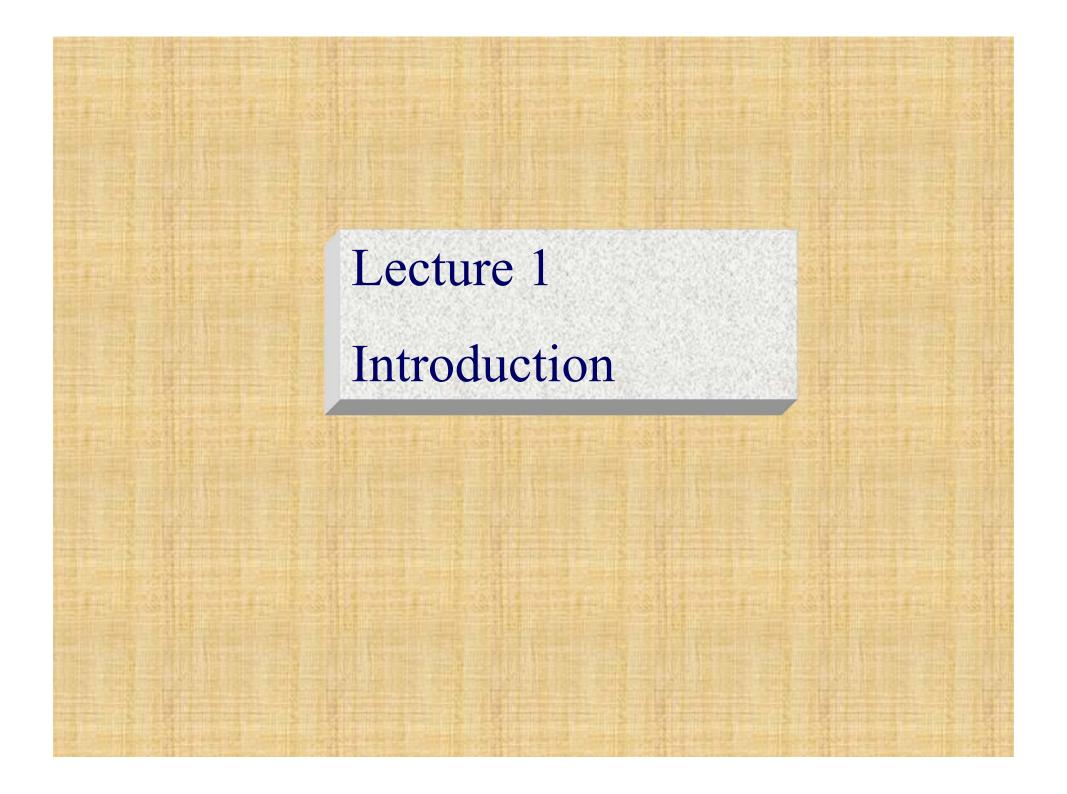
MAT-206 Mathematics practical's



- 1. Problem based on relation between roots and coefficients of a polynomial equations and problem finding equations from given conditions.
- 2. Cardon's Method to solve cubic polynomial equation.
- 3. Ferrari's method to solve bi-quadratic polynomial equation.
- 4. Graphical method to find the real root of an equation.

- 5. Bisection method and method of false position to find root of an equation.
- 6. Fixed point iteration method and newton Raphson method.
- 7. Euler's method to solve an initial value problem (IVP) and modified Euler's method to solve an IVP.
- 8. Taylor's series method to solve an IVP, picard's method to solve an IVP.

- 9. Range-kutta method of order two and order four to solve an IVP.
- 10. Numerical differentiation for equi-spaced arguments: newton's forward and backward formula, gauss's forward differentiation formula.
- 11. Numerical differentiation for un equispaced arguments: Newton's divided difference formula and langrages formula.
- 12. Numerical integration: trapezoidal rule, simpson's 1/3 rule, simpson's 3/8 rule & weddle's rule.

- 13. Problems on change of order of integration.
- 14.Problems on line integrals and volume integrals
- 15.Examples of permutations & symmetric groups.
- 16.Examples on cyclic groups, its subgroups and lattice diagram.

Projects ideas for real life applications:

- 1. Methods, applications and history regarding problems to find roots of an equations.
- 2. Polynomial equations solution methods and applications.
- 3. Initial value problem applications and methods history and application.
- 4. Numerical differentiation and integration problems with real word and solution.

Thank you