



# Short Learning Programmes (SLPs)



science, technology  
& innovation

Department:  
Science, Technology and Innovation  
REPUBLIC OF SOUTH AFRICA



technology innovation  
AGENCY  
Innovating Tomorrow Together



UNIVERSITY  
OF  
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paets  
PROCESS ENERGY & ENVIRONMENTAL  
TECHNOLOGY STATION

UNIVERSITY OF JOHANNESBURG

## Process, Energy and Environmental Technology Station (UJ PEETS)

### VISION

Establishing a vibrant green economy that continually drives South Africa's equitable socio-economic success.

### MISSION

Providing technical oriented enterprise development support in the water, energy and environmental sector through appropriate technological innovations.



## Introduction

Since its founding in 2010, **UJ PEETS** (Process, Energy and Environmental Technology Station) at the University of Johannesburg has been committed to enhancing the competitiveness of South Africa's industries and emerging enterprises. Supported by the Technology Innovation Agency and the Department of Science, Technology and Innovation, UJ PEETS is at the forefront of driving transformative change. By leveraging specialised knowledge and fostering dynamic partnerships across industry, government, academia and small businesses, the station is advancing innovation and facilitating the transfer of technology to propel the circular green economy forward. This includes actively shaping and influencing policy implementation to support sustainable development.

UJ PEETS' mission is deeply rooted in addressing critical challenges across the **Water, Energy and Environment** sectors. The station offers a comprehensive suite of services, including technical assistance, research and development and Short Learning Programmes (SLPs), all aligned with the United Nations Sustainable Development Goals (SDGs). A core focus of UJ PEETS is the design and delivery of tailored capacity-building initiatives to enable a just transition towards a cleaner, more sustainable future. These programmes aim to empower participants with the technical, practical and strategic skills needed to tackle the complex demands of a regenerative green economy.

UJ PEETS excels in skills development through innovative training solutions that bridge the gap between academic knowledge and industry application. Our bespoke capacity-building programmes are developed in consultation with stakeholders to ensure relevance and impact. These initiatives include upskilling in areas such as energy efficiency, renewable energy systems, water management, waste-to-energy solutions and environmental stewardship. By equipping participants with cutting-edge competencies, UJ PEETS supports the creation of a skilled workforce capable of driving economic growth and climate resilience.

The programmes featured in this booklet represent a snapshot of what UJ PEETS offers. Additional training and capacity development opportunities can be customised to meet specific needs and priorities. The UJ PEETS team is committed to collaborating with stakeholders to co-create impactful learning experiences that contribute to long-term sustainability and inclusive socio-economic success.



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# ENERGY

Renewable Energy Solutions

Energy Efficiency

Waste to Energy Conversion

Energy Micro-Grids & Mini-Grids

Energy Storage



## Short Learning Programme (SLP) Applied Renewable Energy

### INTRODUCTION

With general popular interest and growth of solar energy applications combined with a wide range of technological depth and its application in research and industry, the course provides a sound useful knowledge base for a wide range of skills while contributing to the broad renewable energy industry.

The SLP contributes to growing green energy applications and its green energy academic offerings.

### CANDIDATE REQUIREMENTS

Minimum of a first four year degree in a relevant engineering field (mechanical, electrical, chemical, industrial), or other four year degree pitched on NQF level 8 in a related field.

### TOPICS

- Sources and availability of renewable energy.
- Scientific and technological background to energy available from:
  - Photovoltaic cells.
  - Solar thermal (water, air, drying).
  - Wind.
  - Sea (wave and tidal).
  - Hydroelectric storage and single discharge.
  - Biomass (conversion processes).
  - Solar illuminance systems and day lighting.
- Economic considerations.

### INFORMATION

In person: 40 hours

Self Study: 40 hours

Preparation and Assignment Completion: 70 hours

Total: 150 hours

Duration: ±4 weeks.

### WHO SHOULD APPLY

Candidates can vary from technical staff to postgraduate applications in research and product development in the alternative energy space.

On successful completion of the SLP students will be able to:

- Identify and quantify various renewable energy sources.
- Specify and evaluate equipment and plant for extracting a number of renewable energies.
- Evaluate the technological feasibility of renewable energy systems.
- Evaluate the economic feasibility of various renewable energy systems.

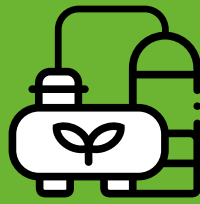
Complete the the sign-up form [HERE](#).

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## Short Learning Programme (SLP) Introduction to Biogas

This Short Learning Programme is aimed at developing the fundamental knowledge about organic waste and the role of anaerobic digestion to extract value from organic waste. In addition, the program sets the foundational knowledge required for more advanced anaerobic digestion courses and provides an introduction to students for other introductory theoretical and practical courses. At the end of this course, participants should understand the present management of organic waste, the potential value inherent in the organic waste, how anaerobic digestion can be used to extract value from organic waste, the existing legislation around organic waste management, and the role of biogas and the by-products of anaerobic digestion within the green economy.

### TOPICS

- SECTION 1
- Waste in South Africa and legislative framework
  - The science and technology for biogas production
  - Anaerobic digestion plants
  - Digester types and components
  - State of AD technology in South Africa
- SECTION 2
- Substrate for biogas production
  - Substrate handling and preparation
  - Biogas cleaning and application
  - Digestate management and application
- SECTION 3
- Pre-feasibility analysis
  - Design considerations
  - Basic plant design and sizing
  - Start-up and operations
  - Regulatory framework & safety

### OTHER COURSES OF INTEREST

- Domestic anaerobic digestion
- Commercial anaerobic digestion
- Wastewater treatment anaerobic digestion

### ABOUT

Participants of this course will learn about the principle of converting organic waste to biogas and the application of biogas, as well as the environmental, ecological and socio-economic benefits of this technology pathway.

### WHO SHOULD ATTEND

NQF level 5 students, municipal officials, farmers, consultants, environmental enthusiasts, those looking at reducing their carbon footprint, managing waste and financial sectors looking for an introduction into biogas production.

**COST:** R11 510.00

**DURATION** Presented online as a two week course.

Register [HERE](#).

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## Short Learning Programme (SLP) Domestic Biogas Plants

Domestic digesters have great potential in rural and peri-urban areas due to its potential to meet heating, cooking, electricity and fertiliser needs of farmers and local communities, thereby developing and growing the circular green economy and reducing harmful impact on the environment through a cost-effective method.

The SLP aims to provide candidates with the knowledge and skills needed to plan, build and operate a domestic anaerobic digester. It aims to develop skills required for the management, maintenance and resuscitation of domestic anaerobic digesters.

### THE PROGRAMME

- 1 week of contact lectures
- 2 days of on-site work
- Installation and pipe connections, appliance connection, system testing, digester loading
- Preparation for the assessments
- 4-hour site visit/work-based learning
- 4-hour lab practical/tutorial
- Independent learning and engaging with mandatory reading and supplementary materials provided

**TOTAL NO OF HOURS:** 96 / **COST:** R12 340.00

### THE FOLLOWING TOPICS WILL BE COVERED

- Overview of fundamentals of anaerobic digestion
- Feasibility evaluation for site suitability for domestic digester.
- Energy audit and resources evaluation
- Domestic digester types
- Guidelines for planning, selecting, designing, and constructing domestic digester
- Design calculation for digester sizing
- Material estimation
- Costing domestic digester system
- Construction consideration for domestic digester
- Operational problems of domestic digesters
- Maintenance of domestic digester
- Methods of improving digester productivity
- Purification, compression and storage of biogas
- Utilisation system of biogas
- Digestate management and utilisation
- Safe working practice (General OHS)

### THE BENEFITS OF THE PROGRAMME

Upon successful completion of this course candidates should be able to convert household waste and agricultural waste such as manure into biogas and organic fertiliser and keep the system running optimally. With the skill set gained through this SLP, the participants could become entrepreneurs by offering this solution to other members of their community, exporting this knowledge to neighbouring countries and advancing their knowledge to become technicians in the medium to large-scale plants.

### CANDIDATE REQUIREMENTS

The SLP has been designed to provide the fundamental knowledge base to individuals, artisans and entrepreneurs in the SMEs with an interest in alternative energy sources to support local economy and reduce harmful waste on the environment. Candidates successfully completing the programme receive a Certificate of Completion.

Apply **HERE**. For further enquiries send an email to [peetstraining@uj.ac.za](mailto:peetstraining@uj.ac.za)



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## Short Learning Programme (SLP) Anaerobic Digestion of Wastewater Sludge for Biogas

### INTRODUCTION

The management of organic municipal solid waste, sewage sludge, agricultural waste and organic industrial processes is a challenge due to their environmental pollution. One of the approaches to derive value from organic waste is through anaerobic digestion to generate biogas and organic fertiliser.

### CANDIDATE REQUIREMENTS

NQF level 5 students. The course will be beneficial to municipal officials, farmers, green circular economy consultants, environmental enthusiasts and financial sectors.

**COST:** R12 340.00

### TOPICS

#### SECTION 1

- Introduction to organic waste management
- The science and technology for biogas production
- Anaerobic digestion plants
- Digester types and components
- State of AD technology in South Africa

#### SECTION 2

- Substrate for biogas production
- Substrate handling and preparation
- Biogas cleaning and application
- Digestate management and application
- Field trip

#### SECTION 3

- Pre-feasibility analysis
- Design considerations
- Basic plant sizing
- Start-up and operations
- Regulatory framework & safety

### THE COURSE

The course aims to introduce participants to the fundamentals of organic waste management and the role of anaerobic digestion in value recovery from organic waste. Candidates who successfully complete the course will:

- Identify viable organic waste suitable for anaerobic digestion.
- Understand the principle of converting organic waste to biogas.
- Gain knowledge about the application of biogas and the environmental, ecological and socio-economic benefits of this technology.

Type of course: Presented online and some in person contact. Total no of hours: 80

Qualification: Successful candidates will receive a Certificate of Completion.

Complete the **SIGN-UP FORM** to register interest.

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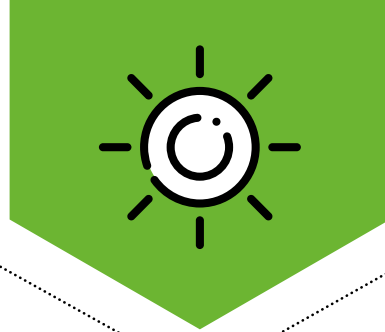
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## Short Learning Programme (SLP) Commercial and Industrial Anaerobic Digestion

The aim of the SLP is to develop expertise in this field of renewable energy to promote the resource recovery from commercial farms, food processing industries, municipal solid waste, research centres and workplaces with high concentration workers and waste generation potentials.

Strong emphasis will be made on understanding the engineering design factors and calculation, security of waste, legislative requirements, financing, off-taker

agreement, operation and maintenance, type of special purpose vehicle for such project and dealing with digestate among other important factors to consider.

### THE FOLLOWING TOPICS WILL BE COVERED:

- Overview of the fundamentals of anaerobic digestion and small scale digesters
- Energy audit and resource evaluation
- Substrate sources, assessment, sampling, characteristics and supply management
- Protocol for BMP, result interpretation and application
- Digester: Science and Engineering
- Process engineering and design calculation of major equipment
- Process technology for upstream pre-processing of substrate
- Utility requirement calculation
- Biogas to energy: Gasholder, preparation, piping, compression and utilisation
- Development, reading and understanding engineering drawing (BFD, PFD, PID)
- Material and energy balance calculations
- Engineering specification of major components
- Legislative requirement and guidelines concerning industrial biogas plant
- Project management
- Legislative requirement
- Product off-take and contracting
- Financing and economic viability metrics
- Contracting and Legal instruments
- Eskom Electricity code, standard for Feed-in and SALGA requirements
- Start-up and commissioning
- Operation and maintenance

### THE BENEFITS OF THE PROGRAMME

The knowledge gained from this SLP can be applied to other process design and engineering fields that are multidisciplinary in nature, but most importantly to support the biogas industry in South Africa, creating the skilled manpower required to initiate, design, finance, manage construction processes and operate such energy systems.

Specialised skill sets built to:

- enable appropriate decision making
- critiquing proposal to municipalities, banks and other funding agencies for industrial scale biogas plant
- provide skilled labour operating in the technical domain to facilitate delivery of a functional commercial/industrial anaerobic digestion plant.

Knowledge gained in this course can be exported to other countries in the form of expatriate, product development and system optimisation.

### THE PROGRAMME

- 1 week of contact lectures (40 hours)
- 2 days of on-site work
- 20 hours of preparation for the assessments
- 4-hour site visit / work-based learning
- 4-hour lab practical / tutorial
- 12 hours of independent learning and engaging with mandatory reading and supplementary materials provided

Total no of hours: 96

### CANDIDATE REQUIREMENTS

- NQF level 5
- Two-year minimum experience in anaerobic digestion technology or wastewater treatment plant or chemical process industry will be an added advantage.

Candidates successfully completing the programme receive a Certificate of Completion.

Application **SIGN-UP**.

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## Short Learning Programme (SLP)

### Introduction to Strategic Energy Planning and Energy Strategy Development Workshop

The national drive towards decarbonization and climate change mitigation has increased the uptake of renewable energy resources in the South African energy mix. The Integrated Resource Plan (IRP) specifies schedule of generation capacity to be procured with the Just Energy Transition (JET) in mind. While current regulations favour municipalities, unfortunately many municipalities do not have a strategic energy plan that provides the roadmap of an energy mix that satisfies their long-term energy demand.

The workshop provides an overview of what strategic energy planning process entails with experience shared from our experts. The workshop positions you to know what long-term energy planning process requires at strategic level.

#### THE WORKSHOP

The Workshop aims to:

- Highlight the importance of strategic energy plans
- Introduce the concept of strategic energy planning and energy strategy development
- Present the state of South African municipalities strategic energy plans and general industry
- Introduce UJ PEETS Basic and Advanced Strategic Energy Planning Short Learning Programmes

#### DURATION

90 mins

Virtual Workshop

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## Short Learning Programme (SLP) Advanced Strategic Energy Planning

### INTRODUCTION

The advanced SLP course aims to address the prevailing skill gap in strategic energy planning on multiple levels. The course offers both theoretical and practical skills of industrial relevance at an advanced level

It can increase job creation within the energy space and provide a platform for career development among government stakeholders within the decision-making space or industries in energy development. It provides informed knowledge for long-term energy planning

at provincial and municipal levels for stakeholders and technical personnel or any individual interested in strategic energy planning.

### THE PROGRAMME

The SLP is independent online learning and online contact sessions at intervals during the course.

Total number of hours: 66 hours to be completed in one semester.

#### COURSE OUTLINE:

- Basics of Power, Energy and Energy Sources
- Understanding International and National Energy Policies, Regulations and Legislations.
- Advanced Geospatial Energy Resource Assessment and Resource Quantification
- Energy Systems and Grid Connection Capacity Analysis
- Strategic Energy Planning Process (including vision and mission statement development, identification of strategic enablers and barriers, development of strategy pillars, etc.)
- Stakeholder Engagement and Stakeholder mapping techniques
- Advanced Energy Demand Forecasting using Geographical Load Forecasting technique
- Data Requirements and data repositories for Strategic Energy Planning
- Basics of Linear Programming and Energy System Optimisation
- Energy Mix Modelling with OSeMOSYS
- Energy Mix Scenario Analysis Investigation
- Energy Demand and Supply Balance
- Energy Plan Development

- Socio-Economic impact quantification (CO<sub>2</sub> emission and water consumption and job opportunities estimation for energy systems)
- Advanced Energy Strategy Report Writing

NQF Level of the SLP: NQF 7

Successful candidates will receive a non-credit bearing Certificate of Completion.

### CANDIDATE REQUIREMENTS

- A good understanding of electricity and electrical systems is required.
- An engineering degree would be an added advantage.

### BENEFIT OF THE SLP

Participants who successfully complete this SLP should gain the following:

1. An in-depth understanding of energy systems and the South African energy sector.
2. Practical knowledge of energy mix optimisation and energy scenario modelling as well as the estimation of socio-economic impacts of the scenarios.
3. An in-depth understanding of the energy strategy development process including the formulation of energy vision and mission statements.
4. Through a series of hands-on exercises, participants will be equipped with the energy modeling skills. They will be able to develop energy mix scenarios, evaluate the socio-economic impacts of each scenario including water use estimation, number of jobs/job- years and CO<sub>2</sub> emission estimation.
5. Be able to put local energy plans in perspective of a national energy strategy.
6. Carry out geospatial renewable energy resource investigation and quantifications for a typical geographical boundary.
7. Developed skills on the stakeholder engagement process by following the road-mapping technique and other methods.
8. Develop a comprehensive report for a typical long-term energy plan for a Municipality or District.

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## Short Learning Programme (SLP)

# Solar Photovoltaic Hybrid Design & Installation System

### EARN A CERTIFICATE OF COMPLETION

#### WHY?

A hybrid solar Photovoltaic (PV) installation for domestic use can provide a reliable and sustainable source of energy for homeowners while also reducing their carbon footprint and energy costs. The demand for solar PV installations has increased as more people look for alternative ways to power their homes and businesses. Additionally, the South African government has recognized the need for more renewable energy solutions and has implemented policies and incentives to promote the development of the solar PV market. This SLP will help develop the PV sector in South Africa by providing students with the necessary skills and knowledge to install hybrid solar PV systems.

#### COURSE OUTLINE

- Solar PV principles
- Solar PV systems
- Inverter types and operation.
- Hybrid inverters
- Basic tools used in repairing, installing and testing solar PV systems
- Occupational Health and Safety (good housekeeping practices, correct use of personal protective equipment).
- Basic concepts of electricity (refresher on the basic concepts of electricity).
- Fault finding in electric circuits.
- Practical installation of a Hybrid PV system

#### DATES, HOURS AND LOCATION

- Applicants will receive confirmation of commencement.
- Total no of hours: 53
- Online self-learning, contact training, practical, assignment completion and assessment.

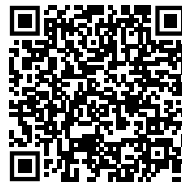
#### CANDIDATE REQUIREMENTS

Applicant requirements: a basic elementary educational background (grade 10 or equivalent), especially in Mathematics, Maths Literacy and English.

#### COST

- \* 53 hours course: R13 720.00
- \* Three week course: tba
- \* Six week course: R24 000.00

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# ENVIRONMENT

Waste Optimisation  
Air Quality Management  
Environmental Efficiency



## Short Learning Programme (SLP)

### eWaste Management in the Circular Green Economy

#### ABOUT THE PROGRAMME

Electrical and electronic equipment (EEE) pertains to a wide range of products that are either dependent on an electrical power supply or battery to operate. Once EEE has reached the end of its useful life (or has been abandoned due to becoming obsolete as a result of technological advancements), it is often discarded without the intent for reuse. It is at this point that EEE becomes e-waste, also known as "Waste Electrical and Electronic Equipment" (WEEE). eWaste is the fastest-growing waste stream globally. The e-waste stream in South Africa grows at a rate that is three times faster than that of solid waste.

E-waste streams from developed countries are fed into the e-waste streams in Africa, where African countries often lack the necessary and sufficient infrastructure as well as legislative enforcement to handle the e-waste, resulting in adverse consequences on human health and environmental degradation.

This SLP will help develop the e-waste recycling sector in South Africa by providing students with the necessary skills and knowledge to repair and refurbish e-waste (in particular, small household appliances) and recycling of e-waste. Repair, refurbishment, and recycling will be linked to the Circular Green Economy principles supported by sound e-waste handling practices, decreasing the negative impact on human health and environment, while simultaneously helping drive economic growth in South Africa (if upon completing the course, the student pursues a career in the e-waste recycling sector by either joining a pre-existing recycling facility or starting their own).

#### WHO SHOULD ATTEND?

Unemployed TVET Graduates, unemployed individuals, any individual interested in entering the e-waste sector in South Africa to build up the e-waste repair, refurbishment and sound recycling practices to drive the circular green economy.

#### BENEFITS OF THE PROGRAMME

Students who successfully complete the programme will gain an understanding of:

- The fundamentals of the circular green economy;
- The current state of e-waste from a global and national perspective;
- The importance of safety and Personal Protective Equipment (PPE) when working with e-waste;
- The basic concepts of electricity;
- Fault finding in electric circuits;
- The use of basic tools to repair, refurbish and recycling e-waste;
- To diagnose and understand faults to conduct basic repair on small household appliances.

**COST:** R17 050.00

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## Short Learning Programme (SLP) Green Building Application

### EARN A CERTIFICATE!

The SLP is designed to train construction industry professionals to perform as green professionals who could lead the transformation of the construction industry through green building practices to ensure the future wellbeing of our Planet. This unique course combines theory and practice. It offers a certificate in applied green building, contextualised within emerging economic, environmental, and social issues, and providing practical guidance on the application of green building design strategies, techniques, and methods.

The aim of this course is to enable the student to evaluate, prepare, and apply green building design strategies, techniques, and methods to green building attributes in furtherance of green building design and construction activities. It will enable participants to explore issues related to the built environment and sustainability and allow students to become familiar with a variety of practical techniques to address such issues in the design and making of buildings, environments, and landscapes. By the end of this course, students should be able to incorporate these ideas into further study and eventually into their practice of building science, architecture, interior architecture, landscape architecture and related disciplines.

### WHO SHOULD ATTEND?

The following people should attend the SLP: Property industry professionals, Facility Managers, Bid Teams, University Academics (relevant fields), Environmentalists (graduates), and or any other recognized professionals in the building industry. The entry level is NQF 5.

### ABOUT THE COURSE

#### CORE COURSEWORK

- Key tenets of green building design and construction activities
- Attributes of green building design and construction activities
- Design strategies for each of the attributes
- Techniques for each design strategy
- Technologies for each design strategy

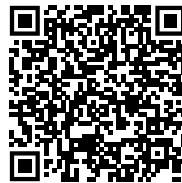
#### COURSE STRUCTURE

The course consists of 7 credit modules. This equates to 70 hours of self-directed study. Approximately 10 hours of study and assignment preparation per week. Each module has topics and assignments. The course is 100% online. There are no required texts, but extra reading and internet research is recommended to help your understanding of the topics. A list of additional reading is provided with the course content.

#### COURSE CONTENT

- Study Unit 1: Environmental Impact of Development
- Study Unit 2: Sustainable Building and Construction Activities
- Study Unit 3: Climatic Considerations and Comfort
- Study Unit 4: Sustainable Sites
- Study Unit 5: Water Conservation
- Study Unit 6: Energy Conservation
- Study Unit 7: Materials and Resources

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## Short Learning Programme (SLP)

### Green Building Institutional Arrangements Legislation, Regulation, Policies and Systems

#### THE PROGRAMME

This short learning programme (SLP) will introduce the concepts of green building relating to the goals of sustainable development, green building institutional instruments, green building assessment methodologies, Green Star SA green building rating tool methodology, green building rating tool critiques, case studies, and business opportunities.

#### COURSE INFORMATION

- Self-taught online course, which you can do at your own pace over a specified period.
- Interactive material such as online recorded lectures and reading material will be provided
- You will spend around 100 hours of personal study on the course.

#### WHY?

Construction activity consumes a substantial amount of natural resources. One of the strategies adopted by the construction industry to improve the environmental performance of its products is the application of green building principles. Green buildings aim to minimise environmental impact while improving indoor environmental health for the benefit of occupants.

#### OUTCOME

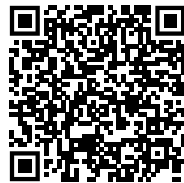
Participants that pass the course should be able to:

- Demonstrate an understanding of the basic theories, design principles and current practices related to green building design and construction.
- Demonstrate an ability to access, study, critically analyse and insightfully interpret relevant government policy and regulation to successfully execute green building projects.
- Demonstrate understanding of the ethical responsibilities of design professionals with respect to green building design and construction and be aware of the implications building design and construction has on social and environmental well-being.
- Demonstrate an appreciation of the purposes, scope, utilisation, differentiation, and limitations of international green building assessment systems.
- Demonstrate understanding of the application of basic green building design principles in the design of the built environment. These include techniques related to energy use, resource cycles, understanding climate, ecology and natural systems and being aware of health and psychological factors in design.

#### WHO SHOULD ATTEND?

Candidates require an entry level of NQF 5.

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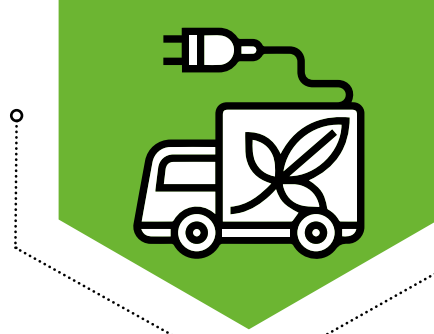


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## Short Learning Programme (SLP)

### Introduction to Green Transport

#### EARN A CERTIFICATE OF COMPLETION

##### SELF STUDY

The Short Learning Programme (SLP) is entirely online, with students completing it in their own time within the specified programme time frame. There will be 1 x Onboarding online session via MS Teams

##### TOPICS

- The need for sustainable transport: Impact on climate, the environment and health
- Overview of South Africa's transport sector
- Drivers of transport use behavior
- Greenhouse gas emissions from different transport technologies and fuels
- Sustainable transport technologies and operator initiatives
- Public and alternative transportation and infrastructure requirements
- Smart mobility and smart cities: Digital solutions and Transport 4.0

##### WHY?

The Green Transport Strategy intends to reduce greenhouse gas emissions and other negative environmental impacts of the transport sector, as well as promote economic growth and boost jobs.

##### HOURS

Each topic should take 5 hours to complete with an additional 1 hour for assessment (45 total)

##### DATES

Commencement to be advised.

##### CANDIDATE REQUIREMENTS

- Entry requirements: Grade 12 or NQF 4 equivalent.
- Cost of SLP: R10 470.00

For further enquiries send an email to

[peetstraining@uj.ac.za](mailto:peetstraining@uj.ac.za)



# ENVIRONMENT

Waste Optimisation  
Air Quality Management  
Environmental Efficiency



## Short Learning Programme (SLP)

# Implementation of the Green Transport Strategy

### EARN A CERTIFICATE OF COMPLETION

The Implementation of the Green Transport Strategy SLP builds on the Introduction to Green Transport SLP and conveys the tools and skills needed for developing and implementing sustainable transport initiatives.

### WHY?

The Green Transport Strategy intends to reduce greenhouse gas emissions and other negative environmental impacts of the transport sector, as well as promote economic growth and boost jobs.

### WHO?

The following should apply:

- Local, provincial and national government officials
- Fleet operators
- Transport professionals

### TOPICS

- Fiscal and non-fiscal policy instruments driving a move to green transport, focusing on the South African policy environment
- Calculating carbon dioxide emissions and developing climate change mitigation initiatives
- Designing a demonstration and pilot programme
- Green transport financing models
- Developing a monitoring and evaluation framework
- Developing a climate change adaptation plan for a sustainable transport initiative

### HOURS

- Online self-study is in participant's own time (16 hours plus 20 hours for assessments)
- Classroom learning is for lectures and group exercises (5 days)

### CANDIDATE REQUIREMENTS

- Entry requirements: Grade 12 or NQF 4 equivalent.
- Completion of the Introduction to Green Transport SLP is a prerequisite.
- Cost of SLP: R11 030.00

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# WATER

Water Quality Management  
Salt Water Purification  
and Desalination



## Short Learning Programme (SLP) Water and the Environment

The UJ Water Testing Laboratory, established through a collaboration between UJ PEETS and the Water Health Research Centre (WHRC), plays a crucial role in advancing water quality research and waste characterisation. With a mission to enable innovation and knowledge in the water sector, the lab focuses on scientific principles to serve both the broader community and the environmental sector.

Here's an overview of the key initiatives and areas of focus:

### Water Testing and Laboratory Accreditation

The UJ Water Testing Laboratory is involved in rigorous proficiency testing schemes with reputable bodies such as the National Laboratory Association and the South African Bureau of Standards (SABS). The lab's goal is to obtain SANAS accreditation, a key milestone for ensuring quality and reliability in water analysis.

### Vision & Mission

- To be an accredited water reference laboratory that contributes dynamically to the analysis of water.
- To serve the broader community by enabling the water sector to innovate and generate knowledge grounded in scientific principles.

### Collaboration and Focus Areas

The laboratory is part of a multidisciplinary team that brings together experts in physicochemical characterization and biochemical analyses, particularly under anaerobic conditions. The laboratory's current focus for waste characterisation includes:

- Putrescible waste. Biodegradable waste that decomposes in landfills, often creating environmental issues.
- Lignocellulosic biomass. Organic materials like wood, agricultural residues and other plant-based materials that are of interest for waste-to-energy projects.

As the lab expands its capacity, it plans to explore other fractions of municipal solid waste for further research.

### Water, Sanitation, and Hygiene (WaSH)

The WHRC's main area of research focuses on WaSH, particularly examining the impact of WaSH on public health. This work supports sustainable development goals related to clean water access, sanitation, and hygiene education, which are critical for improving community health and well-being.

### Sustainable Urban Drainage Systems (SuDS) SLP

In collaboration with other stakeholders, UJ PEETS is developing a Sustainable Urban Drainage Systems (SuDS) SLP. SuDS are designed to manage urban surface water in an environmentally sustainable way, addressing challenges like:

- Flooding (water quantity)
- Pollution (water quality)
- Biodiversity (wildlife and plant life)
- Amenity (public spaces for leisure and liveability)

### Community Collaboration and Engagement

UJ PEETS and the WHRC initiatives actively involve local communities in their work. By linking water management and waste characterization with community engagement, they ensure that research and innovations have practical, real-world applications that can improve public health and environmental outcomes.

This collaboration is designed to address the complexities of urban water management, waste treatment, and community health, reflecting the intertwined nature of environmental science and public policy.

The UJ Water Testing Laboratory and its associated research initiatives are crucial for advancing sustainable water management, waste characterization, and urban planning. With a focus on scientific integrity, community impact and sustainability, these efforts will help tackle some of the most pressing environmental challenges of our time.

The video links hereunder highlight some of the community collaborations, providing additional context on their practical applications.

[Community\\_Engagement\\_Collaborations](#) / [Water\\_Harvesting\\_Eastern\\_Cape](#)

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science, technology  
& innovation

Department:  
Science, Technology and Innovation  
REPUBLIC OF SOUTH AFRICA



UJ PEETS specialises in designing tailor-made capacity development programmes aimed at supporting a just transition towards a clean future. The programmes featured in this booklet are not exhaustive. Additional training and capacity development opportunities can be explored in consultation with the UJ PEETS Team

Further enquiries may be directed to [peetstraining@uj.ac.za](mailto:peetstraining@uj.ac.za).

Website: **UJ PEETS**  
or scan the QR Code.



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