11.	Course unit:							NE/MT2012/12/11/M2
MATHEMATICS – module 2								
Semester	Weeks in the semester	Hours in a week			Hours in the semester			ECTS
		A	C	L	A	C	L	
1	15	1	2		15	30		7
2	15	1	2		15	30		7
3	15	1	2		15	30		7

III/2. Learning outcomes and syllabus

Learning outcomes – semester 2		Field-specific
LO1	Has basic knowledge of linear algebra.	K_U01
LO2	Has basic knowledge of analytical geometry.	K_U01
LO3	Has basic knowledge of the series theory and series applications.	K_W01

Syllabus

SEMESTER 2	MATHEMATICS	LECTURES	15 HOURS

1. Matrices and determinants: definition and types of matrix, operation on matrices, definition and properties of determinants, rank of a matrix, inverse matrix.
2. Systems of linear equations, Cramer's formulas, matrix method, Kronecker – Capelli theorem.
3. Set of complex numbers, definition of complex number, Cartesian and trigonometric form of complex number, de Moivre formula, operations on complex numbers.
4. Analytical geometry in R3 space: vector calculus, plane and line equations, surfaces of second order.
5. Series of numbers and functions: definition of a series of numbers, criteria of convergence of series with non-negative terms, alternating series, conditionally and absolutely convergent series of numbers, functional sequences and series, convergence and uniform convergence of a series and functional series, power series, Taylor series.

SEMESTER 2	MATHEMATICS	TUTORIALS	30 HOURS

The tutorials cover topics and problems lectured.