Agriculture @ Unisa

A complete guide to preparing yourself for career opportunities

Define tomorrow.

UNISA university of south africa

Contents

The information in this publication is correct as of 30 November 2025. Visit the Unisa Counselling and Career Development downloads page 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 you?

- It will provide you with some insight into the field of agriculture.
- It will help you gain more information on the qualities and skills needed in this career field.
- It will help you identify possible career opportunities related to agriculture.
- It will assist you in finding qualifications related to agriculture.

What problems do you want to solve

“Don’t ask kids what they want to be when they grow up but what problems 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 way to think about your career is by focusing on the **problems you care about**, not only on job titles. This shifts the question from *“What do I want to become?”* to *“What do I want to contribute?”*

Activity

1. Write down some problems or challenges you care about — in your family, community, South Africa, Africa, or the world.
2. Think about how you might contribute to solving them.
3. Ask: *What skills or knowledge would I need to prepare myself for that role?*

Example: You may want to address the problem of unsustainable farming practices. Think about the different individuals who may be able to contribute to solving this problem: government workers, scientists, farmers, educators, engineers, and community development practitioners. As an agricultural scientist, you may research specific ways to practice sustainable agriculture; an engineer may develop innovative equipment; and an educator may teach other farmers how to farm sustainably.

Understanding agriculture

Before you start: Why choose agriculture?

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

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

What is agriculture?

Agriculture is a broad term that encompasses the many ways in which crops, plants, and domestic animals sustain the human population by providing food and other products. The word "agriculture" derives from the Latin words "ager" (field) and "colo" (cultivate) and includes activities such as cultivation, domestication, horticulture, arboriculture, and vegeculture. Livestock management methods such as mixed crop-livestock farming, pastoralism, and transhumance are also part of agriculture.

Cultivation is the process through which humans manage the lives and life cycles of certain plants by manipulating soil, water, and other components of the plant environment.

Domestication involves the human-associated domestication of livestock and non-human domesticators such as insects. This process has been crucial to the development of human culture and has allowed for the cultivation of plants and herding of animals.

New and upcoming developments in agriculture will have a big impact on the careers of people working in this field. One major area of progress is the increased use of technology and data to make farming more efficient and to grow more crops. Techniques like remote sensing, machine learning, and drones are being used to map soil and improve fertilisation and irrigation. Biotechnology and genetic engineering are also making crops more resistant to pests, diseases, and extreme weather. The rise of sustainable agriculture and organic farming practices is also expected to create new opportunities in the sector. With the growing demand for environmentally friendly products and sustainable production methods,

careers in agroecology, permaculture, and regenerative agriculture are likely to become more prevalent.

Fields in Agricultural Science

Agronomy is the study of crop production and soil management. Agronomists work in various settings, including agricultural companies, research institutions, and government agencies.

Horticulture is the study of plants used for food, medicine, and decoration. Horticulturists work in greenhouses, nurseries, landscape design firms, and public gardens.

Agricultural Engineering is the application of engineering principles and technology to agricultural production and processing. Agricultural engineers work in research institutions, equipment manufacturing companies, and government agencies.

Agricultural Economics is the study of the economic factors that affect agriculture, including the production, distribution, and consumption of agricultural goods and services. Agricultural economists work in universities, research institutions, and government agencies.

Animal Science is the study of livestock management and animal production. Animal scientists work in research institutions, agricultural companies, and government agencies.

Food Science is the study of the physical, chemical, and microbiological properties of food, and how they interact during processing and storage. Food scientists work in food processing companies, research institutions, and government agencies.

Soil Science is the study of the physical, chemical, and biological properties of soils. Soil scientists work in research institutions, environmental consulting firms, and government agencies.

Agricultural Extension is the application of scientific research and knowledge to agricultural practices, to help farmers improve their productivity and profitability. **Agricultural extension** workers typically work for government agencies or NGOs, providing education and technical assistance to farmers.

What are the agricultural trends in South Africa?

- **Institutional and policy shifts:** the aim is to create opportunities for entrepreneurial farmers and create a more efficient allocation of resources in agriculture.
- **Technology:** technological advancements have been identified to be a significant driver of agricultural growth.
- The use of **chemicals** such as synthetic fertilisers has contributed to the increase in productivity in the agricultural sector through the replenishment of nutrients in the soil.
- **Genetically modified crops:** Although contentious, genetically modified crops have contributed to the development of agriculture both in South Africa and beyond.
- **Machinery use:** The mechanisation of farms is beneficial to the agricultural sector because it reduces labour costs and improves production efficiency, as well as increases crop income.
- **Market changes:** South Africa's per capita consumption of meat, milk and eggs has been increasing over the years. In response to the change on the demand side, more inputs are directed to the production of livestock, vegetables, and fruits to keep up with the more diversified food demand, contributing to severe soil and water pollution from agricultural runoff and animal wastes.

Agricultural Digital Tools

- Agricultural Statistical Reports: price trends of beef cattle in South Africa and land prices
- Agri-workers Survey and Census Tool: up-to-date information on Agri-workers in the Western Cape from all ages, genders, locations and careers
- Cape Farm Mapper: spatial information queries and decision-making in both the fields of agriculture and environmental management
- Carbon Footprint Calculator: calculate what your personal and professional carbon footprint is. It also gives you tips on how to do better
- Enterprise Budgets: listings of all estimated gross income and expenses associated with a specific enterprise to provide an estimate of its gross margin
- Finance for Farmers Tool
- Fruitlook.co.za: web-based, real-time data based on remote sensing data modelling for the Western Cape agricultural sector. The system is updated weekly with crop growth, moisture, and mineral data
- Green Agri: one-stop portal for all farmers, researchers, and private and non-governmental agencies interested in smart agricultural practices (i.e., supporting

green farming practices, balancing farming and conservation needs, resource efficiency and waste minimisation)
- Smart-Agri: the vision here is to lead the way to a climate-resilient agricultural future for the Western Cape with a coordinated sector plan
- Marketing and Agribusiness: Co-operative Development and Support, Market Analysis and Market Information
- Smart-Tech: access surveys, an ostrich slaughter planner, and a canola camera (i.e., aerial view of yellow leaf coverage over an area)
- Western Cape Dam Levels: know the current dam levels and the importance of water saving

Skills needed for a career in agriculture

- **Technical knowledge:** You need to understand scientific principles underlying agriculture, for example, biology, chemistry, physics, and mathematics.
- **Problem-solving skills:** You need to be able to analyse complex data, identify patterns, and develop solutions to diverse and often complex problems.
- **Communication skills:** You must be able to communicate technical information to a variety of people, such as your customers, other farmers, financial institutions, and policymakers.
- **Passion for agriculture:** You must be genuinely interested in agriculture and be committed to increasing sustainability and productivity.
- **Collaborative skills:** You will work with other people from diverse educational, cultural and technical backgrounds.
- **Attention to detail:** Careful attention to detail is essential in agricultural science, as small mistakes can have significant impacts on crop yields and other outcomes.
- **Ethics and responsibility:** You must be committed to ethical and responsible practices, including environmental sustainability and animal welfare.

Opportunities in agriculture

Job opportunities and work environments

Possible job titles

- Agricultural economist
- Agricultural educator
- Agricultural engineer
- Agricultural journalist/ writer
- Agricultural lawyer
- Agrichemical spraying/dusting operator
- Agricultural/horticultural produce inspector
- Agricultural immunologist
- Agricultural laboratory technician
- Agricultural machine and equipment operator
- Agricultural mobile equipment operator
- Agricultural mobile plant (equipment)
- Agricultural product processing engineer
- Agricultural product processing engineering technologist
- Agricultural research technician
- Agricultural sample collector
- Agricultural sampling officer
- Agricultural scientist
- Agronomist
- Animal geneticist
- Animal scientist
- Bioresource engineer
- Crop consultant
- Entomologist
- Extension officer
- Farm manager
- Geographic Information Systems (GIS) technologist
- Horticulturalist
- Lecturer
- Livestock specialist
- Plant breeder
- Plant pathologist

- Precision agriculture technician
- Seed production technician
- Soil Scientist
- Teacher

Possible work environments

- Agribusiness organisations
- Agricultural research facilities
- Animal sanctuaries
- Animal welfare organisations
- Government (local, national or provincial)
- Higher education institutions (public and private universities, universities of technology & colleges)
- Research councils (eg South African Agricultural Research Council)
- SABS

Explore further

AgriSETA Career Guide

Exploring and researching careers

Making informed career decisions means going beyond what you already know. Career research helps you explore opportunities in [career field], understand what employers are looking for, and identify the steps you can take to prepare yourself.

Try this:

Here are some simple activities to help you explore opportunities in chemistry. Choose 2–3 to start with:

1. **Online search**
   Search “career in chemistry South Africa” or “entry-level jobs in analytical chemistry” and make a list of the qualifications and skills mentioned.

2. **Occupational information websites**
   Visit the South African Department of Higher Education and Training's *National Career Advice Portal*. Search for "chemist" or "laboratory technician" and read about work activities, skills, and job outlook.
3. **Job search portals**
   Check portals like Indeed, Career Junction or PNet. Type in "chemist" or "quality control analyst" and see which employers are currently hiring and the requirements.
4. **LinkedIn**
   Search for Unisa alumni who studied chemistry and see where they work now. What career paths do they follow?
5. **AI tools**
   Use ChatGPT or Google Gemini to ask: "What are emerging careers in chemistry in South Africa?" Compare the results with what you see on job portals.
6. **Talk to others**
   Set up an informal chat with someone working in a chemical lab, teaching chemistry, or doing research, to learn more about their career journey and daily work.
7. **Attend a careers fair**
   When Unisa or professional organisations host career fairs, look for employers related to chemistry. Prepare 2–3 questions to ask them about entry routes into the profession.
8. **Join a professional organisation**
   - The Agricultural Economics Association of South Africa (AEASA)
   - Helpful industry organisations and bodies
9. **Volunteering**
   Look for volunteering or vacation work opportunities in labs, schools, or community science projects. Note the skills you develop through these experiences.

For more detailed steps and extra activities, see our Career Research brochure.

Preparing while you study

Many students believe that a degree will lead directly to a specific job. In reality, your career path is shaped by more than your major. It is also about the **skills you build, the experiences you gain, and how you prepare along the way**. While you study, there are many things you can do to get ready for opportunities.

Your degree is one part of your career journey. By building skills, gaining experience, keeping a portfolio, and investing in your confidence, you'll be better prepared for opportunities during and after your studies.

Develop your transferable skills

Your studies give you subject knowledge and valuable skills such as problem-solving, critical thinking, working independently, and adapting to new situations. Reflect on what you're learning and practise explaining these skills in ways that employers will understand.

Activity

- List three skills you've strengthened this year and one example of how you've used each.
- List three skills you intend to strengthen and how you plan on doing so.

Build a career portfolio

A portfolio helps you keep track of your achievements, experiences, and goals. Include your skills, certificates, volunteering, work experience, and career ideas. Over time, this will become a powerful tool for applications and interviews.

Useful resource

- Unisa Career Portfolio

Gain experience (volunteering or part-time work)

Getting experience outside your coursework helps you explore fields of interest, build networks, and develop workplace skills. Volunteering is especially valuable when done responsibly and with respect for the community.

Think about

- Which organisations could benefit from your skills?
- What could you gain in return (skills, networks, insights)?
- How will this experience link to your career goals?

Enhance your employability

Employability means your ability to get, keep, and grow in fulfilling work. Today's careers are flexible: people change jobs and industries often, and success can mean many different things. You can boost your employability by:

- Managing your personal brand (how others see your professionalism).
- Developing job search skills (CVs, cover letters, interviews, networking).
- Exploring flexible career paths and lifelong learning opportunities.

Useful resources:

- Unisa Prepare for Job Opportunities
- Counselling and Career Development YouTube channel
- PNet Grad Pack
- GradNext

Grow your self-confidence

Believing in your ability to succeed is just as important as skills and knowledge. Low self-confidence can hold you back from studying effectively, applying for opportunities, or connecting with others.

Ways to strengthen your confidence:

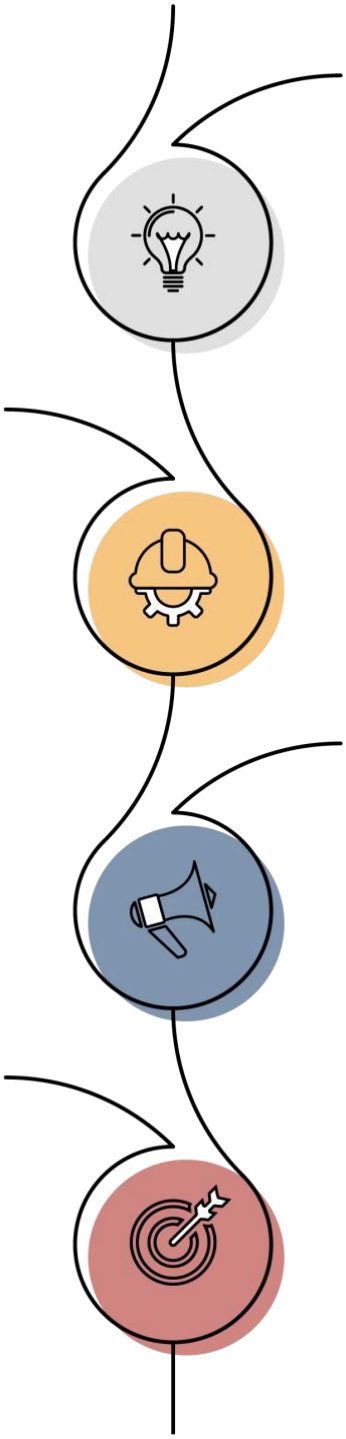
- Focus on your strengths and successes.
- Ask for help when needed — it's a sign of strength, not weakness.
- Practise self-talk that encourages growth instead of fear.

Remember: confidence grows with action. The more you try, the more you'll believe in yourself.

Your roadmap to success

Embarking on a career journey while studying can feel exciting and overwhelming. This roadmap will guide you year by year, helping you to stay intentional, informed, and adaptable.

Careers are rarely straight lines. Think of this roadmap as a flexible guide: you can move between stages depending on your opportunities and goals.



Year 1: Explore and build foundations

- Reflect on your interests, strengths, and career goals.
- Research career paths linked to your qualification.
- Plan your modules and think about postgraduate options.
- Identify key employability skills to develop.
- Create a basic CV and LinkedIn profile.
- Join a student or professional organisation.

Year 2: Grow and gain experience

- Focus on excelling in your studies.
- Apply for internships, part-time jobs, or volunteer work.
- Attend workshops, webinars, or conferences.
- Gain certifications (if relevant).
- Expand your professional network.
- Update your CV and portfolio with new experiences.

Year 3: Refine and specialise

- Revisit your career goals and explore specialisations.
- Connect with alumni and seek mentorship.
- Strengthen your professional presence (LinkedIn, portfolio, personal website).
- Practise with mock interviews and improve communication skills.
- Contribute to professional discussions online or at events.

Final Year: Launch your career

- Start an intentional job search (LinkedIn, job boards, company websites).
- Tailor your CV and cover letters for each application.
- Practise interviews and refine your elevator pitch.
- Attend career fairs and networking events.
- Evaluate and negotiate job offers with guidance from mentors.
- Commit to lifelong learning and professional development.

My career learning plan: Next steps

Your next step is to plan how you will get the information that you still need to make optimal career decisions. Use SMART goals to help you plan your career research.

S – Specific: What exactly do I want to find out?

M – Measurable: How will I know I've done it?

A – Achievable: Can I realistically do this step?

R – Relevant: Does this help me make better career decisions?

T – Time-bound: By when will I do it?

What career questions do I still need answers to?

My career question	What steps will I take?	By when?	Who/what can help me?	Done?	What's next?
E.g. What jobs can I do with an agriculture qualification?	Search LinkedIn profiles of Unisa agriculture graduates	15 Oct	LinkedIn, Alumni page	Yes	Connect with 3 alumni

Career planning is not about having all the answers right now—it's about staying curious, setting small goals, and building momentum.

Study opportunities at Unisa

Undergraduate qualifications in agriculture

College of Agriculture and Environmental Sciences

- Bachelor of Science in Agricultural Science Agricultural Business and Management (90082 - ABM)
- Bachelor of Science in Agricultural Science Animal Science (90082 - ANS)
- Bachelor of Science in Agricultural Science Plant Science (90082 - PLS)

- Diploma in Agricultural Management (90097)

- Advanced Diploma in Agricultural Management (98027)

One of the admission requirements for the above BSc degrees is that you need to have completed 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.

Visit the Unisa website at http://www.unisa.ac.za/qualifications for more information about the admission requirements for these degrees.

Postgraduate qualifications in agriculture

Postgraduate diplomas

- Postgraduate Diploma in Agriculture Agri-Business (90159 - ABM)
- Postgraduate Diploma in Agriculture Animal Health (90159 - AHE)

- Postgraduate Diploma in Agriculture Animal Science (90159 - ANS)
- Postgraduate Diploma in Agriculture Plant Science (90159 - PLS)

Master's and PhD

- Master of Science in Agriculture (98003)
- Doctor of Philosophy in Agriculture (90018)

Read more about the Research Focus Areas here.

Frequently asked questions

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

For degrees in agriculture, the admission requirements stipulate that mathematics is one of the requirements. If you did not complete mathematics in matric, you cannot gain access to any of the BSc degrees. More information about the Unisa admission requirements:

College of Science, Engineering and Technology

For the Diploma in Agricultural Management, you may apply for admission to the Higher Certificate in Life and Environmental Sciences. If you are admitted to the Higher Certificate and complete it, it will enable you to meet the requirements for a degree. Read more information about the Unisa higher certificates and their related qualifications per College to help you identify the higher certificate(s) relevant to your study interests. Please note that completion of a lower-level qualification, such as a higher certificate, is not a guarantee that you will be admitted to the higher-level qualification (eg diploma or bachelor's degree), as spaces are limited.

I completed maths and science, but my marks were below 50% – what can I do?

You will need to consider applying for admission to a relevant Higher Certificate offered in the College of Science, Engineering and Technology. Visit the Unisa website 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.

Is there a practical component to agriculture qualifications?

Yes. The qualifications contain practical modules at each level of study. Arrangements are made for students to complete the required laboratory work at the Unisa Science campus.

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 and mental health.** How can I have better relationships with others? How can I cope more effectively with issues that impact my studies?

Contact us

- Send an email to counselling@unisa.ac.za.
- Make an appointment to see a counsellor:
  - In-person at a Unisa Centre
  - Online (on MS Teams)

Further self-help resources for career, academic and personal development

Our website: www.unisa.ac.za/counselling

Our YouTube channel: www.youtube.com/unisacareers