



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

B Sc, SEM I (Mathematics)

M-1: Elementary Mathematics

Unit I

Complex Numbers:

<https://www.youtube.com/watch?v=AssFmt000o0&list=PLSYuE77SgGIRUH5XcA3ovNJvOnI67Azg6&index=1>

De Moivre's Theorem and its application

<https://www.youtube.com/watch?v=AssFmt000o0&list=PLSYuE77SgGIRUH5XcA3ovNJvOnI67Azg6&index=2&3>

Roots of complex number

<https://www.youtube.com/watch?v=AssFmt000o0&list=PLSYuE77SgGIRUH5XcA3ovNJvOnI67Azg6&index=4>

Euler's formula, Polynomial equations, The nth roots of unity, The elementary functions.

<https://www.youtube.com/watch?v=AssFmt000o0&list=PLSYuE77SgGIRUH5XcA3ovNJvOnI67Azg6&index=5>

Unit II

Matrices: Rank of a matrix

https://www.youtube.com/watch?v=7hB0-uzgG-U&list=PLSYuE77SgGIRhWg44RuKHDWEu4A2_G64e&index=2

Equivalent matrices, Row canonical form, Normal form, Elementary matrices and rank of a product

https://www.youtube.com/watch?v=7hB0-uzgG-U&list=PLSYuE77SgGIRhWg44RuKHDWEu4A2_G64e&index=4

System of homogeneous and non-homogeneous equations

https://www.youtube.com/watch?v=7hB0-uzgG-U&list=PLSYuE77SgGIRhWg44RuKHDWEu4A2_G64e&index=5&6

Characteristic equation and roots,.

https://www.youtube.com/watch?v=7hB0-uzgG-U&list=PLSYuE77SgGIRhWg44RuKHDWEu4A2_G64e&index=11&12

Cayley-Hamilton Theorem

https://www.youtube.com/watch?v=7hB0-uzgG-U&list=PLSYuE77SgGIRhWg44RuKHDWEu4A2_G64e&index=13



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

Unit-III

Theory of Equations: Theorems on roots of equation

https://www.youtube.com/watch?v=5nNPf_EB7Es&list=PLU6SqdYcYsfLkBvdDM5J_Ss9a2-551GVh

Relation between the roots and the coefficients

https://www.youtube.com/watch?v=FAPShLAdkto&list=PLU6SqdYcYsfLkBvdDM5J_Ss9a2-551GVh&index=3

Formation and solutions with surd and complex roots

https://www.youtube.com/watch?v=FAPShLAdkto&list=PLU6SqdYcYsfLkBvdDM5J_Ss9a2-551GVh&index=4

Descartes' rule of signs, Calculation of $f(x + h)$ by Horner's process

https://www.youtube.com/watch?v=FAPShLAdkto&list=PLU6SqdYcYsfLkBvdDM5J_Ss9a2-551GVh&index=11

Transformation of equations, Reciprocal equations.

https://www.youtube.com/watch?v=FAPShLAdkto&list=PLU6SqdYcYsfLkBvdDM5J_Ss9a2-551GVh&index=9

Cardan's solution of Cubic equations

https://www.youtube.com/watch?v=FAPShLAdkto&list=PLU6SqdYcYsfLkBvdDM5J_Ss9a2-551GVh&index=5

Ferrari's and Descartes' solution of Biquadratic equations

https://www.youtube.com/watch?v=FAPShLAdkto&list=PLU6SqdYcYsfLkBvdDM5J_Ss9a2-551GVh&index=12

Unit IV

Elementary Number Theory: Division Algorithm

https://www.youtube.com/watch?v=PztC39wFz6k&list=PLbL_Ai8GNxt8YbnYAkBwHF41IA7Z7T_Qg

Greatest Common Divisor, Euclidean Algorithm

https://www.youtube.com/watch?v=RXIaXmk-tmQ&list=PLbL_Ai8GNxt8YbnYAkBwHF41IA7Z7T_Qg&index=2

The Diophantine equation $ax + by = c$,

https://www.youtube.com/watch?v=RXIaXmk-tmQ&list=PLbL_Ai8GNxt8YbnYAkBwHF41IA7Z7T_Qg&index=5

The Fundamental Theorem of Arithmetic (without proof)



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

[https://www.youtube.com/watch?v=RXIaXmk-
tmQ&list=PLbL_Ai8GNxt8YbnYAkbnHF41IA7Z7T_Qg&index=7](https://www.youtube.com/watch?v=RXIaXmk-tmQ&list=PLbL_Ai8GNxt8YbnYAkbnHF41IA7Z7T_Qg&index=7)

Basic Properties of Congruence, Linear Congruence and the Chinese Remainder Theorem.

[https://www.youtube.com/watch?v=RXIaXmk-
tmQ&list=PLbL_Ai8GNxt8YbnYAkbnHF41IA7Z7T_Qg&index=10](https://www.youtube.com/watch?v=RXIaXmk-tmQ&list=PLbL_Ai8GNxt8YbnYAkbnHF41IA7Z7T_Qg&index=10)