

## Venue

School of Environmental sciences, JNU is one of the leading centres in India in the field of Environmental Sciences and has been recognized for its expertise in environmental geology, water and environmental issues gaining importance on local, regional and global scales. Sustainable development is a key factor in the overall well-being of society and need to guide socio-economic policies of every nation. While, environmental quality is of concern worldwide and essential for achieving quality of life in developing economies, understanding the scientific aspects of earth's environment is vital for the sustainable future of the whole of mankind.



## About Department of Science & Technology (DST)

India is one of the top-ranking countries in the field of basic research. Indian Science has come to be regarded as one of the most powerful instruments of growth and development, especially in the emerging scenario of a competitive economy. In the wake of the recent developments and the new demands that are being placed on the S&T system, it is necessary for us to embark on some major science projects, which will not only have relevance to national needs, but will also be relevant for understanding global issues requiring S&T intervention. The Department of Science and Technology plays a pivotal role in promotion of S&T in the country. The Department has been widely engaged in activities pertaining to promotion of high-end basic research and development of cutting-edge technologies to service the technological requirements of society through development of appropriate skills and technologies.

## About JNU

Young at fortytwo years, as universities go, what has lent strength and energy to Jawaharlal Nehru University is the vision that ideas are a field for adventure, experimentation and unceasing quest and diversity of opinions its chief premise. In the early 1970s, when JNU opened its doors to teachers and students, frontier disciplines and new perspectives on old disciplines were brought to the Indian university system. The once rugged terrain of the Aravalli hill range, where the 1000-acre campus is housed is now lush green. Parts of it host dense forests, sustaining a birdwatcher's paradise and some forms of wild life. The JNU campus is a microcosm of the Indian nation, drawing students from every nook and corner of the country, overseas and from every group and stratum of society. Several Centres in these Schools have been declared by the UGC to be Centres of 'Excellence' including three Science Schools--School of Physical Sciences, School of Life Sciences and School of Environmental Sciences.

### For further information, contact

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# Training Programme (3 week) On "Natural Resources and Water Management" for Africa

(2-22nd December, 2014)



**SUPPORTED BY**  
Department of Science & Technology  
Ministry of External Affairs  
Government of India



Jawaharlal Nehru University



सत्यमेव जयते

## About School of Environmental Sciences

The School has a diversified interest in various earth, atmospheric and biological processes. Linkages between Ecological and Social processes give an additional dimension to School's interest, making the work relevant. Therefore, the curriculum has components of interdisciplinary areas covering physical sciences, earth and atmospheric sciences, environmental biology, and environmental monitoring and management. With such a high level of diverse research interests, over 100 students have so far successfully completed their Ph.D. programme in different aspects of Environmental Sciences.

### Dates/Modules offered : 2-22nd December 2014

- Various geologic principles such as earth formation and structure, volcanism, seismicity and modern plate tectonic theory address the chemical makeup and cycling of earth materials through the lithosphere including minerals, rocks and soil, hydrosphere and atmosphere(Week 1)
- Water resource scenarios in India and other developing countries worldwide. Issue on policy guiding water management in both countries and other regulatory and policy interventions (Week 2)
- An introduction to the disciplines of Environmental Sciences, Environmental resources and Ecological and hydrological issue related to point & non point sources, Water pollution in urban and semi urban regions, agriculture and other sources of water pollution, Ecological, climate and water quality and quantity modeling as well as water harvesting (traditional and current) techniques (Week 3)

#### Aim of the course:

- To use the knowledge gained along with skills acquired in a professional use
- Address regional and local issues in a both the countries;
- Help them to conduct applied research in these field of specialization;
- To acquire problem solving skills.
- Help in transfer of knowledge and skills in a multidisciplinary context;
- Be a part of a network of practitioners in natural and water resource and environmental management.



#### Eligibility

Around 30 mid career researchers, engineers and scientist from African countries with master's degree in Earth sciences related subjects, environmental sciences/ engineering and water / sciences/engineering (including hydrology/ hydrogeology)

#### Details of the modules

##### Module I (1st Week)

Science Internal forces & processes ,plate tectonics, earth materials, mineralogy, petrology, sediment & soil, environmental significant minerals, surface processes & landforms, weathering & soil formation erosion ,glacial sediments &landforms ,fluvial processes, geologic resources, mineral, fossil fuel, alternative energy, water, exploration, extraction & processing techniques, environmental issues of mining, sustainability of geologic resources, earths carrying capacity , drought, geologic site for waste disposal, Landfill ,geologic carbon sequestration and analytical instruments/techniques.

##### Module II (2nd Week)

This covers rain water, roof top and other rain water harvesting techniques adopted in India states and developing countries with respect to various climatic zones and also discuss eth similarities between India and Africa countries. The training will explore water resources issues faced by people in the both the countries particularly how these impact on water supplies for the poor, and how reforms to address water resource problems through legislative, policy and institutional change are unfolding. To develop the understanding of rural water supply and water resources issues in the catchment and opportunities for change and/or intervention. It is envisaged this understanding will assist planning of the next stages of the needed research in Africa.

##### Module III (3rd Week)

This will address various geo environmental issues relevant to both the countries and to develop the novel process to understand the issue like mineral, water, soils and air pollution and their remediation techniques. The modern issue and opportunities for change and/or intervention of natural environment will also be attempted. It is further hoped that understanding will assist in planning the next stages of the needed research in Africa.

Followed by two days' field trip in and around Delhi and Agra: Environmental hotspots

#### SCHOLARSHIP

Government of India will bear the following expenses for the selected candidates:

- To and fro international airfare by excursion/economy class
- Course fees and book allowance
- Boarding and Lodging

