IST SEMESTER

AH114 MATHEMATICS I (3-0-0)

The intent of the mathematics courses for architecture students is three fold (i) modeling: Converting given data of a physical situation into a mathematical form (ii) solving them by standard techniques and (iii) interpreting the results. It is expected that students should not only know different mathematical techniques but should also be conversant with different applications.

Module 1 (10 Classes)
Calculus: Curve tracing, curvature, asymptotes
Ordinary Differential Equations: First order differential equations, separable equations exact differential equations. Bernoulli's equation.

Module 2 (10 Classes)
Linear differential equations of second and higher order, homogeneous equation with constant co-efficients.

Module 3 (10 Classes)
Series solution of differential equation: Power series method, Legendre's equation, Legendrer's polynomial. Bessel's equation, Bessel's functions $J_n(x)$

Module 4 (8 Classes)
Laplace transformation and its use in solving differential equations. Convolution, Integral equations.

The course is covered by:

1. *Calculus: Gorakh Prasad:*
2. *Advance Engineering Mathematics - E. Kreyszig*
3. *John Wiley & sons Inc. - 8th edition*
   Chapter 1 (1.1-1.7)
   Chapter 2 (2.1. - 2.10, 2.12)
   Chapter 4 (4.1- 4.6)
   Chapter 5 (5.1- 5.7)