## MET3101 Remote sensing in Meteorology (3CU)

**Description**

This course deals with different remote sensors and their applications in meteorology and other sectors.

**Objectives**

The course will help the students to achieve the following objectives

* Describe the different techniques used in remote sensing
* Understand how the different remote sensing tools are used in meteorology
* Understand how to interpret some remote sensing products

**Learning outcomes**

By the end of the course, the student should be able to:

* Distinguish and compare the different remote sensing techniques
* Understand how usable information is derived from remote sensing
* Evaluate which remote sensing technique would be appropriate to particular meteorological situations.

**Intellectual, Practical and transferable skills**

* Creative and innovative
* Problem solving
* Analytical
* Communication

**Teaching and learning patterns**

* Use of practical examples
* Class discussions
* Lectures
* Group presentations

**Indicative content**

* Physics behind the various earth sensing techniques, merits and applications: laser, balloons, aircraft, rocket, radar and satellite
* Meteorological satellite orbits
* Radiation concepts for remote sensing
* Principles of temperature sounding by infrared and microwave techniques.
* Remote sensing technology: wind profiler data, lightening detection, radar theory and image interpretation.
* Satellite images, visible, infrared and microwave.

**Assessment Method**

The assessment method is structured to include course work, and final examination. Course work consists of assignments, reports, practicals and tests and accounts for 40% of the final grade. The final examination will account for 60% of the final grading

**Core Reference materials**

* **Arthur P. Cracknell and L. Hayes** (1991): Introduction to Remote Sensing, *Taylor and Francis*
* **James B. Campbell** (2008): Introduction to remote sensing, *Guilford Publications*