

IT @ Unisa

A complete guide to preparing yourself for career opportunities



Contents

Contents	1
How will this brochure help me?	3
How can you use this brochure?	3
Before you start: Why this field?	4
Why IT?	4
Which field in IT?	7
Activity	7
IT job titles	10
How can I find out more about these job titles?	13
What is in demand?	14
Identify opportunities with career research	16
How do you identify opportunities?	16
Prepare	17
Keep track of information	17
Evaluate	17
Further ways to do career research	17
Prepare for opportunities and plan your career	30
Prepare for career opportunities	33
Develop your skills	34
Skills reflection	34
Start with a career portfolio	34
Enhance your employability	37
Self-confidence	38
My career learning plan	42

Qualifications offered by Unisa	43
Undergraduate Qualifications	43
Postgraduate Qualifications	44
Short Learning Programmes (SLPs): Centre for Software Engineering	45
Frequently asked questions	45
I did not complete mathematics and/or physical science at matric level – can I study IT at Unisa?	45
I completed mathematics and physical science at matric level, but my marks were below 50% - what can I do?	46
What if I start with one qualification and wish to change to a different qualification that includes computer science and/or information systems as a major subject?	46
How do I choose among the various IT-related undergraduate study options at Unisa?	46
I want to become an IT teacher. What do I study at Unisa?	47
Counselling and career development services at Unisa	48

The information in this publication is correct as of 9 December 2019. Visit the Unisa Counselling and Career Development downloads page (<http://bit.ly/30ygrll>) to check for updates.

Please check the Unisa qualifications webpage

(<http://www.unisa.ac.za/qualifications>) regularly for updates related to available qualifications and the admission requirements to study.

How will this brochure help me?

- It will help you to explore the broad range of opportunities related to IT.
- It will help you to identify different job titles related to IT.
- It will help you to understand what you need to plan your career in the IT field.
- It will enable you to identify IT-related qualifications at Unisa.

How can you use this brochure?

You can choose to work through all the information and activities in the brochure, or you can skip certain sections depending on your needs. You are making an important career decision – take some time to complete all the activities. We recommend that you make notes and a list of further questions as you are working through the information.

Before you start: Why this field?

Before considering pursuing this field of study there are some basic questions you can ask yourself:

- Why are you interested in studying IT?
- Where does your interest come from?
- Where are you hoping to be in five years' time? In ten years' time?
- What opportunities are you hoping to prepare for by completing a qualification in this field?

Why IT?

Many people indicate that they want to study IT because they believe that they can earn lots of money and that there is always work available. While it is true that the information technology sector is one of the fast-growing employment sectors and that there is a skills shortage in this sector, you would need to do research and analyse the field in more detail to determine whether these statements are true for all IT fields. It would also be important for you to reflect on how you would fit into these different fields. The information technology sector is extremely varied in terms of fields and related job roles. IT is an industry in itself and is part of all other industries. For example, a computer programmer can work for a consulting firm to assist other companies to develop software or can work for a financial institution and write programmes specifically for the banking sector.

Before you embark on a career in IT, you would need to analyse why you want to work in this field. Specifically, you would need to analyse your personality, interests and values and see how they relate to specific fields and job roles in IT. In addition, you would need to gather more information about a career in IT, specifically the various fields and job roles, as well as labour market information. By doing so, you would ensure an informed decision based on information that you have thought about and not just vague thoughts about “lots of money” and “lots of jobs”.

Remember that there are no right or wrong reasons to want to work in a specific field. We just want you to think broader about the career decision that you are making and to start preparing yourself for a wide variety of career opportunities.

Make some notes about the following:

- Why are you interested in studying IT?
- Where does your interest come from?

Your career planning

The following questions will help you to think about important aspects regarding planning your career in IT. Your honesty when completing the questions will help you to have a realistic picture of what you could still possibly do to make effective career decisions.

Nr	Statement	YES	NO
1	I am sure that I want to major in this field		
2	I want a career that is related to IT		
3	I am familiar with the types of jobs that IT graduates can apply for		
4	I am aware of the skills that employers expect		
5	I know about the different fields in IT		

Nr	Statement	YES	NO
6	I know which field in IT I am interested in		
7	I have a clear understanding of the kinds of work done by individuals in the IT field		
8	I know where to look for information about a career in IT		
9	I have spoken to at least one person who works in IT about a career in this field		
10	I know what steps I will have to take to accomplish my career goals in the field of IT		
11	I know what type of qualification I need for the IT field I am interested in		
12	I understand the curriculum requirements for my intended qualification		
13	I know about other study options after completing my first qualification		
14	I know what the admission requirements are for postgraduate studies in IT		
15	I enjoy reading about IT topics		
16	I am aware of the experience that employers expect		
17	I have thought of ways to gain experience in the IT field during my studies		

Once you have completed all the questions, go back to the statements you marked as “no”. Make notes about what you see as gaps in terms of your career planning.

Which field in IT?

There is a wide variety of fields in IT and each field is suitable for certain types of people with certain interests. The aim of the following activity is to help you get started with thinking about the various fields in IT and how they relate to your personal characteristics and interests. Remember that one activity cannot replace the information that you need to gather before making this career decision, so we encourage you to use this as an introductory exercise and to follow it up with your own further research by reading and talking to individuals in the industry.

Activity

Read the descriptions in the left column on the next page and choose the one or two that describes you best. Check to see which IT job titles/ fields are related to this and then do further research about these specific fields.

Words to describe you	Related IT job titles/fields
I am a people person	Technical support
I like communication and teamwork	Education and training
I like to make sure that everyone is on board	IT sales and marketing
I like to help others understand	IT consulting
I am happy to share what has been learned	IT project management
	Service delivery
	Customer relations
	Systems/ business analyst
	Technical writer

Words to describe you	Related IT job titles/fields
I see the big picture	Database design and administration
I learn by challenging situations or systems	Computer programming
I test constantly	Network design and administration
I analyse pieces of the whole	Systems development
I think about how parts fit together to make the whole work better	Technical advice and consultancy
I like complexity	Human-Computer Interaction careers
I like puzzles	Web development careers
	User interface (UX) design

Words to describe you	Related IT job titles/fields
I can keep things organised and in order	Technical writing
I make sure that projects stay on track	Database administration
I make sure that information is standardised so that procedures are easy to follow	Network design and administration
I give careful attention to organisation, procedure and structure	Computer programming
I can manage systems that require attention to precision and organisation	IT Management
	Policy planning and research
	Quality management
	Support and administration
	Project manager
	Knowledge management careers
	IT auditor

Words to describe you	Related IT job titles/fields
I can problem solve on-the-spot	
I can deal with lots of change	Multimedia careers
I like to negotiate	Technical advice and consultancy
I can troubleshoot	Technical support
I like to express myself artistically	Database design and administration
I like to tinker with equipment and see how it works	Computer programming
I am practical	Games development
I can find resources to get a job done	Web design careers

IT job titles

There is a vast range of job titles related to the IT field. This section will help you to explore job titles related to different specialisation areas in IT.

Management	Policy planning and research
Broadcasting management	
Customer relations management	
Education and training management	
Executive management: CEO, CIO	Business continuity planning
Information resource management	Emerging technology monitoring
Information systems manager	External and internal information systems strategy and planning
Knowledge management	Laboratory work
Network management	Network planning
Policy and regulation management	Policy and regulatory planning
Programme management	Projections
Project administration	Research
Project management	Tariff structure planning
Service delivery management	
Systems development management	
Tariff structure management	
Telecommunications management	

Systems development and maintenance	Service delivery
Programmer	
Desktop support	
Systems integrator	Computer operations
Database designer	Help desk
Web designer	Database administration
Software engineer	Database maintenance
Systems maintenance	User support
Applications support	Hardware and software installation
Applications support	Capacity management
Business analyst	Computer operations
Data analyst	Database administration
Design artists	Database maintenance
Documentation/technical auditing	IT network design
Software engineering	IT network administration and support
Software testing	IT network control
Systems analyst	Service level monitoring
Systems architecture	Systems programming
Systems designer	User support
Systems development	
Systems integration	
Systems maintenance	

Technical advice and consultancy	Quality
Business Process Redesign (BPR)	
Consultancy	IS audit: internal and external
Customer Relations Management (CRM)	Quality assurance
Enterprise Resource Planning (ERP)	Quality audit
Safety assessment	Quality management
Security specialist	Quality standards
Software process improvements	Software testing
Strategic planning	System security
System ergonomics evaluation	
Technical specialist	

Customer management	Education and training
Marketing	
Selling	Development and training
Sales support	Education and training delivery (school, tertiary and organisational level)
Client service	Training materials development
Account Management	E-learning development
Customer awareness campaign	E-learning facilitation
Customer service	
Social networking monitor	

Support and administration	Web and social media
Administration	Social media specialist
Appraisals and assessment	Social media analyst
Change management	Community manager
Configuration management	Blogger
Contract management	Podcaster
Data protection	Social media planner
Financial systems	Content manager
IS asset management	Web designer
Methods and tools	Web developer
Procurement	Communications specialist
Project office	Web communications coordinator
Recruitment and resourcing	New media coordinator
Security administration	

How can I find out more about these job titles?

Do more research about these job titles on the following websites:

- MICT SETA Career Guide (http://www.mict.org.za/downloads/0483_MICT_SETA_Career_Guide.pdf).
Read a detailed report about the labour market related to IT and scarce skills demands.
- Connolly, R, Miller, J, and Uzoka, F. A quick guide for prospective students and career advisors ().

- National Career Advice Portal (<http://ncap.careerhelp.org.za/>). Find links to descriptions of job titles in the IT industry.
- Career Planet (<http://www.careerplanet.co.za/careers/it-and-telecommunications>). Read about different IT jobs on this page.
- O*Net (<http://www.onetonline.org/find/career?c=11&g=Go>). Access a list of job titles linked to IT and read more about what individuals in these fields do.

What is in demand?

The **Department of Higher Education and Training** publishes a list of occupations in high demand that is updated every two years. The current list (2018) includes the following IT-related job titles:

- Chief Information Officer (Highest demand level)
- ICT Project Manager (Highest demand level)
- Application Development Manager (Highest demand level)
- IT Manager (Highest demand level)
- Information Systems Director (Highest demand level)
- ICT Communications Assistant (Highest demand level)
- ICT Systems Analyst (Higher demand level)
- Software Developer (Higher demand level)
- ICT Risk Specialist (Higher demand level)
- Programmer Analyst (Higher demand level)

- Developer Programmer (Higher demand level)
- Applications Programmer (Higher demand level)
- Computer Network Technician (Higher demand level)
- Geographic Information Systems Specialist (Higher demand level)
- Geographic Information Systems Technician (Higher demand level)
- Multimedia Designer (Higher demand level)
- Multimedia Specialist (Higher demand level)
- Web Designer (High demand level)
- Web Developer (High demand level)
- Database Designer and Systems Administrator (High demand level)
- Database Designer and Administrator (High demand level)
- Computer Network and Systems Engineer (High demand level)
- Network Analyst (High demand level)
- ICT Security Specialist (High demand level)

Source: Department of Higher Education and Training (available: <http://www.dhet.gov.za/Information%20Systems%20Coordination/GAZETTE.pdf>)

Furthermore, the MICT SETA (link to brochure) lists the following top ten scarce occupations in the MICT sector:

- Software developer
- Computer Network and Systems Engineer
- ICT systems analyst
- Programmer analyst
- ICT security specialist

- Business analyst
- Multimedia designer
- Telecommunications network engineer
- Database designer and administrator
- Advertising specialist

Identify opportunities with career research

How do you identify opportunities?

Labour market information can help you when you search for work, plan your career or explore self-employment opportunities. It is essential information to have if you want to make informed career decisions and/or search for a job. It can tell you how industries and occupations are changing; what skills are needed; and the working conditions for specific jobs and industries.

There are many factors that influence the availability of jobs such as the impact of globalisation (local companies having to compete on the global market) and technology (use of computers and the availability of information electronically) on the international and national labour market. This means that you need to do continuous research as circumstances change constantly. Also, you will need to be creative in finding labour market information – all the information that you need is not stored in one place.

Your career research will connect you to others who will help you to:

- answer questions you have with relation to your career choice;
- expand your understanding of the opportunities related to your career vision;

- identify “hidden” career paths that you did not think of previously; and
- think about how you could plan to pursue specific opportunities.

Prepare

Think about what you still need to find out: what questions do you have? You will use these questions as a starting point to structure your research. Examples of questions include: “What can I do with a major in IT?”, “How much do computer programmers earn?” or “What must I study to be a network specialist?”

Keep track of information

Keep track of your research by making notes about what you learn and what you still need to find out. Use online services or apps such as Evernote (<http://www.evernote.com>) or Diigo (<http://www.diigo.com>) to keep track of your research online.

Evaluate

Evaluate the information that you are finding: Who wrote the information (person/organisation)? Which country does the information relate to? When was the information last updated? After you have visited several websites, you could compare your notes about the information you found – what are the similarities and differences? What else do you need to find out?

Further ways to do career research

1 Online search

Use a search engine such as Google to search for information related to your questions. For example, you need to find out about career opportunities related to IT. You could start with using keywords such as “careers in IT”, and then to further contextualise your findings, you could search keywords such as “careers in IT Africa” and “careers in IT South Africa”. Scan the brief descriptions of the first ten results and decide which website you would want to explore first. Skim read through the

information on the website (start with the headings) to get an understanding of the content of the page and to find information related to your question. Also check whether there are links to other websites that you could further explore. As you are reading, make a summary of the information. You could use the information you find to make lists of job titles related to your field of study, organisations that employ individuals in these fields and professional organisations.

Remember to bookmark pages that you would want to return to and make notes about what you find and what you would still like to find out about.

Activity

Use Google to find specific job titles related to the field(s) of study you wish to explore. The following are some example search terms you could consider: “job titles IT”; and “job titles IT south africa”.

Job title	Website
Example:	
Computer programmer	Quintcareers.com

2 Occupational information websites

The following websites will help you to learn more about specific job titles:

Website	Description
Unisa Counselling & Career Development http://bit.ly/2TO2KoR	This website provides more information about opportunities related to qualifications at Unisa.
National Career Advice Portal (NCAP) http://ncap.careerhelp.org.za/occupations	Search for information about any of the specific job titles you identified during your Google search and in this brochure. The website also provides information about occupations that have been identified as in high demand, and green occupations.
Career Planet http://www.careerplanet.co.za/	Learn more about career areas such as IT, tourism, engineering and more. The website also contains information about learnerships and student finance
O*Net http://www.onetonline.org/	Explore job titles related to different categories such as your interests, skills, values, typical work activities, and more. You could also browse through groups of occupations related to specific industries or economic sectors.
Prospects http://www.prospects.ac.uk/	Explore different job titles related to job sectors, as well as what you could do with your major subject.

Website	Description
Get-SET-Go: A world of opportunities through careers in Science, Engineering and Technology http://www.nrf.ac.za/sites/default/files/documents/Get%20Set%20Go.pdf	Brochure with information about career options in Science, Engineering and Technology
ITWeb http://bit.ly/2sPOahz	This website has a wealth of information about IT-related industry news, but of special value are the various IT industry surveys on this website under the “Surveys” section. Check for the latest salary survey to get an overview of salaries in the IT industry in South Africa.
The CareerJunction Index http://bit.ly/1DDMUvc	Provides information about the supply and demand in specific industries.
IT CareerFinder http://www.itcareerfinder.com/it-careers.html	
MICT SETA Career Guide http://www.mict.org.za/downloads/0483_MICT_SETA_Career_Guide.pdf	Read a detailed report about the labour market related to IT and scarce skills demands.
Computing disciplines: Quick Guide for Prospective Students and Career Advisors	Read more about the about the different computing disciplines.

Activity

Go to any of the above occupational information websites and search for the job titles you identified during the Google search activity.

Use the tables below to explore your top three occupational interests.

Example table:

Job title	Website	Related job titles?	Pros	Cons
Physicist	NCAP			

Job title #1	Website	Related job titles?	Pros	Cons

Job title #2	Website	Related job titles?	Pros	Cons

Job title #3	Website	Related job titles?	Pros	Cons

3 Job-search portals

Job search portals are useful in terms of researching specific job titles linked to different career fields and industries. Finding job advertisements that interest you is a worthwhile activity, even if you are not currently applying for jobs. You may not yet be eligible to apply for your dream job, but you can still gain a lot of information that can be applied to your career planning. For example, you are interested in IT, but you are not sure which specific job titles are linked to this field; or you want to know what kind of qualifications and skills are needed to be a computer science lecturer.

You can use this information to make career goals, and think strategically about how you can develop experiences that will help you meet more of the selection criteria in the future.

Job search sites include

- PNet (<http://www.pnet.co.za>)
- Careerjunction (<http://www.careerjunction.co.za>)
- Careers24 (<http://www.careers24.com/>)
- Indeed (<http://www.indeed.co.za>)
- Government positions (<http://www.gov.za/aboutgovt/vacancies.htm>)

Activity

- Use one of the websites above to search for jobs related to IT. Read at least three advertisements and note the information in the tables below.

Job title #1	
Salary	
Organisation	
Responsibilities/ duties/ tasks	

Job title #1**Requirements
(qualifications)****Requirements
(experience)****Requirements
(skills)****Job title #2****Salary****Organisation****Responsibilities/
duties/ tasks****Requirements
(qualifications)****Requirements
(experience)****Requirements
(skills)****Job title #3****Salary**

Job title #3	
Organisation	
Responsibilities/ duties/ tasks	
Requirements (qualifications)	
Requirements (experience)	
Requirements (skills)	

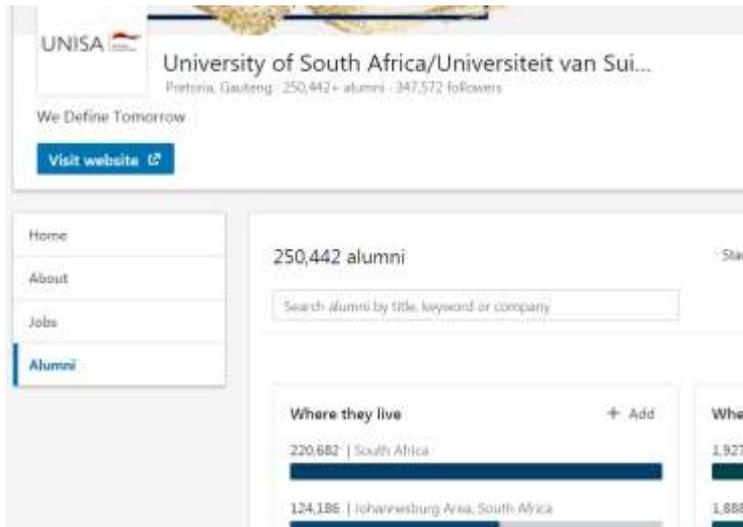
4 LinkedIn

If you have not done so already, start building your network on LinkedIn (<http://www.linkedin.com>) today!

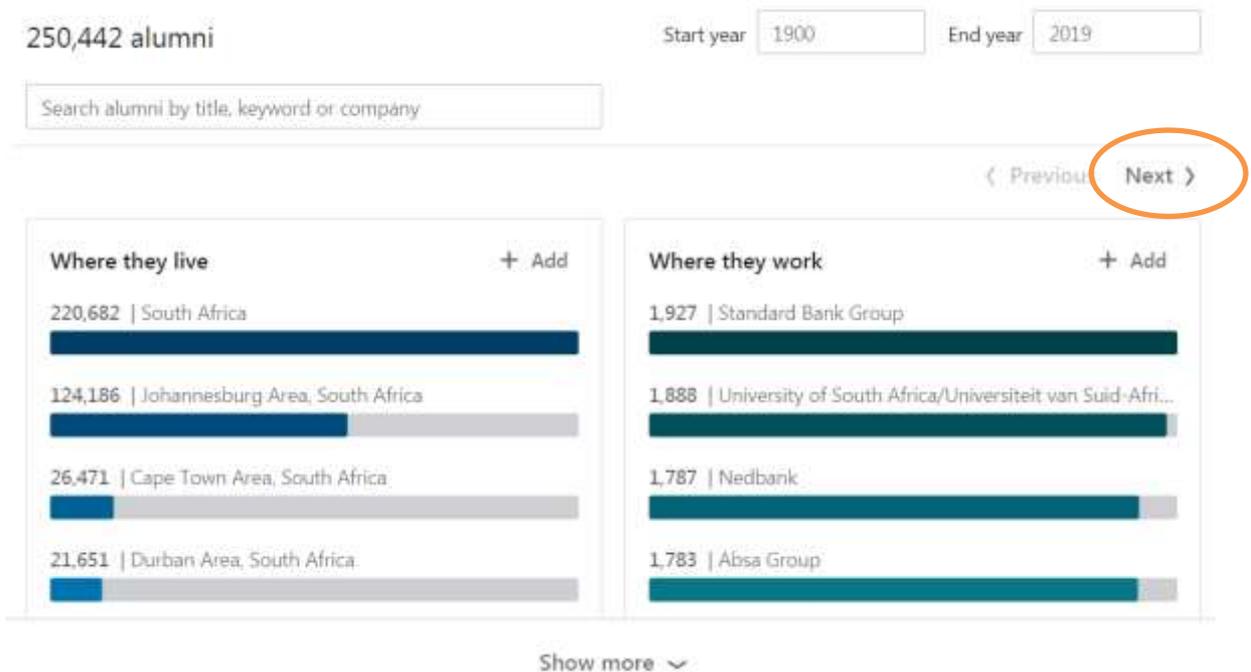
Register for a free account and start connecting with your network online. Join groups relevant to your career field so that you could participate in discussions, ask questions and provide answers about specific topics and search for people, organisations and jobs in your field of interest. Do research about companies and employees to help you identify opportunities. To learn more about using LinkedIn effectively, go to <http://bit.ly/2JSxa3b>.

1. Go to www.linkedin.com and sign in to your LinkedIn account. If you do not have an account yet, then create one.
2. Make sure that you have captured your current or previous studies at Unisa on your LinkedIn profile.
3. Once you are signed in, go to the University of South Africa page at <https://www.linkedin.com/school/12049/>.

4. Click on the “Alumni” link.



5. Click on the “Next >” link to go to the next set of headings (“What they do” and “What they studied”).

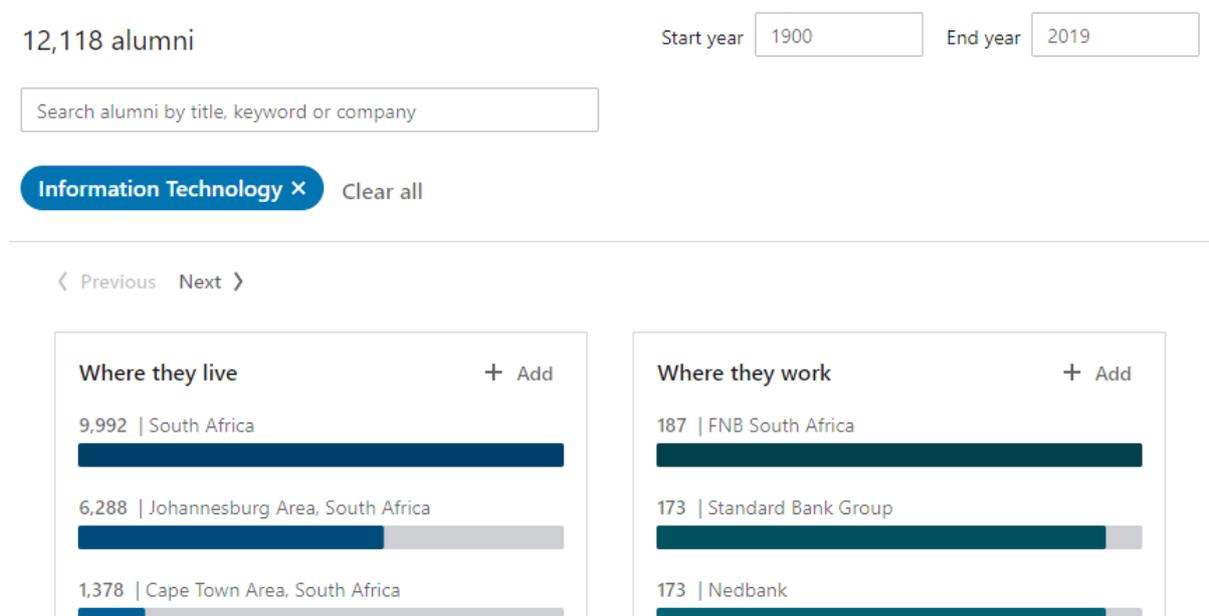


6. Click on “+Add” next to the heading “What they studied”

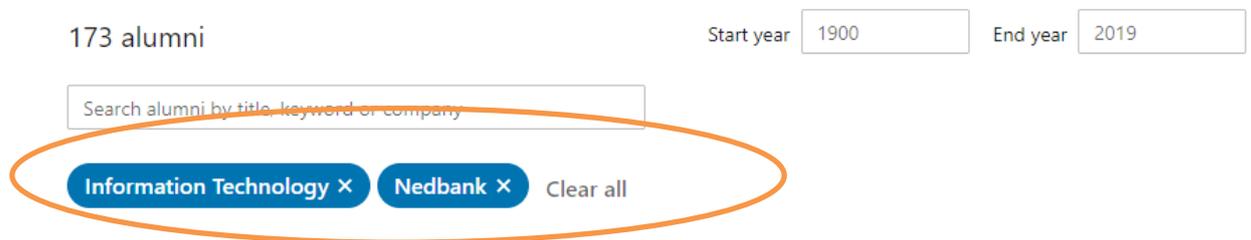


7. Type in “information technology” in the Search box.

8. You will notice that the graphs for the different headings adjust. You have now filtered the information to contain information about Unisa graduates who studied information technology.



9. You can now see how many IT graduates are on LinkedIn, where they work, what they do, what they're skilled at, and how you are connected. For example, in December 2019, most alumni who studied IT worked at the four big banks in South Africa.
10. You are also able to view the profiles of alumni who meet the criteria you searched for. For example, you can filter your search results to those alumni who indicated that they studied IT, and work at Nedbank.
11. As you filter the results, you will get an indication of the filters you have selected (e.g. IT). You can clear these filters by clicking on the x next to the filter or clicking on "Clear all".



12. Make some notes about the interesting things you find below.

Your notes about what you find on LinkedIn

5 Talk to others (informational interviewing)

Once you have done some research about specific options, your next step is to talk to individuals in the type of job/ industry that you are interested in. The goal of these conversations is to explore your career options, to expand your network, to build confidence, to access information and to identify your own strengths and areas of development. For example, you read an article about the use of big data by retailers to predict customer and you feel curious about how this works. You could contact

one of the authors of the article to ask if they would be willing to share how they went about gaining access to the information they needed for their project. Before you interview someone, do research about what you would want to discuss with them – you could ask this person to “fill in the gaps” for you. Start with people you already know: friends, family, neighbours, colleagues, lecturers, tutors and fellow students. Use online social networks such as LinkedIn to further identify potential people. For more information on how to go about this and suggestions for questions that you might want to ask, go to <http://bit.ly/2LX7qp3>. Also, watch this video to learn more: The Dos and Don'ts of Informational Interviews: <http://youtu.be/ixbhtm8l0sl>.

Remember to keep track of the information you have gathered and how you make sense of this. Also, track the questions you still have and how you think you would be able to get answers to these questions.

Activity

Write a list of any people you know who might work in the fields you are interested in. For instance, do any of your parents' friends work in any of the fields you are considering? And write a list of those people who could give you information about any careers you are considering.

You may have identified a lot more people than you thought! Imagine how much information you can gather about the career you are interested in just by talking to these people. Each person will give you fresh insights, opinions and valuable information about the careers you are considering and whether they are currently working in that field or are only remotely related to or associated with it.

The South African Agency for Science and Technology Advancement maintains a database of Science Field Experts on their website at <http://www2.saasta.ac.za/scientists/science-field-experts-database/>. Also, use LinkedIn to identify Unisa alumni who work in your field/ at your organisation of interest.

6 Attend a careers fair event

Attending a careers fair event gives you the opportunity to speak to people from different industries. You may be studying a qualification that does not seem to have

a direct link to the exhibitors or the presenters, but they have one thing in common: they employ people, who work in organisations, who do business with all kinds of suppliers and services. Somewhere in this value chain your qualification will find a place to fit – either as a customer or as an employer or employee.

The annual Unisa Careers Fair usually takes place from March to August at various venues. Go to <http://www.unisa.ac.za/counselling> for more information.

7 Experience studying topics related to your field of interest

Explore what IT is by watching and listening to on-line lectures and reading free open textbooks on a variety of topics related to IT. These resources will enhance your understanding of the various opportunities related to this field.

Search for IT related courses and open textbooks on these sites:

- Coursera.org (<http://www.coursera.org/>)
- Udemy (<http://www.udemy.com/>)
- Saylor Academy (<http://www.saylor.org/books/>)
- Khan Academy (<http://www.khanacademy.org/>)
- Open University (<http://www.open.edu/openlearn/free-courses>)
- MITOpenCourseware (<http://ocw.mit.edu/index.htm>)
- iTunes university (<http://www.apple.com/education/itunes-u/>)
- OpenLearn (<https://www.open.edu/openlearn/free-courses>)
- YouTube (<http://www.youtube.com>)
- FreeVideoLectures (<http://freevideolectures.com/>)

8 Join a professional organisation

Professional organisations can be a very effective way of finding information related to your field of study and many offer networking opportunities such as meetings,

training, and conferences to help professionals in a particular field connect to each other. The following professional organisations are related to IT:

- Institute of Information Technology Professionals South Africa (<https://www.iitpsa.org.za/>)
- The Institute of Chartered IT Professionals (<http://www.icitp.org.za/>)
- The Information Technology Association of South Africa (<https://ita.org.za/>)
- The South Africa Institute of Electrical Engineers (<http://www.ieee.org.za/computer-society>)

Prepare for opportunities and plan your career

“Don’t ask kids what they want to be when they grow up but what problems do they want to solve. This changes the conversation from who do I want to work for, to what do I need to learn to be able to do that.”

Jaime Casap, Google Global Education Evangelist

One interesting way of preparing for opportunities and planning your career is to think about the type of problems you would want to be able to solve. This will help you to focus on what you wish to contribute, and not necessarily, who you want to “become”. Once you have identified some of the problems you would want to focus on, you can then explore how individuals from different academic and professional backgrounds are addressing these problems. Then, you could start thinking about how you would want to contribute and what you will need to do in order to prepare for this.

Activity

Think about your environment (family, community, South Africa, Africa, international) and what problems or challenges you know about. Perhaps you have even thought of possible solutions to these challenges. Write down some of the problems or challenges you would want to address.

Problems/ Challenges

Next, think about how you would want to contribute to addressing some of these problems/ challenges. What would your role be? Also, think about how you would need to start preparing for the roles you identified (think about education, work/ volunteer experience).

Problems/ Challenges	My role	How do I need to prepare

The following are some ideas of challenges/ problems experienced across the world, including South Africa.

Access to digital technologies	Climate	Ethical institutions
Access to education	Climate change	Food security
Access to employment	Corruption	Gender inequality
Access to health care	Crime	Health and well-being
Affordable energy	Data security	HIV/AIDS
Ageing world population	Digital economy	Human rights
Cancer	Disabilities	Hunger
Child labour	Disaster management	Illegal drugs
Clean air	Discrimination	Income inequality
Clean water	Economic growth	Justice
	Economic inequality	Knowledge transfer
	Economic inequality	Lifelong learning

Literacy	Safety at work	Sustainable agriculture
Nutrition	Sea life	Sustainable communities
Peace	Skills development	Sustainable economic development
Poverty	Skills gap	Unemployment
Quality education	Small enterprises	Urban development
Rapid urbanisation	Social cohesion	Violence
Retirement	Social inequality	Water security
Rural development	Substance addiction	

As an example, you may want to address the problem of helping people to live a healthier life. Think about the different individuals that may be able to contribute to the solving of this problem: medical practitioners, dieticians, and social workers. A medical practitioner would focus on diagnosing and treating individuals who present with health problems; a dietician on how to eat more healthy foods; and a social worker on how to access social services to live a healthier lifestyle. As, for example, an app developer, you would possibly want to develop an application that people can access on their mobile phones to encourage them to learn more effective behaviours to choose a healthier lifestyle.

Prepare for career opportunities

Many people believe that a degree will lead directly to a career specifically related to the major(s)/ specialisations for that degree. The fact is that degrees do lead to careers, but that the relationship between the major(s)/ specialisation you choose and the career you build for yourself is complex. Many graduates follow careers that are seemingly not related to their chosen major(s)/ specialisations. Various career management techniques will assist you in managing your career in IT:

1. Develop and reflect on your transferable skills
2. Start with a career portfolio

3. Volunteer work
4. Enhance your employability

Develop your skills

Develop and reflect on your transferable skills

Your degree will equip you with subject-specific knowledge and several work-related skills (transferable skills), for example, the ability to learn fast in new situations, to work independently, and to analyse, evaluate and interpret data. You should be able to identify and articulate the skills that you feel you are gaining through your studies. While you are busy with your studies, you need to reflect continuously on how you could apply the skills that you are learning to contribute to your professional development and who will be able to benefit from what you already know.

Skills reflection

Module passed in the last semester	Skills developed	How can I use the skills to add value to an organisation, or help them solve specific problems?

Start with a career portfolio

Your career management portfolio could help you keep track of the information that you need to gather to manage your career. It could include information about yourself, about job opportunities, occupational information and about the different

fields related to IT. Learn more about compiling a career portfolio here:

<http://bit.ly/2WaPes7>.

Work experience for IT students

Gaining experience is an important part of helping you develop transferable skills as well as specific career-related skills.

Volunteer work

As a volunteer, your studies will be enriched, and you will be able to build up an important network of people who could comment on your professional abilities. You may be wondering how volunteering is related to your studies and your career. We would encourage responsible volunteering where the organisation and community that you are supporting benefit. You also can apply and further develop your skills and knowledge as a student to support the community. Your volunteer work links to your career vision and planning: before you volunteer, think about where you would want to invest your effort.

Volunteering will help you to:

- figure out whether a specific field of work is for you or not;
- find out information about a specific field;

- connect with others and maintaining relationships;
- network with others in your field of interest.

Some questions to think about:

- Which organisations or community would benefit from my skills and knowledge?
- How would this organisation or community contribute to my career vision?
- What conduct is expected of a professional in this organisation and in my future career?
- What are you hoping to gain from your volunteer activities?

Your volunteer work could lead to other opportunities, so it is important to treat it professionally: keep to your commitment, communicate when you cannot volunteer and update your

portfolio with examples of what you have learnt and achieved. As a volunteer, you are already working as a professional – you need to conduct yourself as you would conduct yourself in a work environment. As you are volunteering, you are building your reputation (your “brand”): you would not want to build a reputation as an exploiter or as an unreliable worker.

Your volunteer environment will help you to develop what is valued in professional environments. This includes punctuality, problem-solving and effective communication. In this sense, volunteering contributes to your development as a unique graduate: one who has subject-specific knowledge and an understanding of professional workplace behaviour. The one thing to remember about

volunteering is that your conduct needs to be accountable and ethical. Consider that you are contributing to the community and at the same time you are building your skill sets for the workplace – you need to balance self-interest with that which may benefit others. It is important that your work within the community be done with the utmost respect.

Identify volunteer opportunities in your area through conversations with members of your community. The GreaterGoodSA website at <http://www.gretergoodsa.co.za/> will further help you to identify volunteer opportunities in your community that are related to your interests. Make a list of the organisations that you would want to contact about exploring volunteer opportunities.

Activity

Identify a volunteer work opportunity.

Make a list of the organisations that you would want to contact about exploring volunteer opportunities.

What are you hoping to gain from your volunteer experience?

What can you contribute to an organisation?

Enhance your employability

Your employability refers to your ability to gain initial employment, maintain employment, and obtain new employment if required. In simple terms, employability is about being capable of getting and keeping fulfilling work. There are many aspects related to maximising your employability, including managing your personal brand, job-searching skills, networking, writing a CV, writing a cover letter, include networking, CV-writing, cover letter writing and how to manage job interviews.

Why is your employability important?

Today's careers are not what they used to be: Lifetime employment is a thing of the past: It is not unusual for an individual to hold about six different occupations during their careers, each with several jobs. The reasons for this are technological advances, globalisation, economic shifts and changing social norms. Careers are boundaryless: your career can cut across different industries and companies. Instead of seeing your career as a ladder, you can view it as a web. Career success is defined in many ways: The big house and fancy car are not the only measures of

success. Some people choose to follow a more balanced lifestyle with more time to spend with their family. Where, when and for whom you work

are not necessarily fixed: Flexible work hours, working from home, part-time, temporary and contract work is all part of today's world of work.

Source: Greenberg, J. & Baron, A. Behaviour in Organisations. 8th edition. Pearson Education Inc: New Jersey.

How can you develop your employability skills?

- Work through the information and activities on the *Prepare for job opportunities* section of the Directorate: Counselling and Career Development website (<http://bit.ly/2ufeSA6>).
- *The Muse* career website (<https://www.themuse.com/advice>) provides career advice related to your career questions.
- LiveCareer has an extensive library of resources related to enhancing your employability. Go to <https://www.livecareer.com/> for more information.
- The Monster website (<http://www.monster.co.uk/>) provides several articles related to employability issues. Click on “Career Resources” and “Browse Career Advice” (at top of page) to access career-related information.

Self-confidence

Your personal experiences (for example, your relationships with your parents and siblings; how you related to peers and how you compare yourself to others) shapes your self-confidence. Low self-confidence on all areas of your life, mainly how you negotiate relationships, your career and your studies.

How much you believe in yourself or you do not believe in yourself impact on your success in your career and studies. Low self-confidence affects your career and your studies in several ways:

- Your confidence determines the effort and determination towards your studies and your

career. For example, if you do not believe that you can pass a particular module, you also do not spend time studying, since when you start studying you feel like “what is the use – I will fail in any case”.

- If you keep on telling yourself that, you are not capable of completing your qualification because you have low self-confidence, challenges in your studies act as confirmation that you are a failure. You will then also not go out and get help since you do not think that it will make a difference – you are not hopeful that this could change how you perform.
- Even when you experience challenges that are normal for all students to experience, you tell yourself it is a confirmation that you cannot make it.
- You spend disproportional amounts of time and energy gathering evidence or reinforcing your belief that you cannot make it so that it becomes a reality.
- When you do things well or when you get positive results you deny them. You find it hard to accept that positive things can happen in your life and you find external factors that have contributed to the results or success.
- You will make statements such as “Maybe I was just lucky this time – the other candidates did not accept the offer due to a low salary offer” or “Maybe the lecturer felt sorry for me.”
- When you are presented with an opportunity, you will not use it since you are concerned about failing.
- You project a negative attitude towards yourself and others. You find it hard to appreciate the strengths of others and you are critical about others.
- You will not take a risk to advance in your career because you think you will not make it. For example, you will not apply for an internship because you decide that you will not be

selected even though you meet all the requirements.

- You are always concerned about how other people think about you in a negative way- you will not go and talk to the lecturer or ask other people because you think they will think you are stupid.

On the other hand, when you have a healthy self-image:

- You accept yourself for who you are and you acknowledge that there are things you do well and things you do not do well.
- You use your strengths in one area to build your self-confidence in other areas.
- You acknowledge things people appreciate about you since you use these as a re-affirmation to develop areas where you feel you have room for growth.

How do I build a healthy self-confidence?

Building self-confidence is a process – it is like building a house: Building your confidence starts with small, practical actions. As you get feedback about

- You believe you can achieve your desired career goals and you put your energy and resources towards your vision. This affects your studies in that you can talk to others about your study-related challenges and you are pro-active in terms of managing your studies since you know why you are studying.

- You can recognise and make use of presenting opportunities since you believe that you can contribute.

- You are able to help others understand your potential and you appreciate how others could contribute to your development.

- You are more able to deal effectively with feedback on your performance since you are able to integrate the feedback with your self-knowledge.

your actions, you take some positive things out of it about yourself and appreciate the things you can do well and those you must develop.

Spend some time each day writing down things you did yesterday that you can be proud of and things you would want to do differently.

Give yourself time to develop – a house cannot be built in a day.

Most importantly, it must not be about thinking about things, but about doing things. This will not always be easy, but you need to take risk and test what you can do and also see the results of your actions. For example, if you really want information about your career, take a risk and send an e-mail to your lecturer with questions to see what the response is. As you take the risk, you need to change your attitude about how you view challenges and yourself. You will start thinking differently about challenges: that they are not meant to prove you as a failure, but rather to learn and discover new things about yourself.

You need to be able to embrace failure as part of the process to succeed. Your failures do not define you as a person: Even when you fail, you do not

internalise the experience that you are a failure. You learn from the experience and you try again.

We want you to keep in mind your three circles (career, studies, and personal life) and make sure that you use one of the circles where you have more positive experiences to influence the other areas. For example, in your studies, you are getting good results and you are capable. However, you feel demotivated every time you think about your family situation.

Think about how the fact that you are succeeding with your studies could affect your career. Could it make you hopeful that you will be able to find a good job and then change your family's situation in the future?

Thinking more about the things you can control (for example, your studies and how this will impact positively on your career), enables you to minimise the sense of helplessness in terms of your family situation. When you focus on the things you can control, you create a positive outlook on yourself, your life and others.

My career learning plan

Your career learning plan will help you to stay focused on what you still need to do to find out more about your career development. The career learning plan focuses on the following questions: What is the information you still need? How will you get this information and by when?

Further information needed	Steps to get this information	When?
<i>Where do computer programmers work in SA?</i>	Start with Google search	14 April
	Talk to lecturer about referring me to someone who works in this field	15 April

Qualifications offered by Unisa

Visit the Unisa website at <http://www.unisa.ac.za/qualifications> for more information about these qualifications.

Undergraduate Qualifications

College of Economic and Management Sciences:

- Bachelor of Business Administration Business Administration (98316 - BBA)
- Bachelor of Commerce in Business Informatics (98300 - BIS)

Note: It is important to note that if you do not meet admission requirements for the undergraduate qualification in the College of Economic and Management Sciences then you will need to explore the option of applying for a Higher Certificate offered in the College of Economic and Management Sciences. Completing a relevant Higher Certificate programme will enable you to meet the requirements for a diploma or degree. Completion of a Higher Certificate does not guarantee you admission to a further qualification since the University also considers the number of available spaces for a specific qualification. Read more about the role of the higher certificate qualifications here: <http://bit.ly/2ILN5Gw>.

College of Science, Engineering and Technology

- Bachelor of Science Applied Mathematics and Computer Science Stream (98801 - AMC)
- Bachelor of Science Chemistry and Computer Science Stream (98801 - CCS)
- Bachelor of Science Chemistry and Information Systems Stream (98801 - CIS)
- Bachelor of Science General (98801 - GEN)

- Bachelor of Science Mathematics and Computer Science Stream (98801 - MCS)
- Bachelor of Science Mathematics and Information Systems Stream (98801 - MIS)
- Bachelor of Science in Computing (98906 - COM)
- Bachelor of Science in Informatics (98907 - INF)
- Diploma in Information Technology (98806 - ITE)
- Advanced Diploma in Information Resource Management (90007)

Note: One of the admission requirements for the above degrees and diploma is that you need to have offered Mathematics and Physical Science as subjects on Grade 12 level. If you took these subjects but your percentage was below the requirement for the BSc degree, then you will need to explore the option of applying for a Higher Certificate in the College of Science, Engineering and Technology. Completing a relevant Higher Certificate programme will enable you to meet the requirements for a degree. Completion of a Higher Certificate does not guarantee you admission to a further qualification since the University also considers the number of available spaces for a specific qualification. Read more about the role of the higher certificate qualifications here: <http://bit.ly/2ILN5Gw>. Visit the Unisa website at <http://www.unisa.ac.za/qualifications> for more information about the admission requirements for these degrees.

Postgraduate Qualifications

Postgraduate diploma

- Postgraduate Diploma in Information Resource Management (90069)

Honours degrees

- Bachelor of Science Honours in Computing (98908)

Master's and Doctoral degrees

- Master of Science in Computing (Full Dissertation) (98961)
- Master of Science in Computing Education (Full Dissertation) (98964)
- Doctor of Philosophy in Computer Science (98803)

- Doctor of Philosophy in Information Systems (98804)

Short Learning Programmes (SLPs): Centre for Software Engineering

Unisa's Centre for Software Engineering offers a number of short learning programmes related to computer networks, computer programming, database design and implementation, and robotics. Visit <http://cs-cert.unisa.ac.za/> for more information.

Frequently asked questions

I did not complete mathematics and/or physical science at matric level – can I study IT at Unisa?

The admission requirements for the Diploma in IT as well as the BSc degrees stipulate that mathematics is one of the admission requirements. If you did not complete mathematics in matric you cannot gain access to any of the BSc degrees. Physical Science may also be a requirement for some of the BSc degrees that also contain modules in physics and/or chemistry.

If you are considering the Bachelor of Commerce Business Informatics or Bachelor of Business Administration degrees and you did not complete mathematics at grade 12 level, or you do not meet the mathematics requirement, then you will need to consider to apply for a Higher Certificate offered in the College of Economic and Management Sciences. As per the admission requirements for these degrees, completing a higher certificate in this College will enable you to meet the admission requirements for a BCom or BBA degree. Completion of a Higher Certificate does

not guarantee you admission to a further qualification since the University also considers the number of available spaces for a specific qualification. Read more about the role of the higher certificate qualifications here: <http://bit.ly/2ILN5Gw>.

I completed mathematics and physical science at matric level, but my marks were below 50% - what can I do?

If you would want to pursue the Diploma in IT or BSc degree, you will need to consider applying for admission to a Higher Certificate offered in the College of Science, Engineering and Technology. Visit the Unisa website at <http://www.unisa.ac.za/qualifications> for more information about the available Higher Certificates and their requirements. Completion of a Higher Certificate does not guarantee you admission to a further qualification since the University also considers the number of available spaces for a specific qualification. Read more about the role of the higher certificate qualifications here: <http://bit.ly/2ILN5Gw>.

What if I start with one qualification and wish to change to a different qualification that includes computer science and/or information systems as a major subject?

You can apply for admission to a new qualification. Note that you must ensure that you meet the relevant admission requirements for the proposed qualification. Once the application is approved you can register in the next registration period and apply for the transfer of relevant credits, if applicable.

How do I choose among the various IT-related undergraduate study options at Unisa?

You will need to consider the career research that you have done, specifically the specific field(s) in IT that you are interested in, and the qualifications that you will need to prepare for opportunities in those fields. The [curriculum information](#) for a specific qualification will help you to understand the content of the diploma or degree. For example, the BSc Computing degree focuses on computer programming and you will complete computer science as a major subject, whereas the BCom

Business Informatics degree focuses on information systems analysis and design and you will complete information systems as a major subject.

Use the information and activities in this brochure to help you do more research about which qualification(s) are appropriate for your specific career interests.

I want to become an IT teacher. What do I study at Unisa?

You must complete a Bachelor of Education in Senior Phase and Further Education and Training Teaching School subject combination: Computer Application Technology.

Counselling and career development services at Unisa

The Unisa Directorate for Counselling and Career Development offers career-, academic- and personal counselling services to Unisa students and the broader community. You can talk to a counsellor about:

- **Career decisions.** I am not sure which career path to follow; I don't know which qualification would be best; I want to change my career direction...
- **Career information.** How can I find out more about a career in ...
- **Employability.** How do I market myself to employers? How can I look for work? How can I compile an effective CV? How do I go about networking with others? How do I put together my career portfolio? How can I meet potential employers? How can I improve my interview skills?)
- **My studies at Unisa.** How can I get started with my studies? How do I plan my studies? How can I study more effectively? I don 't feel motivated to continue with my studies... I feel worried about preparing for/ writing the exams. I failed my exams – what now? I need to improve my reading/ writing/ numeracy skills
- **Personal issues.** How can I have better relationships with others? How can I cope more effectively with issues that impact on my studies?

Visit our website at <http://www.unisa.ac.za/counselling> to access many self-help resources, or talk to a counsellor by e-mail to counselling@unisa.ac.za.