

Central University of  
Technology, Free State

DEPARTMENT OF  
INFORMATION TECHNOLOGY

# COMMUNICATION NETWORKING

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## **What factors influenced you to choose Communication Networking as a career path?**

After my matric, I wanted to study Computer Systems Engineering, but unfortunately, I wanted something that has to do more about software than hardware. So, I did my research about careers that combines both hardware and software and that is how I came across networking. So, since I was a science student in high school, I gathered more information about networking, because at that time, I knew nothing about Information Technology. The love of networking came by seeing different careers in it on the internet and as from that moment, I told myself that I want to become a network administrator. I went to CUT's website and started looking for a course that involves computer networking and that's how I chose Communication Networking.

## **In your opinion, how does network security influence our daily living?**

Network Security is very crucial, because a network is vulnerable without security which can put an organization at risk. Network Security can also serve as a restriction amongst users in an organization.

## **Do you think that having knowledge about servers is important for networking?**

Yes, absolutely, because servers are the backbone of a network. Networking without the knowledge of servers is useless. It is like any song without a bass.

## **How will programming benefit a Network Engineer?**

It will help a network engineer to have a background on how computer applications operate, it will also give a network engineer a clear understanding on how software and networking are linked.

## **Do you believe that having knowledge about databases is important for networking?**

Yes, I would say Databases link software and networking.

## **Did you learn anything regarding ISPs? What type of information did you learn?**

Yes, ISPs are organizations that provides services for accessing and using the internet. There are various types of ISPs such as commercial, community-owned, non-profit or privately owned.

## **Which parts of the network course do you find fascinating?**

I find routing and switching as whole fascinating and also working with servers.

### **What are your dreams for pursuing a career in Networking?**

My dream is to become a Network Administrator and work for a big Networking Company. I would also like to be a Systems Server Administrator.

### **What are the major qualifications for success in this occupation?**

I would say an Advanced Diploma in Computer Networking, and studying further can be advantageous.

### **What advice would you offer learners who are interested in pursuing this career path?**

All I can say is: do your research first before pursuing this career. And also, do not pursue it for the love of money, do it for "Passion".

### **What network opportunities would you like to investigate when you start working?**

I want to investigate more on how wireless networks are being configured in a real work environment, because the world has gone wireless.

### **What would be the advice you would give to first years taking the course?**

The advice is to take their course serious immediately from first year because each year after first year requires a basic understanding of first year's work. They must also do more than what is expected of them.

### **What did you enjoy the most in the Communication Networking course?**

I enjoyed configuring routers and switches. And also configuring windows servers.

### **Is there a need for Network specialists in the IT industry?**

Yes, of course! I hardly doubt that the IT Industry would survive without Network Specialists. So, there is a need for network specialists to provide a good Quality of Service in the IT industry.

### **What type of practical, hands on experience did you master during the course of your study?**

I mastered configurations and cabling on a real equipment. I also mastered the skill to work in a virtual environment on network devices.

## Imagine the following:

Peter woke up after his smart wrist watch vibrated. The smart watch detected that Peter slept 8 hours and that he was in his light phase sleep cycle. Peter uses his smartphone to switch on the coffee machine in the kitchen. He gets dressed, enjoys his cup of coffee and then leaves to attend his first networking class for the day.



On the bus he remembers that he forgot to lock the front door. The week before he used his programming skills to program his smart door. Stressless he sits back, takes out his smartphone and locks his front door. He also activates the sprinklers of his garden. Wow, this Python course, along with C# taught them how to control connected things - smart homes, smart cars, smart things – you name it!

Peter passes one of the large cell phone towers on his way to class. It reminds him that he and his group members have an outstanding assignment on routing. They need to demonstrate load balancing between routers. He quickly sets a reminder which automatically sends out a reminder to his group members.

The first class Peter attends, is a class in Security. It fascinates him to learn about the different types of hackers and how a system can be compromised if policies are not in place. The class also teaches them of algorithms to use to ensure the encryption of data between routers, how to create usernames and passwords, backup connections to servers and many other interesting ways to secure a network. He will definitely build some of these features into the configurations of his home router.



Yes, cyberspace is not a safe space and one will have to continuously monitor threats. Luckily Peter has already learned how to install, configure and troubleshoot devices, and he also has an understanding of Operating Systems. By using the real equipment on campus, as well as network simulation software, he knows how to build a network.

Linux

vs

Windows

During a break, Peter and his friends discuss the Work Integrated Learning modules that they will do during their 3rd year. These modules will allow them to work on a virtual server. They are thinking of generating an extra income by hosting databases on a server that they will maintain. One of his friends said that his father is willing to buy a server for them. Of course, they still need to learn about server roles, storage, maintenance etc, but they can start planning on advertising to their friends and companies. Peter can already see how he is going to remotely access the server from his home by using an SSH connection. Man, this is going to be fun!




## A Diploma in Computer Networking is offered at the Bloemfontein campus

### Prerequisites at Grade 12 level:

In addition to the general admission requirements of CUT, a minimum mark of 40% in Mathematics or 60% in Mathematical or Information Technology. A minimum mark of 50% is required for English.

Short Courses	Campus
Cisco Certificate: Short Course	Bloemfontein
IT Essentials: Short Course	Bloemfontein
Higher Certificate: Information Technology	Welkom
Diploma's	Campus
Computer Networking	Bloemfontein
Information Technology	Bloemfontein & Welkom
Higher Qualifications	Campus
Advanced Diploma Computer Networking	Bloemfontein
Diploma in Information Technology	Bloemfontein
Postgraduate Diploma in Information Technology	Bloemfontein
Master in Information Technology (MIT)	
PhD in Information Technology	





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