



# Pan African University PAUWES Institute Academic Positions and Job Descriptions

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# Call for Applications Research and Teaching Positions

## Pan African University PAUWES

The Pan African University  
Institute of Water and Energy Sciences (Including Climate Change) PAUWES  
in Tlemcen, Algeria

The Pan African University (PAU) Institute of Water and Energy Sciences (including Climate Change), (PAUWES) is located on the campus of the University of Tlemcen, Algeria. This beautiful Mediterranean city befittingly derives its name from the Berber word for “water springs.”

PAUWES is one of the five hubs of the Pan African University established under the African Union aimed at revitalising African higher education and at boosting research and postgraduate training. PAUWES will be the fourth institute to become operational after the Institute of Governance, Humanities and Social Sciences (PAUGHSS) at the University of Yaounde II in Cameroon; the Institute of Basic Sciences, Technology and Innovation (PAUSTI) at Jomo Kenyatta University of Agriculture and Technology in Kenya; and the Institute of Life and Earth Sciences (PAULESI) at the University of Ibadan in Nigeria.

In partnership with the Algerian and German government, the PAUWES Institute offers graduate students access to leading academic teaching, research and hands-on training in areas vital to the future of African development – water, energy and the challenge of climate change.

The institute offers two degree programmes: a Master of Science in Water and a Master of Science in Energy and later PhD programmes. In each of the Master programmes students can choose between an engineering track and a policy track. Both are full time two-year master's programmes. The language of instruction is English.

Our goal is to usher in a new generation of leaders, well-equipped to harness the wealth of African human and natural resources, imbued with a common vision of a peaceful, prosperous and integrated Africa.

To complement our international faculty we are seeking to fill the following long-term positions at the level of Chair, Professor or Assistant Professor (according to qualification) as well as a number of short-term positions.

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## Part I: Long-term Positions

### 1. Tasks and Responsibilities

#### Field of Expertise: Solar Energy

*Position: One Chair and Professorship*

#### *Expected Tasks*

The purpose of this role is to teach and conduct world class research in Solar Energy as well as other Renewable Energy sources and technologies at MSc and later PhD levels. In particular, the position covers Solar Energy from materials to systems.

The main responsibilities for this position are to:

- ▶ Manage the PAUWES MSc Program in Energy Sciences
  - ▶ Develop and establish experimental facilities for solar PV and Solar thermal for both teaching and research
  - ▶ Develop and teach two compulsory courses in (i) African Energy resources and Scenarios and (ii) Introduction to Energy as well as 2 elective courses in (iii) Solar PV and (iv) Solar Thermal energy
-

## **Field of Expertise: Energy Policy**

*Position: One Professor or Assistant Professor*

### *Expected Tasks*

This position covers substantive elements of energy policy, policy analysis and formulation including requirements for successful implementation of energy policy in Africa. Candidates should have a background in energy economics, political science or public administration (PhD-level) and they should have been professionally involved in energy policy, preferably in Africa.

The main responsibilities for this position are to:

- ▶ Develop and teach five compulsory courses in (i) Policy Analysis for Energy (ii) Ethics and Leadership (iii) Introduction to Policy Analysis (iv) Policy Influencing and Conflict Management and (v) Methods for Policy Research.
  - ▶ share the responsibility for three additional compulsory courses with the holder of the corresponding position in the PAUWES department of water sciences: (ii) "Methods for Policy Research", (iii) "Introduction to Policy Analysis" and (iv) "Policy Influencing and Conflict Management"
- 

## **Field of Expertise: Energy and Sustainable Development**

*Position: One Professor or Assistant Professor*

### *Expected Tasks*

This position covers energy and sustainable development. Candidates should have a background in engineering, energy economics and environmental studies (climate) at PhD-level.

The main responsibilities for this position are to:

- ▶ Develop and teach five compulsory courses in (i) Energy for Sustainable Development (ii) Energy Modelling and Simulation for Policy Analysis (iii) Externalities / Impact Analysis (iv) Renewable Energy Policy and Planning and (v) Thermal Science and Engineering Applications
- 

## **Field of Expertise: Energy Efficiency and Demand-Side Participation**

*Position: One Professor or Assistant Professor*

### *Expected Tasks*

This position covers energy efficiency and the role of demand side management in electricity supply. Candidates should have a background in electrical power engineering with a specialization in energy economics, planning and operation (PhD-level) and it would be desirable if they had practical experience in distribution system operation.

The main responsibilities for this position are to:

- ▶ Develop and teach four compulsory courses in (i) Energy Efficiency and Demand Side Management (ii) Technical Performance Assessment, (iii) Research Methods for Energy/Water Engineering and (iv) Material Science
- 

## **Field of Expertise: Integrated Water Resource Management**

*Position: One Chair and Professorship*

### *Expected Tasks*

The purpose of this role is to teach and conduct world class research in Integrated Water Resource Management at MSc and later PhD levels. In particular, the position covers River Basin Management. Candidates should have a background in water engineering, hydraulics (water management), hydrology, or hydrogeology (PhD-level)

The main responsibilities for this position are to:

- ▶ Manage the PAUWES MSc Program in Water Sciences
  - ▶ Develop and teach two compulsory courses in (i) "African Water Resources and Scenarios" and (ii) "Introduction to Integrated Water Resource Management" as well as two elective courses (iii) "River Basin Management 1: Management of Extremes (Draughts and Flooding)" and (iv) "River Basin Management 2: Management of Transboundary Water Resources"
- 

## Field of Expertise: Water Policy

*Position: One Professor or Assistant Professor*

### *Expected Tasks*

This position covers substantive elements of water policy in Africa as well as policy analysis for the purposes of political application. The background of candidates should be in political science or public administration (or a closely related field) (PhD-level) and candidates should have been professionally involved in water policy, preferably in Africa.

The main responsibilities for this position are to:

- ▶ Develop and teach a compulsory course in (i) "Policy Analysis for Water Resource Management"
  - ▶ Share the responsibility for three additional compulsory courses with the holder of the corresponding position in the PAUWES department of energy sciences: (ii) "Methods for Policy Research", (iii) "Introduction to Policy Analysis" and (iv) "Policy Influencing and Conflict Management".
  - ▶ Develop and teach two elective courses in "Law and Policy of Water Quality and Sanitation" and "Law and Policy of Water of Water for Agriculture"
- 

## Field of Expertise: Water Engineering

*Position: One Professor or Assistant Professor*

### *Expected Tasks*

This position covers core elements of water engineering. Candidates should have a background in water engineering, physics of fluids or hydraulics (PhD-level)

The main responsibilities for this position are to:

- ▶ Develop and teach three compulsory courses in "Fluid Mechanics", "Hydraulics (Open Channel Hydraulics and Flows under Pressure)" and an overview course on the "Fundamentals of Water Science and Engineering" (Fluid Mechanics, Water Chemistry and Microbiology, Hydraulics) for students of the policy track.
- 

## Field of Expertise: Methods of Water Engineering

*Position: One Professor or Assistant Professor*

### *Expected Tasks*

This position covers the methodology of Water Engineering. Candidates should have a background in water engineering or applied mathematics.

The main responsibilities for this position are to:

- ▶ Develop and teach six compulsory courses in (i) "Research Methods for Water Engineering", (ii) "Applied Numerical Analysis and Modeling", (iii) "Geographical Information Systems", (iv) "Databases, Indicators, and Statistical Analysis" and (v) "Physical Instrumentation and Measurement"
-

All long-term professors will be responsible to the PAUWES Director.

In addition to teaching, all long-term position holders will also be required to:

- ▶ Establish a research agenda in the respective field;
- ▶ Carry out all academic duties including interaction with students, development and supervision of laboratories as required;
- ▶ Set and mark examinations in accordance with Institute regulations and guidelines;
- ▶ Supervise MSc and PhD research projects
- ▶ Undertake research and publish findings in world leading journals and at leading conferences in the respective field

## 2. Required Qualifications and Experiences

Mandatory requirements for the respective positions are:

| PAUWES Professor and Chair                                                                                                                                                                                                                                                                                                                                                                                                                 | PAUWES Professor                                                                                                                                                                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>▶ PhD</li> <li>▶ Habilitation or equivalent publication</li> <li>▶ 8 years of successful academic working experiences (teaching and research post doc)</li> <li>▶ Demonstrated research management and fundraising competences</li> <li>▶ Experiences in administrative HE management</li> <li>▶ Institutional and program development</li> <li>▶ Excellent English language proficiency</li> </ul> | <ul style="list-style-type: none"> <li>▶ PhD</li> <li>▶ Habilitation or equivalent publication</li> <li>▶ 5 years of successful academic working experiences (teaching and research post doc)</li> <li>▶ Excellent English language proficiency</li> </ul> |
| PAUWES Assistant Professor / Junior Professor                                                                                                                                                                                                                                                                                                                                                                                              | PAUWES Short-Term Lecturer                                                                                                                                                                                                                                 |
| <ul style="list-style-type: none"> <li>▶ PhD and academic working experience (teaching and research experience)</li> <li>▶ Excellent English language proficiency</li> </ul>                                                                                                                                                                                                                                                               | <ul style="list-style-type: none"> <li>▶ PhD or 5 years of work experiences in public, private or third sector</li> <li>▶ Teaching experience</li> <li>▶ Excellent English language proficiency</li> </ul>                                                 |

Additional criteria are:

- ▶ project or consultancy expertise;
- ▶ list of selected publications and conference contributions (patents would be an asset);
- ▶ experience in industry, private sector or public sector;
- ▶ number of research grants won;
- ▶ academic and professional networks;
- ▶ international experience;
- ▶ commitment to institutional and programme development;
- ▶ knowledge of French would be an advantage.

### 3. Remuneration for Long-Term Positions

An internationally competitive basic salary will be paid according to background, qualifications and position within PAUWES. Additionally, a benefits package including social security contributions and an annual allowance for relocation, travel expenses, family etc. will be provided. Research budgets are available upon application. A performance-based bonus may be paid at the end of the academic year.

### 4. Starting Date and Duration of Contracts

**Start of Term: 1 September 2014**

Duration of all long-term positions: two years with a possibility for extension.

### 5. How to Apply

Applications for academic staff positions should be made through the PAU online application platform <http://www.pau-au.org/call/>

or can alternatively be sent to the

The Pan African University (PAU) Institute of Water and Energy Sciences (including Climate Change) at [jobs@pauwes.univ-tlemcen.dz](mailto:jobs@pauwes.univ-tlemcen.dz)

Please submit:

- ▶ letter stating your motivation and which position you are applying for
- ▶ current curriculum vitae
- ▶ list of publications and research projects
- ▶ overview of teaching experience, grants, awards etc.
- ▶ names of three referees
- ▶ Copies of academic certificates and testimonials

**Closing date for applications: 15 March 2014**

### 6. Further Information

For more details on the PAUWES institute, study programmes and job opportunities, please see: <http://pauwes.univ-tlemcen.dz/> and [www.pau-au.org](http://www.pau-au.org)

**Pan African University**

**Institute for Water and Energy Sciences (including Climate Change) - PAUWES**

c/o Abou Bekr Belkaid University of Tlemcen

B.P. 119

13000 Tlemcen

Algeria

# Pan African University PAUWES Institute Academic Positions and Job Descriptions

## Part II: Short-Term Positions

The Pan African University  
Institute of Water and Energy Sciences (Including Climate Change) PAUWES  
in Tlemcen, Algeria

To complement our international faculty we are seeking to fill the following short-term positions at the level of lecturers:

### 7. Tasks and Responsibilities

#### Field of Expertise: Renewable Energy Technologies

*Position: One Short-Term Lecturer*

##### *Expected Tasks*

This position covers core elements of renewable energy. Candidates should have an engineering background with academic and/or professional experience in renewable energy.

The main responsibilities for this position are to:

- ▶ Develop and teach one compulsory course: Renewable Energy technologies
- ▶ Teach the following:
  - ▶ Solar resources evaluation techniques
  - ▶ Technology of photovoltaic cells and modules
  - ▶ Technology of photovoltaic systems
  - ▶ Low temperature solar technology
  - ▶ High temperature solar technology
  - ▶ Wind resources evaluation techniques
  - ▶ WECS technology
  - ▶ Wind system technology
  - ▶ Geothermal resources and geothermal energy conversion technology
  - ▶ Hydropower resources and technology
  - ▶ Biomass conversion technologies
  - ▶ Wave and tidal technologies
  - ▶ Biogas
  - ▶ Solar hydrogen

Duration of appointment: 6 weeks (credit points allocated: 6 CPs)

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#### Field of Expertise: Water Quality

*Position: One Short-Term Lecturer*

##### *Expected Tasks*

Candidates should be leading experts in Water Quality, Sanitation and/or Water Treatment and have a PhD in related subject.

The main responsibilities for this position are to:

- ▶ Develop and teach one compulsory course: Water Economics

- ▶ teach the following:
  - ▶ Water Physics & Chemistry
  - ▶ Soil & Rock Science of Porosity, Permeability, Density (Aquifer Parameters)
  - ▶ Groundwater Flow, Darcy's Law
  - ▶ Pumping Aquifers
  - ▶ Karst Hydrogeology
  - ▶ Modeling in Hydrogeology
  - ▶ Introduction to Hydrochemistry
  - ▶ Groundwater Water Quality

Duration of appointment: 4 weeks (credit points allocated: 4 CPs)

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## Field of Expertise: Hydrology

*Position: One Short-Term Lecturer*

### *Expected Tasks*

Candidates should be leading experts in Hydrology and/or Water for Agriculture and have a PhD in related subject.

The main responsibilities for this position are to

- ▶ develop one compulsory course: Hydrology
- ▶ and teach the following:
  - ▶ Hydrologic cycle, Hydrologic system model
  - ▶ Watershed Morphometry
  - ▶ Atmospheric water and climate study)
  - ▶ Subsurface and surface water
  - ▶ Hydrologic measurement
  - ▶ Hydrologic Analysis (Hydrologic statistics and Frequency analysis, Modeling)

Duration of appointment: 4 weeks (credit points allocated: 4 CPs)

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## Field of Expertise: Project Design and Management

*Position: One Short-Term Lecturer*

### *Expected Tasks*

Candidates should be experienced project management experts, preferably in water or engineering.

The main responsibilities for this position are to:

- ▶ develop one skills course: Project Design and Management (for both water and energy students)
- ▶ and teach the following:
  - ▶ Project cycle management and logical framework approach (LFA)
  - ▶ tools and techniques for identification, analysis, design, implementation, monitoring and evaluation of sustainable development of energy/water programmes and projects
  - ▶ collaborative and participatory approaches of project design e.g. including SWOT analysis, stakeholder mapping and analysis tools
  - ▶ proposal writing, work plans
  - ▶ monitoring, evaluation and revision of project activities
  - ▶ risk management
  - ▶ project management software

Duration of appointment: 3 weeks (credit points allocated: 3 CPs)

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## Field of Expertise: Academic Writing

*Position: One Short-Term Lecturer*

### *Expected Tasks*

This position covers core principles of academic writing. Candidates should have academic background, preferably in academic skills in combination with an engineering background.

The main responsibilities for this position are to:

- ▶ Develop and teach one compulsory course: academic writing (for both water and energy students)
- ▶ Teach the following
  - ▶ linkages between research process, academic writing and the structure of academic texts
  - ▶ grammar and style for academic purposes with a particular focus on technical subjects
  - ▶ communicating technical subjects to various audiences). Special attention will also be given to issues of clarity, logic and coherence. Finally, the course will cover
  - ▶ citation techniques, referencing and the issue of plagiarism

Duration of appointment: 2 weeks (credit points allocated: 2 CPs)

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## Field of Expertise: African History

*Position: One Short-Term Lecturer*

### *Expected Tasks*

Candidates should be leading experts in African History and have a PhD in a related subject.

The main responsibilities for this position are to

- ▶ develop one compulsory course 'African history' (for both water and energy students) and
- ▶ teach the following material:
  - ▶ History of Africa in the wider context of the world history
  - ▶ Evolution and development of African states and societies, the cultural systems, the social and political structures, the development of technology and agriculture as well as broad changes and continuities in Africa's historical development
  - ▶ Central place of Africa in the evolution of humankind
  - ▶ The ancient civilizations of Africa and their links with the outside world, the contacts and interactions among African peoples, Africa's contact with the Arabs and Europeans
  - ▶ The introduction and impact of Islam and Christianity in Africa
  - ▶ The slave trade and the prelude to European colonialism

Duration of appointment: 4 weeks (credit points allocated: 4 CPs)

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All short-term lecturers will be responsible to the PAUWES Director.

In addition to teaching, all short-term position holders will also be required to:

- ▶ Set and mark examinations in accordance with Institute's regulations and guidelines;
- ▶ Carry out all academic duties including interaction with students, support the development and supervision of laboratories as required.

## 8. Required Qualifications and Experiences

Mandatory requirements for all short-term positions:

- ▶ PhD or 5 years work experience in public, private or third sector;
- ▶ teaching experience;
- ▶ excellent English language proficiency.

Additional criteria are:

- ▶ project or consultancy expertise;
- ▶ experience in industry, private sector or public sector;
- ▶ academic and professional networks;
- ▶ international experience;
- ▶ commitment to supporting the institutional and programme development;
- ▶ knowledge of French would be an advantage.

## 9. Remuneration of Short-Term Lecturers

An internationally competitive basic salary will be paid per course taught according to background and qualifications. Additionally, social security contributions and a lump sum for travel expenses, etc. will be provided.

## 10. Starting Date and Duration of Contracts

**Appointment: During the academic year 2014/15 (earliest September 2014)**

Duration of short-term positions: between two to six weeks depending on workload (credits) allocated, see above.

## 11. How to Apply

Applications for academic staff positions should be made through the PAU online application platform <http://www.pau-au.org/call/>

or can alternatively be sent to the The Pan African University (PAU) Institute of Water and Energy Sciences (including Climate Change) at [jobs@pauwes.univ-tlemcen.dz](mailto:jobs@pauwes.univ-tlemcen.dz)

Please submit:

- ▶ letter stating your motivation and which position you are applying for
- ▶ current curriculum vitae
- ▶ list of publications and research projects
- ▶ overview of teaching experience, grants, awards etc.
- ▶ names of three referees
- ▶ Copies of academic certificates and testimonials

**Closing date for applications: 15 March 2014**

## 12. Further Information

For more details on the PAUWES institute, study programmes and job opportunities, please see: <http://pauwes.univ-tlemcen.dz/> and [www.pau-au.org](http://www.pau-au.org)

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