

Module Title:	MATHEMATICS 1
Academic year:	2009 2010
Credit Value:	5
Pre- requisites:	None
Assessment:	Final written exam 70% Continuous assessment. 30%
Aims	To provide the student with knowledge and skills in Mathematics relevant to a course of study in science.
Module Content	<ul style="list-style-type: none"> ▪ Scientific Notation; Errors and accuracy; Significant figures; Conversion of Units. ▪ Fundamental algebraic operations and rules of algebra. ▪ Factoring; Simplifying fractions; Transposition of Formulae. ▪ Concept of a function; Polynomial functions. Indices and logarithms; The exponential function and natural logs; Composition of functions. ▪ Applications of logs to pH; Linear, log and exponential equations in one unknown variable. ▪ Systems of linear equations; Quadratic equations; Simultaneous non-linear equations: ▪ Applications of equilibrium concentrations. ▪ Trigonometric ratios; Sine and Cosine rules; Solution to right angled and non-right angled triangles. ▪ Cartesian co-ordinates ; Distance between points; Equation of a line; Parallel and perpendicular lines. ▪ Reduction of non-linear equations to linear form; Verification of experimental laws from graphs.

Intended Learning Outcomes:
(September 2007)

Having successfully completed this student will be able to:

- Apply essential algebraic techniques in the manipulation of scientific formulas and the solution of basic equations.
- Understand and apply log and exponential functions in scientific applications.
- Appreciate fundamental notions of geometry and trigonometry with applications to the solution of arbitrary triangles and equations of lines .
- Use graphical and geometric ideas to find parameters of experimental laws from a given set of data.