

Life Sciences @ Unisa

A guide to preparing for
career opportunities



Contents

Contents	1
How will this brochure help you?	3
What problems do you want to solve	3
Understanding life sciences	4
Before you start: Why choose life sciences?	4
What are life sciences?	5
Biology	5
Botany	6
Zoology	6
Microbiology	7
Biochemistry	7
Physiology	7
Biotechnology	8
Biomedicine	8
Forensic Science and Life Sciences	9
Future trends in life sciences	9
Professional registration	10
Exploring and researching careers	11
Preparing while you study	12
Develop your transferable skills	13
Build a career portfolio	13
<i>Useful resource</i>	13
Gain experience (volunteering or part-time work)	13
Enhance your employability	13
<i>Useful resources</i>	14
Grow your self-confidence	14
<i>Ways to strengthen your confidence</i>	14
Your roadmap to success	15
My career learning plan: Next steps	17

Study opportunities at Unisa	18
Undergraduate qualifications	18
Postgraduate qualifications	19
Honours degrees	19
Master's and PhD	19
Counselling and career development services at Unisa	20
Contact us	20
Further self-help resources for career, academic and personal development	20

The information in this publication is correct as of 28 February 2026. 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 what studying life sciences involves.
- It will help you gain more information about the skills needed for your career in life sciences.
- It will help you identify possible career fields related to life sciences.
- It will assist you in finding life science-related qualifications offered by Unisa.

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 challenge of improving public health and protecting communities from infectious diseases.

Think about the different individuals who can contribute to solving this challenge: microbiologists, biochemists, biotechnologists, medical researchers, epidemiologists, laboratory scientists, public health officials, and policy makers.

As a life sciences professional, you may conduct laboratory research to identify pathogens, study disease mechanisms, or develop diagnostic tools. A biotechnologist might work on developing vaccines or innovative treatments. Epidemiologists analyse disease patterns to inform prevention strategies, while public health officials design and implement community-based interventions. Laboratory scientists ensure accurate testing and quality control, and policy makers allocate resources and shape national health strategies.

Together, these roles demonstrate that improving public health and responding to biological threats requires collaboration across multiple scientific and policy disciplines — and that a background in life sciences equips you to contribute meaningfully to research, innovation, and the protection of human and environmental health.

Understanding life sciences

Before you start: Why choose life sciences?

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

- Why are you interested in studying life sciences?
- 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 life sciences?
- Which career opportunities can I pursue with a life sciences background?

What are life sciences?

Life Sciences is a broad term for scientific disciplines that study living organisms and life processes. It includes fields such as:

- Biology
- Botany
- Zoology
- Microbiology
- Biochemistry
- Physiology
- Biotechnology
- Biomedicine

Life Sciences explore how living systems function: from molecules and cells to ecosystems and entire populations.

Biology

Biology is the scientific study of living organisms and their interactions with each other and their environments.

Because biology is such a broad field, biologists may study:

- Cells and microorganisms
- Plants and animals
- Human health and disease
- Ecosystems and biodiversity
- Climate change and environmental sustainability

Biology connects directly to real-world issues such as infectious disease outbreaks, cancer research, biodiversity loss, food production, and environmental conservation.

Botany

Botany is the scientific study of plants and plant life.

Botanists may specialise in:

- Plant ecology
- Plant genetics
- Plant physiology
- Agricultural science
- Conservation and biodiversity

Plant science contributes to medicine, food production, sustainable agriculture, environmental protection, and climate adaptation.

Zoology

Zoology is the scientific study of animals.

Zoologists may work in areas such as:

- Wildlife conservation
- Animal physiology
- Marine biology
- Entomology (insects)
- Animal behaviour

Zoology plays an important role in biodiversity protection, conservation management, and ecosystem sustainability.

Microbiology

Microbiology focuses on microorganisms such as bacteria, viruses, fungi, and parasites.

Microbiologists work in:

- Healthcare and disease control
- Pharmaceutical and biotechnology industries
- Food safety
- Water quality monitoring
- Environmental protection

Microbiology is essential in understanding infectious diseases, vaccine development, and food and environmental safety.

Biochemistry

Biochemistry explores the chemical processes that occur within living organisms.

Biochemists study:

- Proteins and enzymes
- DNA and genetics
- Metabolism
- Drug development

Biochemistry connects biology and chemistry and plays a critical role in medical research, pharmaceuticals, forensic science, and biotechnology.

Physiology

Physiology studies how living organisms function.

In human physiology, this includes understanding how body systems work together.

Applications include:

- Medical research
- Exercise science

- Pharmacology
- Clinical research

Physiology underpins advances in healthcare and disease treatment.

Biotechnology

Biotechnology involves using living organisms or biological systems to develop useful products.

Applications include:

- Vaccine and drug development
- Agricultural improvements
- Genetic research
- Environmental protection
- Biofuels and sustainable technologies

Biotechnology is a rapidly growing field combining biology, technology, and innovation.

Biomedicine

Biomedicine applies biological science to clinical and medical practice.

It includes areas such as:

- Molecular biology
- Genetics
- Immunology
- Neuroscience
- Pathology
- Bioinformatics

Biomedicine bridges laboratory research and patient care.

Forensic Science and Life Sciences

Forensic science applies scientific principles to legal investigations.

Life sciences graduates may work in forensic environments analysing:

- DNA
- Blood and body fluids
- Hair and tissue samples
- Insect or plant evidence

Forensic careers often require strong foundations in biology and chemistry, as well as advanced laboratory skills.

Future trends in life sciences

Life Sciences are evolving rapidly in response to global challenges such as climate change, pandemics, food insecurity, and technological innovation. Graduates entering this field will work in an environment shaped by science, data, sustainability, and interdisciplinary collaboration.

Some important trends shaping the future of life sciences include:

Genomics and precision medicine

Advances in genetics and molecular biology are enabling personalised medicine tailored to an individual's genetic profile. This includes gene therapy, targeted drug development, and improved disease diagnostics.

Emerging infectious diseases and pandemic preparedness

Global health crises have highlighted the importance of microbiology, epidemiology, and biotechnology. Life scientists are central to vaccine development, disease surveillance, and public health response systems.

Climate change and biodiversity conservation

Climate change is transforming ecosystems worldwide. Life scientists are increasingly involved in conservation biology, ecosystem restoration, climate adaptation research, and biodiversity protection.

Sustainable agriculture and food security

Population growth and environmental pressures demand innovative approaches to food production. Biotechnology, soil science, plant genetics, and sustainable farming practices are critical to ensuring long-term food security.

Biotechnology and bioinnovation

Biotechnology continues to expand into areas such as biofuels, biodegradable materials, pharmaceutical production, and environmental remediation. The bioeconomy is becoming a major driver of economic growth.

Bioinformatics and Big Data

Life Sciences are becoming increasingly data-driven. Bioinformatics, computational biology, and artificial intelligence are transforming research, enabling scientists to analyse complex biological systems at scale.

Interdisciplinary research

Modern scientific challenges require collaboration across disciplines. Life scientists now work alongside engineers, data scientists, policy makers, and environmental specialists to develop integrated solutions.

The future life scientist combines strong scientific knowledge with digital skills, ethical awareness, and a commitment to sustainability.

Professional registration

In South Africa, graduates in certain Life Sciences fields may register with the South African Council for Natural Scientific Professions (SACNASP). SACNASP is the statutory body that regulates natural scientific professions in terms of the Natural Scientific Professions Act. Registration is typically required for professionals who practise in fields such as biological sciences, environmental science, and related natural science disciplines. Registration categories include Candidate Natural Scientist, Professional Natural Scientist, and

Certificated Natural Scientist. Professional registration enhances credibility, demonstrates competence, and may be required for certain positions, especially in environmental consulting, biodiversity management, and scientific reporting.

You are encouraged to familiarise yourself with SACNASP requirements early in your studies, particularly if you intend to pursue careers in environmental management, ecology, conservation, or related scientific practice.

Exploring and researching careers

Making informed career decisions means going beyond what you already know. Career research helps you explore opportunities related to life sciences, 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 life sciences. Choose 2–3 to start with:

1. **Online search**

Search “career in life science South Africa” or “entry-level jobs related to life sciences” 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 specific job titles and read about work activities, skills, and job outlook.

3. **Job search portals**

Check portals like [Indeed](#), [Career Junction](#) or [PNet](#). Type in specific job titles to see which employers are currently hiring and the requirements.

4. **LinkedIn**

[Search for Unisa alumni](#) who studied life sciences to see where they work. What career paths do they follow?

5. **AI tools**

Use ChatGPT or Google Gemini to ask: “What are emerging careers in life sciences 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 the field or at an organisation you are interested in 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 life sciences. Prepare 2–3 questions to ask them about entry routes into the profession.

8. **Join a professional organisation or network**

- [South African Society for Biochemistry and Molecular Biology \(SASBMB\)](#)
Relevant for students interested in biochemistry, molecular biology, and biotechnology.
- [Zoological Society of Southern Africa \(ZSSA\)](#)
For those pursuing zoology, animal biology, and biodiversity research.
- [Botanical Society of South Africa \(BotSoc\)](#)
Supports plant conservation and botanical research.
- [South African Society for Microbiology](#)
Useful for students specialising in microbiology and infectious diseases.
- [Southern African Society of Aquatic Scientists \(SASAgS\)](#)
Relevant for students interested in aquatic ecosystems and water science.

9. **Volunteering**

Look for volunteering or vacation work opportunities. 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

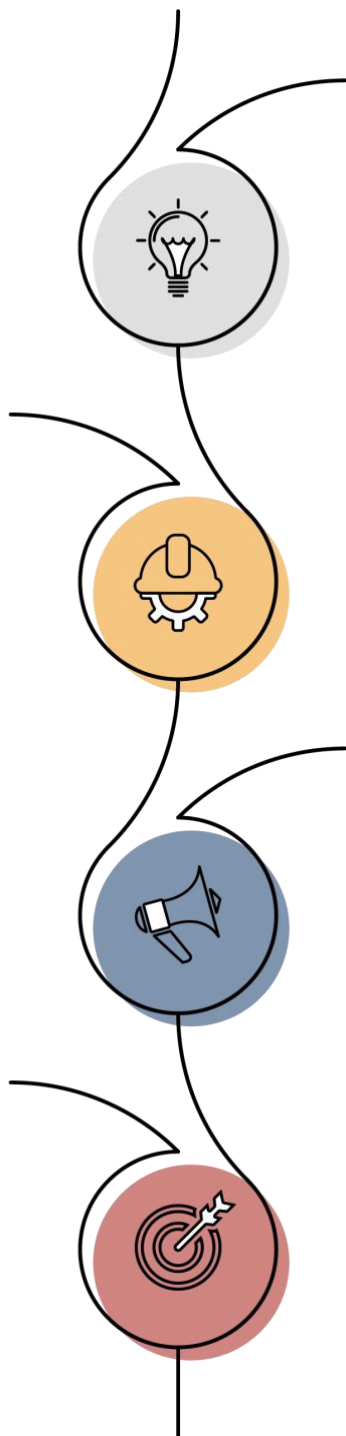
- Focus on your strengths and successes.
- Ask for help when needed: it's a sign of strength, not weakness.
- Practise self-talk that encourages growth instead of fear.

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

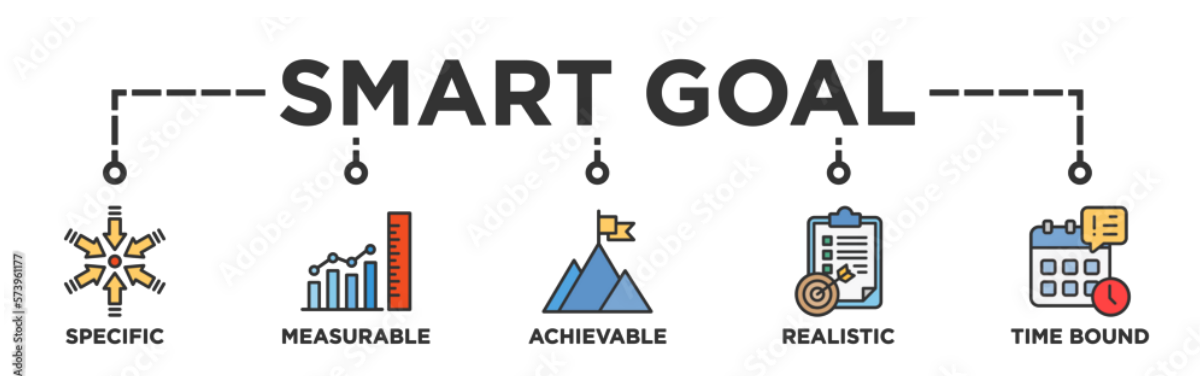
- Revisit your career goals and explore specialisations.
- Connect with alumni and seek mentorship.
- Strengthen your professional presence (LinkedIn, portfolio, personal website).
- Practise with mock interviews and improve communication skills.
- Contribute to professional discussions online or at 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 a degree in life sciences?	Search LinkedIn profiles of Unisa life science graduates	15 Oct	LinkedIn, Alumni page	Yes	Connect with 3 alumni

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

Study opportunities at Unisa

Undergraduate qualifications

- [Bachelor of Science in Life Sciences Biochemistry \(or Physiology or Microbiology\) with Business Management \(98053 - BBM\)](#)
- [Bachelor of Science in Life Sciences Biochemistry and Botany \(98053 - BAB\)](#)
- [Bachelor of Science in Life Sciences Biochemistry and Microbiology \(98053 - BAM\)](#)
- [Bachelor of Science in Life Sciences Biochemistry and Physiology \(98053 - BAP\)](#)
- [Bachelor of Science in Life Sciences Biochemistry and Zoology \(98053 - BAZ\)](#)
- [Bachelor of Science in Life Sciences Biomedical Sciences \(98053 - BMI\)](#)
- [Bachelor of Science in Life Sciences Biotechnology \(98053 - BIT\)](#)
- [Bachelor of Science in Life Sciences Botany and Microbiology \(98053 - BNM\)](#)
- [Bachelor of Science in Life Sciences Botany and Zoology \(with Geography\) \(98053 - BZG\)](#)
- [Bachelor of Science in Life Sciences Genetics and Zoology \(or Botany, Microbiology, Physiology or Biochemistry\) \(98053 - GZB\)](#)
- [Bachelor of Science in Life Sciences Microbiology and Physiology \(98053 - MAP\)](#)
- [Bachelor of Science in Life Sciences Microbiology and Zoology \(98053 - MAZ\)](#)
- [Bachelor of Science in Life Sciences Physiology and Zoology \(98053 - PAZ\)](#)
- [Bachelor of Science in Life Sciences Psychology and Physiology \(with Genetics\) \(98053 - PPG\)](#)

If you do not meet the admission requirements for a Bachelor's degree, then you will need to explore the option of applying for a [relevant Higher Certificate](#). Completing a relevant Higher Certificate programme will enable you to meet the requirements for a degree. If you also do not meet the admission requirements for a relevant higher certificate, you need to explore other options such as upgrading your senior certificate or national senior certificate.

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

Postgraduate qualifications

Honours degrees

- [Bachelor of Science Honours in Life Sciences Biochemistry \(90084 - BIO\)](#)
- [Bachelor of Science Honours in Life Sciences Botany \(90084 - BOT\)](#)
- [Bachelor of Science Honours in Life Sciences Genetics \(90084 - GNE\)](#)
- [Bachelor of Science Honours in Life Sciences Microbiology \(90084 - MIB\)](#)
- [Bachelor of Science Honours in Life Sciences Physiology \(90084 - PHY\)](#)
- [Bachelor of Science Honours in Life Sciences Zoology \(90084 - EZO\)](#)

Master's and PhD

- [Master of Science in Life Sciences \(98016\)](#)
- [Doctor of Philosophy in Life Sciences \(90012\)](#)

Read more about the Research Focus Areas [here](#).

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