



Dharampeth M. P. Deo Memorial Science College, Nagpur
Syllabus wise You Tube Links

B. Sc. SEM II (Mathematics)

M-3: Geometry, Differential & Difference Equations

Unit I

Equation of a sphere, General equation of a sphere, The sphere through four given points

<https://www.youtube.com/watch?v=85iLqV-17VM&list=PLU6SqdYcYsfIOXS-rDdFNWQAYZ9C3H2hC>

Plane section of a sphere, Intersection of two spheres, A sphere with a given diameter

<https://www.youtube.com/watch?v=z3VJswbe5I8&list=PLU6SqdYcYsfIOXS-rDdFNWQAYZ9C3H2hC&index=3>

A sphere through a given circle,

<https://www.youtube.com/watch?v=z3VJswbe5I8&list=PLU6SqdYcYsfIOXS-rDdFNWQAYZ9C3H2hC&index=5>

Intersection of a sphere and a line

<https://www.youtube.com/watch?v=z3VJswbe5I8&list=PLU6SqdYcYsfIOXS-rDdFNWQAYZ9C3H2hC&index=7>

Plane of contact, Condition for the orthogonality of two spheres

<https://www.youtube.com/watch?v=z3VJswbe5I8&list=PLU6SqdYcYsfIOXS-rDdFNWQAYZ9C3H2hC&index=8>

The right circular cone, The right circular cylinder.

<https://www.youtube.com/watch?v=85iLqV-17VM&list=PLU6SqdYcYsfIOXS-rDdFNWQAYZ9C3H2hC&index=9>

Unit II

Families of curves, Orthogonal trajectories

<https://www.youtube.com/watch?v=85iLqV-17VM&list=PLU6SqdYcYsfIOXS-rDdFNWQAYZ9C3H2hC>

Exact equations, Integrating factors

<https://www.youtube.com/watch?v=85iLqV-17VM&list=PLU6SqdYcYsfIOXS-rDdFNWQAYZ9C3H2hC&index=2>



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Linear and Bernoulli's equations, Reduction of order

<https://www.youtube.com/watch?v=85iLqV-17VM&list=PLU6SqdYcYsfIOXS-rDdFNWQAYZ9C3H2hC&index5>

Unit-III

Second Order Linear Differential Equations: Introduction

<https://www.youtube.com/watch?v=85iLqV-17VM&list=PLU6SqdYcYsfIOXS-rDdFNWQAYZ9C3H2hC>

The general solution of the homogeneous equation

<https://www.youtube.com/watch?v=85iLqV-17VM&list=PLU6SqdYcYsfIOXS-rDdFNWQAYZ9C3H2hC&index3>

The use of a known solution to find another, The homogeneous equation with constant coefficients, The method of undetermined coefficients, The method of variation of parameters.

<https://www.youtube.com/watch?v=85iLqV-17VM&list=PLU6SqdYcYsfIOXS-rDdFNWQAYZ9C3H2hC>

Unit IV

Difference Equations: Definition, Solution of simple difference equations

https://www.youtube.com/watch?v=rxFfdOLJ7s0&list=PLIpgsec8oeRqJs_xEq-i8St5tH-WCcxXX

Homogeneous linear equations, General solutions of higher order homogeneous linear equations with variable coefficients

https://www.youtube.com/watch?v=rxFfdOLJ7s0&list=PLIpgsec8oeRqJs_xEq-i8St5tH-WCcxXX&index7

Non-homogeneous equation reducible to homogeneous equation, Method of evaluating $[1/f(E)]\Phi(x)$, First order Non-homogeneous linear equations

https://www.youtube.com/watch?v=rxFfdOLJ7s0&list=PLIpgsec8oeRqJs_xEq-i8St5tH-WCcxXX&index9

Higher order nonhomogeneous linear equations with constant coefficients, First order linear equation with variable coefficients

https://www.youtube.com/watch?v=rxFfdOLJ7s0&list=PLIpgsec8oeRqJs_xEq-i8St5tH-WCcxXX&index10



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Equation homogeneous in $u(x)$, Equations reducible to linear equations with constant coefficients.

https://www.youtube.com/watch?v=rxFfdOLJ7s0&list=PLIpgsec8oeRqJs_xEq-i8St5tH-WCcxXX&index15