# MET 2105 Biometeorology (4CU)

**Description**

This course describes the interaction between climate and living things

**Objectives**

The course will help the students to achieve the following objectives

* Describe the relationship between heat exchanges and meteorological parameters
* Describe the different indices of climate and comfort
* Understand bio-climatic mapping and its applications

**Learning outcomes**

By the end of the course students should be able to:

* Explain the metabolic and heat exchanges in animals and humans
* Describe how relationship between climate and population distribution
* Explain the importance of climate and weather in the health sector
* Classify climates using bio-meteorological data

**Intellectual, Practical and transferable skills**

* Problem solving
* Analytical
* communication

**Teaching and learning patterns**

The mode of learning involves direct contact with students in form of lectures, Tutorials and assignments

**Indicative content**

* Introduction to the meteorological elements and methods of measurements.
* Climate and animal environment; energy and water balance of the human and animal bodies; metabolic, latent and conductive heat exchanges.
* Heat storage. Animal spatial distribution and climate population dynamics, diurnal and seasonal activities.
* Climate and comfort: comfort indices. Acclimatization and adaptation. Climate weather and health: indirect and direct effects; air and water borne diseases, parasitic diseases.
* Cooling/heating, cleaning, gardening, food. Relationship between climate, settlements, recreation, land use, tourism, socio-economic and other activities.
* Bio-climatic mapping, climate classification from bio-meteorological data. Impacts of climate change on human and animals.

**Assessment Method**

The assessment method is structured to include course work, and final examination. Course work consists of assignments, reports and tests and accounts for 30% of the final grade. The final examination will account for 70% of the final grading

**Core Reference materials**

* **Gaylon. S. Campbell and John. M. Norman** (1988): An introduction to Environmental biophysics, 2nd edition, *Springer science + Business media, Inc*
* **Seymour L. Hess** (1979): Introduction to Theoretical Meteorology, [*R.E. Krieger Pub. Co*.](http://openlibrary.org/search?publisher_facet=R.%20E.%20Krieger%20Pub.%20Co.)