www.youtube.com/watch?v=JzFs__yJt-w**
How to Communicate Effectively	**Qasim Ali Shah**	**https://www.youtube.com/watch?v=PhHAQEGehKc**
Your ATTITUDE is Everything	**Tony Robbins Les Brown David Goggins Jocko Willink Wayne Dyer Eckart Tolle**	**https://www.youtube.com/watch?v=5fS3rj6elFg**
Control Your EMOTIONS	**Jim Rohn Les Brown TD Jakes Tony Robbins**	**https://www.youtube.com/watch?v=chn86sH0O5U**
Defeat Fear, Build Confidence	**Shaykh Atif Ahmed**	**https://www.youtube.com/watch?v=s10dzfbozd4**
Wisdom of the Eagle	**Learn Kurooji**	**https://www.youtube.com/watch?v=bEU7V5rJTtw**
The Power of ATTITUDE	**Titan Man**	**https://www.youtube.com/watch?v=r8LJ5X2ejqU**
STOP WASTING TIME	**Arnold Schwarzenegger**	**https://www.youtube.com/watch?v=kzSBrJmXqdg**
Risk of Success	**Denzel Washington**	**https://www.youtube.com/watch?v=tbnzAVRZ9Xc**

Annexure III

SUCCESS STORY

S. No	Key Information	Detail/Description
1.	**Self & Family background**	**Danyal Saleem,** who lives in Mirpur (AJK), is an example of how hard work and perseverance can reap rich rewards when bidding for projects online. The graphic designer works exclusively on an online freelancing platform and has earned, on average, **US$20,000** per month for the past several months. But this isn't a story of overnight success – Danyal has had to work hard to differentiate himself and stay true to his goal.

		It was a full year later, in May 2017, when Danyal finally decided to jump in. He signed up for one of the numerous sites that connect designers or coders with people or companies that have small projects, like designing a logo or building a website. He had already started a small business to help pay for his college education, so he was nervous and apprehensive about the decision. "I gave myself two or three months at most. If I didn't succeed, then I would go back to running the business as it was showing potential," he says. **If at first, you don't succeed, try try again**
2.	**How he came on board NAVTTC Training/ or got trained through any other source**	Certification in graphic designing from STEPS(NAVTTC partner institute)
3.	**Post-training activities**	**Danyal's** area of expertise is in **graphic design**. In his first month using Fiverr, he pitched mostly for projects centered around logo designing. But it wasn't so simple. In the first few weeks, he didn't hear back from even a single client, despite pitching for dozens of projects. "I needed to understand what worked, so I read blogs, participated in forums, and analyzed profiles of successful freelancers. It was an uphill struggle, but I didn't want to give up," he explains. Danyal says he understands why clients would be apprehensive giving projects to untested freelancers. They have hundreds of options to choose from, he explains, and to give a project to someone with no experience requires a strong leap of faith. A slow stream of projects started to come Danyal's way. Within a few months, he was landing an average of a hundred projects every month, with a large number of repeat clients. He also expanded the range of his professional services, branching out from logo design to business cards, banners, Facebook cover pages, letterheads, and stationery. But he's had to face his fair share of challenges too. The shoddy state of internet infrastructure in his city, Mirpur, threatened to derail his freelancing career. "Sometimes I haven't had connectivity for two days straight," he explains. "That's unthinkable for someone who makes his livelihood on the internet."

4.	**Message to others** (under training)	Take the training opportunity seriously Impose self-discipline and ensure regularity Make Hard work pays in the end so be always ready for the same.

Note: Success story is a source of motivation for the trainees and can be presented in several ways/forms in a NAVTTC skill development course as under: -

1. To call a passed out successful trainee of the institute. He will narrate his success story to the trainees in his own words and meet trainees as well.
2. To see and listen to a recorded video/clip (5 to 7 minutes) showing a successful trainee Audio-video recording that has to cover the above-mentioned points.*
3. The teacher displays the picture of a successful trainee (name, trade, institute, organization, job, earning, etc) and narrates his/her story in the teacher's own motivational words.

*The online success stories of renowned professional can also be obtained from **Annex-II**

Annexure IV

Workplace/Institute Ethics Guide

Work ethic is a standard of conduct and values for job performance. The modern definition of what constitutes good work ethics often varies. Different businesses have different expectations. Work ethic is a belief that hard work and diligence have a moral benefit and an inherent ability, virtue, or value to strengthen character and individual abilities. It is a set of values-centered on the importance of work and manifested by determination or desire to work hard.

The following ten work ethics are defined as essential for student success:

1. **Attendance:**

   Be at work every day possible, plan your absences don't abuse leave time. Be punctual every day.

2. **Character:**

   Honesty is the single most important factor having a direct bearing on the final success of an individual, corporation, or product. Complete assigned tasks correctly and promptly. Look to improve your skills.

3. **Team Work:**

   The ability to get along with others including those you don't necessarily like. The ability to carry your weight and help others who are struggling. Recognize when to speak up with an idea and when to compromise by blend ideas together.

4. **Appearance:**

   Dress for success set your best foot forward, personal hygiene, good manner, remember that the first impression of who you are can last a lifetime

5. **Attitude:**

   Listen to suggestions and be positive, accept responsibility. If you make a mistake, admit it. Values workplace safety rules and precautions for personal and co-worker safety. Avoids unnecessary risks. Willing to learn new processes, systems, and procedures in light of changing responsibilities.

6. **Productivity:**

   Do the work correctly, quality and timelines are prized. Get along with fellows, cooperation is the key to productivity. Help out whenever asked, do extra without being asked. Take pride in your work, do things the best you know-how. Eagerly focuses energy on accomplishing tasks, also referred to as demonstrating ownership. Takes pride in work.

7. **Organizational Skills:**

   Make an effort to improve, learn ways to better yourself. Time management; utilize time and resources to get the most out of both. Take an appropriate approach to social interactions at work. Maintains focus on work responsibilities.

8. **Communication:**

   Written communication, being able to correctly write reports and memos. Verbal communications, being able to communicate one on one or to a group.

9. **Cooperation:**

   Follow institute rules and regulations, learn and follow expectations. Get along with fellows, cooperation is the key to productivity. Able to welcome and adapt to changing work situations and the application of new or different skills.

10. **Respect:**

   Work hard, work to the best of your ability. Carry out orders, do what's asked the first time. Show respect, accept, and acknowledge an individual's talents and knowledge. Respects diversity in the workplace, including showing due respect for different perspectives, opinions, and suggestions.