UNIVERSITY OF JOHANNESBURG

Process, Energy and Environmental Technology Station (UJ PEETS)

ENERGY

Renewable Energy Solutions
Energy Efficiency
Waste to Energy Conversion
Energy Micro-Grids & Mini-Grids
Energy Storage

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_2 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 CO2 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.

For further enquiries send an email to peetstraining@uj.ac.za